

## **Final Status Survey Report**

Document No. 82A9554  
Appendices A - I

# **The Quehanna Decommissioning Project**

Prepared For:  
The Commonwealth of Pennsylvania  
Department of General Services

Room 107, Headquarters Building  
18<sup>th</sup> & Herr Streets  
Harrisburg, PA 17125



**APPENDIX A**  
**INSTRUMENT DATA**



## APPENDIX A - INSTRUMENT DATA

Instrument calibration records are provided for the following instruments in the order provided:

Instrument Model	Instrument Serial No.	Probe Model	Probe Serial No.	Description
Ludlum 12	177883	Ludlum 43-37	PR160824	Floor monitor with scalar
Ludlum 2360	202410	Ludlum 43-93	PR208657	$\alpha/\beta$ Phoswich
Ludlum 2360	202433	Ludlum 43-93	PR208664	$\alpha/\beta$ Phoswich
Ludlum 2360	202475	Ludlum 43-93	PR208661	$\alpha/\beta$ Phoswich
Ludlum 2360	202476	Ludlum 43-93	PR208667	$\alpha/\beta$ Phoswich
Ludlum 2221	163668	Ludlum 44-9	PR175103	GM frisker
Ludlum 19	207505	NA	NA	Exposure rate meter
Ludlum 19	062196	NA	NA	Exposure rate meter
Protean WPC-9550	11P-1015	NA	NA	Gas flow proportional counter for smears

Behind the Protean calibration information are the internal equations used by the Protean (smear counter).

# CERTIFICATE OF CALIBRATION (COUNT-RATE INSTRUMENT)



**RSA Laboratories, Inc.**

21 Pendleton Drive, P.O. Box 61  
Hebron, Connecticut 06248  
(860) 228-0721 Fax (860) 228-4402

Customer and Contact: Sciencetech, Inc., Attn: Randy Smith (860) 210-3085

Customer Address: 143 West Street, New Milford, CT 06776

Inst. Mfr. & Model Ludlum Model 12

Inst. Type Survey Meter

Inst. s/n 177883

Det. Mfr. & Model Ludlum 43-37

Det. Type Gas-Proportional

Det. s/n 160824

Cal. Date 05 August 2004

Due Date 05 August 2005

Cal. Interval 1 Year

Environmental conditions: Temperature: 70°F Relative Humidity 50% Atmospheric Pressure 29.15 inches Hg

Pre-calibration Checks:

- Contamination survey
- Mechanical check
- Meter zero
- Geotropism check

- Battery check
- Audio check
- Reset check
- Fast response check

- Slow response check
- Window operation
- Plateau check
- Alarm set

- Det. volts 1700 Vdc
- Input sens. 4 mV

■ Pulse generator s/n 94926

□ Oscilloscope s/n 171-04928

■ Voltmeter s/n 57410002

■ HV Readout (2 points) Ref./Inst. 500 V/ 500 V Ref./Inst. 2000 V/ 2000 V

Comments: Efficiencies taken with source in near-contact with probe grill. Calibration performed using 10-foot probe cord.

S/N of source used for precision check 0001

Isotope Th-230

Dedicated Source? ☐ Yes ☒ No

Reading #1 10,000

Reading #2 10,000

Reading #3 10,000

Mean 10,000

Precision: ☒ ± < 10% ☐ ± 10-20% ☐ Out of tolerance

Range	Reference Calibration Point	"As Found" Instrument Indication	"As left" Instrument Indication
x 1000	400,000 cpm	400,000 cpm	400,000 cpm
x 1000	100,000 cpm	100,000 cpm	100,000 cpm
x 100	40,000 cpm	40,000 cpm	40,000 cpm
x 100	10,000 cpm	10,000 cpm	10,000 cpm
x 10	4,000 cpm	4,000 cpm	4,000 cpm
x 10	1,000 cpm	1,000 cpm	1,000 cpm
x 1	400 cpm	400 cpm	400 cpm
x 1	100 cpm	100 cpm	100 cpm

All ranges calibrated electronically.

Local background (cpm) = 400

Range Multiplier	Cal. Source Used (isotope and S/N)	Source Activity (dpm)	Instrument Reading (cpm)	4π Instrument Efficiency (%)
x 100	C-14 #4456 0.7" disk	202,100	17,000	8.21
x 10	Pm-147 #5381 0.7" disk	8,802	1500	12.50
x 10	Tc-99 #D702 0.7" disk	23,064	4200	16.48
x 10	Cs-137 #2886 0.7" disk	17,839	4000	20.18
x 100	Cl-36 #D700 0.7" disk	23,598	5000	19.49
x 100	Sr/Y-90 #D711 0.7" disk	44,662	9000	19.26
x 100	Th-230 #91TH4700001 2" disk	33,000	10,000	29.09

RSA Laboratories ID# 9087. Instrument indicates within ±10% of calibration points unless otherwise indicated. Source-to-detector entry window distance for efficiency determinations is 1 cm unless otherwise specified. RSA Laboratories, Inc. certifies that the above instrument has been calibrated with standards traceable to the National Institute of Standards and Technology, or have been derived from accepted values of natural physical constants, or have been derived by the ratio-type of calibration techniques.

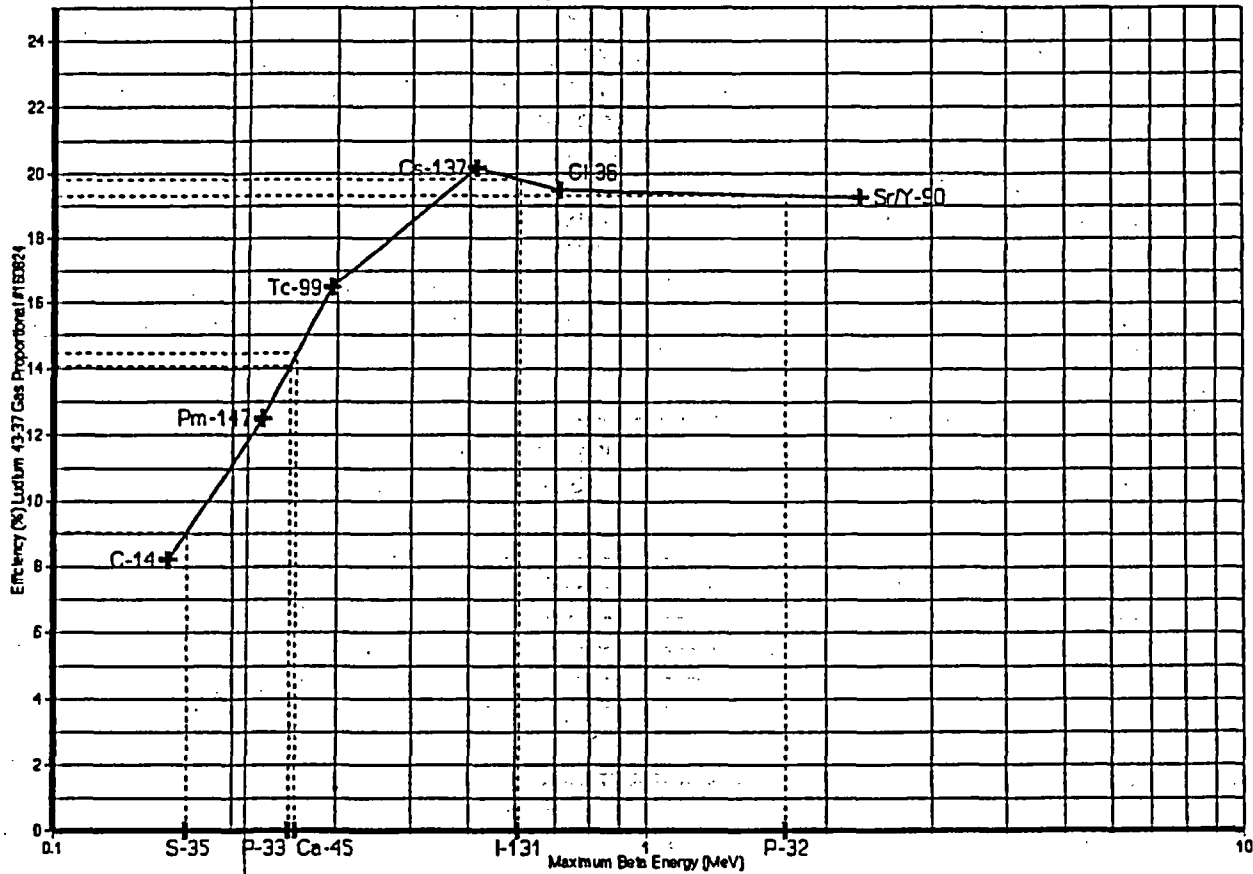
Calibrated by: Kurt D. Newton

Date: 05 August 2004

Reviewed by: Paul R. Steinmeyer

Date: 05 August 2004

Interpolated Beta Efficiencies  
05 August 2004 Ludlum Model 12 #177883



RSA Laboratories ID# 9087.

Calibrated by: Kurt D. Newton

Date: 05 August 2004

Reviewed by: Paul R. Steinmeyer

Date: 05 August 2004



Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

# CERTIFICATE OF CALIBRATION

**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SCIENTECH INC PA ORDER NO. 212641

Ludlum Measurements, Inc. Model 2360 Serial No. 202410  
Mfg. Ludlum Measurements, Inc. Model 43-93 Serial No. PR 208657  
Cal. Date 22-Mar-04 Cal Due Date 22-Mar-05 Cal. Interval 1 Year Meterface 202-855

Check mark ☒ applies to applicable Instr. and/or detector IAW mfg. spec. T. 71 °F RH 44 % Alt 702.8 mm Hg

☒ New Instrument Instrument Received ☐ Within Toler. +10% ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☒ Mechanical ck. ☒ Meter Zeroed ☐ Background Subtract ☐ Input Sens. Linearity

☐ F/S Resp. ck. ☒ Reset ck. ☒ Window Operation ☒ Geotrolism

☒ Audio ck. ☐ Alarm Setting ck. ☒ Batt. ck. (Min. Volt) 2.2 VDC

☒ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 750 V

☒ HV Readout (2 points) Ref./Inst. 500 / 501 V Ref./Inst. 1500 / 1519 V

Firmware Version: 39010N24

(EEPROM Settings)

Alpha Threshold: 120 MV

User Time: 1.0 min

Beta Threshold: 3.5 MV

Alpha Alarm: 50,000

Beta Window: 30 MV

Beta Alarm: 50,000

Overload Set simulating light leak

A/B Alarm: 50,000

Instrument calibrated with a 39" cable

Model 2360 Date: 03/22/2004

High voltage set with detector Connected

Calibration Date Due: 03/22/2005

## COMMENTS:

Sr90y90 ~ 47.2 (2pi) Sr90y90 size = 78043 cpm

Pu239 ~ 41.9 (2pi) Pu239 size = 15,700 cpm

Tc99 ~ 39.8 (2pi) Tc99 size = 14,300 cpm

Th230 ~ 44.7 (2pi) Th230 size = 2740 cpm

C14 ~ 4.34 (2pi) C14 size = 155,824 cpm

Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
<u>x1000</u>	<u>400kcpm</u>		<u>400</u>
<u>x1000</u>	<u>100kcpm</u>		<u>100</u>
<u>x100</u>	<u>40kcpm</u>		<u>400</u>
<u>x100</u>	<u>10kcpm</u>		<u>100</u>
<u>x10</u>	<u>4kcpm</u>		<u>400</u>
<u>x10</u>	<u>1kcpm</u>		<u>100</u>
<u>x1</u>	<u>400kcpm</u>		<u>400</u>
<u>x1</u>	<u>100kcpm</u>		<u>100</u>

\*Uncertainty within  $\pm 10\%$  C.F. within  $\pm 20\%$

ALL Range(s) Calibrated Electronically

REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
<u>400kcpm</u>		<u>39920 (0)</u>			
<u>40kcpm</u>		<u>3992</u>			
<u>4kcpm</u>		<u>400</u>			
<u>400cpm</u>		<u>40</u>			
<u>40cpm</u>		<u>4</u>			

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978. State of Texas Calibration License No. LO-1963

## Reference Instruments and/or Sources:

Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ S105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☒ Alpha S/N 4337, Pu239 ☒ Beta S/N 635/83Tc99, \*918Sr90Y90 ☐ Other

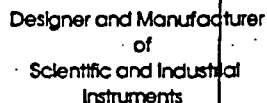
500 S/N 201934 ☐ Oscilloscope S/N ☒ Multimeter S/N 82840194

Calibrated By: Edie Clapper Date 22-Mar-04

Reviewed By: Emi Herrera Date 22-Mar-04

This certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc. FORM C22S 11/26/2003

AC Inst. ☐ Passed Dielectric (Hi-Pot) and Continuity Test  
Only ☐ Failed:



**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

Detector <u>43-93</u>	Serial No. <u>PR 208-657</u>	Order #. <u>212641</u>
Customer <u>SCIENTECH INC PA</u>		Alpha Input Sensitivity <u>120</u> mV
Counter <u>2360</u>	Serial No. <u>207410</u>	Beta Input Sensitivity <u>3.5</u> mV
Count Time <u>1 Minute</u>		Beta Window <u>30</u> mV
Other _____		Distance Source to Detector <u>Surface</u>

☐ Gas Proportional detector count rate decreased  $\leq 10\%$  after 15 hour static test using 39" cable.

☐ Gas proportional detector count rate decreased  $\leq 10\%$  after 5 hour static test using 39" cable and alpha/beta counter.

Date 72-Mar-04



Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

# CERTIFICATE OF CALIBRATION

LUDLUM MEASUREMENTS, INC.  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SCIENTECH INC PA

ORDER NO. 213986/280651

Mfg. Ludlum Measurements, Inc. Model 2360 Serial No. 202410

Mfg. Ludlum Measurements, Inc. Model 43-93 Serial No. PR-208657

Cal. Date 13-Apr-04 Cal Due Date 13-Apr-05 Cal. Interval 1 Year Meterface 202-855

Check mark ☒ applies to applicable instr. and/or detector IAW mfg. spec. T. 71 °F RH 20 % Alt 705.0 mm Hg

☐ New Instrument ☐ Instrument Received ☒ Within Toler. +10% ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☒ Mechanical ck.

☒ Meter Zeroed

☐ Background Subtract

☐ Input Sens. Linearity

☐ F/S Resp. ck

☒ Reset ck.

☒ Window Operation

☒ Geotropism

☒ Audio ck.

☐ Alarm Setting ck.

☒ Batt. ck. (Min. Volt) 2.2 VDC

☒ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89.

☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 750 V

☒ HV Readout (2 points) Ref./Inst. 500 / 500 V Ref./Inst. 2000 / 1998 V

Firmware Version: 39010N24

(EEPROM Settings)

Alpha Threshold: 120mV

User Time: 001.0

Beta Threshold: 3.5mV

Alpha Alarm: 050000

Beta Window: 30mV

Beta Alarm: 050000

Overload set simulating light leak.

A/B Alarm: 050000

Instrument calibrated with a 39" cable.

Model 2360 Date: 04/13/2004

High voltage set with detector disconnected

Calibration Date Due: 04/13/2005

## COMMENTS:

DATE

ma Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
x1000	400 kcpm	400	400
x1000	100 kcpm	100	100
x100	40 kcpm	400	400
x100	10 kcpm	100	100
x10	4 kcpm	400	400
x10	1 kcpm	100	100
x1	400 cpm	400	400
x1	100 cpm	100	100

\*Uncertainty within  $\pm 10\%$

C.F. within  $\pm 20\%$

All Range(s) Calibrated Electronically

REFERENCE CAL POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	REFERENCE CAL POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Digital Readout	400 kcpm	39959(6)	Log Scale		
	40 kcpm	3996			
	4 kcpm	399			
	400 cpm	40			
	40 cpm	4			

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978. State of Texas Calibration License No. LO-1963

## Reference Instruments and/or Sources:

Cs-137 Gamma S/N ☐ 1162 ☐ G12 ☐ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☒ Alpha S/N Pr 237 S/N: 4337 ☒ Beta S/N Tc 99 S/N: NT-EV/5c 90190 S/N: 4016 ☐ Other

☒ m 500 S/N 50800 ☐ Oscilloscope S/N ☒ Multimeter S/N 83990502

Calibrated By: Charles disk Date 13 Apr 04

Reviewed By: WGNL Date 19 Apr 04

This certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc.  
FORM C22S 11/26/2003

AC Inst. ☐ Passed Dielectric (Hi-Pot) and Continuity Test  
Only ☐ Failed:



Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

## CERTIFICATE OF CALIBRATION

**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SCIENTECH INC PA

ORDER NO. 213986/280651

Ludlum Measurements, Inc. Model 2360

Serial No. 202410

Mfg. Ludlum Measurements, Inc. Model 43-93

Serial No. PR-208657

Cal. Date 13-Apr-04 Cal Due Date 13-Apr-05 Cal. Interval 1 Year Meterface 202-855

Check mark ☒ applies to applicable instr. and/or detector IAW mfg. spec. T. 71 °F RH 20 % Alt 705.0 mm Hg

☐ New Instrument ☐ Instrument Received ☒ Within Toler. +10% ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☒ Mechanical ck.

☒ Meter Zeroed

☐ Background Subtract

☐ Input Sens. Linearity

☐ F/S Resp. ck

☒ Reset ck.

☒ Window Operation

☒ Geotroplism

☒ Audio ck.

☐ Alarm Setting ck.

☒ Batt. ck. (Min. Volt) 2.2 VDC

☒ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89.

☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 750 V

☒ HV Readout (2 points) Ref./Inst. 500 / 500 V Ref./Inst. 2000 / 1998 V

Firmware Version: 39010N24

(EEPROM Settings)

Alpha Threshold: 120 mV

User Time: 001.0

Beta Threshold: 3.5 mV

Alpha Alarm: 050000

Beta Window: 30 mV

Beta Alarm: 050000

Overload set simulating light leak.

A/B Alarm: 050000

Instrument calibrated with a 39" cable.

Model 2360 Date: 04/13/2004

High voltage set with detector disconnected

Calibration Date Due: 04/13/2005

### COMMENTS:

Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
x1000	400 kcpm	400	400
x1000	100 kcpm	100	100
x100	40 kcpm	400	400
x100	10 kcpm	100	100
x10	4 kcpm	400	400
x10	1 kcpm	100	100
x1	400 cpm	400	400
x1	100 cpm	100	100

\*Uncertainty within  $\pm 10\%$  C.F. within  $\pm 20\%$

All Range(s) Calibrated Electronically

REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
400 kcpm	39959(6)	39959(6)			
40 kcpm	3996	3996			
4 kcpm	399	399			
400 cpm	40	40			
40 cpm	4	4			

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978. State of Texas Calibration License No. LO-1963

### Reference Instruments and/or Sources:

Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☒ Alpha S/N Pu239SN: 4337 ☒ Beta S/N Tc99SN: NT-EV/560Y904N: 4016 ☐ Other

☐ m 500 S/N 50800

☐ Oscilloscope S/N

☒ Multimeter S/N 83990502

Calibrated By: Charles

Date 13 Apr 04

Reviewed By: WJRL

Date 19 Apr 04



Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

LUDLUM MEASUREMENTS, INC.  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

Bench Test Data For Detector

Detector 43-93 Serial No. PR-208657 Order #. 213986/280651  
Customer SCIENTECH INC PA Alpha Input Sensitivity 120 mV  
Counter 2360 Serial No. 202410 Beta Input Sensitivity 3.5 mV  
Count Time 1 Minute Beta Window 30 mV  
Other \_\_\_\_\_ Distance Source to Detector Surface

High Voltage	Background		Isotope <u>Pu 239</u> Size <u>15700 cpm</u>		Isotope <u>Tc 99</u> Size <u>14100 cpm</u>		Isotope <u>Sr 90 Y 90</u> Size <u>43632 cpm</u>	
	Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
700	1	105	6305	389	1	3293	2	12829
725	1	131	6524	457	2	4192	2	16094
750	0	170	6713	704	3	5351	1	19517
775	1	239	6744	1067	4	6158	3	20262
800	1	295	6848	1498	2	7013	13	21524

- ☐ Gas Proportional detector count rate decreased  $\leq$  10% after 15 hour static test using 39" cable.  
☐ Gas proportional detector count rate decreased  $\leq$  10% after 5 hour static test using 39" cable and alpha/beta counter.

Signature \_\_\_\_\_

Date 13 Apr 04





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POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SCIENTECH INC PA ORDER NO. 212641

Mfg. Ludlum Measurements, Inc. Model 2360 Serial No. 202 433  
Mfg. Ludlum Measurements, Inc. Model 43-93 Serial No. PR 208664

Cal. Date 22-Mar-04 Cal Due Date 22-Mar-05 Cal. Interval 1 Year Meterface 202-855

check mark ☒ applies to applicable Instr. and/or detector IAW mfg. spec. T. 71 °F RH 44 % Alt. 702.8 mm Hg

☒ New Instrument Instrument Received ☐ Within Toler. +10% ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments  
☒ Mechanical ck. ☒ Meter Zeroed ☐ Background Subtract ☐ Input Sens. Linearity  
☐ F/S Resp. ck. ☒ Reset ck. ☒ Window Operation ☒ Geotropism  
☒ Audio ck. ☐ Alarm Setting ck. ☒ Batt. ck. (Min. Volt) 2.2 VDC  
☒ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 750 V  
☒ HV Readout (2 points) Ref./Inst. 500 / 500 V Ref./Inst. 1500 / 1526 V  
Firmware Version: 39010N24 (EEPROM Settings)  
Alpha Threshold: 120 mV User Time: 1.0 min  
Beta Threshold: 3.5 mV Alpha Alarm: 50,000  
Beta Window: 30 mV Beta Alarm: 50,000  
Overload set simulating light leak A/B Alarm: 50,000  
Instrument calibrated with a 39" cable Model 2360 Date: 03/22/2004  
High voltage set with detector Connected Calibration Date Due: 03/22/2005

**COMMENTS:**  
Sr90y90 = 45.9 (2pi) Sr90y90 size = 78457 cpm Pu239 = 46.2 (2pi) Pu239 size = 15700 cpm  
Tc99 = 35.1 (2pi) Tc99 size = 14300 cpm Th230 = 48.1 (2pi) Th230 size = 2740 cpm  
C14 = 5.33 (2pi) C14 size = 155824 cpm

Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
x1000	400kcpm		<u>400</u>
x1000	100kcpm		<u>100</u>
x100	40kcpm		<u>400</u>
x100	10kcpm		<u>100</u>
x10	4kcpm		<u>400</u>
x10	1kcpm		<u>100</u>
x1	400kcpm		<u>400</u>
x1	100kcpm		<u>100</u>

\*Uncertainty within ± 10% C.F. within ± 20%

ALL Range(s) Calibrated Electronically

REFERENCE CAL POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	REFERENCE CAL POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Digital Readout					
400kcpm		<u>39973(0)</u>			
40kcpm		<u>4000</u>			
4kcpm		<u>404</u>			
400cpm		<u>40</u>			
40cpm		<u>4</u>			

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## Reference Instruments and/or Sources:

Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☒ Alpha S/N 4337, Pu239 ☒ Beta S/N 635/83Tc99, 918Sr90Y90 ☐ Other \_\_\_\_\_

500 S/N 201934 ☐ Oscilloscope S/N \_\_\_\_\_ ☒ Multimeter S/N 82840194

Calibrated By: Ledie Clepper Date 22-Mar-04

Reviewed By: Evan Hansen Date 22 MAR 04

This certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc. FORM C225 11/26/2003

AC Inst. ☐ Passed Dielectric (Hi-Pot) and Continuity Test  
Only ☐ Failed: \_\_\_\_\_



Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

### Bench Test Data For Detector

Detector 43-93 Serial No. PR 208 664 Order #. 212641  
Customer SCIENTECH INC PA Alpha Input Sensitivity 120 mV  
Counter 2360 Serial No. 202 433 Beta Input Sensitivity 3.5 mV  
Count Time 1 Minute Beta Window 30 mV  
Other \_\_\_\_\_ Distance Source to Detector Surface

High Voltage	Background		Isotope <u>Pu239</u> Size <u>15,700cpm</u>		Isotope <u>Sr90, 90</u> Size <u>78457cpm</u>		Isotope <u>Tc99</u> Size <u>14,300cpm</u>	
	Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
700	1	96	6689	346	1	24271	2	3371
725	0	129	6936	366	0	31213	7	4304
- 750	0	214	7267	465	0	36268	6	5232
775	1	269	7144	794	1	38844	3	6145
800	0	282	7411	1220	12	39025	6	6828

- ☐ Gas Proportional detector count rate decreased  $\leq$  10% after 15 hour static test using 39" cable.  
☐ Gas proportional detector count rate decreased  $\leq$  10% after 5 hour static test using 39" cable and alpha/beta counter.

Signature Leslie Clepper Date 22-Mar-04



Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

# CERTIFICATE OF CALIBRATION

**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SCIENTECH INC PA

ORDER NO. 213986/280651

Mfg. Ludlum Measurements, Inc. Model 2360 Serial No. 202433  
Mfg. Ludlum Measurements, Inc. Model 43-93 Serial No. PR-208664

Cal. Date 13-Apr-04 Cal Due Date 13-Apr-05 Cal. Interval 1 Year Meterface 202-855

check mark ☒ applies to applicable Instr. and/or detector IAW mfg. spec. T. 71 °F RH 20 % Alt 705.0 mm Hg

☐ New Instrument ☐ Instrument Received ☒ Within Toler. +10% ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☒ Mechanical ck.

☒ Meter Zeroed

☐ Background Subtract

☐ Input Sens. Linearity

☐ F/S Resp. ck

☒ Reset ck.

☒ Window Operation

☒ Geotrolism

☒ Audio ck.

☐ Alarm Setting ck.

☒ Batt. ck. (Min. Volt) 2.2 VDC

☒ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89.

☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 825 V

☒ HV Readout (2 points) Ref./Inst. 500 / 500 V Ref./Inst. 2000 / 2008 V

Firmware Version: 39010N24

(EEPROM Settings)

Alpha Threshold: 120 mV

User Time: 0010

Beta Threshold: 3.9 mV

Alpha Alarm: 050000

Beta Window: 30 mV

Beta Alarm: 050000

Overload Set simulating light leak

A/B Alarm: 050000

Instrument calibrated with a 39" cable.

Model 2360 Date: 13/Apr/04

High voltage set with detector disconnected

Calibration Date Due: 13/Apr/2005

## COMMENTS:

Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
x1000	400 kcpm	400	400
x1000	100 kcpm	100	100
x100	40 kcpm	400	400
x100	10 kcpm	100	100
x10	4 kcpm	400	400
x10	1 kcpm	100	100
x1	400 cpm	400	400
x1	100 cpm	100	100

\*Uncertainty within  $\pm 10\%$  C.F. within  $\pm 20\%$

All Range(s) Calibrated Electronically

REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	Log Scale	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Digital Readout	400 kcpm	40023(6)				
	40 kcpm	4002				
	4 kcpm	400				
	400 cpm	40				
	40 cpm	4				

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978. State of Texas Calibration License No. LO-1963

## Reference Instruments and/or Sources:

Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☒ Alpha S/N PR-239 S/N: 4337 ☒ Beta S/N Tc-99 S/N: 635/83/5r9090 S/N: 918 ☐ Other

☐ n 500 S/N 50800 ☐ Oscilloscope S/N ☒ Multimeter S/N 83990502

Calibrated By: Charles Smith Date 13 Apr 04

Reviewed By: WJL Date 19 Apr 04



Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

LUDLUM MEASUREMENTS, INC.  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

### Bench Test Data For Detector

Detector 43-93 Serial No. PR-208664  
Customer SCIENTECH INC PA  
Counter 2360 Serial No. 202433  
Count Time 1 Minute  
Other \_\_\_\_\_

Order #. 213986/280651  
Alpha Input Sensitivity 120 mV  
Beta Input Sensitivity 3.5 mV  
Beta Window 30 mV  
Distance Source to Detector Surface

High Voltage	Background		Isotope <u>Pu 239</u> Size <u>15700 cpm</u>		Isotope <u>Tc 99</u> Size <u>14300 cpm</u>		Isotope <u>Sr 90Y90</u> Size <u>77929 cpm</u>	
	Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
775	0	120	6574	381	1	3311	80	25172
800	0	169	7001	441	7	4190	0	30175
- 825	0	230	6988	612	10	5130	0	34481
850	1	255	7077	858	11	5848	4	37020
875	0	301	7237	1155	10	6615	18	37414

- ☐ Gas Proportional detector count rate decreased  $\leq$  10% after 15 hour static test using 39" cable.  
☐ Gas proportional detector count rate decreased  $\leq$  10% after 5 hour static test using 39" cable and alpha/beta counter.

Signature \_\_\_\_\_

Date 13 Apr 04



Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

## CERTIFICATE OF CALIBRATION

**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SCIENTECH INC PA

ORDER NO. 212641

Mfg. Ludlum Measurements, Inc. Model 2360 Serial No. 202 475  
Mfg. Ludlum Measurements, Inc. Model 43-93 Serial No. PR 208661  
Cal. Date 22-Mar-04 Cal Due Date 22-Mar-05 Cal. Interval 1 Year Meterface 202-855

check mark ☒ applies to applicable Instr. and/or detector IAW mfg. spec. T. 71 °F RH 44 % Alt 702.8 mm Hg

☒ New Instrument ☐ Instrument Received ☐ Within Toler. +10% ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☒ Mechanical ck. ☒ Meter Zeroed ☐ Background Subtract ☐ Input Sens. Linearity  
☐ F/S Resp. ck. ☒ Reset ck. ☒ Window Operation ☒ Geotroplism  
☒ Audio ck. ☐ Alarm Setting ck. ☒ Batt. ck. (Min. Volt) 2.2 VDC  
☒ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 675 V

☒ HV Readout (2 points) Ref./Inst. 500 / 502 V Ref./Inst. 1500 / 1524 V

Firmware Version: 39010N24

(EEPROM Settings)

Alpha Threshold: 120 mV

User Time: 1.0 min.

Beta Threshold: 3.5 mV

Alpha Alarm: 50,000

Beta Window: 30 mV

Beta Alarm: 50,000

Overload Set Simulating light leak

A/B Alarm: 50,000

Instrument calibrated with a 39" cable

Model 2360 Date: 03/22/2004

High voltage set with detector connected

Calibration Date Due: 03/22/2005

### COMMENTS:

Sr90y90 ~ 44.4% (2pi) Sr90y90 size = 78457 cpm  
Tc99 ~ 42.9% (2pi) Tc99 size = 14,300 cpm  
C14 ~ 5.28% (2pi) C14 size = 155,824 cpm

Pu239 ~ 42.7% (2pi) Pu239 size = 15,700 cpm  
Th230 ~ 38.6% (2pi) Th230 size = 2740 cpm

Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

### RANGE/MULTIPLIER

### REFERENCE CAL POINT

### INSTRUMENT REC'D "AS FOUND READING"

### INSTRUMENT METER READING\*

x1000	400kcpm		400
x1000	100kcpm		100
x100	40kcpm		400
x100	10kcpm		100
x10	4kcpm		400
x10	1kcpm		100
x1	400kcpm		400
x1	100kcpm		100

\*Uncertainty within ± 10% C.F. within ± 20%

ALL Range(s) Calibrated Electronically

REFERENCE CAL POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	REFERENCE CAL POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Digital Readout					
400kcpm		39999 (0)			
40kcpm		3999			
4kcpm		399			
400cpm		40			
40cpm		4			

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978. State of Texas Calibration License No. LO-1963

### Reference Instruments and/or Sources:

Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ 6105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/NT-304  
☒ Alpha S/N 4337, Pu239 ☒ Beta S/N 635/83Tc99, \*918Sr90Y90 ☐ Other \_\_\_\_\_  
☐ m 500 S/N 94940 ☐ Oscilloscope S/N \_\_\_\_\_ ☒ Multimeter S/N 83630256

Calibrated By: Leslie Clepper Date 22-Mar-04

Reviewed By: Emi Messers Date 22-Mar-04

This certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc.  
FORM C225 11/26/2003

AC Inst. ☐ Passed Dielectric (Hi-Pot) and Continuity Test  
Only ☐ Failed: \_\_\_\_\_



**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

Detector <u>43-93</u>	Serial No. <u>PR 208 661</u>	Order #.	<u>212641</u>
Customer <u>SCIENTECH INC PA</u>		Alpha Input Sensitivity	<u>120</u> mV
Counter <u>2360</u>	Serial No. <u>202 475</u>	Beta Input Sensitivity	<u>3.5</u> mV
Count Time <u>1Minute</u>		Beta Window	<u>70</u> mV
Other _____		Distance Source to Detector	<u>Surface</u>

☐ Gas Proportional detector count rate decreased  $\leq 10\%$  after 15 hour static test using 39" cable.

☐ Gas proportional detector count rate decreased  $\leq 10\%$  after 5 hour static test using 39" cable and alpha/beta counter.

Date 22-Mar. 04



Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

# CERTIFICATE OF CALIBRATION

**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SCIENTECH INC PA

ORDER NO. 213986/280651

Mfg. Ludlum Measurements, Inc. Model 2360

Serial No. 202475

Mfg. Ludlum Measurements, Inc. Model 43-93

Serial No. PR-208661

Cal. Date 13-Apr-04 Cal Due Date 13-Apr-05 Cal. Interval 1 Year Meterface 202-855

check mark ☒ applies to applicable instr. and/or detector IAW mfg. spec. T. 71 °F RH 20 % Alt 705.0 mm Hg

☐ New Instrument ☐ Instrument Received ☒ Within Toler. +10% ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☒ Mechanical ck. ☒ Meter Zeroed ☐ Background Subtract ☐ Input Sens. Linearity

☐ F/S Resp. ck. ☒ Reset ck. ☒ Window Operation ☒ Geotropism

☒ Audio ck. ☐ Alarm Setting ck. ☒ Batt. ck. (Min. Volt) 2.2 VDC

☒ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 700 V

☒ HV Readout (2 points) Ref./Inst. 500 / 506 V Ref./Inst. 2000 / 1995 V

Firmware Version: 39010N24

(EEPROM Settings)

Alpha Threshold: 120 mV

User Time: 061.0

Beta Threshold: 3.5 mV

Alpha Alarm: 050000

Beta Window: 30 mV

Beta Alarm: 050000

Overload Set Simulating light leak

A/B Alarm: 050000

Instrument calibrated with a 9' J cable.

Model 2360 Date: 04/13/2004

High voltage set with detector disconnected

Calibration Date Due: 04/13/2005

## COMMENTS:

alignment: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
x1000	400 kcpm	400	400
x1000	100 kcpm	100	100
x100	40 kcpm	400	400
x100	10 kcpm	100	100
x10	4 kcpm	400	400
x10	1 kcpm	100	100
x1	400 cpm	400	400
x1	100 cpm	100	100

\*Uncertainty within ± 10% C.F. within ± 20%

All Range(s) Calibrated Electronically

REFERENCE CAL POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	REFERENCE CAL POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Digital Readout					
400 kcpm	39917 (6)	39917 (6)			
40 kcpm	3998	3998			
4 kcpm	400	400			
400 cpm	40	40			
40 cpm	4	4			

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978. State of Texas Calibration License No. LO-1963

## Reference Instruments and/or Sources:

Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☒ Alpha S/N Pa 239 S/N: 2928-D1 ☒ Beta S/N Sc 90 Y90 S/N: 4016 / E99 S/N: NE-EV ☐ Other

☐ m 500 S/N 50800 ☐ Oscilloscope S/N ☒ Multimeter S/N 83990502

Calibrated By: Charles Date 13 Apr 04

Reviewed By: WJ Rb Date 19 Apr 04



**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

Detector <u>43-93</u>	Serial No. <u>PR-208461</u>
Customer <u>SCIENTECH INC PA</u>	
Counter <u>2360</u>	Serial No. <u>202475</u>
Count Time <u>1Minute</u>	
Other	

Alpha Input Sensitivity 120 mV

Beta Input Sensitivity 3.5 mV

Beta Window 30 mV

Distance Source to Detector Surface

Isotope Pu 239 | Isotope Tc 99 | Isotope Sr 90Y 90  
Size 12600 cpm | Size 14100 cpm | Size 43635 cpm

[illegible]

- ☐ Gas Proportional detector count rate decreased  $\leq$  10% after 15 hour static test using 39" cable.
- ☐ Gas proportional detector count rate decreased  $\leq$  10% after 5 hour static test using 39" cable and alpha/beta counter.

**Signature**

Date 13 Apr 04





Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

# CERTIFICATE OF CALIBRATION

**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SCIENTECH INC PA ORDER NO. 212641

Mfg. Ludlum Measurements, Inc. Model 2360 Serial No. 202476  
Mfg. Ludlum Measurements, Inc. Model 43-93 Serial No. PR 208667

Cal. Date 22-Mar-04 Cal Due Date 22-Mar-05 Cal. Interval 1 Year Meterface 202-855

Check mark ☒ applies to applicable Instr. and/or detector IAW mfg. spec. T. 71 °F RH 44 % Alt 702.8 mm Hg

☒ New Instrument ☐ Instrument Received ☐ Within Toler.  $\pm 10\%$  ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☒ Mechanical ck. ☒ Meter Zeroed ☐ Background Subtract ☐ Input Sens. Linearity

☐ F/S Resp. ck. ☒ Reset ck. ☒ Window Operation ☒ Geotropism

☒ Audio ck. ☐ Alarm Setting ck. ☒ Batt. ck. (Min. Volt) 2.2 VDC

☐ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 675 V

☒ HV Readout (2 points) Ref./Inst. 500 / 500 V Ref./Inst. 1500 / 1487 V

Firmware Version: 39010124

Alpha Threshold: 120 mV

Beta Threshold: 3.5 mV

Beta Window: 30 mV

Overload: set simulating light leak

Instrument calibrated with a 39" cable.

High voltage set with detector Connected

(EEPROM Settings)

User Time: 1.0 min

Alpha Alarm: 50,000

Beta Alarm: 50,000

A/B Alarm: 50,000

Model 2360 Date: 03/22/2004

Calibration Date Due: 03/22/2005

## COMMENTS:

Sr90y90 48 % (2pi) Sr90y90 size = 78457 cpm

Tc99 47.3 % (2pi) Tc99 size = 14,300 cpm

C14 9.93 % (2pi) C14 size = 155,824 cpm

Pu239 41.6 % (2pi) Pu239 size = 15,700 cpm

Th230 51.9 % (2pi) Th230 size = 2740 cpm

Calibration: GM detectors positioned perpendicular to source except for M 44-8 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
x1000	400kcpm		400
x1000	100kcpm		100
x100	40kcpm		400
x100	10kcpm		100
x10	4kcpm		400
x10	1kcpm		100
x1	400kcpm		400
x1	100kcpm		100

\*Uncertainty within  $\pm 10\%$  C.F. within  $\pm 20\%$

All Range(s) Calibrated Electronically

REFERENCE CAL POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	REFERENCE CAL POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Digital Readout		40054(0)			
400kcpm		4005			
40kcpm		401			
4kcpm		40			
400cpm		4			
40cpm					

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## Reference Instruments and/or Sources:

Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☒ Alpha S/N 4337, Pu239 ☒ Beta S/N 635/83Tc99, \*918Sr90Y90 ☐ Other

☐ n 500 S/N 201934 ☐ Oscilloscope S/N ☒ Multimeter S/N 82840194

Calibrated By: Leslie Clepper Date: 22-Mar-04

Reviewed By: Eric H. H. H. Date: 23-Mar-04

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FORM C225 11/26/2003

AC Inst. ☐ Passed Dielectric (Hi-Pot) and Continuity Test  
Only ☐ Failed:





Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

# CERTIFICATE OF CALIBRATION

**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SCIENTECH INC PA

ORDER NO. 213986/280651

Ludlum Measurements, Inc. Model 2360

Serial No. 202476

Mfg. Ludlum Measurements, Inc. Model 43-93

Serial No. PR-208667

Cal. Date 13-Apr-04 Cal Due Date 13-Apr-05 Cal. Interval 1 Year Meterface 202-855

Check mark ☒ applies to applicable instr. and/or detector IAW mfg. spec. T. 71 °F RH 20 % Alt 705.0 mm Hg

☐ New Instrument ☐ Instrument Received ☒ Within Toler.  $\pm 10\%$  ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☒ Mechanical ck.

☒ Meter Zeroed

☐ Background Subtract

☐ Input Sens. Linearity

☐ F/S Resp. ck

☒ Reset ck.

☒ Window Operation

☒ Geotroplism

☒ Audio ck.

☐ Alarm Setting ck.

☒ Batt. ck. (Min. Volt) 2.2 VDC

☒ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89.

☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 700 V

☒ HV Readout (2 points) Ref./Inst. 500 / 1.503 V Ref./Inst. 2000 / 2008 V

Firmware Version: 39010N24

(EEPROM Settings)

Alpha Threshold: 120 mV

User Time: 00.10

Beta Threshold: 3.5 mV

Alpha Alarm: 050000

Beta Window: 30 mV

Beta Alarm: 050000

Overload Set to simulate light leak.

A/B Alarm: 050000

Instrument calibrated with a 39" cable.

Model 2360 Date: 04/13/2004

High voltage set with detector disconnected

Calibration Date Due: 04/13/2005

## COMMENTS:

Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
x1000	400 kcpm	400	400
x1000	100 kcpm	100	100
x100	40 kcpm	400	400
x100	10 kcpm	100	100
x10	4 kcpm	400	400
x10	1 kcpm	100	100
x1	400 cpm	400	400
x1	100 cpm	100	100

\*Uncertainty within  $\pm 10\%$  C.F. within  $\pm 20\%$

All Range(s) Calibrated Electronically

REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Digital Readout 400 kcpm	39930(6)	39930(6)	Log Scale		
40 kcpm	3993	3993			
4 kcpm	399	399			
400 cpm	40	40			
40 cpm	4	4			

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## Reference Instruments and/or Sources:

Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☒ Alpha S/N PR-239 S/N: 8774 ☐ Beta S/N 1699 S/N: 635/23/S-80190 S/N: 4016 ☐ Other

☐ 500 S/N 50800 ☐ Oscilloscope S/N ☒ Multimeter S/N 83990502

Calibrated By: Charles Date 13 Apr 04

Reviewed By: Wm Date 19 Apr 04

This certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc.  
FORM C225 11/26/2003

AC Inst. ☐ Passed Dielectric (Hi-Pot) and Continuity Test  
Only ☐ Failed:



**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

Detector	43-93	Serial No.	PR-208667
Customer	SCIENTECH INC PA		
Counter	2360	Serial No.	202476
Count Time	1Minute		
Other			

Alpha Input Sensitivity 120 mV  
Beta Input Sensitivity 3.5 mV  
Beta Window 30 mV  
ce Source to Detector Surface

[illegible]

- ☐ Gas Proportional detector count rate decreased  $\leq$  10% after 15 hour static test using 39" cable.
- ☐ Gas proportional detector count rate decreased  $\leq$  10% after 5 hour static test using 39" cable and alpha/beta counter.

Signature Charles Ash

Date 13 Apr 04

# CERTIFICATE OF CALIBRATION (COUNT-RATE INSTRUMENT)



**RSA Laboratories, Inc.**

21 Pendleton Drive, P.O. Box 61

Hebron, Connecticut 06248

(860) 228-0721 Fax (860) 228-4402

Customer and Contact: Sciencetech, Inc., Attn: Rob Ellison (814) 263-4694

Customer Address: 115 Reactor Road, Karthaus, PA 16845

Inst. Mfr. & Model Ludlum Model 2221

Inst. Type Scaler/Ratemeter

Inst. s/n 163668

Det. Mfr. & Model Ludlum 44-9

Det. Type G-M Pancake

Det. s/n 175103

Cal. Date 04 May 2004

Due Date 04 May 2005

Cal. Interval 1 year

Environmental conditions: Temperature: 73°F Relative Humidity 40% Atmospheric Pressure 29.20 inches Hg

Pre-calibration Checks:

■ Contamination survey

■ Battery check

■ Slow response check

■ Det. volts 900 Vdc

■ Mechanical check

■ Audio check

□ Window operation

■ Meter zero

■ Reset check

□ Plateau check

■ Geotropism check

■ Fast response check

□ Alarm set

■ Input sens. 34 mV

■ Pulse generator s/n 94926

□ Oscilloscope s/n 171-04928

■ Voltmeter s/n 57410002

■ HV Readout (2 points) Ref./Inst. 500V/ 500V Ref./Inst. 1500V/ 1500V

Comments: Calibration performed with WIN in OUT position. Th-230 efficiency measured at near contact.

S/N of source used for precision check #6

Isotope Cs-137

Dedicated Source? ☐ Yes ☒ No

Reading #1 29,285

Reading #2 30,959

Reading #3 29,603

Mean 29,949

Precision: ☒  $\pm 10\%$  ☐  $\pm 10-20\%$  ☐ Out of tolerance

Range	Reference Calibration Point	"As Found" Instrument Indication	"As left" Instrument Indication
x 1000	400,000 cpm	400,000 cpm	400,000 cpm
x 1000	100,000 cpm	100,000 cpm	100,000 cpm
x 100	40,000 cpm	40,000 cpm	40,000 cpm
x 100	10,000 cpm	10,000 cpm	10,000 cpm
x 10	4,000 cpm	4,000 cpm	4,000 cpm
x 10	1,000 cpm	1,000 cpm	1,000 cpm
x 1	400 cpm	400 cpm	400 cpm
x 1	100 cpm	100 cpm	100 cpm
1 min. count	400,000 cpm	399,994 cpm	399,994 cpm

All ranges calibrated electronically.

Local background (cpm) = 57

Range Multiplier	Cal. Source Used (isotope and S/N)	Source Activity (dpm)	Instrument Reading (cpm)	4 $\pi$ Instrument Efficiency (%)
1 min. count	C-14 #4456	202,100	7404	3.64
1 min. count	Pm-147 #5381	8,313	574	6.22
1 min. count	Tc-99 #D702	23,064	2713	11.52
1 min. count	Cs-137 #2886	17,751	3519	19.50
1 min. count	Cl-36 #D700	23,598	4878	20.43
1 min. count	Sr/Y-90 #D711	44,429	9929	22.22
1 min. count	Th-230 #91TH2200210	38,900	3924	9.94

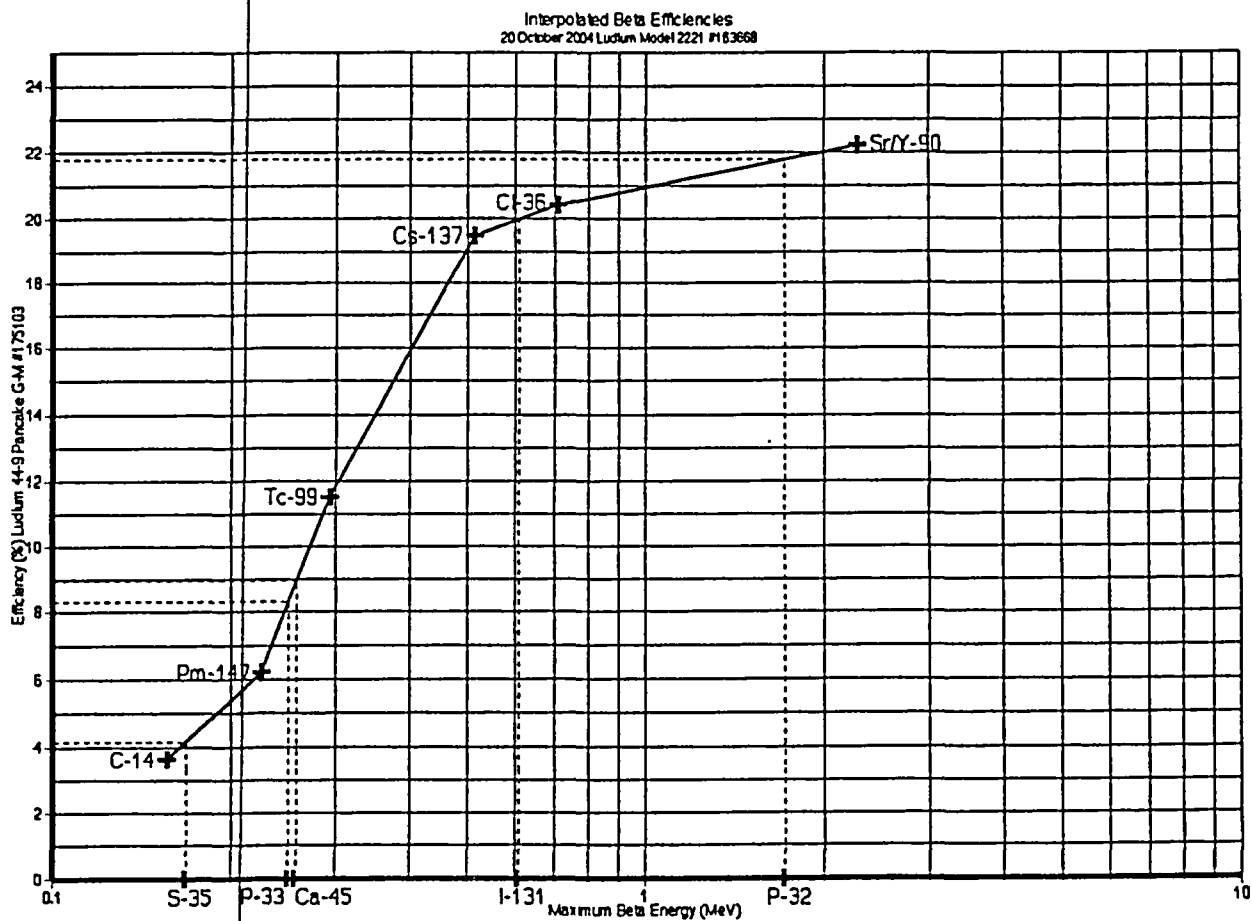
RSA Laboratories ID# 9306. Instrument indicates within  $\pm 10\%$  of calibration points unless otherwise indicated. Source-to-detector entry window distance for efficiency determinations is 1 cm unless otherwise specified. RSA Laboratories, Inc. certifies that the above instrument has been calibrated with standards traceable to the National Institute of Standards and Technology, or have been derived from accepted values of natural physical constants, or have been derived by the ratio-type of calibration techniques.

Calibrated by: Kurt D. Newton

Date: 20 October 2004

Reviewed by: Paul R. Steinmeyer

Date: 20 October 2004



RSA Laboratories ID# 9306.

Calibrated by: Kurt D. Newton

Date: 20 October 2004

Reviewed by: Paul R. Steinmeyer

Date: 20 October 2004



Designer and Manufacturer  
of  
Scientific and Industrial  
Instruments

## CERTIFICATE OF CALIBRATION

**LUDLUM MEASUREMENTS, INC.**  
POST OFFICE BOX 810 PH. 325-235-5494  
501 OAK STREET FAX NO. 325-235-4672  
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SCIENTECH

ORDER NO. 223028

Ludlum Measurements, Inc.

Model 19

Serial No. 207505

Model

Serial No.

Cal. Date 20-Sep-04

Cal Due Date 20-Sep-05

Cal. Interval 1 Year Meterface 202-1070

Check mark ☒ applies to applicable Instr. and/or detector IAW mfg. spec. T. 72 °F RH 54 % Alt 702.8 mm Hg

☒ New Instrument ☐ Instrument Received ☐ Within Toler. +10% ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☒ Mechanical ck.

☒ Meter Zeroed

☐ Background Subtract

☐ Input Sens. Linearity

☒ F/S Resp. ck

☒ Reset ck.

☐ Window Operation

☒ Geotrolism

☒ Audio ck.

☐ Alarm Setting ck.

☒ Batt. ck. (Min. Volt) 2.2 VDC

☐ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89.

☒ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 700 V Input Sens. 31 mV Det. Oper. 509 V at 1500 mV Threshold 1473 mV

☒ HV Readout (2 points) Ref./Inst. 500 / 509 V Ref./Inst. 1500 / 1473 V

### COMMENTS:

High voltage set with detector connected.

Gamma Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

#### RANGE/MULTIPLIER

5000  
5000  
500  
500  
250  
250  
50  
50  
25  
25

#### REFERENCE CAL POINT

4000µR/hr  
1000µR/hr  
400µR/hr = 75600 cpm  
100µR/hr  
200µR/hr = 38200 cpm  
100µR/hr  
7560 cpm  
1890 cpm  
3820 cpm  
955 cpm

#### INSTRUMENT REC'D "AS FOUND READING"

4000  
1000  
400  
100  
200  
100  
40  
10  
20  
5

#### INSTRUMENT METER READING\*

4000  
1000  
400  
100  
200  
100  
40  
10  
20  
5

\*Uncertainty within ± 10% C.F. within ± 20%

50, 25 Range(s) Calibrated Electronically

#### REFERENCE CAL POINT

#### INSTRUMENT RECEIVED

#### INSTRUMENT METER READING\*

#### REFERENCE CAL POINT

#### INSTRUMENT RECEIVED

#### INSTRUMENT METER READING\*

Digital  
Readout

Log  
Scale

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCCL Z540-1-1994 and ANSI N323-1978. State of Texas Calibration License No. LO-1963

### Reference Instruments and/or Sources:

Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ 5105 ☐ T1008 ☒ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☐ Alpha S/N

☐ Beta S/N

☐ Other

n 500 S/N 94940

☐ Oscilloscope S/N

☒ Multimeter S/N 836630256

Calibrated By: Michael Sharp

Date 20 Sept 04

Reviewed By: Debra Orzco

Date 20 Sept 04

This certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc.  
FORM C22A 11/26/2003

AC Inst. ☐ Passed Dielectric (H-Pot) and Continuity Test  
Only ☐ Failed:

# CERTIFICATE OF CALIBRATION (EXPOSURE RATE INSTRUMENT)



**RSA Laboratories, Inc.**

21 Pendleton Drive, P.O. Box 61  
Hebron, Connecticut 06248  
(860) 228-0721 Fax (860) 228-4402

Customer and Contact: Scientech, Inc., Attn: Mike Taylor (814) 263-4860

Customer Address: 115 Reactor Road, Karthaus, PA 16845

Inst. Mfr. & Model Ludlum Model 19

Inst. Type Micro R Meter

Inst. s/n 062196

Det. Mfr. & Model N/A

Det. Type (internal sodium iodide)

Det. s/n N/A

Cal. Date 04 May 2004

Due Date 04 May 2005

Cal. Interval 1 year

Environmental conditions: Temperature: 71°F Relative Humidity 44% Atmospheric Pressure 29.20 inches Hg

Pre-calibration Checks:

- Contamination survey
- Mechanical check
- Meter zero
- Geotropism check

- Battery check
- Audio check
- Reset check
- Fast response check

- Slow response check
- Window operation
- Plateau check
- Alarm set

■ Det. volts 650 Vdc

■ Input sens. 38 mV

■ Pulse generator s/n 94926

□ Oscilloscope s/n 171-04928

■ Voltmeter s/n 57410002

□ HV Readout (2 points) Ref./Inst. \_\_\_\_\_ V/ \_\_\_\_\_ V

Ref./Inst. \_\_\_\_\_ V/ \_\_\_\_\_ V

Ref./Inst. \_\_\_\_\_ V/ \_\_\_\_\_ V

Comments:

S/N of source used for precision check #6

Isotope Cs-137

Dedicated Source? ☐ Yes ☒ No

Reading #1 1800  $\mu$ R/h

Reading #2 1800  $\mu$ R/h

Reading #3 1800  $\mu$ R/h

Mean 1800  $\mu$ R/h

Precision: ☒  $\pm < 10\%$  ☐  $\pm 10-20\%$  ☐ Out of tolerance

Range	Reference Calibration Point	Instrument Indication
5000 $\mu$ R/h	3,798 $\mu$ R/h	4,000 $\mu$ R/h
5000 $\mu$ R/h	1,008 $\mu$ R/h	1,000 $\mu$ R/h
500 $\mu$ R/h	349 $\mu$ R/h $\approx$ 52,500 cpm	350 $\mu$ R/h
500 $\mu$ R/h	101 $\mu$ R/h $\approx$ 14,500 cpm	100 $\mu$ R/h
250 $\mu$ R/h	171 $\mu$ R/h $\approx$ 24,500 cpm	170 $\mu$ R/h
250 $\mu$ R/h	50 $\mu$ R/h $\approx$ 7,100 cpm	50 $\mu$ R/h
50 $\mu$ R/h	5,250 cpm	35 $\mu$ R/h
50 $\mu$ R/h	1,450 cpm	10 $\mu$ R/h
25 $\mu$ R/h	2,450 cpm	17 $\mu$ R/h
25 $\mu$ R/h	710 cpm	5 $\mu$ R/h

50 and 25  $\mu$ R/h ranges were calibrated electronically.

Sources used:  $^{137}$ Cesium 750 mCi s/n KR-6244 and KR-6250, and  $^{137}$ Cesium 750  $\mu$ Ci s/n 163.

RSA Laboratories Log ID# 8742. Calibration points calculated to center of detector volume unless otherwise specified. Instrument indicates within  $\pm 10\%$  of calibration points unless otherwise indicated. RSA Laboratories, Inc. certifies that the above instrument has been calibrated with standards traceable to the National Institute of Standards and Technology, or have been derived from accepted values of natural physical constants, or have been derived by the ratio-type of calibration techniques.

Calibrated by: Kurt D. Newton

Date: 04 May 2004

Reviewed by: Jay R. Dockendorff

Date: 04 May 2004



## Variable Definitions and Equations

A_CTS	Gross Alpha Counts
A_CTS_SD	Gross Alpha Counts Standard Deviation
A_CPM	Gross Alpha Counts per Minute
A_CTS_SD	Gross Alpha Counts per Minute Standard Deviation
A_BG	Alpha Background Counts
A_BG_CPM	Alpha Background Counts per Minute
A_BG_CPM_SD	Alpha Background Counts per Minute Standard Deviation
A_NET_CPM	Net Alpha Counts per Minute
A_NET_CPM_SD	Net Alpha Counts per Minute Standard Deviation
A_EFF	Alpha Efficiency percent
A_EFF_SD	Alpha Efficiency percent Standard Deviation
A_DPM	Net Alpha Disintegrations per Minute
A_DPM_SD	Alpha Disintegrations per Minute Standard Deviation
A_LLD_DPM	Alpha Lower Limits of Detection in DPM
A_XTLK	Alpha to Beta Crosstalk percent
A_XTLK_SD	Alpha to Beta Crosstalk percent Standard Deviation
A_XTLK_CPM	Alpha to Beta Crosstalk Counts per Minute
A_XTLK_CPM_SD	Alpha to Beta Crosstalk CPM Standard Deviation
BG_TIME	Background Counting Time minutes
CNT_TIME	Sample Counting Time minutes
B_CTS	Gross Beta Counts
B_CTS_SD	Gross Beta Counts Standard Deviation
B_CPM	Gross Beta Counts per Minute
B_CTS_SD	Gross Beta Counts per Minute Standard Deviation
B_BG	Beta Background Counts
B_BG_CPM	Beta Background Counts per Minute
B_BG_CPM_SD	Beta Background Counts per Minute Standard Deviation
B_NET_CPM	Net Beta Counts per Minute
B_NET_CPM_SD	Net Beta Counts per Minute Standard Deviation
B_EFF	Beta Efficiency percent
B_EFF_SD	Beta Efficiency percent Standard Deviation
B_DPM	Net Beta Disintegrations per Minute
B_DPM_SD	Beta Disintegrations per Minute Standard Deviation
B_LLD_DPM	Beta Lower Limits of Detection in DPM

$$(A-1) \quad A\_CTS = \text{Data Buffer}$$

$$(A-2) \quad A\_CTS\_SD = \sqrt{A\_CTS}$$

$$(A-3) \quad A\_CPM = \frac{A\_CTS}{CNT\_TIME}$$

$$(A-4) \quad A\_CPM\_SD = \frac{A\_CTS\_SD}{CNT\_TIME}$$

$$(A-5) \quad A\_BG\_CPM = \frac{A\_BG}{BG\_TIME}$$

$$(A-6) \quad A\_BG\_CPM\_SD = \text{Calibration File}$$

$$(A-7) \quad A\_NET\_CPM = A\_CPM - A\_BG\_CPM$$

$$(A-8) \quad A\_NET\_CPM\_SD = \sqrt{A\_CPM\_SD^2 + A\_BG\_CPM\_SD^2}$$

$$(A-9) \quad A\_EFF = \text{Calibration File}$$

$$(A-10) \quad A\_EFF\_SD = \text{Calibration File}$$

$$(A-11) \quad A\_DPM = \frac{A\_NET\_CPM \times 100}{A\_EFF}$$

$$(A-12) \quad A\_DPM\_SD = A\_DPM \sqrt{\left[ \frac{A\_NET\_CPM\_SD}{A\_NET\_CPM} \right]^2 + \left[ \frac{A\_EFF\_SD}{A\_EFF} \right]^2}$$

$$\text{Method 1 } A\_LLD\_DPM = \frac{\frac{2.71}{CNT\_TIME} + 3.29 \sqrt{\frac{A\_BG\_CPM}{CNT\_TIME} \left[ 1 + \frac{CNT\_TIME}{BG\_TIME} \right]}}{(A\_EFF / 100)}$$

$$\text{Method 2 } A\_LLD\_DPM = \frac{\frac{2.71}{CNT\_TIME} + 4.65 \sqrt{\frac{A\_BG\_CPM}{CNT\_TIME}}}{(A\_EFF / 100)}$$

$$\text{Method 3 } A\_LLD\_DPM = \frac{4.65 \sqrt{\frac{A\_BG\_CPM}{CNT\_TIME}}}{(A\_EFF / 100)}$$

$$\text{Method 4 } A\_LLD\_DPM = \frac{1.92 + \sqrt{(7.68) (A\_BG\_CPM) (CNT\_TIME) + 3.69}}{(A\_EFF / 100) (CNT\_TIME)}$$

(A-13)

Note: The LLD equation depends on the selected method.

(A-14)

$A\_XTLK = \text{Calibration File}$

(A-15)

$A\_XTLK\_SD = \text{Calibration File}$

(A-16)

$$A\_XTLK\_CPM = \frac{A\_NET\_CPM \times A\_XTLK}{100}$$

$$(A-17) \quad A\_XTLK\_SD = A\_XTLK\_CPM \sqrt{\left[ \frac{A\_NET\_CPM\_SD}{A\_NET\_CPM} \right]^2 + \left[ \frac{A\_XTLK\_SD}{A\_XTLK} \right]^2}$$

$$(A-18) \quad B\_CTS = \text{Data Buffer}$$

$$(A-19) \quad B\_CTS\_SD = \sqrt{B\_CTS}$$

$$(A-20) \quad B\_CPM = \frac{B\_CTS}{CNT\_TIME}$$

$$(A-21) \quad B\_CPM\_SD = \frac{B\_CTS\_SD}{CNT\_TIME}$$

$$(A-22) \quad B\_BG\_CPM = \frac{B\_BG}{BG\_TIME}$$

$$(A-23) \quad B\_BG\_CPM\_SD = \text{Calibration File}$$

$$(A-24) \quad B\_NET\_CPM = B\_CPM - B\_BG\_CPM - A\_XTLK\_CPM$$

$$(A-25) \quad B\_NET\_CPM\_SD = \sqrt{B\_CPM\_SD^2 + B\_BG\_CPM\_SD^2 + A\_XTLK\_CPM\_SD^2}$$

$$(A-26) \quad B\_EFF = \text{Calibration File}$$

$$(A-27) \quad B\_EFF\_SD = \text{Calibration File}$$

$$(A-28) \quad B\_DPM = \frac{B\_NET\_CPM \times 100}{B\_EFF}$$

$$\text{Method 1 } B\_LLD\_DPM = \frac{\frac{2.71}{CNT\_TIME} + 3.29 \sqrt{\frac{B\_BG\_CPM}{CNT\_TIME} \left[ 1 + \frac{CNT\_TIME}{BG\_TIME} \right]}}{(B\_EFF / 100)}$$

$$\text{Method 2 } B\_LLD\_DPM = \frac{\frac{2.71}{CNT\_TIME} + 4.65 \sqrt{\frac{B\_BG\_CPM}{CNT\_TIME}}}{(B\_EFF / 100)}$$

$$\text{Method 3 } B\_LLD\_DPM = \frac{4.65 \sqrt{\frac{B\_BG\_CPM}{CNT\_TIME}}}{(B\_EFF / 100)}$$

$$\text{Method 4 } B\_LLD\_DPM = \frac{1.92 + \sqrt{(7.68) (B\_BG\_CPM) (CNT\_TIME) + 3.69}}{(B\_EFF / 100) (CNT\_TIME)}$$

(A-29)

Note: The LLD equation depends on the selected method.

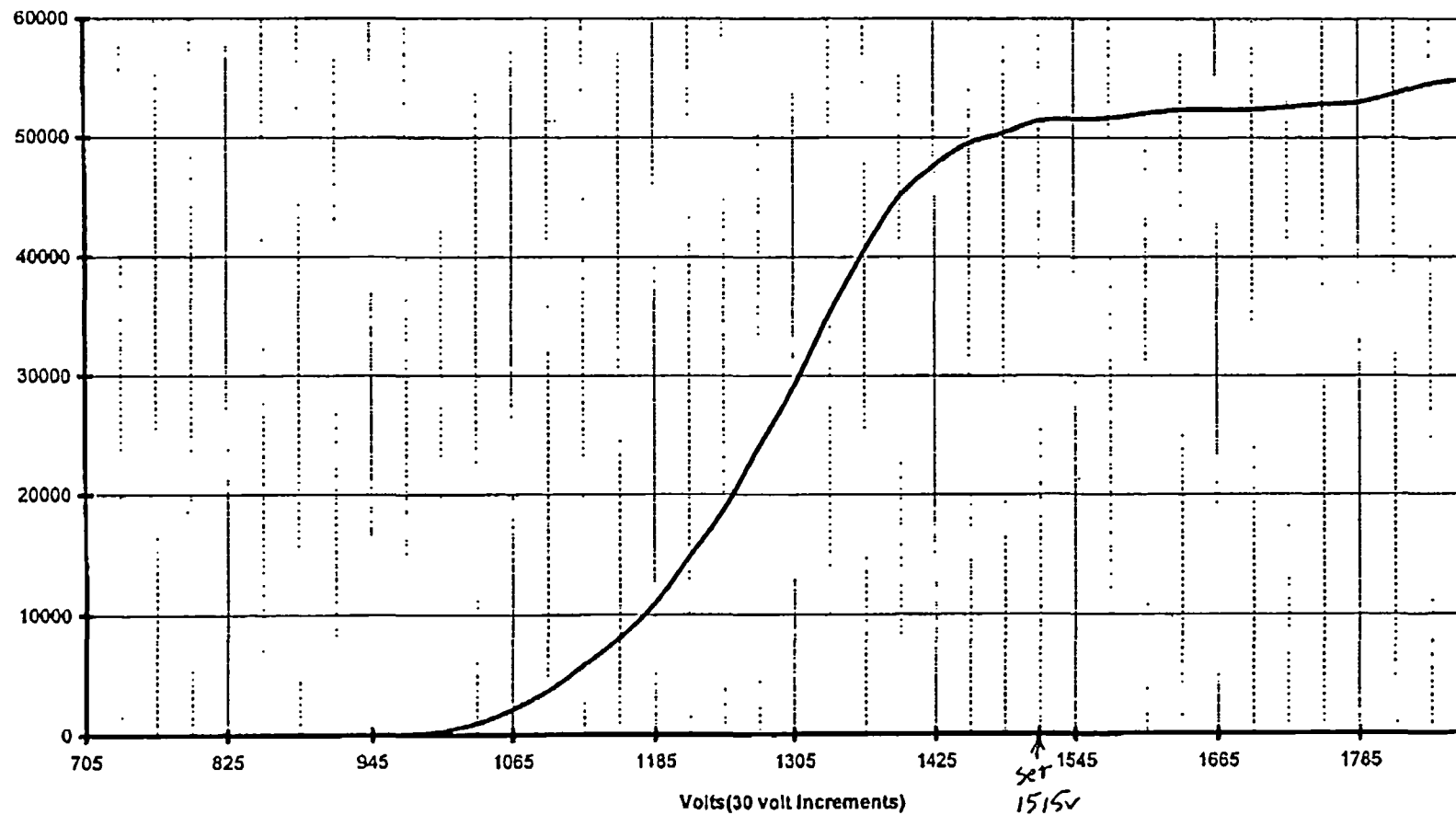
calibration date

4/29/2004

WPC-9550 Detector Plateau Data

PIC WPC-9550

WPC-9550 Plateau



Calibrated by: Mike Taylor

Signature: *[Signature]*

Date: 4-29-04

Reviewed by: *Chris Higgins*

Signature: *[Signature]*

Date: 4-29-04

Source: Sr-90  
Source serial #: Fx-152

**APPENDIX B**  
**SUMMARY DATA - STRUCTURES**

## **APPENDIX B - SUMMARY DATA - STRUCTURES**

Appendix B contains all of the survey unit measurements, including scan, removable, fixed-point, and dose-rate measurements. It also contains the reference area measurements. Maps of the survey units are also included in this appendix. Paved outdoor surfaces are also considered structures and are presented in this section. The data is presented by survey unit in the order provided in the next two pages.



Admin-1-A	Administration Area
Admin-1-B	Administration Area
Admin-1-C	Administration Area
Admin-1-D	Administration Area
Admin-1-E	Administration Area
Admin-1-F	Administration Area
Admin-1-G	Administration Area
Admin-1-H	Administration Area
Admin-1-I	Administration Area
Admin-1-J	Administration Area
Admin-1-K	Administration Area
Admin-1-L	Administration Area
Admin-1-M	Administration Area
Admin-1-N	Administration Area
Admin-1-O	Administration Area
Admin-1-P	Administration Area
Admin-1-Q	Administration Area
Admin-1-R	Administration Area
Admin-1-S	Administration Area
Admin-1-T	Administration Area
Admin-1-U	Administration Area
Admin-1-V	Administration Area
Admin-1-W	Administration Area
Admin-1-X	Administration Area
Admin-1-Y	Administration Area
HVAC-1-A	Office Mezzanine
HVAC-1-B	Office Mezzanine
HVAC-1-C	Office Mezzanine
HVAC-1-D	Office Mezzanine
HVAC-1-E	Office Mezzanine
HVAC-1-F	Office Mezzanine
SA-1-A	Service Area
SA-1-D	Service Area
SA-1-E	Service Area
SA-1-F	Service Area
SA-1-G	Service Area
SA-1-H	Service Area
SA-1-I	Service Area
SA-1-J	Service Area
SA-1-K	Service Area
SA-2-A	Service Area
CHEM-1-A	Chemistry Lab
CHEM-1-B	Chemistry Lab
CHEM-1-C	Chemistry Lab
DECON-1-A	Decontamination Room

DECON-1-B	Decontamination Room
DECON-1-C	Decontamination Room
FAN-1-A	Fan Room
FAN-1-B	Fan Room
FAN-1-C	Fan Room
FAN-1-D	Fan Room
FAN-1-E	Fan Room
FAN-1-F	Fan Room
GPOOL-1-A	Gamma Pool
VEST-1-A	Vestibule
VEST-1-B	Vestibule
VEST-1-C	Vestibule
FA-1-A	Finishing Area
FA-1-B	Finishing Area
FA-1-C	Finishing Area
FA-1-D	Finishing Area
FA-1-E	Finishing Area
FA-1-F	Finishing Area
FA-1-G	Finishing Area
FA-1-H	Finishing Area
FA-1-I	Finishing Area
FA-1-J	Finishing Area
FA-1-K	Finishing Area
FA-1-L	Finishing Area
FA-3-A	Finishing Area
FA-3-B	Finishing Area
DECON-2-A	Decontamination Area in Finishing Area
ELOF-3-A	Electrical Office
FABU-2-A	Finishing Area - Bunker
FABU-3-A	Finishing Area - Bunker
FAOF-3-A	Finishing Area - Office
FATC-2-A	Finishing Area - Tool Crib
BR-1-A	Boiler Room
BR-1-B	Boiler Room
BR-1-C	Boiler Room
BR-1-D	Boiler Room
BR-1-E	Boiler Room
BR-1-F	Boiler Room
BR-1-G	Boiler Room
HYDRO-1-A	Hydroblast Room
HYDRO-3-A	Hydroblast Room
ER-3-A	Electrical Room
ER-3-B	Electrical Room

ER-3-C	Electrical Room
RB-1-A	Reactor Bay
RB-1-B	Reactor Bay
RB-1-C	Reactor Bay
RB-1-D	Reactor Bay
RB-3-A	Reactor Bay
RB-3-C	Reactor Bay
RB-3-D	Reactor Bay
POOL-1-A	Reactor Pool
POOL-1-B	Reactor Pool
POOL-1-C	Reactor Pool
POOL-1-D	Reactor Pool
POOL-1-E	Reactor Pool
POOL-1-F	Reactor Pool
PUMP-2-A	Pump Room
PUMP-3-A	Pump Room
BEAM-2-A	Beam Room

BEAM-3-A	Beam Room
DUN-2-A	Dungeon
DUN-3-A	Dungeon
ROAD-3-A	Road
PLOT-3-A	Parking Lot
LZone-1-A	Loading Zone
SAW-2-A	Sawdust Shed
SAW-3-A	Sawdust Shed
WWTB-1-A	Waste Water Treatment Building
WWTB-1-B	Waste Water Treatment Building
WWTB-1-C	Waste Water Treatment Building
WWTB-1-D	Waste Water Treatment Building
Reference Area Measurements	

**Admin-1-A and Admin-1-B  
Administration Areas**

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARTHIAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area Floor (Layout)

SCIENTECH

SCIENTECH, INC.  
143 WEST STREET  
NEW MILFORD, CT 06776

PROJECT NO:  
23529-0501

FILE NAME:

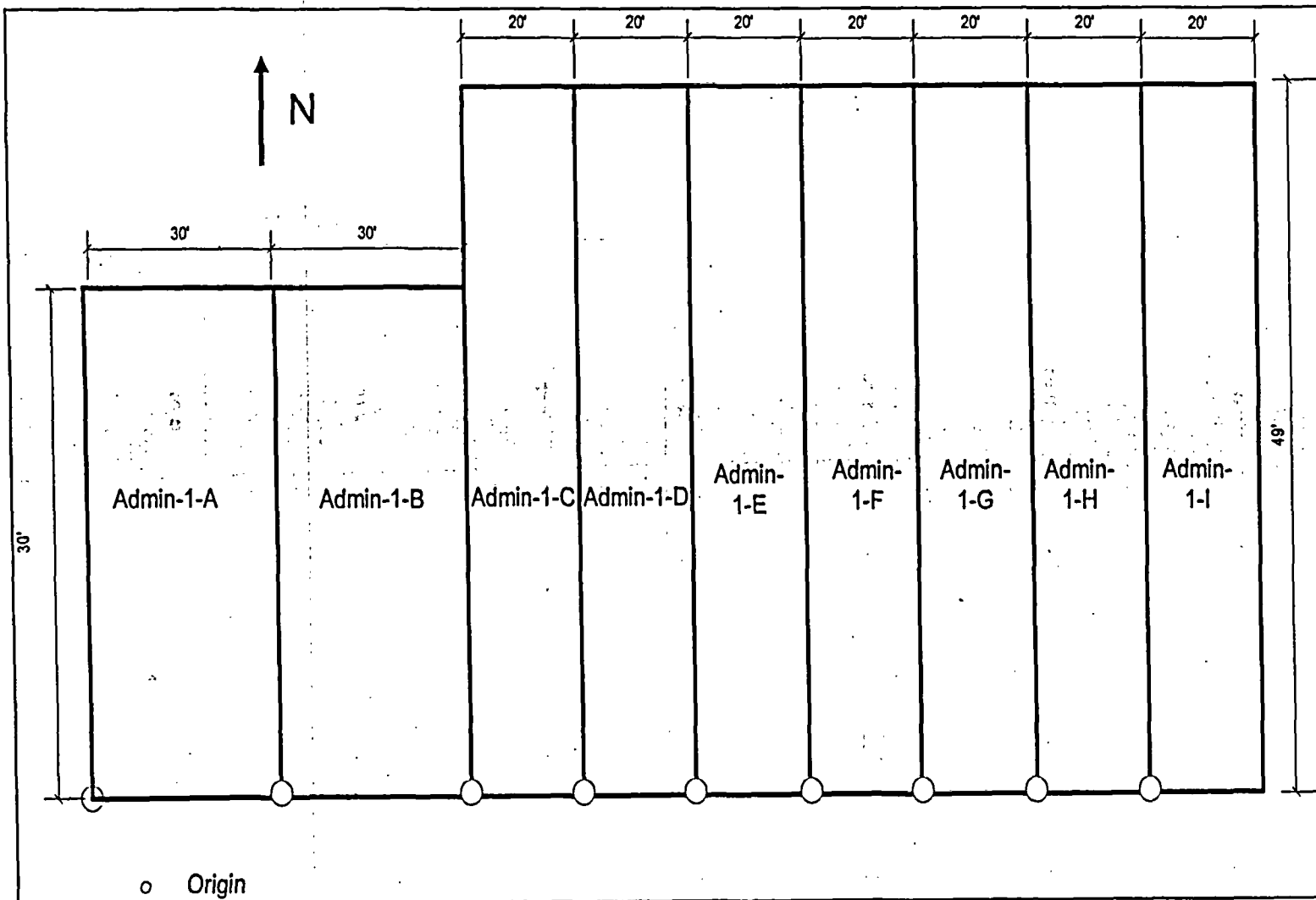
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N.T.S.

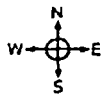
DATE:  
06/29/2004

By:

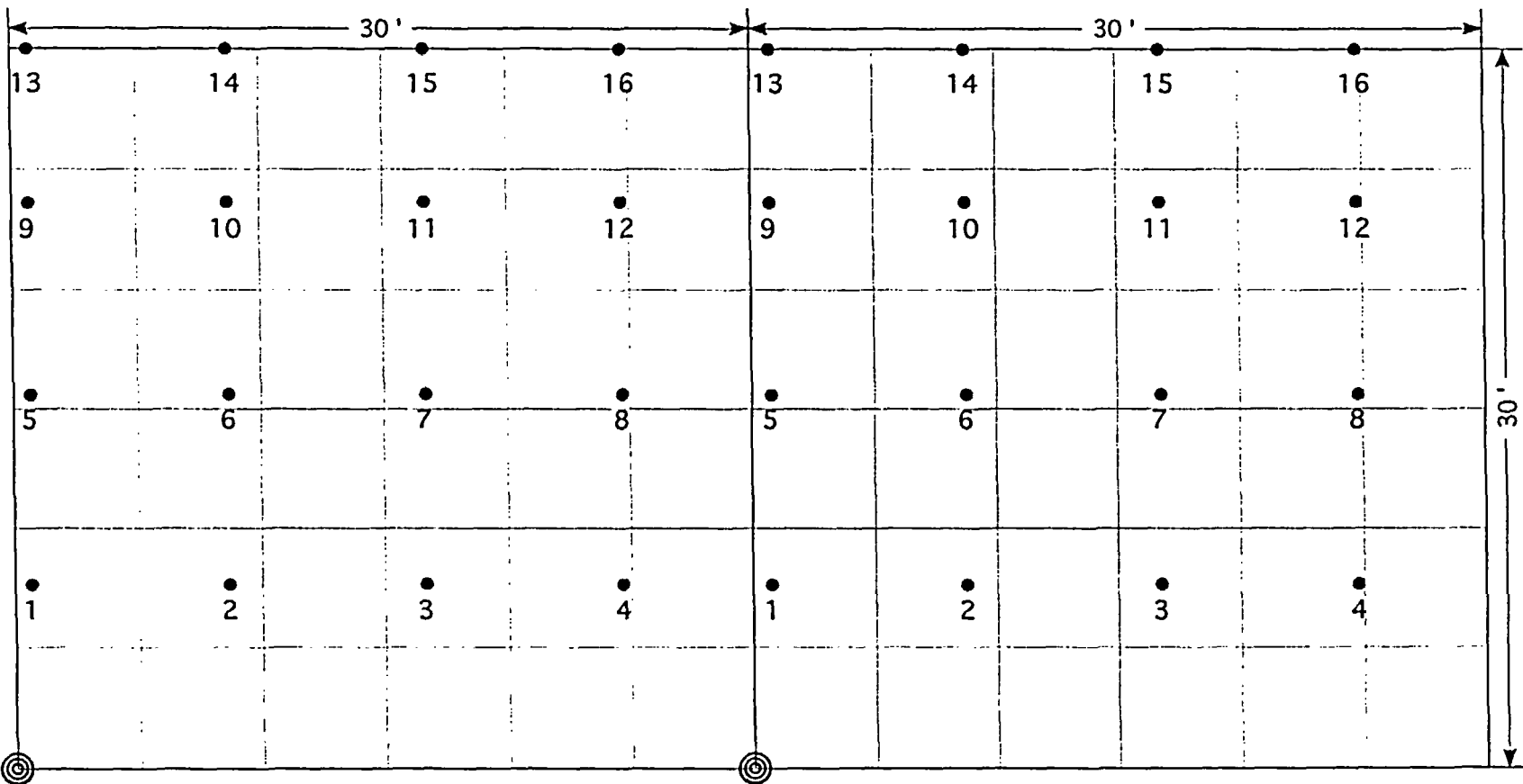
CK:

FIGURE:  
ADMIN-Floor Layout





• SURVEY POINTS  
 ◎ STARTING LOCATION



ADMIN-1-A

ADMIN-1-B

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KARTIUS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Administration Area Floor (1 of 3)

SCIENTECH

SCIENTECH, Inc.  
 143 WEST STREET  
 NEW MILFORD, CT 06776

PROJECT NO:  
 23529-0501

FILE NAME:

SCALE: N.T.S.	DATE: 06/29/2004
By:	CK:

FIGURE:  
 ADMIN-1-A,B

**General Area**  
Admin Area

**Survey Unit**  
Admin-1-A

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
900 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net	Net Maximum	Net Activity	Sigma	
1	114	57	6	128	-1	1	5
2	18	54	67	128	1	4	4
3	-32	52	37	159	1	4	4
4	77	56	37	159	1	4	4
5	169	59	67	98	-1	1	4
6	-65	50	37	98	-1	1	4
7	10	53	67	128	1	4	4
8	173	59	98	159	1	4	4
9	-3	53	-55	-9	-1	1	4
10	-86	50	6	98	3	6	4
11	48	55	6	128	6	8	5
12	181	60	37	98	1	4	5
13	-19	52	6	98	3	6	4
14	139	58	37	128	-1	1	5
15	190	60	6	128	3	6	5
16	-15	52	37	98	6	8	5
Average: 56					Average: 1		Average: 4
Maximum: 190					Maximum: 6		Maximum: 5
Minimum: -86					Minimum: -1		Minimum: 4
Survey Date 9/23/2004			Survey Date 9/22/2004		Survey Date 10/5/2004		Survey Date 9/22/2004
Inst. Model M2360			Inst. Model L12		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-37		Ei 0.441 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 697 cm <sup>2</sup>		Background 0.53 cpm		Bkg σ 0.5 μ R/hour
Ei 0.479 cpm/cpm			Ei 0.188 cpm/cpm		Bkg σ 0.133 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 12 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 236 cpm				
Bkg σ 10 cpm			Bkg σ 26 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 354 dpm/100 cm <sup>2</sup>				

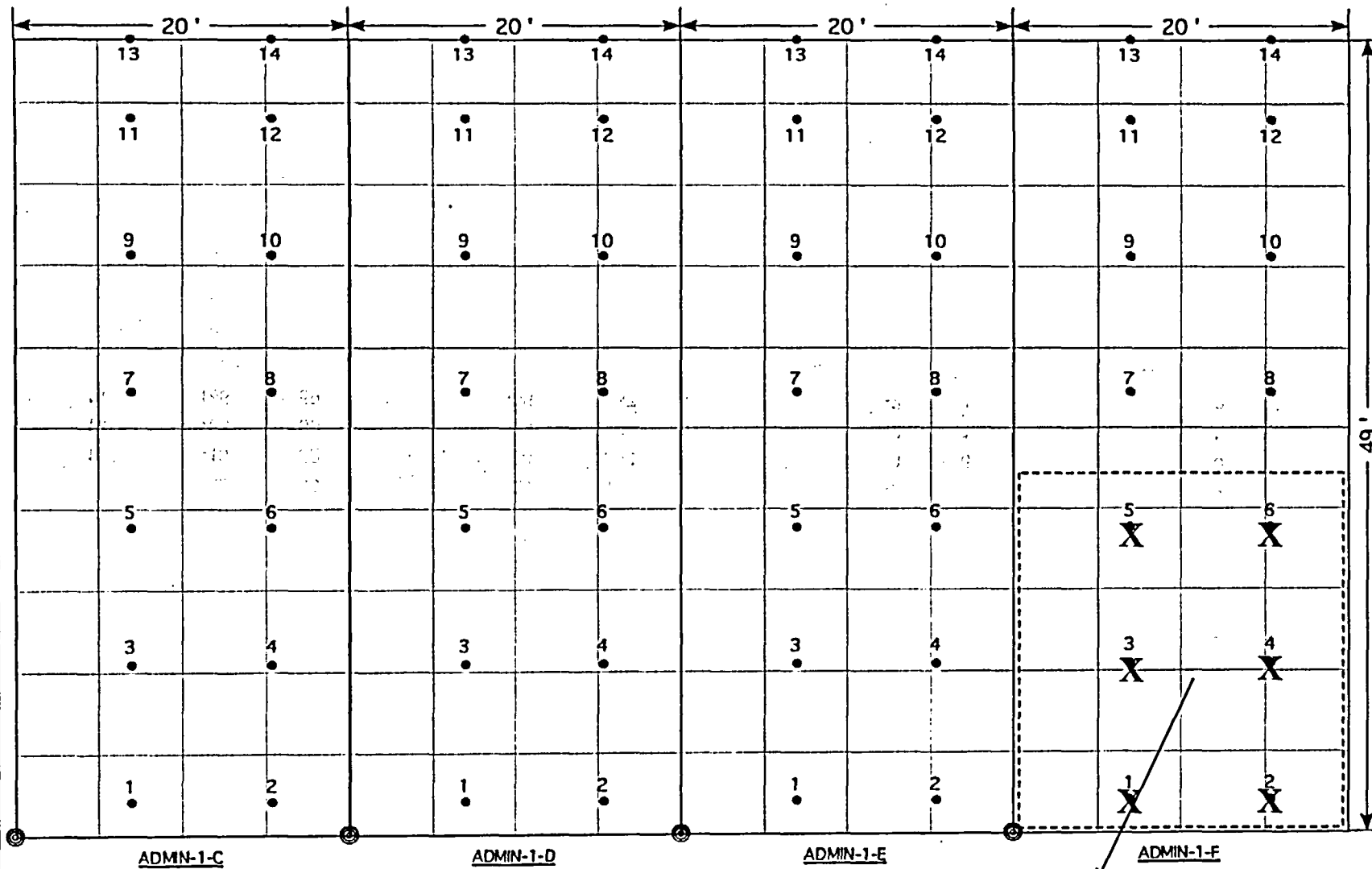
General Area	Survey Unit	Class	Part	Material	Size		
Admin Area	Admin-1-B	1	Floor	Concrete	900 ft <sup>2</sup>		
Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	89	56	67	128	-1	1	5
2	110	57	37	128	1	4	5
3	135	58	67	98	-1	1	4
4	60	55	37	128	8	9	4
5	81	56	98	250	-1	1	4
6	131	58	128	281	8	9	4
7	2	53	67	189	-1	1	3
8	160	59	98	250	-1	1	3
9	56	55	67	128	6	8	4
10	94	57	67	556	8	9	5
11	319	64	37	189	6	8	5
12	60	55	98	189	1	4	4
13	27	54	128	220	3	6	5
14	156	59	189	220	10	10	5
15	-3	53	98	189	-1	1	5
16	14	54	128	220	1	4	3
Average: 93					Average: 3		Average: 4
Maximum: 319					Maximum: 10		Maximum: 5
Minimum: -3					Minimum: -1		Minimum: 3
Survey Date	9/23/2004		Survey Date	9/22/2004	Survey Date	10/5/2004	Survey Date 9/22/2004
Inst. Model	M2360		Inst. Model	L12	Inst. Model	WPC-9550	Inst. Model M19
Probe Model	M43-93		Probe Model	M43-37	Ei	0.441 cpm/dpm	Background 4.5 μ R/hour
Probe Area	100 cm <sup>2</sup>		Probe Area	697 cm <sup>2</sup>	Background	0.53 cpm	Bkg σ 0.52 μ R/hour
Ei	0.479 cpm/cpm		Ei	0.188 cpm/cpm	Bkg σ	0.133 cpm	
Es	0.5 cpm/dpm		Es	0.5 cpm/dpm	MDC	12 dpm/100 cm <sup>2</sup>	
Background	160.6 cpm		Background	236 cpm			
Bkg σ	10 cpm		Bkg σ	26 cpm			
MDC	259 dpm/100 cm <sup>2</sup>		MDC	354 dpm/100 cm <sup>2</sup>			

**Admin-1-C through Admin-1-F**  
**Administration Areas**





- SURVEY POINTS
- ⊙ STARTING LOCATION



Points 1 - 6 were inaccessible.

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Administration Area Floor (2 of 3)	
SCIENTECH, Inc. 141 WEST STREET NEW HAVEN, CT 06510	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 06/29/2004
By:	CK:
FIGURE: ADMIN-1-C,D,E,F	

General Area		Survey Unit	Class	Part	Material	Size	Gross Exposure Rate	
Admin Area		Admin-1-C	1	Floor	Concrete	980 ft <sup>2</sup>		
Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )			
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma		
1	102	57	-24	67	7	9	4	
2	68	56	-55	37	16	12	4	
3	48	55	-55	98	1	4	4	
4	-15	52	-24	159	5	8	4	
5	156	59	6	67	1	4	4	
6	-48	51	-24	67	3	6	4	
7	127	58	-24	128	-2	1	5	
8	73	56	6	67	1	4	4	
9	18	54	6	250	-2	1	5	
10	73	56	-55	159	1	4	4	
11	152	59	-24	128	-2	1	4	
12	-19	52	-24	556	3	6	5	
13	165	59	-24	67	-2	1	5	
14	165	59	-55	37	-2	1	5	
Average: 76					Average: 2		Average: 4	
Maximum: 165					Maximum: 16		Maximum: 5	
Minimum: -48					Minimum: -2		Minimum: 4	
Survey Date 10/11/2004			Survey Date 10/11/2004		Survey Date 10/11/2004		Survey Date 10/11/2004	
Inst. Model M2360			Inst. Model L12		Inst. Model WPC-9550		Inst. Model M19	
Probe Model M43-93			Probe Model M43-37		Ei 0.444 cpm/dpm		Background 4.5 $\mu$ R/hour	
Probe Area 100 cm <sup>2</sup>			Probe Area 697 cm <sup>2</sup>		Background 0.7 cpm		Bkg $\sigma$ 0.52 $\mu$ R/hour	
Ei 0.479 cpm/epm			Ei 0.188 cpm/epm		Bkg $\sigma$ 0.153 cpm			
Es 0.5 epm/dpm			Es 0.5 epm/dpm		MDC 12 dpm/100 cm <sup>2</sup>			
Background 160.6 cpm			Background 236 cpm					
Bkg $\sigma$ 10 cpm			Bkg $\sigma$ 26 cpm					
MDC 259 dpm/100 cm <sup>2</sup>			MDC 354 dpm/100 cm <sup>2</sup>					

**General Area**  
Admin Area

**Survey Unit**  
Admin-1-D

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
980 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	106	57	-55	37	10	10	4
2	56	55	6	861	19	13	4
3	23	54	-24	128	3	6	4
4	152	59	-55	128	10	10	4
5	89	56	-55	67	12	11	4
6	98	57	-55	556	21	14	4
7	39	55	-24	189	1	4	5
8	68	56	-55	128	21	14	4
9	160	59	-24	98	3	6	4
10	273	63	-24	67	10	10	4
11	68	56	-24	67	1	4	4
12	248	62	-55	37	8	9	4
13	98	57	-55	67	5	8	5
14	98	57	-55	98	5	8	5
Average: 113					Average: 9		Average: 4
Maximum: 273					Maximum: 21		Maximum: 5
Minimum: 23					Minimum: 1		Minimum: 4
Survey Date 10/12/2004			Survey Date 10/12/2004		Survey Date 10/12/2004		Survey Date 10/12/200
Inst. Model M2360			Inst. Model L12		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-37		Ei 0.444 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 697 cm <sup>2</sup>		Background 0.6 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/cpm			Ei 0.188 cpm/cpm		Bkg σ 0.141 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 12 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 236 cpm				
Bkg σ 10 cpm			Bkg σ 26 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 354 dpm/100 cm <sup>2</sup>				

**General Area**  
Admin Area

**Survey Unit**  
Admin-1-E

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
980 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	131	58	-40	-40	14	12	4
2	131	58	98	281	8	9	4
3	173	59	37	189	21	14	4
4	306	64	6	98	8	9	4
5	31	54	-55	-55	3	6	4
6	240	62	-24	159	14	12	4
7	139	58	-55	67	17	12	4
8	89	56	6	98	10	10	4
9	198	60	-24	98	21	14	4
10	194	60	37	189	3	6	4
11	144	58	-9	-9	8	9	4
12	244	62	-24	128	3	6	4
13	319	64	-24	98	17	12	4
14	227	61	-55	128	-1	1	4
<b>Average:</b> 183					<b>Average:</b> 10		
<b>Maximum:</b> 319					<b>Maximum:</b> 21		
<b>Minimum:</b> 31					<b>Minimum:</b> -1		
Survey Date 10/13/2004			Survey Date 10/13/2004		Survey Date 10/15/2004		Survey Date 10/13/200
Inst. Model M2360			Inst. Model L12		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-37		Ei 0.446 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 697 cm <sup>2</sup>		Background 0.63 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/dpm			Ei 0.188 cpm/dpm		Bkg σ 0.145 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 12 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 236 cpm				
Bkg σ 10 cpm			Bkg σ 26 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 354 dpm/100 cm <sup>2</sup>				

**General Area**  
Admin Area

**Survey Unit**  
Admin-1-F

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
980 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
4	94	57
5	152	59
6	106	57
7	68	56
8	56	55
9	240	62
10	185	60
11	85	56
12	169	59
13	119	57
14	23	54
<b>Average:</b>		118
<b>Maximum:</b>		240
<b>Minimum:</b>		23

Survey Date 11/10/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 epm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
81	165
165	248
81	165
-24	159
98	250
-55	37
-24	67
37	37
37	67
98	128
98	189

Survey Date 11/10/2004

Inst. Model L12

Probe Model M43-37

Probe Area 697 cm<sup>2</sup>

Ei 0.188 cpm/cpm

Es 0.5 epm/dpm

Background 236 cpm

Bkg σ 26 cpm

MDC 354 dpm/100 cm<sup>2</sup>

**Smears**

(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma	
-1	1	
1	4	
3	6	
1	4	
5	8	
-1	1	
-1	1	
1	4	
1	4	
1	4	
3	6	
<b>Average:</b>		1
<b>Maximum:</b>		5
<b>Minimum:</b>		-1

Survey Date 11/10/2004

Inst. Model WPC-9550

Ei 0.443 cpm/dpm

Background 0.63 cpm

Bkg σ 0.145 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**Gross Exposure Rate**  
(μR/hour)

6		
6		
6		
4		
4		
3		
3		
3		
4		
4		
3		
<b>Average:</b>		4
<b>Maximum:</b>		6
<b>Minimum:</b>		3

Survey Date 11/10/200

Inst. Model M19

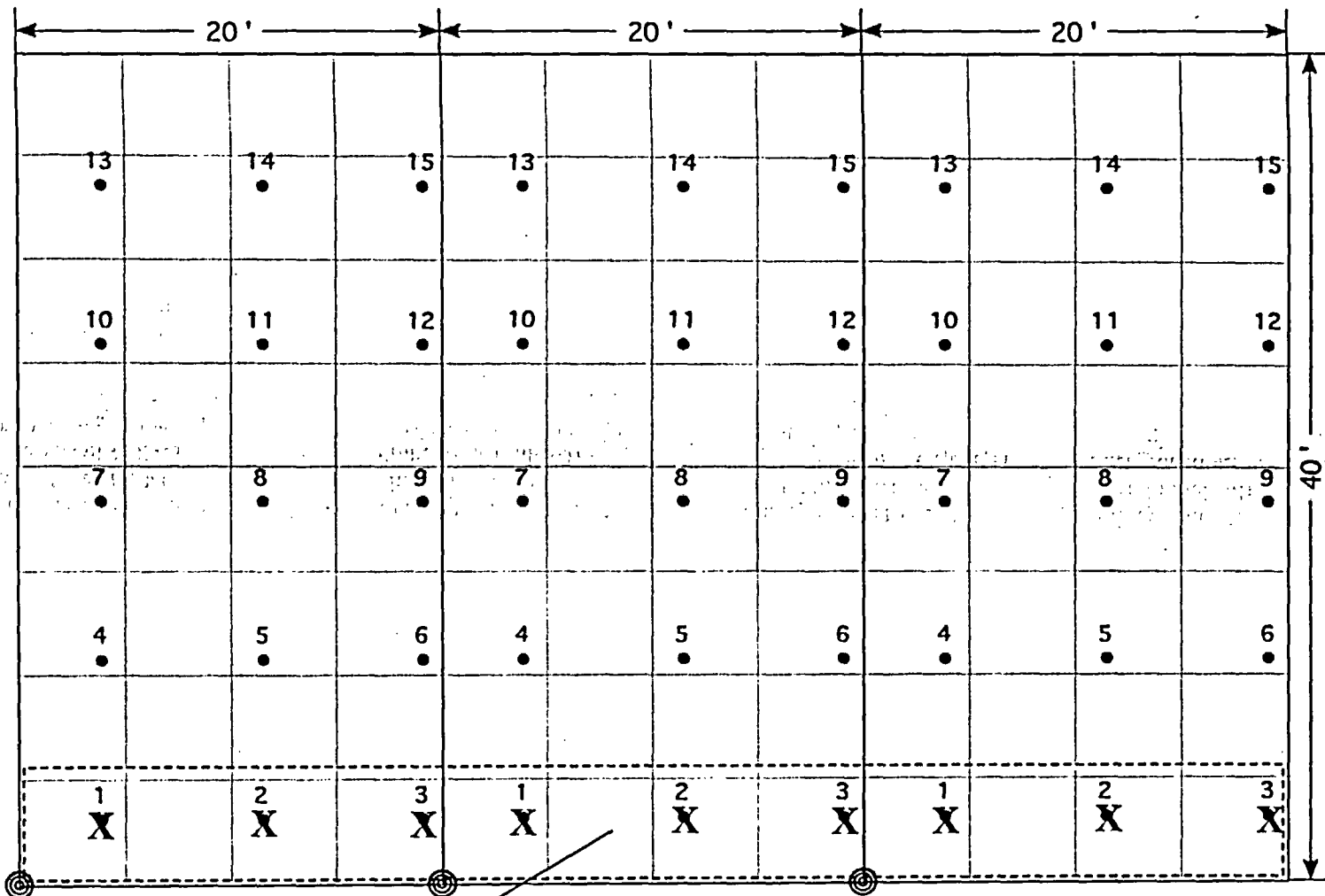
Background 4.5 μ R/hour

Bkg σ 0.5 μ R/hour

**Admin-1-G through Admin-1-I  
Administration Areas**



• SURVEY POINTS  
 ◎ STARTING LOCATION



ADMIN-1-G

ADMIN-1-H

ADMIN-1-I

Trench area - points no longer there.

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KATHAUS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Administration Area Floor (3 of 3)

SCIENTECH

SCIENTECH, Inc.  
 143 WEST STREET  
 NEW MILFORD, CT 06470

PROJECT NO:

23529-0501

FILE NAME:

SCALE:

DATE:

N.T.S.

06/29/2004

By:

CK:

FIGURE:

ADMIN-1-G,H,I

General Area	Survey Unit	Class	Part	Material	Size		
Admin Area	Admin-1-G	1	Floor	Concrete	800 ft <sup>2</sup>		
Beta Directs (dpm/100 cm <sup>2</sup> )		Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
4	198	60	165	248	5	8	6
5	152	59	165	248	3	6	6
6	148	58	165	248	-1	1	6
7	227	61	-55	98	-1	1	4
8	-7	53	-24	128	5	8	5
9	-3	53	-24	67	1	4	4
10	185	60	37	189	8	9	3
11	286	63	-24	98	3	6	3
12	436	68	6	98	8	9	4
13	261	62	6	128	-1	1	4
14	227	61	37	128	3	6	4
Average:	192				Average:	3	4
Maximum:	436				Maximum:	8	6
Minimum:	-7				Minimum:	-1	0
Survey Date	11/10/2004	Survey Date	11/10/2004	Survey Date	11/10/2004	Survey Date	10/19/200
Inst. Model	M2360	Inst. Model	L12	Inst. Model	WPC-9550	Inst. Model	M19
Probe Model	M43-93	Probe Model	M43-37	Ei	0.443 cpm/dpm	Background	4.5 μ R/hour
Probe Area	100 cm <sup>2</sup>	Probe Area	697 cm <sup>2</sup>	Background	0.63 cpm	Bkg σ	0.5 μ R/hour
Ei	0.479 cpm/cpm	Ei	0.188 cpm/cpm	Bkg σ	0.145 cpm		
Es	0.5 epm/dpm	Es	0.5 epm/dpm	MDC	12 dpm/100 cm <sup>2</sup>		
Background	160.6 cpm	Background	236 cpm				
Bkg σ	10 cpm	Bkg σ	26 cpm				
MDC	259 dpm/100 cm <sup>2</sup>	MDC	354 dpm/100 cm <sup>2</sup>				



**General Area**  
Admin Area

**Survey Unit**  
Admin-1-H

**Class**  
1

**Part**  
Floor

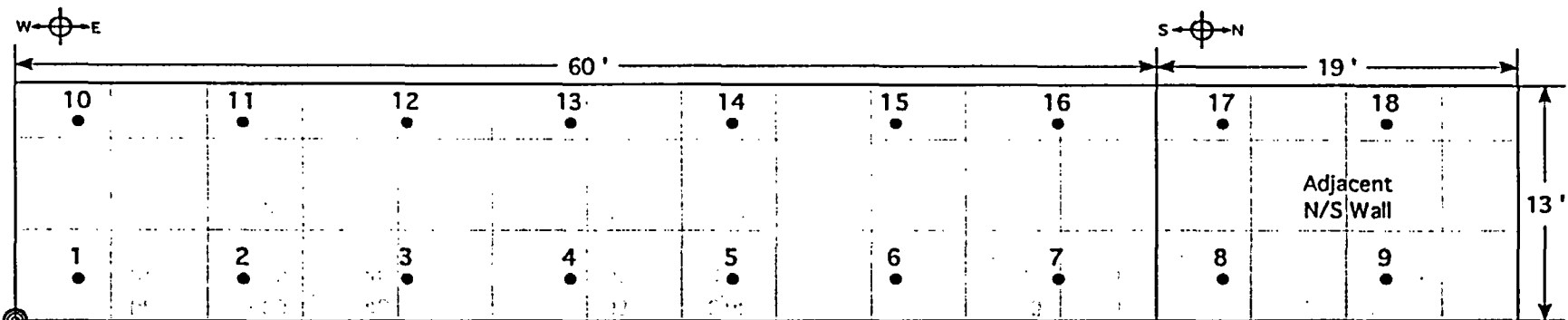
**Material**  
Concrete

**Size**  
800 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	173	59	21	159	-1	1	4
2	177	60	21	159	-1	1	3
3	290	63	21	159	1	4	5
4	210	61	21	136	-1	1	4
5	68	56	6	174	1	4	4
6	23	54	-40	159	1	4	4
7	248	62	21	144	5	8	5
8	48	55	-9	174	8	9	4
9	231	61	21	174	1	4	4
10	198	60	-9	113	1	4	5
11	223	61	-24	159	1	4	5
12	177	60	-40	174	3	6	4
Average: 172					Average: 2		Average: 4
Maximum: 290					Maximum: 8		Maximum: 5
Minimum: 23					Minimum: -1		Minimum: 3
Survey Date 11/10/2004			Survey Date 11/10/2004		Survey Date 11/10/2004		Survey Date 11/10/2004
Inst. Model M2360			Inst. Model L12		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-37		Ei 0.443 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 697 cm <sup>2</sup>		Background 0.63 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/dpm			Ei 0.188 cpm/dpm		Bkg σ 0.145 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 12 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 236 cpm				
Bkg σ 10 cpm			Bkg σ 26 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 354 dpm/100 cm <sup>2</sup>				

General Area		Survey Unit		Class	Part	Material	Size	
Admin Area		Admin-1-I		1	Floor	Concrete	800 ft²	
N	Beta Directs (dpm/100 cm²)		Beta Scans (dpm/100 cm²)		Smears (dpm/100 cm²)		Gross Exposure Rate (μ R/hour)	
	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma		
1	14	54	174	861	-2	1	6	
2	89	56	174	403	3	6	6	
3	94	57	174	403	3	6	6	
4	486	70	174	556	5	8	5	
5	248	62	174	403	-2	1	6	
6	202	60	174	403	3	6	6	
7	185	60	174	403	-2	1	6	
8	110	57	174	403	-2	1	6	
9	169	59	174	403	12	11	5	
10	156	59	174	403	5	8	6	
11	27	54	174	403	8	9	6	
12	98	57	174	403	-2	1	6	
Average:		157			Average:		6	
Maximum:		486			Maximum:		6	
Minimum:		14			Minimum:		5	
Survey Date		12/2/2004	Survey Date		12/2/2004	Survey Date		12/2/2004
Inst. Model		M2360	Inst. Model		L12	Inst. Model		M19
Probe Model		M43-93	Probe Model		M43-37	Background		4.5 μ R/hour
Probe Area		100 cm²	Probe Area		697 cm²	Bkg σ		0.52 μ R/hour
Ei		0.479 cpm/cpm	Ei		0.188 cpm/cpm	Ei		0.444 cpm/dpm
Es		0.5 epn/dpm	Es		0.5 cpm/dpm	Bkg σ		0.149 cpm
Background		160.6 cpm	Background		236 cpm	MDC		12 dpm/100 cm²
Bkg σ		10 cpm	Bkg σ		26 cpm			
MDC		259 dpm/100 cm²	MDC		354 dpm/100 cm²			

**Admin-1-J Administration Area**



ADMIN-1-J

- SURVEY POINTS
- ◎ STARTING LOCATION

Document Control No.	
REVISION NO.	
PROJECT	DRAWING
<div style="text-align: center;"> <b>QUEHANNA DECOMMISSIONING</b>              KARTHANS, PENNSYLVANIA              115 REACTOR ROAD  <b>CLASS 1</b> </div>	
Administration Area North Wall (1 of 3)	
<div style="text-align: center;">   <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776</small> </div>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 06/29/2004
By:	CK:
FIGURE: ADMIN-1-J	

**General Area**  
Admin Area

**Survey Unit**  
Admin-1-J

**Class**  
1

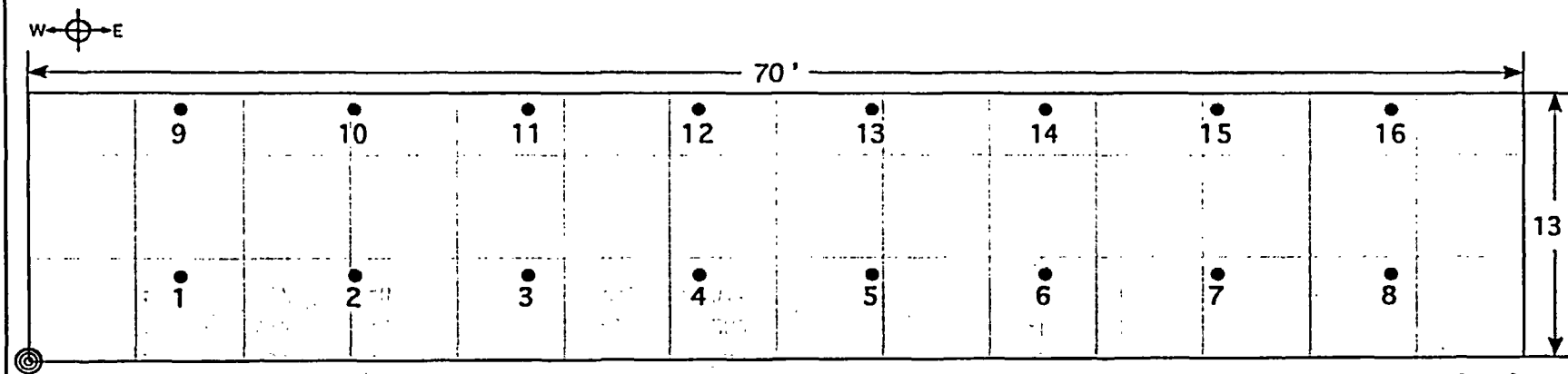
**Part**  
Wall

**Material**  
Metal

**Size**  
1027 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	-12	46	63	230	-2	1
2	0	47	63	314	-2	1
3	-46	45	-20	230	10	10
4	-33	45	-20	314	1	4
5	42	49	63	397	-2	1
6	-8	46	-20	314	14	12
7	-37	45	63	314	-2	1
8	-41	45	-20	230	1	4
9	96	51	63	564	-2	1
10	42	49	63	314	1	4
11	-20	46	63	314	5	8
12	55	49	63	397	-2	1
13	25	48	63	397	1	4
14	38	48	63	314	3	6
15	30	48	63	397	1	4
16	13	47	63	481	-2	1
17	-33	45	-20	397	-2	1
18	-12	46	63	314	-2	1
Average:		6	Average:		1	
Maximum:		96	Maximum:		14	
Minimum:		-46	Minimum:		-2	
Survey Date 9/18/2004			Survey Date 9/18/2004		Survey Date 9/13/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.442 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.8 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.163 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 13 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

**Admin-1-K Administration Area**



ADMIN-1-K

- SURVEY POINTS
- ◎ STARTING LOCATION

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area North Wall (2 of 3)

**SCIENTECH**  
SCIENTECH, Inc.  
141 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO:  
23529-0501

FILE NAME:

SCALE: DATE:  
N.T.S. 06/29/2004

By: CK:

FIGURE:  
ADMIN-1-K

**General Area**  
Admin Area

**Survey Unit**  
Admin-1-K

**Class**  
1

**Part**  
Wall

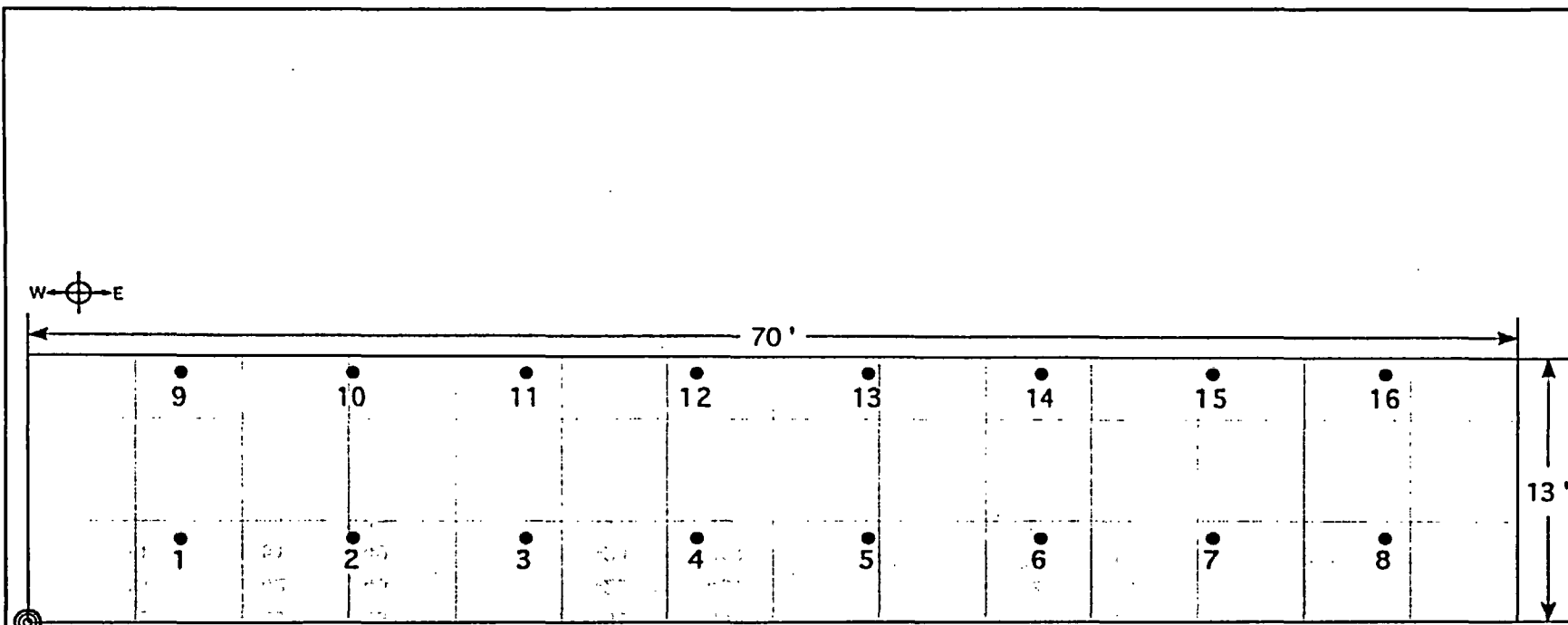
**Material**  
Metal

**Size**  
910 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	71	50	-20	397	3	6
2	-87	43	63	314	3	6
3	-25	46	-104	230	3	6
4	84	50	63	397	1	4
5	34	48	63	397	3	6
6	-100	42	-104	147	1	4
7	-20	46	63	314	-1	1
8	-75	43	21	314	-1	1
9	-66	44	-20	314	3	6
10	-79	43	-20	314	1	4
11	13	47	-20	314	1	4
12	-54	44	-20	230	3	6
13	-142	40	-20	230	-1	1
14	17	48	-20	314	-1	1
15	-33	45	-104	314	-1	1
16	-20	46	-20	147	-1	1
Average:		-30			Average:	1
Maximum:		84			Maximum:	3
Minimum:		-142			Minimum:	-1
Survey Date 9/30/2004			Survey Date 9/30/2004		Survey Date 10/3/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.443 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.6 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.141 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 12 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			



**Admin-1-L Administration Area**



ADMIN-1-L

• SURVEY POINTS  
 ◎ STARTING LOCATION

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1	
Administration Area North Wall (3 of 3)	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06470	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 06/29/2004
By:	CK:
FIGURE: ADMIN-1-L	

**General Area**  
Admin Area

**Survey Unit**  
Admin-1-L

**Class**  
1

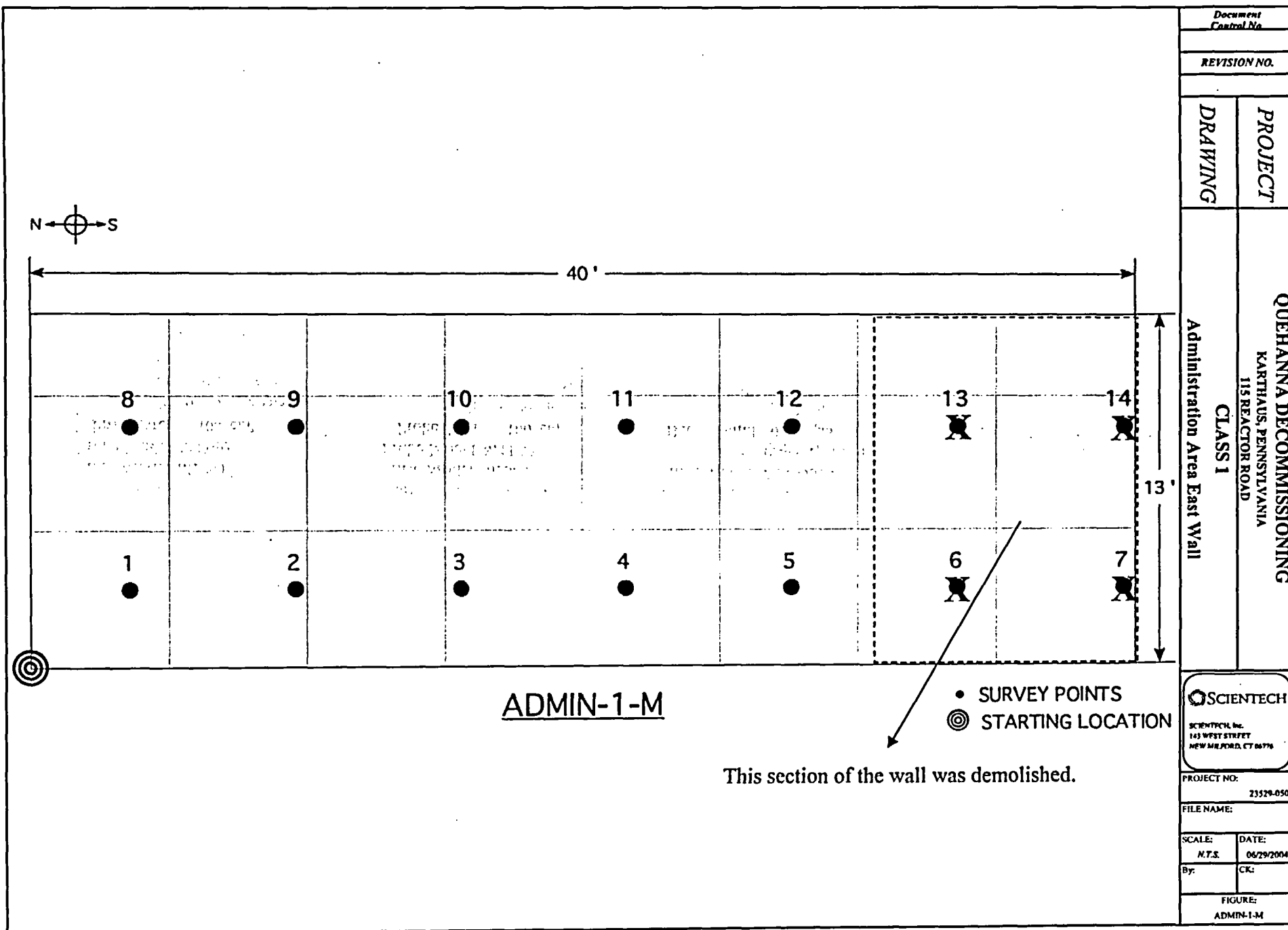
**Part**  
Wall

**Material**  
Metal

**Size**  
910 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	-50	44	63	314	1	4
2	-12	46	-20	230	3	6
3	21	48	-20	314	1	4
4	88	51	63	230	-2	1
5	80	50	-20	314	1	4
6	46	49	-20	397	-2	1
7	-8	46	-20	648	-2	1
8	-8	46	63	314	5	8
9	42	49	-20	397	-2	1
10	38	48	-20	230	1	4
11	-37	45	63	397	-2	1
12	63	49	63	397	1	4
13	42	49	-20	481	-2	1
14	51	49	-20	314	1	4
15	-41	45	147	397	5	8
16	113	52	-20	314	-2	1
Average: 27					Average: 0	
Maximum: 113					Maximum: 5	
Minimum: -50					Minimum: -2	
Survey Date 10/12/2004			Survey Date 10/12/2004		Survey Date 9/13/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.442 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.8 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.163 cpm	
Es 0.5 epm/dpm			Es 0.5 epm/dpm		MDC 13 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

**Admin-1-M Administration Area**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Administration Area East Wall	
SCIENTECH SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 06/29/2004
By:	CK:
FIGURE: ADMIN-1-M	

**General Area**

Admin Area

**Survey Unit**

Admin-1-M

**Class**

1

**Part**

Wall

**Material**

Metal

**Size**520 ft<sup>2</sup>**Beta Directs**(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	13	47
2	38	48
3	88	51
4	9	47
5	-8	46
8	-46	45
9	92	51
10	-29	45
11	-16	46
12	<u>30</u>	48

Average: 17

Maximum: 92

Minimum: -46

Survey Date 10/4/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 cpm/dpm

Background 124. cpm

Bkg σ 10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>**Beta Scans**(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
63	314
147	397
147	481
63	397
63	397
-20	314
-20	314
-20	397
-20	314
63	397

Survey Date 10/4/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg σ 10.8 cpm

MDC 705 dpm/100 cm<sup>2</sup>**Smears**(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
1	4
-2	1
5	8
1	4
3	6
-2	1
-2	1
-2	1
-2	1
<u>-2</u>	1

Average: 0

Maximum: 5

Minimum: -2

Survey Date 10/4/2004

Inst. Model WPC-9550

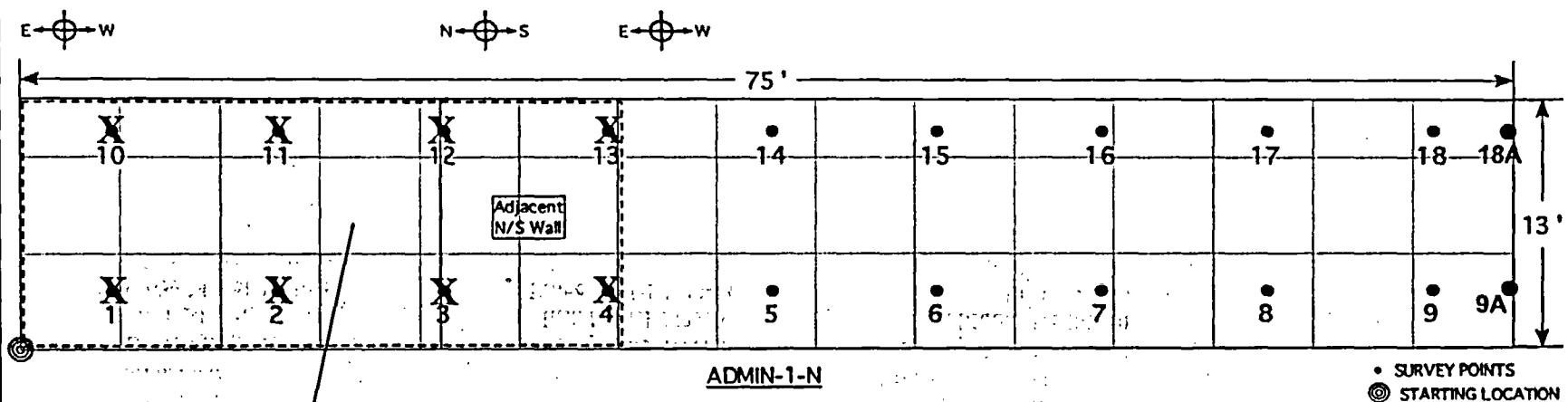
Ei 0.443 cpm/dpm

Background 0.83 cpm

Bkg σ 0.167 cpm

MDC 13 dpm/100 cm<sup>2</sup>

**Admin-1-N Administration Area**



Wall removed.

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1	
Administration Area South Wall (1 of 2)	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 06/29/2004
By:	CK:
FIGURE: ADMIN-1-N	



<i>General Area</i>	<i>Survey Unit</i>	<i>Class</i>	<i>Part</i>	<i>Material</i>	<i>Size</i>
Admin Area	Admin-1-N	1	Wall	Metal	975 ft <sup>2</sup>
			<i>Beta Directs</i> (dpm/100 cm <sup>2</sup> )		<i>Beta Scans</i> (dpm/100 cm <sup>2</sup> )
			<i>Net Activity</i>	<i>Sigma</i>	<i>Net Average</i> <i>Net Maximum</i>
			N		
			5	71	50
			6	-4	47
			7	9	47
			8	-4	47
			9	38	48
			9A	70	50
			14	63	49
			15	46	49
			16	-16	46
			17	289	58
			18	-33	45
			18A	9	47
			<i>Average:</i>	45	
			<i>Maximum:</i>	289	
			<i>Minimum:</i>	-33	
			Survey Date	10/11/2004	
			Inst. Model	M2360	
			Probe Model	M43-93	
			Probe Area	100 cm <sup>2</sup>	
			Ei	0.479 cpm/epm	
			Es	0.5 epm/dpm	
			Background	124. cpm	
			Bkg σ	10.8 cpm	
			MDC	230 dpm/100 cm <sup>2</sup>	
			Survey Date	10/11/2004	
			Inst. Model	M2360	
			Probe Model	M43-93	
			Probe Area	100 cm <sup>2</sup>	
			Ei	0.479 cpm/epm	
			Es	0.5 epm/dpm	
			Background	124.9 cpm	
			Bkg σ	10.8 cpm	
			MDC	705 dpm/100 cm <sup>2</sup>	
			Survey Date	10/12/2004	
			Inst. Model	WPC-9550	
			Ei	0.444 cpm/dpm	
			Background	0.6 cpm	
			Bkg σ	0.141 cpm	
			MDC	12 dpm/100 cm <sup>2</sup>	

**Admin-1-O Administration Area**



75'

13'

ADMIN-1-0

- SURVEY POINTS
- ⊙ STARTING LOCATION

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
KARTHaus, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area South Wall (2 of 2)

SCIENTECH  
SCIENTECH, Inc.  
143 WEST STREET  
NEW HAVEN, CT 06716

PROJECT NO:  
23529-0501

FILE NAME:

SCALE: DATE:  
N.T.S. 06/29/2004

By: CK:

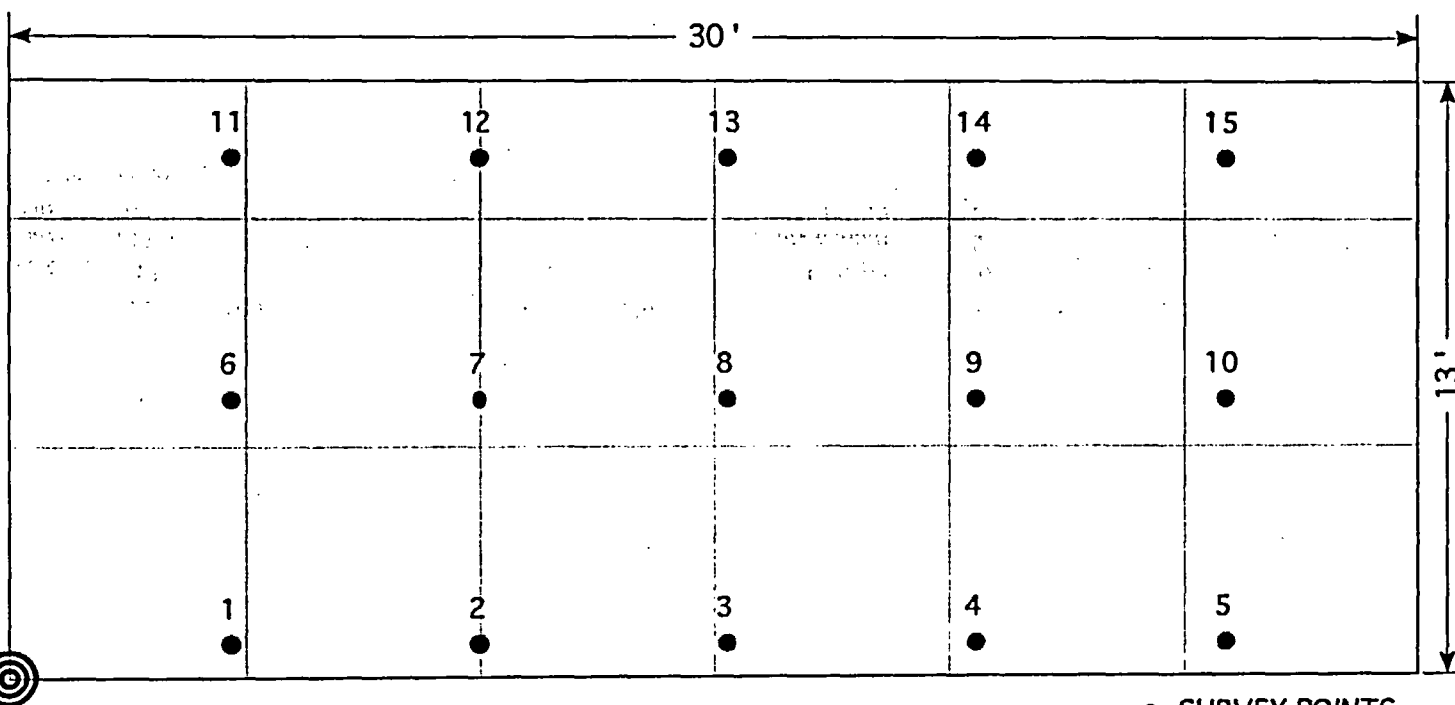
FIGURE:  
ADMIN-1-0

<i>General Area</i>	<i>Survey Unit</i>	<i>Class</i>	<i>Part</i>	<i>Material</i>	<i>Size</i>
Admin Area	Admin-1-O	1	Wall	Metal	975 ft <sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	-66	44	63	481	1	4
2	101	51	-20	397	1	4
3	105	51	63	564	-1	1
4	113	52	147	481	1	4
5	109	51	63	397	-1	1
6	213	55	63	481	-1	1
7	142	53	63	314	-1	1
8	80	50	-20	230	-1	1
9	101	51	-20	230	-1	1
10	63	49	147	731	6	8
11	142	53	230	564	1	4
12	17	48	147	314	4	6
13	63	49	147	397	4	6
14	76	50	147	314	4	6
15	138	53	63	397	1	4
16	122	52	-20	314	1	4
17	167	54	63	397	-1	1
18	176	54	63	314	-1	1
<i>Average:</i> 103					<i>Average:</i> 1	
<i>Maximum:</i> 213					<i>Maximum:</i> 6	
<i>Minimum:</i> -66					<i>Minimum:</i> -1	
Survey Date 9/30/2004			Survey Date 9/29/2004		Survey Date 10/1/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.446 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.12 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

**Admin-1-P Administration Area**



ADMIN-1-P

- SURVEY POINTS
- ◎ STARTING LOCATION

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Administration Area West Wall	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 06/29/2004
By:	CK:
FIGURE: ADMIN-1-P	

**General Area**

Admin Area

**Survey Unit**

Admin-1-P

**Class**

1

**Part**

Wall

**Material**

Metal

**Size**

390 ft²

**Beta Directs***(dpm/100)*

N-	Net Activity	Sigma
1	80	50
2	-29	45
3	67	50
4	105	51
5	76	50
6	-25	46
7	42	49
8	34	48
9	-4	47
10	-25	46
11	-62	44
12	38	48
13	-33	45
14	-12	46
15	-12	46

*Average:* 16*Maximum:* 105*Minimum:* -62

Survey Date 9/18/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm²

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124. cpm

Bkg σ 10.8 cpm

MDC 230 dpm/100 cm²

**Beta Scans***(dpm/100)*

Net	Net Maximum
-20	230
63	397
147	397
63	314
-20	230
63	314
63	397
63	397
63	397
147	481
-20	314
63	314
-20	230
-20	314
63	314

Survey Date 9/17/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm²

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg σ 10.8 cpm

MDC 705 dpm/100 cm²

**Smears***(dpm/100)*

Net Activity	Sigma
1	4
-2	1
1	4
3	6
-2	1
-2	1
1	4
-2	1
-2	1
-2	1
3	6
3	6
5	8
1	4
1	4

*Average:* 0*Maximum:* 5*Minimum:* -2

Survey Date 8/19/2004

Inst. Model WPC-9550

Ei 0.447 cpm/dpm

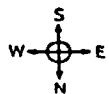
Background 0.77 cpm

Bkg σ 0.16 cpm

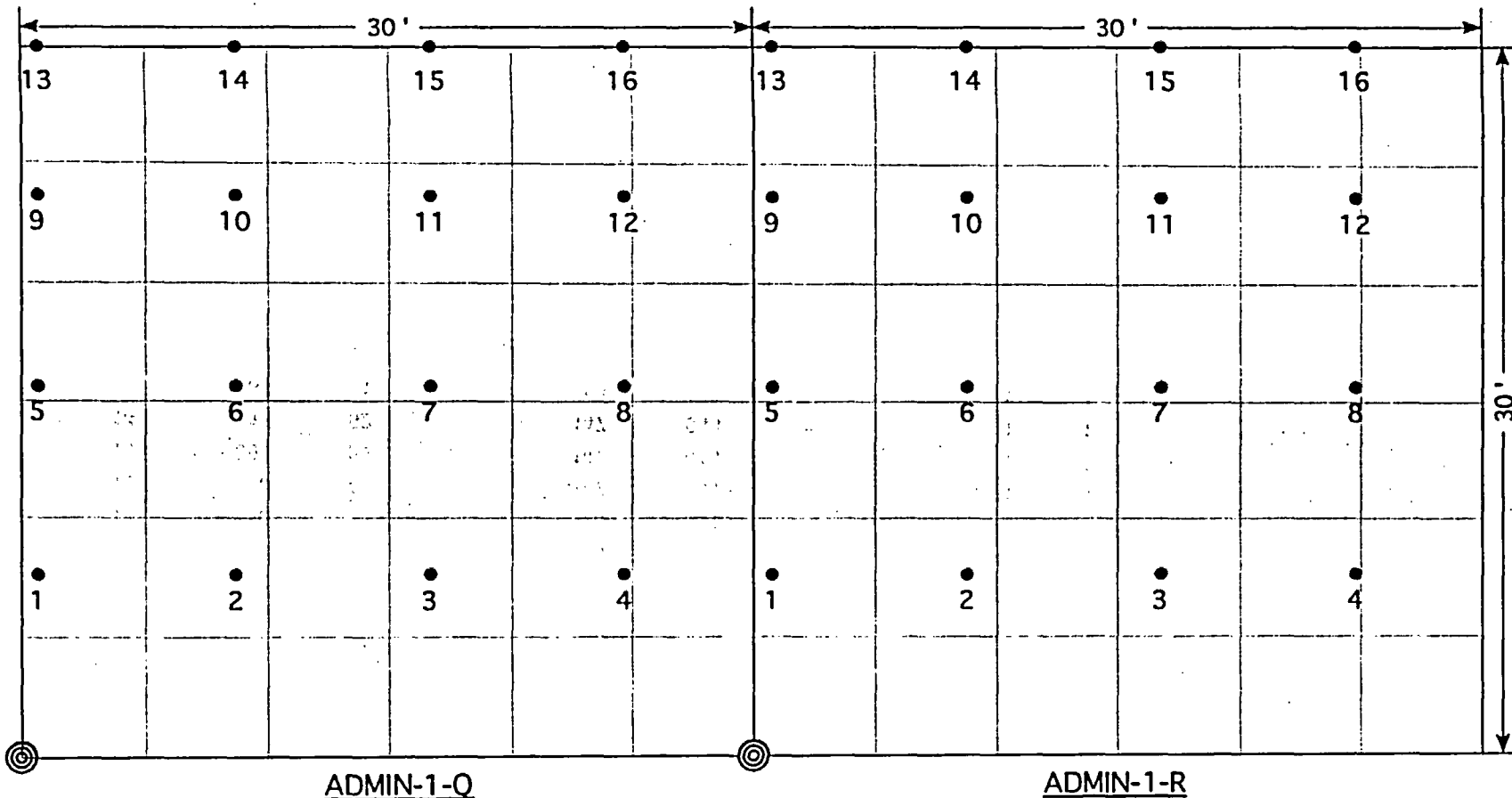
MDC 13 dpm/100 cm²

**Admin-1-Q and Admin-1-R  
Administration Areas**





• SURVEY POINTS  
 ◎ STARTING LOCATION



ADMIN-1-Q

ADMIN-1-R

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KARTHANS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Administration Area Ceiling (1 of 3)

SCIENTECH

SCIENTECH, Inc.  
 143 WEST STREET  
 NEW MILFORD, CT 06470

PROJECT NO:  
 23529-0501

FILE NAME:

SCALE: DATE:  
 N.T.S. 06/29/2004

By: CK:

FIGURE:  
 ADMIN-1-Q,R

<i>General Area</i>	<i>Survey Unit</i>	<i>Class</i>	<i>Part</i>	<i>Material</i>	<i>Size</i>
Admin Area	Admin-1-Q	1	Ceiling	Metal	900 ft <sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	201	55	230	648	-1	1
2	17	48	63	648	-1	1
3	-29	45	88	564	-1	1
4	0	47	63	481	-1	1
5	167	54	-20	648	1	4
6	180	54	-20	648	1	4
7	51	49	63	397	1	4
8	55	49	63	648	1	4
9	192	55	63	564	-1	1
10	88	51	63	564	-1	1
11	80	50	-20	314	-1	1
12	30	48	147	564	1	4
13	301	59	147	648	-1	1
14	117	52	147	648	-1	1
15	88	51	63	648	1	4
16	76	50	63	564	-2	1
<i>Average:</i> 101					<i>Average:</i> 0	
<i>Maximum:</i> 301					<i>Maximum:</i> 1	
<i>Minimum:</i> -29					<i>Minimum:</i> -2	
Survey Date 10/5/2004			Survey Date 10/5/2004		Survey Date 10/7/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.443 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.5 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.129 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

General Area  
Admin Area

Survey Unit  
Admin-1-R

Class  
1

Part  
Ceiling

Material  
Metal

Size  
900 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	117	52	63	314	1	4
2	138	53	147	397	-2	1
3	147	53	63	481	1	4
4	147	53	147	564	3	6
5	51	49	63	564	-2	1
6	163	54	147	397	1	4
7	138	53	63	481	5	8
8	63	49	63	314	-2	1
9	172	54	147	397	-2	1
10	17	48	63	314	-2	1
11	172	54	147	397	1	4
12	109	51	63	481	1	4
13	176	54	63	314	-2	1
14	92	51	63	397	-2	1
15	117	52	147	397	-2	1
16	117	52	63	314	-2	1
Average: 121			Average: 0		Average: 0	
Maximum: 176			Maximum: 5		Maximum: 5	
Minimum: 17			Minimum: -2		Minimum: -2	
Survey Date 10/7/2004			Survey Date 10/7/2004		Survey Date 10/11/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.444 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.7 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.153 cpm	
Es 0.5 epn/dpm			Es 0.5 epn/dpm		MDC 12 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

**Admin-1-S through Admin-1-V  
Administration Areas**



**General Area**  
Admin Area

**Survey Unit**  
Admin-1-S

**Class**  
1

**Part**  
Ceiling

**Material**  
Metal

**Size**  
980 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	101	51	21	147	-2	1
2	51	49	21	147	-2	1
3	176	54	21	147	-2	1
4	155	53	21	147	-2	1
5	113	52	21	147	-2	1
6	-62	44	21	147	-2	1
7	5	47	21	147	-2	1
8	96	51	21	147	-2	1
9	63	49	21	147	-2	1
10	122	52	21	147	-2	1
11	17	48	21	147	-2	1
12	76	50	21	147	-2	1
13	9	47	21	147	1	5
14	-4	47	21	147	1	5
<b>Average:</b> 66			<b>Average:</b> -2		<b>Average:</b> -2	
<b>Maximum:</b> 176			<b>Maximum:</b> 1		<b>Maximum:</b> 1	
<b>Minimum:</b> -62			<b>Minimum:</b> -2		<b>Minimum:</b> -2	
Survey Date 11/28/2004			Survey Date 11/24/2004		Survey Date 11/29/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.440 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.83 cpm	
Ei 0.479 cpm/dpm			Ei 0.479 cpm/dpm		Bkg σ 0.167 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 13 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

**General Area**  
Admin Area

**Survey Unit**  
Admin-1-T

**Class**  
1

**Part**  
Ceiling

**Material**  
Metal

**Size**  
980 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	21	48	-21	230	3	6
2	21	48	-21	230	1	4
3	289	58	-21	230	-2	1
4	130	52	-21	230	-2	1
5	0	47	-21	230	1	4
6	-20	46	-21	230	-2	1
7	42	49	-21	230	-2	1
8	92	51	-21	230	3	6
9	51	49	-21	230	3	6
10	63	49	-21	230	1	4
11	-54	44	-21	230	-2	1
12	134	52	-21	230	1	4
13	5	47	-21	230	-2	1
14	46	49	-21	230	-2	1
Average:		59	Average:		0	
Maximum:		289	Maximum:		3	
Minimum:		-54	Minimum:		-2	
Survey Date 11/30/2004			Survey Date 11/30/2004		Survey Date 12/1/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.445 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.77 cpm	
Ei 0.479 cpm/dpm			Ei 0.479 cpm/dpm		Bkg σ 0.16 cpm	
Es 0.5 epm/dpm			Es 0.5 epm/dpm		MDC 13 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

<i>General Area</i>	<i>Survey Unit</i>	<i>Class</i>	<i>Part</i>	<i>Material</i>	<i>Size</i>
Admin Area	Admin-1-U	1	Ceiling	Metal	980 ft²
			<i>Beta Directs</i> (dpm/100 cm²)		<i>Smears</i> (dpm/100 cm²)
N	<i>Net Activity</i>	<i>Sigma</i>	<i>Net Average</i>	<i>Net Maximum</i>	<i>Net Activity</i> <i>Sigma</i>
1	-4	47	147	397	1   4
2	80	50	230	314	-2   1
3	71	50	147	314	-2   1
5	38	48	230	397	-2   1
6	63	49	147	314	-2   1
7	105	51	63	230	3   6
8	9	47	63	147	1   4
9	88	51	63	230	1   4
10	234	56	-21	648	-2   1
11	142	53	-21	481	-2   1
12	21	48	63	147	-2   1
13	230	56	147	147	-2   1
14	71	50	147	230	-2   1
<i>Average:</i>	88				<i>Average:</i> -1
<i>Maximum:</i>	234				<i>Maximum:</i> 3
<i>Minimum:</i>	-4				<i>Minimum:</i> -2
Survey Date 10/27/2004			Survey Date 11/3/2004		Survey Date 12/1/2004
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550
Probe Model M43-93			Probe Model M43-93		Ei 0.445 cpm/dpm
Probe Area 100 cm²			Probe Area 100 cm²		Background 0.77 cpm
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.16 cpm
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 13 dpm/100 cm²
Background 124. cpm			Background 124.9 cpm		
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm		
MDC 230 dpm/100 cm²			MDC 705 dpm/100 cm²		



**General Area**  
Admin Area

**Survey Unit**  
Admin-1-V

**Class**  
1

**Part**  
Ceiling

**Material**  
Metal

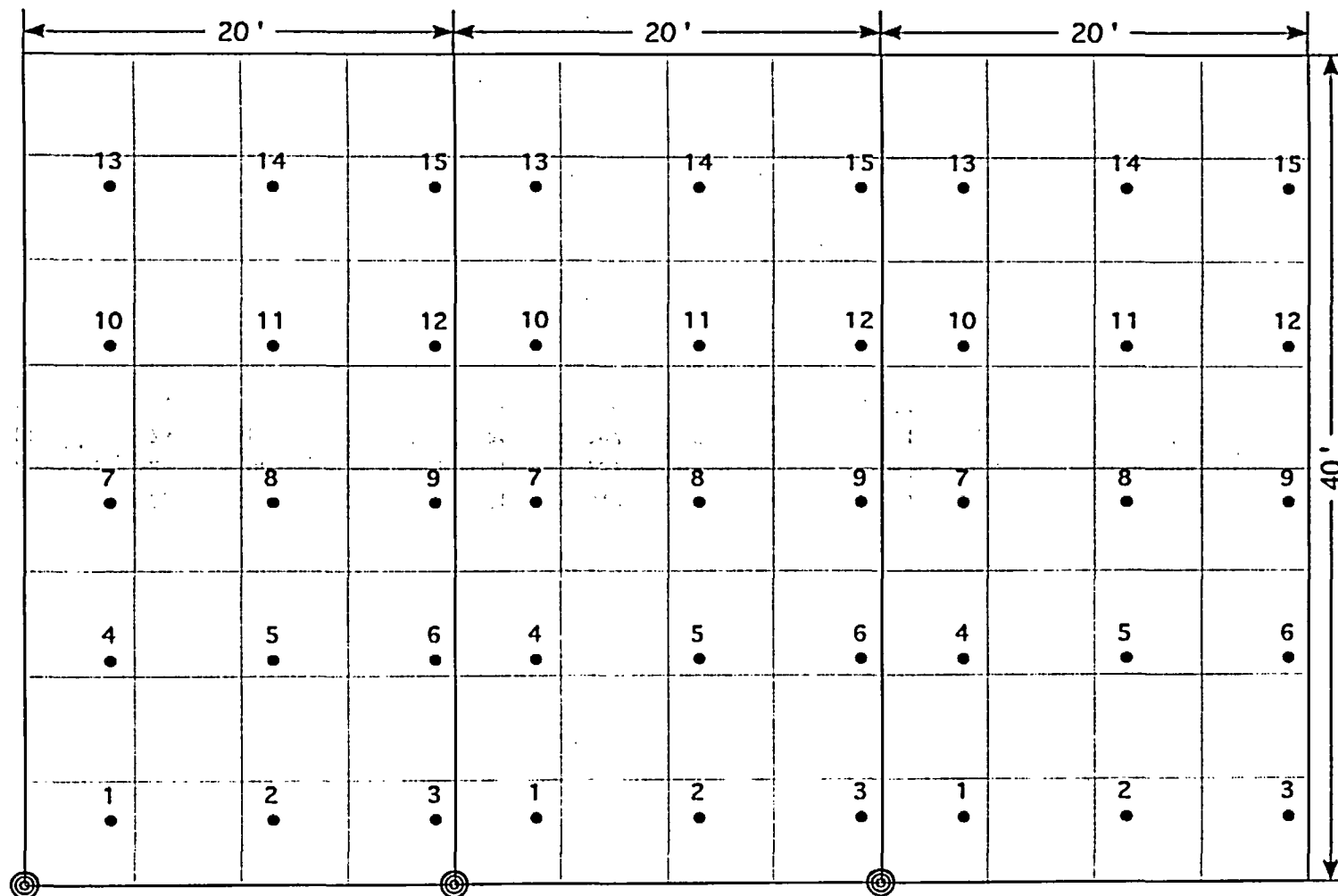
**Size**  
980 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	51	49	-20	147	-1	0.5
2	63	49	-20	147	1	4.5
3	96	51	-20	397	-1	0.5
4	101	51	21	481	1	4.5
5	-12	46	-20	230	6	7.7
6	-75	43	-20	397	-1	0.5
7	25	48	-20	522	4	6.3
8	80	50	-20	397	-1	0.5
9	142	53	21	564	-1	0.5
10	21	48	21	564	4	6.3
11	51	49	21	648	4	6.3
12	-121	41	21	648	4	6.3
Average:		35			Average:	2
Maximum:		142			Maximum:	6
Minimum:		-121			Minimum:	-1
Survey Date 11/16/2004			Survey Date 11/15/2004		Survey Date 11/22/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.438 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.37 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.111 cpm	
Es 0.5 epn/dpm			Es 0.5 epn/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

**Admin-1-W through Admin-1-Y  
Administration Areas**



- SURVEY POINTS
- ⊙ STARTING LOCATION



ADMIN-1-W

ADMIN-1-X

ADMIN-1-Y

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Administration Area Ceiling (3 of 3)	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06470	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 06/29/2004
By:	CK:
FIGURE: ADMIN-1-W,X,Y	

**General Area**  
Admin Area

**Survey Unit**  
Admin-1-W

**Class**  
1

**Part**  
Ceiling

**Material**  
Metal

**Size**  
800 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	101	51	-20	230	4	6.3
2	63	49	-20	147	8	8.9
3	67	50	21	272	4	6.3
4	109	51	-20	314	1	4.5
5	84	50	21	188	4	6.3
6	76	50	21	147	-1	0.5
7	130	52	21	230	4	6.3
8	38	48	21	230	-1	0.5
9	9	47	-20	147	-1	0.5
10	80	50	21	314	4	6.3
11	46	49	21	397	1	4.5
12	30	48	21	314	-1	0.5
13	-20	46	21	731	1	4.5
14	76	50	21	397	-1	0.5
15	34	48	21	815	1	4.5
Average: 62					Average: 2	
Maximum: 130					Maximum: 8	
Minimum: -20					Minimum: -1	
Survey Date 11/18/2004			Survey Date 11/18/2004		Survey Date 11/22/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.438 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.37 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.111 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

**General Area**  
Admin Area

**Survey Unit**  
Admin-1-X

**Class**  
1

**Part**  
Ceiling

**Material**  
Metal

**Size**  
800 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	92	51	21	397	-1	0.5
2	13	47	21	397	-1	0.5
3	243	57	21	564	4	6.3
4	130	52	21	314	-1	0.5
5	117	52	21	230	-1	0.5
6	159	53	21	230	1	4.5
7	55	49	21	314	-1	0.5
8	113	52	21	230	-1	0.5
9	38	48	21	147	-1	0.5
10	-16	46	-20	314	1	4.5
11	96	51	21	230	4	6.3
12	122	52	21	272	-1	0.5
13	-46	45	-20	648	4	6.3
14	71	50	-20	648	1	4.5
15	5	47	21	815	-1	0.5
Average: 79			Average: 0		Average: 0	
Maximum: 243			Maximum: 4		Maximum: 4	
Minimum: -46			Minimum: -1		Minimum: -1	
Survey Date 11/20/2004			Survey Date 11/19/2004		Survey Date 11/22/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.438 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.37 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.111 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

General Area  
Admin Area

Survey Unit  
Admin-1-Y

Class  
1

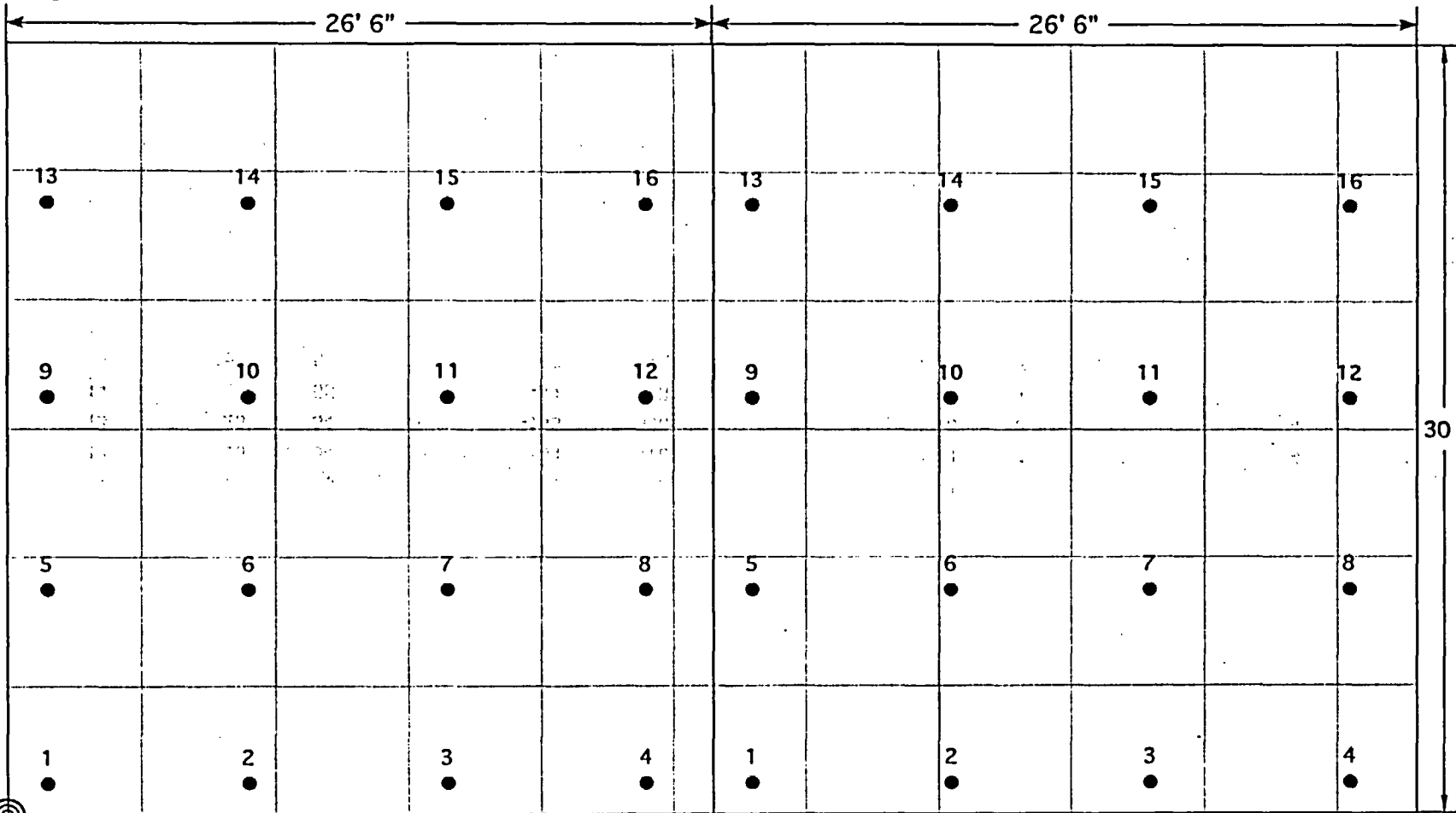
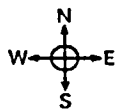
Part  
Ceiling

Material  
Metal

Size  
800 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	55	49	-20	230	-1	0.4
2	55	49	-20	314	-1	0.4
3	21	48	-20	230	-1	0.4
4	184	54	21	272	6	7.6
5	172	54	21	230	-1	0.4
6	167	54	-20	272	-1	0.4
7	151	53	21	230	4	6.3
8	80	50	-20	188	2	4.4
9	134	52	21	188	-1	0.4
10	42	49	21	230	2	4.4
11	105	51	21	230	-1	0.4
12	101	51	21	230	-1	0.4
13	138	53	21	564	2	4.4
14	59	49	21	397	-1	0.4
15	42	49	21	522	17	12.5
Average: 100					Average: 2	
Maximum: 184					Maximum: 17	
Minimum: 21					Minimum: -1	
Survey Date 11/23/2004			Survey Date 11/22/2004		Survey Date 11/23/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.444 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.3 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.1 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 10 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

**HVAC-1-A and HVAC-1-B**  
**Office Mezzanine**



HVAC-1-A

HVAC-1-B

• SURVEY POINTS  
 ◎ STARTING LOCATION

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING
DRAWING	KARHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS I Office Mezz (HVAC) Floor
SCIENTECH SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: HVAC-1-A,B	



**General Area**  
Office Mezz (HVAC)

**Survey Unit**  
HVAC-1-A

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
795 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate ( $\mu$ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	210	61	-44	582	3	6	5
2	244	62	-44	582	3	6	5
3	202	60	60	686	3	6	4
4	173	59	-44	582	12	11	4
5	-15	52	-44	373	1	4	5
6	94	57	60	373	1	4	4
7	94	57	-44	478	3	6	4
8	173	59	-44	269	8	9	3
9	148	59	-44	269	-1	1	4
10	10	53	-149	478	3	6	4
11	177	60	-149	582	-1	1	4
12	23	54	-44	478	1	4	4
13	23	54	-149	686	6	8	4
14	39	55	-44	373	-1	1	4
15	156	59	60	478	3	6	3
16	27	54	-149	582	3	6	3
Average: 111					Average: 3		Average: 4
Maximum: 244					Maximum: 12		Maximum: 5
Minimum: -15					Minimum: -1		Minimum: 3
Survey Date 9/27/2004			Survey Date 9/27/2004		Survey Date 9/27/2004		Survey Date 9/27/2004
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.445 cpm/dpm		Background 4.5 $\mu$ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.5 cpm		Bkg $\sigma$ 0.52 $\mu$ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg $\sigma$ 0.129 cpm		
Es 0.5 epn/dpm			Es 0.5 epn/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg $\sigma$ 10 cpm			Bkg $\sigma$ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**General Area**  
Office Mezz (HVAC)

**Survey Unit**  
HVAC-1-B

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
795 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	131	58
2	60	55
5	27	54
6	102	57
9	102	57
10	14	54
11	-15	52
12	-57	51
13	77	56
14	48	55
15	194	60
16	81	56

**Average:** 64  
**Maximum:** 194  
**Minimum:** -57

Survey Date 9/27/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 epm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net	Net Maximum
-149	269
-44	686
-44	165
18	582
-44	373
-107	269
-44	311
-65	269
-149	165
-44	478
60	478
-149	165

Survey Date 9/26/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 epm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
44	20
19	13
10	10
21	14
10	10
3	6
-1	1
15	12
10	10
6	8
-1	1
6	8

**Average:** 12  
**Maximum:** 44  
**Minimum:** -1

Survey Date 9/27/2004

Inst. Model WPC-9550

Ei 0.445 cpm/dpm

Background 0.5 cpm

Bkg σ 0.129 cpm

MDC 11 dpm/100 cm<sup>2</sup>

**Gross Exposure Rate**  
(μ R/hour)

4  
5  
3  
4  
4  
3  
4  
5  
3  
4  
5  
5  
4  
5  
3

**Average:** 4  
**Maximum:** 5  
**Minimum:** 3

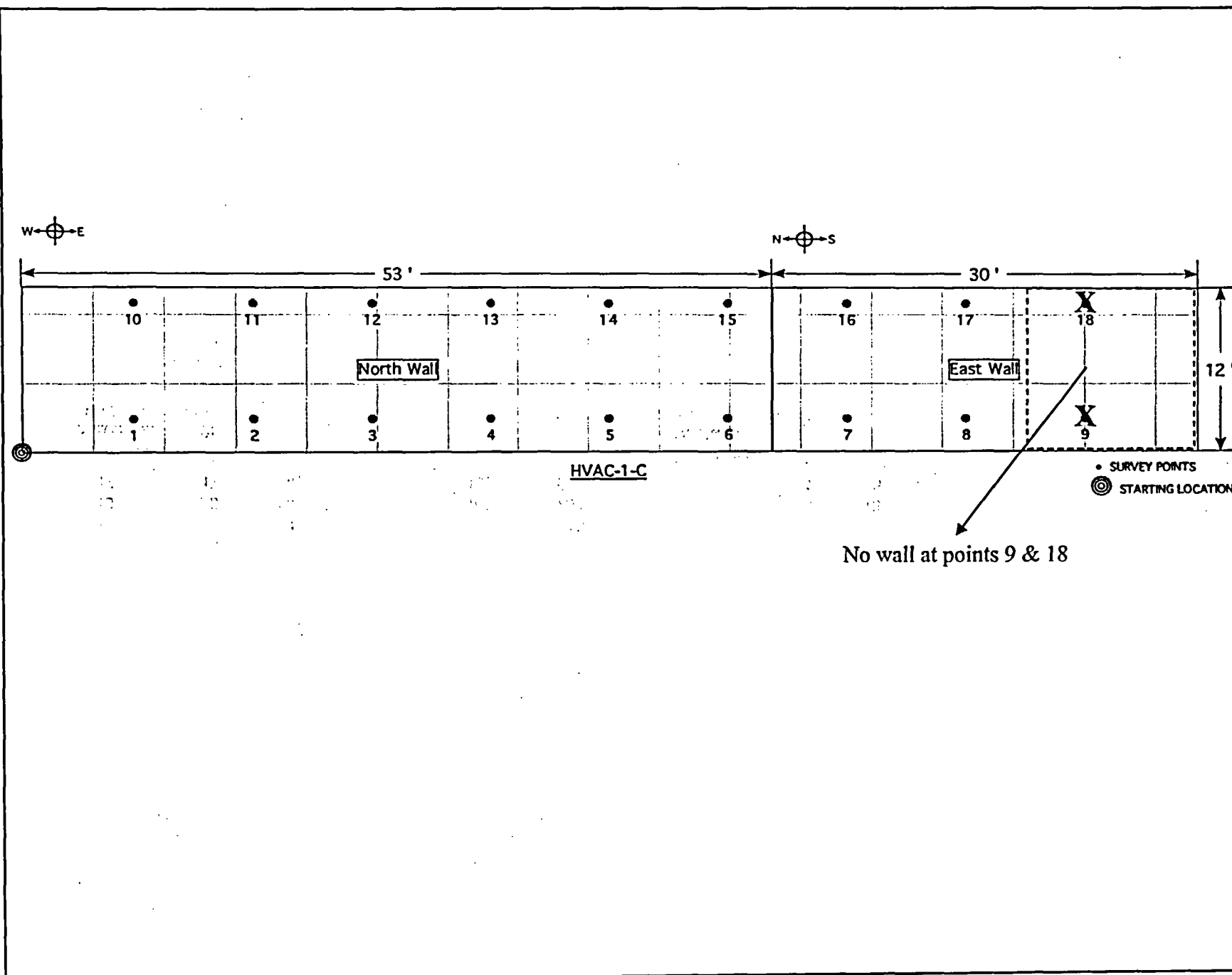
Survey Date 9/26/2004

Inst. Model M19

Background 4.5 μ R/hour

Bkg σ 0.5 μ R/hour

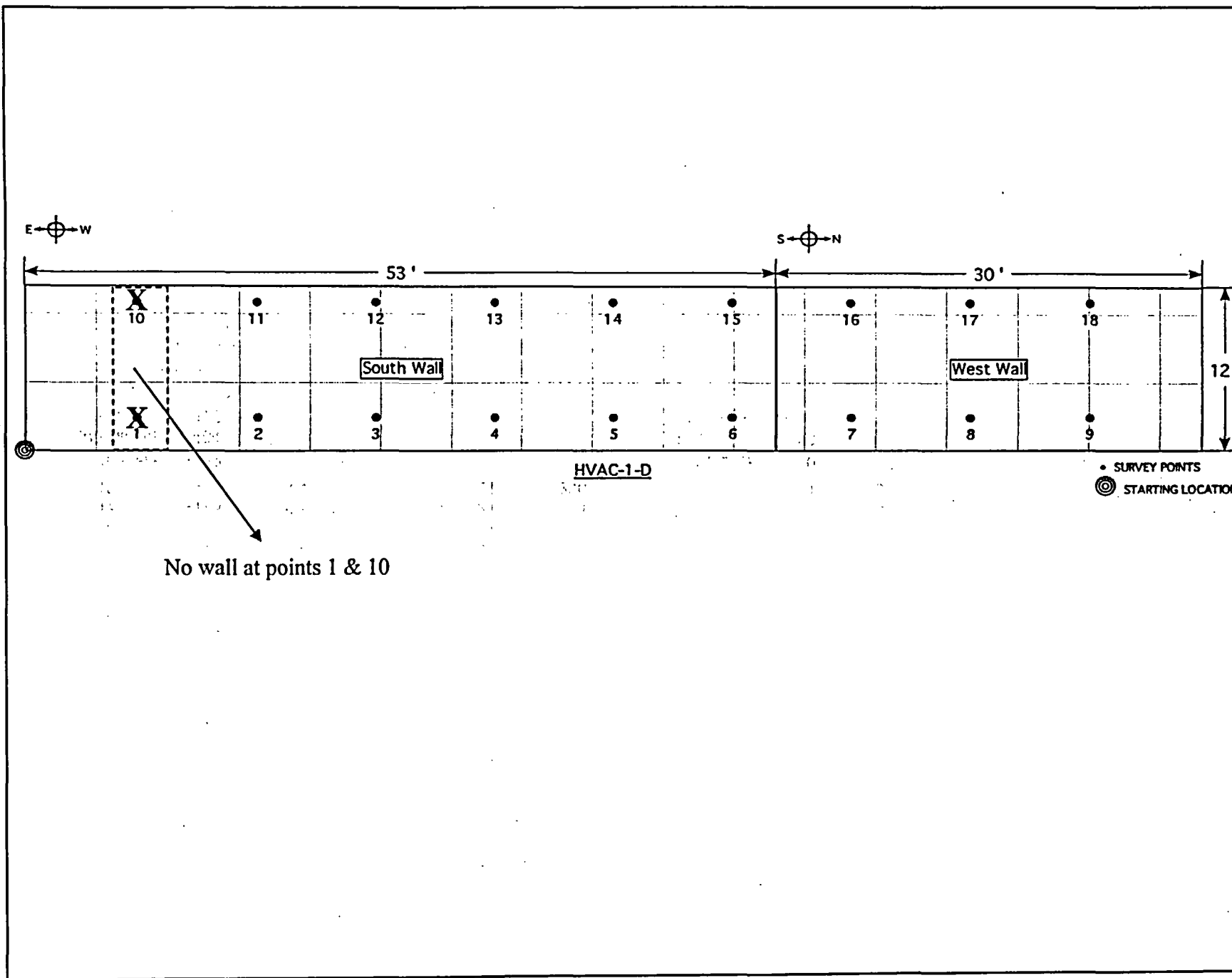
**HVAC-1-C Office Mezzanine**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA HIS REACTOR ROAD
CLASS 1	
Office Mezz (HVAC) North and East Walls	
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: HVAC-1-C	

<i>General Area</i>	<i>Survey Unit</i>	<i>Class</i>	<i>Part</i>	<i>Material</i>	<i>Size</i>
Office Mezz (HVAC)	HVAC-1-C	1	Wall	Metal	966 ft <sup>2</sup>
<i>Beta Directs</i> (dpm/100 cm <sup>2</sup> )			<i>Beta Scans</i> (dpm/100 cm <sup>2</sup> )		<i>Smears</i> (dpm/100 cm <sup>2</sup> )
N	<i>Net Activity</i>	<i>Sigma</i>	<i>Net</i>	<i>Net Maximum</i>	<i>Net Activity</i> <i>Sigma</i>
1	55	49	147	397	-1   1
2	205	55	63	481	-1   1
3	63	49	-21	314	4   6
4	-54	44	-21	481	-1   1
5	130	52	147	397	1   5
6	180	54	147	397	4   6
7	-75	43	63	314	-1   1
8	-20	46	147	397	-1   1
10	-108	42	-21	314	-1   1
11	-83	43	-104	314	-1   1
12	-112	41	-104	418	1   5
13	-91	42	1	835	6   8
14	-8	46	147	731	-1   1
15	5	47	1	815	4   6
16	-20	46	105	731	19   13
17	17	48	105	564	1   5
<i>Average:</i> 5					<i>Average:</i> 2
<i>Maximum:</i> 205					<i>Maximum:</i> 19
<i>Minimum:</i> -112					<i>Minimum:</i> -1
Survey Date 9/27/2004			Survey Date 9/27/2004		Survey Date 9/29/2004
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550
Probe Model M43-93			Probe Model M43-93		Ei 0.444 cpm/dpm
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.47 cpm
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.125 cpm
Es 0.5 epn/dpm			Es 0.5 epn/dpm		MDC 11 dpm/100 cm <sup>2</sup>
Background 124. cpm			Background 124.9 cpm		
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm		
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>		

**HVAC-1-D Office Mezzanine**

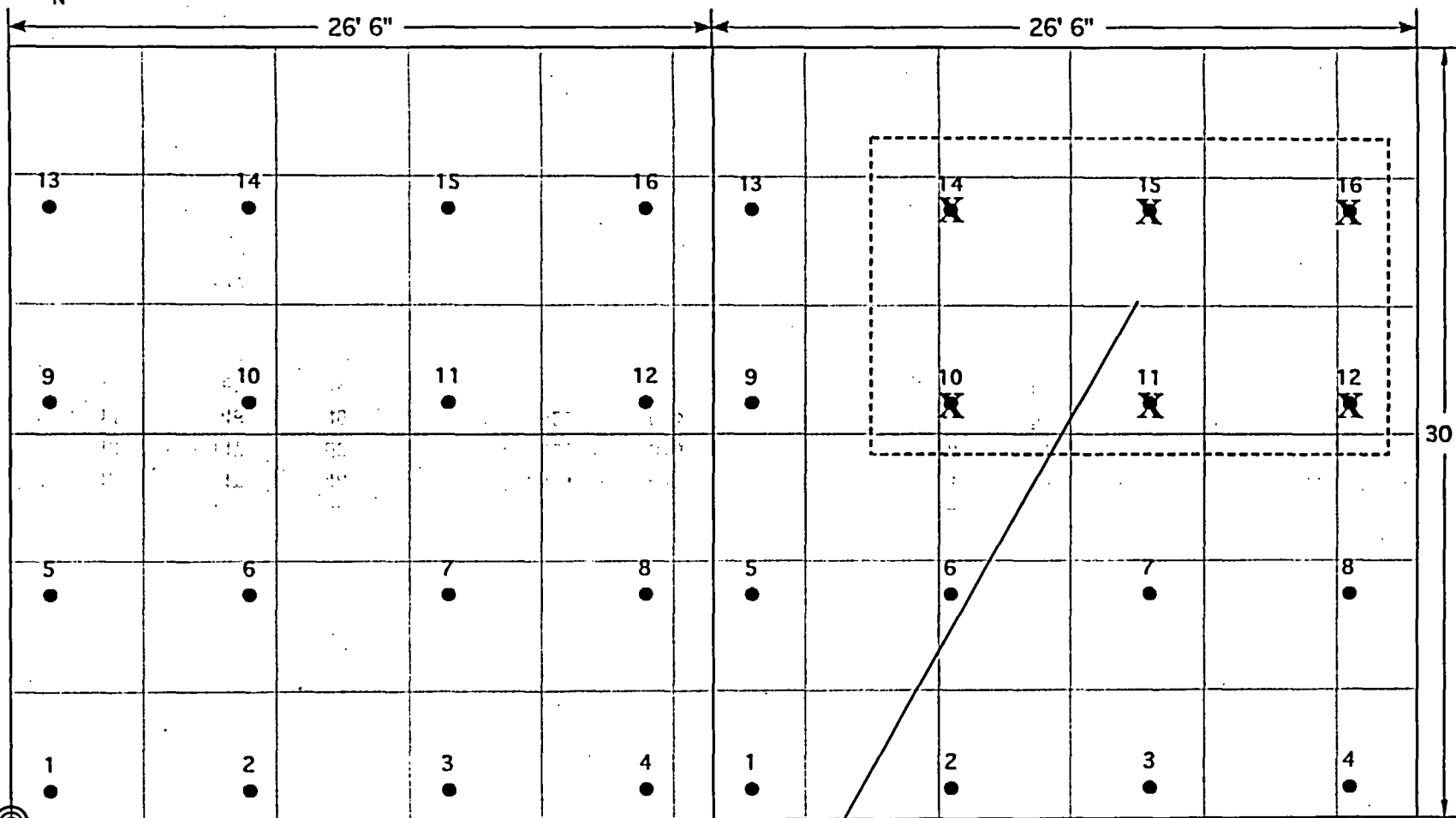
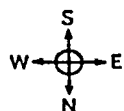


Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Office Mezz (HVAC) South and West Walls	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: HVAC-1-D	

<i>General Area</i>	<i>Survey Unit</i>	<i>Class</i>	<i>Part</i>	<i>Material</i>	<i>Size</i>
Office Mezz (HVAC)	HVAC-1-D	1	Wall	Metal	966 ft <sup>2</sup>
<i>Beta Directs</i> (dpm/100 cm <sup>2</sup> )			<i>Beta Scans</i> (dpm/100 cm <sup>2</sup> )		<i>Smears</i> (dpm/100 cm <sup>2</sup> )
N	Net Activity	Sigma	Net	Net Maximum	Net Activity Sigma
2	46	49	-21	314	1 5
3	42	49	63	648	1 5
4	46	49	-21	314	1 5
5	67	50	105	314	-2 1
6	17	48	-21	314	-2 1
7	-33	45	-21	147	3 6
8	-41	45	-104	147	-2 1
9	-37	45	-21	230	3 6
11	464	64	230	731	-2 1
12	51	49	63	230	3 6
13	-29	45	-21	314	-2 1
14	63	49	63	397	1 5
15	-16	46	21	147	1 5
16	-50	44	-21	397	-2 1
17	-175	38	-21	564	1 5
18	-66	44	21	230	1 5
<i>Average:</i>	22				<i>Average:</i> 0
<i>Maximum:</i>	464				<i>Maximum:</i> 3
<i>Minimum:</i>	-175				<i>Minimum:</i> -2
Survey Date	9/28/2004		Survey Date	9/28/2004	Survey Date 9/30/2004
Inst. Model	M2360		Inst. Model	M2360	Inst. Model WPC-9550
Probe Model	M43-93		Probe Model	M43-93	Ei 0.444 cpm/dpm
Probe Area	100 cm <sup>2</sup>		Probe Area	100 cm <sup>2</sup>	Background 0.8 cpm
Ei	0.479 cpm/cpm		Ei	0.479 cpm/cpm	Bkg σ 0.163 cpm
Es	0.5 epm/dpm		Es	0.5 epm/dpm	MDC 13 dpm/100 cm <sup>2</sup>
Background	124. cpm		Background	124.9 cpm	
Bkg σ	10.8 cpm		Bkg σ	10.8 cpm	
MDC	230 dpm/100 cm <sup>2</sup>		MDC	705 dpm/100 cm <sup>2</sup>	



**HVAC-1-E and HVAC-1-F**  
**Office Mezzanine**



HVAC-1-E

HVAC-1-F

These points were inaccessible.

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING

KARHAUS, PENNSYLVANIA  
115 REACTOR ROAD

CLASS 1

Office Mezz (HVAC) Ceiling

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06476

PROJECT NO:

23529-0501

FILE NAME:

SCALE: DATE:  
N.T.S. 07/06/2004

By: CK:

FIGURE:

HVAC-1-E,F

**General Area**  
Office Mezz (HVAC)

**Survey Unit**  
HVAC-1-E

**Class**  
1

**Part**  
Ceiling

**Material**  
Metal

**Size**  
795 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	0	47	105	355	12	11
2	5	47	105	982	3	6
3	59	49	-20	982	1	5
4	147	53	105	940	-2	1
5	-20	46	188	314	7	9
6	59	49	105	835	1	5
7	55	49	105	731	7	9
8	55	49	147	648	1	5
9	76	50	188	815	5	8
10	17	48	-104	522	1	5
11	113	52	-104	439	-2	1
12	17	48	-104	439	-2	1
13	147	53	105	940	12	11
14	46	49	-20	648	1	5
15	63	49	-20	648	3	6
16	30	48	105	731	3	6
<b>Average:</b> 54			<b>Average:</b> 3		<b>Average:</b> 3	
<b>Maximum:</b> 147			<b>Maximum:</b> 12		<b>Maximum:</b> 12	
<b>Minimum:</b> -20			<b>Minimum:</b> -2		<b>Minimum:</b> -2	
Survey Date 9/28/2004			Survey Date 9/28/2004		Survey Date 9/30/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.444 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.8 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg $\sigma$ 0.163 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 13 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg $\sigma$ 10.8 cpm			Bkg $\sigma$ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

**General Area**  
Office Mezz (HVAC)

**Survey Unit**  
HVAC-1-F

**Class**  
1

**Part**  
Ceiling

**Material**  
Metal

**Size**  
795 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	105	51
2	117	52
3	126	52
4	0	47
5	-62	44
6	-46	45
7	76	50
8	-62	44
9	88	51
13	<u>192</u>	55

Average: 53

Maximum: 192

Minimum: -62

Survey Date 10/1/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 epm/dpm

Background 124. cpm

Bkg σ 10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net	Net Maximum
230	940
-21	731
-104	731
230	940
-104	731
-21	355
105	314
230	397
147	314
-21	815

Survey Date 10/1/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 epm/dpm

Background 124.9 cpm

Bkg σ 10.8 cpm

MDC 705 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-2	1
-2	1
1	5
18	13
38	19
18	13
25	15
20	14
34	18
<u>23</u>	15

Average: 17

Maximum: 38

Minimum: -2

Survey Date 10/2/2004

Inst. Model WPC-9550

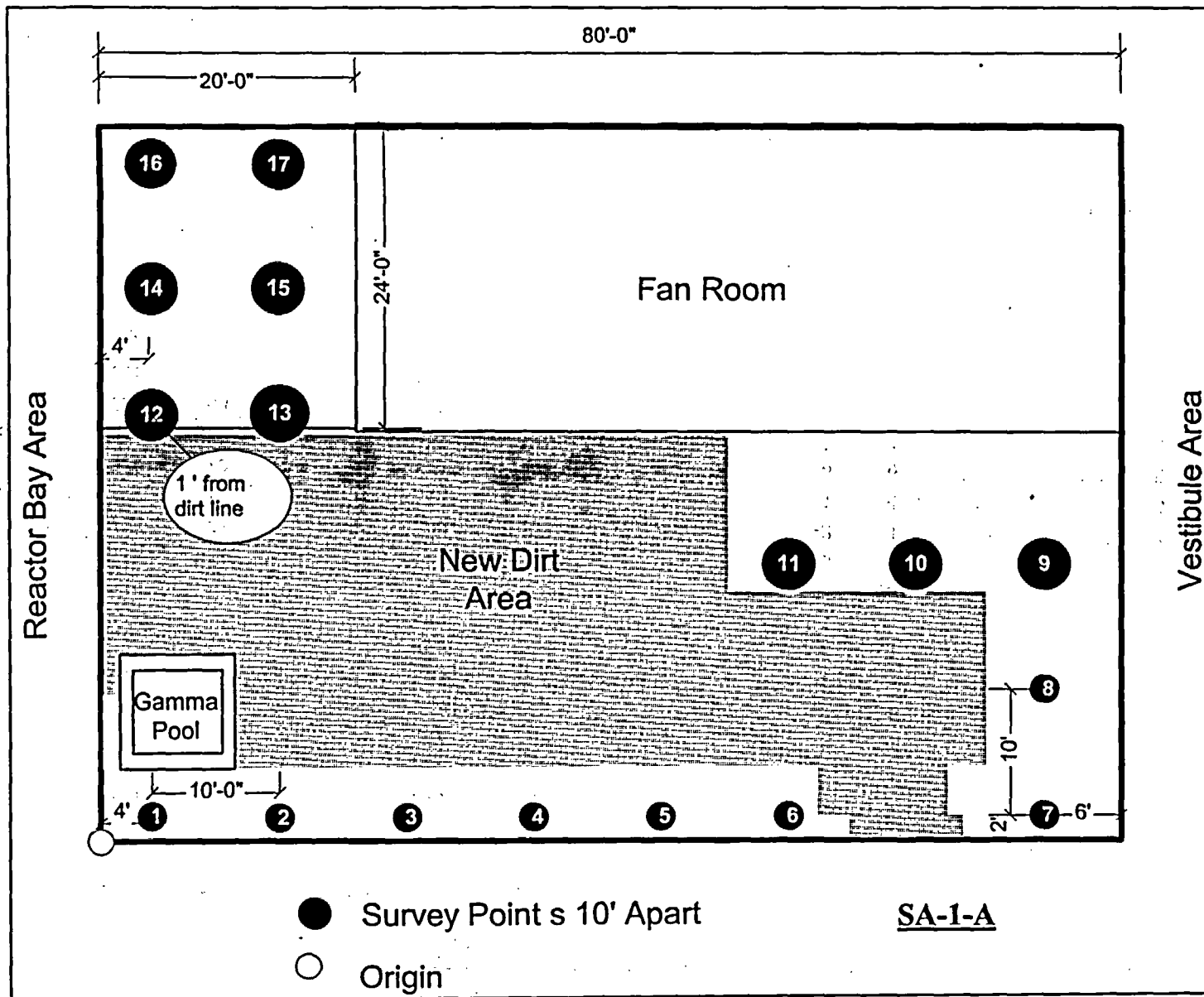
Ei 0.444 cpm/dpm

Background 0.93 cpm

Bkg σ 0.176 cpm

MDC 13 dpm/100 cm<sup>2</sup>

**SA-1-A      Service Area**



- Survey Points 10' Apart
- Origin

**SA-1-A**

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Service Area Floor	
SCIENTECH, Inc. 145 WEST STREET NEW MILFORD, CT 06476	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/16/2004
By: C.W.	CK:
FIGURE: SA-1-A	

**General Area**  
Service Area

**Survey Unit**  
SA-1-A

**Class**  
1

**Part**  
Floor

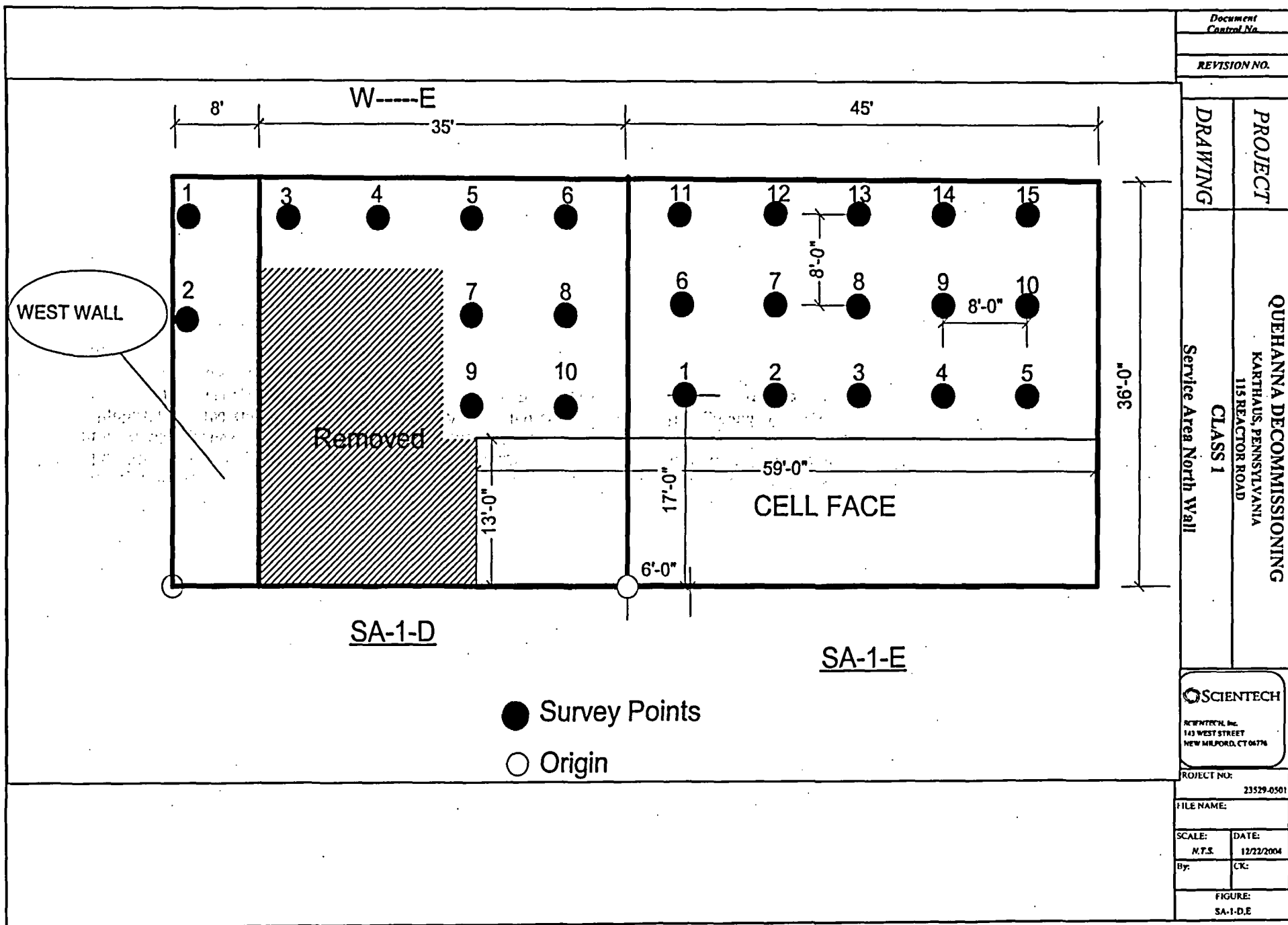
**Material**  
Concrete

**Size**  
1026 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	148	59	-253	165	-2	1	7
2	252	62	-3	332	12	11	9
3	206	61	248	582	3	6	9
4	419	68	415	749	-2	1	8
5	361	66	332	582	1	4	7
6	636	74	582	833	-2	1	6
7	265	63	165	499	-2	1	10
8	227	61	165	373	-2	1	7
9	745	77	499	833	1	4	5
10	344	65	248	499	5	8	6
11	540	71	582	833	3	6	6
12	782	78	540	833	-2	1	4
13	711	76	582	749	1	4	5
14	578	72	415	666	3	6	5
15	674	75	582	749	-2	1	5
16	265	63	165	499	-2	1	5
17	365	66	248	749	5	8	5
<b>Average:</b> 442					<b>Average:</b> 1		<b>Average:</b> 6
<b>Maximum:</b> 782					<b>Maximum:</b> 12		<b>Maximum:</b> 10
<b>Minimum:</b> 148					<b>Minimum:</b> -2		<b>Minimum:</b> 4
Survey Date 12/19/2004			Survey Date 12/19/2004		Survey Date 12/20/2004		Survey Date 12/19/200
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.448 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.7 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.153 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 12 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg σ 10 cpm			Bkg σ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**SA-1-D and SA-1-E  
Service Areas**





**General Area**  
Service Area

**Survey Unit**  
SA-1-D

**Class**  
1

**Part**  
Wall

**Material**  
Metal

**Size**  
1064 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	76	50
2	71	50
3	-37	45
4	-104	42
5	664	70
6	-79	43
7	59	49
8	30	48
9	80	50
10	0	47

**Average:** 76

**Maximum:** 664

**Minimum:** -104

**Survey Date** 12/22/2004

**Inst. Model** M2360

**Probe Model** M43-93

**Probe Area** 100 cm<sup>2</sup>

**Ei** 0.479 cpm/epm

**Es** 0.5 epm/dpm

**Background** 124. cpm

**Bkg σ** 10.8 cpm

**MDC** 230 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Net Maximum
-104	147
-104	230
-21	147
-188	63
314	731
-21	314
-188	147
-21	230
63	230
-188	63

**Survey Date** 12/22/2004

**Inst. Model** M2360

**Probe Model** M43-93

**Probe Area** 100 cm<sup>2</sup>

**Ei** 0.479 cpm/epm

**Es** 0.5 epm/dpm

**Background** 124.9 cpm

**Bkg σ** 10.8 cpm

**MDC** 705 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
1	4
5	8
14	12
63	23
-1	1
-1	1
5	8
-1	1
-1	1
10	10

**Average:** 9

**Maximum:** 63

**Minimum:** -1

**Survey Date** 12/22/2004

**Inst. Model** WPC-9550

**Ei** 0.451 cpm/dpm

**Background** 0.63 cpm

**Bkg σ** 0.145 cpm

**MDC** 12 dpm/100 cm<sup>2</sup>

**General Area**  
Service Area

**Survey Unit**  
SA-1-E

**Class**  
1

**Part**  
Wall

**Material**  
Metal

**Size**  
990 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	25	48
2	130	52
3	63	49
4	13	47
5	71	50
6	122	52
7	101	51
8	0	47
9	-54	44
10	230	56
11	21	48
12	689	71
13	-12	46
14	126	52
15	5	47

**Average:** 102  
**Maximum:** 689  
**Minimum:** -54

Survey Date 11/22/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 cpm/dpm

Background 124. cpm

Bkg  $\sigma$  10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
21	147
1	63
-62	21
21	147
63	147
63	147
-21	21
-62	21
147	314
-21	105
564	815
-104	21
63	188
-21	63
-21	63

Survey Date 12/22/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10.8 cpm

MDC 705 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
10	10
16	12
1	4
3	6
8	9
12	11
8	9
10	10
3	6
19	13
3	6
1	4
3	6
1	4

**Average:** 6  
**Maximum:** 19  
**Minimum:** -1

Survey Date 12/22/2004

Inst. Model WPC-9550

Ei 0.451 cpm/dpm

Background 0.63 cpm

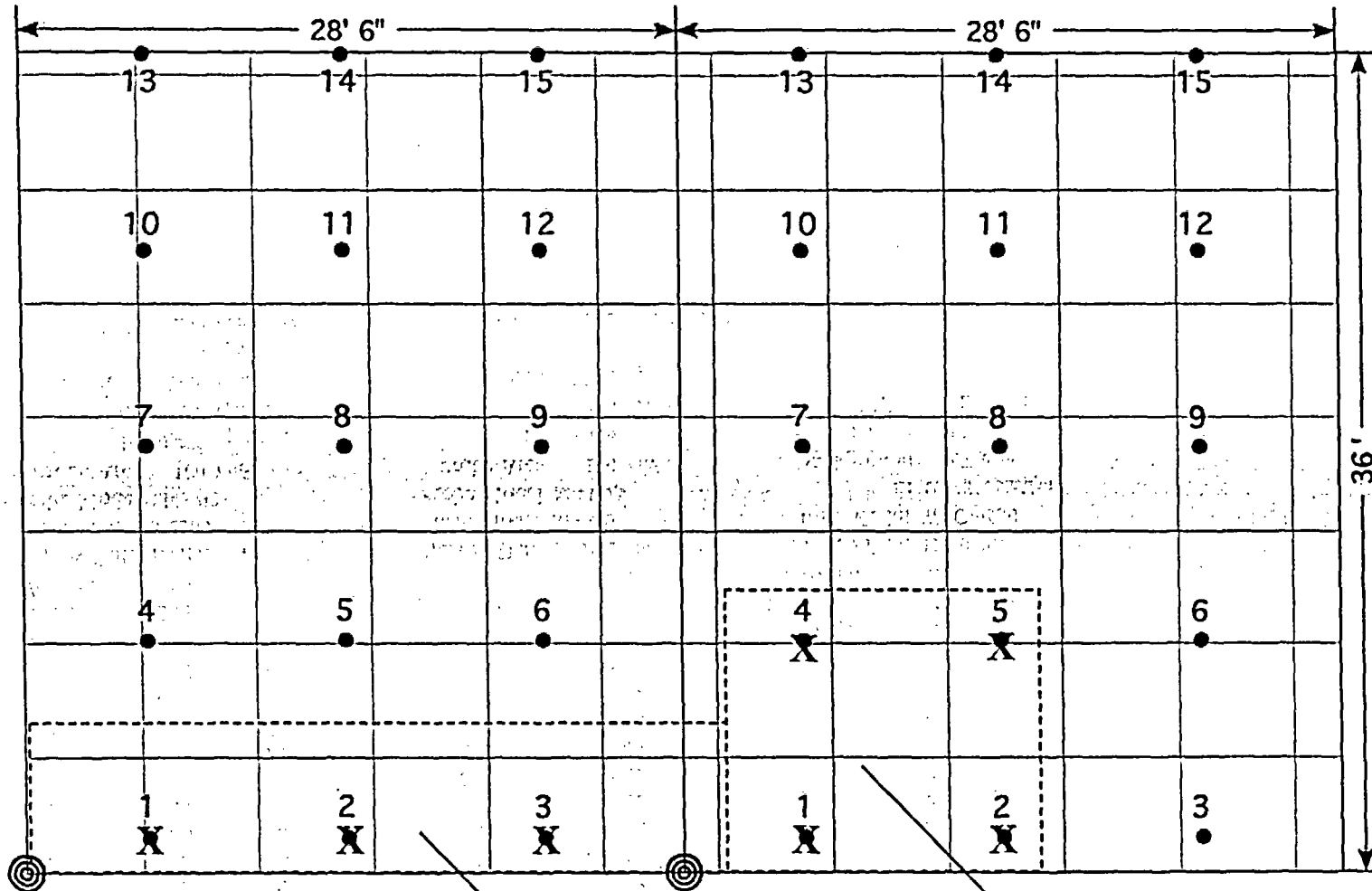
Bkg  $\sigma$  0.145 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**SA-1-F and SA-1-G  
Service Areas**



• SURVEY POINTS  
◎ STARTING LOCATION



SA-1-F

SA-1-G

No wall at point 1, 2, & 3

Doorway

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING

KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD

CLASS 1

Service Area East Wall

SCIENTECH

SCIENTECH, INC.  
143 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO:

23529-0501

FILE NAME:

SCALE:

N.T.S.

DATE:

07/12/2004

By:

CK:

FIGURE:

SA-1-F,G

**General Area**  
Service Area

**Survey Unit**  
SA-1-F

**Class**  
1

**Part**  
Wall

**Material**  
Metal

**Size**  
1026 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	272	58
2	80	50
3	243	57
4	309	59
5	213	55
6	535	66
7	184	54
8	564	67
9	698	71
10	251	57
11	314	59
12	<u>359</u>	61

**Average:** 335  
**Maximum:** 698  
**Minimum:** 80

Survey Date 12/19/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Net Maximum
314	397
63	146
230	314
314	397
230	314
564	648
146	230
564	648
648	731
230	314
314	397
397	481

Survey Date 12/19/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
1	4
7	9
-2	1
1	4
-2	1
-2	1
-2	1
-2	1
-2	1
1	4
<u>5</u>	8

**Average:** 0  
**Maximum:** 7  
**Minimum:** -2

Survey Date 12/20/2004

Inst. Model WPC-9550

Ei 0.448 cpm/dpm

Background 0.7 cpm

Bkg  $\sigma$  0.153 cpm

MDC 12 dpm/100 cm<sup>2</sup>

General Area  
Service Area

Survey Unit  
SA-1-G

Class  
1

Part  
Wall

Material  
Metal

Size  
1026 ft<sup>2</sup>

Beta Directs  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
3	-8	46
6	-33	45
7	9	47
8	-37	45
9	0	47
10	34	48
11	-46	45
12	-91	42
13	9	47
14	-58	44
15	-41	45

Average: -24

Maximum: 34

Minimum: -91

Survey Date 12/21/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124. cpm

Bkg  $\sigma$  10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

Beta Scans  
(dpm/100 cm<sup>2</sup>)

Net Activity	Net Maximum
-188	21
-104	-20
-188	63
-104	-20
-146	105
-188	63
-104	63
-21	147
-104	21
-104	-20
-62	63

Survey Date 12/22/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10.8 cpm

MDC 705 dpm/100 cm<sup>2</sup>

Smears  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
3	6
-1	1
1	4
1	4
-1	1
-1	1
1	4
1	4
3	6
-1	1
-1	1

Average: 0

Maximum: 3

Minimum: -1

Survey Date 12/22/2004

Inst. Model WPC-9550

Ei 0.451 cpm/dpm

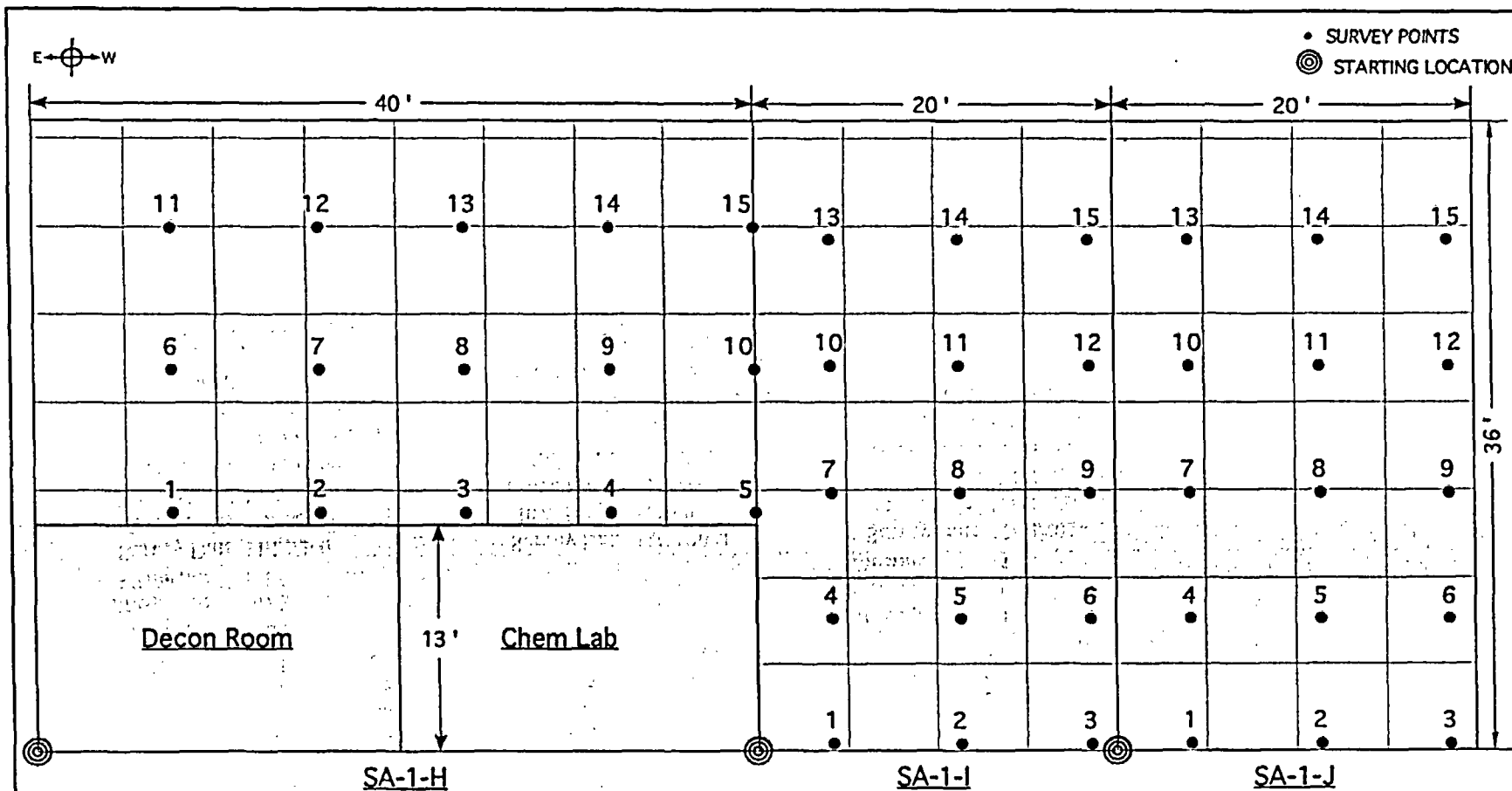
Background 0.63 cpm

Bkg  $\sigma$  0.145 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**SA-1-H through SA-1-J**  
**Service Areas**





Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING	
KARTHANS, PENNSYLVANIA	
115 REACTOR ROAD	
CLASS 1	
Service Area South Wall	
SCIENTECH	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06716	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/12/2004
By:	CK:
FIGURE: SA-1-HJJ	

General Area  
Service Area

Survey Unit  
SA-1-H

Class  
1

Part  
Wall

Material  
Metal

Size  
920 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	-62	44
2	-37	45
3	0	47
4	-12	46
5	30	48
6	17	48
7	59	49
8	142	53
9	243	57
10	305	59
11	476	65
12	-66	44
13	71	50
14	-8	46
15	84	50

Average: 83

Maximum: 476

Minimum: -66

Survey Date 11/22/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Net Maximum
-104	146
-104	-21
-62	21
-21	21
-146	105
-104	230
-104	105
63	230
230	355
230	522
272	564
-21	63
-62	63
-21	63
-104	-21

Survey Date 12/22/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**

(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
3	6
-1	1
1	4
1	4
-1	1
3	6
1	4
3	6
1	4
-1	1
5	8
1	4
3	6

Average: 1

Maximum: 5

Minimum: -1

Survey Date 12/22/2004

Inst. Model WPC-9550

Ei 0.451 cpm/dpm

Background 0.63 cpm

Bkg  $\sigma$  0.145 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**General Area**  
Service Area

**Survey Unit**  
SA-1-I

**Class**  
1

**Part**  
Wall

**Material**  
Metal

**Size**  
720 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	-12	46
2	109	51
3	38	48
4	80	50
5	-37	45
6	46	49
7	218	56
8	0	47
9	51	49
10	9	47
11	5	47
12	-50	44
13	63	49
14	-29	45
15	-12	46

Average: 32  
Maximum: 218  
Minimum: -50

Survey Date 11/22/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Net Maximum
-104	67
-104	-21
21	146
-104	63
-21	63
-104	21
21	105
-104	21
146	314
-21	230
-104	63
21	105
-104	63
63	272
-104	63

Survey Date 12/22/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
-1	1
3	6
-1	1
-1	1
-1	1
-1	1
1	4
-1	1
-1	1
1	4
-1	1
-1	1
-1	1
-1	1

Average: 0  
Maximum: 3  
Minimum: -1

Survey Date 12/22/2004

Inst. Model WPC-9550

Ei 0.451 cpm/dpm

Background 0.63 cpm

Bkg  $\sigma$  0.145 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**General Area**  
Service Area

**Survey Unit**  
SA-1-J

**Class**  
1

**Part**  
Wall

**Material**  
Concrete/metal

**Size**  
720 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1 concrete	695	76
2 concrete	511	70
3 concrete	194	60
4 concrete	369	66
5 concrete	457	69
6 concrete	-124	48
7 metal	0	47
8 metal	38	48
9 metal	-4	47
10 metal	-112	41
11 metal	-100	42
12 metal	25	48
13 metal	-16	46
14 metal	-62	44
15 metal	-79	43

**Average:** 119

**Maximum:** 695

**Minimum:** -124

Survey Date 12/21/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160/125cpm

Bkg σ 10/11 cpm

MDC259/230 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
499	916
332	1000
582	916
165	415
-3	165
-86	123
314	564
-104	147
147	481
63	397
-21	230
-104	147
-21	230
147	397
-21	314

Survey Date 12/22/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160/125cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
1	4
1	4
5	8
1	4
3	6
10	10
-1	1
-1	1
3	6
-1	1
5	8
3	6
1	4
5	8
1	4

**Average:** 2

**Maximum:** 10

**Minimum:** -1

Survey Date 12/22/2004

Inst. Model WPC-9550

Ei 0.451 cpm/dpm

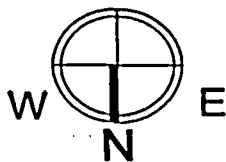
Background 0.63 cpm

Bkg σ 0.145 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**SA-1-K      Service Area**

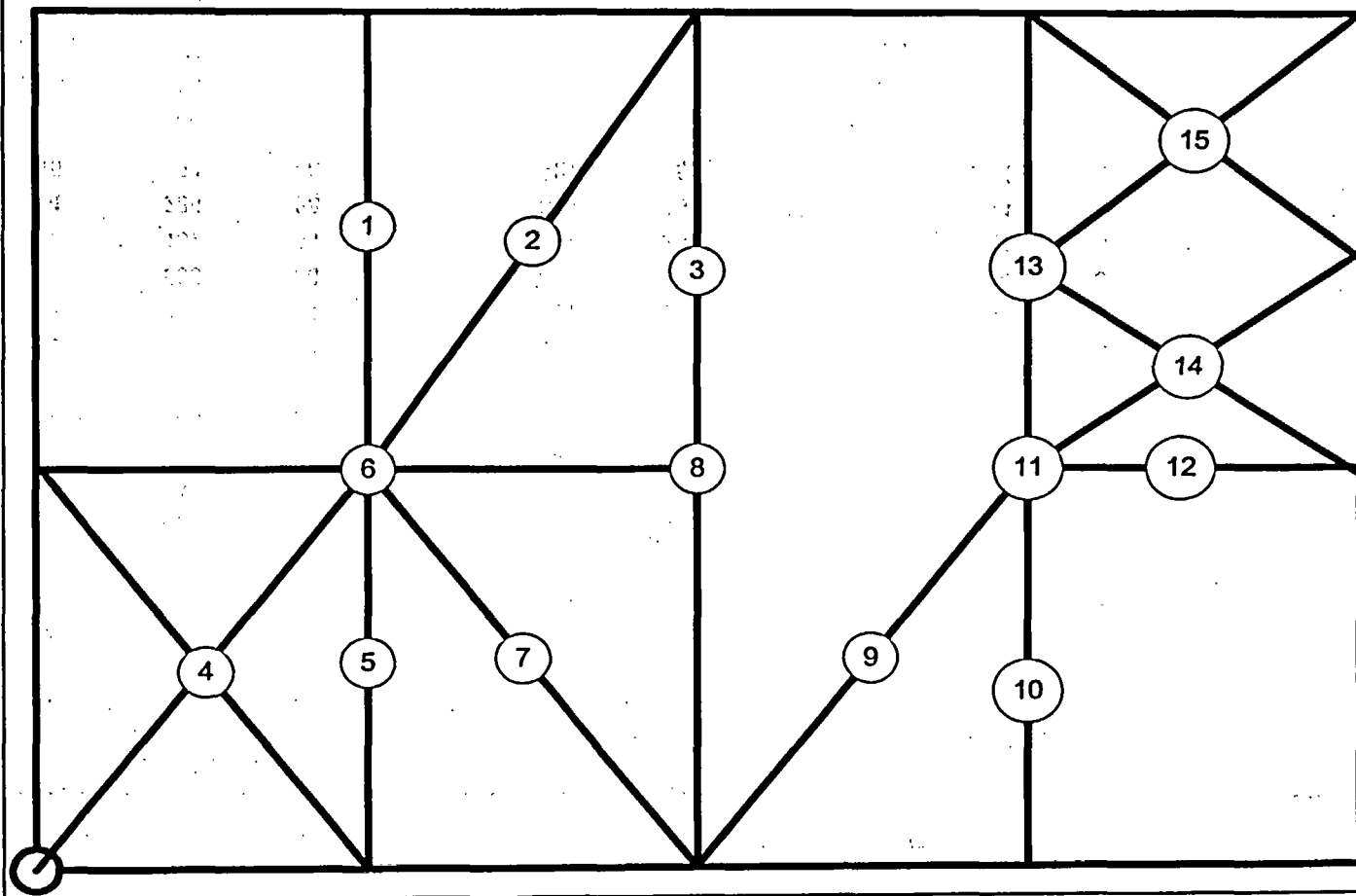
Looking Up



Lower Ceiling Beams

80'-0"

57'-0"



SA-1-K

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Service Area Beams: SA-1-K

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06776

PROJECT NO:  
23329-0501

FILE NAME:

SCALE: DATE:  
N.T.S. 12/09/2004

By: CK:  
ah

FIGURE:  
SA-1-K

**General Area**  
Service Area

**Survey Unit**  
SA-1-K

**Class**  
1

**Part**  
Beam

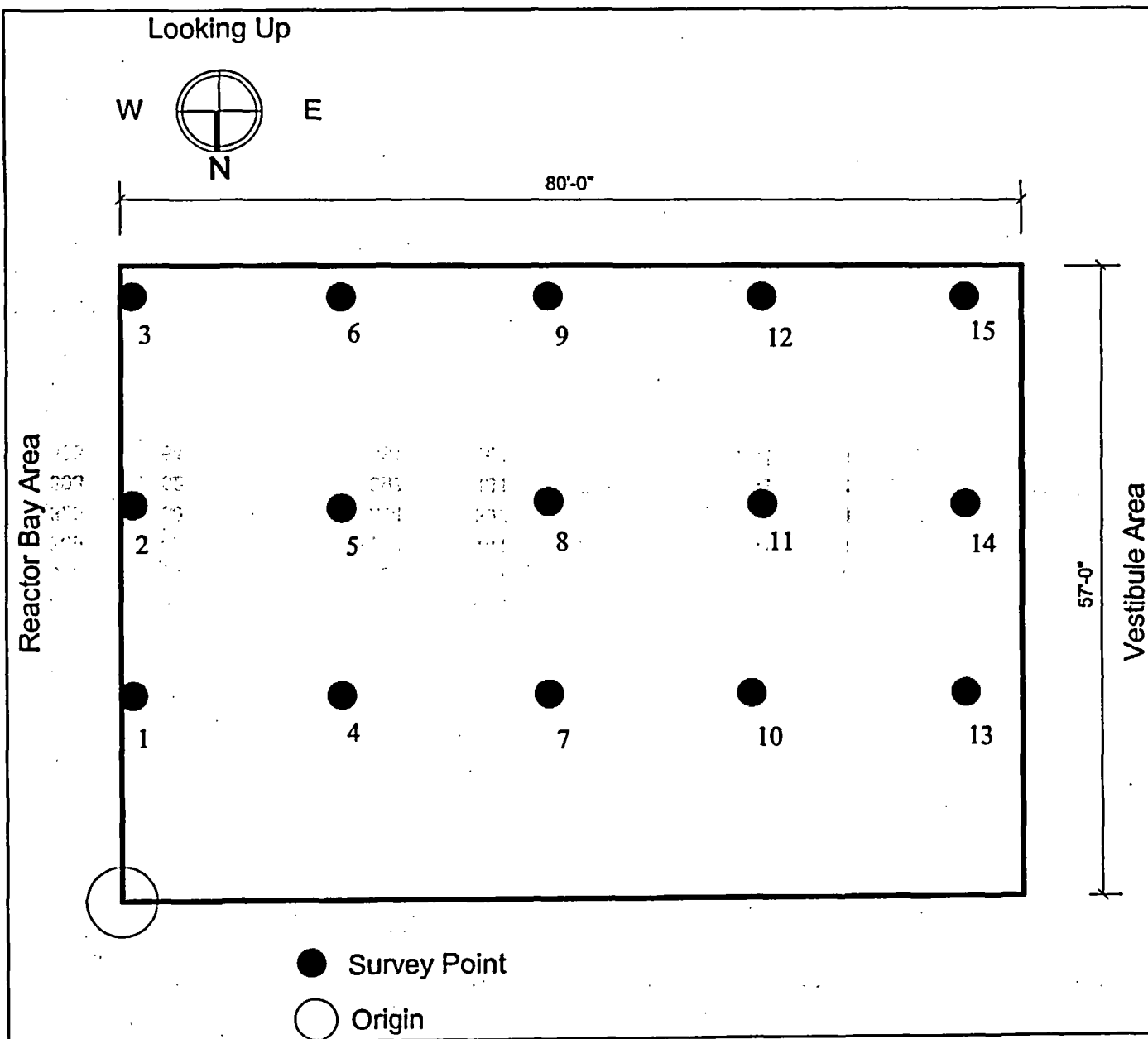
**Material**  
Metal

**Size**  
910 R<sup>2</sup>


Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	564	67	564	648	4	6
2	364	61	397	481	8	9
3	343	60	314	481	1	5
4	184	54	147	230	4	6
5	401	62	397	481	6	8
6	147	53	147	230	-1	1
7	481	65	481	564	1	5
8	263	57	230	314	4	6
9	301	59	314	397	-1	1
10	176	54	147	230	1	5
11	456	64	481	564	-1	1
12	506	66	481	564	4	6
13	167	54	147	230	1	5
14	284	58	314	397	-1	1
15	21	48	-21	63	1	5
<b>Average:</b> 311			<b>Average:</b> 2		<b>Average:</b> 2	
<b>Maximum:</b> 564			<b>Maximum:</b> 8		<b>Maximum:</b> 8	
<b>Minimum:</b> 21			<b>Minimum:</b> -1		<b>Minimum:</b> -1	
Survey Date 12/17/2004			Survey Date 12/17/2004		Survey Date 12/18/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.444 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.47 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg $\sigma$ 0.125 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg $\sigma$ 10.8 cpm			Bkg $\sigma$ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

**SA-2-A      Service Area**





SA-2-A

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 2 Service Area Ceiling	
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/22/2004
By: CW	CR:
FIGURE: SA-2-A	

General Area  
Service Area

Survey Unit  
SA-2-A

Class  
2

Part  
Ceiling

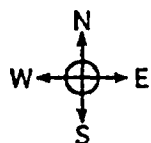
Material  
Metal

Size  
4560 ft<sup>2</sup>

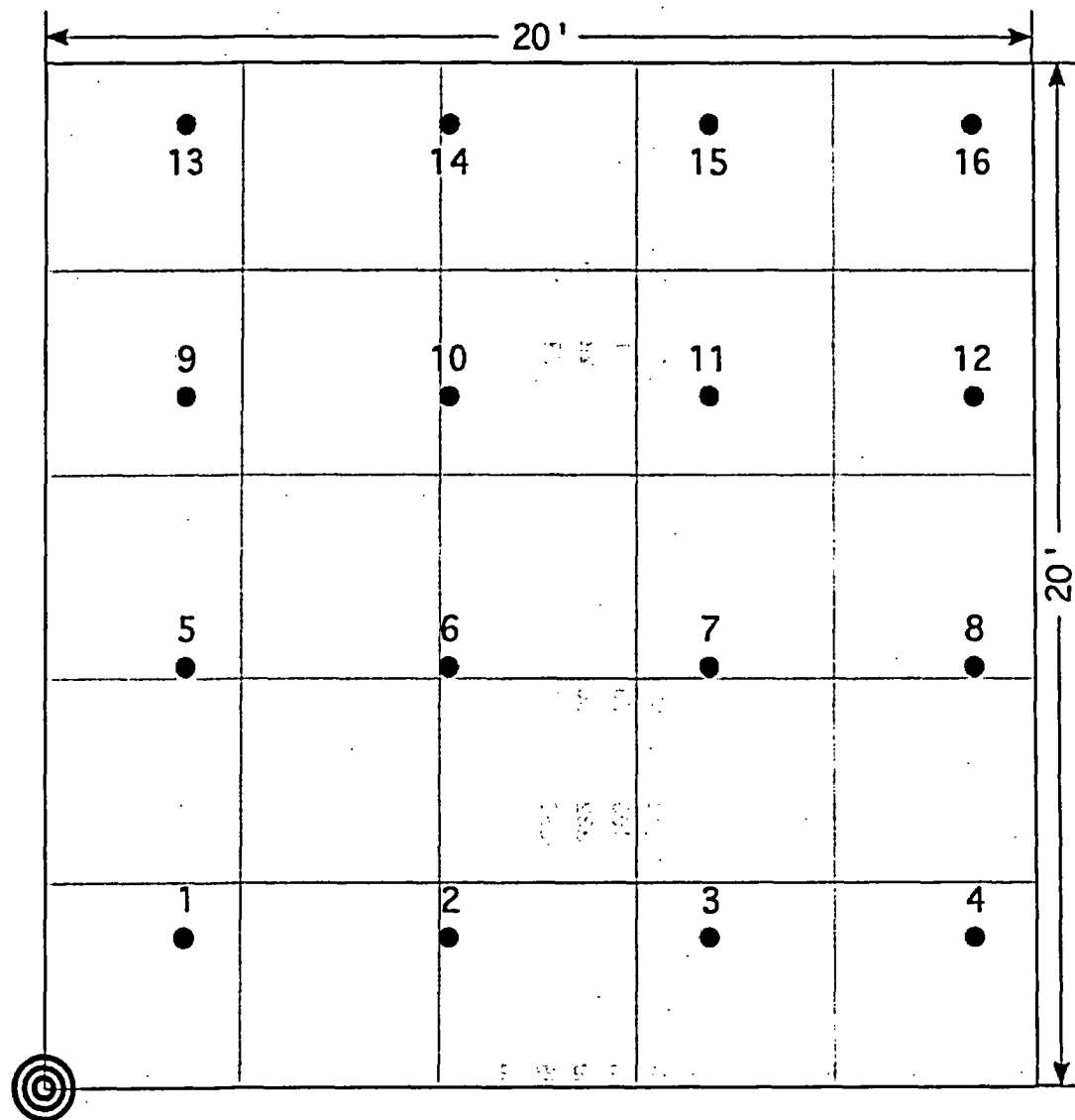
Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	368	61	314	481	-1	1
2	443	64	481	564	12	11
3	414	63	397	481	10	10
4	293	58	314	397	-1	1
5	276	58	314	397	-1	1
6	314	59	314	397	-1	1
7	343	60	314	397	-1	1
8	326	60	314	397	-1	1
9	255	57	230	481	4	6
10	547	67	564	648	-1	1
11	376	61	397	481	1	5
12	389	62	397	481	-1	1
13	326	60	314	397	-1	1
14	393	62	397	481	-1	1
15	468	64	481	564	-1	1
Average: 369					Average: 1	
Maximum: 547					Maximum: 12	
Minimum: 255					Minimum: -1	
Survey Date 12/17/2004			Survey Date 12/18/2004		Survey Date 12/18/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.444 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.47 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.125 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

**CHEM-1-A Chemistry Lab**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENTECH, INC. 143 WEST STREET NEW HAVEN, CT 06511	PROJECT NO: 23529-0501	FILE NAME:	DATE:	07/12/2004	FIGURE: CHEM-1-A
		DRAWING	CLASS 1 Chem Lab Floor				SCALE:	N.T.S.	



- SURVEY POINTS
- ◎ STARTING LOCATION



CHEM-1-A

General Area  
SA Chem Lab

Survey Unit  
CHEM-1-A

Class  
1

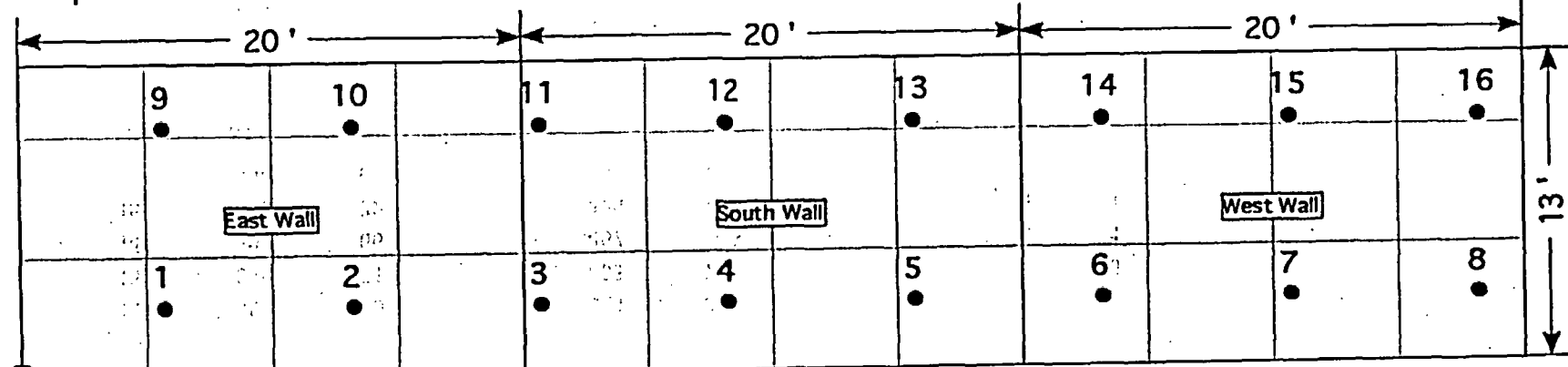
Part  
Floor

Material  
Concrete

Size  
400 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	590	73	499	749	4	6	10
2	215	61	165	499	1	4	8
3	344	65	165	582	1	4	7
4	181	60	81	415	6	8	5
5	423	68	248	499	4	6	9
6	85	56	-3	290	-1	1	7
7	398	67	165	666	-1	1	6
8	148	59	81	373	4	6	5
9	561	72	332	749	10	10	9
10	336	65	290	749	-1	1	7
11	720	76	499	749	6	8	5
12	377	66	332	582	10	10	5
13	611	73	499	791	1	4	8
14	461	69	332	666	28	16	6
15	436	68	332	582	33	17	4
16	419	68	165	499	1	4	4
Average: 394					Average: 7		Average: 7
Maximum: 720					Maximum: 33		Maximum: 10
Minimum: 85					Minimum: -1		Minimum: 4
Survey Date 12/17/2004			Survey Date 12/17/2004		Survey Date 12/17/2004		Survey Date 12/17/200
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.447 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/epm			Ei 0.479 cpm/epm		Bkg σ 0.12 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg σ 10 cpm			Bkg σ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**CHEM-1-B Chemistry Lab**



CHEM-1-B

- SURVEY POINTS
- ⊙ STARTING LOCATION

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING	
KARHAUS, PENNSYLVANIA	
115 REACTOR ROAD	
CLASS 1	
Chem Lab Walls	
SCIENTECH	
SCIENTECH, INC.	
143 WEST STREET	
NEW MILFORD, CT 06476	
PROJECT NO:	
23529-0501	
FILE NAME:	
SCALE:	DATE:
N.T.S.	07/12/2004
By:	CK:
FIGURE:	
CHEM-1-B	

General Area  
SA Chem Lab

Survey Unit  
CHEM-1-B

Class  
1

Part  
Walls


Material  
Concrete

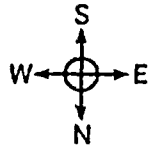
Size  
780 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	-99	49	-44	123	-1	1
2	-3	53	81	248	4	6
3	-111	48	-86	165	-1	1
4	465	69	332	666	-1	1
5	553	72	499	833	1	4
6	515	70	457	749	-1	1
7	774	78	833	916	1	4
8	599	73	707	791	4	6
9	56	55	248	415	4	6
10	-40	51	81	165	-1	1
11	-94	49	60	206	-1	1
12	494	70	624	833	-1	1
13	540	71	603	749	4	6
14	369	66	457	666	-1	1
15	553	72	499	791	-1	1
16	444	68	499	749	1	4
Average: 313					Average: 1	
Maximum: 774					Maximum: 4	
Minimum: -111					Minimum: -1	
Survey Date 12/17/2004			Survey Date 12/17/2004		Survey Date 12/17/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.447 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm	
Ei 0.479 cpm/epm			Ei 0.479 cpm/epm		Bkg σ 0.12 cpm	
Es 0.5 epm/dpm			Es 0.5 epm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 160.6 cpm			Background 160.6 cpm			
Bkg σ 10 cpm			Bkg σ 10 cpm			
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>			

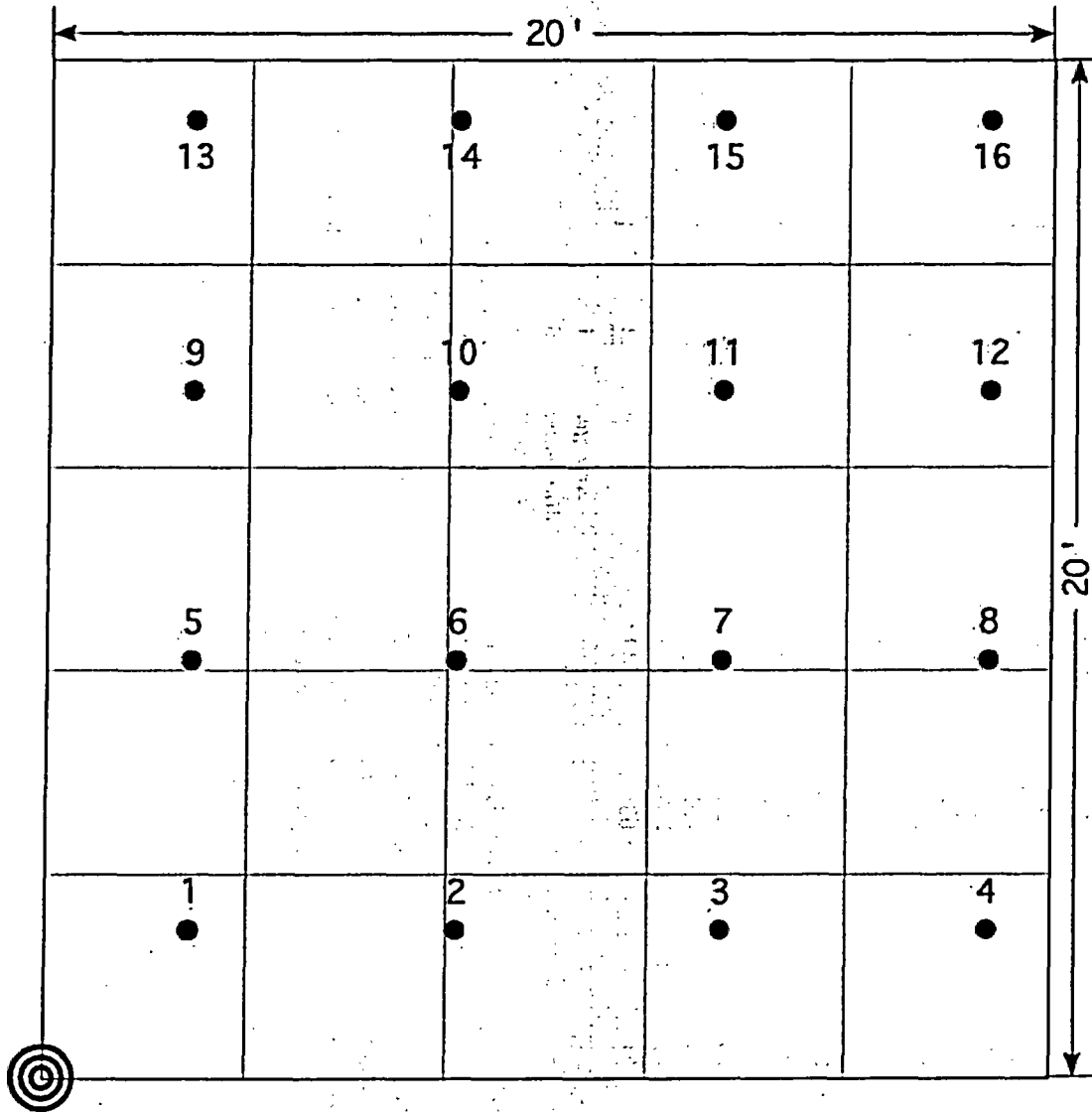


**CHEM-1-C Chemistry Lab**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENCETECH 140 WEST STREET NEW HAVEN, CT 06714	PROJECT NO. 33579-0501	FILE NAME:	DATE:	07/12/2004	BY:	CK:	FIGURE:	CHEM-1-C
		DRAWING	CLASS 1 Chem Lab Ceiling				SCALE:	N.T.S.				



- SURVEY POINTS
- ◎ STARTING LOCATION



CHEM-1-C

General Area  
SA Chem Lab

Survey Unit  
CHEM-1-C

Class  
1

Part  
Ceiling

Material  
Metal

Size  
400 ft<sup>2</sup>

Beta Directs  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	176	54
2	109	51
3	167	54
4	109	51
5	92	51
6	88	51
7	197	55
8	163	54
9	205	55
10	122	52
11	109	51
12	180	54
13	167	54
14	147	53
15	63	49
16	<u>105</u>	51

Average: 137

Maximum: 205

Minimum: 63

Survey Date 12/17/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg σ 10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

Beta Scans  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
-20	314
-104	314
63	230
-104	147
-20	314
-20	314
-20	230
21	314
-20	314
-104	397
-104	230
-62	314
-20	230
-104	230
-104	147
63	147

Survey Date 12/17/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

Smears  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
1	4
-1	1
-1	1
4	6
-1	1
6	8
1	4
-1	1
1	4
-1	1
1	4
4	6
4	6
<u>-1</u>	1

Average: 1

Maximum: 6

Minimum: -1

Survey Date 12/17/2004

Inst. Model WPC-9550

Ei 0.447 cpm/dpm

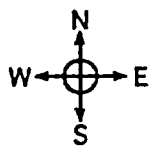
Background 0.43 cpm

Bkg σ 0.12 cpm

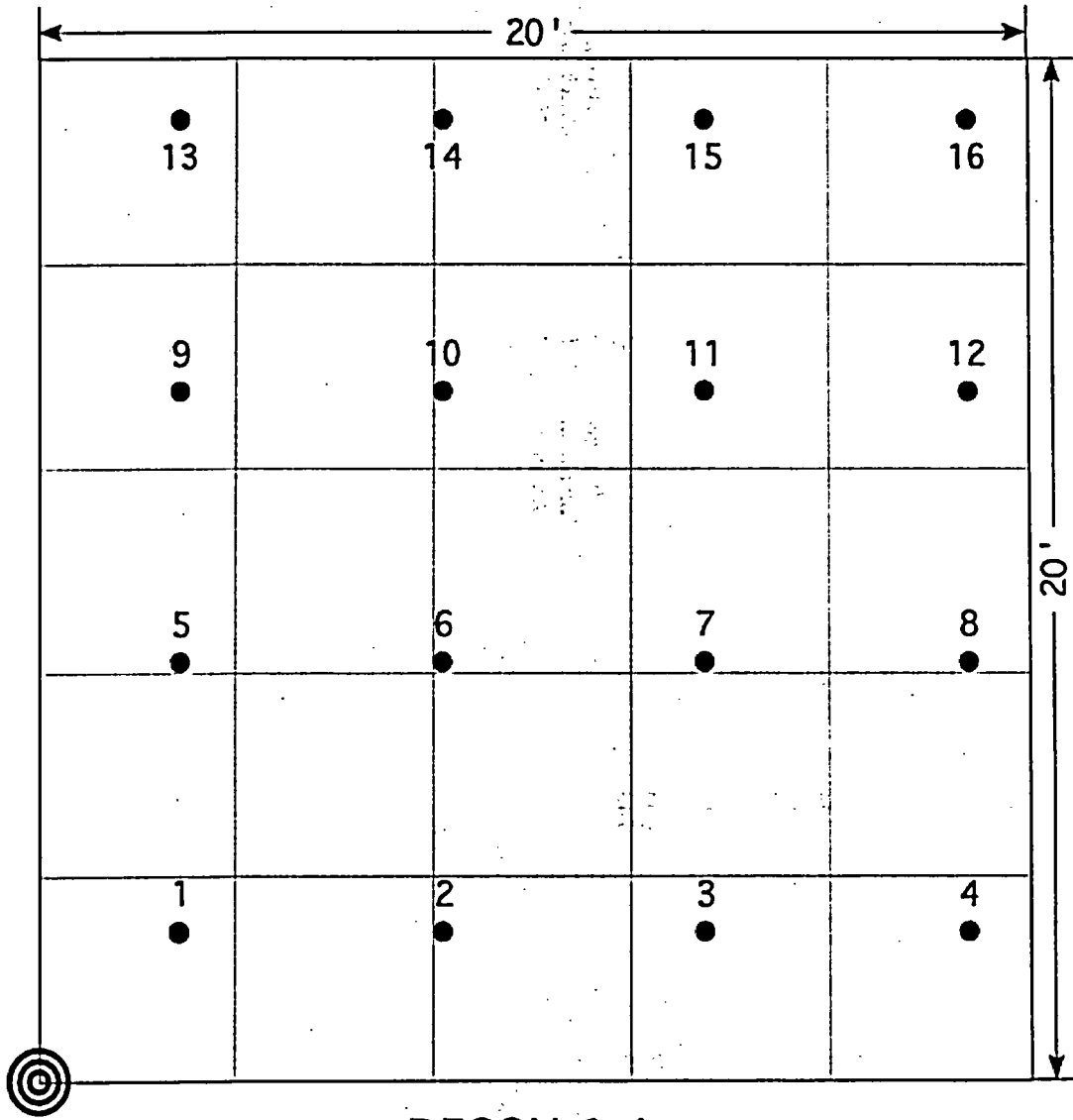
MDC 11 dpm/100 cm<sup>2</sup>

**DECON-1-A Decontamination Room**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENTECH, LLC 143 WEST STREET NEW HAVEN, CT 06511	PROJECT NO.: 23529-0501	FILE NAME:	DATE:	07/12/2004	BY:	FIGURE:	DECON-1-A
		DRAWING	CLASS 1 Decon Room Floor				SCALE:	N.T.S.			



• SURVEY POINTS  
 ◎ STARTING LOCATION



**DECON-1-A**

**General Area**  
SA Decon Room

**Survey Unit**  
DECON-1-A

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
400 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	277	63
2	302	64
3	215	61
4	686	75
5	553	72
6	352	65
7	269	63
8	448	68
9	578	72
10	386	66
11	908	81
12	544	71
13	377	66
14	419	68
15	941	82
16	795	78

Average: 503  
Maximum: 941  
Minimum: 215

Survey Date 12/21/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
499	582
749	874
582	624
415	457
499	499
582	666
499	624
415	499
332	415
749	916
666	749
499	624
415	582
582	749
833	916
749	833

Survey Date 12/21/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
1	4
1	4
-1	1
1	4
-1	1
5	8
3	6
1	4
-1	1
-1	1
1	4
-1	1
1	4
1	4
-1	1

Average: 1  
Maximum: 5  
Minimum: -1

Survey Date 12/22/2004

Inst. Model WPC-9550

Ei 0.451 cpm/dpm

Background 0.63 cpm

Bkg σ 0.145 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**Gross Exposure Rate**  
(μ R/hour)

4  
4  
5  
4  
5  
4  
4  
5  
5  
5  
5  
5  
5  
5  
5  
5

Average: 5  
Maximum: 5  
Minimum: 4

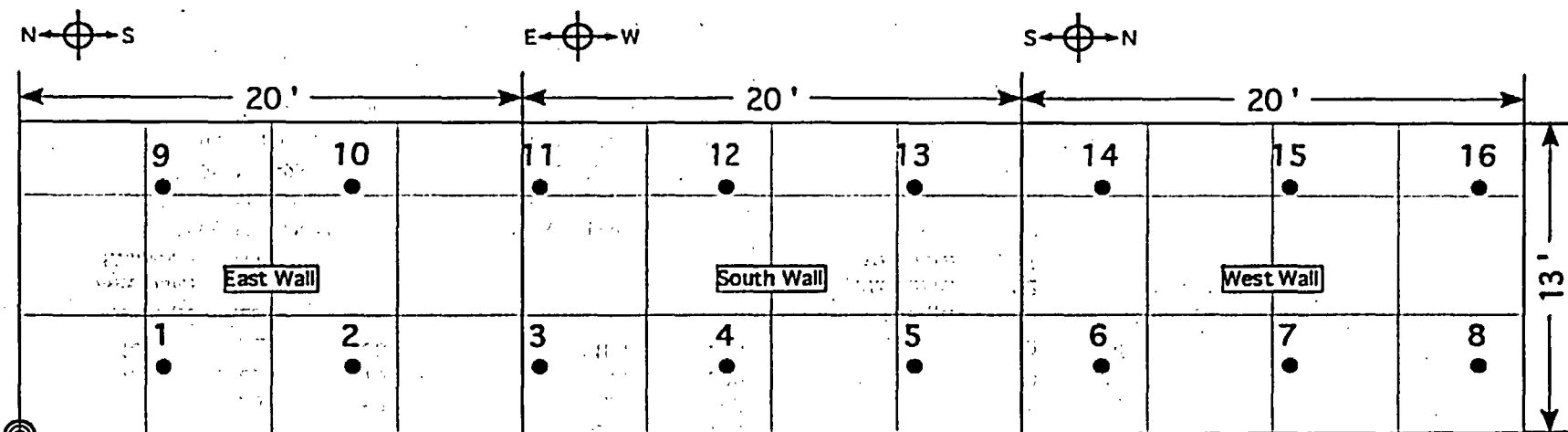
Survey Date 12/21/200

Inst. Model M19

Background 4.5 μ R/hour

Bkg σ 0.5 μ R/hour

**DECON-1-B Decontamination Room**



DECON-1-B

- SURVEY POINTS
- ⊙ STARTING LOCATION

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Decon Room Walls	
SCIENTECH SCIENTECH, Inc. 141 WEST STREET NEW MILFORD, CT 06476	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/12/2004
By:	CK:
FIGURE: DECON-1-B	



**General Area**  
SA Decon Room

**Survey Unit**  
DECON-1-B

**Class**  
1

**Part**  
Walls

**Material**  
Concrete

**Size**  
780 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	-107	49
2	-107	49
3	632	74
4	478	69
5	641	74
6	81	56
7	265	63
8	173	59
9	-115	48
10	-119	48
11	469	69
12	482	69
13	423	68
14	252	62
15	824	79
16	373	66

**Average:** 290

**Maximum:** 824

**Minimum:** -119

Survey Date 12/21/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160. cpm

Bkg  $\sigma$  10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net	Net Maximum
-86	-3
-86	-3
499	582
499	582
499	582
248	499
833	916
540	415
-86	-3
-86	-3
666	749
499	582
666	749
81	165
248	332
165	248

Survey Date 12/21/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg  $\sigma$  10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
92	28
1	4
3	6
5	8
-1	1
-1	1
23	14
-1	1
-1	1
5	8
19	13
3	6
-1	1
10	10
5	8

**Average:** 10

**Maximum:** 92

**Minimum:** -1

Survey Date 12/22/2004

Inst. Model WPC-9550


Ei 0.451 cpm/dpm

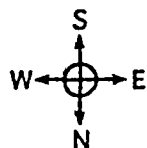
Background 0.63 cpm

Bkg  $\sigma$  0.145 cpm

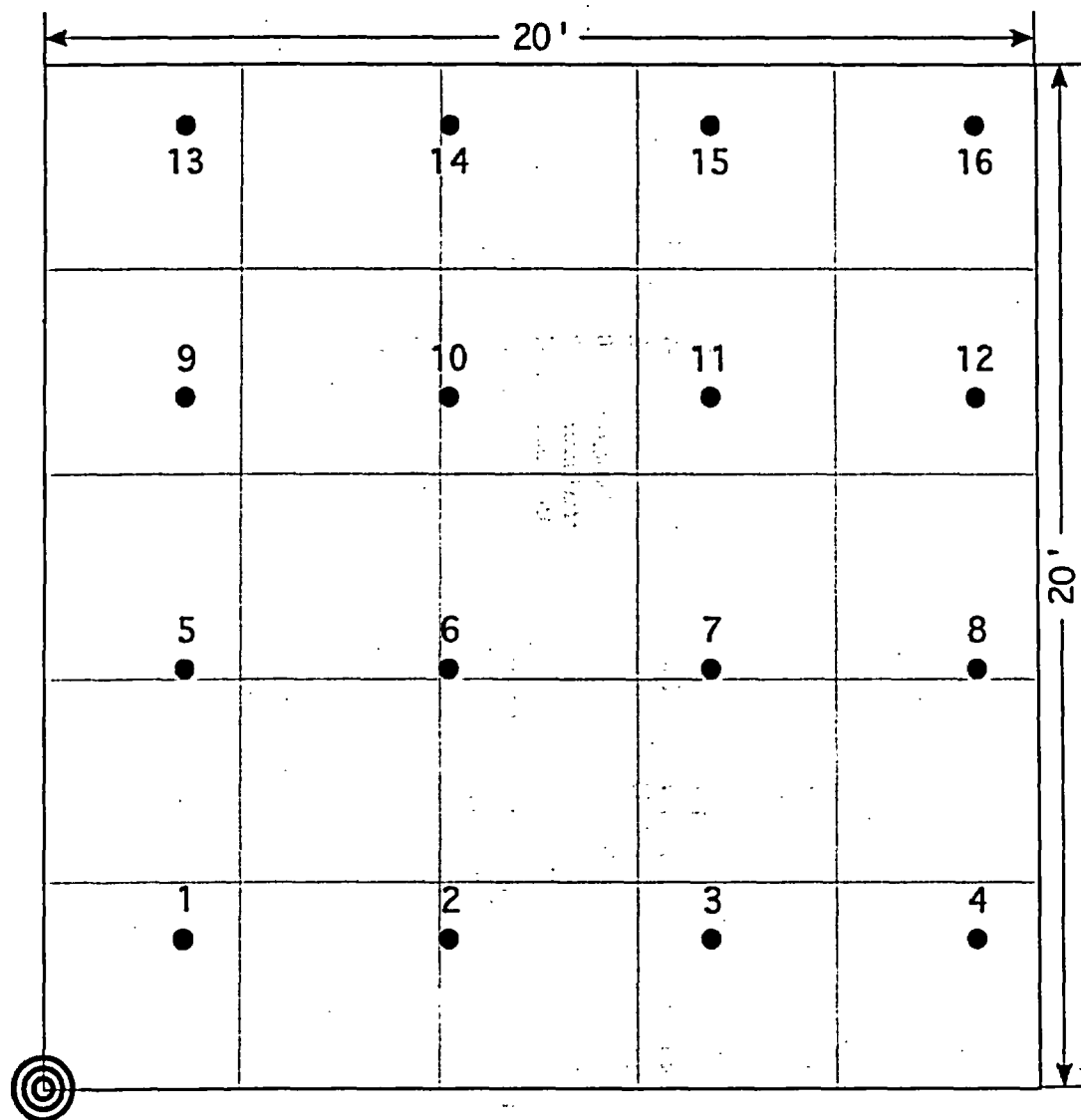
MDC 12 dpm/100 cm<sup>2</sup>

**DECON-1-C Decontamination Room**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENCETECH, INC. 143 WEST STREET NEW HAVEN, CT 06510	PROJECT NO: 23594-0501	FILE NAME:	DATE:	07/12/2004	FIGURE: DECON-1-C
		DRAWING	CLASS 1 Decon Room Ceiling				SCALE:	N.T.S.	



- SURVEY POINTS
- ◎ STARTING LOCATION



**DECON-1-C**

**General Area**  
SA Decon Room

**Survey Unit**  
DECON-1-C

**Class**  
1

**Part**  
Ceiling

**Material**  
Metal

**Size**  
400 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	176	54
2	209	55
3	923	78
4	180	54
5	359	61
6	147	53
7	163	54
8	134	52
9	117	52
10	188	55
11	122	52
12	201	55
13	702	72
14	522	66
15	460	64
16	263	57

**Average:** 304

**Maximum:** 923

**Minimum:** 117

Survey Date 12/21/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124. cpm

Bkg  $\sigma$  10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net	Net Maximum
230	230
147	230
898	982
230	230
481	648
397	481
230	314
397	439
63	230
147	230
105	147
63	147
147	230
147	147
147	230
648	731

Survey Date 12/21/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10.8 cpm

MDC 705 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
1	4
-1	1
-1	1
1	4
3	6
-1	1
-1	1
1	4
-1	1
-1	1
3	6
-1	1
-1	1
-1	1
1	4

**Average:** 0

**Maximum:** 3

**Minimum:** -1

Survey Date 12/22/2004

Inst. Model WPC-9550

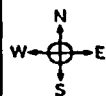
Ei 0.451 cpm/dpm

Background 0.63 cpm

Bkg  $\sigma$  0.145 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**FAN-1-A and FAN-1-B**  
**Fan Room**



• SURVEY POINTS  
◎ STARTING LOCATION

59'

92'

FAN-1-B

FAN-1-A

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Fan Room Floor

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06456

PROJECT NO:  
23529-0501

FILE NAME:

SCALE: DATE:  
N.T.S. 07/13/2004

By: CK:

FIGURE:  
FAN-1-A,B

<b>General Area</b>	<b>Survey Unit</b>	<b>Class</b>	<b>Part</b>	<b>Material</b>	<b>Size</b>
Fan Room	FAN-1-A	1	Floor	Concrete	770 ft <sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μR/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	778	160	-352	88	-1	1	4
2	-515	113	-498	-205	-1	1	4
3	-457	116	-352	-59	-1	1	4
4	-564	111	-59	381	3	6	4
5	272	144	674	968	-1	1	4
6	-477	115	-352	88	1	5	5
7	-263	124	88	235	1	5	4
8	973	166	88	381	-1	1	4
9	-428	117	-352	88	-1	1	4
10	-506	114	-205	88	-1	1	4
11	-263	124	-645	-352	1	5	4
12	-447	116	-645	-205	1	5	4
13	-457	116	-205	88	1	5	3
14	-554	112	381	674	1	5	4
15	<u>-379</u>	119	-352	-59	<u>-1</u>	1	<u>3</u>
<b>Average:</b>	-219			<b>Average:</b>	0	<b>Average:</b>	4
<b>Maximum:</b>	973			<b>Maximum:</b>	3	<b>Maximum:</b>	5
<b>Minimum:</b>	-564			<b>Minimum:</b>	-1	<b>Minimum:</b>	3

Survey Date 12/6/2004  
 Inst. Model M2221  
 Probe Model M44-9  
 Probe Area 15 cm<sup>2</sup>  
 Ei 0.457 cpm/cpm  
 Es 0.5 cpm/dpm  
 Background 62 cpm  
 Bkg σ 8 cpm  
 MDC 487 dpm/100 cm<sup>2</sup>

Survey Date 12/6/2004  
 Inst. Model M2221  
 Probe Model M44-9  
 Probe Area 15 cm<sup>2</sup>  
 Ei 0.457 cpm/cpm  
 Es 0.5 cpm/dpm  
 Background 62 cpm  
 Bkg σ 8 cpm  
 MDC 487 dpm/100 cm<sup>2</sup>

Survey Date 12/7/2004  
 Inst. Model WPC-9550  
 Ei 0.449 cpm/dpm  
 Background 0.4 cpm  
 Bkg σ 0.115 cpm  
 MDC 11 dpm/100 cm<sup>2</sup>

Survey Date 12/6/2004  
 Inst. Model M19  
 Background 4.5 μ R/hour  
 Bkg σ 0.5 μ R/hour

<b>General Area</b>	<b>Survey Unit</b>	<b>Class</b>	<b>Part</b>	<b>Material</b>	<b>Size</b>
Fan Room	FAN-1-B	1	Floor	Concrete	1005 ft <sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μR/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	-486	115	-586	205	-1	1	3
2	146	139	-59	645	1	4	3
3	-311	122	59	733	1	4	4
4	-136	129	88	821	4	6	4
5	-593	110	-498	-117	-1	1	3
6	-311	122	-469	-59	4	6	3
7	-272	123	-59	616	-1	1	4
8	-496	114	-293	235	1	4	4
9	-126	129	528	968	-1	1	4
10	-457	116	-352	88	-1	1	3
11	866	163	586	968	10	10	4
12	-272	123	528	821	4	6	3
13	-117	130	645	938	1	4	3
14	-496	114	-205	-59	1	4	4
15	-282	123	88	293	4	6	4
16	-10	134	0	235	1	4	4
17	117	138	88	381	10	10	4
18	525	152	674	821	-1	1	4
Average:	-151			Average:	2	Average:	4
Maximum:	866			Maximum:	10	Maximum:	4
Minimum:	-593			Minimum:	-1	Minimum:	3

Survey Date 12/6/2004  
 Inst. Model M2221  
 Probe Model M44-9  
 Probe Area 15 cm<sup>2</sup>  
 Ei 0.457 cpm/cpm  
 Es 0.5 cpm/dpm  
 Background 62 cpm  
 Bkg σ 8 cpm  
 MDC 487 dpm/100 cm<sup>2</sup>

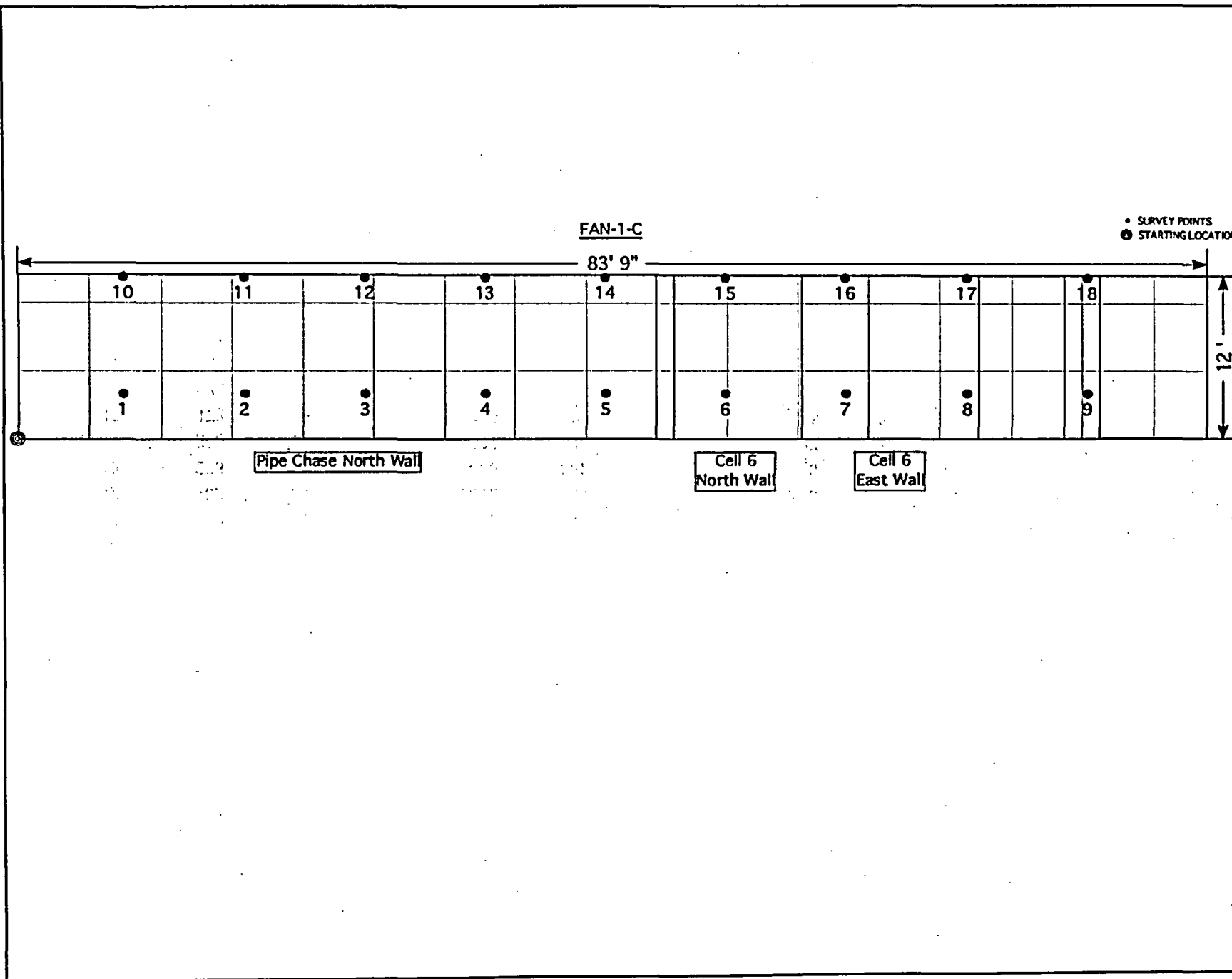
Survey Date 12/6/2004  
 Inst. Model M2221  
 Probe Model M44-9  
 Probe Area 15 cm<sup>2</sup>  
 Ei 0.457 cpm/cpm  
 Es 0.5 cpm/dpm  
 Background 62 cpm  
 Bkg σ 8 cpm  
 MDC 487 dpm/100 cm<sup>2</sup>

Survey Date 12/7/2004  
 Inst. Model WPC-9550  
 Ei 0.449 cpm/dpm  
 Background 0.4 cpm  
 Bkg σ 0.115 cpm  
 MDC 11 dpm/100 cm<sup>2</sup>

Survey Date 12/6/2004  
 Inst. Model M19  
 Background 4.5 μ R/hour  
 Bkg σ 0.5 μ R/hour



**FAN-1-C    Fan Room**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING
DRAWING	KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Fan Room Walls (1 of 4)
SCIENTECH <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/13/2004
By:	CK:
FIGURE: FAN-1-C	

General Area  
Fan Room

Survey Unit  
FAN-1-C

Class  
1

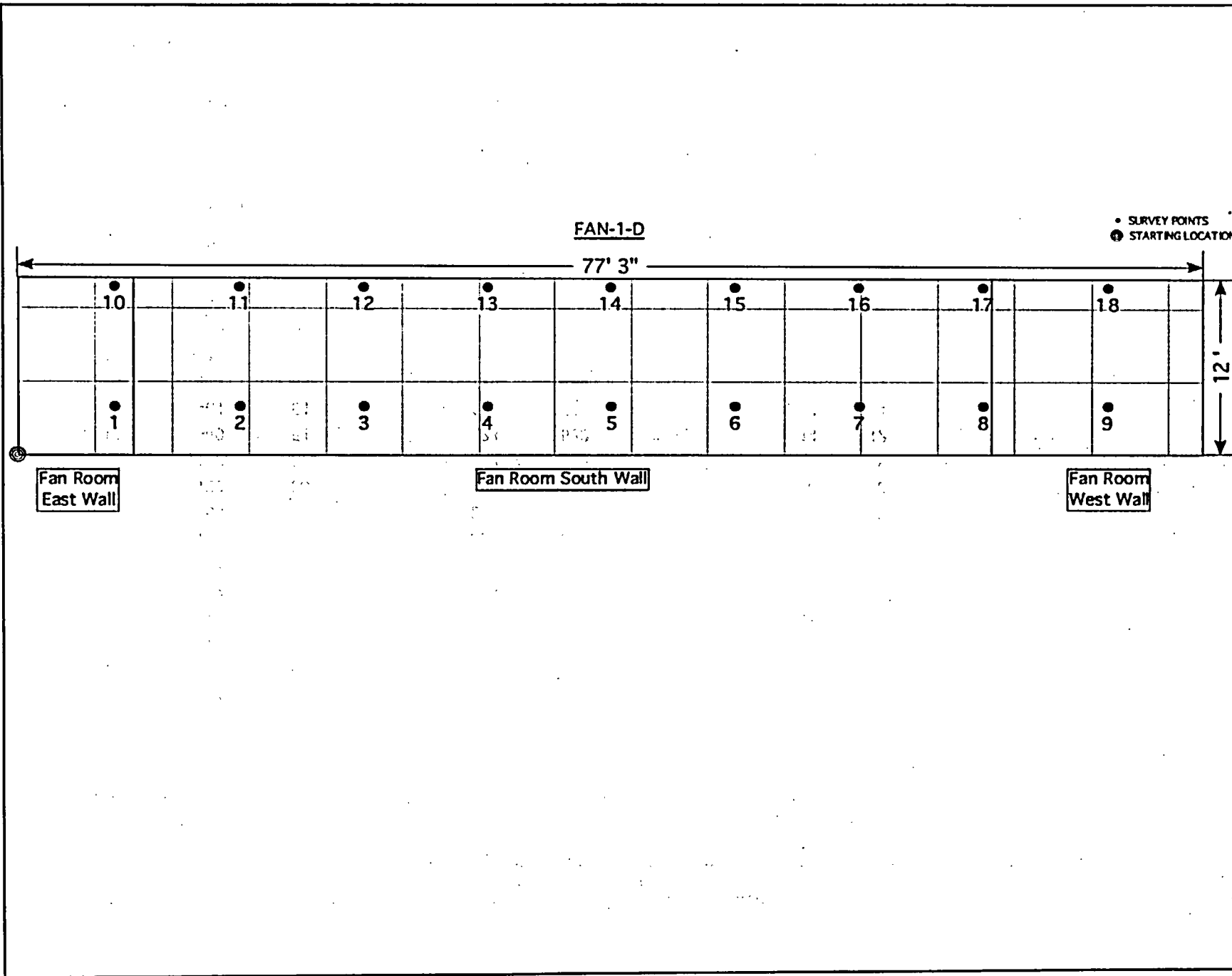
Part  
Wall

Material  
Concrete

Size  
1005 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	461	69	165	916	-1	1
2	323	64	415	916	6	8
3	494	70	332	916	1	4
4	273	63	81	833	3	6
5	215	61	499	582	3	6
6	85	56	415	916	-1	1
7	778	78	165	582	3	6
8	135	58	-86	165	-1	1
9	728	76	-3	248	6	8
10	-90	49	332	749	3	6
11	440	68	165	749	3	6
12	-82	50	332	791	3	6
13	273	63	666	582	8	9
14	269	63	332	833	37	18
15	173	59	415	582	6	8
16	578	72	499	582	-1	1
17	81	56	-86	165	8	9
18	311	64	81	415	8	9
Average: 303					Average: 5	
Maximum: 778					Maximum: 37	
Minimum: -90					Minimum: -1	
Survey Date 12/11/2004			Survey Date 12/12/2004		Survey Date 12/12/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.45 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.5 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg $\sigma$ 0.129 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 160.6 cpm			Background 160.6 cpm			
Bkg $\sigma$ 10 cpm			Bkg $\sigma$ 10 cpm			
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>			

**FAN-1-D      Fan Room**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Fan Room Walls (2 of 4)	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.P.S.	DATE: 07/13/2004
By:	CK:
FIGURE: FAN-I-D	

General Area  
Fan Room

Survey Unit  
FAN-1-D

Class  
1

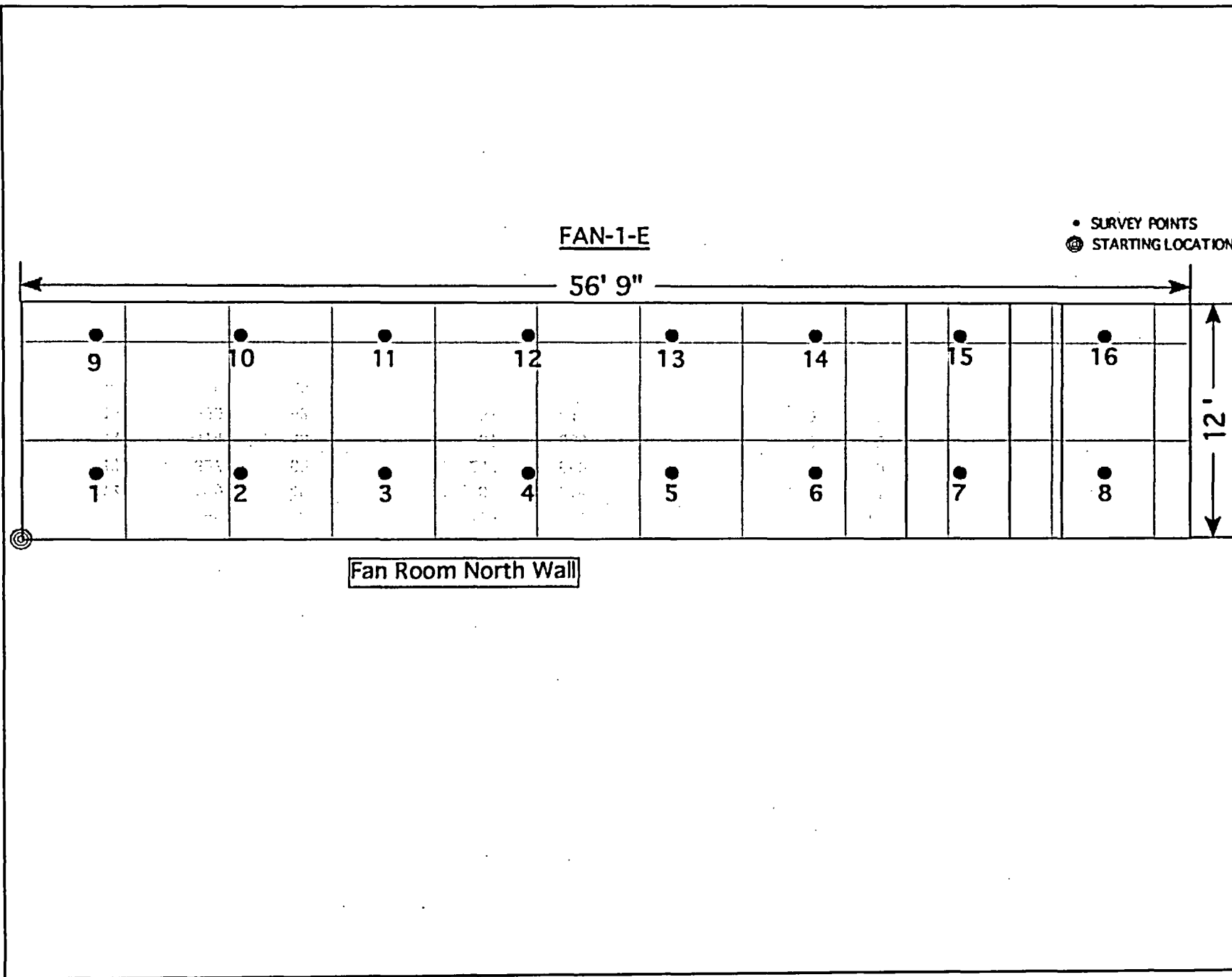
Part  
Wall

Material  
Concrete

Size  
927 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	398	67	833	582	-1	1
2	603	73	749	916	1	4
3	720	76	833	666	8	9
4	114	57	582	833	-1	1
5	14	54	248	833	-1	1
6	173	59	165	916	-1	1
7	173	59	415	666	-1	1
8	632	74	415	582	-1	1
9	-161	46	165	916	-1	1
10	127	58	332	582	-1	1
11	56	55	248	499	8	9
12	123	58	165	749	6	8
13	102	57	332	666	6	8
14	-40	51	123	833	14	12
15	-61	51	165	582	1	4
16	444	68	749	499	-1	1
17	-115	48	248	916	6	8
18	-69	50	415	666	1	4
Average: 180			Average: 2		Average: 2	
Maximum: 720			Maximum: 14		Maximum: 14	
Minimum: -161			Minimum: -1		Minimum: -1	
Survey Date 12/8/2004			Survey Date 12/8/2004		Survey Date 12/8/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.446 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.57 cpm	
Ei 0.479 cpm/epm			Ei 0.479 cpm/epm		Bkg σ 0.137 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 12 dpm/100 cm <sup>2</sup>	
Background 160.6 cpm			Background 160.6 cpm			
Bkg σ 10 cpm			Bkg σ 10 cpm			
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>			

**FAN-1-E      Fan Room**



Document Control No.	
REVISION NO.	
<b>DRAWING</b>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%; padding: 2px;"> <b>PROJECT</b>            QUEHANNA DECOMMISSIONING            KARTHANS, PENNSYLVANIA            115 REACTOR ROAD         </div> <div style="width: 50%; padding: 2px; text-align: center;"> <b>CLASS 1</b>            Fan Room Walls (3 of 4)         </div> </div>
<div style="text-align: center;"> <b>SCIENTECH</b>  <small>SCIENTECH, Inc.            143 WEST STREET            NEW MILFORD, CT 06456</small> </div>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/13/2004
By:	CK:
FIGURE: FAN-1-E	



**General Area**  
Fan Room

**Survey Unit**  
FAN-1-E

**Class**  
1

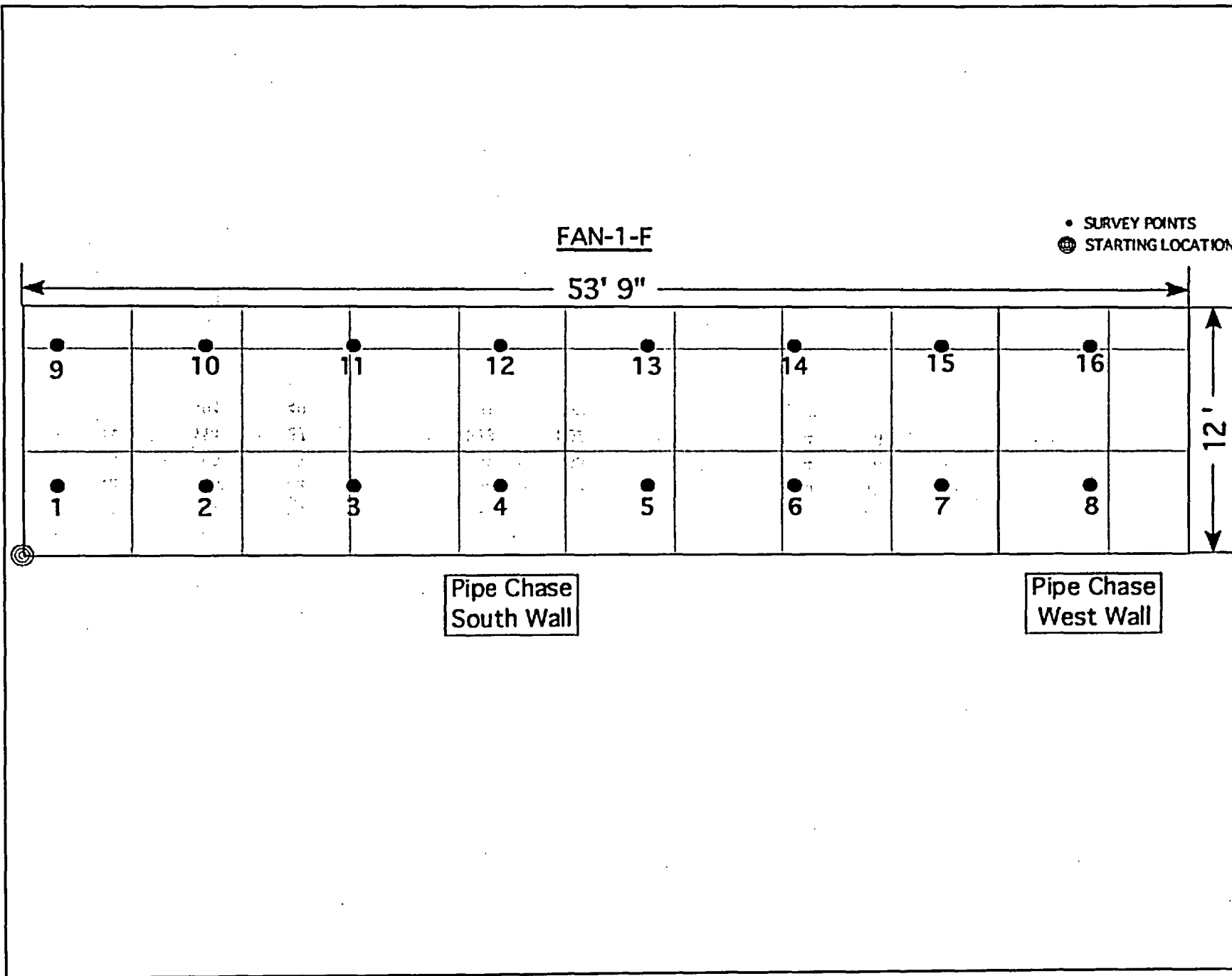
**Part**  
Wall

**Material**  
Concrete

**Size**  
681 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	48	55	165	415	1	4
2	-69	50	81	248	-1	1
3	256	62	582	582	3	6
4	473	69	81	582	-1	1
5	98	57	-3	248	-1	1
6	-103	49	666	415	3	6
7	131	58	749	415	6	8
8	177	60	582	916	64	24
9	-228	43	415	582	8	9
10	-19	52	332	833	12	11
11	248	62	165	415	15	12
12	-195	45	81	916	-1	1
13	327	65	248	916	8	9
14	-174	46	81	666	6	8
15	290	63	81	415	8	9
16	139	58	-3	248	10	10
<b>Average:</b> 87			<b>Average:</b> 9		<b>Average:</b> 9	
<b>Maximum:</b> 473			<b>Maximum:</b> 64		<b>Maximum:</b> 64	
<b>Minimum:</b> -228			<b>Minimum:</b> -1		<b>Minimum:</b> -1	
Survey Date 12/9/2004			Survey Date 12/9/2004		Survey Date 12/9/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.446 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.5 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.129 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 160.6 cpm			Background 160.6 cpm			
Bkg σ 10 cpm			Bkg σ 10 cpm			
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>			

**FAN-1-F    Fan Room**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING
DRAWING	KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Fan Room Walls (4 of 4)
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06476	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/13/2004
Uy:	CK:
FIGURE: FAN-1-F	

**General Area**  
Fan Room

**Survey Unit**  
FAN-1-F

**Class**  
1

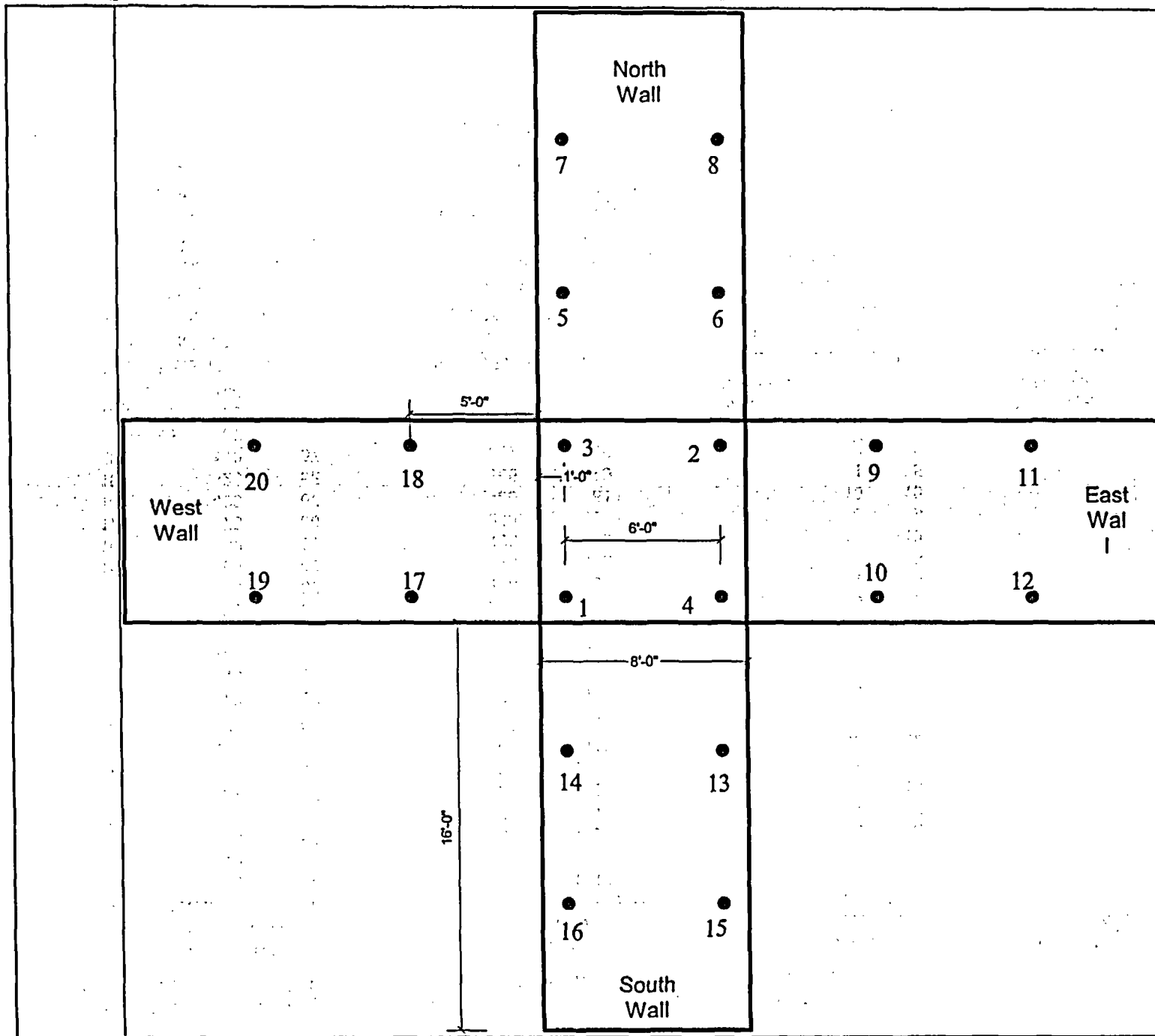
**Part**  
Wall

**Material**  
Concrete

**Size**  
645 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	599	73	582	833	1	4
2	-73	50	165	269	4	6
3	10	53	269	373	-1	1
4	423	68	311	499	1	4
5	386	66	123	248	-1	1
6	235	62	269	582	-1	1
7	327	65	39	248	-1	1
8	636	74	165	582	1	4
9	-86	50	582	916	1	4
10	202	60	81	332	10	10
11	461	69	-3	332	58	22
12	-15	52	582	582	10	10
13	98	57	81	833	4	6
14	114	57	373	582	4	6
15	-94	49	81	749	4	6
16	110	57	227	666	10	10
Average: 208			Average: 7		Average: 7	
Maximum: 636			Maximum: 58		Maximum: 58	
Minimum: -94			Minimum: -1		Minimum: -1	
Survey Date 12/11/2004			Survey Date 12/11/2004		Survey Date 12/11/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.458 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.37 cpm	
Ei 0.479 cpm/dpm			Ei 0.479 cpm/dpm		Bkg σ 0.111 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 10 dpm/100 cm <sup>2</sup>	
Background 160.6 cpm			Background 160.6 cpm			
Bkg σ 10 cpm			Bkg σ 10 cpm			
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>			

**GPOOL-1-A Gamma Pool**



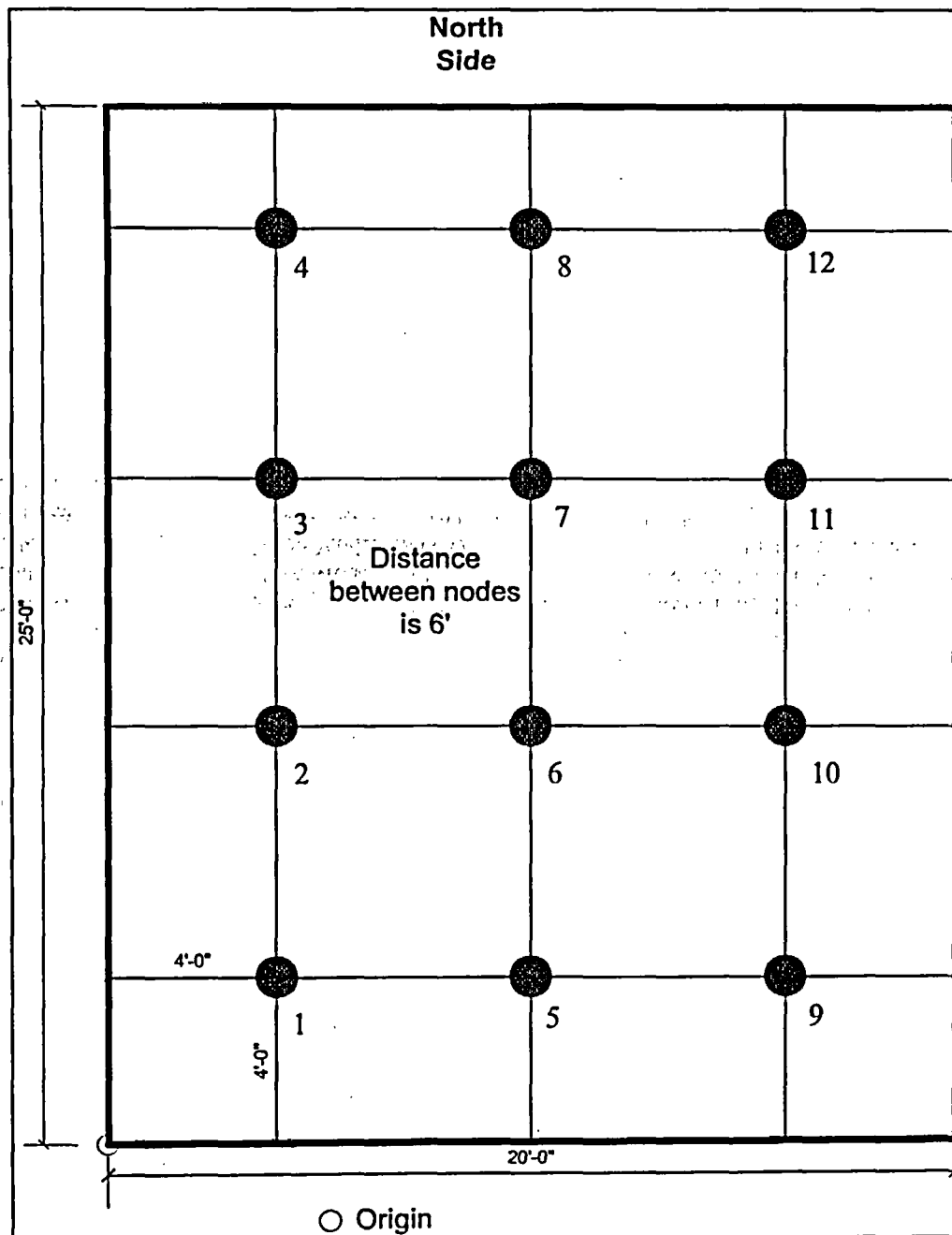
Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Gamma Pool Floor & Walls	
SCIENTECH, Inc. 142 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: [Signature]	CK:
FIGURE: GP001-1-A	

General Area	Survey Unit	Class	Part	Material	Size		
Gamma (Storage)	GPOOL-1-A	1	Floor & Walls	Concrete	144 ft <sup>2</sup>		
Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net	Net Maximum	Net Activity	Sigma	
1	632	74	-3	1417	3	6	4
2	119	57	-86	165	5	8	4
3	18	54	81	1000	5	8	5
4	68	56	248	415	1	5	4
5	327	65	81	499	10	10	
6	119	57	165	1835	5	8	
7	202	60	165	415	55	22	
8	27	54	-3	248	12	11	
9	-78	50	-170	165	3	6	
10	-48	51	-86	81	-1	1	
11	-144	47	-3	499	3	6	
12	23	54	81	248	10	10	
13	56	55	248	582	5	8	
14	-86	50	-170	81	1	5	
15	-99	49	-3	165	5	8	
16	52	55	165	415	10	10	
17	73	56	248	582	8	9	
18	403	67	-86	81	10	10	
19	-28	52	165	499	1	5	
20	110	57	582	916	8	6	
Average: 87					Average: 8		Average: 4
Maximum: 632					Maximum: 55		Maximum: 5
Minimum: -144					Minimum: -1		Minimum: 4
Survey Date	12/14/2004		Survey Date	12/14/2004*	Survey Date	12/14/2004	Survey Date 12/14/200
Inst. Model	M2360		Inst. Model	M2360	Inst. Model	WPC-9550	Inst. Model M19
Probe Model	M43-93		Probe Model	M43-93	Ei	0.445 cpm/dpm	Background 4.5 μ R/hour
Probe Area	100 cm <sup>2</sup>		Probe Area	100 cm <sup>2</sup>	Background	0.63 cpm	Bkg σ 0.5 μ R/hour
Ei	0.479 cpm/cpm		Ei	0.479 cpm/cpm	Bkg σ	0.145 cpm	
Es	0.5 epm/dpm		Es	0.5 epm/dpm	MDC	12 dpm/100 cm <sup>2</sup>	
Background	160.6 cpm		Background	160.6 cpm			
Bkg σ	10 cpm		Bkg σ	10 cpm			
MDC	259 dpm/100 cm <sup>2</sup>		MDC	800 dpm/100 cm <sup>2</sup>			


\* Additional scanning was performed on areas related to points 4 and 7 on 2/10/05.

**VEST-1-A Vestibule**





VEST-1-A

Document Control No.	
REVISION NO.	
<b>PROJECT</b>	<b>QUEHANNA DECOMMISSIONING</b>
<b>DRAWING</b>	KARHAUS, PENNSYLVANIA 115 REACTOR ROAD <b>CLASS 1</b> Vestibule Floors
 <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456</small>	
PROJECT NO: 23329-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: ah	CK:
FIGURE: VEST-1-A	

**General Area**  
Vestibule

**Survey Unit**  
VEST-1-A

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
360 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	870	80
2	720	76
3	261	62
4	240	62
5	553	72
6	686	75
7	745	77
8	570	72
9	528	71
10	235	62
11	674	75
12	448	68
<b>Average:</b>		544
<b>Maximum:</b>		870
<b>Minimum:</b>		235

Survey Date 12/21/2004  
Inst. Model M2360  
Probe Model M43-93

Probe Area 100 cm<sup>2</sup>  
Ei 0.479 cpm/cpm  
Es 0.5 cpm/dpm  
Background 160.6 cpm  
Bkg  $\sigma$  10 cpm  
MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net	Net Maximum
556	861
556	861
709	861
556	861
403	709
556	861
250	861
250	556
250	556
250	556
250	556
250	556
<b>Average:</b> 2	
<b>Maximum:</b> 10	
<b>Minimum:</b> -1	

Survey Date 12/22/2004  
Inst. Model L12  
Probe Model M43-37

Probe Area 697 cm<sup>2</sup>  
Ei 0.188 cpm/cpm  
Es 0.5 cpm/dpm  
Background 236 cpm  
Bkg  $\sigma$  26 cpm  
MDC 354 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
-1	1
1	4
-1	1
1	4
1	4
8	9
5	8
-1	1
1	4
10	10
-1	1
<b>Average:</b> 2	
<b>Maximum:</b> 10	
<b>Minimum:</b> -1	

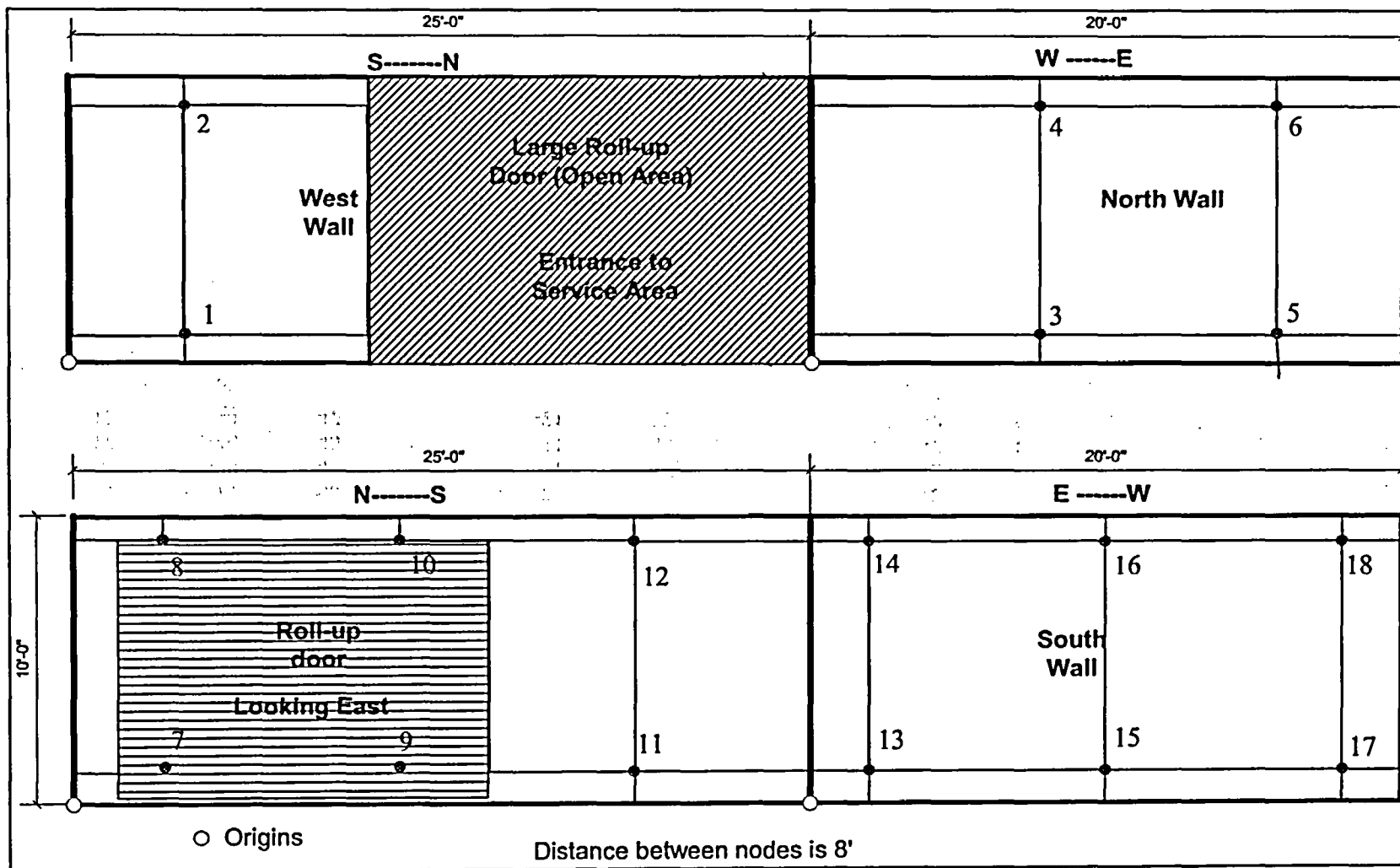
Survey Date 12/21/2004  
Inst. Model WPC-9550  
Ei 0.448 cpm/dpm  
Background 0.63 cpm  
Bkg  $\sigma$  0.145 cpm  
MDC 12 dpm/100 cm<sup>2</sup>

**Gross Exposure Rate**  
( $\mu$  R/hour)

6
6
6
5
6
5
7
6
5
7
5
6
<b>Average:</b> 6
<b>Maximum:</b> 7
<b>Minimum:</b> 5

Survey Date 12/21/200  
Inst. Model M19  
Background 4.5  $\mu$  R/hour  
Bkg  $\sigma$  0.5  $\mu$  R/hour

**VEST-1-B Vestibule**



VEST-1-B

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING	
KARTHUS, PENNSYLVANIA	
115 REACTOR ROAD	
CLASS 1	
Vestibule Walls	
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: ah	CK:
FIGURE: VEST-1-B	

General Area  
Vestibule

Survey Unit  
VEST-1-B

Class  
1

Part  
Walls

Material  
Metal

Size  
936 ft<sup>2</sup>

Beta Directs  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	63	49
2	138	53
3	88	51
4	109	51
5	109	51
6	63	49
7	-8	46
8	151	53
9	-12	46
10	101	51
11	63	49
12	88	51
13	42	49
14	67	50
15	71	50
16	-20	46
17	-46	45
18	-4	47

Average: 59  
Maximum: 151  
Minimum: -46

Survey Date 12/19/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124. cpm

Bkg σ 10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

Beta Scans  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
-21	105
21	147
-21	105
-21	63
-21	105
21	105
-21	63
-21	63
-21	63
-21	63
21	105
-21	63
-21	63
-21	63
-21	63
-21	63
-21	63
-21	63

Survey Date 12/19/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg σ 10.8 cpm

MDC 705 dpm/100 cm<sup>2</sup>

Smears  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-2	1
-2	1
7	9
-2	1
3	6
-2	1
3	6
1	4
-2	1
5	8
-2	1
3	6
1	4
-2	1
-2	1
-2	1
-2	1
-2	1

Average: 0  
Maximum: 7  
Minimum: -2

Survey Date 12/20/2004

Inst. Model WPC-9550

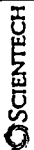
Ei 0.448 cpm/dpm

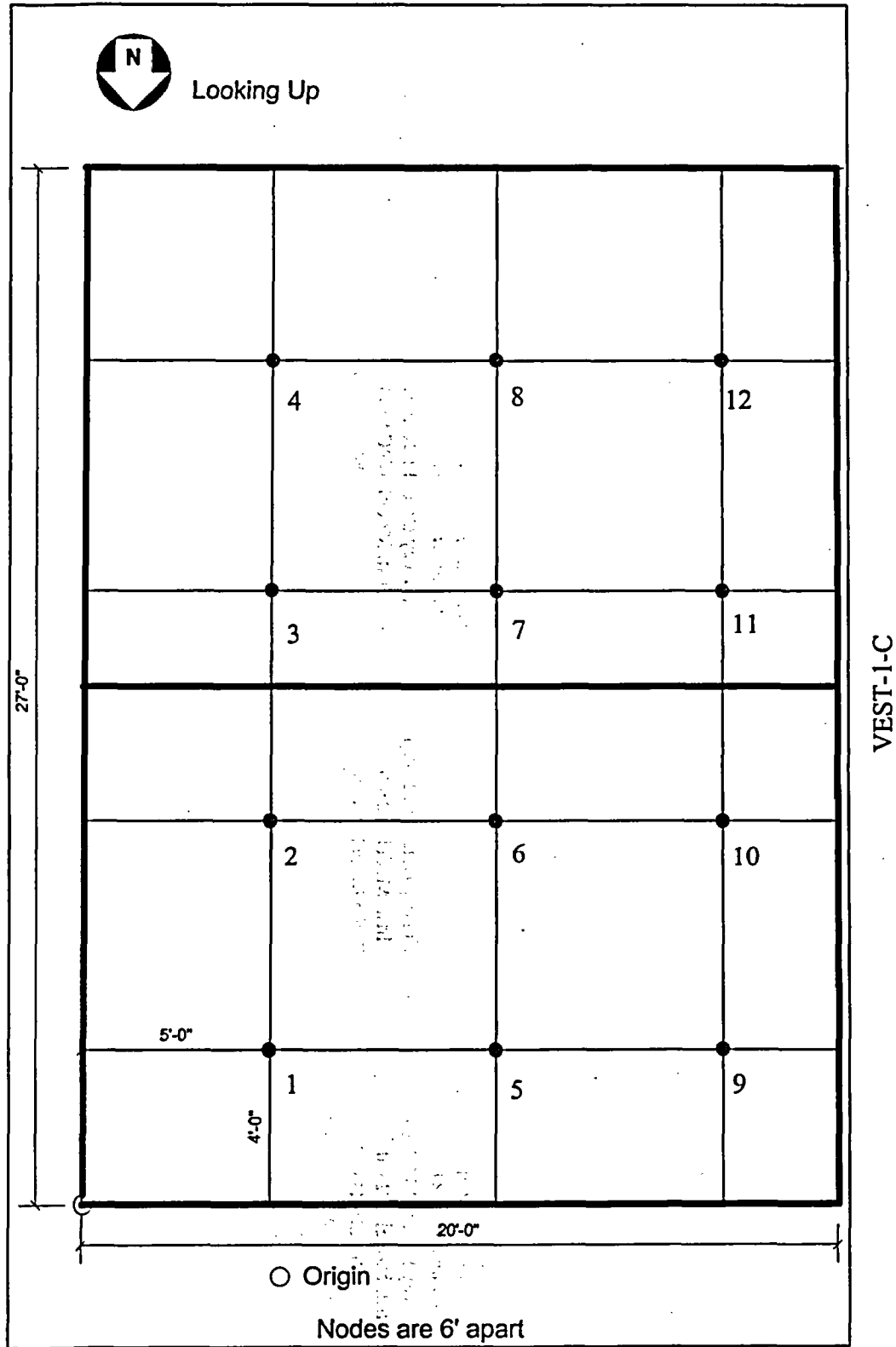
Background 0.7 cpm

Bkg σ 0.153 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**VEST-1-C Vestibule**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENTECH, INC. 111 WEST STREET NEW HAVEN, CT 06510	PROJECT NO. 23329-0501	FILE NAME:	SCALE:	DATE:	By:	Ck:	FIGURE:
		DRAWING	CLASS 1 Vestibule Ceiling				N.T.S.	12/02/2004			



**General Area**  
Vestibule

**Survey Unit**  
VEST-1-C

**Class**  
1

**Part**  
Ceiling

**Material**  
Metal

**Size**  
432 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	113	52
2	30	48
3	142	53
4	109	51
5	188	55
6	101	51
7	21	48
8	126	52
9	38	48
10	76	50
11	238	56
12	230	56

**Average:** 118

**Maximum:** 238

**Minimum:** 21

Survey Date 12/21/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124. cpm

Bkg σ 10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net	Net Maximum
147	230
63	147
147	230
147	230
147	230
147	230
63	147
147	230
63	147
63	147
230	314
230	314

Survey Date 12/22/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg σ 10.8 cpm

MDC 705 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
-1	1
1	4
-1	1
-1	1
1	4
-1	1
-1	1
1	4
-1	1
1	4
-1	1

**Average:** 0

**Maximum:** 1

**Minimum:** -1

Survey Date 12/21/2004

Inst. Model WPC-9550

Ei 0.448 cpm/dpm

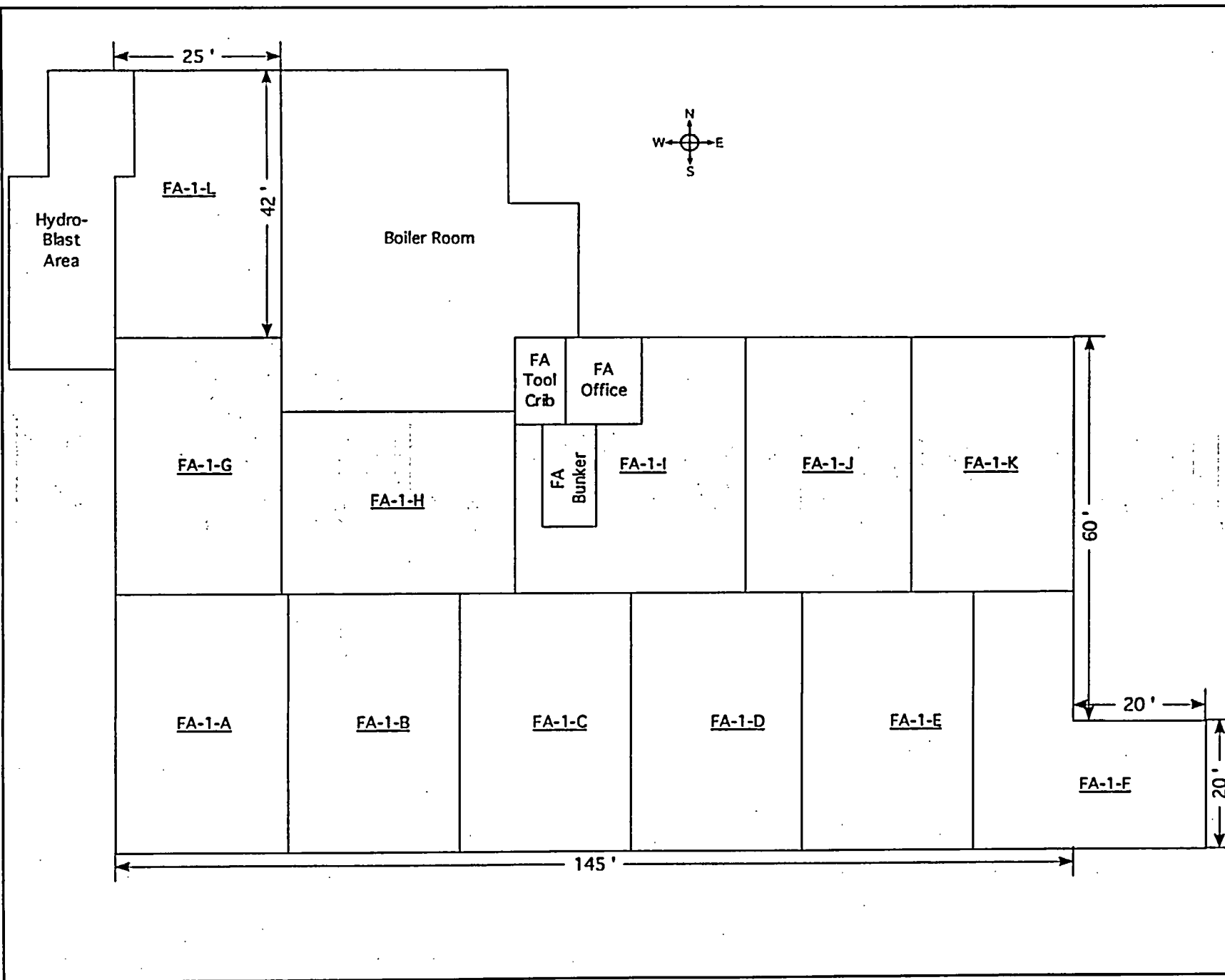
Background 0.63 cpm

Bkg σ 0.145 cpm

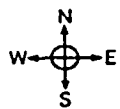
MDC 12 dpm/100 cm<sup>2</sup>



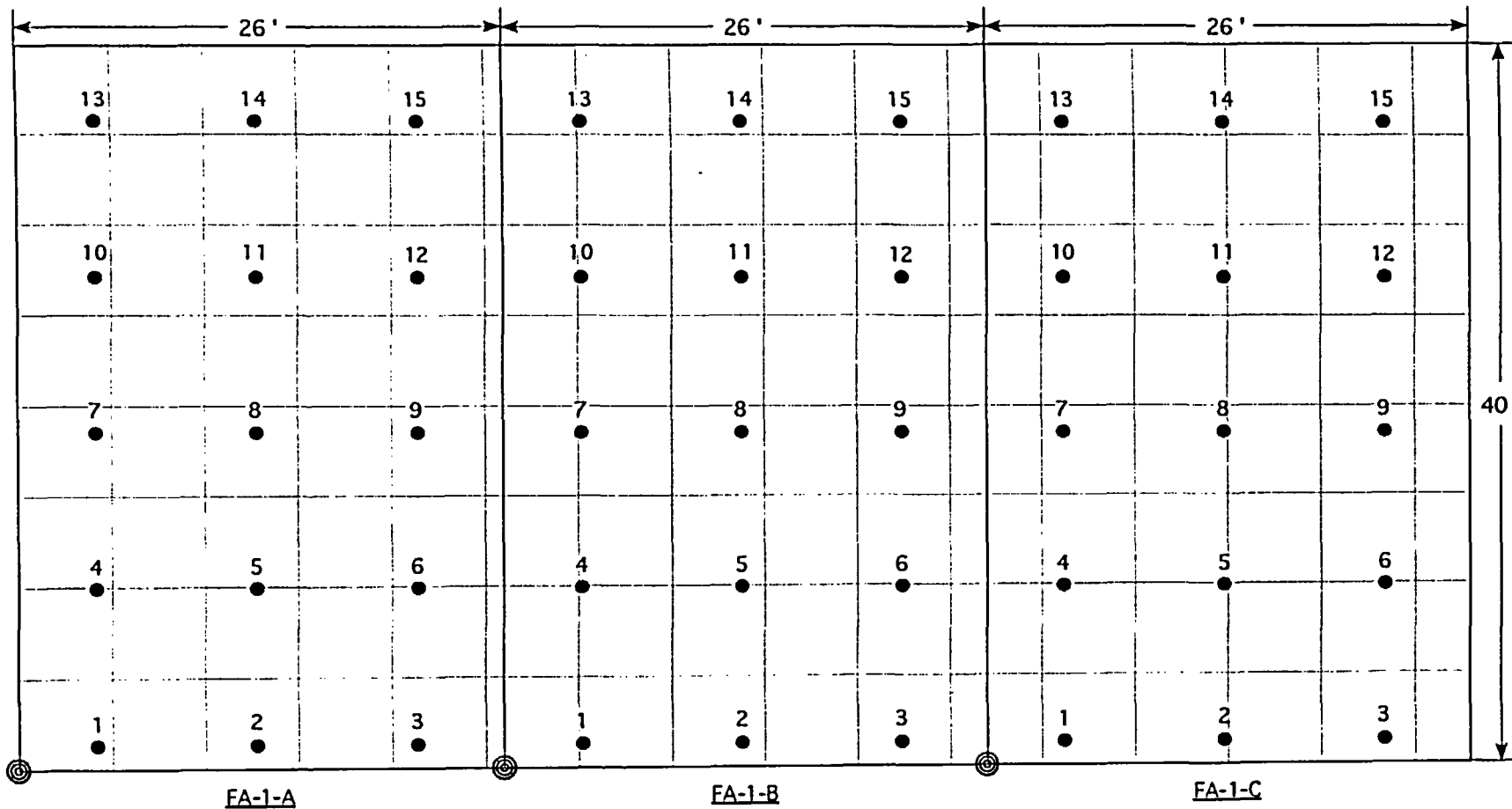
**FA-1-A through FA-1-C**  
**Finishing Areas**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Finishing Area Floor (Layout)
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: FA Layout	



• SURVEY POINTS  
◎ STARTING LOCATION



Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING

KARTHIAUS, PENNSYLVANIA  
115 REACTOR ROAD

CLASS 1

Finishing Area Floor (1 of 5)

SCIENTECH

SCIENTECH, INC.  
143 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO:

23529-0501

FILE NAME:

SCALE:

N.T.S.

DATE:

07/06/2004

By:

CK:

FIGURE:

FA-1-A,B,C

General Area  
Finishing Area

Survey Unit  
FA-1-A

Class  
1

Part  
Floor

Material  
Concrete

Size  
1040 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	261	62	332	499	-1	1	6
2	261	62	248	415	1	4	5
3	678	75	666	749	1	4	6
4	332	65	332	499	1	4	6
5	160	59	165	332	-1	1	7
6	519	71	499	666	4	6	8
7	344	65	332	499	8	9	7
8	457	69	499	666	19	13	6
9	415	67	415	582	10	10	7
10	123	58	165	332	15	12	6
11	428	68	415	582	4	6	6
12	286	63	248	415	6	8	5
13	286	63	248	415	-1	1	6
14	352	65	332	499	13	11	5
15	315	64	332	499	1	4	6
Average:		348			Average:		6
Maximum:		678			Maximum:		8
Minimum:		123			Minimum:		5
Survey Date 12/15/2004			Survey Date 12/15/2004		Survey Date 12/15/2004		Survey Date 12/15/200
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.446 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.12 cpm		
Es 0.5 epm/dpm			Es 0.5 epm/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg σ 10 cpm			Bkg σ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**General Area**  
Finishing Area

**Survey Unit**  
FA-1-B

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
1040 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	365	66	415	582	-1	1	7
2	369	66	415	582	-1	1	5
3	478	69	499	666	6	8	5
4	711	76	749	916	6	8	6
5	403	67	415	582	6	8	6
6	261	62	248	415	6	8	6
7	799	78	749	916	1	4	6
8	611	73	582	749	1	4	7
9	544	71	582	749	1	4	7
10	394	67	415	499	13	11	7
11	365	66	332	499	4	6	7
12	440	68	415	582	-1	1	6
13	315	64	332	499	-1	1	8
14	536	71	582	666	-1	1	6
15	332	65	332	499	1	4	6
<b>Average:</b> 462					<b>Average:</b> 3		<b>Average:</b> 6
<b>Maximum:</b> 799					<b>Maximum:</b> 13		<b>Maximum:</b> 8
<b>Minimum:</b> 261					<b>Minimum:</b> -1		<b>Minimum:</b> 5
Survey Date 12/15/2004			Survey Date 12/15/2004		Survey Date 12/15/2004		Survey Date 12/15/200
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.446 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.12 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg σ 10 cpm			Bkg σ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**General Area**  
Finishing Area

**Survey Unit**  
FA-1-C

**Class**  
1

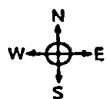
**Part**  
Floor

**Material**  
Concrete

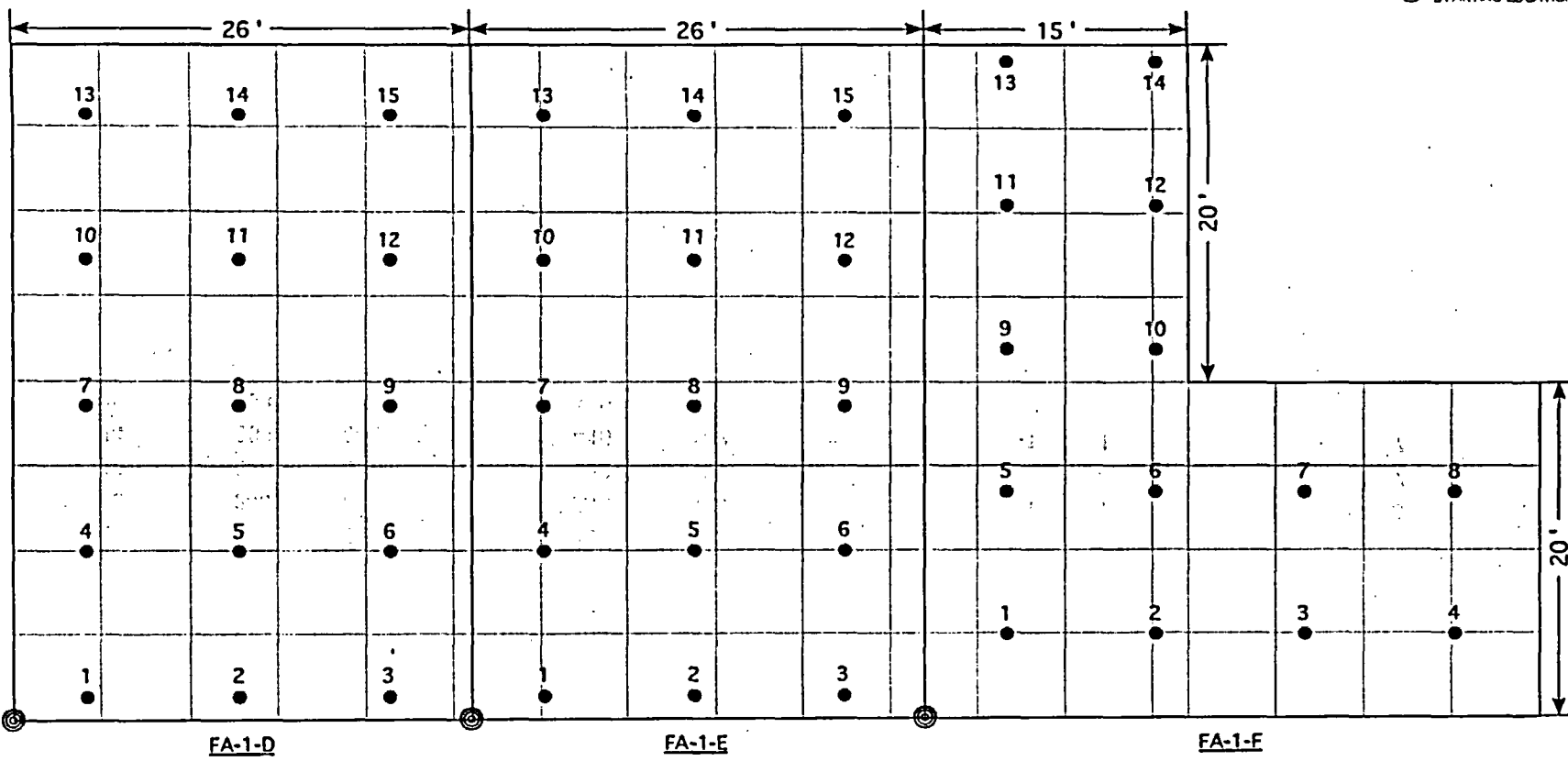
**Size**  
1040 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	-215	44	-253	-170	-1	1	5
2	-32	52	-86	-3	-1	1	5
3	89	56	81	165	6	8	5
4	453	69	415	582	1	4	8
5	340	65	332	499	-1	1	6
6	411	67	415	582	4	6	6
7	144	58	165	248	-1	1	6
8	286	63	248	415	1	4	7
9	160	59	165	332	1	4	6
10	135	58	165	332	-1	1	7
11	390	67	415	582	-1	1	6
12	657	75	666	749	1	4	6
13	536	71	499	749	4	6	6
14	707	76	666	749	4	6	5
15	561	72	582	666	1	4	8
Average:		308			Average:		6
Maximum:		707			Maximum:		8
Minimum:		-215			Minimum:		5
Survey Date 12/15/2004			Survey Date 12/15/2004		Survey Date 12/15/2004		Survey Date 12/15/200
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.446 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/epm			Ei 0.479 cpm/epm		Bkg σ 0.12 cpm		
Es 0.5 epm/dpm			Es 0.5 epm/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg σ 10 cpm			Bkg σ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**FA-1-D through FA-1-F**  
**Finishing Areas**



• SURVEY POINTS  
 ◎ STARTING LOCATION



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA IIS REACTOR ROAD CLASS 1 Finishing Area Floor (2 of 5)	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: FA-1-D,E,F	



General Area  
Finishing Area

Survey Unit  
FA-1-D

Class  
1

Part  
Floor

Material  
Concrete

Size  
1040 ft<sup>2</sup>

Beta Directs (dpm/100 cm²)			Beta Scans (dpm/100 cm²)		Smears (dpm/100 cm²)		Gross Exposure Rate (μ R/hour)				
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma					
1	-28	52	165	332	1	4	5				
2	261	62	248	415	-1	1	6				
3	382	66	332	499	1	4	5				
4	357	66	332	499	-1	1	5				
5	319	64	332	499	1	4	5				
6	327	65	332	499	6	8	5				
7	294	64	332	499	4	6	6				
8	215	61	165	248	1	4	7				
9	269	63	248	415	-1	1	7				
10	240	62	248	415	-1	1	8				
11	144	58	165	332	4	6	7				
12	240	62	248	415	-1	1	6				
13	340	65	332	499	6	8	7				
14	386	66	415	582	-1	1	7				
15	398	67	415	582	4	6	6				
Average:	276				Average:	1	Average:	6			
Maximum:	398				Maximum:	6	Maximum:	8			
Minimum:	-28				Minimum:	-1	Minimum:	5			
Survey Date	12/15/2004		Survey Date	12/15/2004		Survey Date	12/15/2004		Survey Date	12/15/2004	
Inst. Model	M2360		Inst. Model	M2360		Inst. Model	WPC-9550		Inst. Model	M19	
Probe Model	M43-93		Probe Model	M43-93		Ei	0.446 cpm/dpm		Background	4.5 μ R/hour	
Probe Area	100 cm²		Probe Area	100 cm²		Background	0.43 cpm		Bkg σ	0.52 μ R/hour	
Ei	0.479 cpm/cpm		Ei	0.479 cpm/cpm		Bkg σ	0.12 cpm				
Es	0.5 cpm/dpm		Es	0.5 cpm/dpm		MDC	11 dpm/100 cm²				
Background	160.6 cpm		Background	160.6 cpm							
Bkg σ	10 cpm		Bkg σ	10 cpm							
MDC	259 dpm/100 cm²		MDC	800 dpm/100 cm²							

General Area  
Finishing Area

Survey Unit  
FA-1-E

Class  
1

Part  
Floor

Material  
Concrete

Size  
1040 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	741	77	749	833	3	6	5
2	544	71	582	749	-1	1	6
3	691	75	666	833	3	6	6
4	574	72	582	833	-1	1	6
5	528	71	499	749	6	8	7
6	661	75	666	833	1	4	5
7	795	78	749	916	1	4	5
8	390	67	332	499	8	9	8
9	440	68	582	833	26	15	8
10	540	71	582	666	-1	1	6
11	544	71	582	666	1	4	6
12	607	73	582	833	12	11	6
13	311	64	248	499	3	6	7
14	336	65	332	499	-1	1	8
15	403	67	415	582	-1	1	5
Average: 540			Average: 4		Average: 6		
Maximum: 795			Maximum: 26		Maximum: 8		
Minimum: 311			Minimum: -1		Minimum: 5		
Survey Date 12/9/2004			Survey Date 12/9/2004		Survey Date 12/9/2004		Survey Date 12/9/2004
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.446 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.5 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/epm			Ei 0.479 cpm/epm		Bkg σ 0.129 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg σ 10 cpm			Bkg σ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**General Area**  
Finishing Area

**Survey Unit**  
FA-1-F

**Class**  
1

**Part**  
Floor

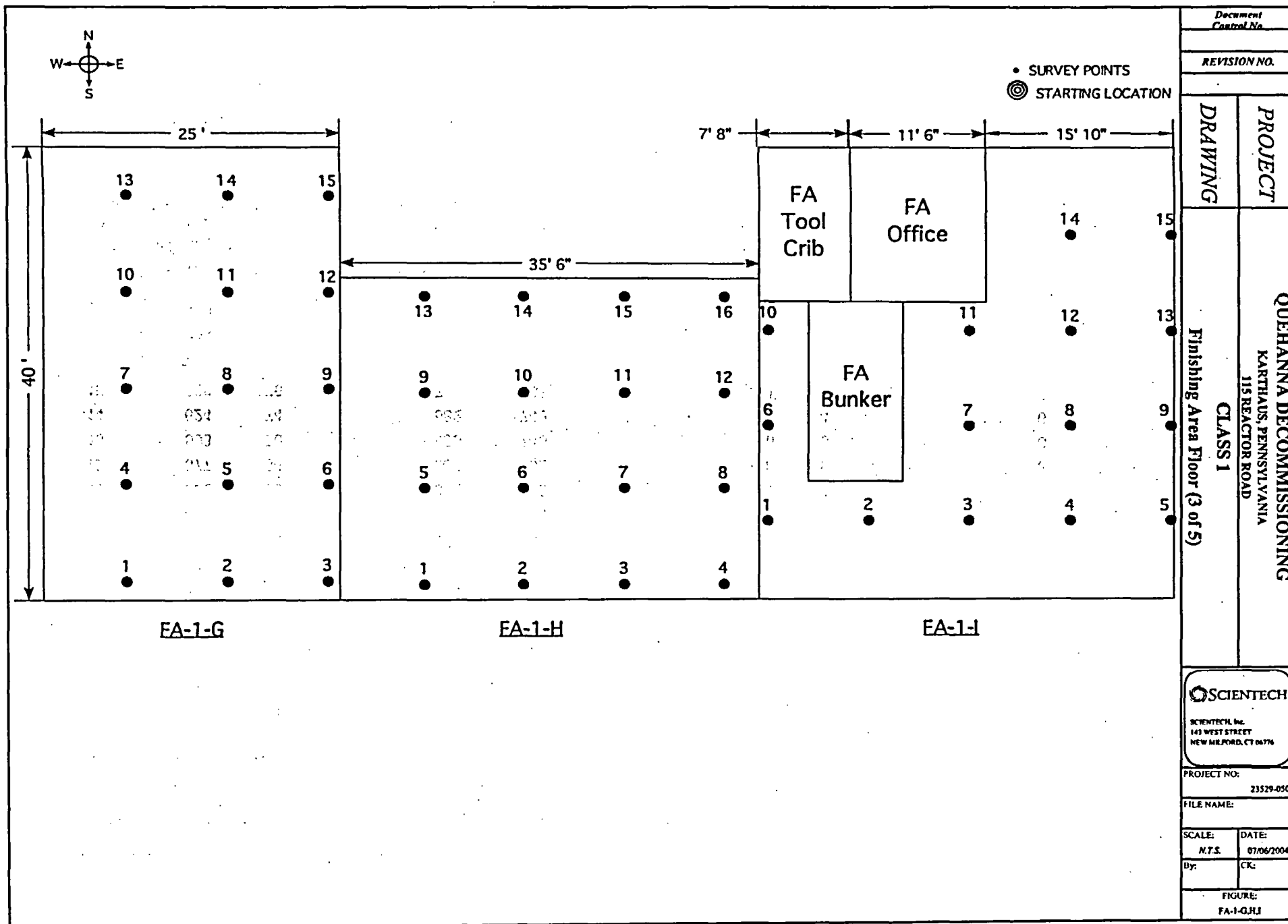
**Material**  
Concrete

**Size**  
1000 ft<sup>2</sup>

Beta Directs (dpm/100 cm²)			Beta Scans (dpm/100 cm²)		Smears (dpm/100 cm²)		Gross Exposure Rate ( μ R/hour)	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma		
1	590	73	582	916	6	8	5	
2	465	69	582	833	-1	1	6	
3	357	66	332	582	1	4	7	
4	749	77	749	833	1	4	7	
5	323	64	332	582	-1	1	5	
6	490	70	499	666	-1	1	6	
7	582	72	582	582	8	9	6	
8	574	72	582	666	-1	1	7	
9	540	71	499	833	6	8	6	
10	828	79	749	916	35	18	6	
11	511	70	582	666	19	13	7	
12	636	74	582	833	3	6	8	
13	828	79	833	916	10	10	8	
14	411	67	415	582	1	4	9	
Average:	563				Average:	6	Average: 7	
Maximum:	828				Maximum:	35	Maximum: 9	
Minimum:	323				Minimum:	-1	Minimum: 5	
Survey Date	12/9/2004		Survey Date	12/9/2004		Survey Date	12/9/2004	
Inst. Model	M2360		Inst. Model	M2360		Inst. Model	WPC-9550	
Probe Model	M43-93		Probe Model	M43-93		Ei	0.446 cpm/dpm	
Probe Area	100 cm²		Probe Area	100 cm²		Background	0.5 cpm	
Ei	0.479 cpm/cpm		Ei	0.479 cpm/cpm		Bkg σ	0.129 cpm	
Es	0.5 cpm/dpm		Es	0.5 cpm/dpm		MDC	11 dpm/100 cm²	
Background	160.6 cpm		Background	160.6 cpm				
Bkg σ	10 cpm		Bkg σ	10 cpm				
MDC	259 dpm/100 cm²		MDC	800 dpm/100 cm²				

Survey Date 12/9/2004  
Inst. Model M19  
Background 4.5 μ R/hour  
Bkg σ 0.52 μ R/hour

**FA-1-G through FA-1-I  
Finishing Areas**



**General Area**  
Finishing Area

**Survey Unit**  
FA-1-G

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
1000 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	219	61	248	332	-1	1	6
2	311	64	332	415	1	4	6
3	273	63	248	415	8	9	7
4	219	61	165	332	1	4	6
5	173	59	165	332	-1	1	8
6	361	66	332	499	-1	1	6
7	332	65	332	499	4	6	6
8	348	65	332	499	1	4	7
9	382	66	415	582	8	9	6
10	473	69	499	666	-1	1	5
11	352	65	332	582	1	4	6
12	377	66	332	582	8	9	8
13	503	70	499	749	6	8	6
14	624	74	582	749	1	4	6
15	728	76	749	833	-1	1	7
Average: 378					Average: 2		Average: 6
Maximum: 728					Maximum: 8		Maximum: 8
Minimum: 173					Minimum: -1		Minimum: 5
Survey Date 12/15/2004			Survey Date 12/15/2004		Survey Date 12/15/2004		Survey Date 12/15/2004
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.446 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.12 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg σ 10 cpm			Bkg σ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**General Area**  
Finishing Area

**Survey Unit**  
FA-1-H

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
1012 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	465	69
2	653	74
3	536	71
4	528	71
5	407	67
6	344	65
7	281	63
8	373	66
9	332	65
10	490	70
11	565	72
12	615	73
13	2	53
14	-11	53
15	-82	50
16	-107	49
Average:	337	
Maximum:	653	
Minimum:	-107	

Survey Date 12/15/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
499	666
666	749
499	666
499	666
415	582
332	499
332	499
332	499
332	499
499	666
582	749
582	749
-3	81
-3	81
-86	-3
-86	-3

Survey Date 12/15/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
10	10
-1	1
4	6
4	6
15	12
1	4
6	8
-1	1
-1	1
4	6
-1	1
-1	1
6	8
-1	1
-1	1
Average:	3
Maximum:	15
Minimum:	-1

Survey Date 12/15/2004

Inst. Model WPC-9550

Ei 0.446 cpm/dpm

Background 0.43 cpm

Bkg σ 0.12 cpm

MDC 11 dpm/100 cm<sup>2</sup>

**Gross Exposure Rate**  
(μ R/hour)

6	
6	
7	
6	
6	
6	
7	
6	
6	
6	
7	
6	
8	
6	
5	
6	
Average:	6
Maximum:	8
Minimum:	5

Survey Date 12/15/2004

Inst. Model M19

Background 4.5 μ R/hour

Bkg σ 0.5 μ R/hour

**General Area**  
Finishing Area

**Survey Unit**  
FA-1-I

**Class**  
1

**Part**  
Floor

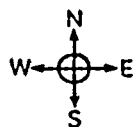
**Material**  
Concrete

**Size**  
1013 ft<sup>2</sup>

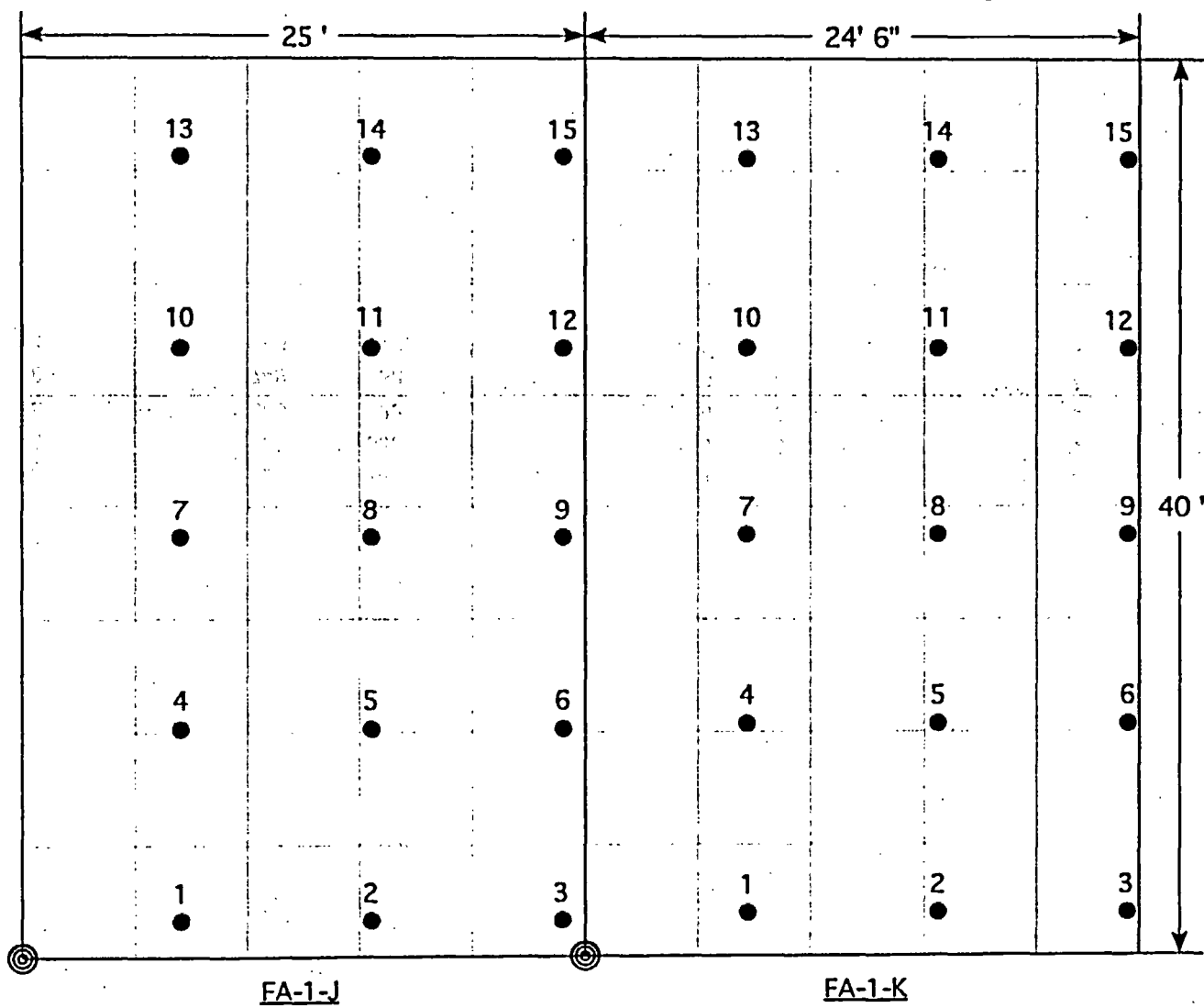
Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate ( $\mu$ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	641	74	666	749	1	4	6
2	457	69	415	499	-1	1	7
3	636	74	666	749	-1	1	6
4	787	78	749	833	10	10	6
5	507	70	499	666	6	8	5
6	465	69	499	666	13	11	8
7	670	75	666	833	6	8	9
8	499	70	499	666	4	6	7
9	657	75	666	833	1	4	6
10	507	70	499	666	1	4	7
11	586	73	582	666	-1	1	6
12	586	73	582	666	1	4	6
13	578	72	582	666	4	6	5
14	620	73	582	666	1	4	6
15	561	72	582	666	15	12	6
Average: 584					Average: 4		Average: 6
Maximum: 787					Maximum: 15		Maximum: 9
Minimum: 457					Minimum: -1		Minimum: 5
Survey Date 12/15/2004			Survey Date 12/15/2004		Survey Date 12/16/2004		Survey Date 12/15/200
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.446 cpm/dpm		Background 4.5 $\mu$ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm		Bkg $\sigma$ 0.52 $\mu$ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg $\sigma$ 0.12 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg $\sigma$ 10 cpm			Bkg $\sigma$ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				



**FA-1-J and FA-1-K  
Finishing Areas**



• SURVEY POINTS  
 ◎ STARTING LOCATION



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING	
KATHAUS, PENNSYLVANIA	
115 REACTOR ROAD	
CLASS 1	
Finishing Area Floor (4 of 5)	
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06474	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: FA-1-J,K	

**General Area**  
Finishing Area

**Survey Unit**  
FA-1-J

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
1000 ft<sup>2</sup>

Beta Directs (dpm/100 cm²)			Beta Scans (dpm/100 cm²)		Smears (dpm/100 cm²)		Gross Exposure Rate	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	(µ R/hour)	
1	386	66	332	415	6	8	7	
2	382	66	332	415	6	8	7	
3	277	63	248	415	15	12	7	
4	595	73	582	666	3	6	7	
5	590	73	582	666	3	6	7	
6	590	73	582	666	8	9	7	
7	428	68	165	582	1	4	6	
8	461	69	415	582	6	8	8	
9	440	68	415	582	8	9	8	
10	670	75	666	833	1	4	6	
11	603	73	582	749	1	4	6	
12	686	75	666	833	10	10	6	
13	670	75	666	833	8	9	6	
14	728	76	749	833	6	8	7	
15	210	61	165	248	6	8	6	
Average:	514				Average:	6	Average:	7
Maximum:	728				Maximum:	15	Maximum:	8
Minimum:	210				Minimum:	1	Minimum:	6
Survey Date	12/9/2004		Survey Date	12/9/2004		Survey Date	12/9/2004	
Inst. Model	M2360		Inst. Model	M2360		Inst. Model	WPC-9550	
Probe Model	M43-93		Probe Model	M43-93		Ei	0.446 cpm/dpm	
Probe Area	100 cm²		Probe Area	100 cm²		Background	0.5 cpm	
Ei	0.479 cpm/cpm		Ei	0.479 cpm/cpm		Bkg σ	0.129 cpm	
Es	0.5 cpm/dpm		Es	0.5 cpm/dpm		MDC	11 dpm/100 cm²	
Background	160.6 cpm		Background	160.6 cpm				
Bkg σ	10 cpm		Bkg σ	10 cpm				
MDC	259 dpm/100 cm²		MDC	800 dpm/100 cm²				

Survey Date 12/9/2004  
Inst. Model M19  
Background 4.5  $\mu$  R/hour  
Bkg  $\sigma$  0.52  $\mu$  R/hour

**General Area**  
Finishing Area

**Survey Unit**  
FA-1-K

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
980 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	202	60
2	394	67
3	306	64
4	319	64
5	332	65
6	315	64
7	302	64
8	365	66
9	365	66
10	386	66
11	240	62
12	286	63
13	265	63
14	319	64
15	377	66
<b>Average:</b>		318
<b>Maximum:</b>		394
<b>Minimum:</b>		202

Survey Date 12/9/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/epm

Es 0.5 epm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
165	332
415	499
332	499
332	499
332	499
332	499
332	499
332	499
332	499
332	499
248	415
248	415
248	415
332	499
332	499

Survey Date 12/9/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/epm

Es 0.5 epm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**

(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma	
-1	1	
3	6	
-1	1	
1	4	
15	12	
12	11	
6	8	
-1	1	
3	6	
-1	1	
-1	1	
10	10	
-1	1	
1	4	
1	4	
<b>Average:</b>		3
<b>Maximum:</b>		15
<b>Minimum:</b>		-1

Survey Date 12/9/2004

Inst. Model WPC-9550

Ei 0.446 cpm/dpm

Background 0.5 cpm

Bkg σ 0.129 cpm

MDC 11 dpm/100 cm<sup>2</sup>

**Gross Exposure Rate**  
(μ R/hour)

7		
6		
7		
6		
6		
7		
6		
7		
6		
6		
6		
5		
6		
7		
8		
<b>Average:</b>		6
<b>Maximum:</b>		8
<b>Minimum:</b>		5

Survey Date 12/9/2004

Inst. Model M19

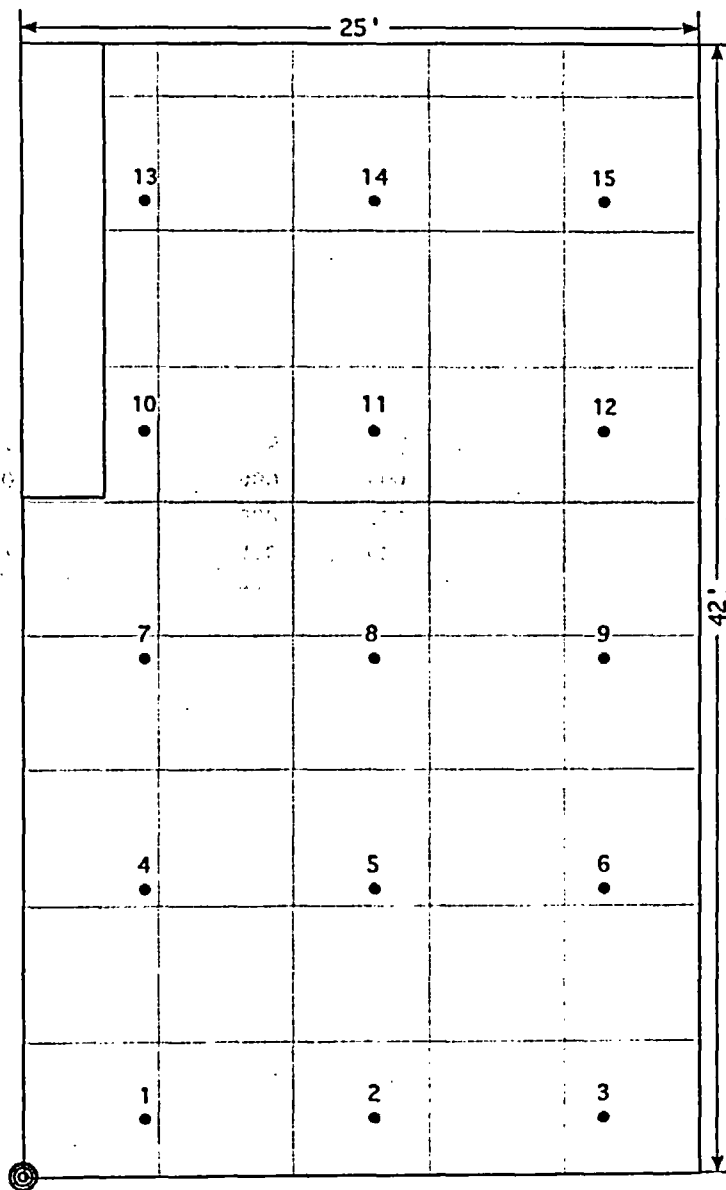
Background 4.5 μ R/hour

Bkg σ 0.5 μ R/hour

**FA-1-L      Finishing Area**



• SURVEY POINTS  
 ◎ STARTING LOCATION



FA-1-L

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Finishing Area Floor (5 of 5)	
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CHK:
FIGURE: FA-1-L	

**General Area**  
Finishing Area

**Survey Unit**  
FA-1-L

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

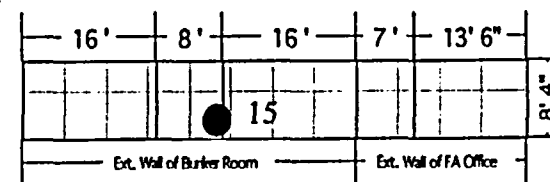
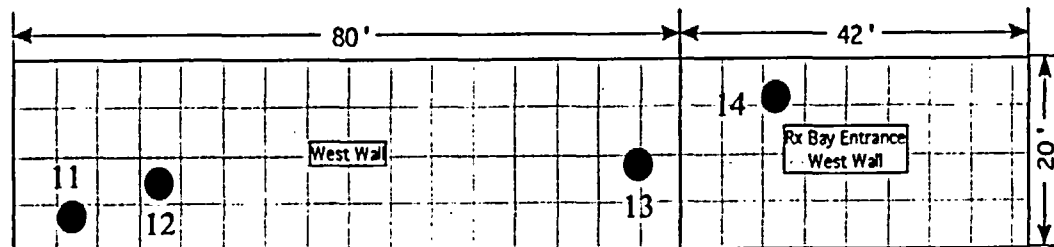
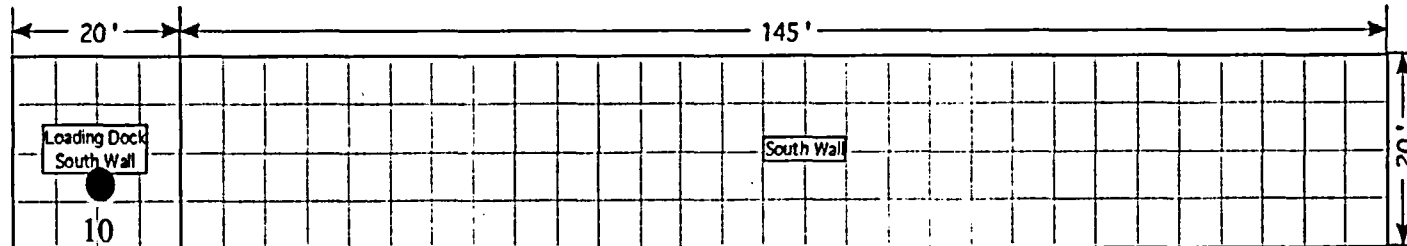
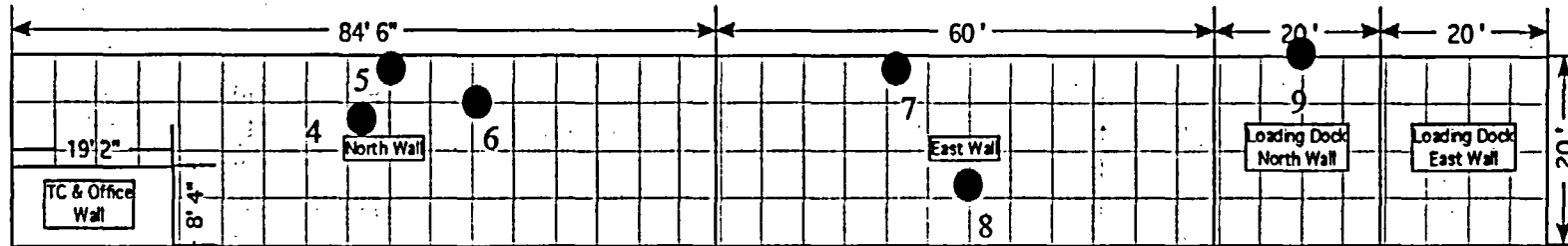
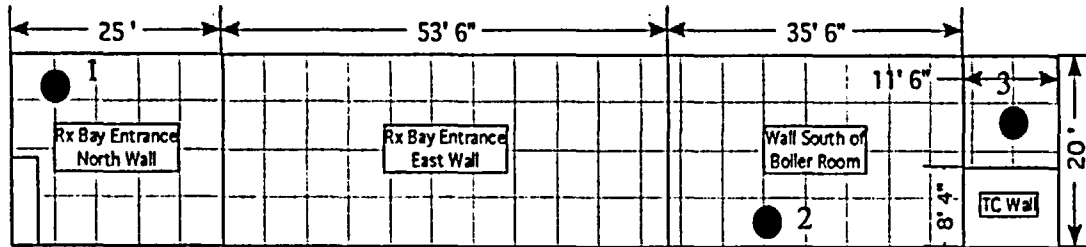
**Size**  
1000 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	615	73	582	749	-1	1	6
2	636	74	666	749	4	6	8
3	532	71	582	749	6	8	6
4	478	69	499	666	1	4	6
5	641	74	666	749	-1	1	7
6	490	70	499	666	-1	1	6
7	536	71	499	666	1	4	7
8	532	71	499	666	4	6	7
9	641	74	666	749	1	4	6
10	486	70	499	666	-1	1	6
11	419	68	415	582	-1	1	5
12	390	67	415	499	-1	1	6
13	323	64	332	499	-1	1	8
14	490	70	499	666	1	4	6
15	231	61	248	332	-1	1	6
Average: 496					Average: 1		Average: 6
Maximum: 641					Maximum: 6		Maximum: 8
Minimum: 231					Minimum: -1		Minimum: 5
Survey Date 12/15/2004			Survey Date 12/15/2004		Survey Date 12/16/2004		Survey Date 12/15/200
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.446 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.12 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg σ 10 cpm			Bkg σ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**FA-3-A      Finishing Area**



# FA-3-A



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Finishing Area Walls	
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: all	CK:
FIGURE: FA-3-A	

**General Area**  
Finishing Area

**Survey Unit**  
FA-3-A

**Class**  
3

**Part**  
Wall

**Material**  
Insulation

**Size**  
12189 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )		
N	Net Activity	Sigma
1	206	56
2	89	51
3	172	54
4	60	50
5	30	49
6	156	54
7	-7	47
8	97	51
9	-15	47
10	72	50
11	-28	46
12	39	49
13	-86	43
14	64	50
15	189	55

**Average:** 69  
**Maximum:** 206  
**Minimum:** -86

Survey Date 12/10/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/epm

Es 0.5 cpm/dpm

Background 127.7 cpm

Bkg  $\sigma$  9.8 cpm

MDC 232 dpm/100 cm<sup>2</sup>

Smears (dpm/100 cm <sup>2</sup> )		
Net Activity	Sigma	
-1	1	
8	9	
1	4	
-1	1	
-1	1	
-1	1	
-1	1	
-1	1	
-1	1	
8	9	
-1	1	
-1	1	
4	6	
6	7	

**Average:** 1  
**Maximum:** 8  
**Minimum:** -1

Survey Date 12/11/2004

Inst. Model WPC-9550

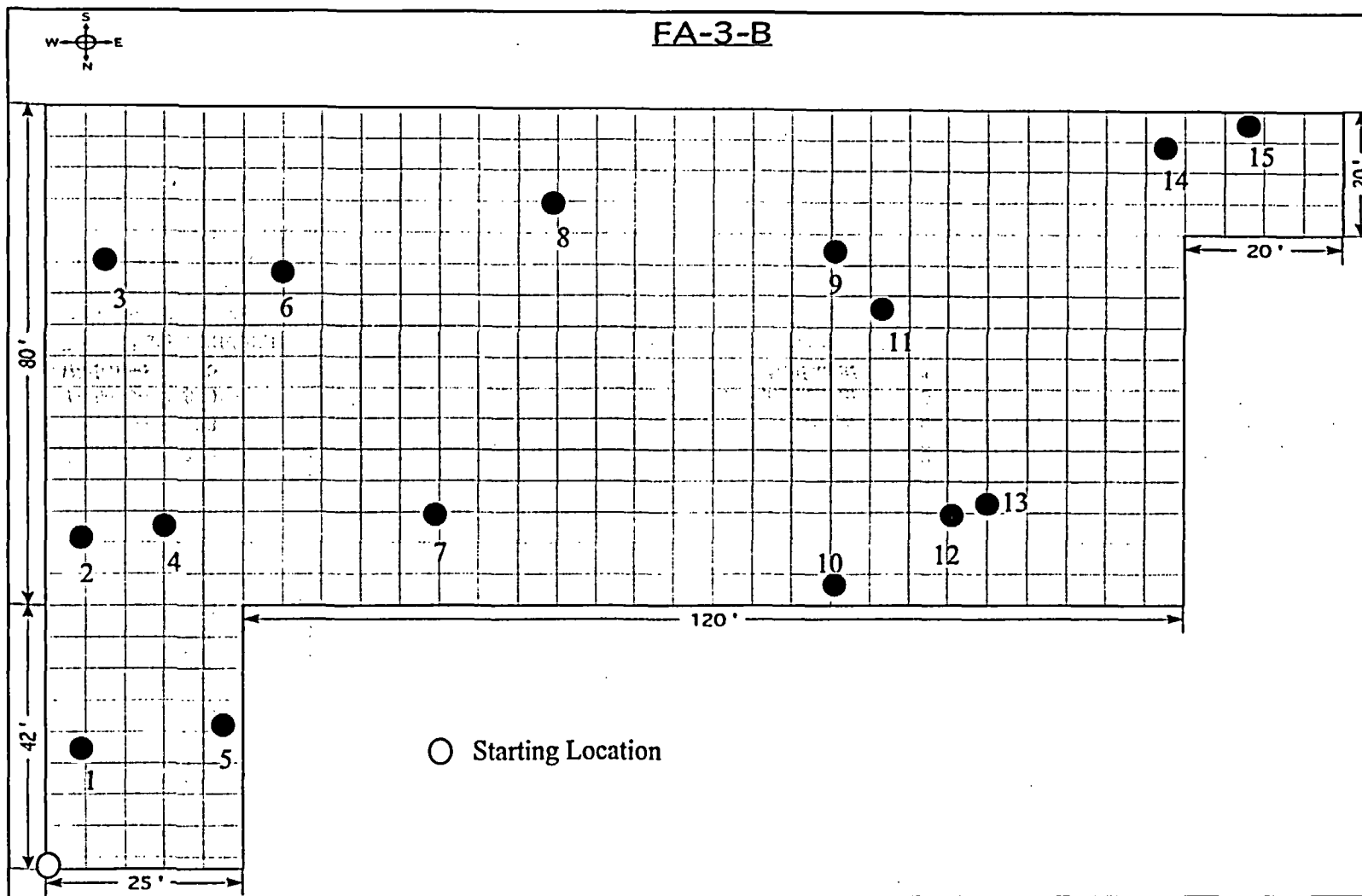
Ei 0.458 cpm/dpm

Background 0.37 cpm

Bkg  $\sigma$  0.111 cpm

MDC 10 dpm/100 cm<sup>2</sup>

**FA-3-B      Finishing Area**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING
DRAWING	KARHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Finishing Area Ceiling
SCIENTECH <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: an	CK:
FIGURE: FA-3-B	

**General Area**  
Finishing Area

**Survey Unit**  
FA-3-B

**Class**  
3

**Part**  
Ceiling

**Material**  
Metal

**Size**  
13,050 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	322	59
2	205	55
3	142	53
4	309	59
5	330	60
6	355	61
7	301	59
8	155	53
9	314	59
10	810	75
11	84	50
12	13	47
13	5	47
14	34	48
15	<u>113</u>	52

**Average:** 233

**Maximum:** 810

**Minimum:** 5

Survey Date 12/10/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 epn/dpm

Background 124.9 cpm

Bkg  $\sigma$  10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
3	6
-1	1
-1	1
-1	1
-1	1
-1	1
5	8
-1	1
3	6
1	4
-1	1
-1	1
-1	1
<u>3</u>	6

**Average:** 0

**Maximum:** 5

**Minimum:** -1

Survey Date 12/10/2004

Inst. Model WPC-9550


Ei 0.450 cpm/dpm

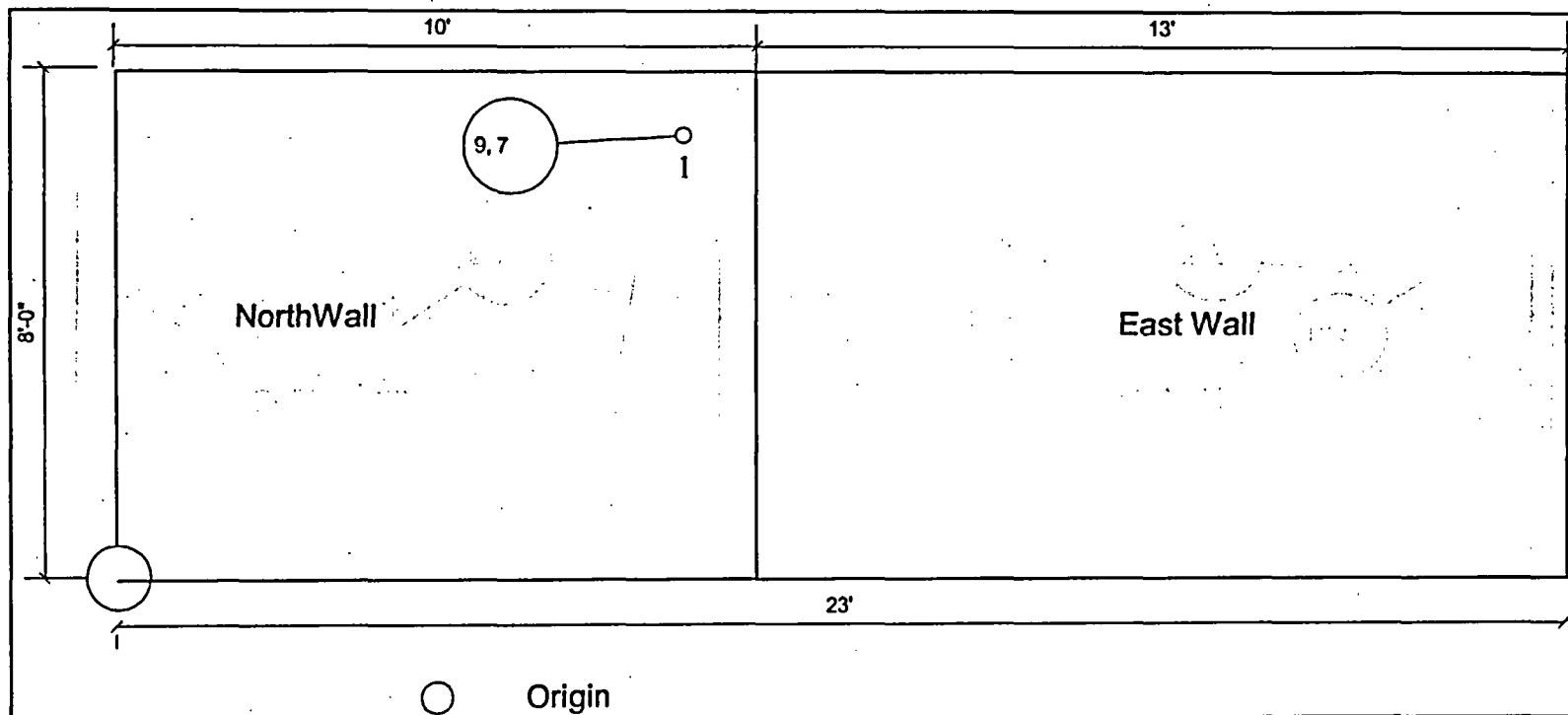
Background 0.6 cpm

Bkg  $\sigma$  0.141 cpm

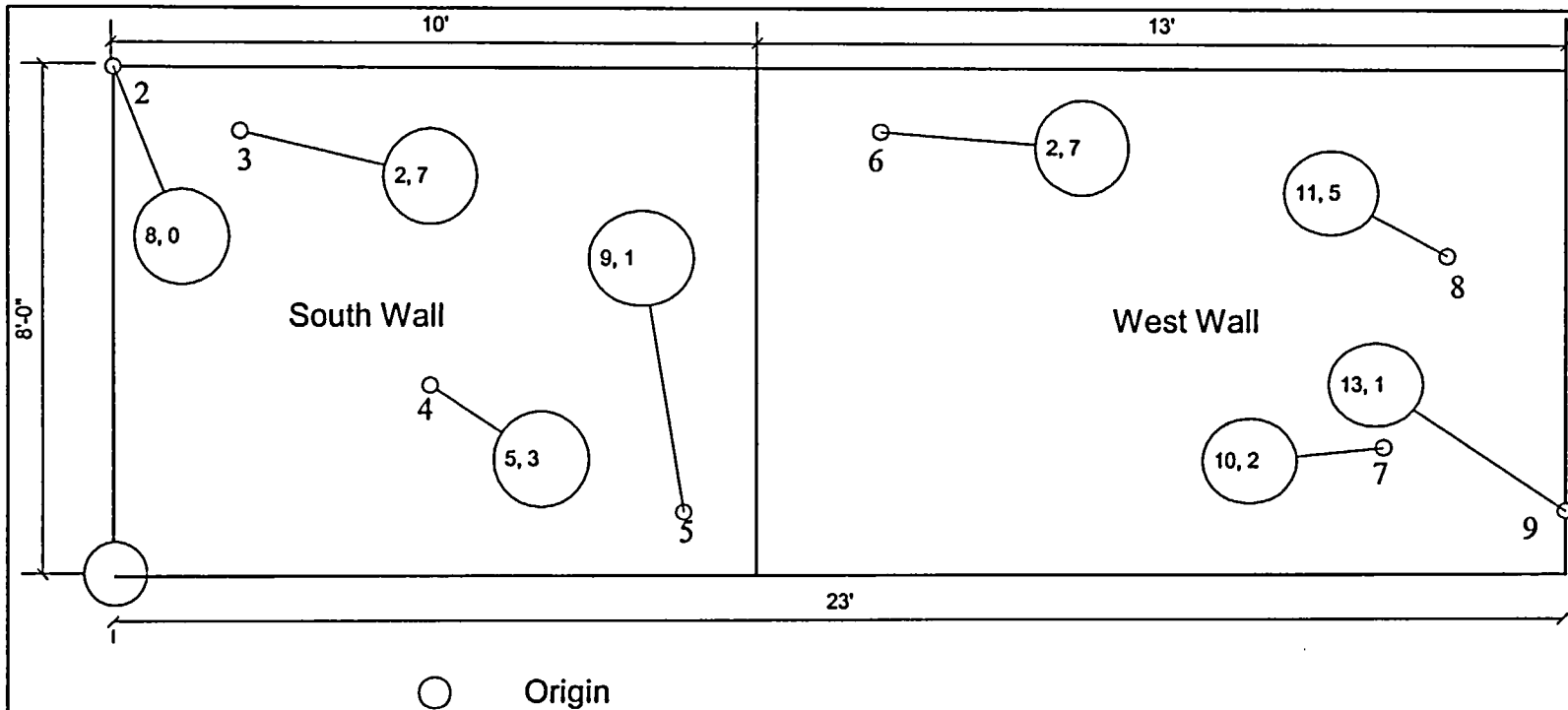
MDC 12 dpm/100 cm<sup>2</sup>

**ELOF-3-A    Electrical Office**

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Electrician Office North & East Wall
 <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: TJR	CK:
FIGURE: ELOF-3-A NE	



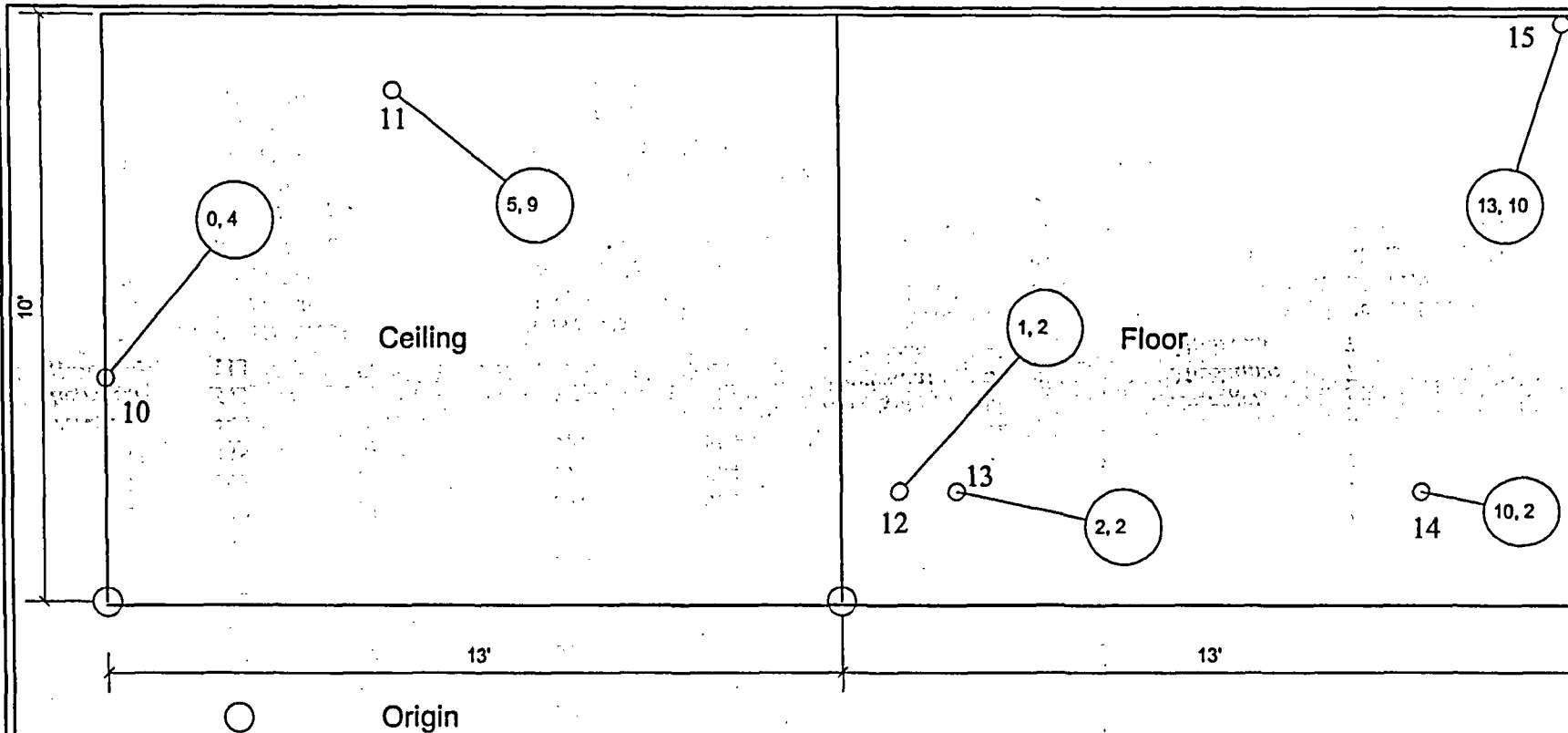
ELOF-3-A



ELOF-3-A

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARLHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Electrician Office South & West Wall
<p>SCIENTECH, INC. 143 WEST STREET NEW MILFORD, CT 06776</p>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: d11	CK:
FIGURE: ELOF-3-A SW	





ELOF-3-A

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Electrician Office Floor & Ceiling	
SCIENSTECH SCIENSTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: MR	CK:
FIGURE: ELOF-3-A Floor/Ceiling	

**General Area**  
FA Electrician Office

**Survey Unit**  
ELOF-3-A

**Class**  
3

**Part**  
All

**Material**  
Various

**Size**  
520 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

**Smears**  
(dpm/100 cm<sup>2</sup>)

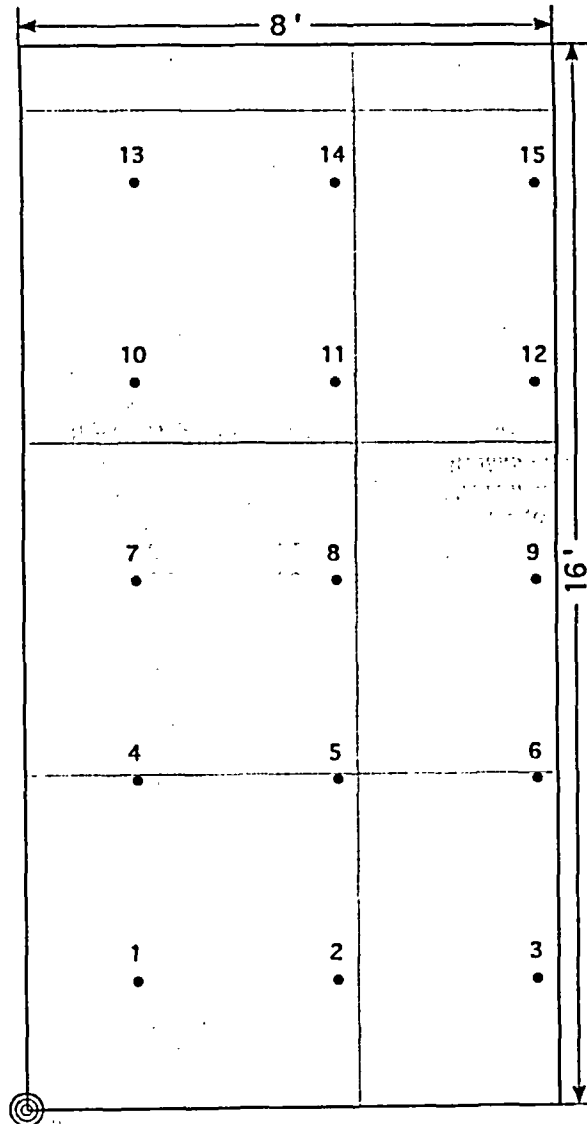
**Gross Exposure Rate**  
( $\mu$ R/hour)

N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	426	63	397	522	-2	1	
2	410	62	314	564	-2	1	
3	539	67	397	564	3	6	
4	460	64	397	481	-2	1	
5	589	68	397	522	-2	1	
6	493	65	397	522	-2	1	
7	485	65	397	522	-2	1	
8	493	65	314	522	1	5	
9	447	64	314	522	-2	1	
10	422	63	397	522	1	5	
11	113	51	397	564	3	6	
12	351	60	439	481	5	8	7
13	430	63	397	564	1	5	7
14	593	68	314	564	1	5	7
15	435	63	397	564	-2	1	7
Average:	446				0		7
Maximum:	593				5		7
Minimum:	113				-2		7
Survey Date 11/30/2004				Survey Date 12/1/2004			
Inst. Model M2360				Inst. Model WPC-9550			
Probe Model M43-93				Ei 0.447 cpm/dpm			
Probe Area 100 cm²				Background 0.83 cpm			
Ei 0.479 cpm/cpm				Bkg σ 0.167 cpm			
Es 0.5 cpm/dpm				MDC 13 dpm/100 cm²			
Background 124.9 cpm							
Bkg σ 10.8 cpm							
MDC 230 dpm/100 cm²							
Survey Date 12/1/2004				Survey Date 12/1/2004			
Inst. Model M2360				Inst. Model M19			
Probe Model M43-93				Background 4.5 μ R/hour			
Probe Area 100 cm²				Bkg σ 0.5 μ R/hour			
Ei 0.479 cpm/cpm							
Es 0.5 cpm/dpm							
Background 124.9 cpm							
Bkg σ 10.8 cpm							
MDC 230 dpm/100 cm²							

**FABU-2-A    Finishing Area – Bunker**



- SURVEY POINTS
- ◎ STARTING LOCATION



EABU-2-A

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 2 Finishing Area Bunker Floor
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/12/2004
By:	CK:
FIGURE: EABU-2-A	

**General Area**  
FA Bunker

**Survey Unit**  
FABU-2-A

**Class**  
2

**Part**  
Floor

**Material**  
Concrete

**Size**  
128 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	532	71
2	486	70
3	281	63
4	344	65
5	407	67
6	357	66
7	244	62
8	160	59
9	173	59
10	315	64
11	277	63
12	302	64
13	235	62
14	281	63
15	139	58
<b>Average:</b>		302
<b>Maximum:</b>		532
<b>Minimum:</b>		139

Survey Date 11/8/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net	Net Maximum
499	666
499	666
332	499
332	499
415	582
415	582
248	415
332	582
165	415
332	499
332	499
332	499
165	332
332	499
165	332

Survey Date 12/1/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
-1	1
8	9
-1	1
1	4
6	8
6	8
-1	1
-1	1
1	4
-1	1
-1	1
-1	1
-1	1
8	9
<b>Average:</b> 1	
<b>Maximum:</b> 8	
<b>Minimum:</b> -1	

Survey Date 12/9/2004

Inst. Model WPC-9550

Ei 0.446 cpm/dpm

Background 0.5 cpm

Bkg σ 0.129 cpm

MDC 11 dpm/100 cm<sup>2</sup>

**Gross Exposure Rate**  
(μ R/hour)

6	
8	
6	
6	
8	
7	
8	
6	
8	
6	
6	
7	
6	
7	
7	
<b>Average:</b> 7	
<b>Maximum:</b> 8	
<b>Minimum:</b> 6	

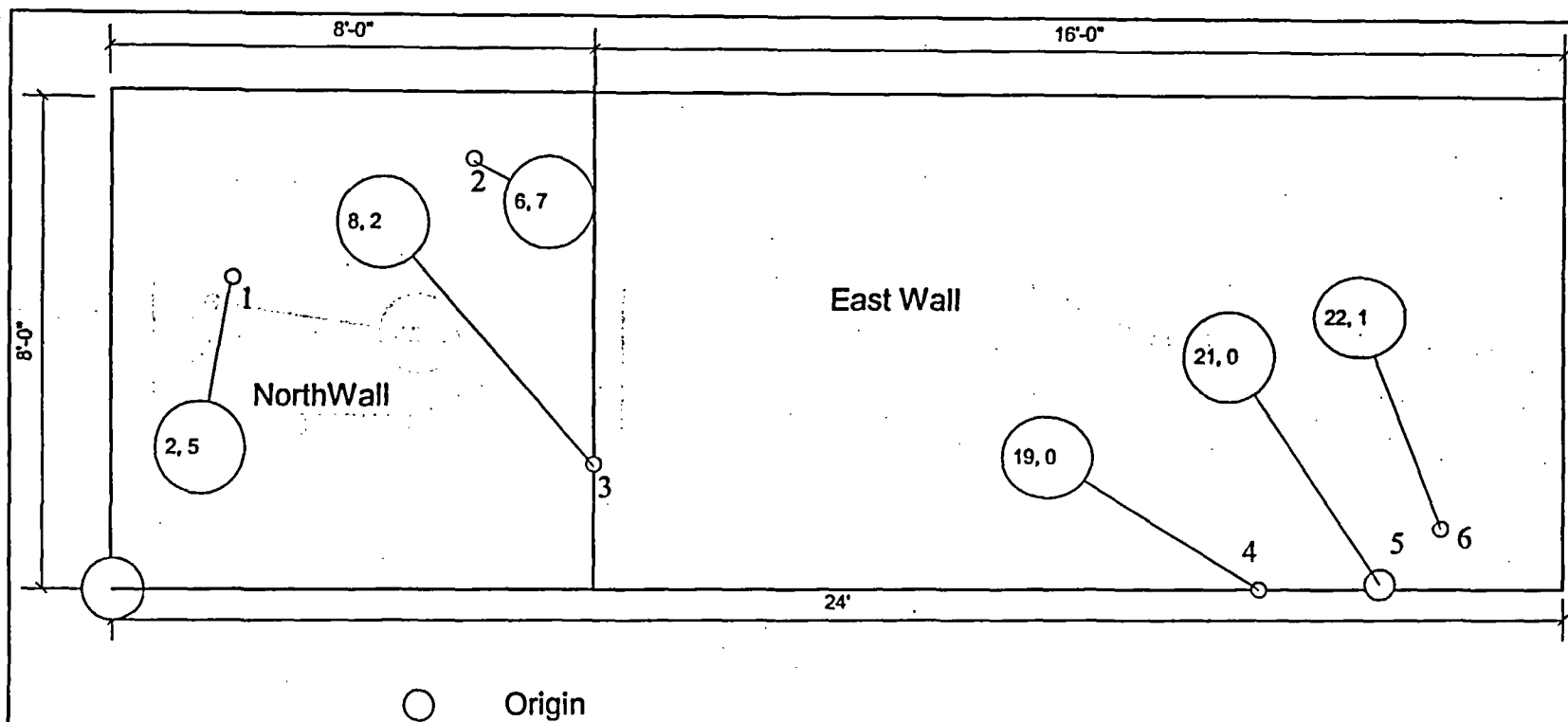
Survey Date 12/9/2004

Inst. Model M19

Background 4.5 μ R/hour

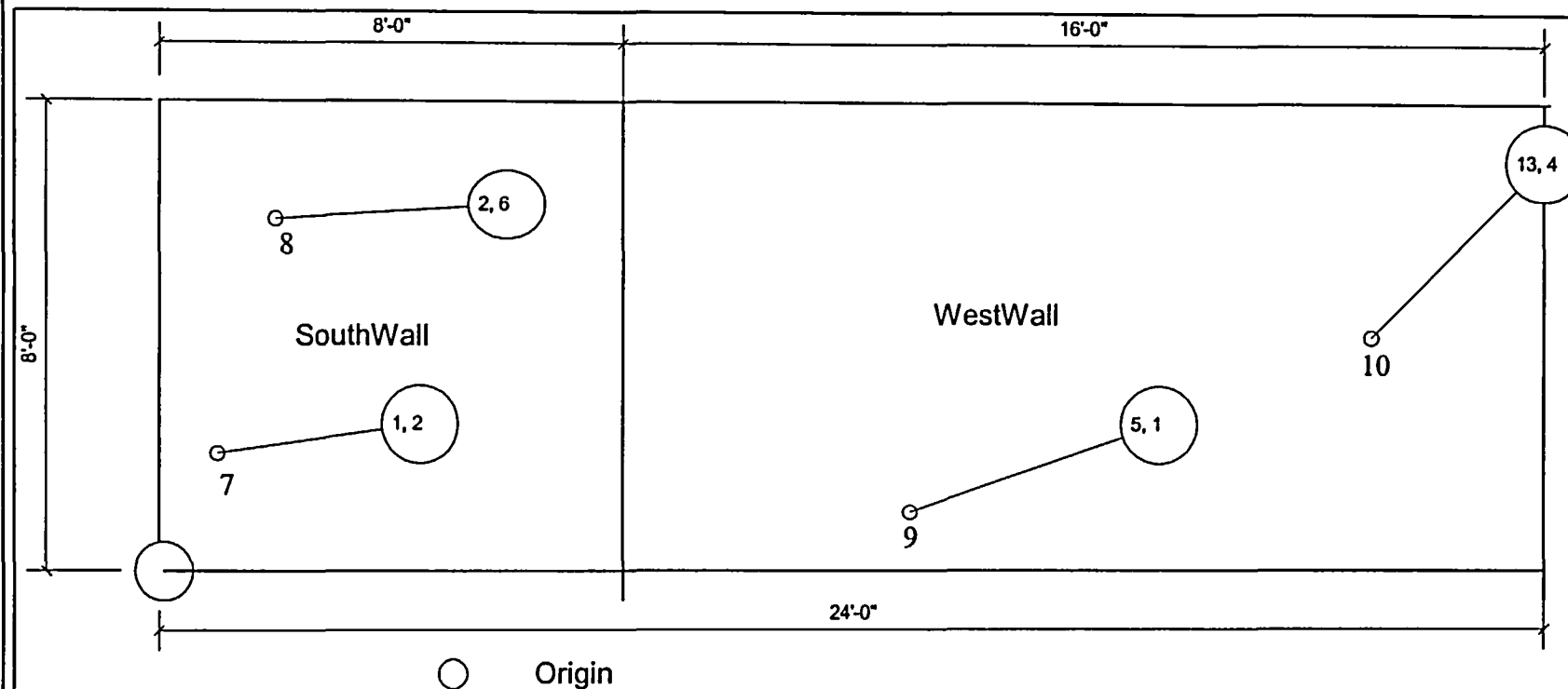
Bkg σ 0.5 μ R/hour

**FABU-3-A    Finishing Area – Bunker**



FABU-3-A

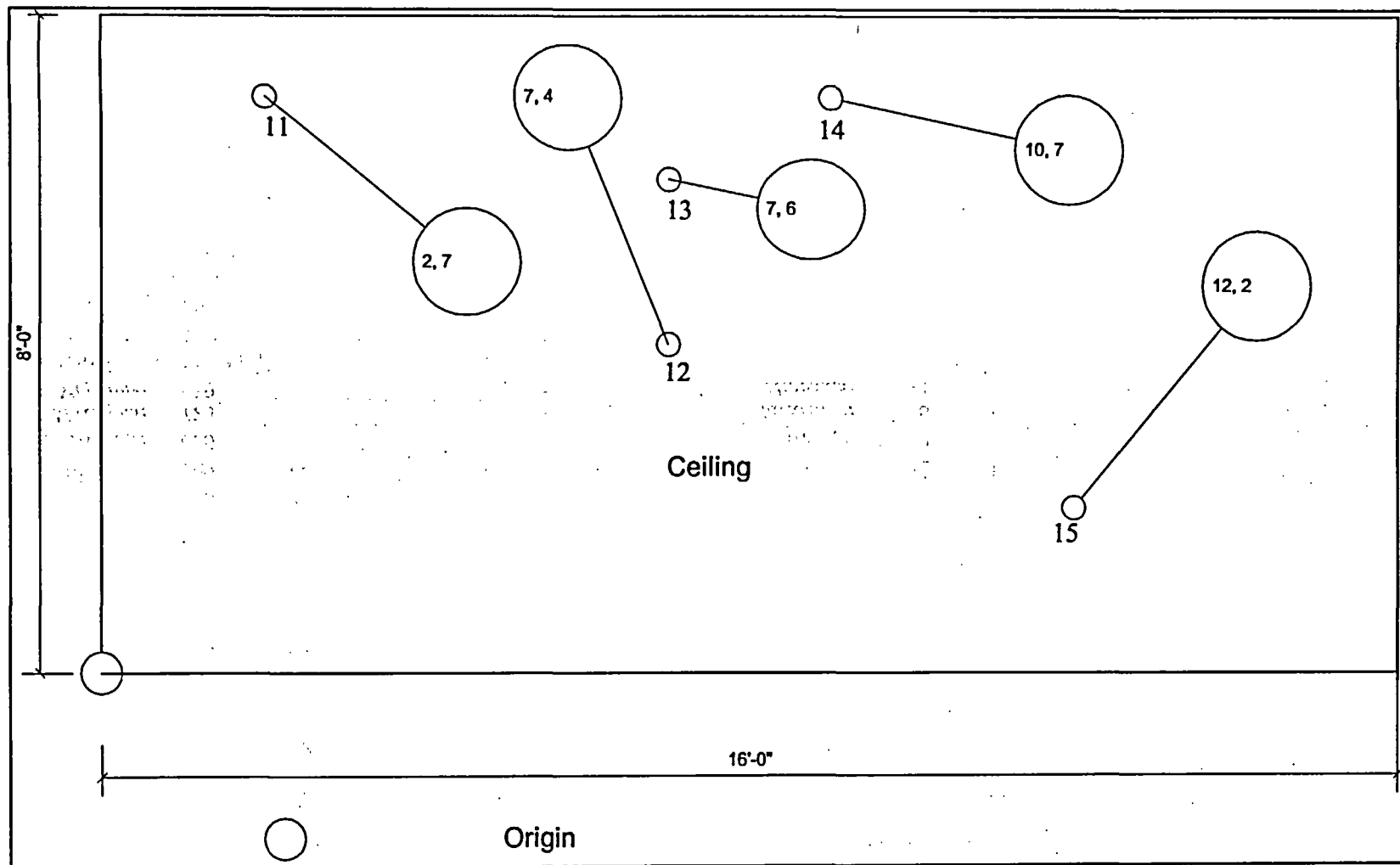
Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Finishing Area Bunker North & East Wall	
SCIENTECH SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/09/2004
By: ah	CK:
FIGURE: FABU-3-A	



FABU-3-A

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Finishing Area Bunker South & West Wall
SCIENTECH <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/09/2004
By: ah	CK:
FIGURE: FABU-3-A	





FABU-3-A

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Finishing Area Bunker Ceiling
SCIENTECH <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/09/2004
By: ah	CK:
FIGURE: FABU-3-A	

**General Area**  
FA Bunker

**Survey Unit**  
FABU-3-A

**Class**  
3

**Part**  
Walls & Ceiling

**Material**  
Metal

**Size**  
512 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	719	72
2	723	72
3	664	70
4	706	72
5	664	70
6	556	67
7	627	69
8	539	67
9	593	68
10	664	70
11	643	70
12	677	71
13	698	71
14	689	71
15	<u>656</u>	70

**Average:** 655

**Maximum:** 723

**Minimum:** 539

Survey Date 12/6/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
6	8
3	6
6	8
1	5
1	5
8	9
3	6
-1	1
-1	1
-1	1
-1	1
3	6
1	5
1	5
<u>-1</u>	1

**Average:** 2

**Maximum:** 8

**Minimum:** -1

Survey Date 12/6/2004

Inst. Model WPC-9550

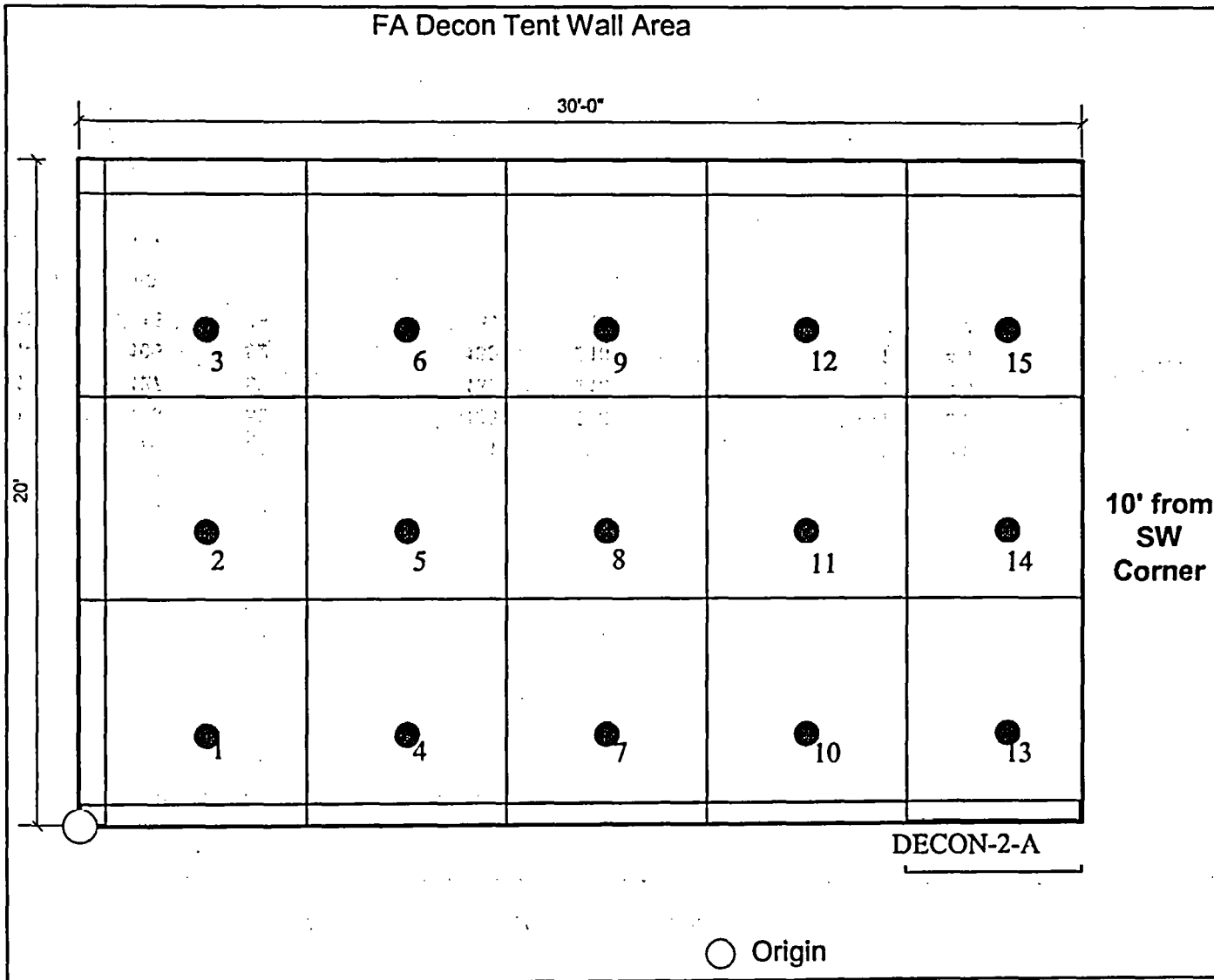
Ei 0.444 cpm/dpm

Background 0.53 cpm

Bkg  $\sigma$  0.133 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**DECON-2-A Decontamination Area in Finishing Area**



Document Control No.	
REVISION NO.	
<b>PROJECT</b>	<b>QUEHANNA DECOMMISSIONING</b>
<b>DRAWING</b>	<b>CLASS 2</b>
KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD Decon Tent Wall Area: DECON-2-A	
 SCIENTECH, Inc. 143 WEST STREET NEW BRIDFORD, CT 06476	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: <b>all</b>	CR:
FIGURE: DECON-2-A	

General Area  
FA SW Decon

Survey Unit  
DECON-2-A

Class  
2

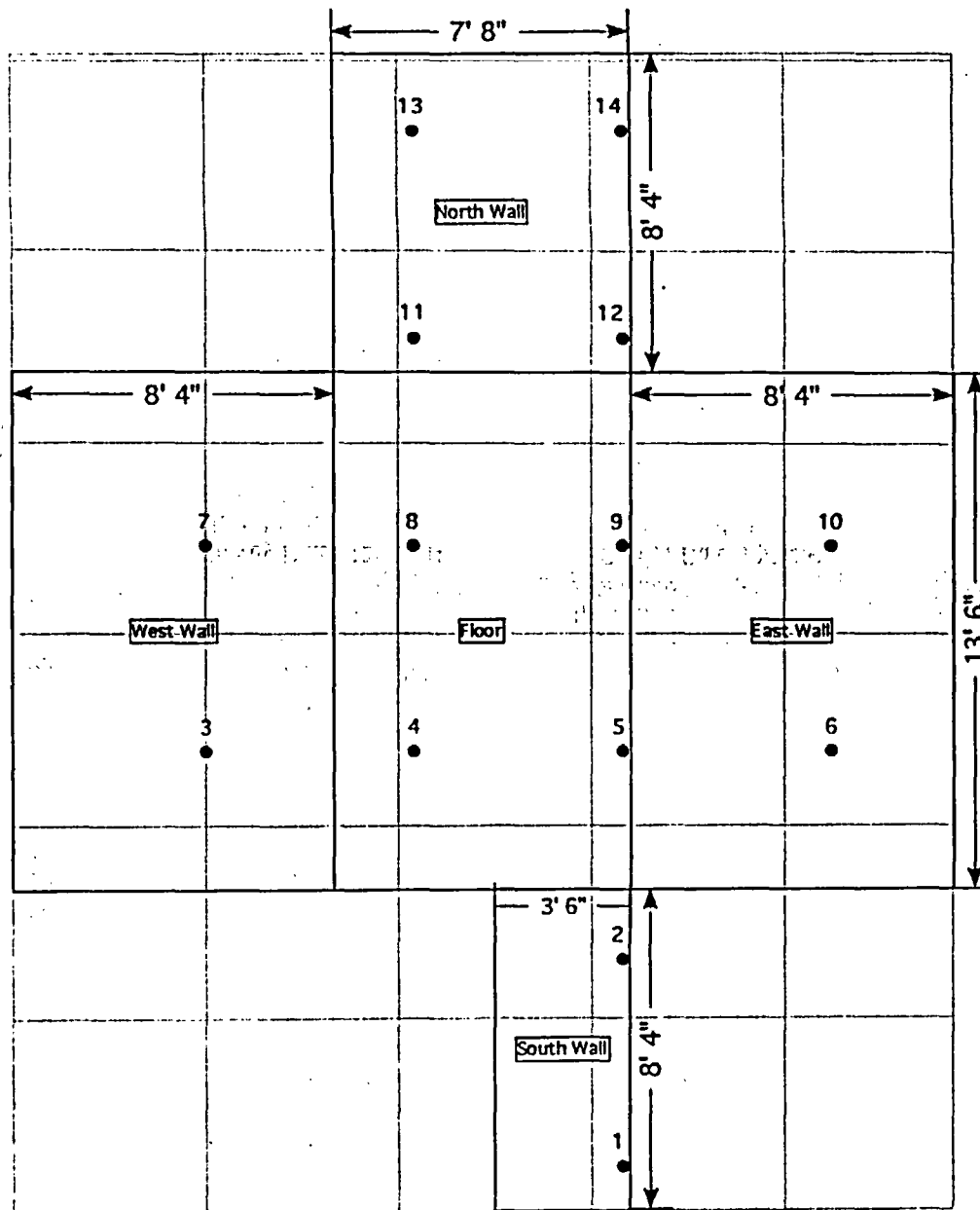
Part  
Wall

Material  
Insulation

Size  
224 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	76	51	51	135	-1	0.5
2	47	49	51	135	1	4.4
3	47	49	51	135	1	4.4
4	127	53	135	218	-1	0.5
5	-20	46	-32	51	-1	0.5
6	68	50	51	135	6	7.6
7	85	51	51	135	-1	0.5
8	60	50	51	135	-1	0.5
9	35	49	51	135	4	6.2
10	-24	46	-32	51	-1	0.5
11	76	51	51	135	-1	0.5
12	118	52	135	218	-1	0.5
13	127	53	135	218	1	4.4
14	106	52	135	218	1	4.4
15	18	48	51	218	1	4.4
Average: 63					Average: 0	
Maximum: 127					Maximum: 6	
Minimum: -24					Minimum: -1	
Survey Date 12/15/2004			Survey Date 12/15/2004		Survey Date 12/16/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.446 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.12 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 127.7 cpm			Background 127.7 cpm			
Bkg σ 9.8 cpm			Bkg σ 9.8 cpm			
MDC 232 dpm/100 cm <sup>2</sup>			MDC 713 dpm/100 cm <sup>2</sup>			

**FATC-2-A    Finishing Area - Tool Crib**



FATC-2-A

• SURVEY POINTS

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 2 Finishing Area Tool Crib: FATC-2-A	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/08/2004
By: ah	CK:
FIGURE: FATC-2-A	

General Area  
FA Tool Crib

Survey Unit  
FATC-2-A

Class  
2

Part  
All

Material  
Concrete

Size  
405 ft<sup>2</sup>

**Beta Directs**

(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	152	59
2	135	58
3	131	58
4	177	60
5	-241	43
6	160	59
7	190	60
8	-215	44
9	194	60
10	240	62
11	256	62
12	185	60
13	165	59
14	123	58

Average: 118

Maximum: 256

Minimum: -241

Survey Date 12/7/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**

(dpm/100 cm<sup>2</sup>)

Net	Net Maximum
165	332
165	248
81	165
-3	165
-253	-3
165	332
165	248
-253	-3
165	332
248	415
248	415
165	248
165	248
81	248

Survey Date 12/7/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**

(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
4	6
-1	1
1	4
6	8
-1	1
-1	1
-1	1
6	8
1	4
-1	1
1	4
-1	1
4	6

Average: 1

Maximum: 6

Minimum: -1

Survey Date 12/7/2004

Inst. Model WPC-9550

Ei 0.449 cpm/dpm

Background 0.4 cpm

Bkg σ 0.115 cpm

MDC 11 dpm/100 cm<sup>2</sup>

**Gross Exposure Rate**

(μ R/hour)

5

6

5

6

Average: 6

Maximum: 6

Minimum: 5

Survey Date 12/7/2004

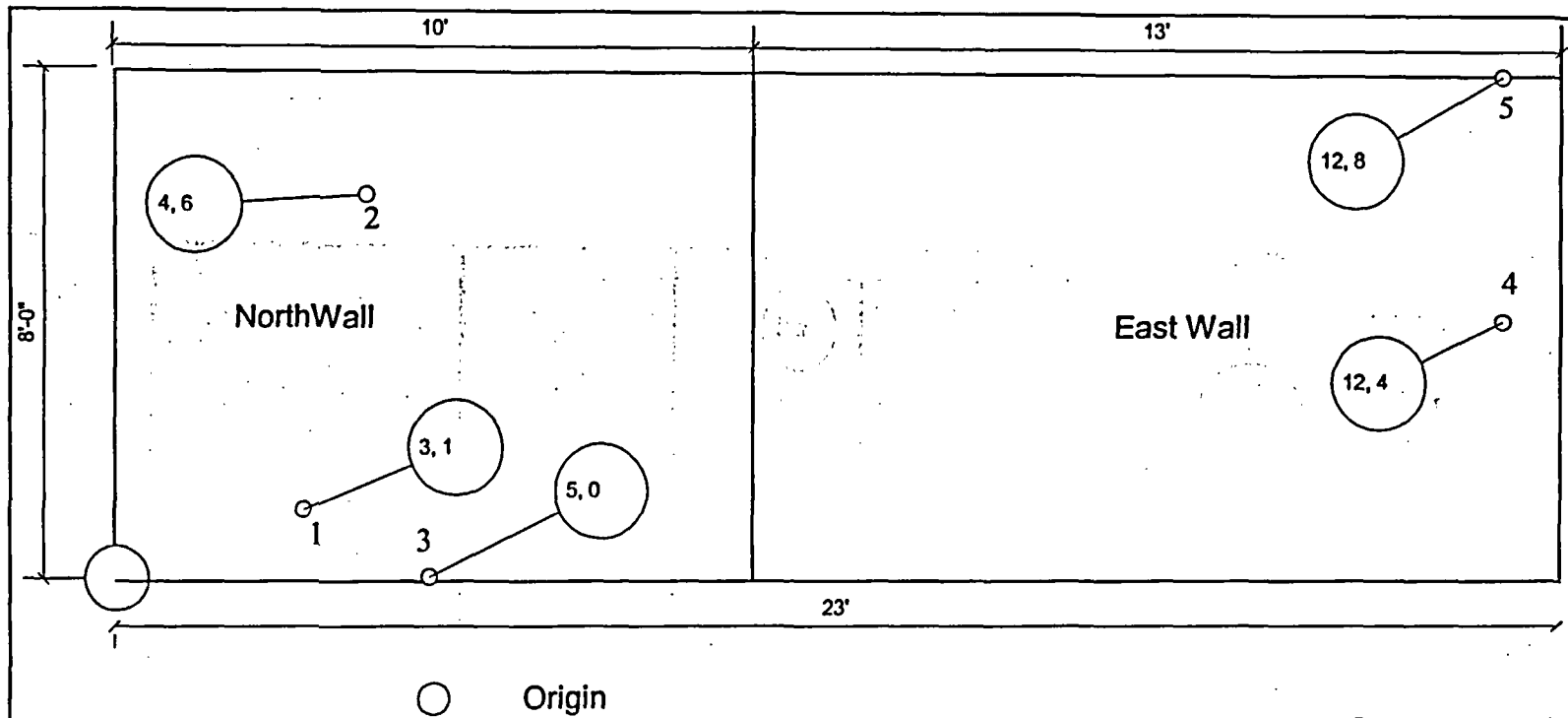
Inst. Model M19

Background 4.5 μ R/hour

Bkg σ 0.5 μ R/hour



**FAOF-3-A Finishing Area – Office**



Document -  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 3  
Finishing Area Office North & East Wall

SCIENTECH

SCIENTECH, Inc.  
141 WEST STREET  
NEW MILFORD, CT 06776

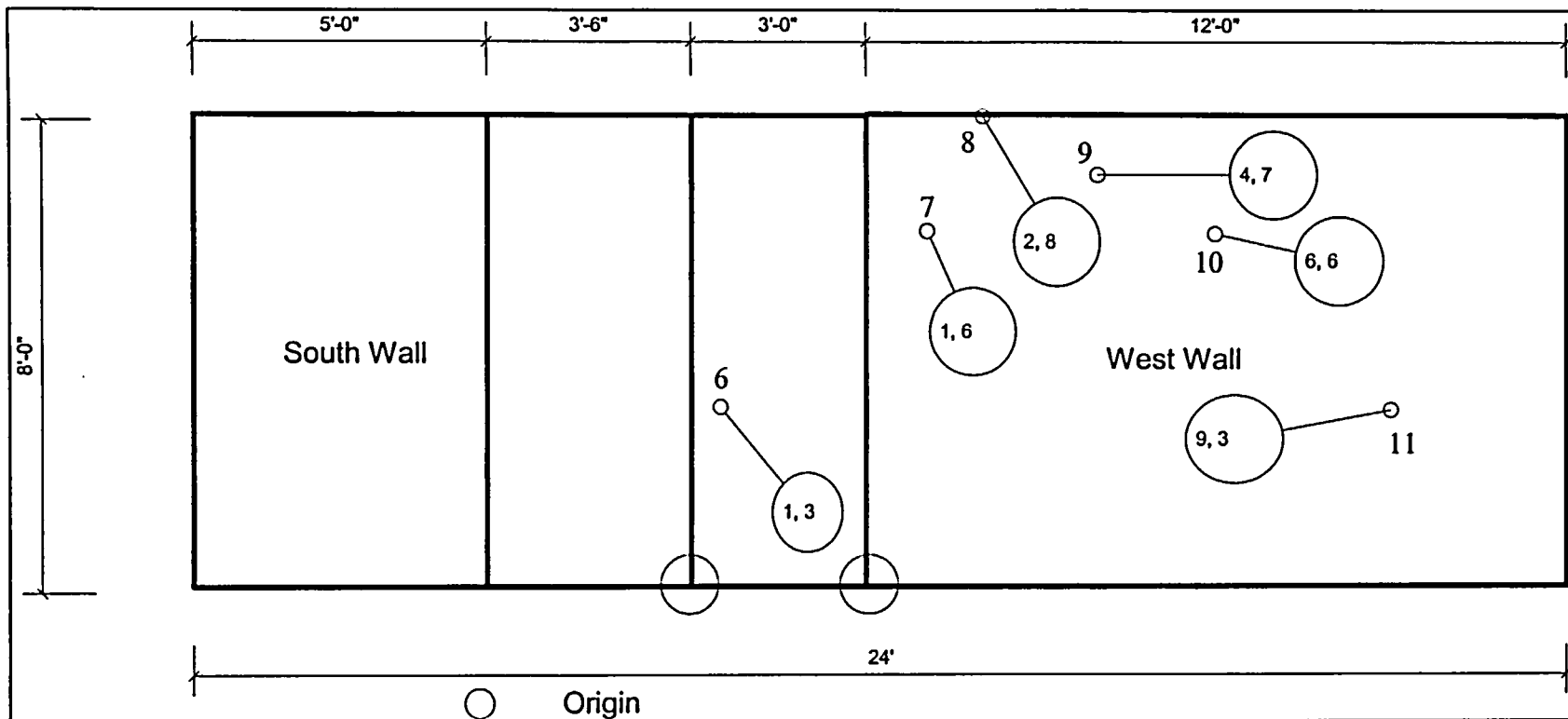
PROJECT NO:  
23529-0501

FILE NAME:

SCALE: N.T.S. DATE: 12/02/2004

By: CK: 211

FIGURE:  
FAOF-3-A NE



Document  
Control No.

REVISION NO.

1

DRAWING

PROJECT

Finishing Area Office South & West Wall

CLASS 3

QUEHANNA DECOMMISSIONING  
KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO:

23529-0501

FILE NAME:

SCALE:

N.T.S.

DATE:

12/04/2004

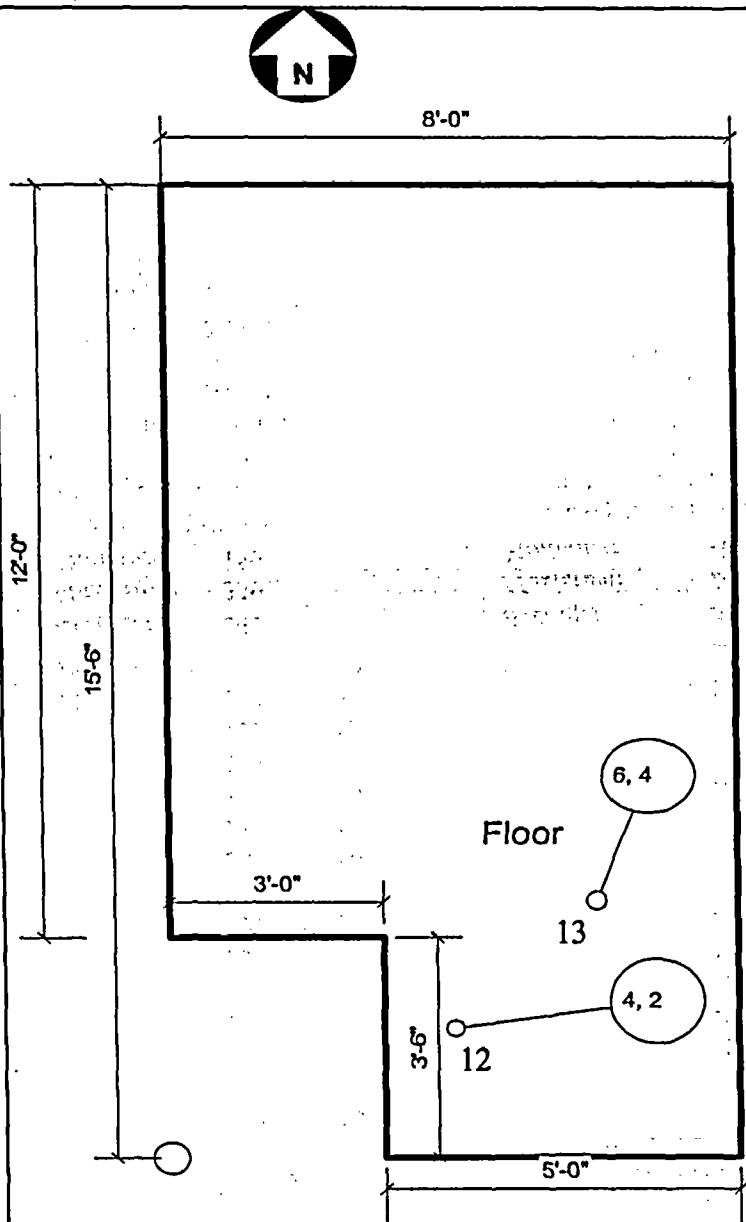
By:

all

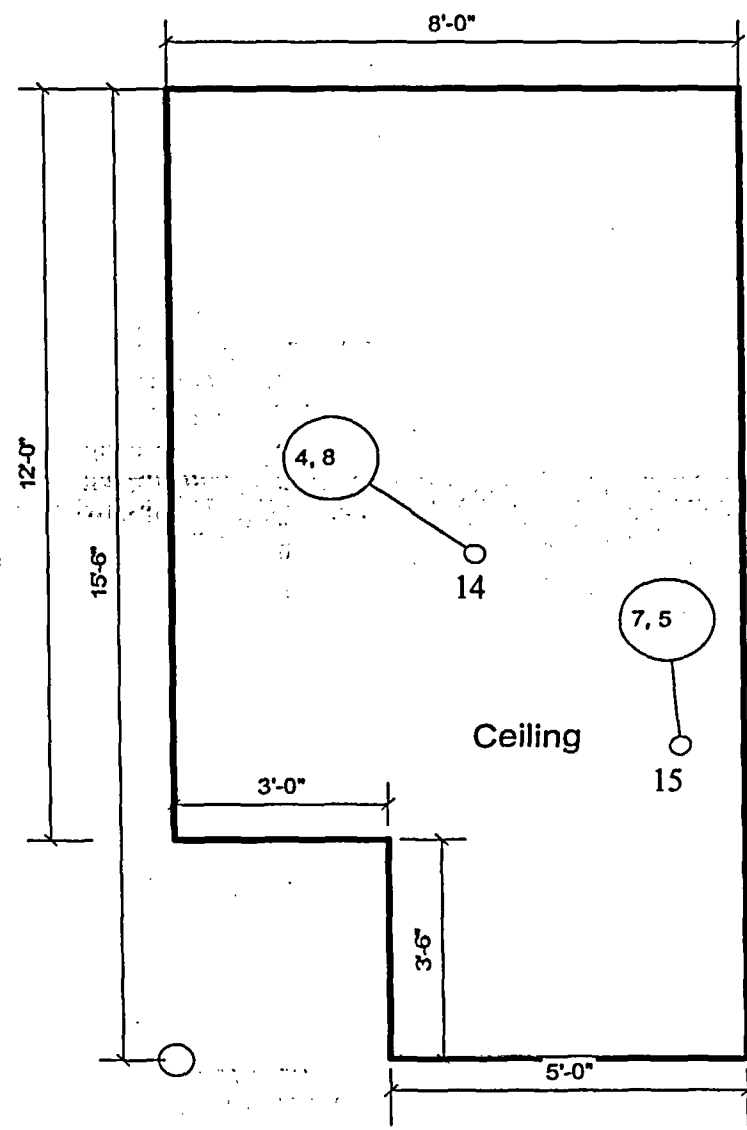
CK:

FIGURE:

FAOF-3-A SW



○ Origin



○ Origin

Document Control No.	
REVISION NO.	
2	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Finishing Area Office Floor & Ceiling	
SCIENTECH SCIENTECH, INC. 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO:	
23529-0501	
FILE NAME:	
SCALE:	DATE:
N.T.S.	1/10/2005
By:	CK:
CW	
FIGURE:	
FAOF-3-A Floor/Ceiling	

**General Area**  
FA Office

**Survey Unit**  
FAOF-3-A

**Class**  
3

**Part**  
All

**Material**  
Various

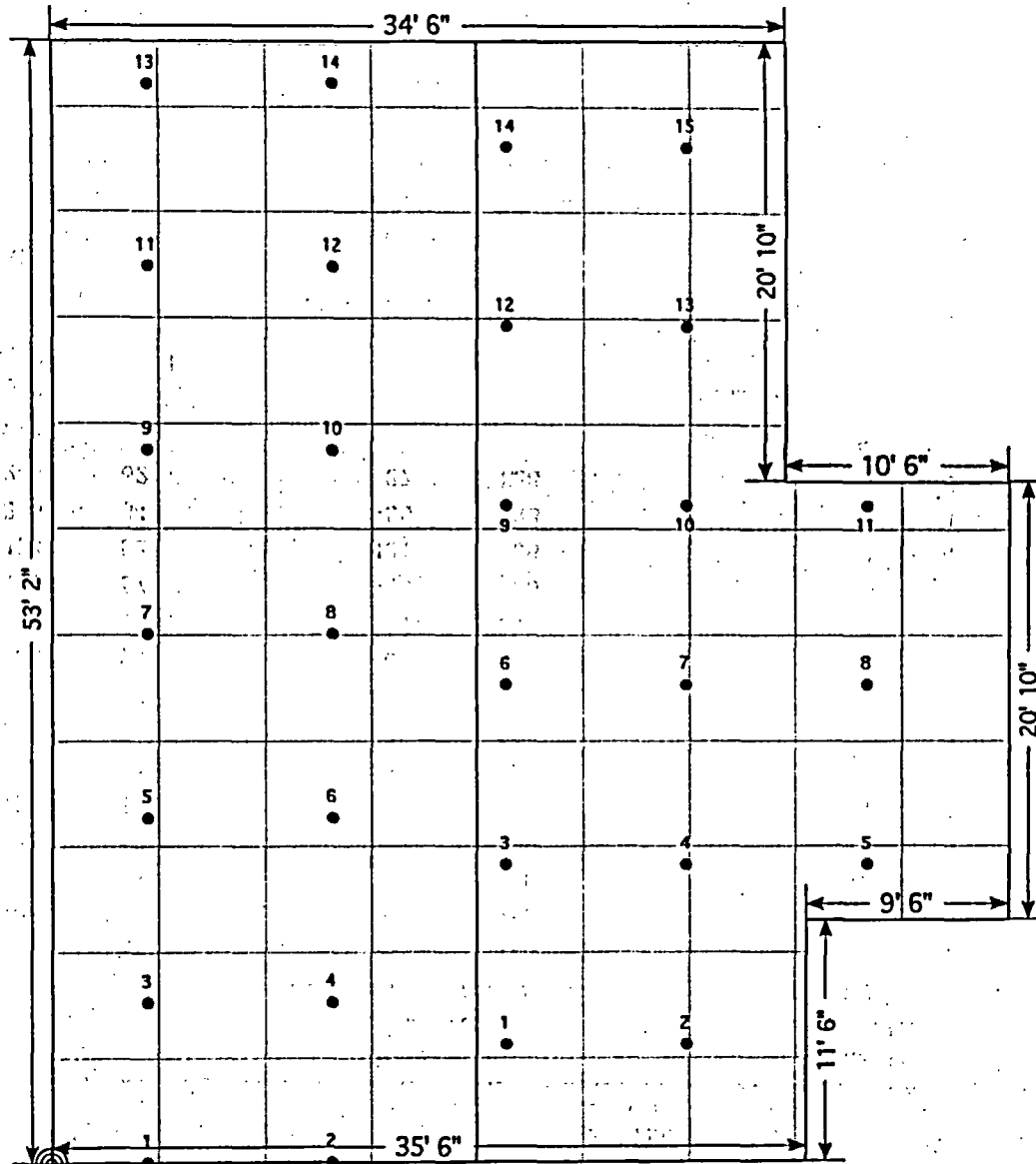
**Size**  
132 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure ( $\mu$ R/hour)
N	Net Activity	Sigma	Net Activity	Sigma	
1	293	58	6	8	
2	230	56	1	4	
3	251	57	-1	1	
4	201	55	-1	1	
5	263	57	-1	1	
6	334	60	1	4	
7	197	55	-1	1	
8	263	57	15	12	
9	222	56	-1	1	
10	217	56	-1	1	
11	339	60	-1	1	
12	163	53	6	8	
13	159	53	24	15	
14	243	57	13	11	7
15	247	57	10	10	6
Average:	242		5		7
Maximum:	339		24		7
Minimum:	159		-1		6
Survey Date	12/7/2004		Survey Date	12/7/2004	
Inst. Model	M2360		Inst. Model	WPC-9550	
Probe Model	M43-93		Ei	0.449 cpm/dpm	
Probe Area	100 cm <sup>2</sup>		Background	0.4 cpm	
Ei	0.479 cpm/cpm		Bkg $\sigma$	0.115 cpm	
Es	0.5 cpm/dpm		MDC	11 dpm/100 cm <sup>2</sup>	
Background	124.9 cpm				Survey Date 12/7/2004
Bkg $\sigma$	10.8 cpm				Inst. Model M19
MDC	230 dpm/100 cm <sup>2</sup>				Background 4.5 $\mu$ R/hour
					Bkg $\sigma$ 0.5 $\mu$ R/hour

**BR-1-A and BR-1-B  
Boiler Rooms**



• SURVEY POINTS  
 ◎ STARTING LOCATION



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING
DRAWING	KARTHUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Boiler Room Floor
<p>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756</p>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: BR-1-A,B	

**General Area**  
Boiler Room

**Survey Unit**  
BR-1-A

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
1063 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	215	61	-55	128	1	4	3
2	106	57	-86	189	6	7	3
3	-132	48	-86	220	12	11	3
4	73	56	37	159	4	6	4
5	190	60	-86	159	-1	1	4
6	302	64	-55	250	4	6	3
7	277	63	-55	250	4	6	4
8	357	66	98	709	6	7	3
9	52	55	67	556	4	6	3
10	144	58	21	311	-1	1	4
11	102	57	-86	98	6	7	4
12	123	58	-131	-66	1	4	5
13	315	64	-55	128	-1	1	4
14	244	62	37	556	4	6	6
<b>Average:</b> 169					<b>Average:</b> 4		<b>Average:</b> 4
<b>Maximum:</b> 357					<b>Maximum:</b> 12		<b>Maximum:</b> 6
<b>Minimum:</b> -132					<b>Minimum:</b> -1		<b>Minimum:</b> 3
Survey Date 12/11/2004			Survey Date 12/11/2004		Survey Date 12/11/2004		Survey Date 12/11/200
Inst. Model M2360			Inst. Model LI2		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-37		Ei 0.458 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 697 cm <sup>2</sup>		Background 0.37 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/cpm			Ei 0.188 cpm/cpm		Bkg σ 0.111 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 10 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 236 cpm				
Bkg σ 10 cpm			Bkg σ 26 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 354 dpm/100 cm <sup>2</sup>				



**General Area**  
Boiler Room

**Survey Unit**  
BR-1-B

**Class**  
1

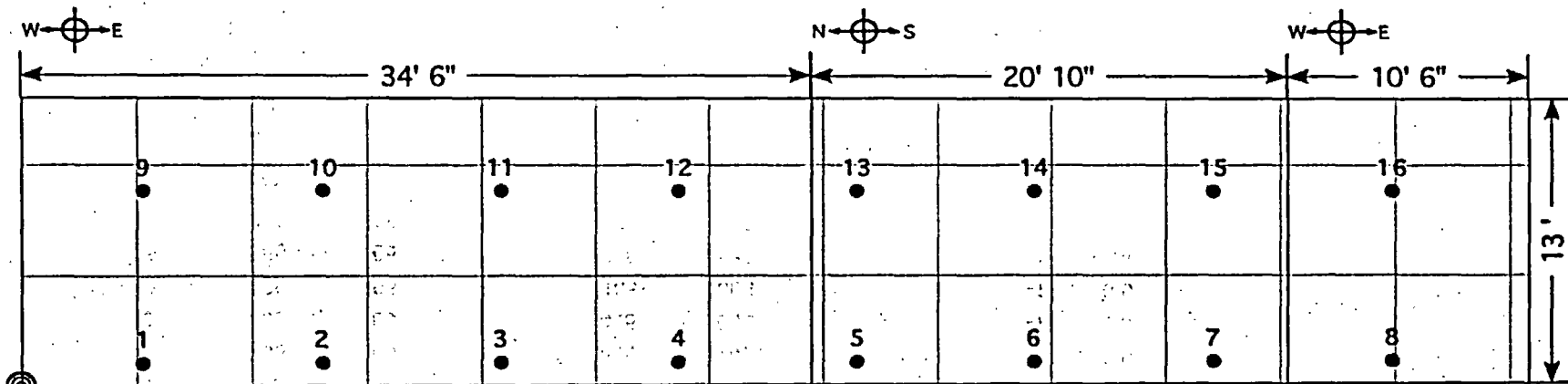
**Part**  
Floor

**Material**  
Concrete

**Size**  
1001 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	43	55	-208	21	6	7	4
2	110	57	98	403	-1	1	3
3	173	59	21	250	-1	1	4
4	-15	52	-131	21	1	4	4
5	85	56	-131	21	1	4	5
6	185	60	98	403	-1	1	4
7	160	59	-55	174	6	7	5
8	185	60	-55	250	4	6	7
9	315	64	21	250	1	4	4
10	114	57	-55	327	4	6	4
11	352	65	98	327	-1	1	6
12	177	60	98	403	-1	1	5
13	127	58	21	174	6	7	5
14	256	62	-55	174	-1	1	5
15	269	63	-55	98	-1	1	6
Average: 169					Average: 1		Average: 5
Maximum: 352					Maximum: 6		Maximum: 7
Minimum: -15					Minimum: -1		Minimum: 3
Survey Date 11/11/2004			Survey Date 12/11/2004		Survey Date 12/11/2004		Survey Date 12/11/200
Inst. Model M2360			Inst. Model L12		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-37		Ei 0.458 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 697 cm <sup>2</sup>		Background 0.37 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/dpm			Ei 0.188 cpm/dpm		Bkg σ 0.111 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 10 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 236 cpm				
Bkg σ 10 cpm			Bkg σ 26 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 354 dpm/100 cm <sup>2</sup>				

**BR-1-C      Boiler Room**



BR-1-C

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING
DRAWING	KARLHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Boiler Room North and East Walls
SCIENTECH <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: BR-1-C	

**General Area**  
Boiler Room

**Survey Unit**  
BR-1-C

**Class**  
1

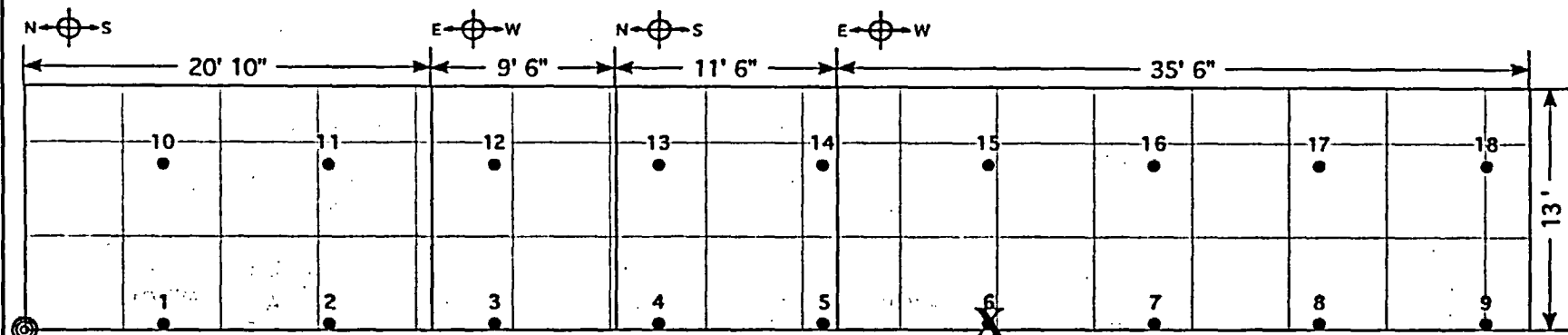
**Part**  
Wall

**Material**  
Concrete

**Size**  
856 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	319	64	-86	749	-1	0.5
2	390	67	165	582	-1	0.5
3	252	62	165	666	-1	0.5
4	273	63	81	582	-1	0.5
5	290	63	332	749	-1	0.5
6	377	66	415	749	1	4.4
7	377	66	332	749	1	4.4
8	540	71	248	833	-1	0.5
9	448	68	290	582	-1	0.5
10	311	64	332	749	1	4.4
11	352	65	332	582	-1	0.5
12	386	66	415	749	-1	0.5
13	436	68	415	666	-1	0.5
14	369	66	165	666	-1	0.5
15	369	66	248	582	1	4.4
16	436	68	373	582	-1	0.5
<b>Average:</b> 370			<b>Average:</b> -1		<b>Average:</b> -1	
<b>Maximum:</b> 540			<b>Maximum:</b> 1		<b>Maximum:</b> 1	
<b>Minimum:</b> 252			<b>Minimum:</b> -1		<b>Minimum:</b> -1	
Survey Date 12/13/2004			Survey Date 12/13/2004		Survey Date 12/13/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.448 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.47 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg $\sigma$ 0.125 cpm	
Es 0.5 epm/dpm			Es 0.5 epm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 160.6 cpm			Background 160.6 cpm			
Bkg $\sigma$ 10 cpm			Bkg $\sigma$ 10 cpm			
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>			

**BR-1-D      Boiler Room**



BR-1-D

• SURVEY POINTS  
 • STARTING LOCATION

Pt. #6 was in a doorway

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Boiler Room East and South Walls	
SCIENSTECH SCIENSTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CX:
FIGURE: BR-1-D	

General Area  
Boiler Room

Survey Unit  
BR-1-D

Class  
1

Part  
Wall

Material  
Concrete

Size  
1005 ft<sup>2</sup>

Beta Directs  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	352	65
2	286	63
3	-119	48
4	-69	50
5	-3	53
7	-82	50
8	-111	48
9	-111	48
10	298	64
11	277	63
12	-57	51
13	-73	50
14	-48	51
15	-7	53
15	-107	49
17	-115	48
18	-23	52
Average: 17		
Maximum: 352		
Minimum: -119		

Survey Date 12/15/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/epm

Es 0.5 epm/dpm

Background 160. cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

Beta Scans  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
81	582
81	666
-86	165
-170	81
-86	81
-86	81
-128	-3
-128	-3
81	582
81	582
-170	-3
-128	-3
-170	-3
-170	-3
-170	-3
-170	-3
-170	-3

Survey Date 12/15/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/epm

Es 0.5 epm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

Smears  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
1	4.4
-1	0.5
1	4.4
1	4.4
-1	0.5
-1	0.5
-1	0.5
6	7.6
4	6.2
4	6.2
-1	0.5
4	6.2
1	4.4
1	4.4
4	6.2
4	6.2
-1	0.5
Average: 1	
Maximum: 6	
Minimum: -1	

Survey Date 12/15/2004

Inst. Model WPC-9550

Ei 0.446 cpm/dpm

Background 0.43 cpm

Bkg σ 0.12 cpm

MDC 11 dpm/100 cm<sup>2</sup>

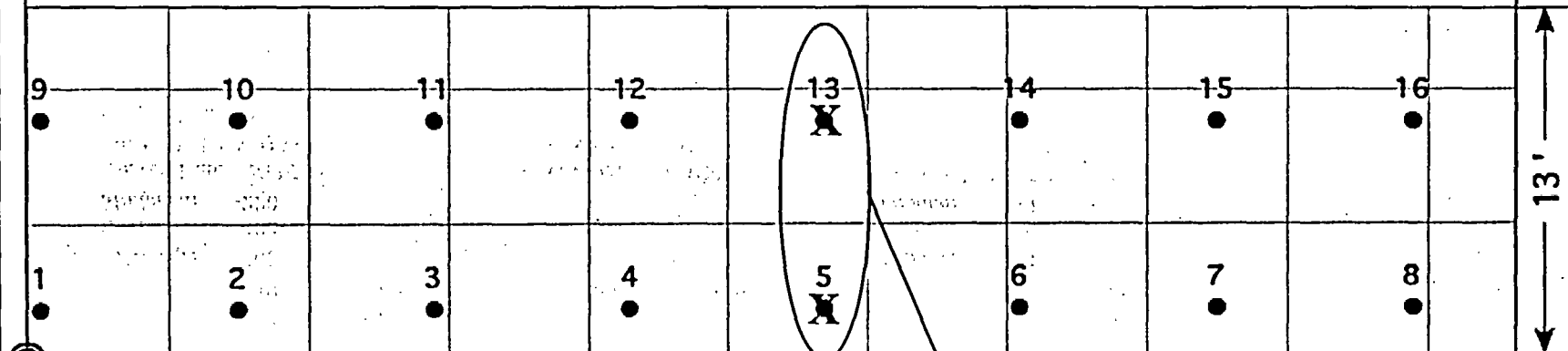
**BR-1-E      Boiler Room**





53' 2"

13'



BR-1-E

• SURVEY POINTS

◎ STARTING LOCATION

There was no wall at points 5 & 13

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING

KARLHAUS, PENNSYLVANIA  
115 REACTOR ROAD

CLASS 1

Boiler Room West Wall

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO:

23529-0501

FILE NAME:

SCALE:

DATE:

N.T.S.

07/06/2004

By:

CK:

FIGURE:

BR-1-E

**General Area**  
Boiler Room

**Survey Unit**  
BR-1-E

**Class**  
1

**Part**  
Wall

**Material**  
Concrete

**Size**  
691 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	60	55
2	-57	51
3	77	56
4	-220	44
6	81	56
7	215	61
8	131	58
9	6	53
10	10	53
11	64	55
12	-28	52
14	56	55
15	403	67
16	<u>110</u>	57

**Average:** 65  
**Maximum:** 403  
**Minimum:** -220

Survey Date 12/13/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160. cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
165	415
-170	415
-86	165
-170	499
81	332
165	666
248	666
81	499
39	415
-86	248
-3	499
81	749
165	666
332	499

Survey Date 12/13/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	0.5
-1	0.5
3	6.2
1	4.4
-1	0.5
1	4.4
1	4.4
-1	0.5
-1	0.5
-1	0.5
-1	0.5
6	7.6
<u>6</u>	7.6

**Average:** 1  
**Maximum:** 6  
**Minimum:** -1

Survey Date 12/13/2004

Inst. Model WPC-9550

Ei 0.448 cpm/dpm

Background 0.47 cpm

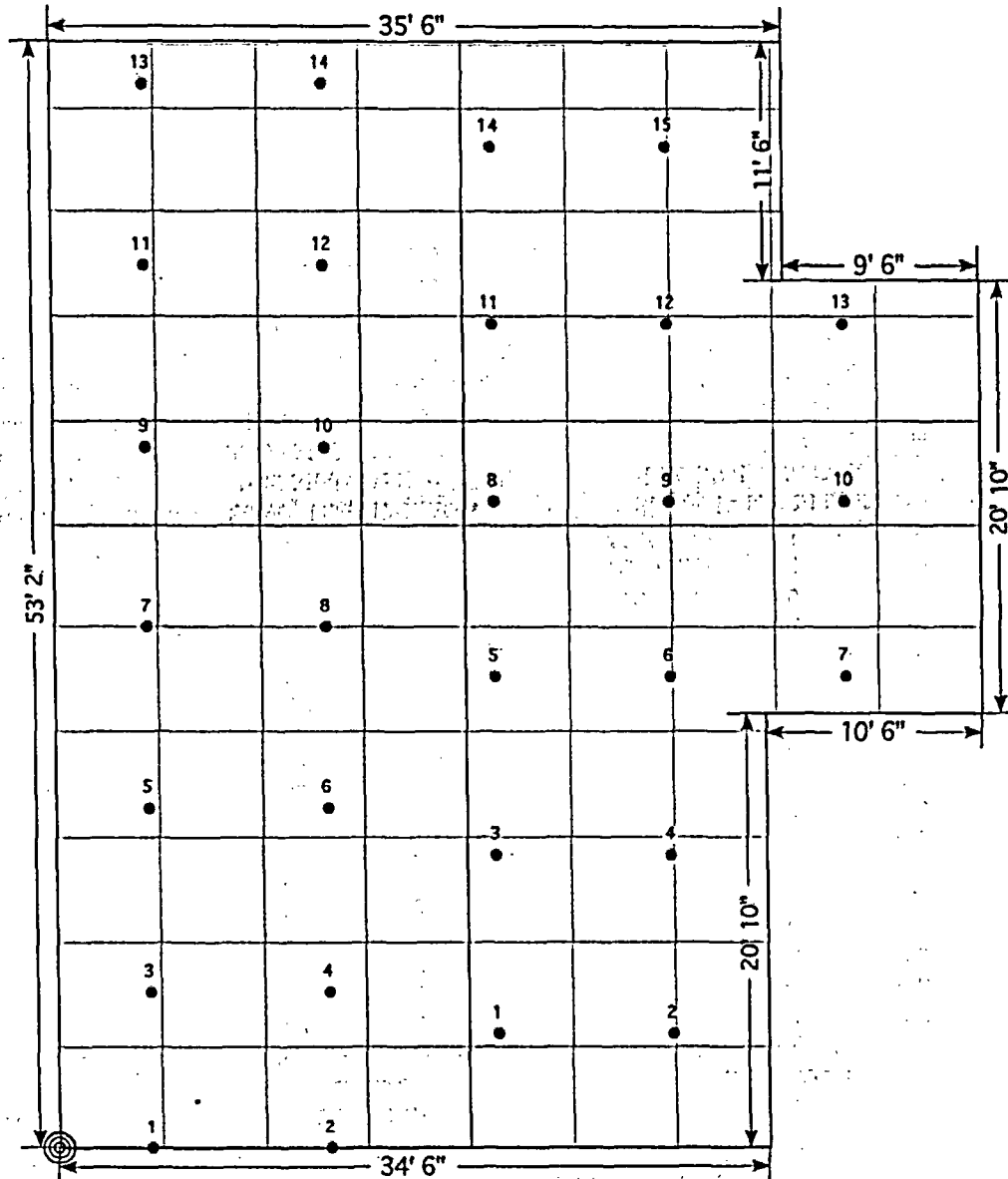
Bkg σ 0.125 cpm

MDC 11 dpm/100 cm<sup>2</sup>

**BR-1-F and BR-1-G**  
**Boiler Rooms**



- SURVEY POINTS
- ◎ STARTING LOCATION



BR-1-F

BR-1-G

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Boiler Room Ceiling

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06774

PROJECT NO:  
23529-0501

FILE NAME:

SCALE:  
N.T.S.

DATE:  
07/06/2004

By: CK:

FIGURE:  
BR-1-F,G

**General Area**  
Boiler Room

**Survey Unit**  
BR-1-F

**Class**  
1

**Part**  
Ceiling

**Material**  
Metal

**Size**  
1063 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	25	48
2	71	50
3	376	61
4	259	57
5	581	68
6	101	51
7	101	51
8	88	50
9	493	65
10	55	49
11	564	67
12	50	49
13	288	58
14	167	54

**Average:** 231

**Maximum:** 581

**Minimum:** 25

Survey Date 11/14/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
63	397
63	397
63	397
63	397
63	397
63	397
63	314
21	314
63	314
63	314
63	397
-21	230
63	314
21	230

Survey Date 12/14/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	0.6
-1	0.6
-1	0.6
1	4.5
5	7.6
1	4.5
-1	0.6
-1	0.6
1	4.5
1	4.5
-1	0.6
-1	0.6
-1	0.6
-1	0.6

**Average:** 0

**Maximum:** 5

**Minimum:** -1

Survey Date 12/14/2004

Inst. Model WPC-9550

Ei 0.445 cpm/dpm

Background 0.63 cpm

Bkg  $\sigma$  0.145 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**General Area**  
Boiler Room

**Survey Unit**  
BR-1-G

**Class**  
1

**Part**  
Ceiling

**Material**  
Metal

**Size**  
1001 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	67	50
2	30	48
3	-87	43
4	172	54
5	59	49
6	80	50
7	-75	43
8	67	50
9	138	52
10	71	50
11	201	55
12	-33	45
13	5	47
14	50	49
15	92	51

Average: 56

Maximum: 205

Minimum: -87

Survey Date 11/15/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 epm/dpm

Background 124.9 cpm

Bkg σ 10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
21	230
21	146
-21	105
21	146
21	188
21	146
-21	146
-21	146
21	188
-21	146
21	188
-21	105
-21	63
-21	105
-21	146

Survey Date 12/14/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 epm/dpm

Background 124.9 cpm

Bkg σ 10.8 cpm

MDC 705 dpm/100 cm<sup>2</sup>

**Smears**

(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
1	4.4
-1	0.5
-1	0.5
1	4.4
1	4.4
4	6.2
-1	0.5
-1	0.5
1	4.4
4	6.2
6	7.6
-1	0.5
1	4.4
-1	0.5
-1	0.5

Average: 1

Maximum: 6

Minimum: -1

Survey Date 12/15/2004

Inst. Model WPC-9550

Ei 0.446 cpm/dpm

Background 0.43 cpm

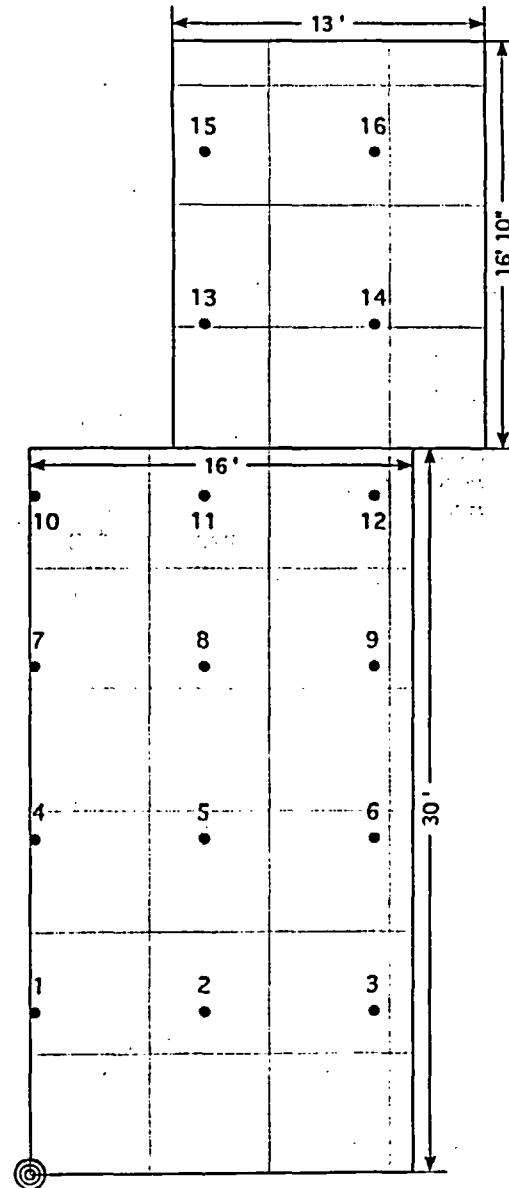
Bkg σ 0.12 cpm

MDC 11 dpm/100 cm<sup>2</sup>

**HYDRO-1-A Hydroblast Room**



• SURVEY POINTS  
◎ STARTING LOCATION



HYDRO-1-A

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Hydro Blast Room Floor

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06776

PROJECT NO:  
23529-0501

FILE NAME:

SCALE: DATE:  
N.T.S. 12/09/2004

By: CK:  
ah

FIGURE:  
HYDRO-1-A



**General Area**  
Hydro-Blast Area

**Survey Unit**  
HYDRO-1-A

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
699 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	27	54
2	81	56
3	77	56
4	148	59
5	43	55
6	248	62
7	419	68
8	394	67
9	390	67
10	352	65
11	286	63
12	327	65
13	169	59
14	227	61
15	261	62
16	240	62
<b>Average:</b>		231
<b>Maximum:</b>		419
<b>Minimum:</b>		27

Survey Date 11/8/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
-3	165
81	332
81	332
165	332
-3	81
248	499
415	582
415	582
415	582
332	499
248	415
332	499
165	499
165	499
248	332
248	332

Survey Date 12/1/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
6	8
1	4
3	6
1	4
6	8
8	9
3	6
-1	1
1	4
-1	1
-1	1
1	4
-1	1
3	6
-1	1
1	4
<b>Average:</b> 2	
<b>Maximum:</b> 8	
<b>Minimum:</b> -1	

Survey Date 12/9/2004

Inst. Model WPC-9550

Ei 0.446 cpm/dpm

Background 0.5 cpm

Bkg σ 0.129 cpm

MDC 11 dpm/100 cm<sup>2</sup>

**Gross Exposure Rate**  
(μR/hour)

6	
7	
8	
7	
6	
6	
8	
6	
6	
8	
6	
5	
7	
6	
6	
8	
<b>Average:</b> 7	
<b>Maximum:</b> 8	
<b>Minimum:</b> 5	

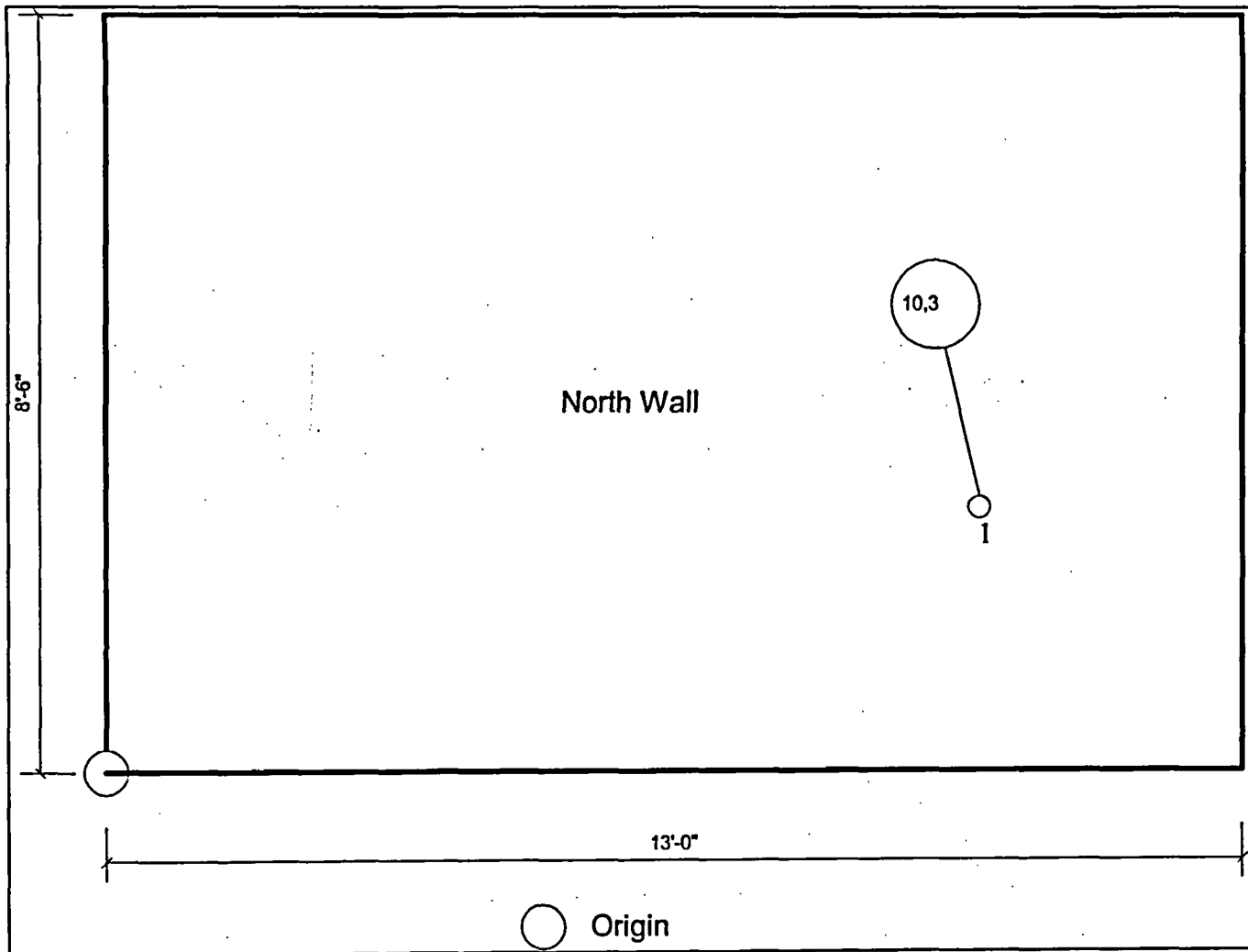
Survey Date 12/9/2004

Inst. Model M19

Background 4.5 μ R/hour

Bkg σ 0.5 μ R/hour

**HYDRO-3-A Hydroblast Room**



HYDRO-3-A

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Hydro Blast Room North Wall: HYDRO-3-A
SCIENTECH <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/09/2004
By: ah	CK:
FIGURE: HYDRO-3-A	

Document  
Control No.

REVISION NO.

PROJECT

DRAWING

QUEHANNA DECOMMISSIONING

KARHAUS, PENNSYLVANIA  
115 REACTOR ROAD

CLASS 3

Hydro Blast Room East Wall 1: HYDRO-3-A

SCIENTECH  
SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06476

PROJECT NO:

23529-0501

FILE NAME:

SCALE:

N.T.S.

DATE:

12/09/2004

By:

ah

CK:

FIGURE:

HYDRO-3-A

East Wall 1

4, 2

0

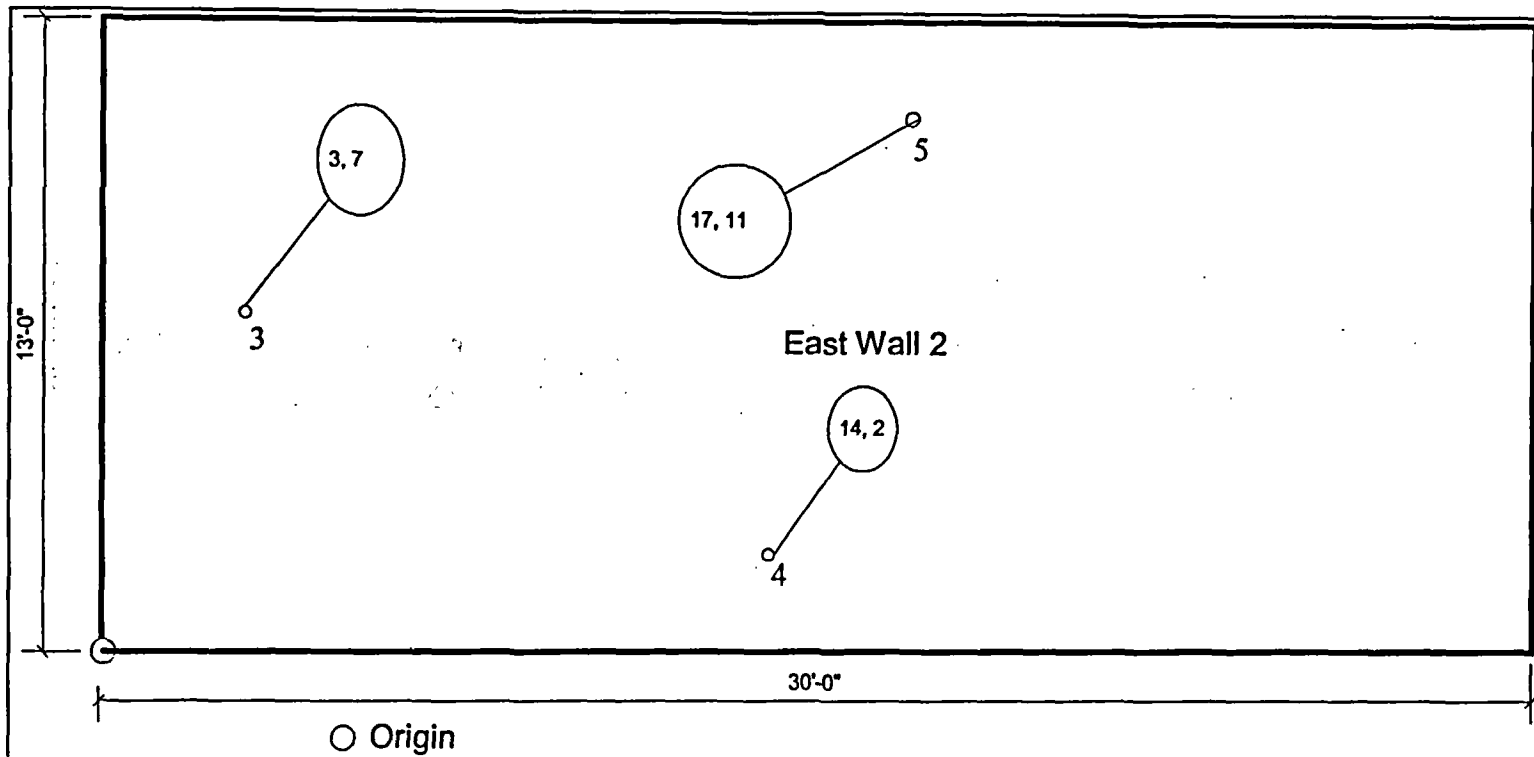
2

Origin

16' 10"

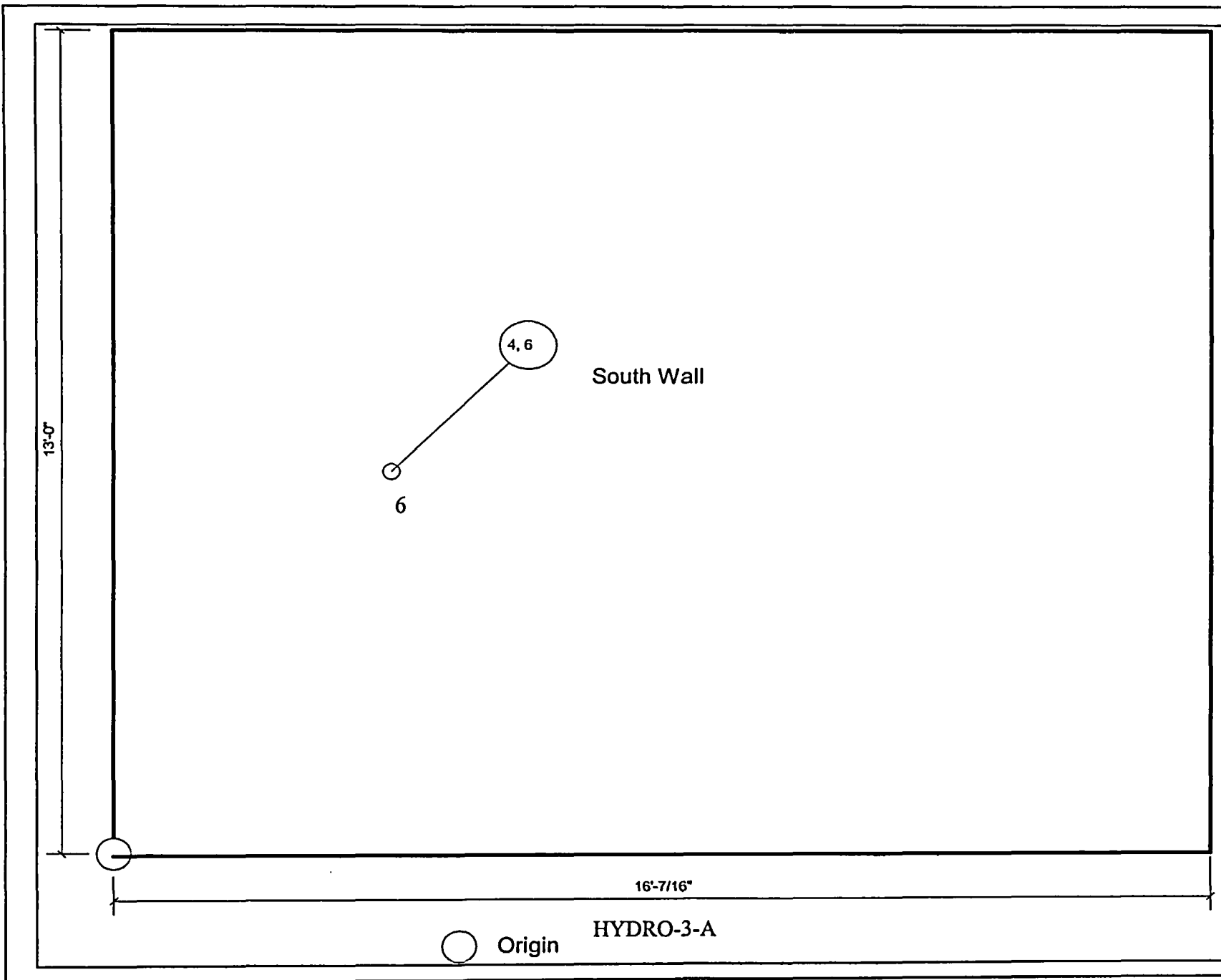
HYDRO-3-A


8'-8"

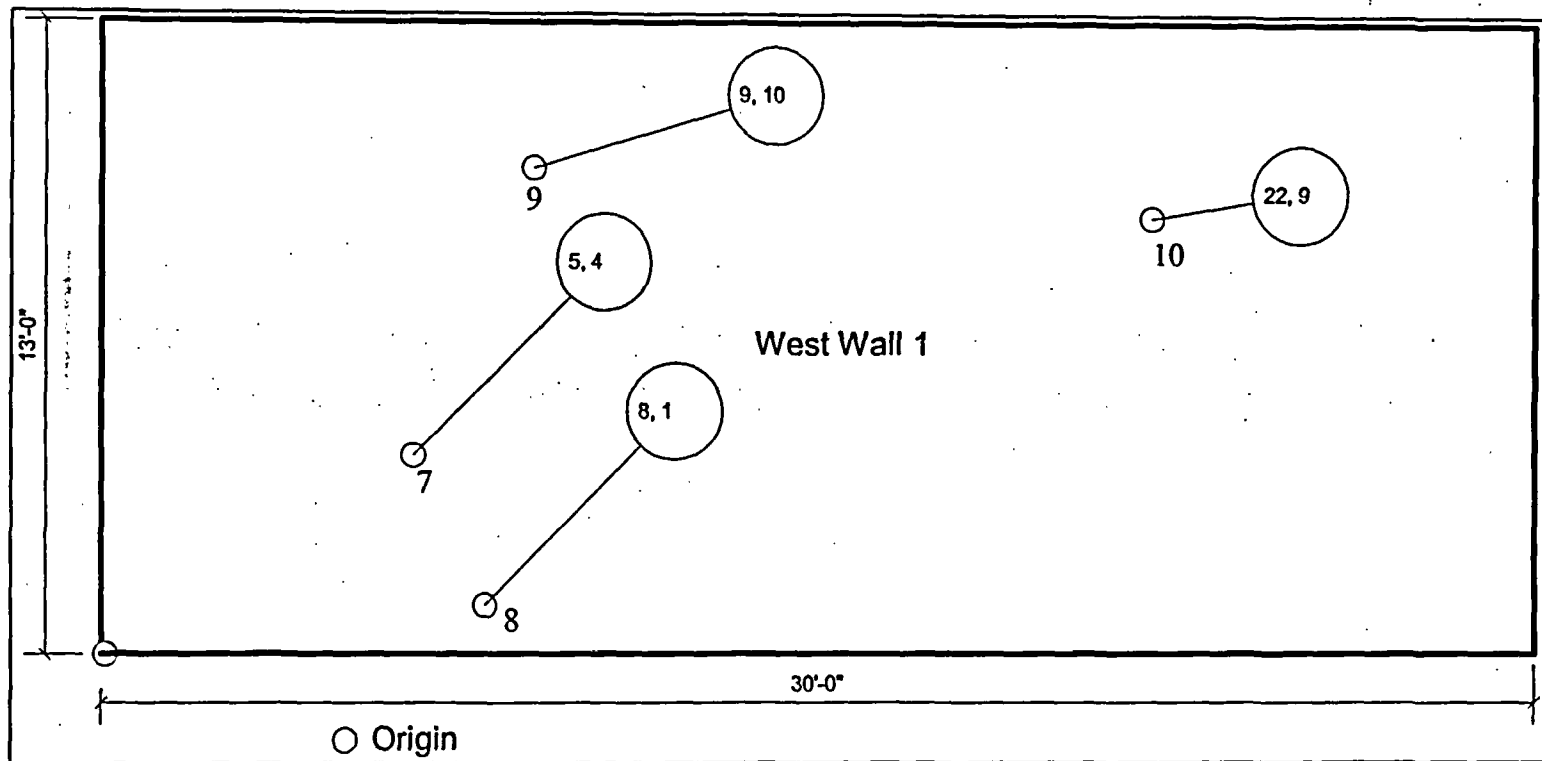


HYDRO-3-A

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Hydro Blast Room East Wall: HYDRO-3-A
SCIENTECH <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456</small>	
PROJECT NO: 23329-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/09/2004
By: ah	CK:
FIGURE: HYDRO-3-A	

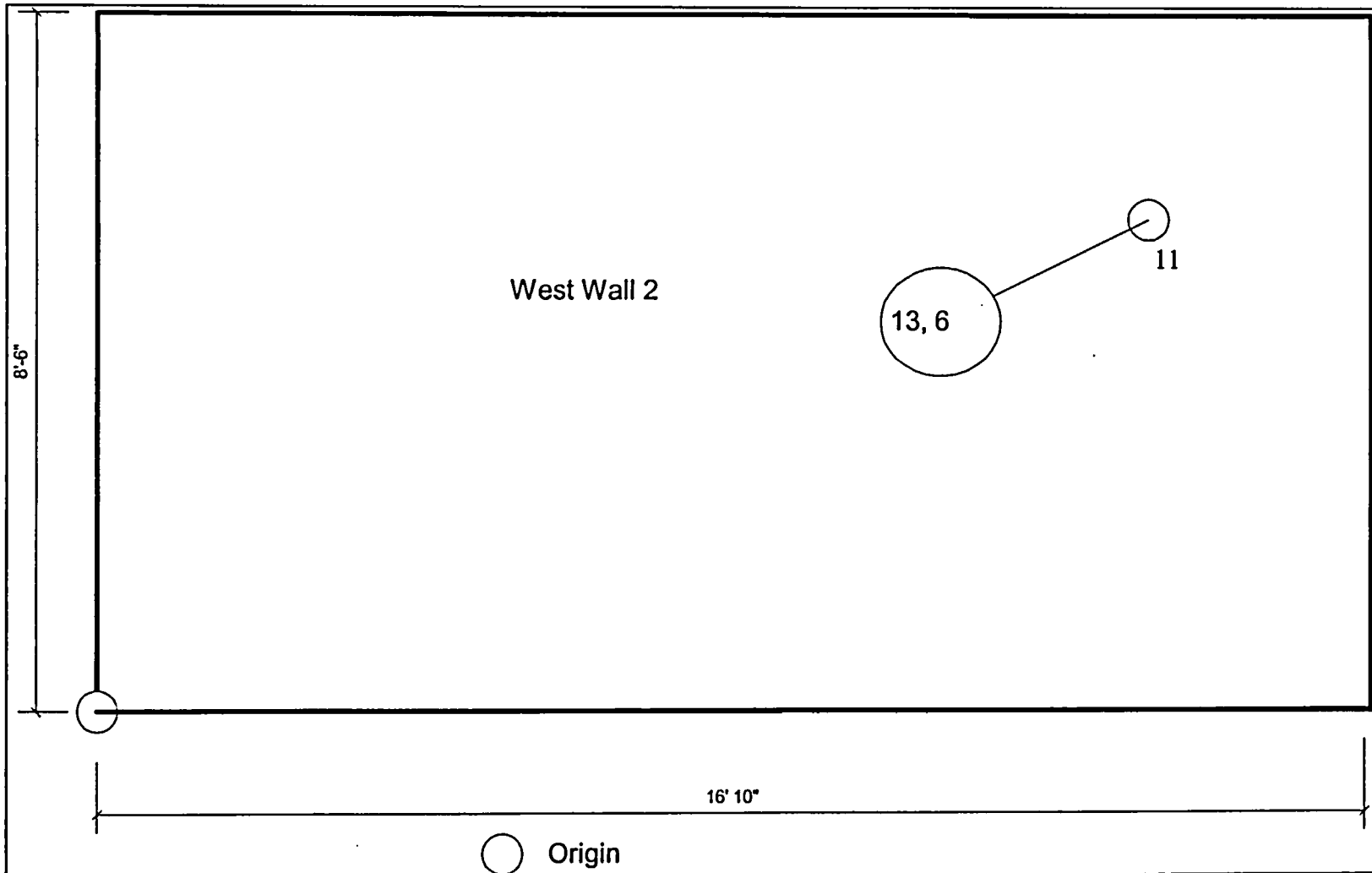


Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Hydro Blast Room South Wall: HYDRO-3-A
 SCIENTECH, Inc. 141 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/09/2004
By: ah	CK:
FIGURE: HYDRO-3-A	



HYDRO-3-A

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Hydro Blast Room West Wall 1: HYDRO-3-A
<p>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456</p>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/09/2004
By: ah	CK:
FIGURE: HYDRO-3-A	

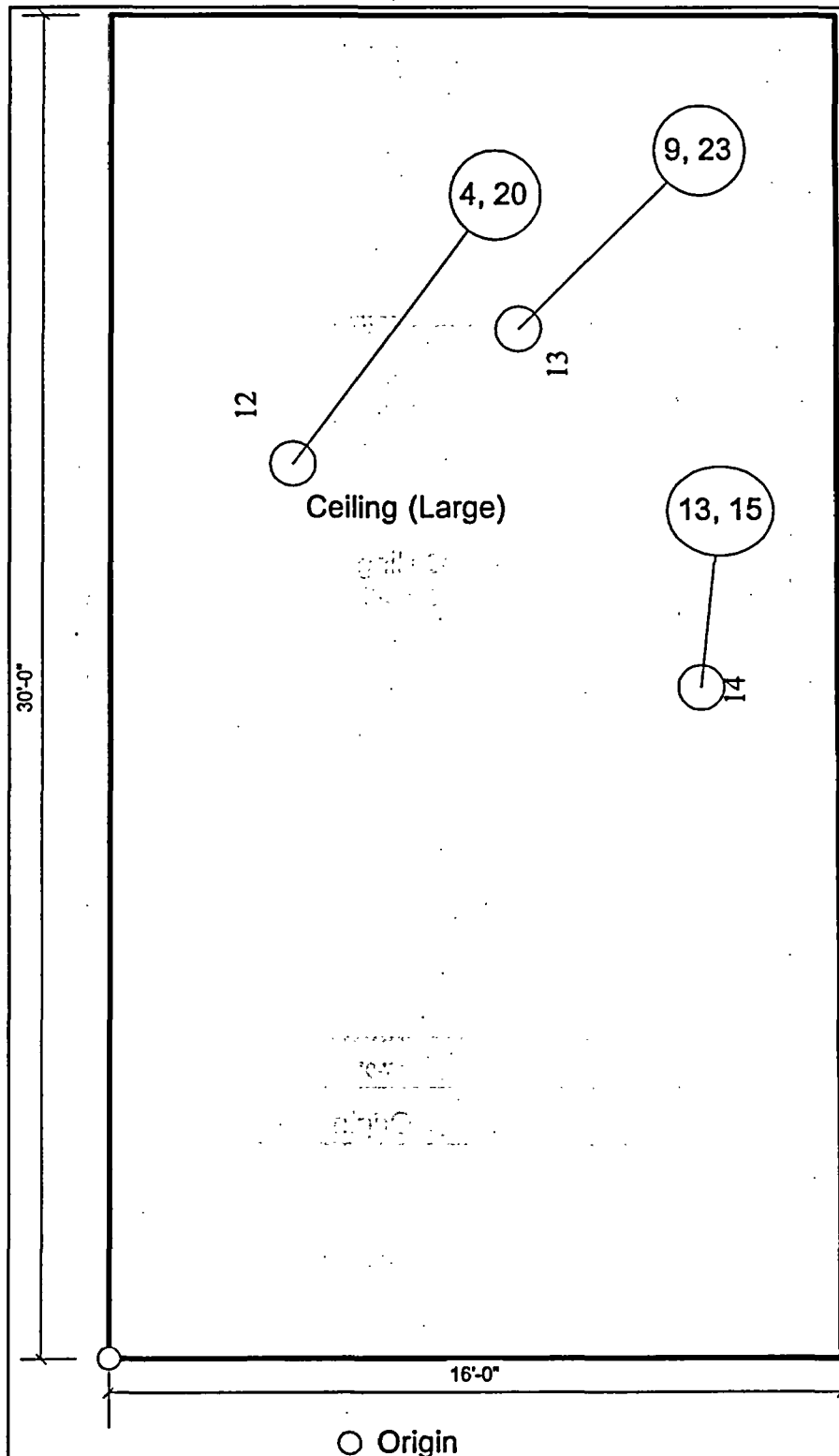


HYDRO-3-A


Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Hydro Blast Room West Wall 2: HYDRO-3-A
<p>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456</p>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/09/2004
By: ah	CK:
FIGURE: HYDRO-3-A	

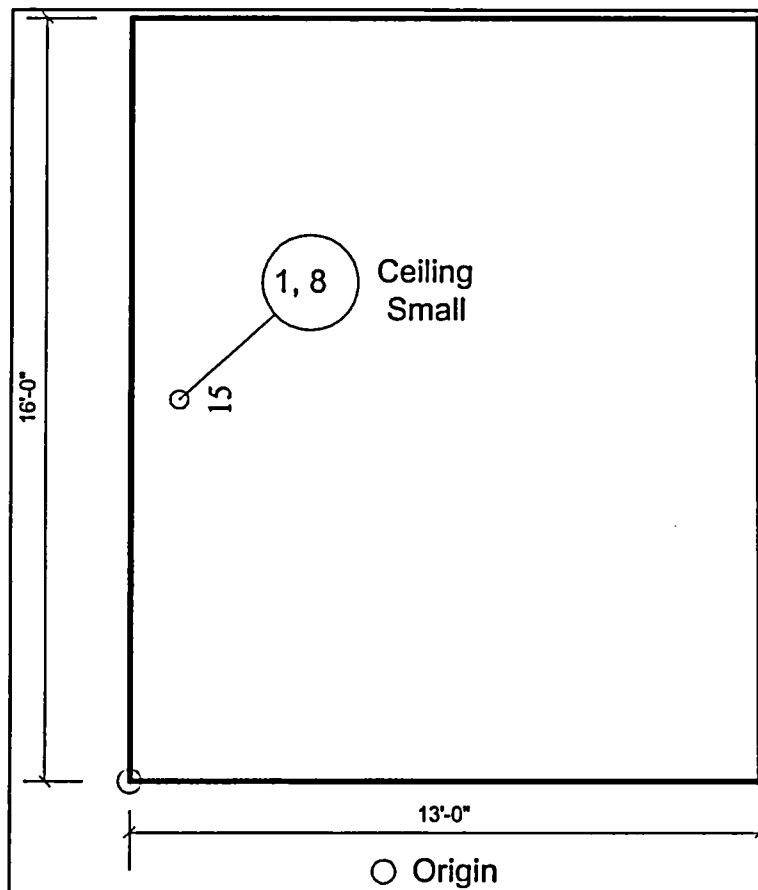


Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	<b>OSCIENTECH</b> SCIENTECH, INC. 143 WEST STREET NEW MILFORD, CT 06456	PROJECT NO.: 21574-0001	FILE NAME:	SCALE:	DATE:	By:	CHK:	FIGURE:
		DRAWING	CLASS 3 Hydro Blast Room Ceiling (Large): HYDRO-3-A				N.T.S.	12/09/2004			



HYDRO-3-A

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD		 OSCIENTECH, INC. 143 WEST STREET NEW HAVEN, CT 06510	PROJECT NO:	2339-0501	
		DRAWING	CLASS 3 Hydro Blast Room Ceiling (Small): HYDRO-3-A			FILE NAME:		
		SCALE:	DATE:	By:	Check:			
		NTS	12/09/2004	ah				
							FIGURE:	HYDRO-3-A



HYDRO-3-A

**General Area**  
Hydro-Blast Area

**Survey Unit**  
HYDRO-3-A

**Class**  
3

**Part**  
Walls & Ceiling

**Material**  
Concrete

**Size**  
2187 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	-170	46
2	-144	47
3	-128	48
4	-94	49
5	-136	47
6	-203	44
7	-90	49
8	-132	48
9	-111	48
10	-86	50
11	-65	50
12	-136	47
13	-48	51
14	-53	51
15	<u>-161</u>	46

**Average:** -117

**Maximum:** -48

**Minimum:** -203

Survey Date 12/8/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/epm

Es 0.5 epm/dpm

Background 160.6 cpm

Bkg  $\sigma$  10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Smears**

(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
1	4
1	4
1	4
-1	1
1	4
-1	1
1	4
-1	1
1	4
-1	1
-1	1
-1	1
-1	1
6	8
<u>-1</u>	1

**Average:** 0

**Maximum:** 6

**Minimum:** -1

Survey Date 12/8/2004

Inst. Model WPC-9550

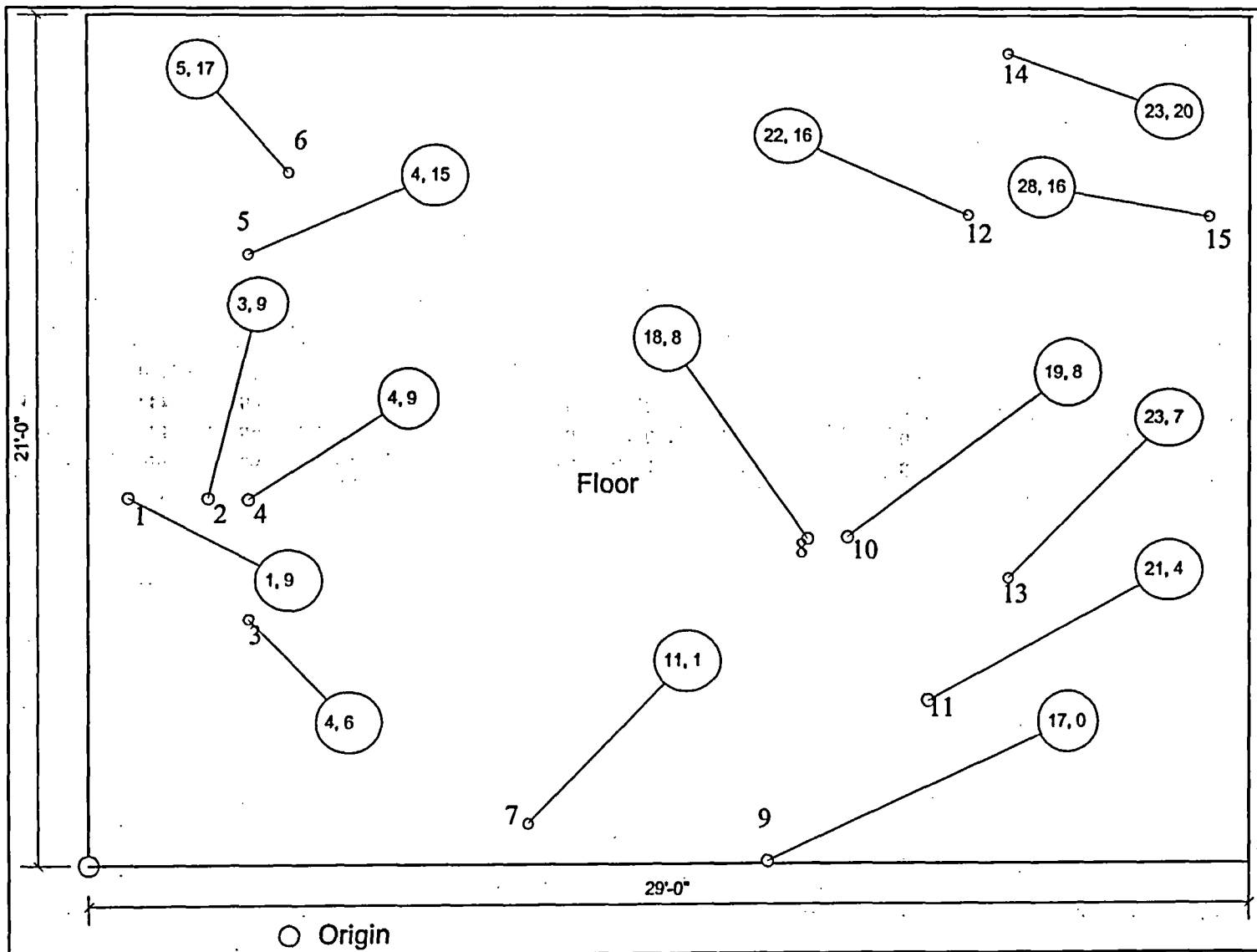
Ei 0.446 cpm/dpm

Background 0.57 cpm

Bkg  $\sigma$  0.137 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**ER-3-A      Electrical Room**



ER-3-A

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARLHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Electrical Room Floor: ER-3-A
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.F.S.	DATE: 11/09/2004
By: CW	CK:
FIGURE: ER-3-A	

**General Area**  
Electrical Room

**Survey Unit**  
ER-3-A

**Class**  
3

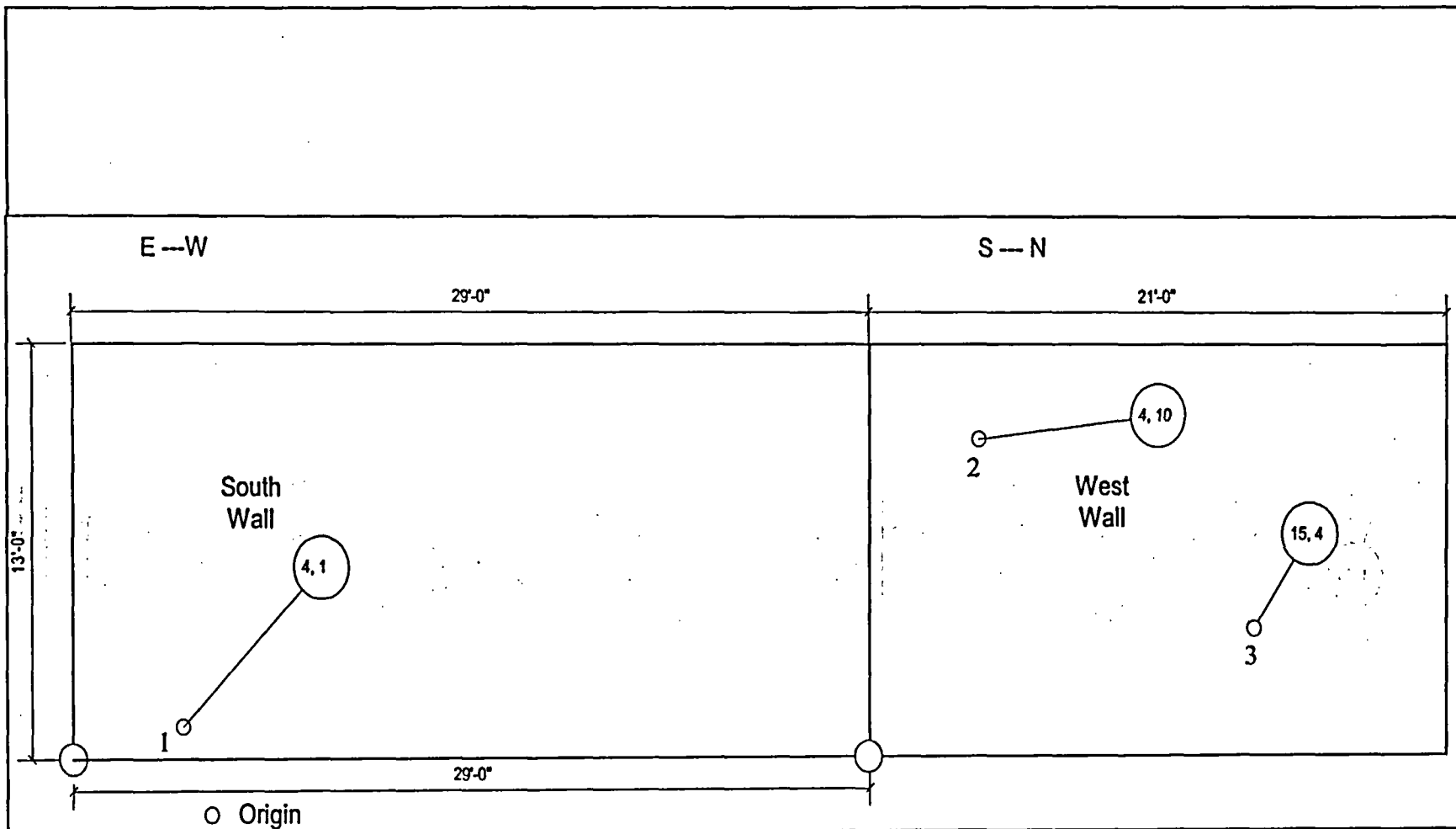
**Part**  
Floor

**Material**  
Concrete

**Size**  
609 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate ( $\mu$ R/hour)
N	Net Activity	Sigma	Net Activity	Sigma	
1	135	58	3	6	4
2	102	57	-2	1	4
3	-128	48	-2	1	4
4	6	53	-2	1	4
5	31	54	-2	1	4
6	81	56	-2	1	4
7	152	59	-2	1	7
8	-19	52	5	8	6
9	206	61	-2	1	7
10	52	55	-2	1	6
11	31	54	3	6	6
12	68	56	-2	1	5
13	18	54	3	6	6
14	-11	53	5	8	4
15	102	57	-2	1	4
<b>Average:</b> 55			<b>Average:</b> 0		<b>Average:</b> 5
<b>Maximum:</b> 206			<b>Maximum:</b> 5		<b>Maximum:</b> 7
<b>Minimum:</b> -128			<b>Minimum:</b> -2		<b>Minimum:</b> 4
Survey Date 11/4/2004			Survey Date 12/4/2004		Survey Date 12/4/2004
Inst. Model M2360			Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Ei 0.445 cpm/dpm		Background 4.5 $\mu$ R/hour
Probe Area 100 cm <sup>2</sup>			Background 0.7 cpm		Bkg $\sigma$ 0.52 $\mu$ R/hour
Ei 0.479 cpm/cpm			Bkg $\sigma$ 0.153 cpm		
Es 0.5 cpm/dpm			MDC 12 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm					
Bkg $\sigma$ 10 cpm					
MDC 259 dpm/100 cm <sup>2</sup>					

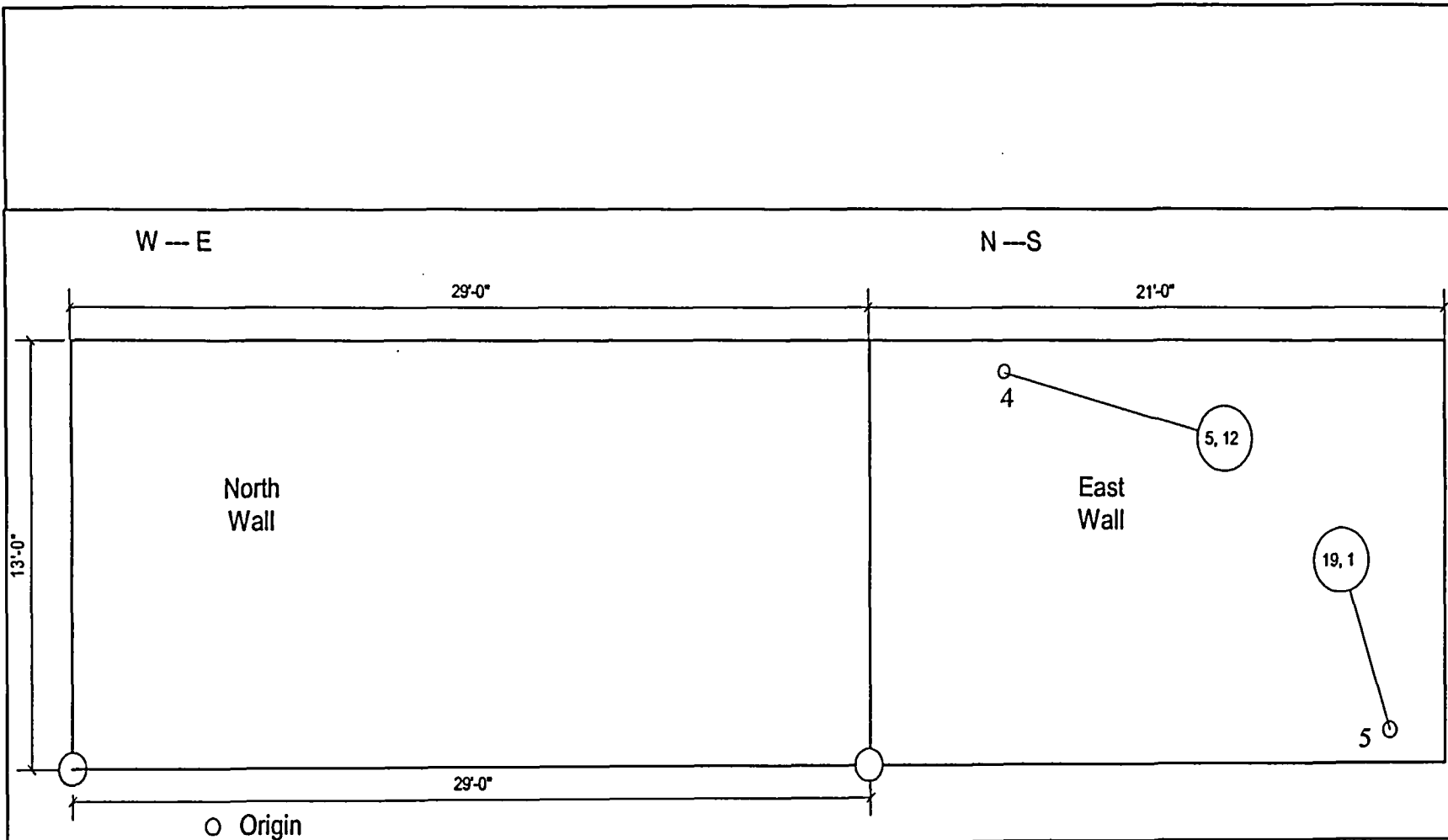
**ER-3-B      Electrical Room**



ER-3-B

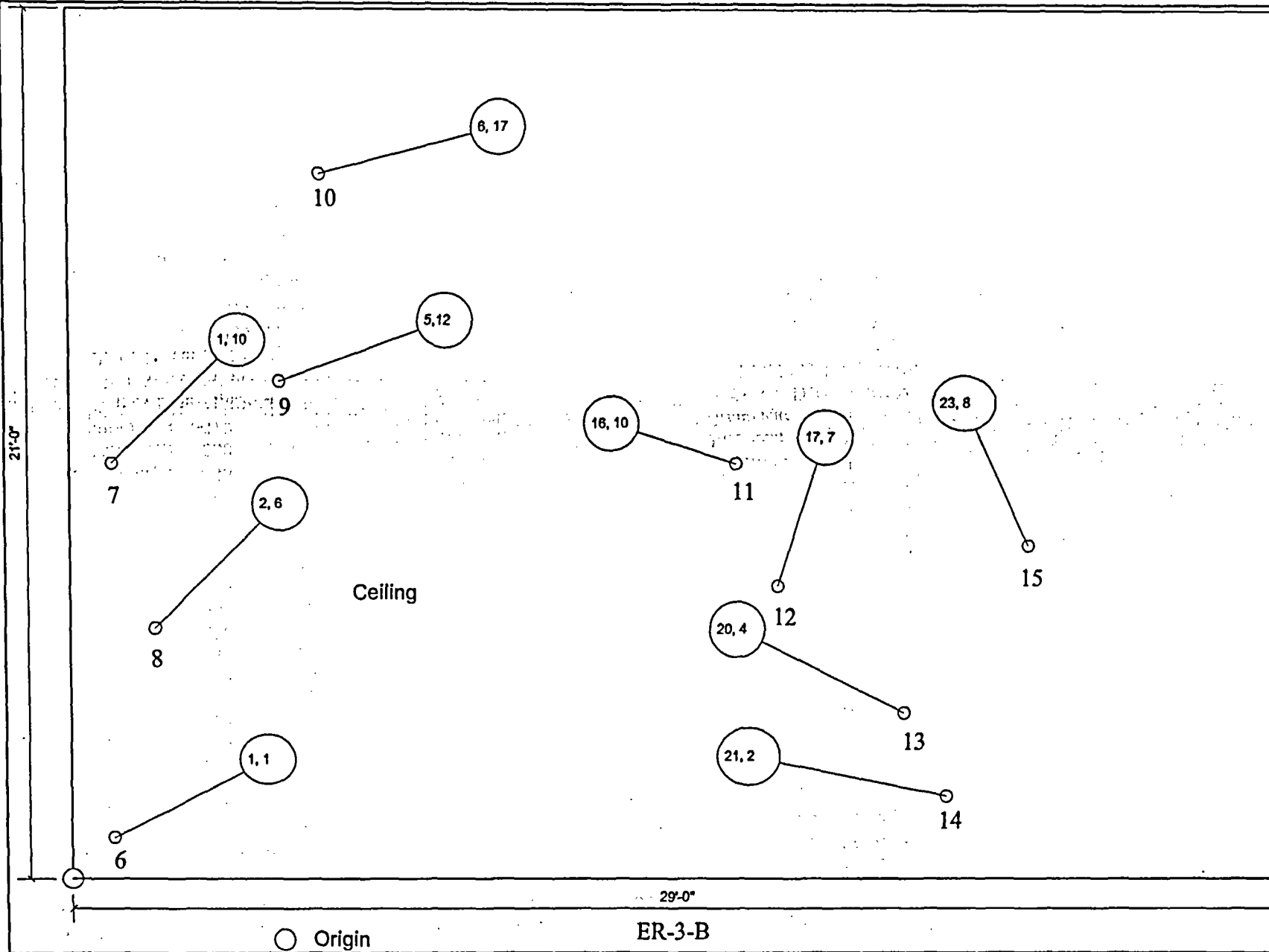
Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING	
KARTHAUS, PENNSYLVANIA	
115 REACTOR ROAD	
CLASS 3	
Electrical Room South & West Walls: ER-3-B	
<p>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06470</p>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/30/2004
By: CW	CK:
FIGURE: ER-3-B-3	





ER-3-B

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3	
Electrical Room North & East Walls: ER-3-B	
SCIENTECH <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/30/2004
By: C'W	CK:
FIGURE: ER-3-B	



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Electrical Room Ceiling: ER-3-B	
SCIENSTECH SCIENSTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/30/2004
By: CW	CK:
FIGURE: ER-3-B	

**General Area**  
Electrical Room

**Survey Unit**  
ER-3-B

**Class**  
3

**Part**  
Walls &

**Material**  
Concrete

**Size**  
1909 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	2	53
2	306	64
3	390	67
4	152	59
5	-57	51
6	-103	49
7	-65	50
8	14	54
9	223	61
10	-36	52
11	64	55
12	18	54
13	-170	46
14	-86	50
15	<u>23</u>	54

Average: 45

Maximum: 390

Minimum: -170

Survey Date 11/6/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/epm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg  $\sigma$  10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
1	5
-1	1
1	5
-1	1
-1	1
-1	1
1	5
-1	1
-1	1
-1	1
8	9
-1	1
1	5
-1	1
<u>6</u>	8

Average: 1

Maximum: 8

Minimum: -1

Survey Date 12/6/2004

Inst. Model WPC-9550


Ei 0.444 cpm/dpm

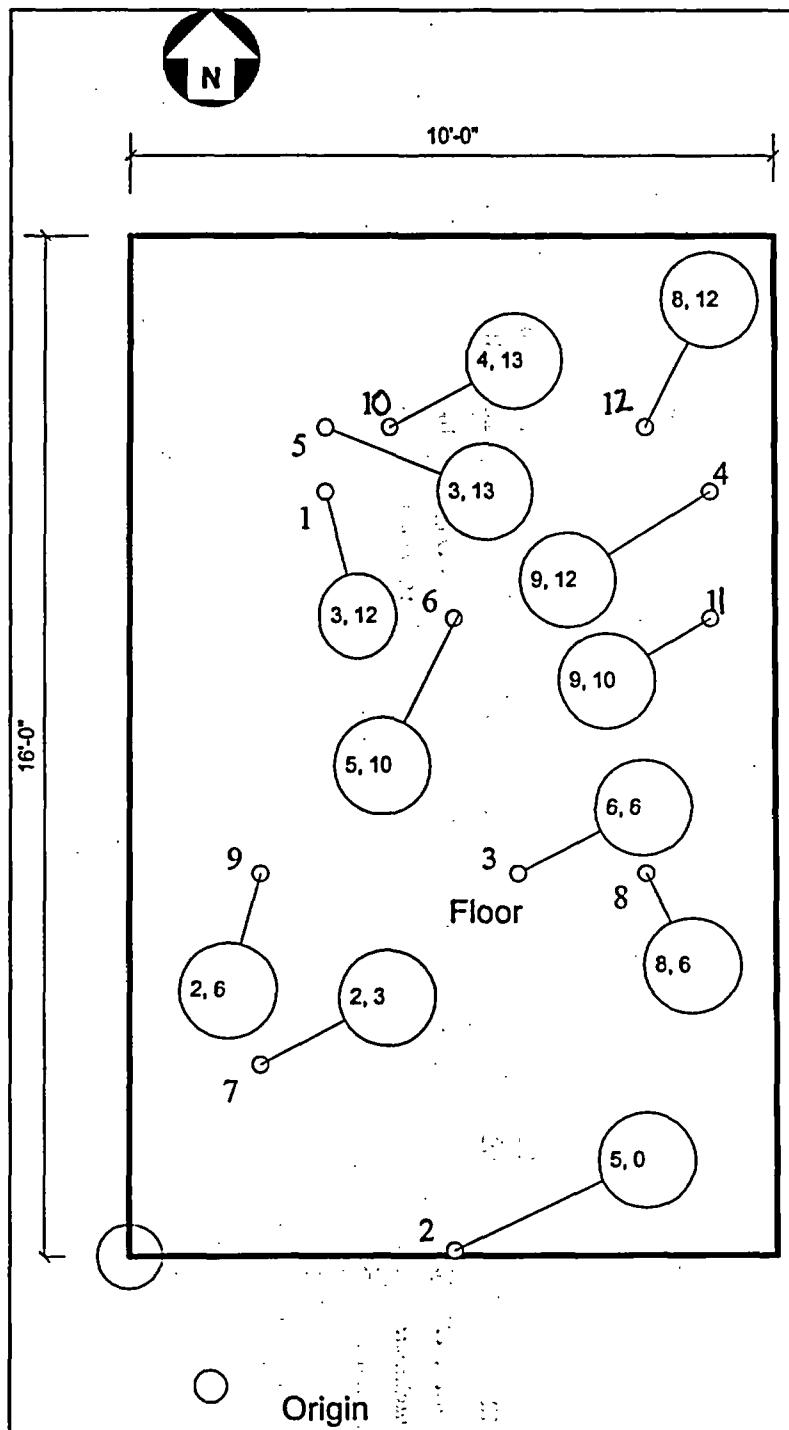
Background 0.53 cpm

Bkg  $\sigma$  0.133 cpm

MDC 12 dpm/100 cm<sup>2</sup>

**ER-3-C      Electrical Room**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENTECH, INC. 143 WEST STREET NEW HAVEN, CT 06511	PROJECT NO: 23124-0101	FILE NAME:	DATE:	12/08/2004	BY:	CW	FIGURE:	ER-3-C
		DRAWING	CLASS 3 Electrical Room Floor: ER-3-C				SCALE:	N.T.S.				



ER-3-C

**General Area**  
Electrical Room

**Survey Unit**  
ER-3-C

**Class**  
3

**Part**  
Floor

**Material**  
Concrete

**Size**  
160 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	14	54
2	23	54
3	-32	52
4	68	56
5	27	54
6	-3	53
7	73	56
8	-7	53
9	85	56
10	64	55
11	-32	52
12	85	56

**Average:** 30

**Maximum:** 85

**Minimum:** -32

**Survey Date** 12/7/2004

**Inst. Model** M2360

**Probe Model** M43-93

**Probe Area** 100 cm<sup>2</sup>

**Ei** 0.479 cpm/cpm

**Es** 0.5 cpm/dpm

**Background** 160.6 cpm

**Bkg σ** 10 cpm

**MDC** 259 dpm/100 cm<sup>2</sup>

**Smears**

(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
15	12
24	15
15	12
19	13
6	8
19	13
10	10
15	12
24	15
17	12
28	16
26	15

**Average:** 18

**Maximum:** 28

**Minimum:** 6

**Survey Date** 12/7/2004

**Inst. Model** WPC-9550

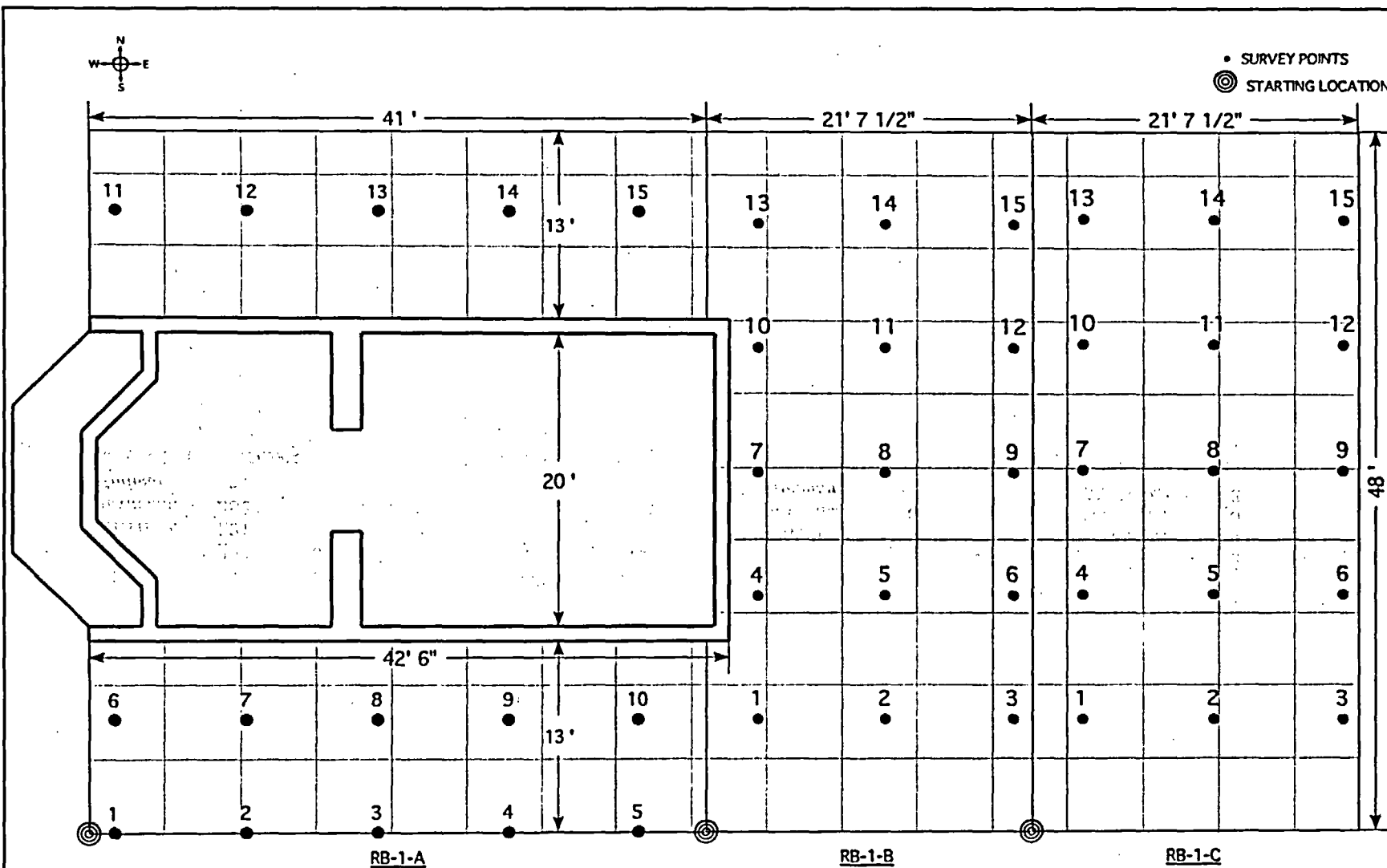
**Ei** 0.449 cpm/dpm

**Background** 0.4 cpm

**Bkg σ** 0.115 cpm

**MDC** 11 dpm/100 cm<sup>2</sup>

**RB-1-A through RB-1-C**  
**Reactor Bays**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING	
KARTHANS, PENNSYLVANIA	
115 REACTOR ROAD	
CLASS 1	
Reactor Bay Floor	
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: RB-1-A,B,C	



**General Area**  
Reactor Bay

**Survey Unit**  
RB-1-A

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
1066 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	198	60
2	190	60
3	235	62
4	156	59
5	377	66
6	148	59
7	135	58
8	148	59
9	52	55
10	294	64
11	215	61
12	286	63
13	382	66
14	144	58
15	357	66
<b>Average:</b>		221
<b>Maximum:</b>		382
<b>Minimum:</b>		52

Survey Date 12/16/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
165	666
165	499
81	415
165	499
-3	332
81	415
-3	499
415	833
165	582
165	582
332	582
332	582
332	582
332	582
332	833
81	415

Survey Date 12/16/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
4	6
8	9
-1	1
1	4
4	6
6	8
4	6
8	9
-1	1
-1	1
-1	1
-1	1
6	8
4	6
4	6
<b>Average:</b> 3	
<b>Maximum:</b> 8	
<b>Minimum:</b> -1	

Survey Date 12/17/2004

Inst. Model WPC-9550

Ei 0.447 cpm/dpm

Background 0.43 cpm

Bkg σ 0.12 cpm

MDC 11 dpm/100 cm<sup>2</sup>

**Gross Exposure Rate**  
(μ R/hour)

4	
4	
5	
4	
4	
4	
3	
4	
5	
3	
4	
3	
5	
3	
4	
<b>Average:</b> 4	
<b>Maximum:</b> 5	
<b>Minimum:</b> 3	

Survey Date 12/17/200

Inst. Model M19

Background 4.5 μ R/hour

Bkg σ 0.5 μ R/hour

General Area  
Reactor Bay

Survey Unit  
RB-1-B

Class  
1

Part  
Floor

Material  
Concrete

Size  
1005 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	628	74	582	666	1	4	7
2	711	76	666	749	10	10	7
3	670	75	666	749	4	6	7
4	711	76	666	749	10	10	6
5	757	77	749	833	1	4	6
6	448	68	415	499	4	6	7
7	929	82	833	916	-1	1	7
8	628	74	582	666	6	8	7
9	887	81	833	916	1	4	5
10	645	74	666	749	-1	1	7
11	423	68	415	499	-1	1	7
12	812	79	833	916	-1	1	7
13	812	79	833	916	-1	1	6
14	924	82	916	916	1	4	7
15	707	76	749	833	1	4	6
Average: 713					Average: 2		Average: 7
Maximum: 929					Maximum: 10		Maximum: 7
Minimum: 423					Minimum: -1		Minimum: 5
Survey Date 12/17/2004			Survey Date 12/17/2004		Survey Date 12/17/2004		Survey Date 12/17/200
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.447 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.12 cpm		
Es 0.5 epm/dpm			Es 0.5 epm/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg σ 10 cpm			Bkg σ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**General Area**  
Reactor Bay

**Survey Unit**  
RB-1-C

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
1038 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	620	73	582	666	1	4	7
2	419	68	415	582	8	9	6
3	837	79	833	916	10	10	6
4	507	70	499	582	1	4	0
5	519	71	499	582	1	4	0
6	582	72	582	666	-1	1	6
7	382	66	332	582	-1	1	5
8	958	83	916	958	-1	1	6
9	803	79	833	916	-1	1	5
10	849	80	833	916	-1	1	6
11	933	82	833	916	4	6	6
12	682	75	666	749	1	4	6
13	720	76	666	833	6	8	7
14	340	65	332	415	8	9	6
15	620	73	582	666	6	8	6
<b>Average:</b> 651					<b>Average:</b> 3		<b>Average:</b> 5
<b>Maximum:</b> 958					<b>Maximum:</b> 10		<b>Maximum:</b> 7
<b>Minimum:</b> 340					<b>Minimum:</b> -1		<b>Minimum:</b> 0
Survey Date 12/17/2004			Survey Date 12/17/2004		Survey Date 12/17/2004		Survey Date 12/17/200
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.447 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.12 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg σ 10 cpm			Bkg σ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

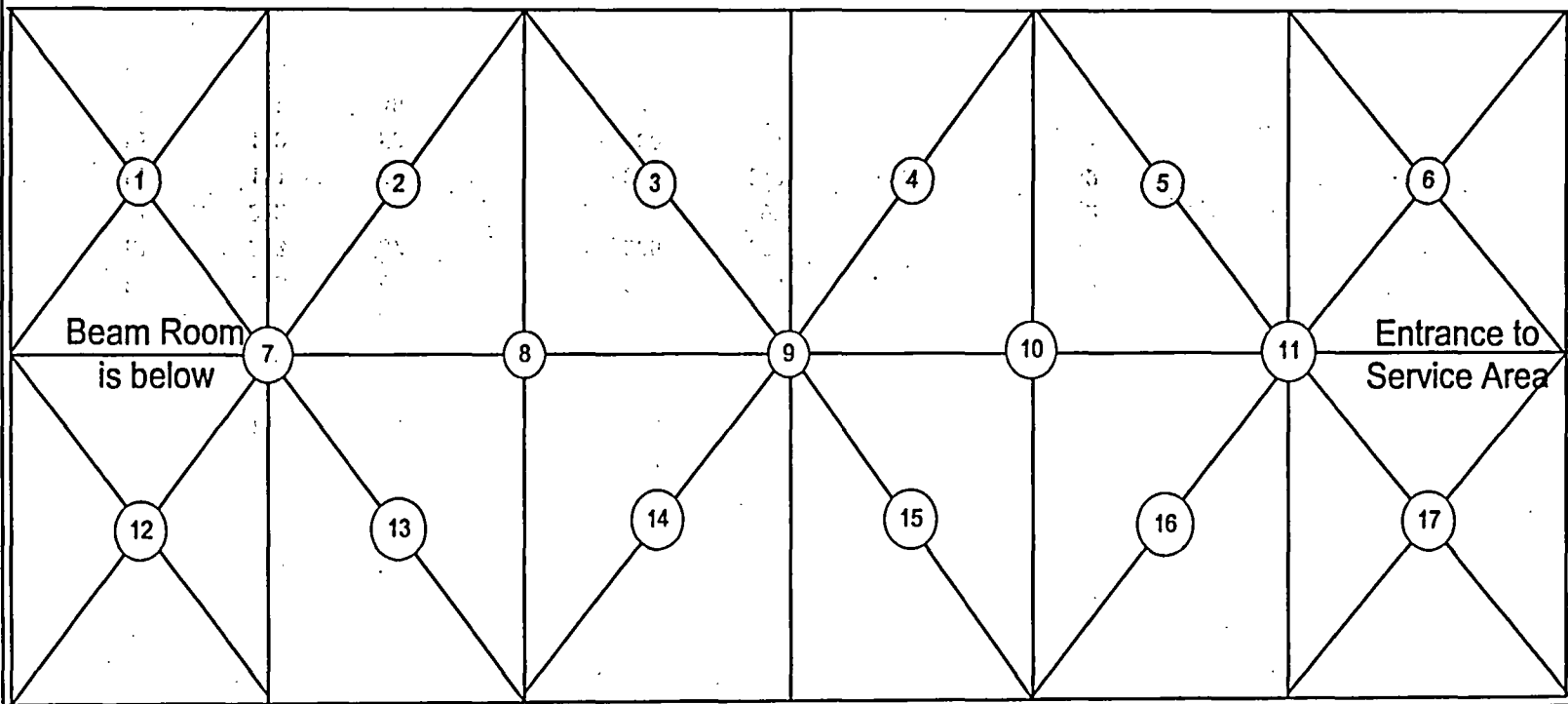
**RB-1-D      Reactor Bay**

Looking Up



122'-0"

48'-0"



RB-1-D

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING

KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD

CLASS 1

Reactor Bay Ceiling Beam

**SCIENTECH**  
SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO:  
23529-0501

FILE NAME:

SCALE:  
N.T.S.

DATE:  
11/16/04

By:  
CW

CK:

FIGURE:  
RB-1-D

General Area  
Reactor Bay

Survey Unit  
RB-1-D

Class  
1

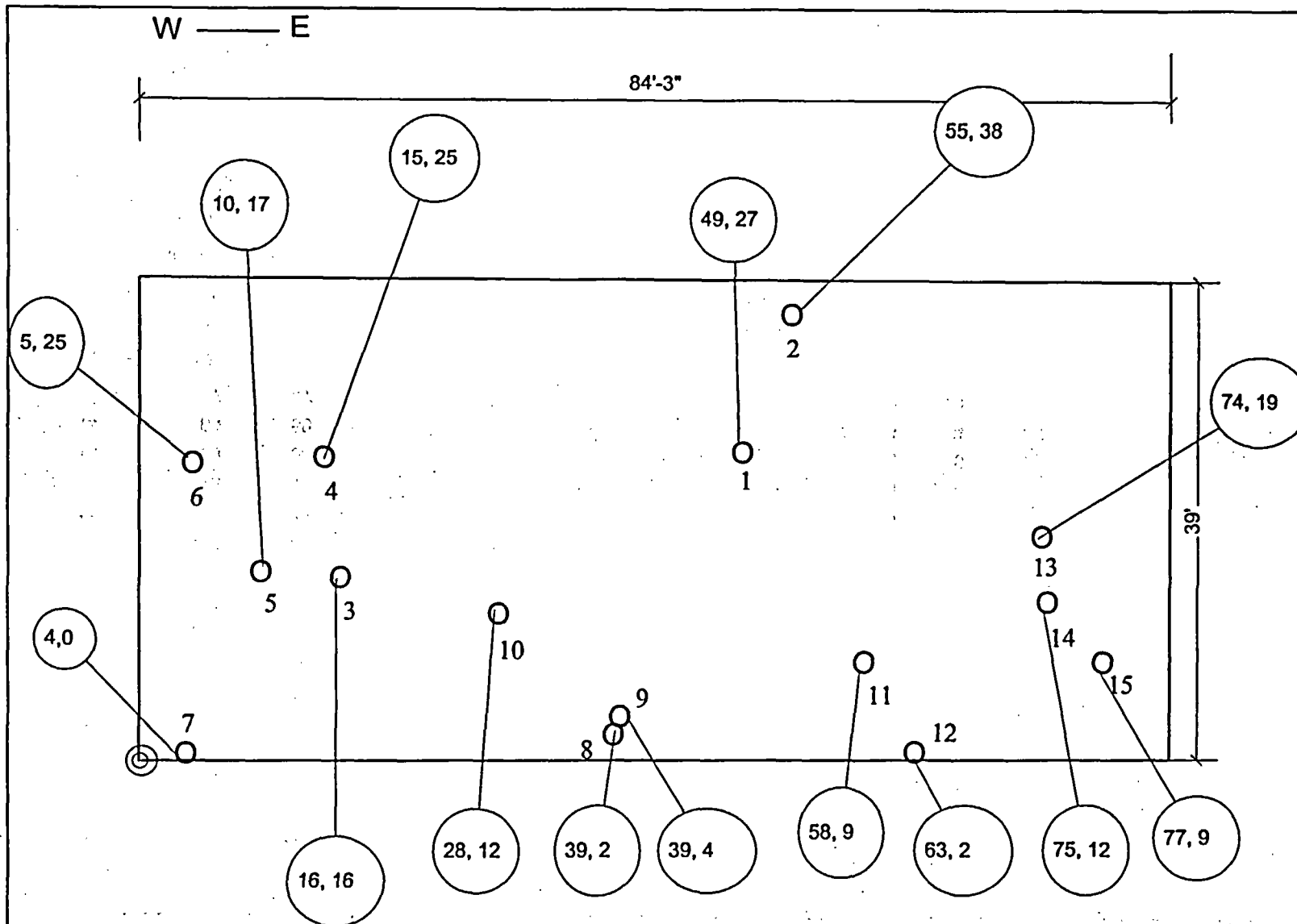
Part  
Beams

Material  
Metal

Size  
500 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	-4	47	63	314	1	5
2	0	47	230	397	3	6
3	138	53	147	314	-2	1
4	76	50	230	564	1	5
5	138	53	63	481	-2	1
6	96	51	63	481	3	6
7	172	54	63	314	3	6
8	84	50	147	481	1	5
9	88	51	147	564	3	6
10	238	56	147	648	1	5
11	355	61	230	564	-2	1
12	263	57	230	564	-2	1
13	222	56	63	397	-2	1
14	151	53	314	648	-2	1
15	142	53	230	397	-2	1
16	59	49	147	481	3	6
17	59	49	63	314	10	10
Average: 134			Average: 1		Average: 1	
Maximum: 355			Maximum: 10		Maximum: 10	
Minimum: -4			Minimum: -2		Minimum: -2	
Survey Date 10/22/2004			Survey Date 11/3/2004		Survey Date 12/3/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.445 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.73 cpm	
Ei 0.479 cpm/epm			Ei 0.479 cpm/epm		Bkg $\sigma$ 0.156 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 13 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg $\sigma$ 10.8 cpm			Bkg $\sigma$ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

**RB-3-A      Reactor Bay**



RB-3-A

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Reactor Bay North Wall	
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/16/04
By: CW	CK:
FIGURE: RB-3-A	



**General Area**  
Reactor Bay

**Survey Unit**  
RB-3-A

**Class**  
3

**Part**  
Wall

**Material**  
Insulation

**Size**  
3286 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	185	55
2	168	54
3	193	55
4	114	52
5	210	56
6	218	56
7	110	52
8	43	49
9	89	51
10	-70	44
11	1	47
12	18	48
13	139	53
14	64	50
15	-7	47

**Average:** 98

**Maximum:** 218

**Minimum:** -70

**Survey Date** 12/7/2004

**Inst. Model** M2360

**Probe Model** M43-93

**Probe Area** 100 cm<sup>2</sup>

**Ei** 0.479 cpm/epm

**Es** 0.5 cpm/dpm

**Background** 127.7 cpm

**Bkg σ** 9.8 cpm

**MDC** 232 dpm/100 cm<sup>2</sup>

**Smears**

(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
1	4
1	4
1	4
-1	1
1	4
6	8
-1	1
-1	1
-1	1
1	4
8	9
1	4
1	4

**Average:** 1

**Maximum:** 8

**Minimum:** -1

**Survey Date** 12/8/2004

**Inst. Model** WPC-9550

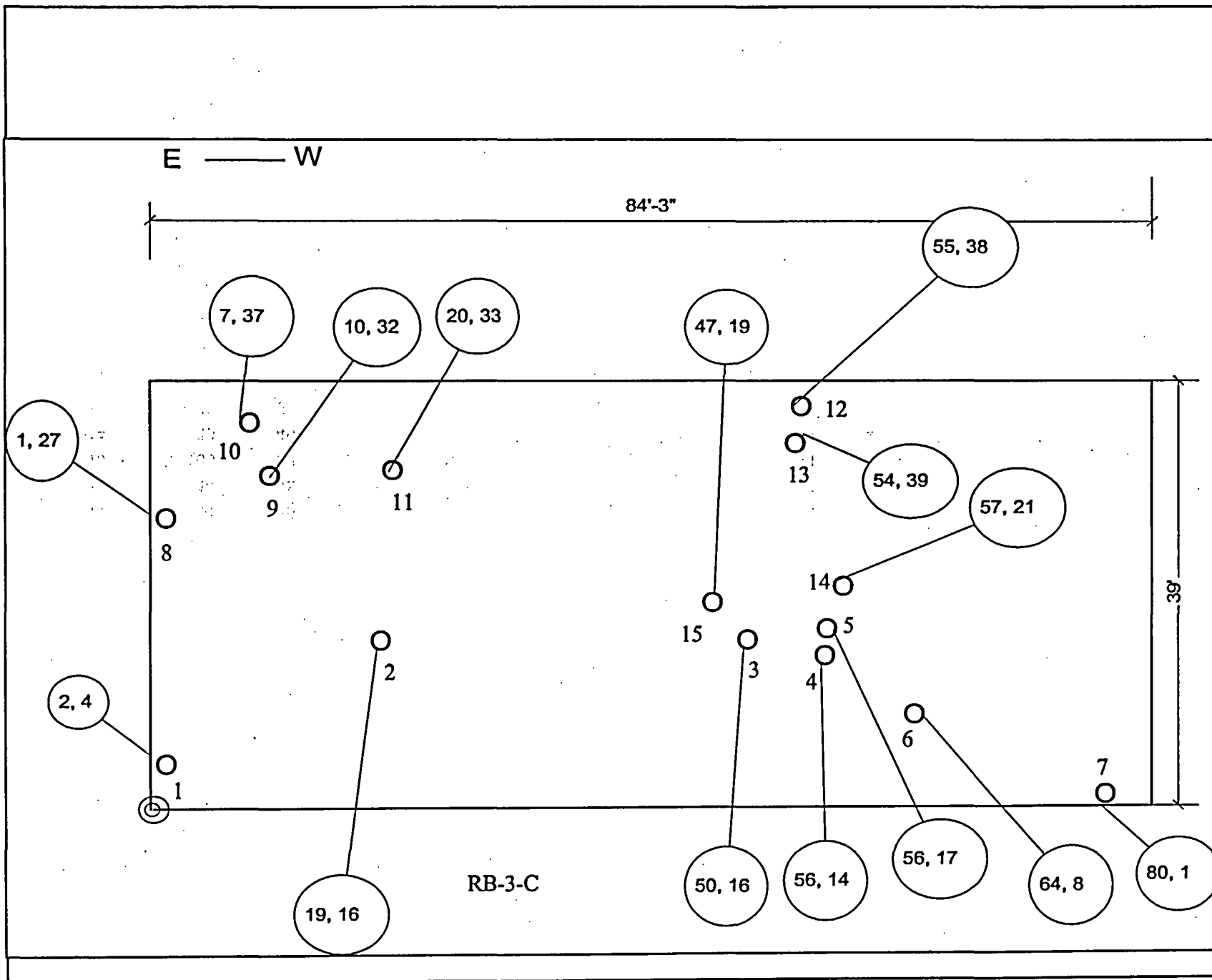
**Ei** 0.446 cpm/dpm

**Background** 0.57 cpm

**Bkg σ** 0.137 cpm

**MDC** 12 dpm/100 cm<sup>2</sup>

**RB-3-C      Reactor Bay**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING
DRAWING	KARTHUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Reactor Bay South Wall
SCIENTECH SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO. 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/16/04
By: CW	CK:
FIGURE: RB-3-C	

**General Area**  
Reactor Bay

**Survey Unit**  
RB-3-C

**Class**  
3

**Part**  
Wall

**Material**  
Insulation

**Size**  
3286 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	-157	40
2	10	48
3	193	55
4	114	52
5	160	54
6	-41	45
7	-128	41
8	-7	47
9	64	50
10	-120	42
11	51	49
12	14	48
13	106	52
14	30	49
15	76	51

**Average:** 24

**Maximum:** 193

**Minimum:** -157

**Survey Date** 12/9/2004

**Inst. Model** M2360

**Probe Model** M43-93

**Probe Area** 100 cm<sup>2</sup>

**Ei** 0.479 cpm/cpm

**Es** 0.5 epn/dpm

**Background** 127.7 cpm

**Bkg σ** 9.8 cpm

**MDC** 232 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
3	6
-1	1
1	4
-1	1
-1	1
-1	1
-1	1
-1	1
3	6
-1	1
-1	1
-1	1
1	4
-1	1

**Average:** 0

**Maximum:** 3

**Minimum:** -1

**Survey Date** 12/13/2004

**Inst. Model** WPC-9550

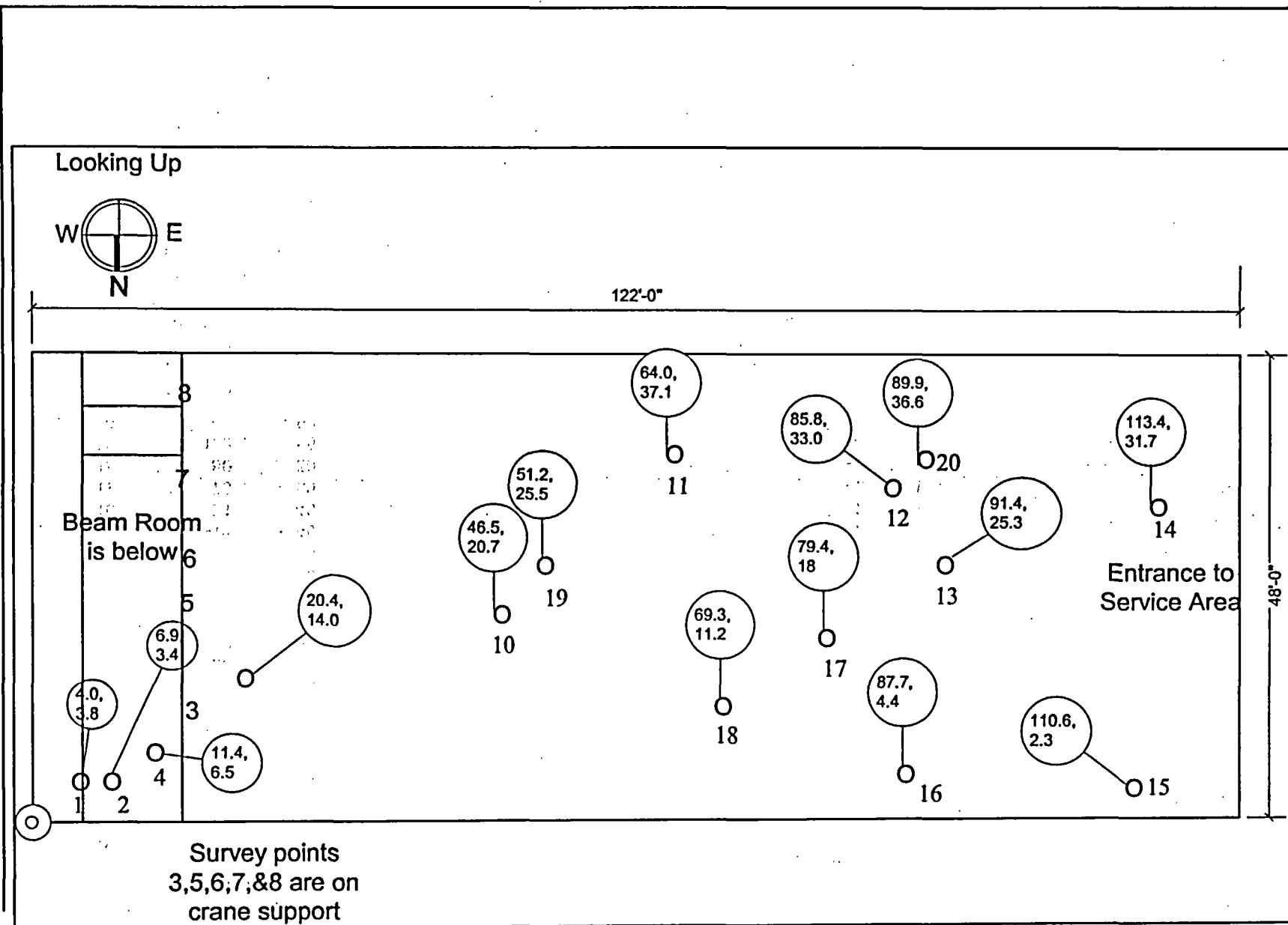
**Ei** 0.448 cpm/dpm

**Background** 0.47 cpm

**Bkg σ** 0.125 cpm

**MDC** 11 dpm/100 cm<sup>2</sup>

**RB-3-D      Reactor Bay**



RB-3-D

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Reactor Bay Ceiling
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/03/04
By:	CK:
FIGURE: RB-3-D	

**General Area**  
Reactor Bay

**Survey Unit**  
RB-3-D

**Class**  
3

**Part**  
Ceiling

**Material**  
Metal

**Size**  
5856 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	-133	40
2	188	55
3	-196	37
4	109	51
5	-41	45
6	-125	41
7	-33	45
8	-83	43
9	25	48
10	38	48
11	46	49
12	42	49
13	76	50
14	34	48
15	-16	46
16	21	48
17	76	50
18	80	50
19	192	55
20	<u>67</u>	50

**Average:** 18

**Maximum:** 192

**Minimum:** -196

Survey Date 11/4/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10.8 cpm

MDC 230 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
-1	1
-1	1
6	8
6	8
8	9
4	6
10	10
-1	1
-1	1
-1	1
1	4
1	4
-1	1
-1	1
-1	1
-1	1
-1	1
-1	1
<u>-1</u>	1

**Average:** 1

**Maximum:** 10

**Minimum:** -1

Survey Date 12/7/2004

Inst. Model WPC-9550

Ei 0.449 cpm/dpm

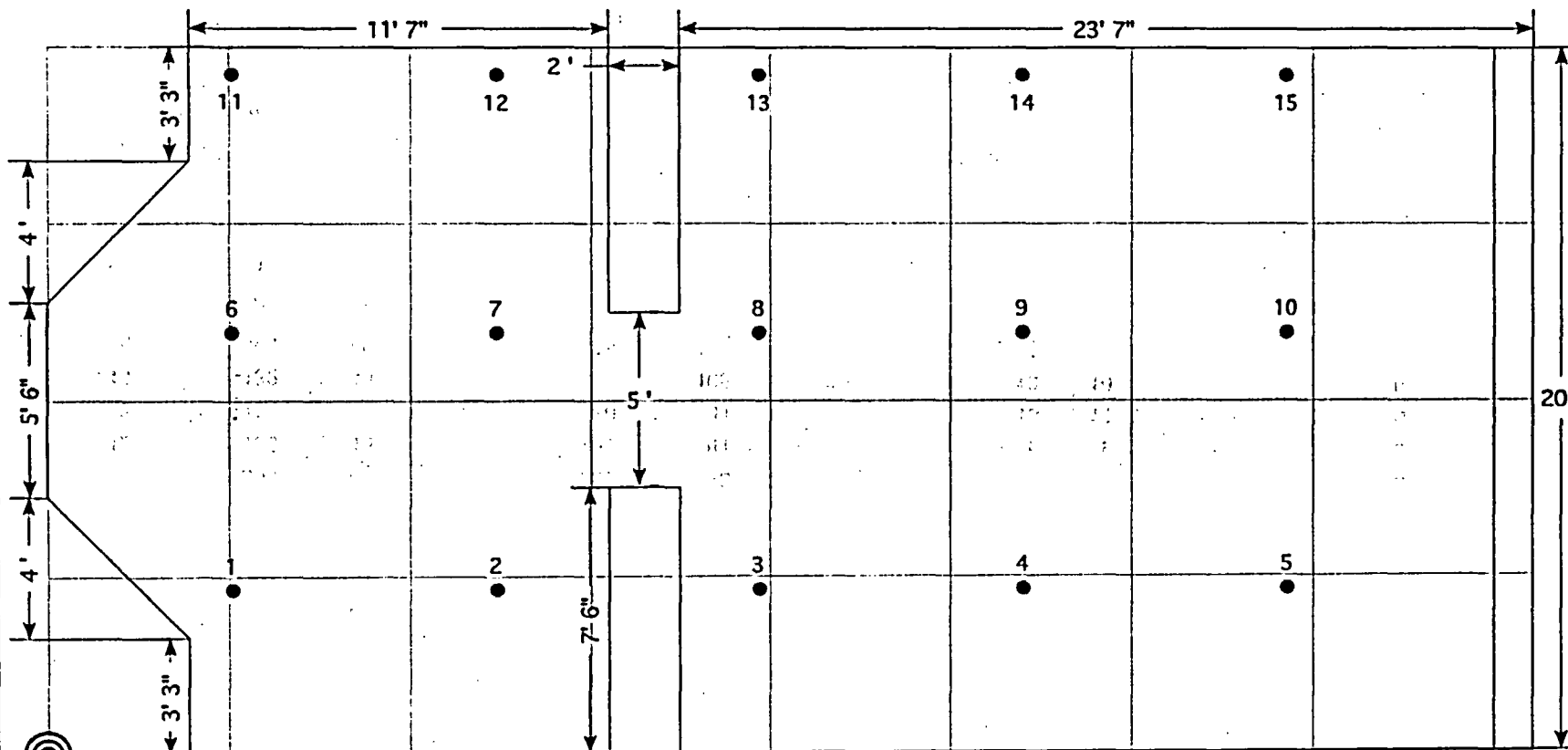
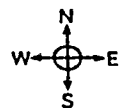
Background 0.4 cpm

Bkg  $\sigma$  0.115 cpm

MDC 11 dpm/100 cm<sup>2</sup>

**POOL-1-A Reactor Pool**





POOL-1-A

- SURVEY POINTS
- ◎ STARTING LOCATION

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING	
KARTHUS, PENNSYLVANIA	
115 REACTOR ROAD	
CLASS 1	
Reactor Pool Floor	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06455	
PROJECT NO:	
23529-0501	
FILE NAME:	
SCALE:	DATE:
N.T.S.	07/06/2004
By:	CR:
FIGURE:	
POOL-1-A	

General Area  
Reactor Pool

Survey Unit  
POOL-1-A

Class  
1

Part  
Floor

Material  
Concrete

Size  
736 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate ( $\mu$ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	-107	49	-86	165	4	6	6
2	-274	41	-337	-86	1	5	6
3	-132	48	-170	165	13	11	6
4	-11	53	-3	248	4	6	5
5	-44	51	-86	248	26	15	5
6	-165	46	-170	81	-1	1	5
7	-94	49	-86	248	-1	1	6
8	-61	51	-86	165	6	8	6
9	-86	50	-86	165	10	10	5
10	-15	52	-86	248	8	9	6
11	-203	44	-253	-3	4	6	5
12	-195	45	-253	81	8	9	5
13	-161	46	-170	81	13	11	5
14	-132	48	-170	165	10	10	6
15	-94	49	-170	165	6	8	5
Average: -118					Average: 7	Average: 5	
Maximum: -11					Maximum: 26	Maximum: 6	
Minimum: -274					Minimum: -1	Minimum: 5	
Survey Date 7/23/2004			Survey Date 7/23/2004		Survey Date 7/24/2004		Survey Date 7/23/2004
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.441 cpm/dpm		Background 4.5 $\mu$ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.4 cpm		Bkg $\sigma$ 0.52 $\mu$ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg $\sigma$ 0.115 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg $\sigma$ 10 cpm			Bkg $\sigma$ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

<b>General Area</b>	<b>Survey Unit</b>	<b>Class</b>	<b>Part</b>	<b>Material</b>	<b>Size</b>
Reactor Pool	POOL-1-A	1	Floor	Concrete	736 ft <sup>2</sup>

**Gamma Directs**

	<i>(gross cpm)</i>	<i>(net cpm)</i>
1	3613	-1498
2	3779	-1332
3	3289	-1822
4	3518	-1593
5	3614	-1497
6	3579	-1532
7	3499	-1612
8	3515	-1596
9	3742	-1369
10	3814	-1297
11	3412	-1699
12	3814	-1297
13	3478	-1633
14	3619	-1492
15	3570	-1541

<b>Average:</b>	-1521
<b>Maximum:</b>	-1297
<b>Minimum:</b>	-1699

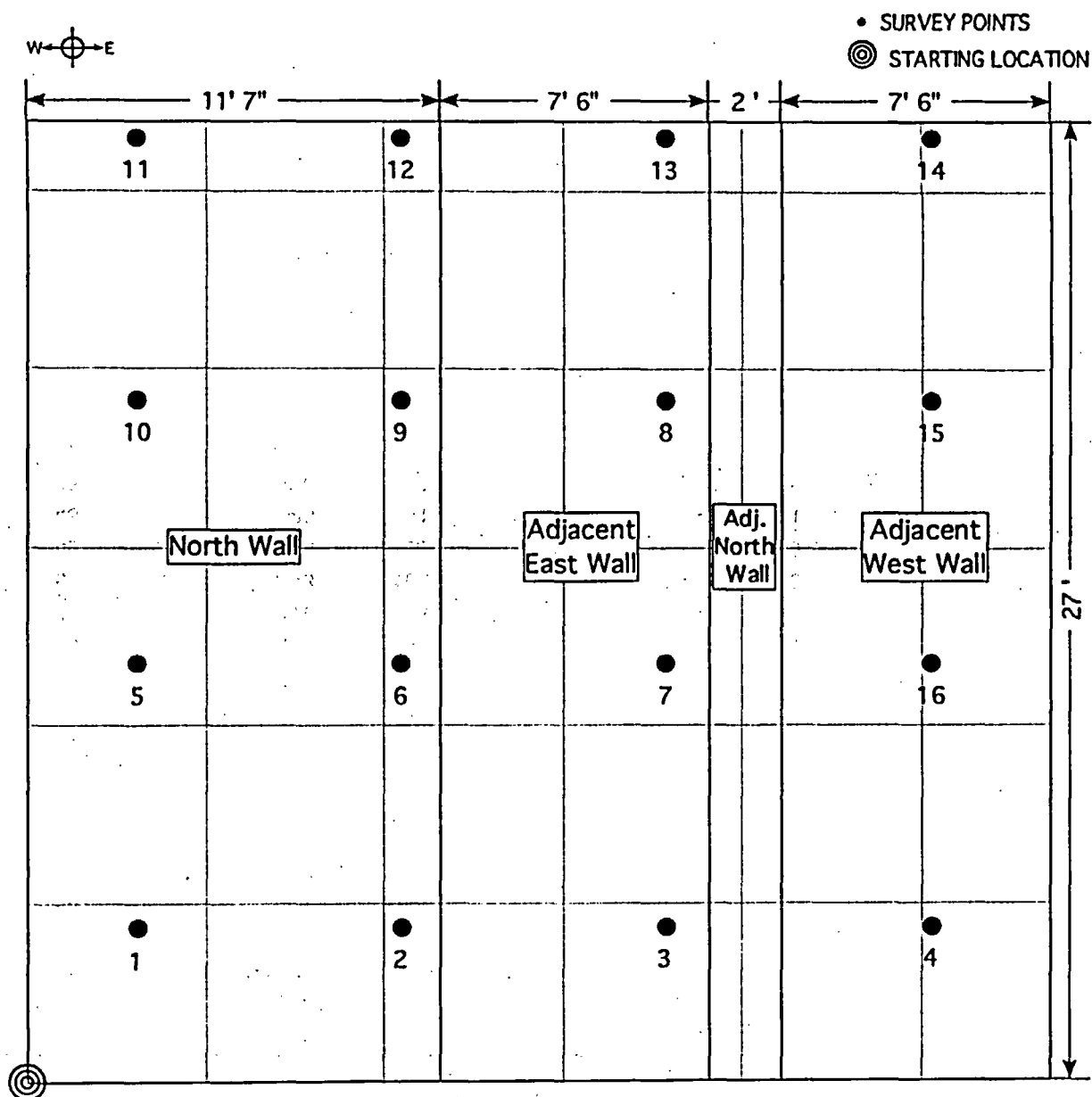
Survey Date 7/23/2004

Inst. Model M2350

Probe Model M44-2

Background 5111 cpm (measurement taken outside the reactor pool)

**POOL-1-B Reactor Pool**



**POOL-1-B**

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Reactor Pool North Wall and Adjacent Walls	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-B	

**General Area**  
Reactor Pool

**Survey Unit**  
POOL-1-B

**Class**  
1

**Part**  
Wall

**Material**  
Concrete

**Size**  
772 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	-291	40	-337	-170	-1	1
2	-232	43	-337	-128	4	6
3	-149	47	-253	165	-1	1
4	-311	39	-337	-170	-1	1
5	-274	41	-253	-86	1	5
6	-253	42	-253	-3	17	13
7	-207	44	-211	-3	-1	1
8	-253	42	-253	-44	-1	1
9	-261	41	-128	-3	1	5
10	-228	43	-170	-3	-1	1
11	-119	48	-170	-3	-1	1
12	-40	51	-3	165	6	8
13	-90	49	-3	165	8	9
14	-115	48	-86	81	-1	1
15	-190	45	-170	-3	1	5
16	-257	42	-253	-44	8	9
<b>Average:</b> -204					<b>Average:</b> 2	
<b>Maximum:</b> -40					<b>Maximum:</b> 17	
<b>Minimum:</b> -311					<b>Minimum:</b> -1	
Survey Date 7/23/2004			Survey Date 7/23/2004		Survey Date 7/24/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.441 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.4 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg $\sigma$ 0.115 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 160.6 cpm			Background 160.6 cpm			
Bkg $\sigma$ 10 cpm			Bkg $\sigma$ 10 cpm			
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>			

<b>General Area</b>	<b>Survey Unit</b>	<b>Class</b>	<b>Part</b>	<b>Material</b>	<b>Size</b>
Reactor Pool	POOL-1-B	1	Wall	Concrete	772 ft <sup>2</sup>

**Gamma Directs**

	<i>(gross cpm)</i>	<i>(net cpm)</i>
1	3464	-1647
2	3192	-1919
3	3728	-1383
4	3615	-1496
5	3912	-1199
6	4118	-993
7	4007	-1104
8	4257	-854
9	4518	-593
10	4024	-1087
11	5100	-11
12	5539	428
13	5418	307
14	5333	222
15	4639	-472
16	3989	-1122

<b>Average:</b>	-808
<b>Maximum:</b>	428
<b>Minimum:</b>	-1919

Survey Date 7/23/2004

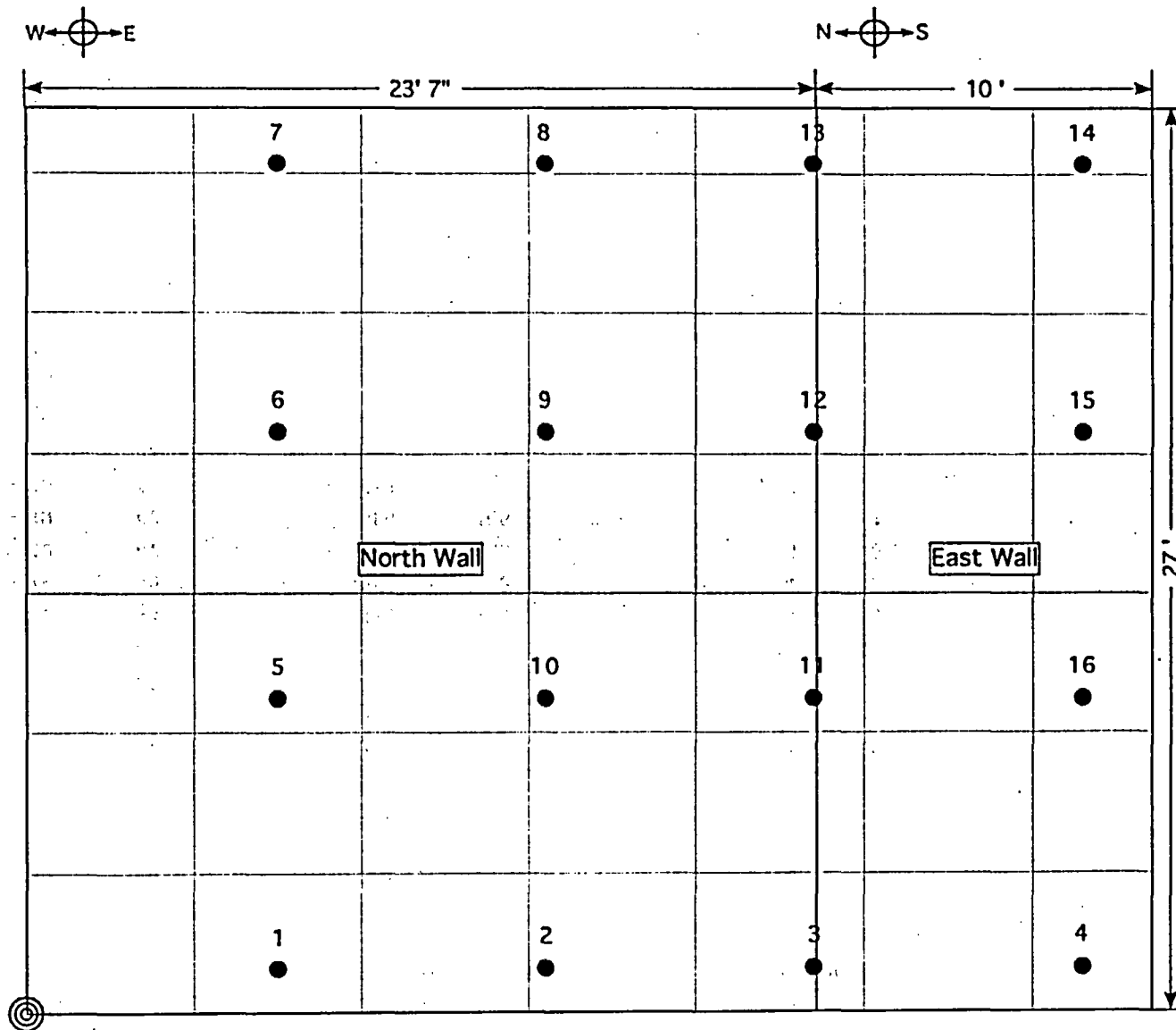
Inst. Model M2350

Probe Model M44-2

Background 5111 cpm (measurement taken outside the reactor pool)

**POOL-1-C Reactor Pool**





Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Reactor Pool North and East Wall	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-C	

General Area		Survey Unit	Class	Part	Material	Size
Reactor Pool		POOL-1-C	1	Wall	Concrete	907 ft <sup>2</sup>
Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	-311	39	-337	-211	-1	1
2	-278	41	-337	-170	-1	1
3	-295	40	-337	-211	4	6
4	-295	40	-337	-170	1	5
5	-190	45	-253	-3	-1	1
6	-170	46	-170	-3	-1	1
7	-136	47	-170	81	1	5
8	-144	47	-170	81	-1	1
9	-195	45	-337	-86	1	5
10	-253	42	-170	-86	13	11
11	-236	43	-170	-86	4	6
12	-178	45	-253	-3	4	6
13	-140	47	-170	165	6	8
14	-119	48	-86	165	-1	1
15	-215	44	-253	-3	-1	1
16	-245	42	-253	-3	1	5
Average: -213					Average: 2	
Maximum: -119					Maximum: 13	
Minimum: -311					Minimum: -1	
Survey Date 7/23/2004			Survey Date 7/23/2004		Survey Date 7/24/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.441 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.4 cpm	
Ei 0.479 cpm/epm			Ei 0.479 cpm/epm		Bkg σ 0.115 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 160.6 cpm			Background 160.6 cpm			
Bkg σ 10 cpm			Bkg σ 10 cpm			
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>			

<b>General Area</b>	<b>Survey Unit</b>	<b>Class</b>	<b>Part</b>	<b>Material</b>	<b>Size</b>
Reactor Pool	POOL-1-C	1	Wall	Concrete	907 ft <sup>2</sup>

	Gamma Directs (gross cpm)	(net cpm)
1	3543	-1568
2	3724	-1387
3	3479	-1632
4	3918	-1193
5	3219	-1892
6	3974	-1137
7	5045	-66
8	5422	311
9	3844	-1267
10	3984	-1127
11	4078	-1033
12	3926	-1185
13	4983	-128
14	5613	502
15	4079	-1032
16	3418	-1693

<b>Average:</b>	-970
<b>Maximum:</b>	502
<b>Minimum:</b>	-1892

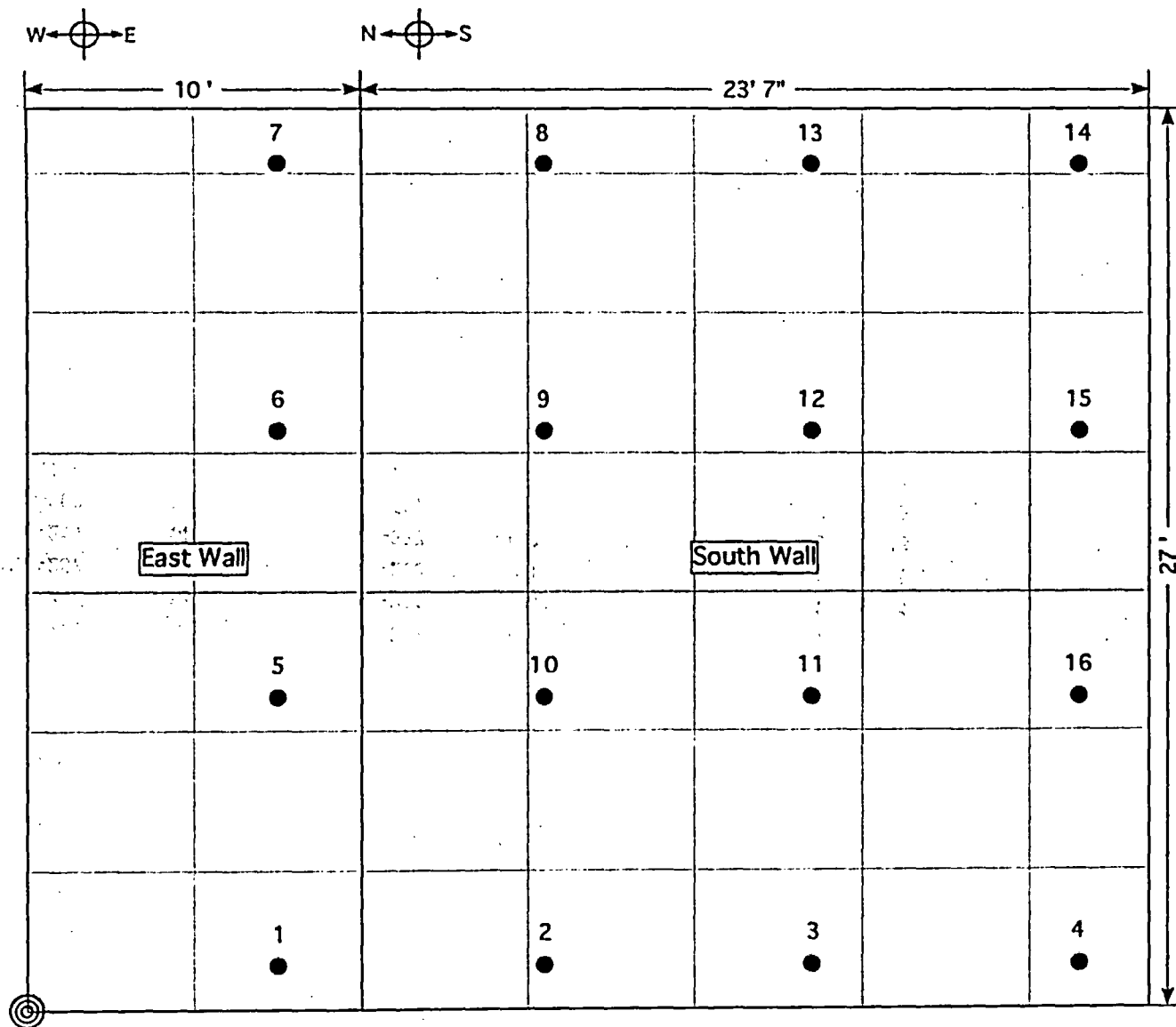
Survey Date 7/23/2004

Inst. Model M2350

Probe Model M44-2

Background 5111 cpm (measurement taken outside the reactor pool)

**POOL-1-D Reactor Pool**



POOL-1-D

- SURVEY POINTS
- ⊙ STARTING LOCATION

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Reactor Pool East and South Wall	
SCIENTECH, Inc. 143 WEST STREET NEW HARTFORD, CT 06176	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-D	

General Area		Survey Unit		Class	Part	Material	Size
Reactor Pool		POOL-1-D		1	Wall	Concrete	907 ft²
Beta Directs (dpm/100 cm²)			Beta Scans (dpm/100 cm²)		Smears (dpm/100 cm²)		
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	-337	37	-253	-86	1	5	
2	-215	44	-337	-170	-1	1	
3	-291	40	-337	-3	-1	1	
4	-374	35	-337	-86	-1	1	
5	-282	40	-337	-170	1	5	
6	-157	46	-253	-3	-1	1	
7	-195	45	-170	-3	-1	1	
8	-245	42	-170	-3	-1	1	
9	-182	45	-253	-86	-1	1	
10	-203	44	-170	81	-1	1	
11	-178	45	-337	-170	4	6	
12	-249	42	-211	-3	-1	1	
13	-257	42	-253	81	1	5	
14	-211	44	-337	-170	38	18	
15	-207	44	-337	-170	1	5	
16	-236	43	-253	-86	-1	1	
Average: -239					Average: 2		
Maximum: -157					Maximum: 38		
Minimum: -374					Minimum: -1		
Survey Date 7/23/2004			Survey Date 7/23/2004		Survey Date 7/24/2004		
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		
Probe Model M43-93			Probe Model M43-93		Ei 0.441 cpm/dpm		
Probe Area 100 cm²			Probe Area 100 cm²		Background 0.4 cpm		
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.115 cpm		
Es 0.5 epn/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm²		
Background 160.6 cpm			Background 160.6 cpm				
Bkg σ 10 cpm			Bkg σ 10 cpm				
MDC 259 dpm/100 cm²			MDC 800 dpm/100 cm²				

<b>General Area</b>	<b>Survey Unit</b>	<b>Class</b>	<b>Part</b>	<b>Material</b>	<b>Size</b>
Reactor Pool	POOL-1-D	1	Wall	Concrete	907 ft <sup>2</sup>

**Gamma Directs**

	<i>(gross cpm)</i>	<i>(net cpm)</i>
1	3483	-1628
2	3667	-1444
3	3157	-1954
4	3926	-1185
5	3848	-1263
6	4703	-408
7	5109	-2
8	5098	-13
9	4390	-721
10	3484	-1627
11	3778	-1333
12	4872	-239
13	4815	-296
14	5422	311
15	4664	-447
16	4298	-813

<b>Average:</b>	-816
<b>Maximum:</b>	311
<b>Minimum:</b>	-1954

Survey Date 7/23/2004

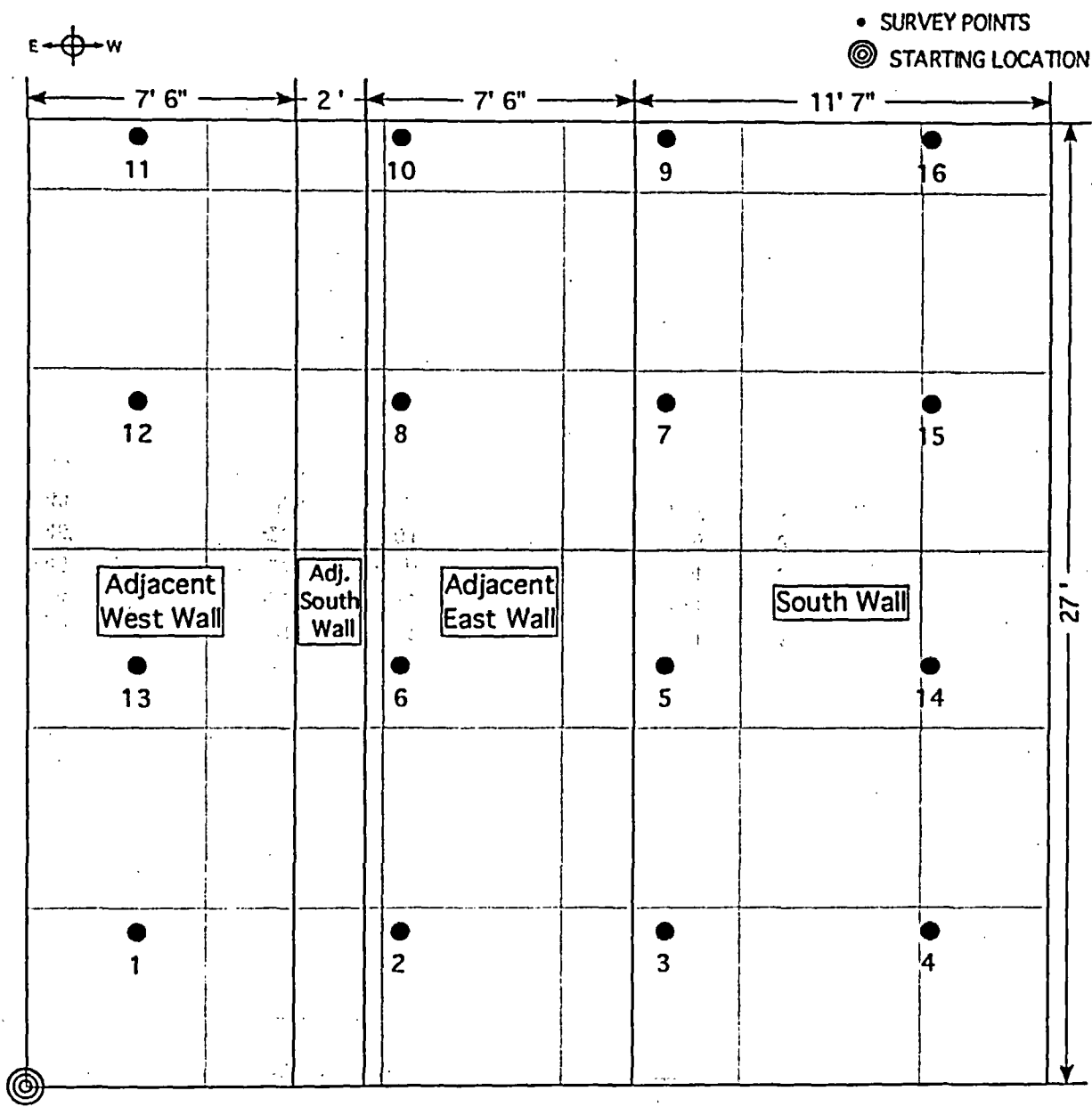
Inst. Model M2350

Probe Model M44-2

Background 5111 cpm (measurement taken outside the reactor pool)

**POOL-1-E Reactor Pool**





**POOL-1-E**

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Reactor Pool Adjacent Walls and South Wall	
 SCIENTECH, INC. 143 WEST STREET NEW MILFORD, CT 06455	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-E	

**General Area**  
Reactor Pool

**Survey Unit**  
POOL-1-E

**Class**  
1

**Part**  
Wall

**Material**  
Concrete

**Size**  
858 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	-266	41	-337	-170	-1	1
2	-178	45	-253	-86	-1	1
3	-211	44	-337	-3	4	6
4	-224	43	-253	-86	-1	1
5	-303	39	-337	-86	6	8
6	-153	47	-253	81	-1	1
7	-228	43	-337	-86	-1	1
8	-115	48	-170	81	-1	1
9	-86	50	-170	165	-1	1
10	-136	47	-170	81	-1	1
11	-199	45	-211	81	-1	1
12	-211	44	-253	-3	-1	1
13	-232	43	-253	-128	1	5
14	-195	45	-253	81	6	8
15	-228	43	-253	81	-1	1
16	-165	46	-170	165	4	6
<b>Average:</b> -196					<b>Average:</b> 1	
<b>Maximum:</b> -86					<b>Maximum:</b> 6	
<b>Minimum:</b> -303					<b>Minimum:</b> -1	
Survey Date 7/23/2004			Survey Date 7/23/2004		Survey Date 7/24/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.441 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.4 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.115 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 160.6 cpm			Background 160.6 cpm			
Bkg σ 10 cpm			Bkg σ 10 cpm			
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>			

<b>General Area</b>	<b>Survey Unit</b>	<b>Class</b>	<b>Part</b>	<b>Material</b>	<b>Size</b>
Reactor Pool	POOL-1-E	1	Wall	Concrete	858 ft <sup>2</sup>

**Gamma Directs**

	<i>(gross cpm)</i>	<i>(net cpm)</i>
1	3136	-1975
2	3414	-1697
3	3865	-1246
4	3021	-2090
5	3750	-1361
6	3166	-1945
7	4042	-1069
8	4853	-258
9	5291	180
10	4843	-268
11	4925	-186
12	4612	-499
13	3683	-1428
14	3776	-1335
15	4369	-742
16	5155	44

<b>Average:</b>	-992
<b>Maximum:</b>	44
<b>Minimum:</b>	-2090

Survey Date 7/23/2004

Inst. Model M2350

Probe Model M44-2

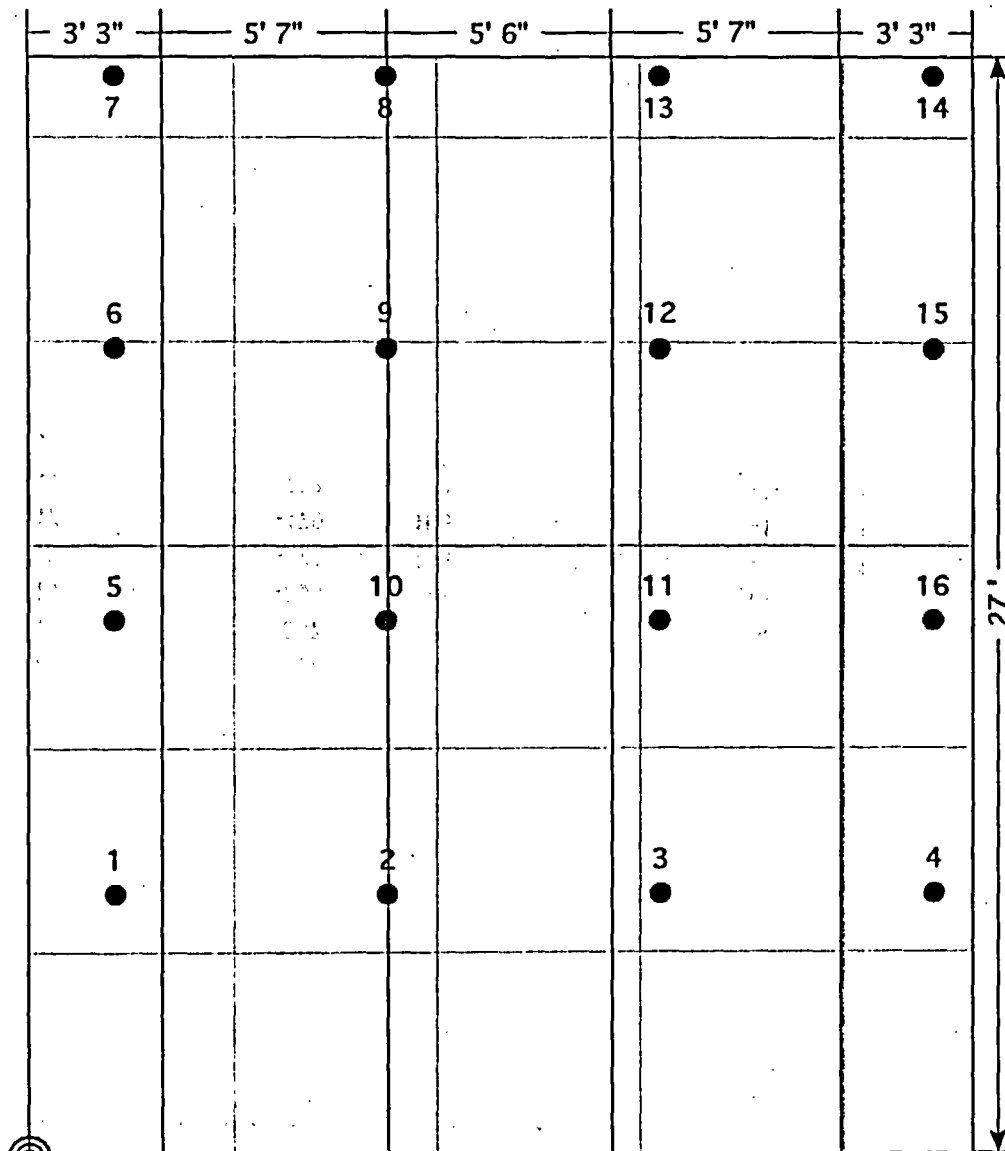
Background 5111 cpm (measurement taken outside the reactor pool)

**POOL-1-F Reactor Pool**



• SURVEY POINTS

⊙ STARTING LOCATION



POOL-1-F

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Reactor Pool West Wall	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23329-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-F	

**General Area**  
Reactor Pool

**Survey Unit**  
POOL-1-F

**Class**  
1

**Part**  
Wall

**Material**  
Concrete

**Size**  
624 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	-332	38	-337	-86	-1	1
2	-249	42	-337	-86	-1	1
3	-299	40	-337	-86	-1	1
4	-299	40	-253	-3	-1	1
5	-257	42	-337	-170	1	5
6	-199	45	-253	81	1	5
7	-65	50	-170	165	1	5
8	-144	47	-170	248	6	8
9	-161	46	-170	81	-1	1
10	-266	41	-337	-170	13	11
11	-261	41	-337	-170	4	6
12	-232	43	-253	-3	13	11
13	-86	50	-170	165	-1	1
14	-153	47	-170	165	-1	1
15	-274	41	-253	-3	-1	1
16	-307	39	-337	-86	-1	1
Average: -224			Average: 2		Average: 2	
Maximum: -65			Maximum: 13		Maximum: 13	
Minimum: -332			Minimum: -1		Minimum: -1	
Survey Date 7/23/2004			Survey Date 7/23/2004		Survey Date 7/24/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.441 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.4 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.115 cpm	
Es 0.5 epm/dpm			Es 0.5 epm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 160.6 cpm			Background 160.6 cpm			
Bkg σ 10 cpm			Bkg σ 10 cpm			
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>			

<b>General Area</b>	<b>Survey Unit</b>	<b>Class</b>	<b>Part</b>	<b>Material</b>	<b>Size</b>
Reactor Pool	POOL-1-F	1	Wall	Concrete	624 ft <sup>2</sup>

**Gamma Directs**

	<i>(gross cpm)</i>	<i>(net cpm)</i>
1	3046	-2065
2	3362	-1749
3	3044	-2067
4	2931	-2180
5	3837	-1274
6	4392	-719
7	4976	-135
8	5277	166
9	5403	292
10	3383	-1728
11	3648	-1463
12	4608	-503
13	4804	-307
14	5119	8
15	4550	-561
16	3873	-1238

<b>Average:</b>	-970
<b>Maximum:</b>	292
<b>Minimum:</b>	-2180

Survey Date 7/23/2004

Inst. Model M2350

Probe Model M44-2

Background 5111 cpm (measurement taken outside the reactor pool)

**PUMP-2-A · Pump Room**



DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 2 Pump-2-A	

**SCIENTECH.**  
 SCIENTECH, LLC  
 143 WEST STREET  
 NEW MILFORD, CT  
 06776

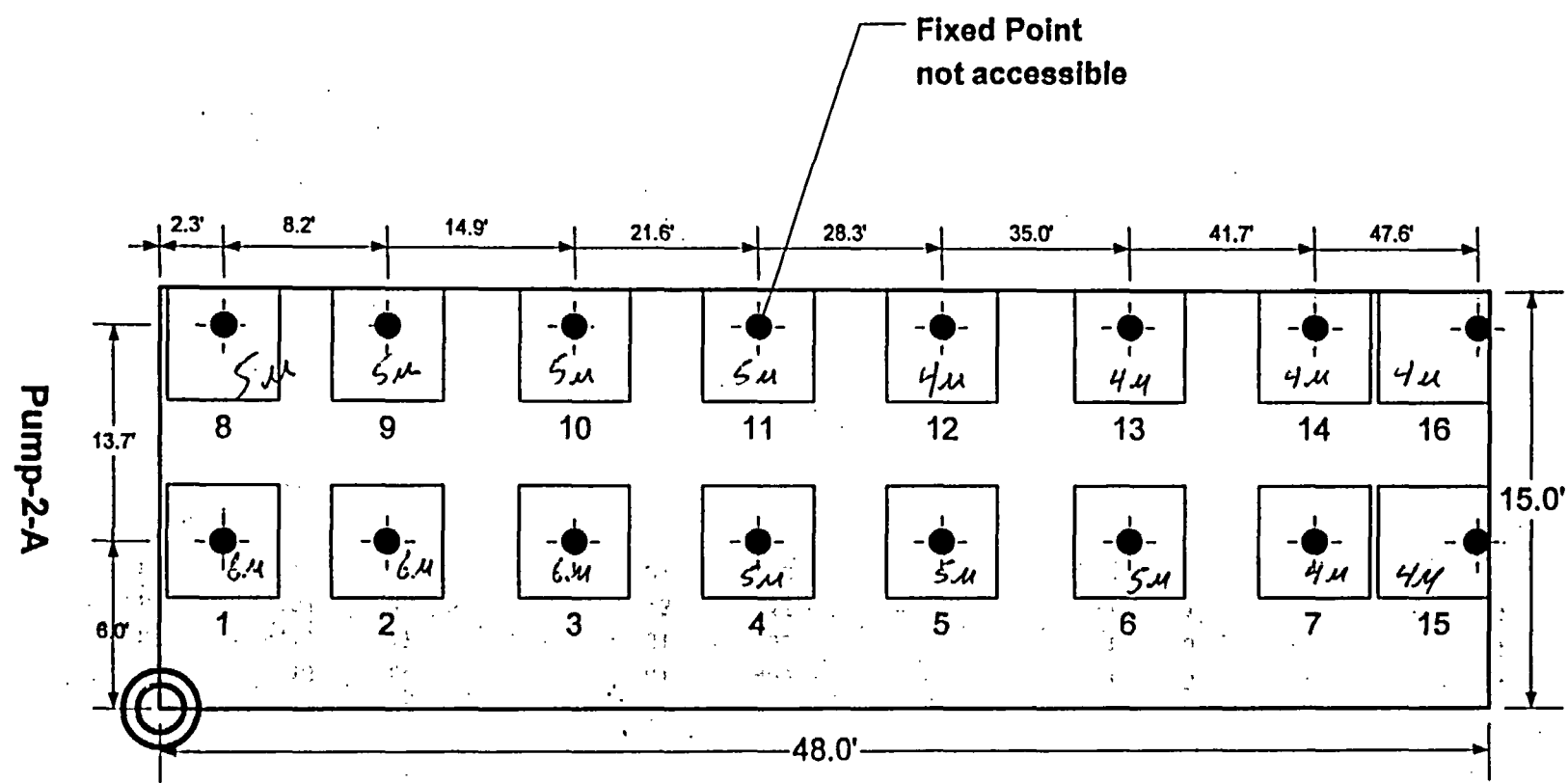
PROJECT NO.  
 23529 - 0501

FILENAME  
 PUMP-2-A.VSD

SCALE NTS	DATE 11/13/2004
--------------	--------------------

DRAWN BY S.R. SMITH	Checked By:
------------------------	-------------

FIGURE  
 PUMP-2-A



General Area  
Pump Room

Survey Unit  
PUMP-2-A

Class  
2

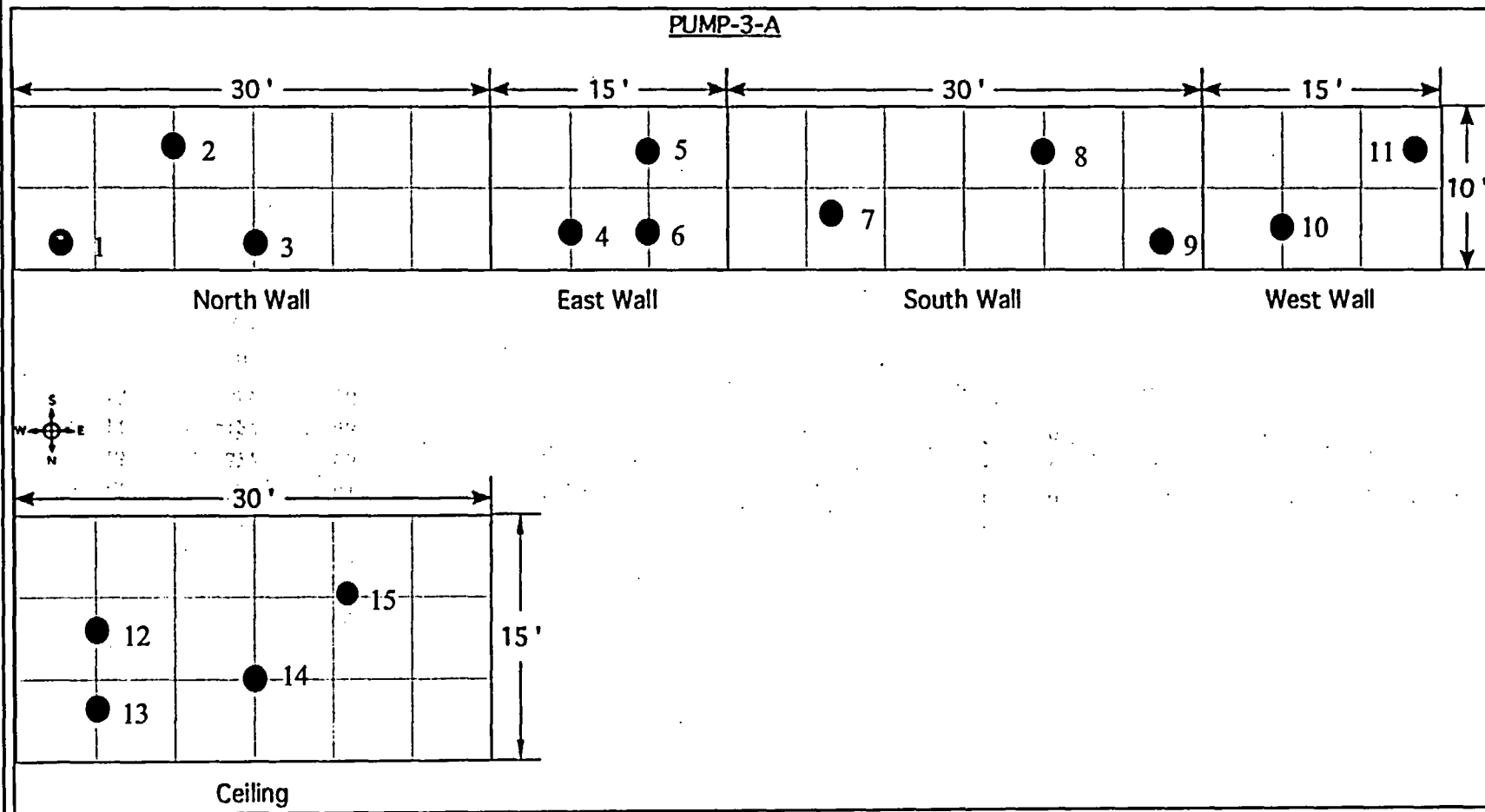
Part  
Floor

Material  
Concrete

Size  
450 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate ( $\mu$ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	177	60	81	332	1	5	6
2	252	62	165	582	-1	1	6
3	281	63	-86	165	6	8	6
4	252	62	-3	248	-1	1	5
5	-94	49	-170	81	-1	1	5
6	-23	52	-253	-86	-1	1	5
7	-61	51	-253	165	-1	1	4
8	190	60	248	582	4	6	5
9	52	55	248	582	1	5	5
10	106	57	248	582	-1	1	5
11	-136	47	332	499	-1	1	5
12	18	54	81	499	1	5	4
13	-140	47	81	499	1	5	4
14	-157	46	-3	415	-1	1	4
15	-220	44	81	499	4	6	4
Average: 33					Average: 1		Average: 5
Maximum: 281					Maximum: 6		Maximum: 6
Minimum: -220					Minimum: -1		Minimum: 4
Survey Date 10/13/2004			Survey Date 10/13/2004		Survey Date 10/13/2004		Survey Date 11/16/200
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.442 cpm/dpm		Background 4.5 $\mu$ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.47 cpm		Bkg $\sigma$ 0.52 $\mu$ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg $\sigma$ 0.125 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg $\sigma$ 10 cpm			Bkg $\sigma$ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**PUMP-3-A Pump Room**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Pump Room Walls and Ceiling	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/09/2004
By: ah	CK:
FIGURE: PUMP-3-A	

General Area  
Pump Room

Survey Unit  
PUMP-3-A

Class  
3

Part  
Walls &

Material  
Concrete

Size  
1350 ft<sup>2</sup>

Beta Directs  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	-78	50
2	-61	51
3	-203	44
4	-232	43
5	-207	44
6	-224	43
7	-241	43
8	348	65
9	119	57
10	165	59
11	373	66
12	223	61
13	377	66
14	-124	48
15	-82	50

Average: 10

Maximum: 377

Minimum: -241

Survey Date 10/12/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg  $\sigma$  10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

Smears  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
-1	1
4	6
-1	1
1	5
1	5
6	8
-1	1
-1	1
-1	1
-1	1
1	5
4	6
4	6
4	6

Average: 1

Maximum: 6

Minimum: -1

Survey Date 10/13/2004

Inst. Model WPC-9550

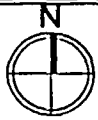
Ei 0.442 cpm/dpm

Background 0.47 cpm

Bkg  $\sigma$  0.125 cpm

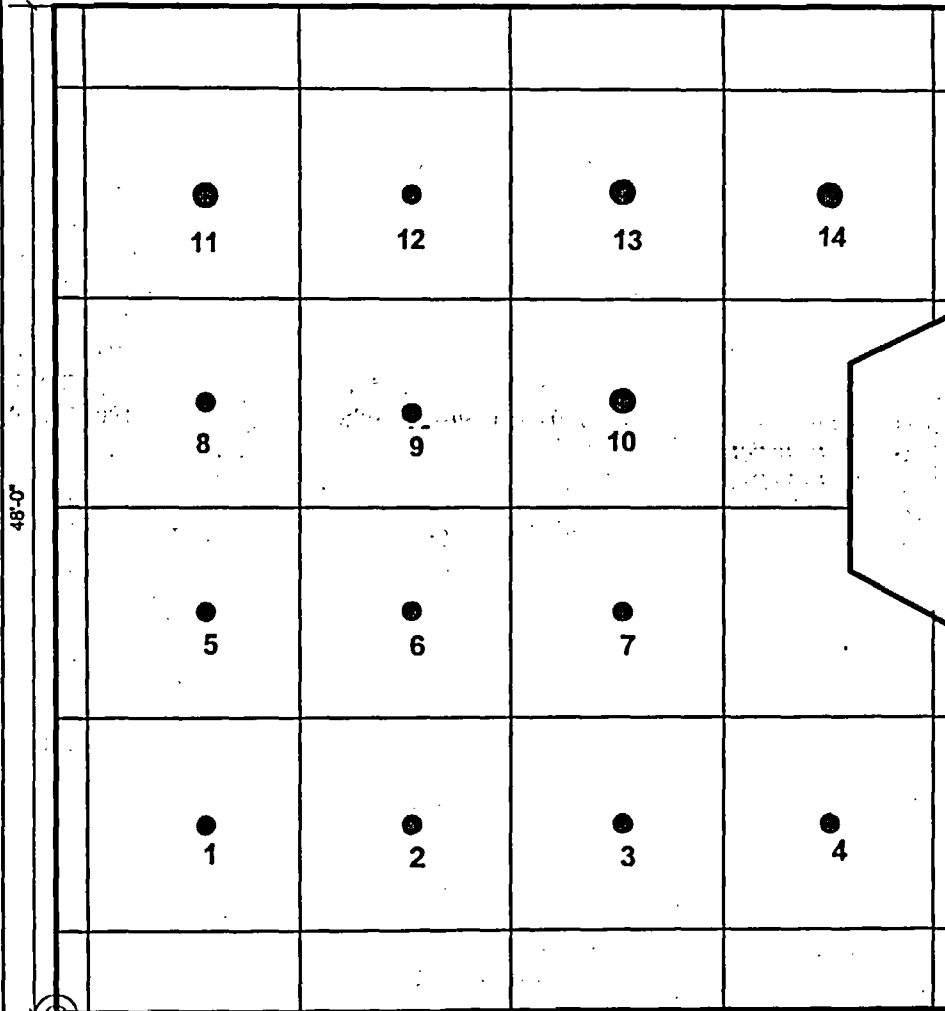
MDC 11 dpm/100 cm<sup>2</sup>

**BEAM-2-A Beam Room**



Distance between  
points: 10 ft

42'-6"



**BEAM-2-A**



**SURVEY POINTS**  
**STARTING**  
**LOCATION**

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 2  
Beam Room Floor

**SCIENTECH**  
SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO.:  
23529-0501

FILE NAME:

SCALE:  
N.T.S.

DATE:  
11/30/2004

By:  
CW

CK:

FIGURE:  
BEAM-2-A

**General Area**  
Beam Room

**Survey Unit**  
Beam-2-A

**Class**  
1

**Part**  
Floor

**Material**  
Concrete

**Size**  
1812 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	-99	49
2	39	55
3	156	59
4	-36	52
5	27	54
6	56	55
7	-107	49
8	14	54
9	14	54
10	-61	51
11	-48	51
12	-3	53
13	-199	45
14	-23	52

Average: -19  
Maximum: 156  
Minimum: -199

Survey Date 11/2/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg  $\sigma$  10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
-3	332
-3	248
165	415
81	582
165	582
81	415
-3	248
-3	165
-44	165
-3	248
81	165
-3	248
-3	582
-3	332

Survey Date 11/9/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg  $\sigma$  10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
6	8
-1	1
2	5
-1	1
6	8
2	5
-1	1
2	5
-1	1
2	5
6	8
2	5
2	5

Average: 2  
Maximum: 6  
Minimum: -1

Survey Date 11/11/2004

Inst. Model WPC-9550

Ei 0.442 cpm/dpm

Background 0.33 cpm

Bkg  $\sigma$  0.105 cpm

MDC 10 dpm/100 cm<sup>2</sup>

**Gross Exposure Rate**  
( $\mu$ R/hour)

4  
4  
5  
6  
4  
4  
4  
4  
4  
4  
5  
5  
5  
6

Average: 5  
Maximum: 6  
Minimum: 4

Survey Date 11/9/2004

Inst. Model M19

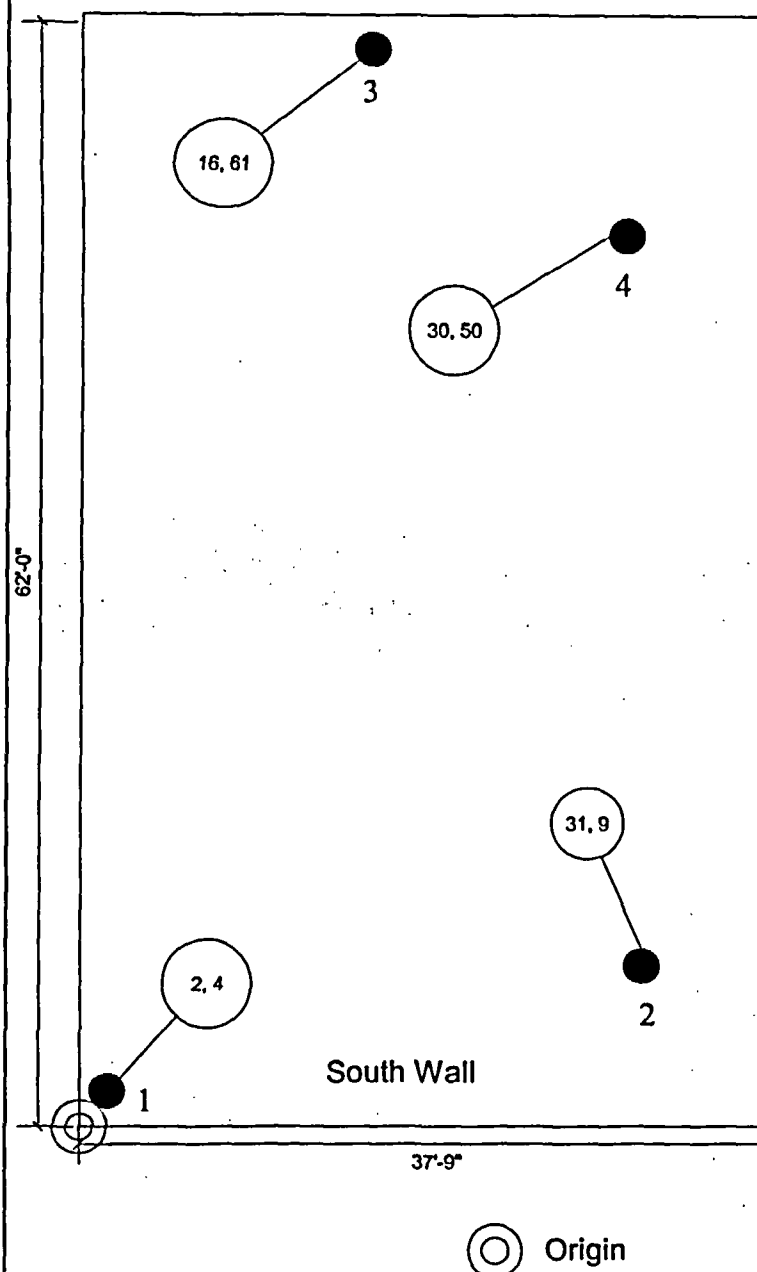
Background 4.5  $\mu$  R/hour

Bkg  $\sigma$  0.5  $\mu$  R/hour



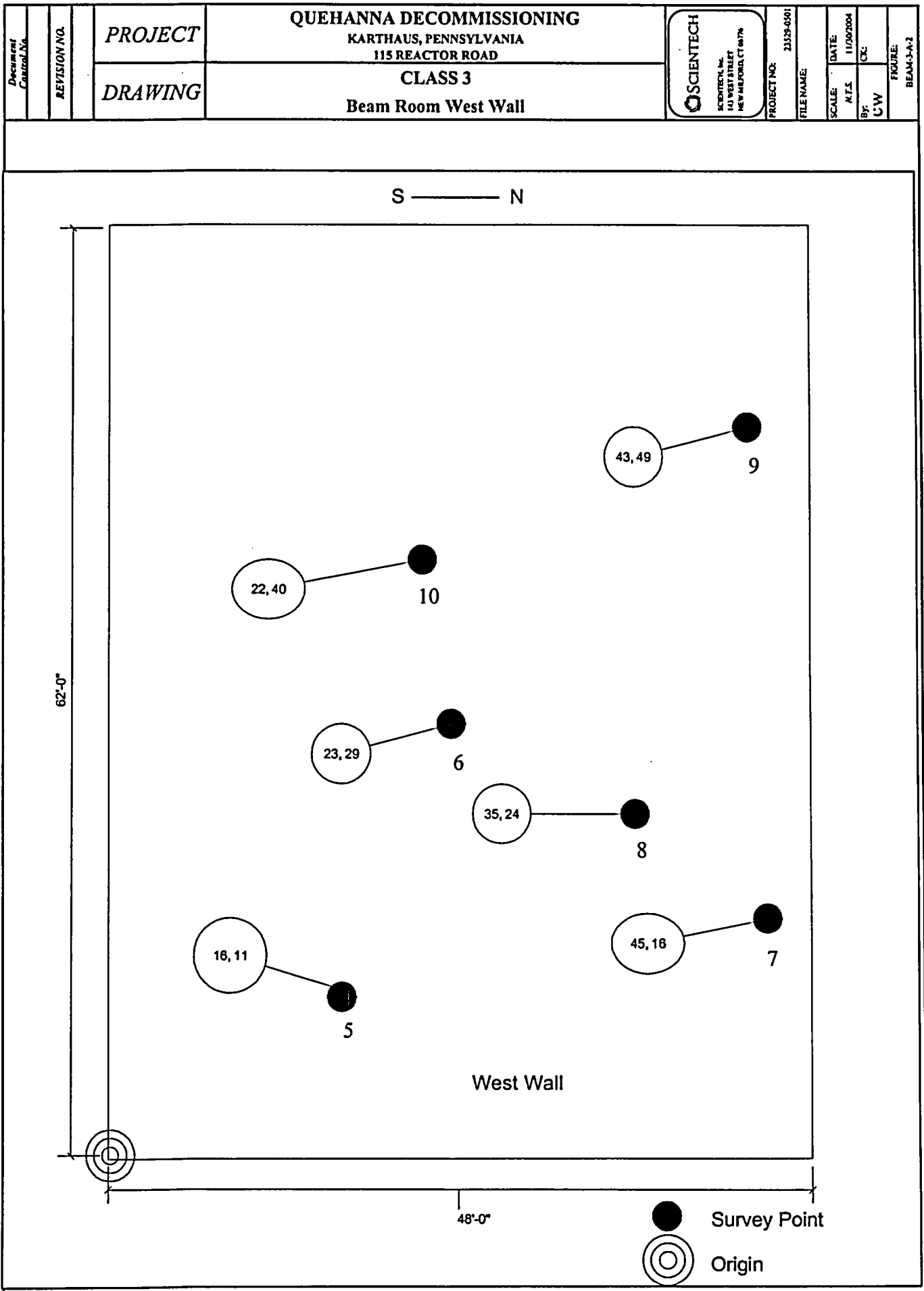
**BEAM-3-A Beam Room**

E ——— W



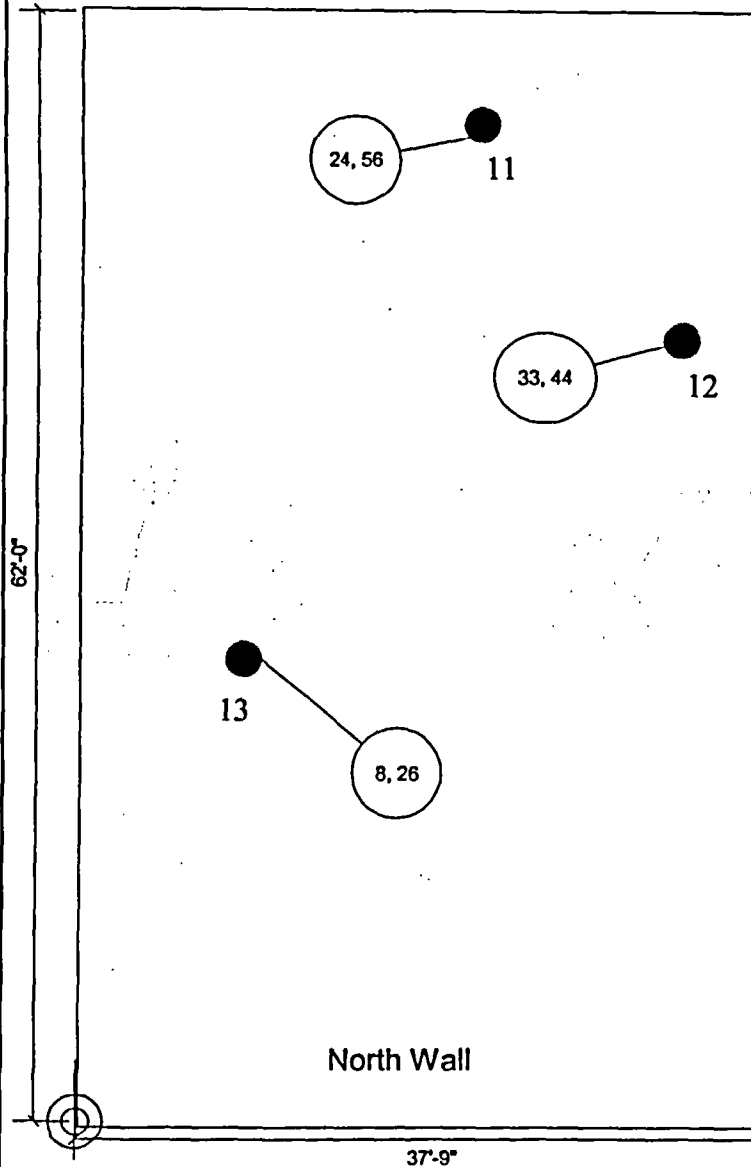
**BEAM-3-A**

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Beam Room South Wall	
SCIENCETECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/30/2004
By: CW	CK:
FIGURE: BEAM-3-A-1	



BEAM-3-A

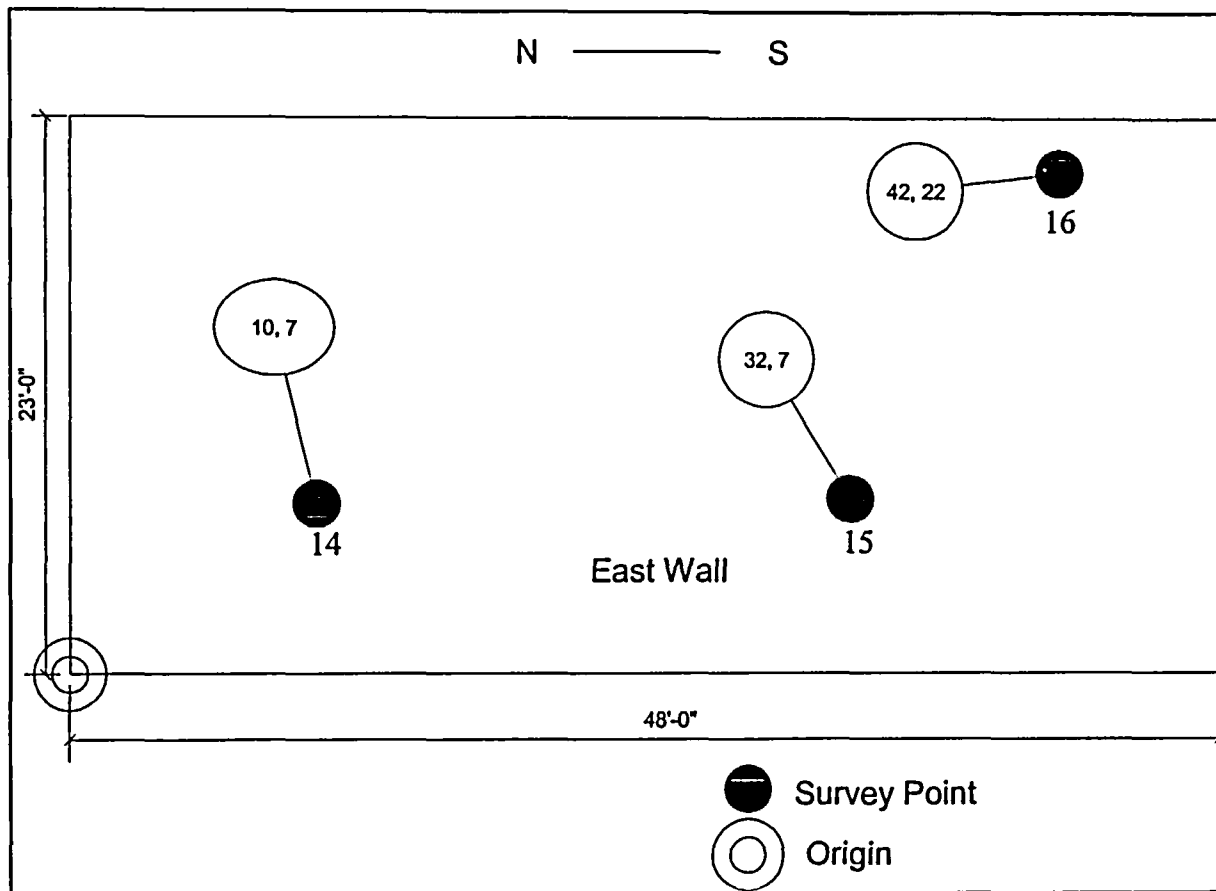
W — E



Origin

BEAM-3-A

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Beam Room North Wall
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/09/2004
By: CW	CK:
FIGURE: BEAM-3-A-3	



**BEAM-3-A**

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARITHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Beam Room East Wall
 <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/30/2004
By: C'W	CK:
FIGURE: BEAM-3-A-4	

**General Area**  
Beam Room

**Survey Unit**  
Beam-3-A

**Class**  
3

**Part**  
Wall

**Material**  
Metal

**Size**  
8760 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	-192	37
2	-50	44
3	-96	42
4	121	52
5	17	47
6	0	47
7	84	50
8	25	48
9	67	50
10	30	48
11	121	52
12	159	53
13	13	47
14	-37	45
15	113	51
16	-41	43
17	71	48

**Average:** 25

**Maximum:** 159

**Minimum:** -192

Survey Date 10/16/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg  $\sigma$  10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-1	1
1	5
4	6
1	5
1	5
-1	1
1	5
-1	1
1	5
1	5
6	8
11	10
1	5
-1	1
24	15
<u>20</u>	<u>13</u>

**Average:** 4

**Maximum:** 24

**Minimum:** -1

Survey Date 11/22/2004

Inst. Model WPC-9550

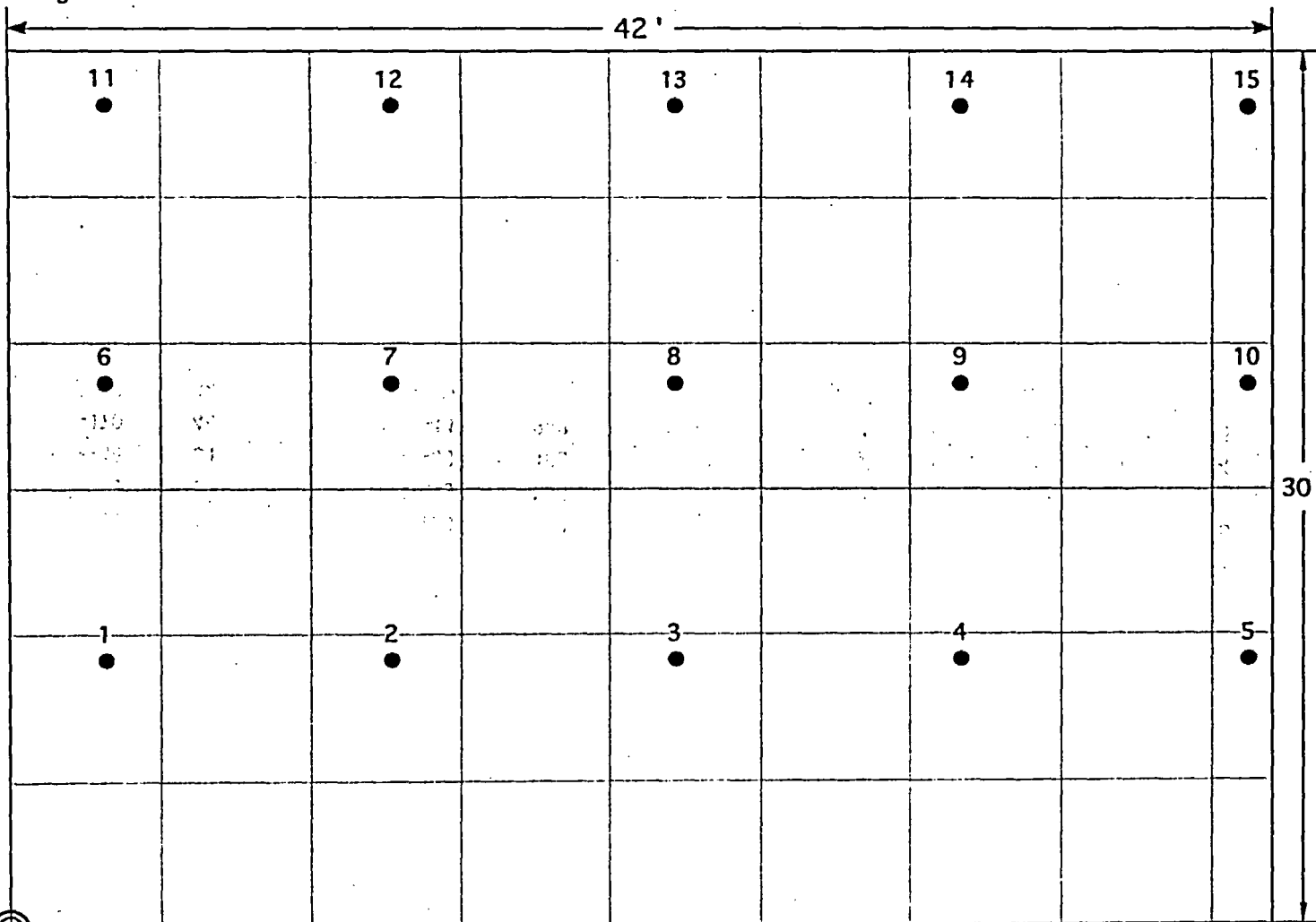
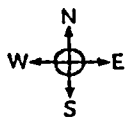
Ei 0.438 cpm/dpm

Background 0.37 cpm

Bkg  $\sigma$  0.111 cpm

MDC 11 dpm/100 cm<sup>2</sup>

**DUN-2-A    Dungeon**



DUN-2-A

• SURVEY POINTS  
 ◎ STARTING LOCATION

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KARTHANS, PENNSYLVANIA  
 115 REACTOR ROAD

CLASS 2  
 Dungeon Floor

**SCIENTECH**  
 SCIENTECH, Inc.  
 141 WEST STREET  
 NEW MILFORD, CT 06470

PROJECT NO:

23529-0501

FILE NAME:

SCALE:

N.T.S.

DATE:

07/06/2004

By:

CK:

FIGURE:

DUN-2-A



General Area  
Dungeon

Survey Unit  
DUN-2-A

Class  
2

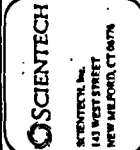
Part  
Floor

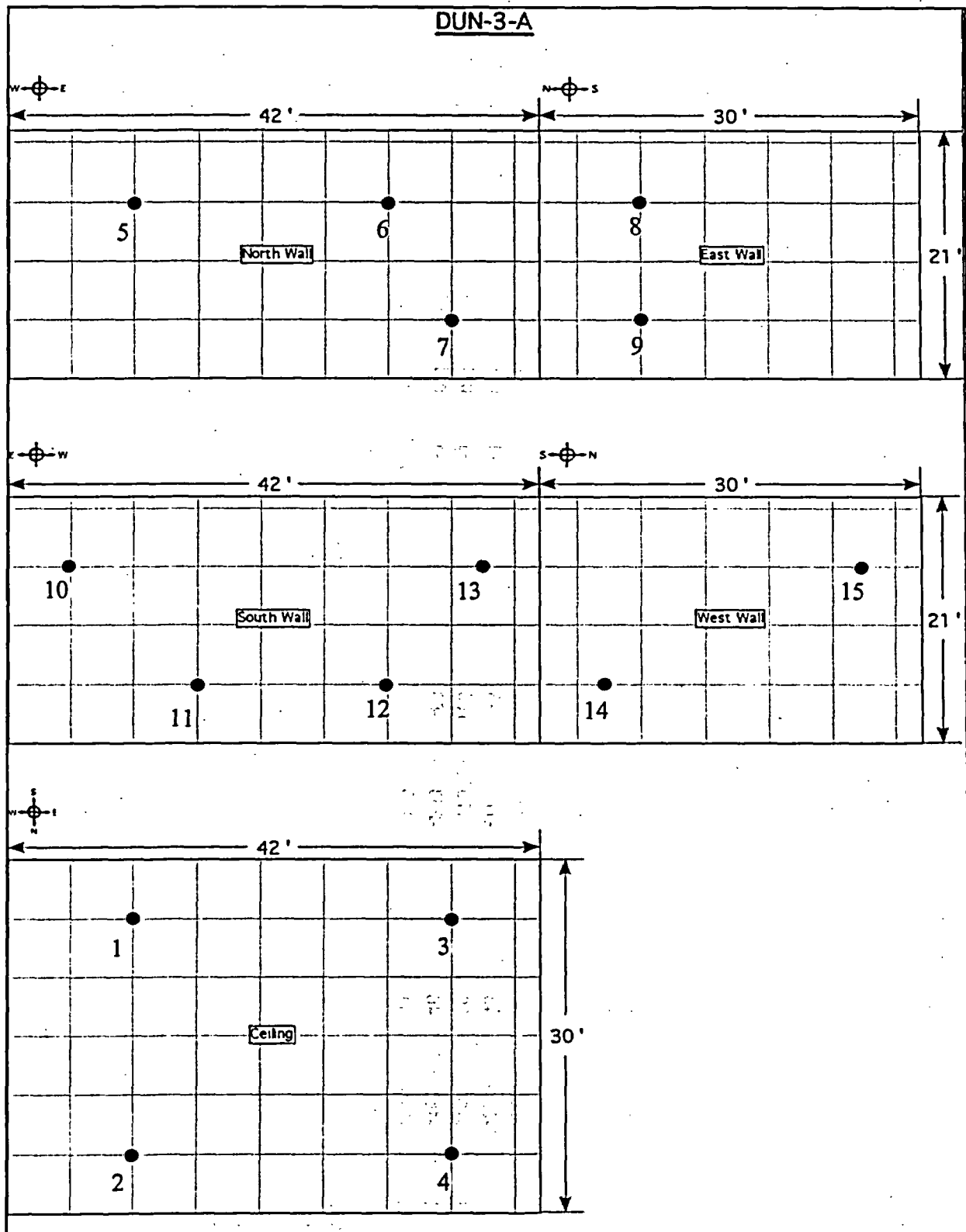
Material  
Concrete

Size  
1260 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	-44	51	-86	165	-2	1	6
2	-107	49	-3	165	3	6	5
3	-7	53	-86	81	5	8	4
4	-73	50	-44	81	3	6	5
5	-190	45	-170	-86	3	6	4
6	-48	51	-44	248	1	5	7
7	68	56	81	332	5	8	6
8	-103	49	-44	165	5	8	5
9	-132	48	-86	165	-2	1	4
10	-203	44	-86	248	1	5	4
11	-111	48	-170	-3	1	5	5
12	-23	52	-3	415	1	5	5
13	-48	51	-86	165	7	9	4
14	-170	46	-44	248	1	5	5
15	-207	44	-170	-3	3	6	4
Average: -93					Average: 2		Average: 5
Maximum: 68					Maximum: 7		Maximum: 7
Minimum: -207					Minimum: -2		Minimum: 4
Survey Date 10/4/2004			Survey Date 10/4/2004		Survey Date 10/4/2004		Survey Date 11/9/2004
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.443 cpm/dpm		Background 4.5 μ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.83 cpm		Bkg σ 0.52 μ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.167 cpm		
Es 0.5 epm/dpm			Es 0.5 epm/dpm		MDC 13 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg σ 10 cpm			Bkg σ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**DUN-3-A    Dungeon**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD		 OSCIENTECH 140 WEST STREET NEW MILFORD, CT 06457	PROJECT NO: 21579-0501	FILE NAME:	DATE:	12/02/2004	By:	ah	FIGURE: DUN-3-A
		DRAWING	CLASS 3 Dungeon Walls and Ceiling					SCALE:	N.T.S.		CC:	



General Area  
Dungeon

Survey Unit  
DUN-3-A

Class  
3

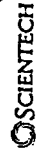
Part  
Walls &

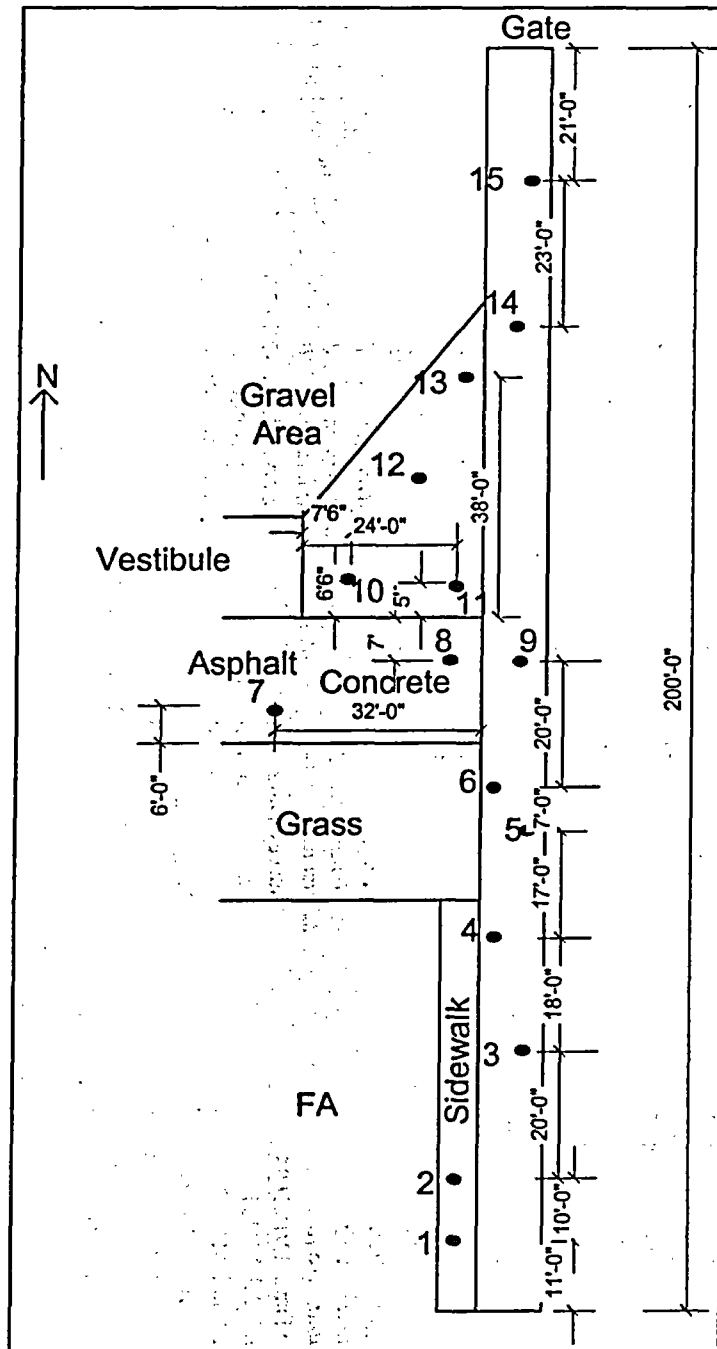
Material  
Concrete

Size  
4284 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	-94	49	-3	332	-1	0.6
2	-78	50	81	332	-1	0.6
3	-36	52	-170	-3	-1	0.6
4	-19	52	81	248	6	7.7
5	102	57	81	415	-1	0.6
6	-245	42	-170	-3	-1	0.6
7	-182	45	-86	332	-1	0.6
8	-94	49	-170	81	1	4.5
9	-144	47	-170	-3	3	6.3
10	-241	43	-170	81	3	6.3
11	-224	43	-253	-86	1	4.5
12	-224	43	-170	-3	-1	0.6
13	-65	50	-170	165	-1	0.6
14	-165	46	-253	-86	-1	0.6
15	-270	41	-170	-3	1	4.5
Average: -132			Average: 0		Average: 0	
Maximum: 102			Maximum: 6		Maximum: 6	
Minimum: -270			Minimum: -1		Minimum: -1	
Survey Date 10/5/2004			Survey Date 10/4/2004		Survey Date 10/5/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.441 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.53 cpm	
Ei 0.479 cpm/epm			Ei 0.479 cpm/cpm		Bkg σ 0.133 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 12 dpm/100 cm <sup>2</sup>	
Background 160.6 cpm			Background 160.6 cpm			
Bkg σ 10 cpm			Bkg σ 10 cpm			
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>			

**ROAD-3-A Road**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENTECH, INC. 143 WEST STREET NEW HAVEN, CT 06510	PROJECT NO: 23129-0001	FILE NAME:	SCALE:	DATE:	By ah	CHK:	FIGURE: ROAD-3-A
		DRAWING	CLASS 3 ROAD				N.T.S.	12/09/2004			



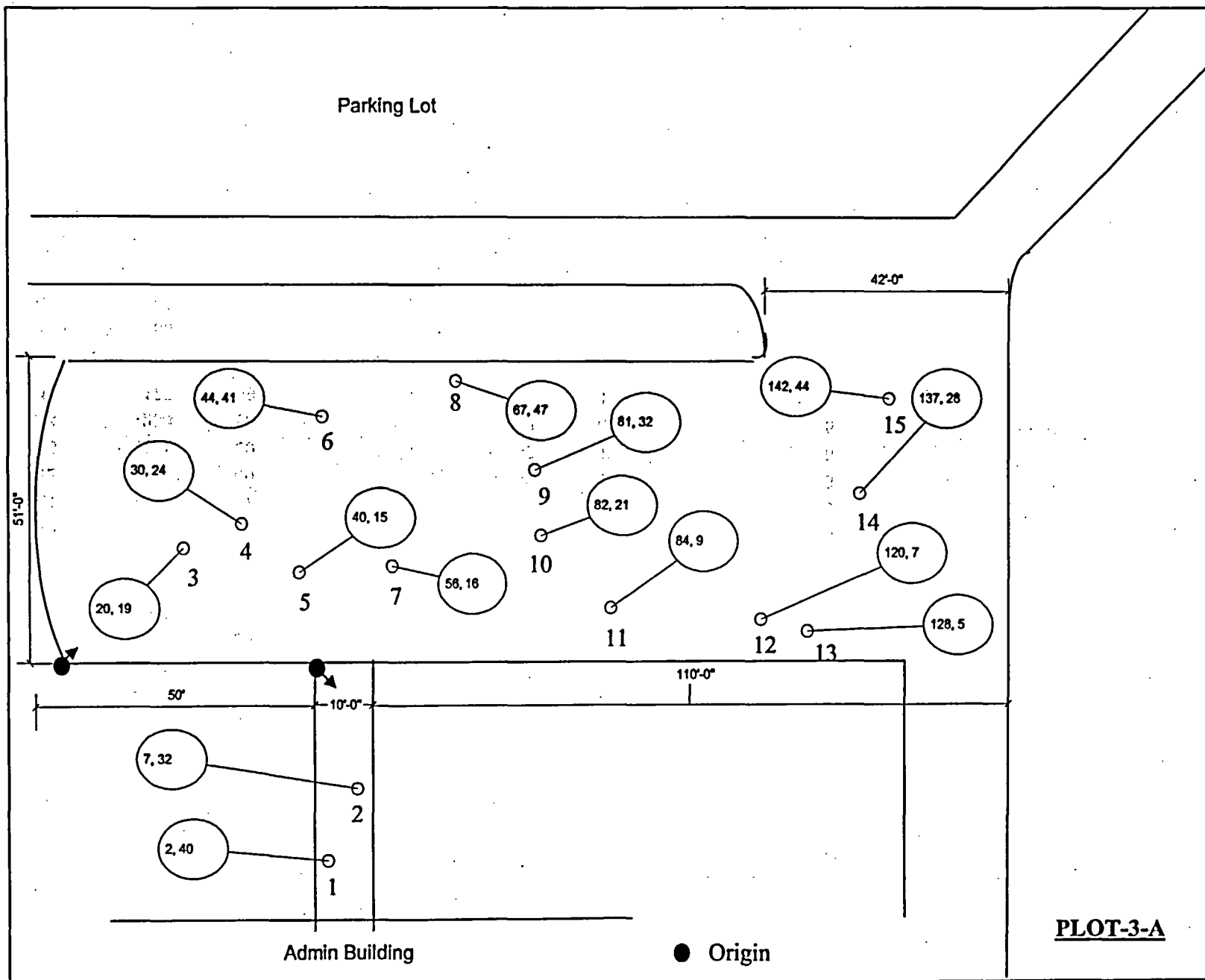
**ROAD-3-A**

<i>General Area</i>	<i>Survey Unit</i>	<i>Class</i>	<i>Part</i>	<i>Material</i>	<i>Size</i>
East of RB	ROAD-3-A	3	Floor	Asphalt & Concrete	3000 ft <sup>2</sup>
<i>Beta Directs</i> (dpm/100 cm <sup>2</sup> )			<i>Smears</i> (dpm/100 cm <sup>2</sup> )		<i>Gross Exposure</i> ( $\mu$ R/hour)
N	<i>Net Activity</i>	<i>Sigma</i>	<i>Net Activity</i>	<i>Sigma</i>	
1	-326	25	5	8	6
2	-188	26	8	9	8
3	-225	26	-1	1	7
4	-292	26	12	11	7
5	572	100	5	8	6
6	898	107	-1	1	6
7	806	105	-1	1	8
8	727	103	3	6	7
9	685	102	-1	1	7
10	539	99	23	15	6
11	939	107	14	12	7
12	-543	102	5	8	6
13	-376	105	14	12	6
14	134	90	10	10	8
15	211	88	5	8	7
<i>Average:</i>	225		<i>Average:</i>	7	<i>Average:</i> 7
<i>Maximum:</i>	939		<i>Maximum:</i>	23	<i>Maximum:</i> 8
<i>Minimum:</i>	-543		<i>Minimum:</i>	-1	<i>Minimum:</i> 6
Survey Date	12/10/2004		Survey Date	12/10/2004	Survey Date 12/10/200
Inst. Model	M2360		Inst. Model	WPC-9550	Inst. Model M19
Probe Model	M43-93		Ei	0.450 cpm/dpm	Background 7.1 $\mu$ R/hour
Probe Area	100 cm <sup>2</sup>		Background	0.6 cpm	Bkg $\sigma$ 0.3 $\mu$ R/hour
Ei	0.479 cpm/cpm		Bkg $\sigma$	0.141 cpm	
Es	0.5 cpm/dpm		MDC	12 dpm/100 cm <sup>2</sup>	
Background	436 cpm Asphalt; 723 cpm Concrete				
Bkg $\sigma$	22 cpm Asphalt; 43 cpm Concrete				
MDC	299 dpm/100 cm <sup>2</sup> Asphalt; 384 dpm/100 cm <sup>2</sup> Concrete				

Note -- A new background level had to be established for this survey. Radon levels were excessive (as can be seen from the elevated alpha data). Background levels established for this survey were taken at the same location as the other asphalt backgrounds (approximately 1/4 mile away from the facility on Reactor Road).

**PLOT-3-A    Parking Lot**





**PLOT-3-A**

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
	QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Parking Lot
SCIENSTECH SCIENSTECH, INC. 113 WEST STREET NEW MILFORD, CT 06455	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/09/2004
By: ah	CK:
FIGURE: PLOT-3-A	

General Area  
Parking Lot

Survey Unit  
PLOT-3-A

Class  
3

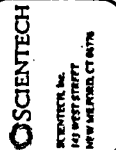
Part  
Floor

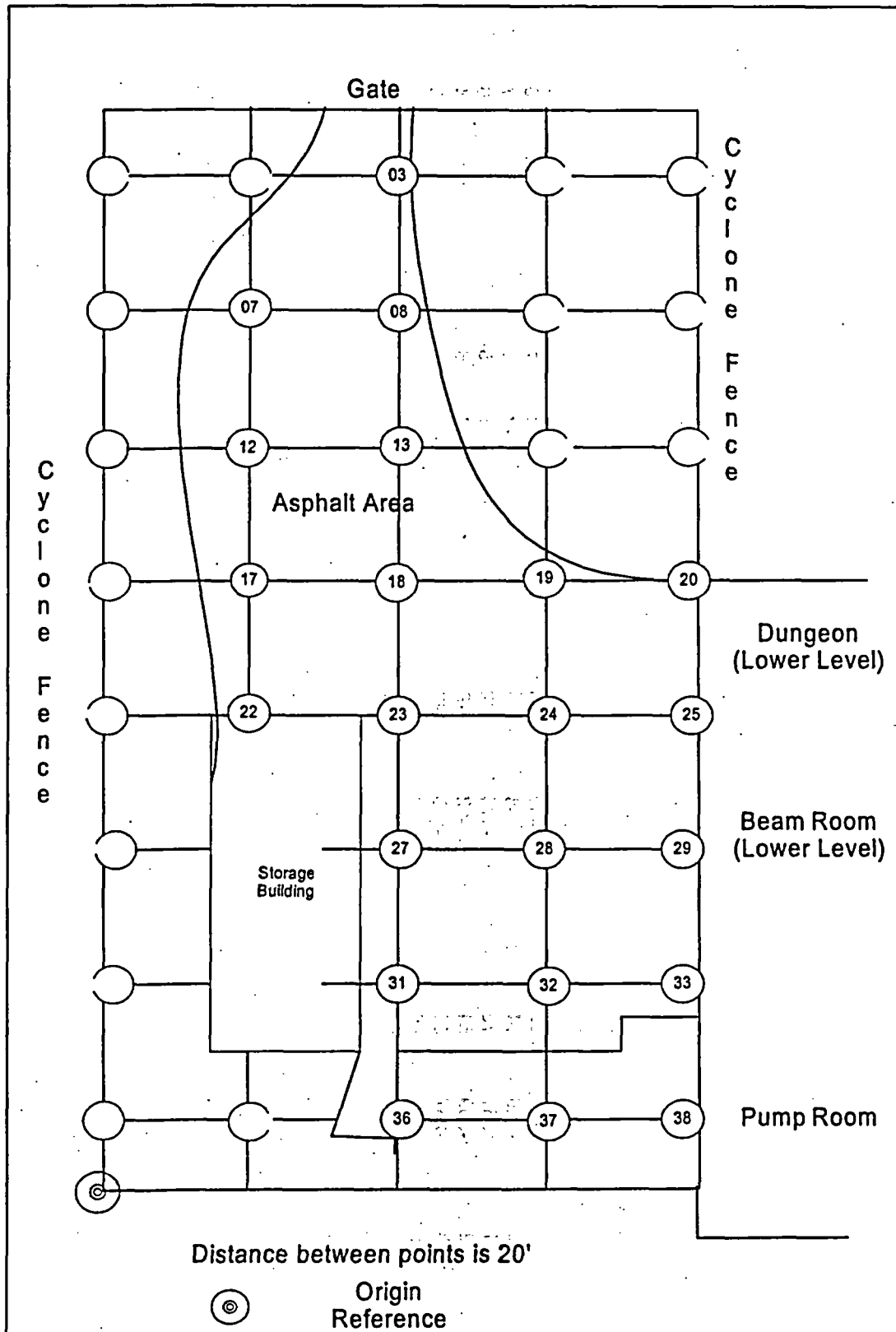
Material  
Asphalt

Size  
6100 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate ( $\mu$ R/hour)
N	Net Activity	Sigma	Net Activity	Sigma	
1	58	67	1	5	6
2	4	65	1	5	6
3	-205	58	-2	1	8
4	-184	59	-2	1	7
5	-251	56	1	5	6
6	-180	59	-2	1	8
7	-200	58	-2	1	7
8	-167	59	-2	1	7
9	-100	62	1	5	7
10	-217	58	-2	1	5
11	-225	57	1	5	6
12	-138	60	-2	1	6
13	-171	59	-2	1	6
14	-200	58	3	6	5
15	-175	59	-2	1	6
Average: -157			Average: -1		Average: 6
Maximum: 58			Maximum: 3		Maximum: 8
Minimum: -251			Minimum: -2		Minimum: 5
Survey Date 11/29/2004			Survey Date 11/30/2004		Survey Date 12/1/2004
Inst. Model M2360			Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Ei 0.447 cpm/dpm		Background 7.1 $\mu$ R/hour
Probe Area 100 cm <sup>2</sup>			Background 0.83 cpm		Bkg $\sigma$ 0.31 $\mu$ R/hour
Ei 0.479 cpm/epm			Bkg $\sigma$ 0.167 cpm		
Es 0.5 cpm/dpm			MDC 13 dpm/100 cm <sup>2</sup>		
Background 242 cpm					
Bkg $\sigma$ 41 cpm					
MDC 315 dpm/100 cm <sup>2</sup>					

**LZone-1-A Loading Zone**

Document Control No.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 OSCIENTECH 100 WEST STREET NEW HAVEN, CT 06510	PROJECT NO.	23379-0901
	DRAWING	CLASS 1 Loading Zone: Lzone-1-A		FILE NAME	
REVISION NO.				SCALE:	N.T.S.
				DATE:	12/08/2004
				By:	ah
				FIGURE:	Lzone-1-A



**Lzone-1-A**

**General Area**  
West of RB

**Survey Unit**  
LZone-1-A

**Class**  
1

**Part**  
Floor

**Material**  
Asphalt

**Size**  
1280 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate (μ R/hour)
N	Net Activity	Sigma	Net Activity	Net Maximum	Net Activity	Sigma	
3	-159	60	-92	-8	1	5	6
7	-225	57	-92	-8	-2	1	5
8	-225	57	-175	-92	-2	1	5
12	-117	61	-259	-175	1	5	6
13	259	73	-259	-175	1	5	6
17	380	76	-92	-8	-2	1	6
18	-54	63	-342	-259	-2	1	5
19	-167	59	326	409	5	8	4
20	-125	61	-342	-259	1	5	7
22	-142	60	-259	-175	1	5	7
23	434	78	-175	-92	-2	1	7
24	-125	61	-92	-8	1	5	6
25	-154	60	-175	-92	7	9	4
27	-100	62	242	326	5	8	6
28	-100	62	409	493	-2	1	6
29	-326	54	-8	75	-2	1	7
31	351	75	-175	-92	1	5	6
32	-309	54	-92	-8	3	6	4
33	-267	56	-175	-92	1	5	5
36	-146	60	409	493	-2	1	4
37	-129	61	-92	-8	-2	1	5
38	<u>-217</u>	58	-175	-92	<u>-2</u>	1	<u>5</u>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)  
Average: -76  
Maximum: 434  
Minimum: -326

**Beta Scans**

**Smears**  
(dpm/100 cm<sup>2</sup>)  
Average: 0  
Maximum: 7  
Minimum: -2

**Gross Exposure Rate**  
( μ R/hour)  
Average: 5  
Maximum: 7  
Minimum: 4

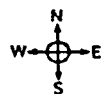
Survey Date 12/4/2004  
Inst. Model M2360  
Probe Model M43-93  
Probe Area 100 cm<sup>2</sup>  
Ei 0.479 cpm/cpm  
Es 0.5 cpm/dpm  
Background 242 cpm  
Bkg σ 41 cpm  
MDC 315 dpm/100 cm<sup>2</sup>

Survey Date 12/5/2004  
Inst. Model M2360  
Probe Model M43-93  
Probe Area 100 cm<sup>2</sup>  
Ei 0.479 cpm/cpm  
Es 0.5 cpm/dpm  
Background 242 cpm  
Bkg σ 41 cpm  
MDC 982 dpm/100 cm<sup>2</sup>

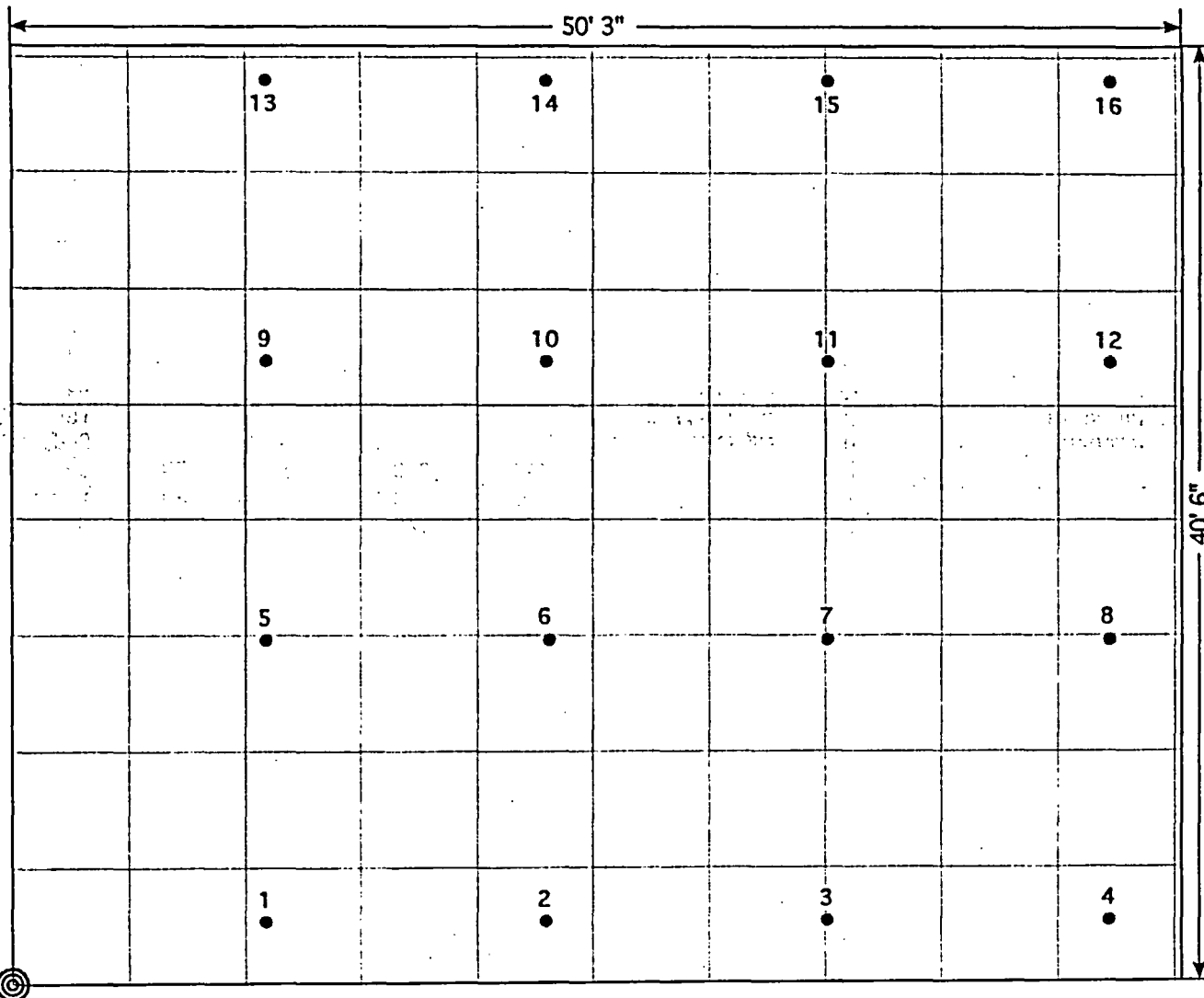
Survey Date 12/5/2004  
Inst. Model WPC-9550  
Ei 0.445 cpm/dpm  
Background 0.7 cpm  
Bkg σ 0.153 cpm  
MDC 12 dpm/100 cm<sup>2</sup>

Survey Date 11/2/2004  
Inst. Model M19  
Background 7.1 μ R/hour  
Bkg σ 0.3 μ R/hour

**SAW-2-A    Sawdust Shed**



• SURVEY POINTS  
◎ STARTING LOCATION



SAW-2-A

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
KARHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 2  
Sawdust Building - Floor

SCIENTECH  
SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO:  
23529-0501

FILE NAME:

SCALE: N.T.S.  
DATE: 08/10/2004

By: CK:

FIGURE:  
SAW-2-A

**General Area**  
SawDust Shed

**Survey Unit**  
SAW-2-A

**Class**  
2

**Part**  
Floor

**Material**  
Concrete

**Size**  
2035 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	248	62
2	340	65
3	344	65
4	461	69
5	294	64
6	269	63
7	298	64
8	261	62
9	248	62
10	231	61
11	377	66
12	394	67
13	235	62
14	336	65
15	444	68
16	-65	50

Average: 295  
Maximum: 461  
Minimum: -65

Survey Date 8/18/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net	Net Maximum
373	749
165	582
373	624
248	582
269	666
248	582
81	248
373	582
373	666
248	582
248	791
373	666
373	582
373	582
248	582
373	666

Survey Date 8/18/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/cpm

Es 0.5 cpm/dpm

Background 160.6 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-2	1
-2	1
-2	1
1	4
1	4
-2	1
3	6
3	6
1	4
3	6
-2	1
-2	1
-2	1
-2	1
1	4
-2	1

Average: 0  
Maximum: 3  
Minimum: -2

Survey Date 8/19/2004

Inst. Model WPC-9550

Ei 0.447 cpm/dpm

Background 0.77 cpm

Bkg σ 0.16 cpm

MDC 13 dpm/100 cm<sup>2</sup>

**Gross Exposure Rate**  
( μ R/hour)

7
8
9
7
8
7
7
7
8
8
8
8
8
8
8
7
Average: 8
Maximum: 9
Minimum: 7

Survey Date 8/18/2004

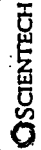
Inst. Model M19

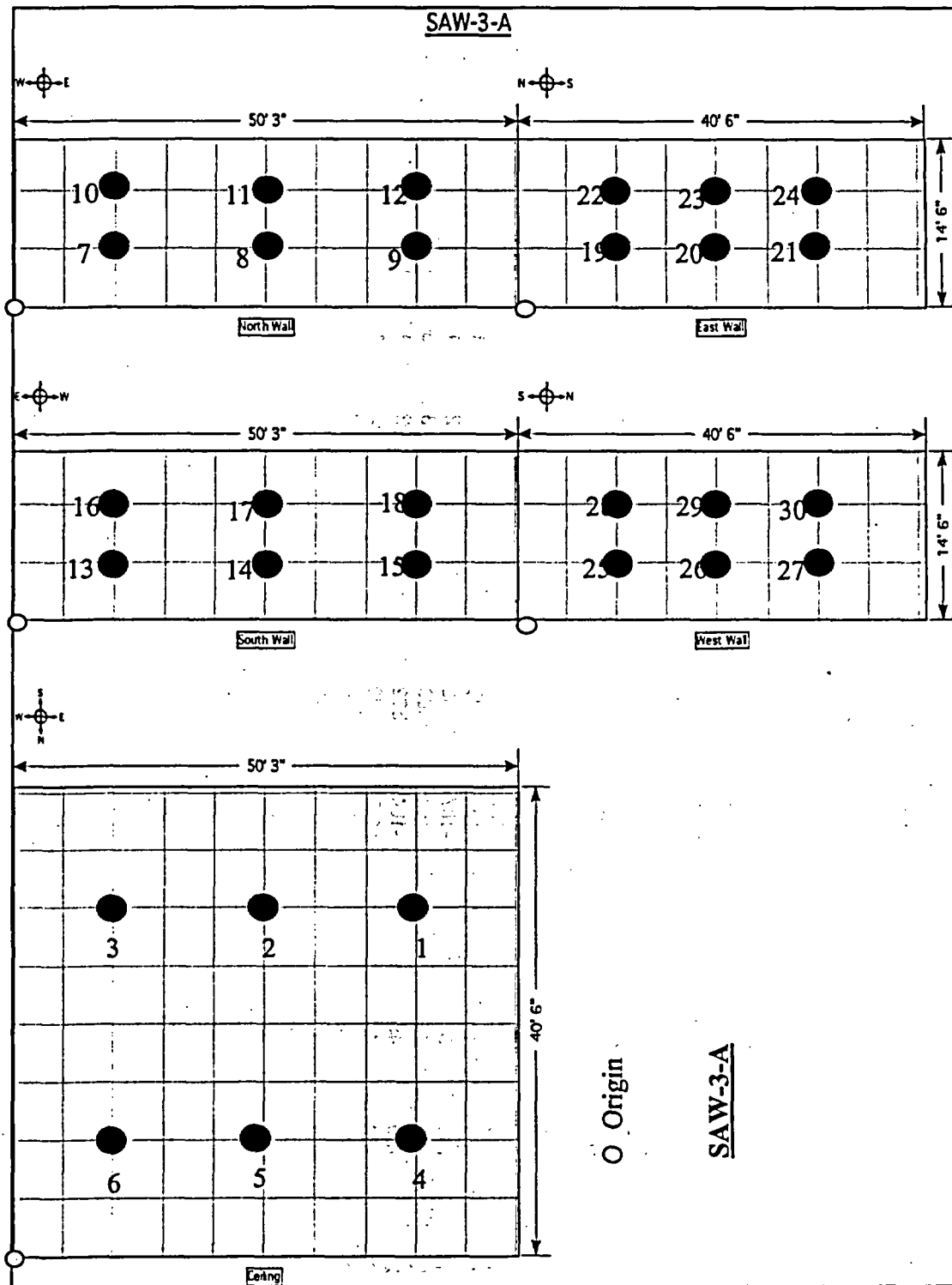
Background 6.5 μ R/hour

Bkg σ 0.8 μ R/hour



**SAW-3-A    Sawdust Shed**

Document Control Use	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENTECH, Inc. 103 WEST STREET NEW HAVEN, CT 06510	PROJECT NO. 23579-0001	FILE NAME:	DATE:	08/10/2004	BY:	FIGURE:	SAW-3-A
	DRAWING	CLASS 3 Sawdust Building - Walls and Ceiling	SCALE:				N.T.S.				



**General Area**  
SawDust Shed

**Survey Unit**  
SAW-3-A

**Class**  
3

**Part**  
Walls & Ceiling

**Material**  
Metal

**Size**  
4667 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	155	53
2	-4	47
3	-33	45
4	-12	46
5	109	51
6	-29	45
7	-8	46
8	-83	43
9	-37	45
10	-4	47
11	-29	45
12	105	51
13	-75	43
14	-129	41
15	21	48
16	-37	45
17	5	47
18	-58	44
19	109	51
20	-41	45
21	-29	45
22	-33	45
23	-71	43
24	21	48
25	-66	44
26	84	50
27	-37	45
28	13	47
29	9	47
30	59	49

**Average:** -4  
**Maximum:** 155  
**Minimum:** -129

Survey Date 8/18/2004  
Inst. Model M2360  
Probe Model M43-93

Probe Area 100 cm<sup>2</sup>  
Ei 0.479 cpm/cpm  
Es 0.5 cpm/dpm

Background 124.9 cpm  
Bkg  $\sigma$  10.8 cpm  
MDC 230 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
-104	147
-20	314
-20	314
-20	230
-20	230
-20	230
-187	-20
-104	230
-104	147
-20	230
-104	147
-20	147
-104	63
-187	147
-187	63
-104	105
-187	63
-104	63
-104	522
-187	-20
-187	230
230	522
-104	397
-104	230
-20	230
-104	230
-104	147
-187	147

Survey Date 8/15/2004  
Inst. Model M2360  
Probe Model M43-93

Probe Area 100 cm<sup>2</sup>  
Ei 0.479 cpm/cpm  
Es 0.5 cpm/dpm

Background 124.9 cpm  
Bkg  $\sigma$  10.8 cpm  
MDC 705 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

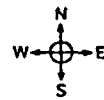
Net Activity	Sigma
-2	1
-2	1
1	4
-2	1
1	4
1	4
-2	1
-2	1
-2	1
1	4
3	6
-2	1
1	4
3	6
-2	1
1	4
-2	1
-2	1
3	6
-2	1
-2	1
-2	1
3	6
-2	1
-2	1
3	6
-2	1
-2	1
-2	1

**Average:** -1  
**Maximum:** 3  
**Minimum:** -2

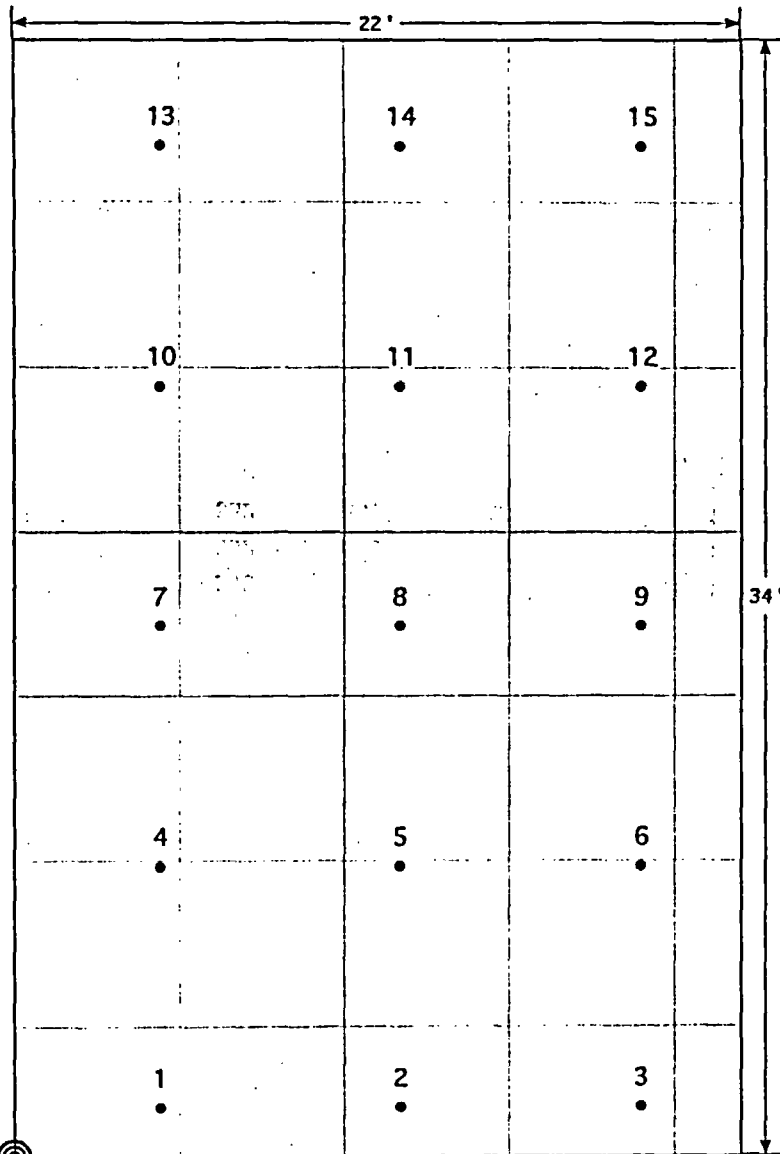
Survey Date 8/19/2004  
Inst. Model WPC-9550

Ei 0.447 cpm/dpm  
Background 0.77 cpm  
Bkg  $\sigma$  0.16 cpm  
MDC 13 dpm/100 cm<sup>2</sup>

**WWTB-1-A Waste Water Treatment Building**



• SURVEY POINTS  
 ◎ STARTING LOCATION



WWTB-1-A

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
 KARTHANS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Waste Water Treatment Building Floor

**SCIENTECH**  
 SCIENTECH, Inc.  
 143 WEST STREET  
 NEW MILFORD, CT 06476

PROJECT NO:  
23529-0501

FILE NAME:

SCALE:  
N.T.S.

DATE:  
07/12/2004

By: CK:

FIGURE:  
WWTB-1-A

General Area  
WWTB

Survey Unit  
WWTB-1-A

Class  
1

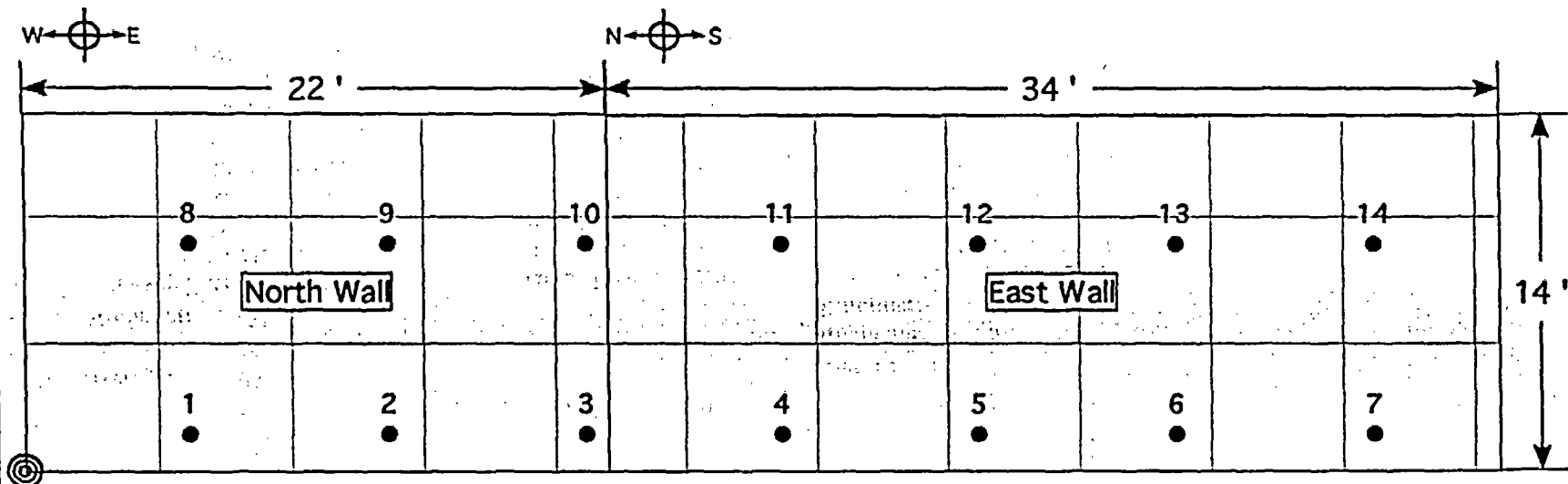
Part  
Floor

Material  
Concrete

Size  
748 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate ( $\mu$ R/hour)
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma	
1	294	64	165	582	5	8	5
2	261	62	248	582	-2	1	6.5
3	148	59	248	499	3	6	5
4	394	67	248	499	1	4	6
5	403	67	332	499	-2	1	6
6	98	57	332	499	3	6	5.5
7	432	68	248	582	3	6	7
8	511	70	373	791	-2	1	8
9	444	68	332	582	1	4	7
10	382	66	-44	165	3	6	7
11	524	71	248	582	1	4	7
12	281	63	248	499	1	4	6.5
13	436	68	332	666	1	4	6.5
14	494	70	332	666	1	4	6
15	265	63	332	749	3	6	6.5
Average: 358					Average: 1		Average: 6
Maximum: 524					Maximum: 5		Maximum: 8
Minimum: 98					Minimum: -2		Minimum: 5
Survey Date 8/19/2004			Survey Date 8/19/2004		Survey Date 8/19/2004		Survey Date 8/19/2004
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550		Inst. Model M19
Probe Model M43-93			Probe Model M43-93		Ei 0.447 cpm/dpm		Background 4.5 $\mu$ R/hour
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.77 cpm		Bkg $\sigma$ 0.52 $\mu$ R/hour
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg $\sigma$ 0.16 cpm		
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 13 dpm/100 cm <sup>2</sup>		
Background 160.6 cpm			Background 160.6 cpm				
Bkg $\sigma$ 10 cpm			Bkg $\sigma$ 10 cpm				
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>				

**WWTB-1-B Waste Water Treatment Building**



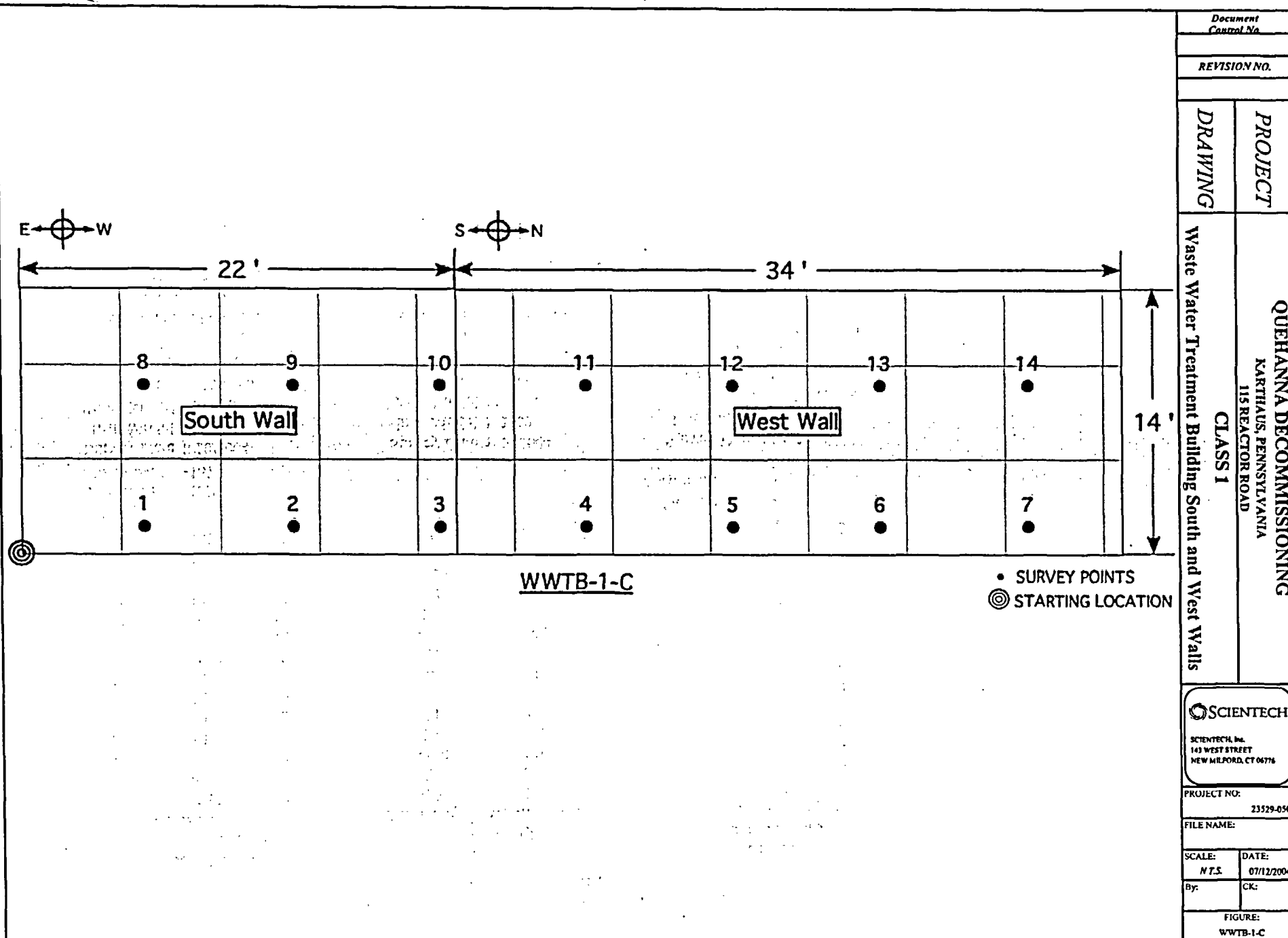
• SURVEY POINTS  
 © STARTING LOCATION

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
Waste Water Treatment Building North and East Walls CLASS 1 KARTHANS, PENNSYLVANIA 115 REACTOR ROAD	
QUEHANNA DECOMMISSIONING SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/12/2004
By:	CHK:
FIGURE: WWTB-1-B	



<i>General Area</i>	<i>Survey Unit</i>	<i>Class</i>	<i>Part</i>	<i>Material</i>	<i>Size</i>
WWTB	WWTB-1-B	1	Wall	Metal	784 ft <sup>2</sup>
<i>Beta Directs</i> (dpm/100 cm <sup>2</sup> )			<i>Beta Scans</i> (dpm/100 cm <sup>2</sup> )		<i>Smears</i> (dpm/100 cm <sup>2</sup> )
N	<i>Net Activity</i>	<i>Sigma</i>	<i>Net Average</i>	<i>Net Maximum</i>	<i>Net Activity</i> <i>Sigma</i>
1	101	51	-21	230	1   4
2	46	49	63	397	-2   1
3	-25	46	63	314	1   4
4	46	49	-21	230	1   4
5	-12	46	-104	314	1   4
6	13	47	-21	230	3   6
7	13	47	63	230	-2   1
8	88	51	-21	397	-2   1
9	251	57	-104	314	3   6
10	297	59	63	397	1   4
11	213	55	146	481	3   6
12	155	53	-21	230	-2   1
13	155	53	105	355	-2   1
14	<u>-33</u>	45	-104	105	<u>5</u> 8
<i>Average:</i>	93				<i>Average:</i> 1
<i>Maximum:</i>	297				<i>Maximum:</i> 5
<i>Minimum:</i>	-33				<i>Minimum:</i> -2
Survey Date 8/20/2004			Survey Date 8/20/2004		Survey Date 8/19/2004
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550
Probe Model M43-93			Probe Model M43-93		Ei 0.447 cpm/dpm
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.77 cpm
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.16 cpm
Es 0.5 epm/dpm			Es 0.5 epm/dpm		MDC 13 dpm/100 cm <sup>2</sup>
Background 124.9 cpm			Background 124.9 cpm		
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm		
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>		

**WWTB-1-C Waste Water Treatment Building**



Document  
Control No.

REVISION NO.

DRAWING

PROJECT

Waste Water Treatment Building South and West Walls

CLASS I

KATHAUS, PENNSYLVANIA  
115 REACTOR ROAD

QUEHANNA DECOMMISSIONING

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06776

PROJECT NO:

23529-0501

FILE NAME:

SCALE:  
N.T.S.

DATE:  
07/12/2004

By:

CK:

FIGURE:

WWTB-1-C

**General Area**  
WWTB

**Survey Unit**  
WWTB-1-C

**Class**  
1

**Part**  
Wall

**Material**  
Concrete

**Size**  
784 ft<sup>2</sup>

**Beta Directs**  
(dpm/100 cm<sup>2</sup>)

N	Net Activity	Sigma
1	-137	40
2	-58	44
3	-66	44
4	50	49
5	30	48
6	42	49
7	34	48
8	-100	42
9	-16	46
10	-100	42
11	17	47
12	46	49
13	167	54
14	192	55

**Average:** 7

**Maximum:** 192

**Minimum:** -137

Survey Date 8/20/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg σ 10 cpm

MDC 259 dpm/100 cm<sup>2</sup>

**Beta Scans**  
(dpm/100 cm<sup>2</sup>)

Net Average	Net Maximum
-104	146
-21	230
-104	146
-21	146
-21	230
63	355
146	314
-21	146
-21	146
-21	146
-62	146
-104	230
63	314
63	355

Survey Date 8/20/2004

Inst. Model M2360

Probe Model M43-93

Probe Area 100 cm<sup>2</sup>

Ei 0.479 cpm/dpm

Es 0.5 cpm/dpm

Background 124.9 cpm

Bkg σ 10 cpm

MDC 800 dpm/100 cm<sup>2</sup>

**Smears**  
(dpm/100 cm<sup>2</sup>)

Net Activity	Sigma
-2	1
1	4
1	4
1	4
-2	1
-2	1
1	4
1	4
1	4
-2	1
1	4
1	4
-2	1
5	8

**Average:** 0

**Maximum:** 5

**Minimum:** -2

Survey Date 8/19/2004

Inst. Model WPC-9550

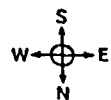
Ei 0.447 cpm/dpm

Background 0.77 cpm

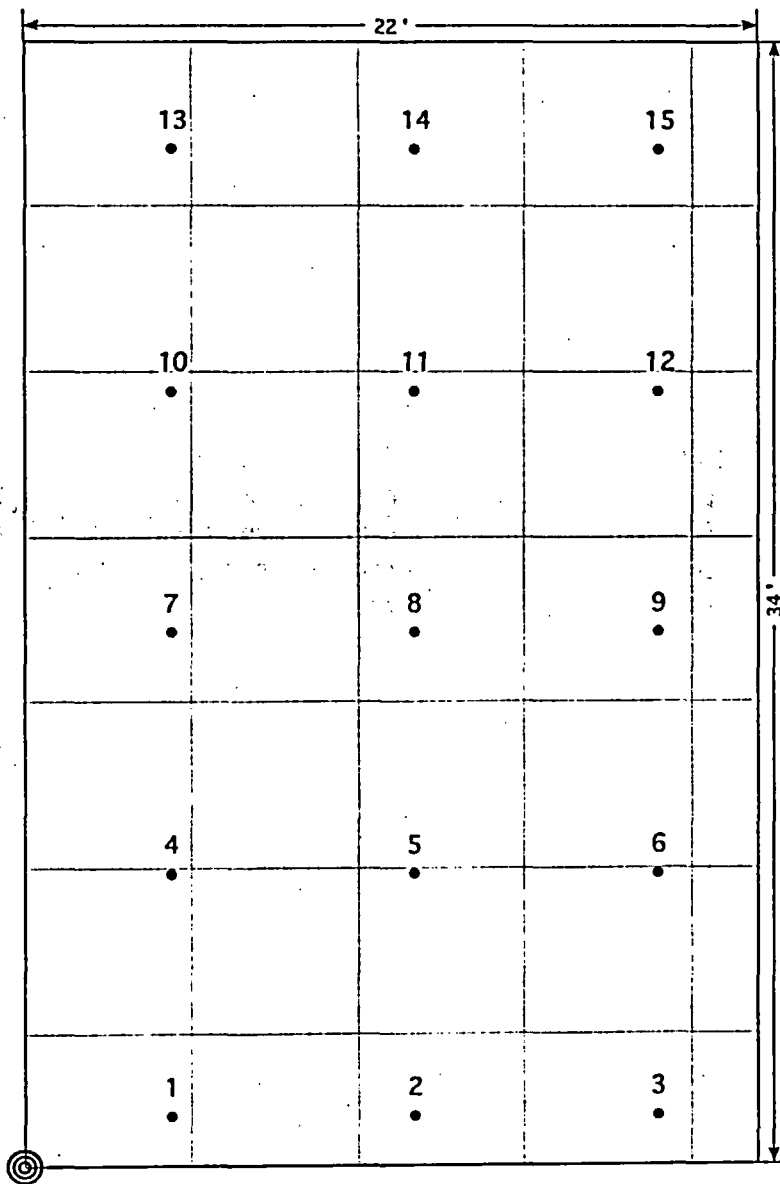
Bkg σ 0.16 cpm

MDC 13 dpm/100 cm<sup>2</sup>

**WWTB-1-D Waste Water Treatment Building**



• SURVEY POINTS  
 ◎ STARTING LOCATION



WWTB-1-D

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING
DRAWING	KARHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Waste Water Treatment Building Ceiling
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/12/2004
By:	CR:
FIGURE: WWTB-1-D	

General Area  
WWTB

Survey Unit  
WWTB-1-D

Class  
1

Part  
Ceiling

Material  
Metal

Size  
748 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )	
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma
1	247	57	105	314	1	4
2	151	53	230	522	-1	1
3	167	54	147	397	-1	1
4	197	55	230	397	4	6
5	76	50	147	397	-1	1
6	230	56	105	314	-1	1
7	63	49	63	230	-1	1
8	147	53	-20	230	1	4
9	155	53	-20	147	-1	1
10	163	54	-20	230	-1	1
11	180	54	147	397	-1	1
12	126	52	63	314	-1	1
13	51	49	63	230	-1	1
14	134	52	-20	230	-1	1
15	159	53	63	314	-1	1
Average: 150					Average: 0	
Maximum: 247					Maximum: 4	
Minimum: 51					Minimum: -1	
Survey Date 8/21/2004			Survey Date 8/12/2004		Survey Date 8/24/2004	
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550	
Probe Model M43-93			Probe Model M43-93		Ei 0.447 cpm/dpm	
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.43 cpm	
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.12 cpm	
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 11 dpm/100 cm <sup>2</sup>	
Background 124.9 cpm			Background 124.9 cpm			
Bkg σ 10.8 cpm			Bkg σ 10.8 cpm			
MDC 230 dpm/100 cm <sup>2</sup>			MDC 705 dpm/100 cm <sup>2</sup>			

## Reference Area Measurements



**QUEHANNA FINAL STATUS SURVEY REFERENCE AREA MEASUREMENTS  
LOCATIONS: RESERVOIR BUILDING AND NON-IMPACTED OUTSIDE AREAS**

	Direct Fixed-Point Measurements (one-minute counts)					Scan Measurements (cpm)			
	Ludlum 2360 w/ a Ludlum 43-93 Probe ( $\alpha/\beta$ Phoswich)					Ludlum 2221 w/ 44-9 (GM)	Ludlum Model 12 w/ 43-37 Probe (Floor Monitor)		
	Wood/Siding	Metal	Indoor Concrete	Outdoor Concrete	Asphalt	Indoor Concrete	Outdoor Concrete	Asphalt	Indoor Concrete
1	130	118	163	243	199	63	300	240	260
2	117	138	169	272	301	58	340	290	235
3	117	142	161	220	334	56	320	320	225
4	130	125	149	209	317	62	300	300	220
5	123	129	161	240	232	45	360	280	200
6	125	134	163	221	206	69	380	260	240
7	145	105	168	219	234	66	360	250	220
8	133	130	147	245	227	64	340	220	260
9	127	113	139	256	244	73	300	250	240
10	139	121	170	249	219	59	400	220	220
11	113	130	159	255	232	54	360	250	220
12	147	111	162	232	235	61	420	240	200
13	120	131	151	245	212	55	300	290	280
14	129	137	161	224	203	77	360	260	260
15	119	113	179	263	219	65	380	220	280
16	129	122	168	239	262	68	400	260	260
Average	128	125	161	240	242	62	351	259	239
Std. Dev.	10	11	10	18	41	8	39	30	26

**APPENDIX C**  
**SUMMARY DATA - LAND AREAS**

## **APPENDIX C – SUMMARY DATA – LAND AREAS**

Appendix C contains all of the exterior survey unit surface soil sample analytical results as well as subsurface sample results from throughout the Quehanna site. Maps of the outside area survey units showing soil sample locations are also included in this appendix. Radiation survey measurements on exterior paved outdoor surfaces are included in Appendix B. Data is presented by survey unit in the following order:


- Class 1 Surface Soils: Waste Water Treatment Building
- Class 2 Surface Soils: Loading Zone Area
- Class 3 Surface Soils: Site-wide
- Subsurface Soils: Site-wide

TABLE C-1

**CLASS 1 SOIL EXPOSURE RATES AND CONCENTRATIONS IN SURFACE LOCATIONS  
(6 INCH DEPTH)**

Sample Identification	Exposure Rate* (μR/h)	Concentrations (pCi/g)						ATL Report Date
		Sr-90			Co-60			
		Activity	Sigma	MDA	Activity	Sigma	MDA	
1-1	5	0.29	0.28	0.66	0.00	0.01	0.01	12/17/2004
1-2	8	0.39	0.27	0.62	0.00	0.01	0.01	12/17/2004
1-3	7	0.36	0.23	0.63	0.00	0.02	0.04	12/17/2004
1-4	7	-0.09	0.19	0.56	-0.01	0.02	0.02	12/17/2004
1-5	8	0.33	0.19	0.53	-0.01	0.02	0.04	12/17/2004
1-6	8	0.38	0.20	0.61	0.00	0.02	0.04	12/17/2004
1-7	7	-0.04	0.16	0.61	-0.01	0.01	0.02	12/17/2004
-18	7	0.22	0.16	0.53	0.01	0.02	0.03	12/17/2004
1-9	6	-0.04	0.17	0.60	0.00	0.03	0.04	12/17/2004
1-10	5	0.31	0.19	0.55	0.00	0.02	0.04	12/17/2004
1-11	7	0.12	0.18	0.51	0.00	0.01	0.01	12/17/2004
1-12	5	0.23	0.20	0.66	0.03	0.02	0.04	12/17/2004
1-13	6	0.45	0.20	0.57	0.02	0.03	0.05	12/17/2004
1-14	5	-0.01	0.16	0.60	0.00	0.02	0.03	12/17/2004
1-15	5	0.11	0.16	0.53	0.02	0.02	0.04	12/17/2004
1-16	5	-0.07	0.16	0.60	-0.01	0.02	0.04	12/17/2004

\* - Ludlum Model 19 Exposure Rate Meter # 207505

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD		 SCIENTECH, INC. 143 WEST STREET NEW BEDFORD, CT 06450	PROJECT NO: 23379-0501	FILE NAME:	DATE:	12/09/2004
		DRAWING	CLASS 1 SURFACE SOIL - WWTB					SCALE:	N.T.S.

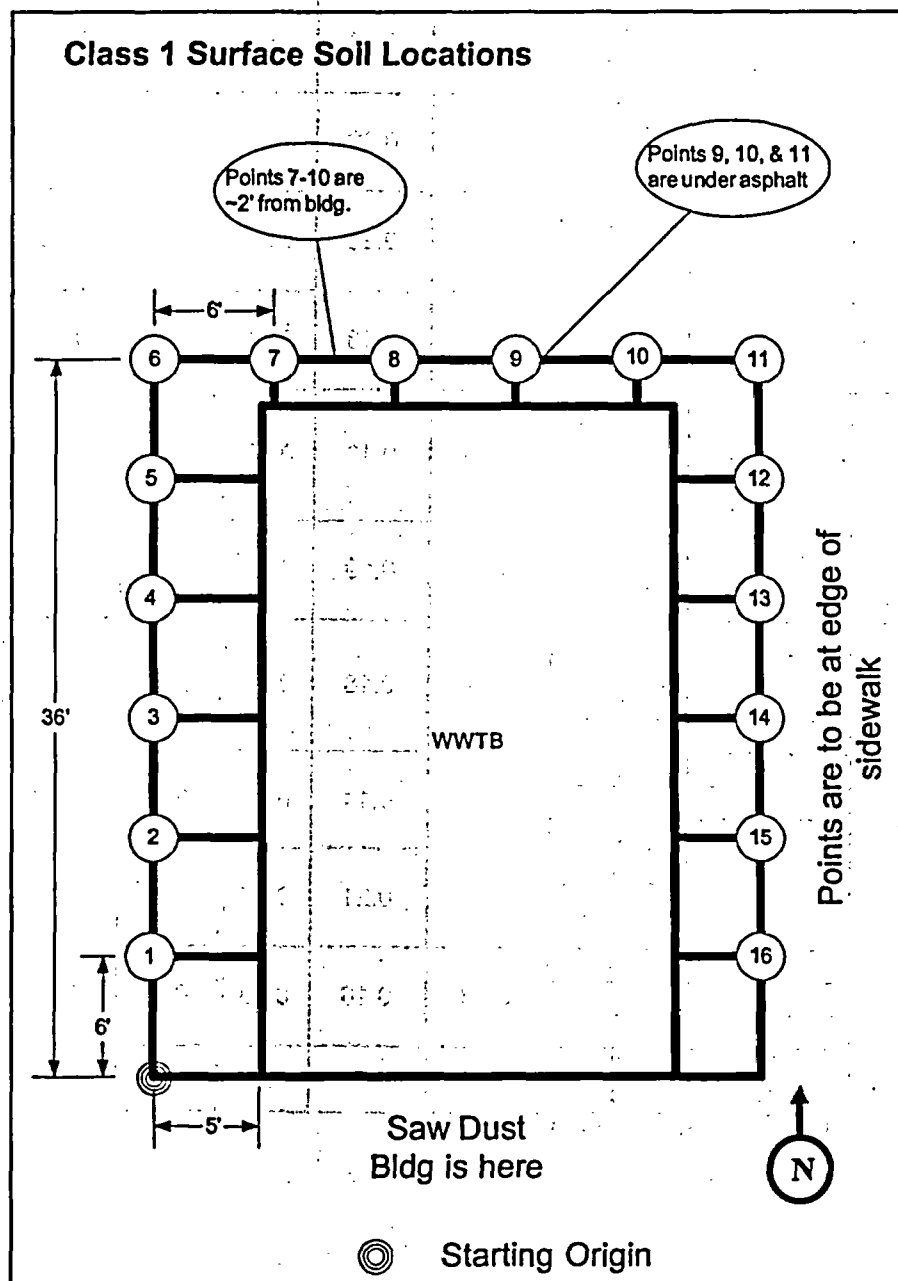
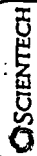


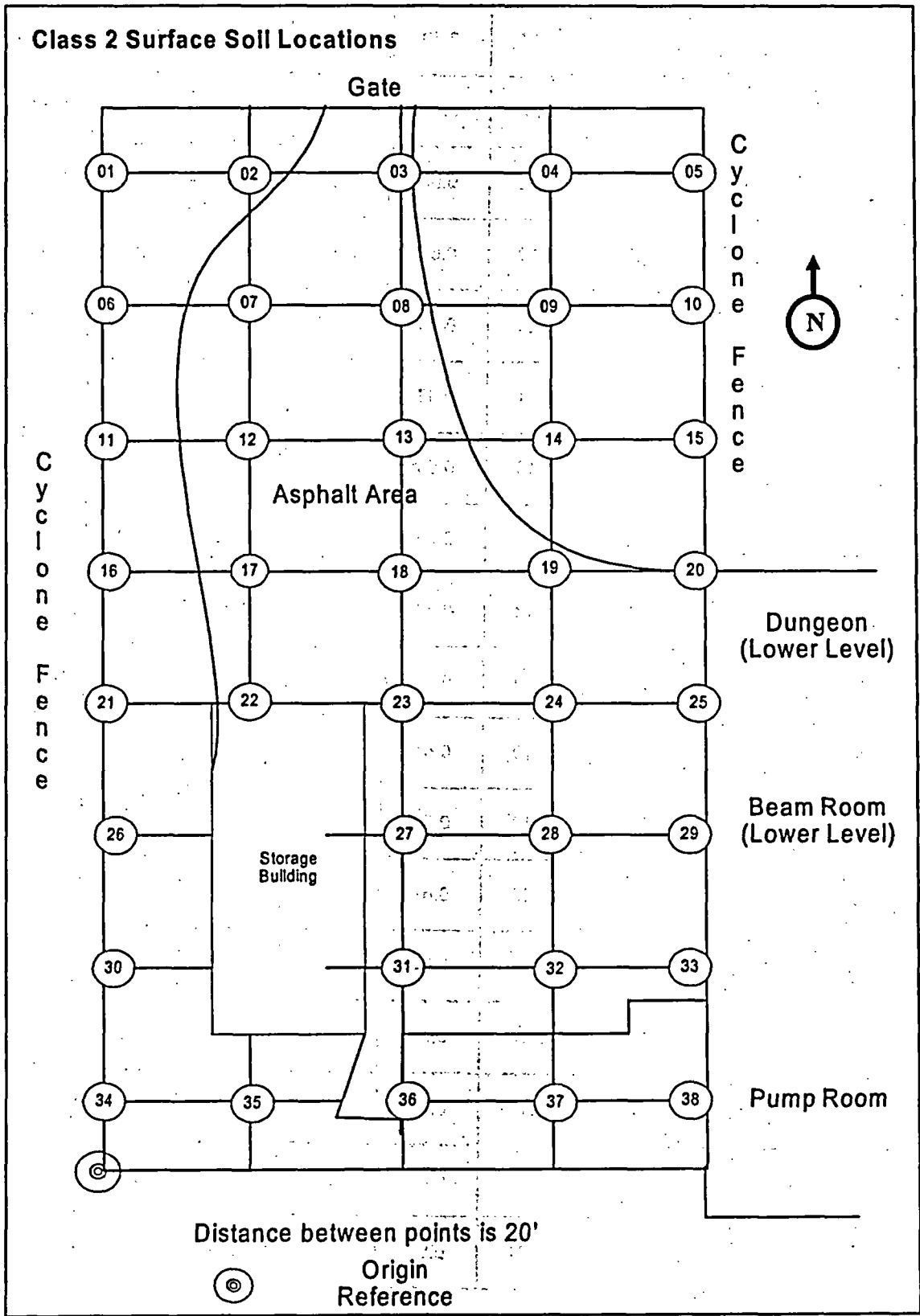
TABLE C-2

**CLASS 2 SOIL EXPOSURE RATES AND CONCENTRATIONS  
IN SURFACE LOCATIONS (6 INCH DEPTH)**

Composited Sample Identification	Sample Identification	Exposure Rate* (μR/h)	Concentrations (pCi/g)						ATL Report Date
			Sr-90			Co-60			
			Activity	Sigma	MDA	Activity	Sigma	MDA	
C2-01	1	6	-0.30	0.15	0.66	0.00	0.02	0.04	12/17/2004
	2	4							
	4	6							
C2-02	5	6	-0.08	0.16	0.59	-0.01	0.02	0.03	12/17/2004
	6	6							
	9	7							
C2-03	10	7	-0.10	0.20	0.63	-0.01	0.02	0.03	12/17/2004
	11	7							
	14	6							
C2-04	15	6	-0.01	0.23	0.64	-0.02	0.02	0.03	12/17/2004
	16	7							
	21	5							
C2-05	26	7	-0.01	0.18	0.61	0.00	0.02	0.04	12/17/2004
	30	5							
	34	7							
C2-06	35	7	0.10	0.19	0.62	-0.01	0.02	0.04	12/17/2004
	36	7							
	37	8							
	38	6							
C2-07	3	5	0.06	0.19	0.65	-0.01	0.02	0.03	12/17/2004
	7	5							
	8	4							
C2-08	12	6	0.02	0.18	0.62	0.00	0.02	0.04	12/17/2004
	13	4							
	17	6							
	18	4							
C2-09	19	5	-0.01	0.14	0.51	-0.01	0.02	0.03	12/17/2004
	23	4							
	28	3							
C2-10	20	4	0.18	0.21	0.67	0.00	0.02	0.04	12/17/2004
	22	5							
	24	5							
C2-11	29	3	0.08	0.16	0.53	-0.02	0.02	0.03	12/17/2004
	31	5							
	32	4							
C2-12	25	3	0.20	0.15	0.46	-0.01	0.02	0.03	12/17/2004
	27	4							

\* - Ludlum Model 19 Exposure Rate Meter # 207505

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD		 SCIENTECH, LLC 143 WEST STREET NEW HAVEN, CT 06510	PROJECT NO: 23179-0501	FILE NAME:	DATE:	12/09/2004	BY:	CHK:	FIGURE:	SURFS-2
		DRAWING	CLASS 2 SURFACE SOIL - LOADING ZONE AREA					SCALE:	N.T.S.				



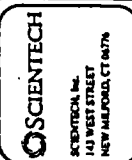
11



TABLE C-3

C3-19	32	8	0.10	0.20	0.62	0.02	0.02	0.04	12/17/2004
	64	11							
	85	8							
C3-20	84	9	-0.05	0.19	0.63	0.00	0.02	0.04	12/17/2004
	86	8							
	87	9							
C3-21	21	9	0.03	0.19	0.59	-0.01	0.01	0.02	12/17/2004
	25	9							
	27	10							
C3-22	26	9	0.07	0.20	0.56	0.01	0.02	0.04	12/17/2004
	89	9							
	90	9							
C3-23	83	9	0.33	0.28	0.65	-0.01	0.02	0.03	12/17/2004
	88	8							
	23								
	41	This sample location was inaccessible due to shallow rock							
		This sample location was inaccessible due to concrete							
CW-004	53	4	-0.01	0.18	0.66	0.01	0.02	0.03	11/8/2004
	114	8							
	127	9							
CW-001	54	8	-0.03	0.18	0.65	-0.01	0.02	0.04	11/8/2004
	58	8							
	62	8							
CW-005	57	9	-0.20	0.17	0.66	0.00	0.02	0.04	11/8/2004
	61	10							
	65	12							
CW-002	66	8	-0.30	0.15	0.67	0.02	0.02	0.04	11/8/2004
	68	7							
	70	8							
CW-006	67	9	0.07	0.21	0.67	0.01	0.02	0.03	11/8/2004
	69	9							
	72	8							
CW-007	71	9	0.18	0.22	0.67	0.00	0.02	0.04	11/8/2004
	73	10							
	75	11							
CW-003	74	7	-0.05	0.19	0.66	0.01	0.02	0.04	11/8/2004
	76	8							
	78	8							
CW-008	77	10	0.28	0.21	0.67	0.03	0.02	0.04	11/8/2004
	113	12							
	126	9							
PLC-01	PL-01	8	0.02	0.18	0.65	-0.01	0.02	0.03	12/17/2004
	PL-02	6							
	PL-03	5							
PLC-02	PL-04	8	0.06	0.18	0.64	0.00	0.02	0.04	12/17/2004
	PL-05	6							
	PL-06	6							
Pond-01	-	-	-0.03	-0.02	0.57	-0.06	0.04	0.07	7/8/2004
Pond-02	-	-	0.22	0.32	0.57	-0.04	0.04	0.06	7/8/2004
Pond-03	-	-	0.10	0.19	0.57	0.02	0.04	0.08	7/8/2004

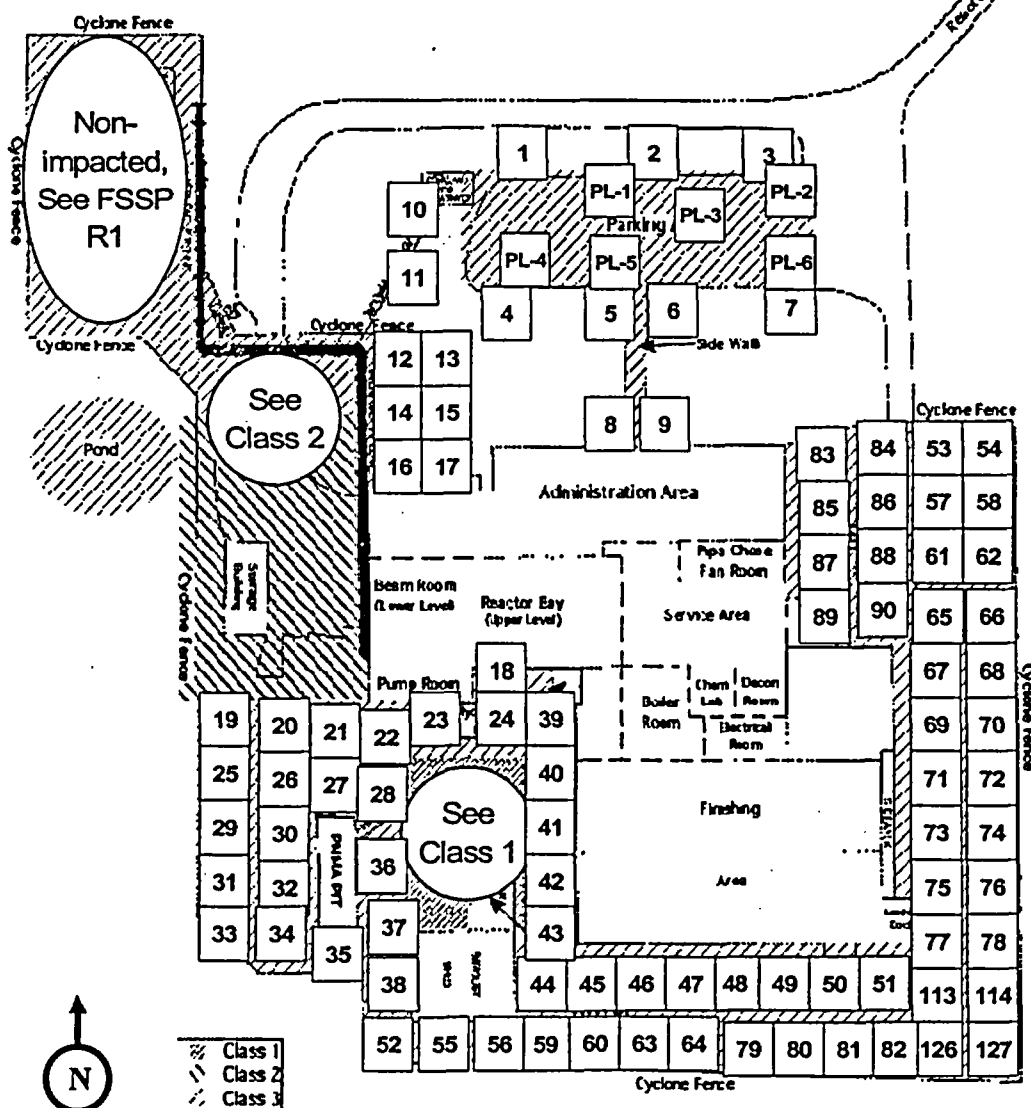
\* - Ludlum Model 19 Exposure Rate Meter # 062196


Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENTECH, Inc. 141 WEST STREET NEW MILFORD, CT 06457	PROJECT NO.	23379-0501	FILE NAME	SCALE	DATE	By:	CK:	FIGURE
		DRAWING	CLASS 3 SURFACE SOIL - SITE-WIDE						AT: 12/09/2004		ah	SURFS-3

### Class 3 Surface Soil Locations

Parking Lot (PL) Below Asphalt- 6  
 Around PL and Sidewalk - 11  
 Inside Cyclone Fence - 83

Distance between each point within cyclone fence is ~23'.



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		DRAWING	CLASS 3 SURFACE SOIL - SITE-WIDE				SCALE:	N.T.S.		CHK:		

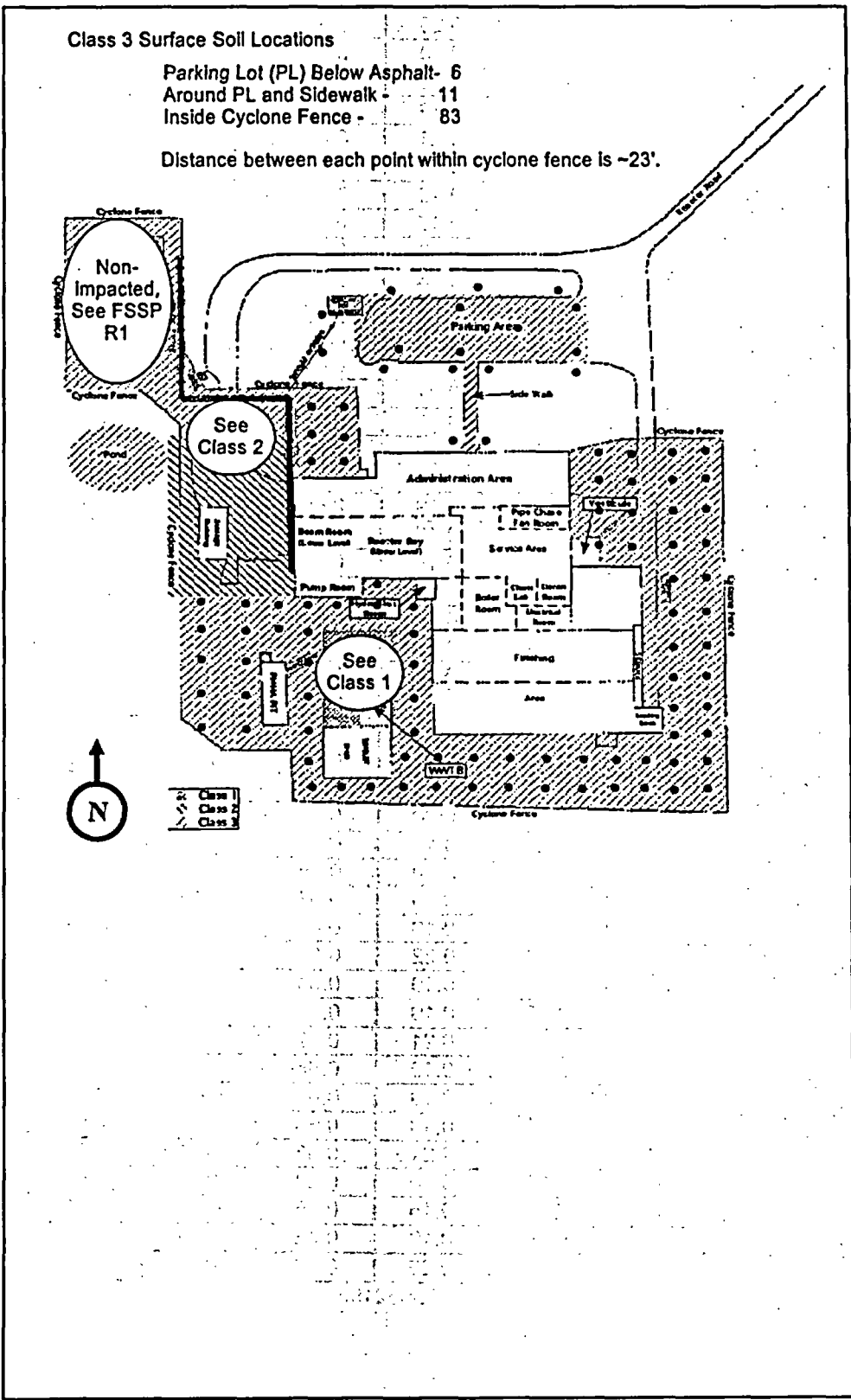
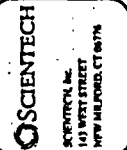


TABLE C-4

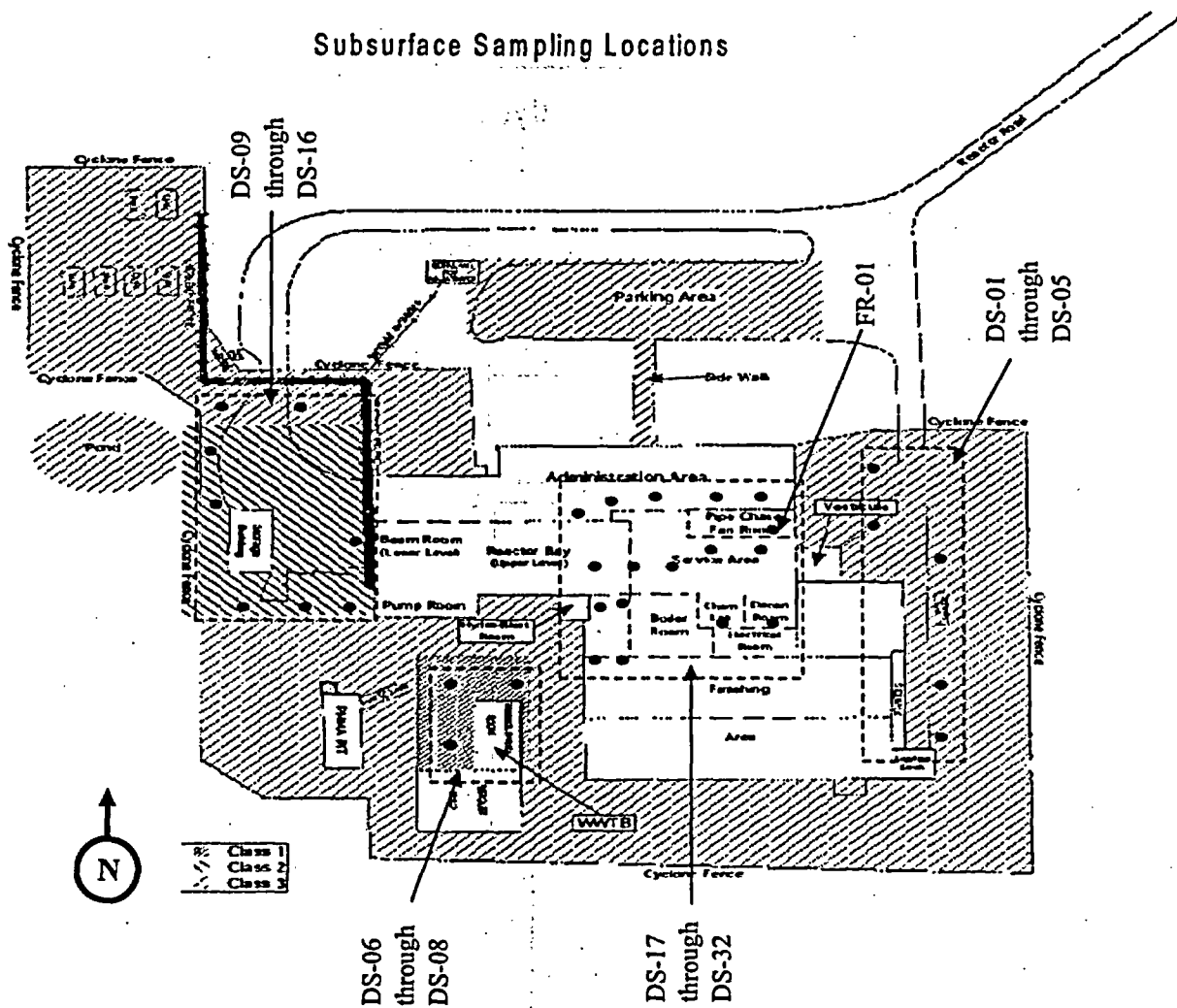
## EXPOSURE RATES AND CONCENTRATIONS IN SUBSURFACE LOCATIONS

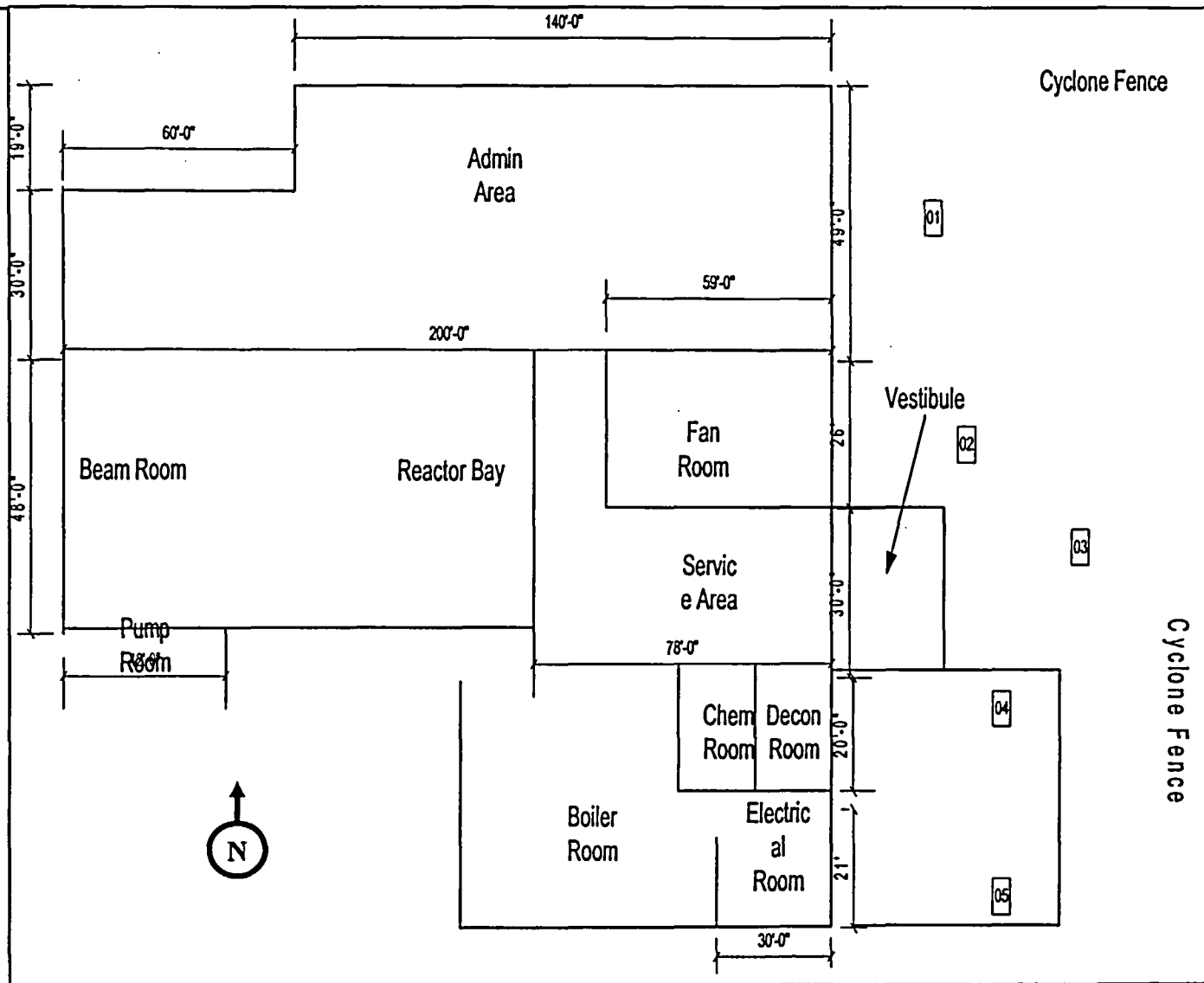
Sample Identification	Depth (ft)	Exposure Rate* (μR/h)	Concentrations (pCi/g)						ATL Report
			Sr-90			Co-60			Date
			Activity	Sigma	MDA	Activity	Sigma	MDA	
DS-01	0.5-10	5	-0.10	0.20	0.67	-0.02	0.02	0.04	11/24/2004
DS-02	0.5-10	5	-0.05	0.20	0.67	0.00	0.02	0.04	11/24/2004
DS-03	0.5-10	5	-0.09	0.20	0.66	-0.03	0.03	0.04	11/24/2004
DS-04	0.5-10	6	-0.13	0.19	0.66	0.02	0.02	0.04	11/24/2004
DS-05	0.5-10	6	-0.10	0.21	0.66	0.00	0.02	0.04	11/24/2004
DS-06	0.5-10	6	0.24	0.24	0.66	-0.01	0.02	0.03	11/24/2004
DS-07	0.5-10	6	-0.13	0.19	0.66	-0.01	0.02	0.04	11/24/2004
DS-08	0.5-10	6	-0.20	0.17	0.65	-0.01	0.02	0.03	11/24/2004
DS-09	0.5-10	5	0.03	0.20	0.67	-0.01	0.02	0.04	11/24/2004
DS-10	0.5-10	5	-0.05	0.18	0.65	0.00	0.02	0.03	11/24/2004
DS-11	0.5-10	5	0.02	0.18	0.65	-0.02	0.03	0.04	11/24/2004
DS-12	0.5-10	6	-0.05	0.19	0.67	-0.01	0.02	0.03	11/24/2004
DS-13	0.5-10	5	-0.09	0.19	0.67	0.00	0.02	0.04	11/24/2004
DS-14	0.5-10	5	0.11	0.21	0.66	0.02	0.02	0.03	11/24/2004
DS-15	0.5-10	5	-0.17	0.18	0.65	0.01	0.02	0.04	11/24/2004
DS-16	0.5-10	5	-0.01	0.20	0.65	-0.01	0.02	0.03	11/24/2004
DS-17A	0.5-10	6	0.03	0.20	0.66	0.00	0.02	0.03	11/24/2004
DS-17B	10-20		-0.01	0.19	0.66	0.00	0.02	0.03	11/24/2004
DS-18A	0.5-10	5	-0.13	0.18	0.66	-0.03	0.02	0.03	11/24/2004
DS-18B	10-20		-0.09	0.18	0.66	0.00	0.02	0.03	11/24/2004
DS-19A	0.5-10	6	0.86	0.27	0.67	0.01	0.02	0.04	11/24/2004
DS-19B	10-20		0.33	0.22	0.64	-0.03	0.02	0.03	11/24/2004
DS-20A	0.5-10	8	-0.13	0.18	0.67	-0.01	0.02	0.04	11/24/2004
DS-20B	10-20		-0.01	0.19	0.64	-0.03	0.02	0.03	11/24/2004
DS-21A	0.5-10	8	-0.22	0.15	0.63	0.01	0.02	0.04	11/24/2004
DS-21B	10-20		0.03	0.19	0.66	-0.01	0.02	0.03	11/24/2004
DS-22A	0.5-10	8	0.38	0.22	0.63	-0.01	0.02	0.04	11/24/2004
DS-22B	10-20		0.03	0.19	0.63	-0.01	0.02	0.03	11/24/2004
DS-23A	0.5-10	7	0.03	0.20	0.67	-0.01	0.02	0.03	11/24/2004
DS-23B	10-20		-0.25	0.17	0.64	0.00	0.02	0.03	11/24/2004
DS-24A	0.5-10	7	0.17	0.20	0.66	-0.02	0.02	0.03	11/24/2004
DS-24B	10-20		-0.01	0.19	0.67	-0.01	0.02	0.03	11/24/2004
DS-25A	0.5-10	6	0.06	0.19	0.63	0.00	0.02	0.04	11/24/2004
DS-25B	10-20		0.22	0.22	0.64	-0.01	0.02	0.03	11/24/2004
DS-26A	0.5-10	6	0.06	0.19	0.64	-0.02	0.02	0.03	12/17/2004
DS-26B	10-20		0.06	0.19	0.63	0.00	0.02	0.04	12/17/2004
DS-27A	0.5-10	6	-0.05	0.21	0.67	0.00	0.02	0.03	12/17/2004
DS-28A	0.5-10	7	0.03	0.19	0.65	0.02	0.02	0.04	12/17/2004
DS-28B	10-20		0.06	0.19	0.62	0.00	0.02	0.04	12/17/2004
DS-29A	0.5-10	6	0.03	0.19	0.63	-0.03	0.02	0.03	12/17/2004
DS-30A	0.5-10	6	0.18	0.21	0.63	-0.02	0.02	0.02	12/17/2004
DS-31A	0.5-10	6	0.03	0.20	0.63	-0.01	0.02	0.03	12/17/2004
DS-31B	10-20	6	-0.29	0.15	0.65	0.00	0.02	0.03	12/17/2004
DS-32A	0.5-10	6	0.16	0.19	0.63	0.00	0.02	0.04	12/17/2004
FR-01	0-1	4	0.10	0.20	0.57	-0.01	0.02	0.04	12/17/2004

\* - Ludlum Model 19 Exposure Rate Meter # 207505 and #062196

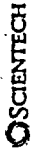
Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 OSCIENTECH SCIENTECH, INC. 143 WEST STREET NEW MILFORD, CT 06455	PROJECT NO. 23129-0501	FILE NAME:	SCALE:	DATE:	By:	CHK:	FIGURE:
		DRAWING	Subsurface Sampling Locations DS-01 through DS-32 and FR-01				N.T.S.	12/09/2004			

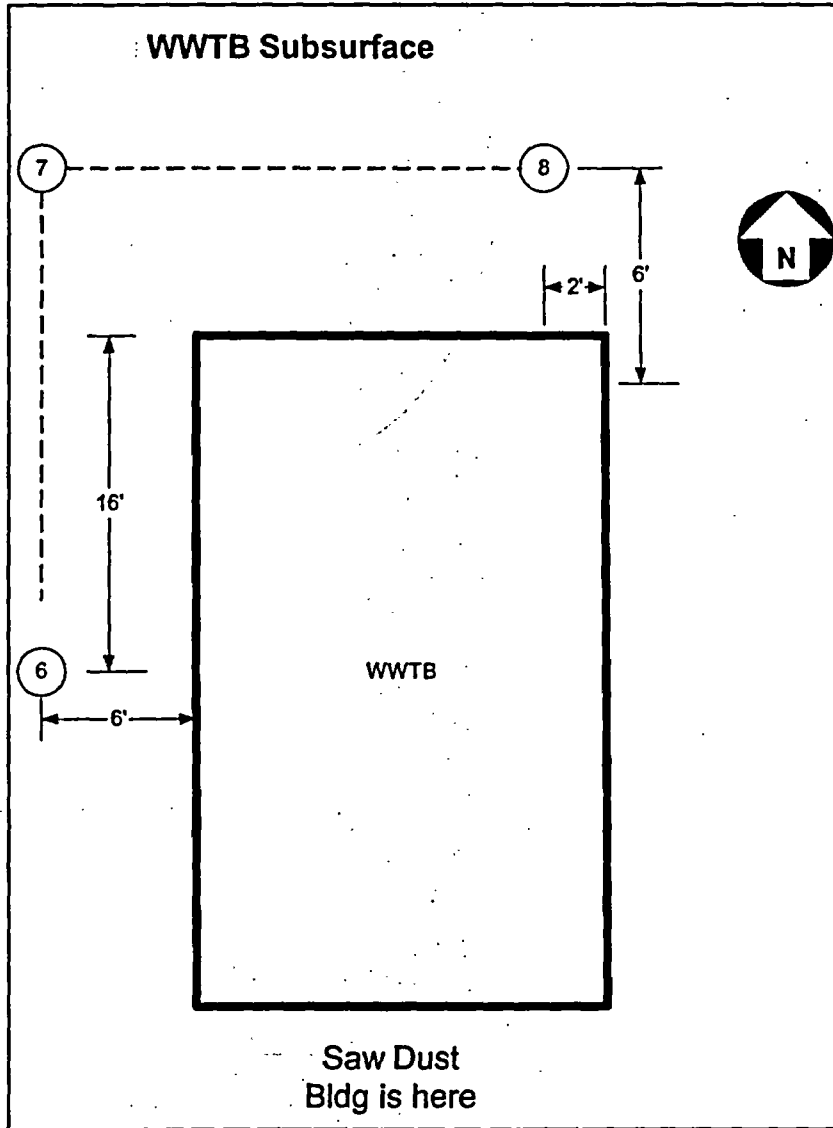
## Subsurface Sampling Locations

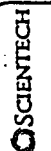


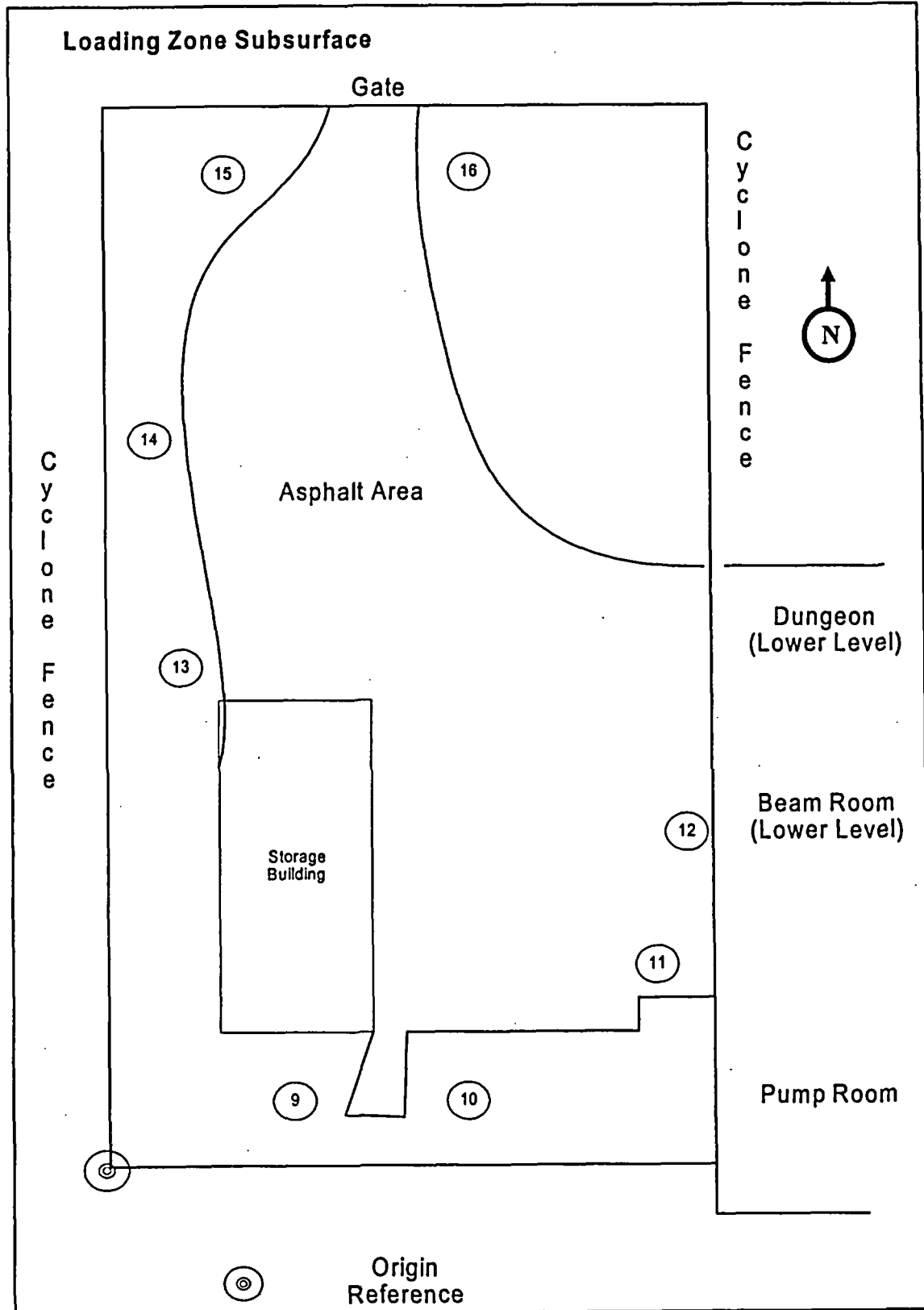


Document Control No.	
REVISION NO.	
DRAWING	PROJECT
<b>QUEHANNA DECOMMISSIONING</b> KARTHANS, PENNSYLVANIA 115 REACTOR ROAD East Exterior Subsurface Soil Locations DS-01 through DS-05	
SCIENTECH, Inc. 141 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/09/2004
By: ah	CK:
FIGURE: SUBS-I-C	

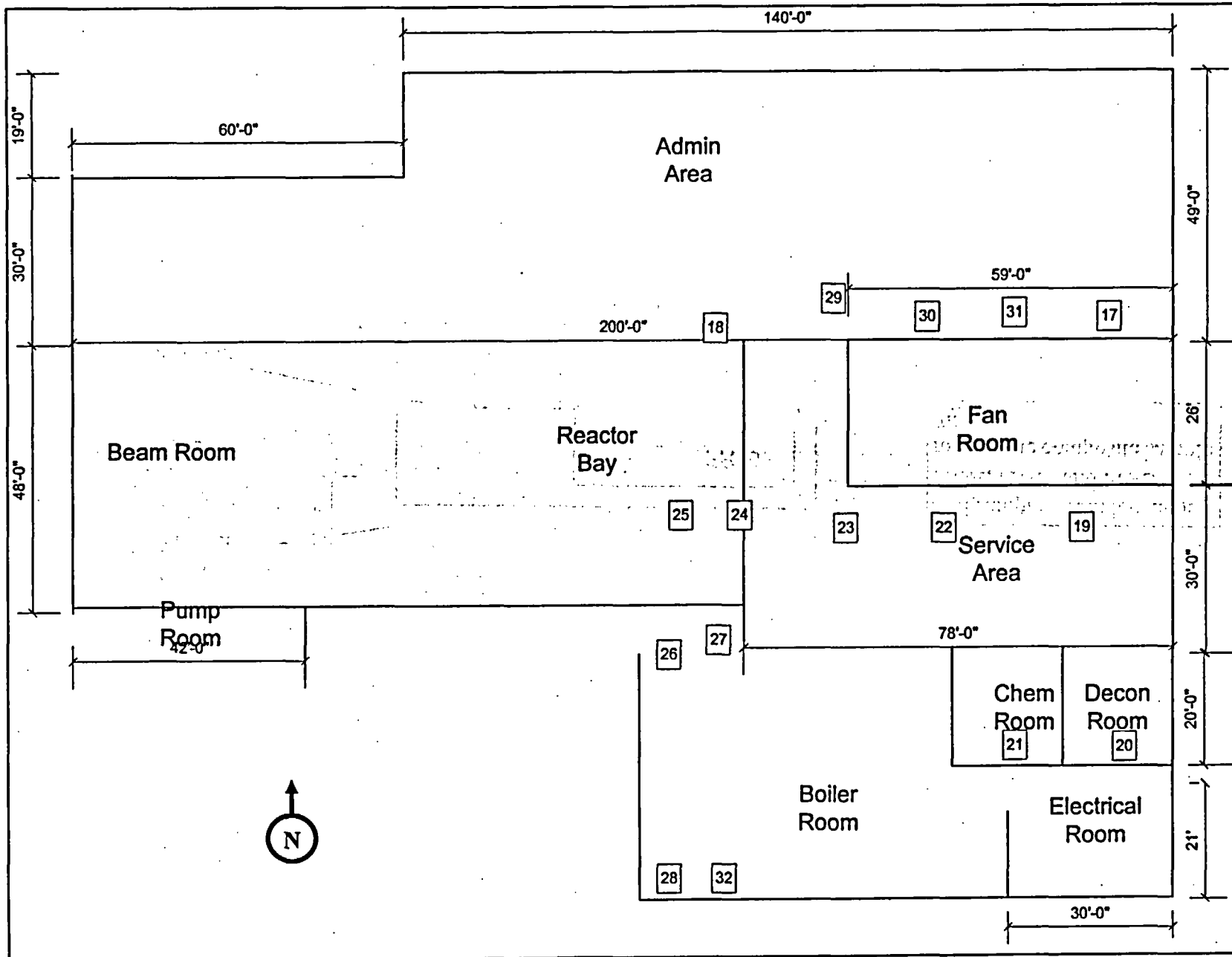
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		DRAWING	WWTB Subsurface DS-06 through DS-08					SCALE:	N.T.S.		3/4"	



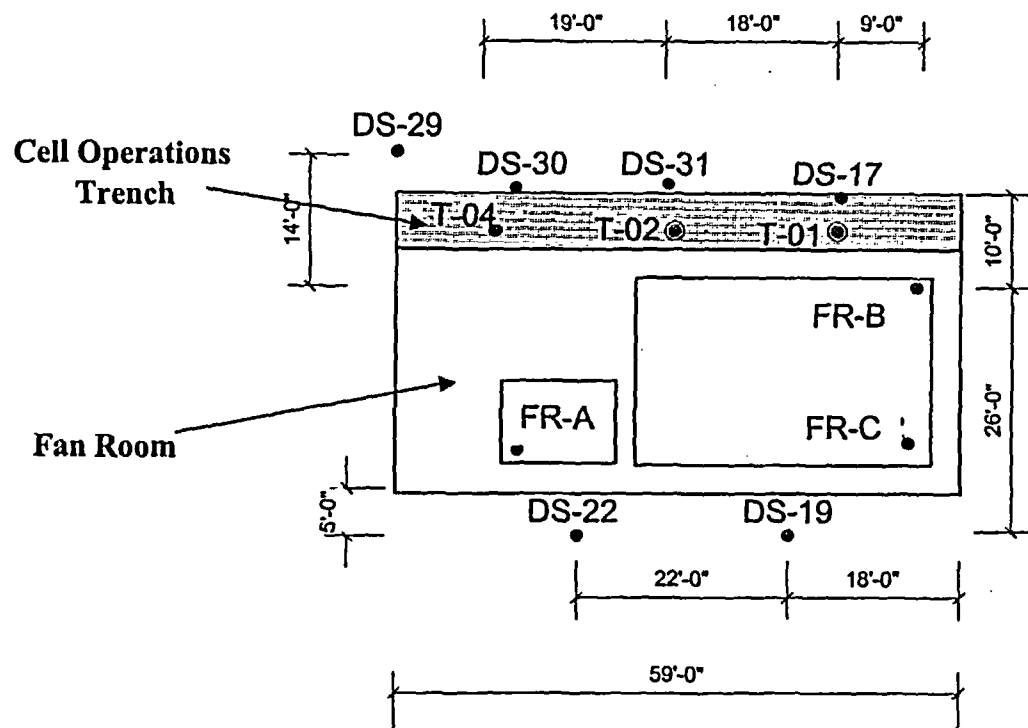
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		DRAWING	Subsurface Loading Zone Soil Sample Locations					ATLS	12/09/2004	ah	SUBS-I-A
		DS-09 through DS-16		CC:							







Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD	
Interior Subsurface Soil Locations	
DS-17 through DS-32	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06455	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/09/2004
By: ah	CK:
FIGURE: SURS-I-B	



Soil samples from locations FR-A, FR-B, and FR-C formed the composite sample FR-01.

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD	
Cell Operations Trench and Fan Room Sample Locations	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: A.T.S.	DATE: 07/12/2004
By:	CK:
FIGURE:	

**APPENDIX D**  
**QUALITY ASSURANCE DATA**

## **APPENDIX D – QUALITY ASSURANCE DATA**

Appendix D contains the results of the three quality assurance (QA) tests that were performed as part of the final status survey. Three tests included:

- Duplicate soil sample analysis
- Instrument precision test
- Operator precision test

### Laboratory Quality Assurance – Duplicate Analysis

As part of the Quehanna site final status survey, approximately 110 soil and sediment samples were sent from the site for laboratory analysis at ATL International, Inc. (ATL) in Gaithersburg, MD. ATL used a gas-flow proportional counting method for strontium-90 analysis and gamma spectroscopy for cobalt-60 analysis. All samples were returned to the Quehanna site following analysis. For quality assurance, 12 of the samples that were analyzed at ATL were sent to Severn Trent Laboratories (STL) in St. Louis, MO for a duplicate analysis. STL also used gas-flow proportional counting and gamma spectroscopy analysis for strontium-90 and cobalt-60 analysis respectively.

Table D-1 below summarizes the analysis results at the two laboratories. While it is difficult to compare the results of each sample directly because all results were less than the method minimum detectable activity (MDA), the duplicate analysis performed by STL was consistent with the ATL analysis. It was planned to include at least several samples that had concentrations greater than the MDAs, but the duplicate samples were sent to STL early during the final status survey before all soil samples were analyzed.

**TABLE D-1**  
**LABORATORY SOIL ANALYSIS COMPARISON**

Laboratory Sample ID #	Co-60				Sr-90			
	STL	MDA	ATL	MDA	STL	MDA	ATL	MDA
STPA137	<MDA	0.13	<MDA	0.04	<MDA	0.56	<MDA	0.67
STPA138	<MDA	0.11	<MDA	0.04	<MDA	0.66	<MDA	0.67
STPA139	<MDA	0.14	<MDA	0.04	<MDA	0.68	<MDA	0.66
STPA140	<MDA	0.11	<MDA	0.04	<MDA	0.78	<MDA	0.66
STPA141	<MDA	0.10	<MDA	0.04	<MDA	0.73	<MDA	0.66
STPA142	<MDA	0.11	<MDA	0.03	<MDA	0.75	<MDA	0.66
STPA143	<MDA	0.12	<MDA	0.04	<MDA	0.87	<MDA	0.66
STPA144	<MDA	0.11	<MDA	0.03	<MDA	0.82	<MDA	0.65
STPA145	<MDA	0.11	<MDA	0.04	<MDA	0.72	<MDA	0.67
STPA146	<MDA	0.10	<MDA	0.03	<MDA	0.96	<MDA	0.65
STPA168	<MDA	0.13	<MDA	0.03	<MDA	0.74	<MDA	0.67
STPA169	<MDA	0.10	<MDA	0.04	<MDA	0.59	<MDA	0.63

### Instrument Precision Analysis

The Ludlum Model 43-93 alpha/beta phoswich detector, coupled with a Ludlum Model 2360 data logging scalar/rate meter, was the primary instrument for collecting final status survey data. In order to evaluate the precision of the phoswich detectors that were to be used as part of the final status survey, at the Quehanna site, an instrument precision was performed. In this analysis, each of the four detectors was used to collect 16 static measurements of a 0.027 uCi strontium-90 source [0.053 uCi total beta (Sr+Y-90) activity]. One of the instruments was selected as the standard and the average activity measurements from the other detectors were compared against the average activity measurement of the standard.

Table D-2 provides the activity measurements in disintegrations per minute (dpm) for each source measurement with each detector. The detector with the identification number 202410 was selected as the standard instrument. As shown in the table, the differences in the average measured source activities were between +5% and -6%.

A gas flow proportional floor monitor was also used for scanning floor surfaces (no direct fixed-point measurements) and a pancake-type GM detector was used for direct fixed-point measurements in two survey units due to the uneven nature of the floor surface. These instruments were not included in the precision analysis.

**TABLE D-2  
INSTRUMENT PRECISION CHECK**

Instrument Precision Measurements					
Instrument ID Number		202476	202475	202433	202410
Beta Source Activity (dpm)	1	145,388	138,761	156,105	148,008
	2	145,925	139,858	155,882	147,186
	3	144,721	140,729	157,041	147,915
	4	144,825	138,943	155,691	147,729
	5	143,996	140,336	156,410	146,263
	6	145,813	140,773	156,623	146,356
	7	145,533	140,166	156,588	148,742
	8	143,942	140,215	156,270	147,242
	9	145,196	140,077	156,436	148,275
	10	144,892	139,785	156,283	147,818
	11	144,100	140,709	156,536	149,428
	12	144,800	139,421	156,876	148,195
	13	146,650	139,713	156,105	147,292
	14	144,971	139,652	156,410	148,462
	15	146,063	139,190	155,264	148,432
	16	146,033	138,980	156,296	148,352
Average		145,178	139,832	156,301	147,856
% Difference		2%	5%	- 6%	-

## Operator Precision Analysis

In order to evaluate the precision of survey technicians at the Quehanna site, an operator precision test was performed. In this analysis, three Class 1 survey units in the Administration Area were rescanned several weeks after the initial scans. The average and maximum detected count rates as measured during the initial and repeat scans are provided in the following tables for survey units ADMIN-1-B, ADMIN-1-C, and ADMIN-1-D. Each of these survey units consisted only of concrete floor surfaces and the same Ludlum floor monitor (large-area gas flow proportional detector).

The initial scans, performed by Operator A, were performed on September 22, October 11, and October 12, 2004 and the repeat scans were performed by Operator B on December 20, 2004. The fact that the repeat measurements were made well after the initial measurements caused some complications in performing the precision analysis. Because there were variations in the background count rates on the days of the scans, the count rates were difficult to compare directly. Therefore, the scan data was adjusted for the different background rates. The actual and adjusted background rates are provided in the following tables.

Once all of the scan data was "normalized" to a common background rate, the data were compared by calculating the percent difference in the measurements. This was done by subtracting the count rates (average and maximum values) measured by Operator B from the count rates measured by Operator A and then dividing the difference by the count rates measured by Operator A. To summarize the measurement differences, the average percent difference for each survey unit and collectively for all three survey units was calculated. These values are presented in the following tables.

**Results:** The results of the operator precision analysis were adequate for the given situation. While the calculated percent differences in the average and maximum count rates are greater than optimal (25% and 40% respectively), it should be noted that most of the recorded data were well below the instrument minimum detectable concentration (MDC) level which was equivalent to about 500 gross counts per minute (cpm) and no measurements were observed in excess of the release criteria. Environmental conditions may also have impacted the detector response and operator response between the time of the initial measurements (September and October) and the repeat measurements (December). These variable conditions may have included ambient and surface temperatures, radon levels, and noise levels from other on-going activities.

**OPERATOR PRECISION TEST**  
(Page 1 of 3)

**INITIAL AND REPEAT SCAN MEASUREMENTS (cpm)**

ADMIN-1-B				
Operator A 9/22/2004		Operator B 12/20/2004		
Average	Maximum	Average	Maximum	
1	280	320	180	200
2	260	320	180	200
3	280	300	180	200
4	260	320	160	180
5	300	400	200	220
6	320	420	220	240
7	280	360	180	200
8	300	400	180	200
9	280	320	180	200
10	280	600	180	220
11	260	360	200	220
12	300	380	200	220
13	320	380	160	180
14	360	380	200	220
15	300	360	160	180
16	320	380	200	220

ADMIN-1-C				
Operator A 10/11/2004		Operator B 12/20/2004		
Average	Maximum	Average	Maximum	
1	200	280	220	240
2	200	260	180	200
3	200	300	200	220
4	220	340	180	200
5	240	280	200	220
6	220	280	180	200
7	220	320	180	200
8	240	280	160	180
9	240	400	180	200
10	200	340	180	200
11	220	320	180	200
12	220	600	200	220
13	220	280	180	200
14	200	260	180	200

ADMIN-1-D				
Operator A 10/12/2004		Operator B 12/20/2004		
Average	Maximum	Average	Maximum	
1	200	260	180	200
2	240	800	200	220
3	220	320	180	200
4	200	320	180	200
5	200	280	200	220
6	200	600	200	220
7	220	360	180	200
8	200	320	180	200
9	220	300	160	180
10	220	280	180	200
11	220	280	180	200
12	200	260	160	180
13	200	280	160	180
14	200	300	180	200

**Instrument Backgrounds (cpm):**

9/22/2004	325
10/11/2004	250
10/12/2004	250
12/20/2004	280

Due to the differences in the background measurements, the gross count rates were adjusted to the background on 12/20/2004 when Operator B made the repeat measurements.



**OPERATOR PRECISION TEST**  
(Page 2 of 3)

**BACKGROUND ADJUSTED SCAN MEASUREMENTS (cpm)**

Bkgnd Adjustment: -45 cpm

Bkgnd Adjustment: 30 cpm

Bkgnd Adjustment: 30 cpm

ADMIN-1-B				
Operator A 9/22/2004		Operator B 12/20/2004		
Average	Maximum	Average	Maximum	
1	235	275	180	200
2	215	275	180	200
3	235	255	180	200
4	215	275	160	180
5	255	355	200	220
6	275	375	220	240
7	235	315	180	200
8	255	355	180	200
9	235	275	180	200
10	235	555	180	220
11	215	315	200	220
12	255	335	200	220
13	275	335	160	180
14	315	335	200	220
15	255	315	160	180
16	275	335	200	220

ADMIN-1-C				
Operator A 10/11/2004		Operator B 12/20/2004		
Average	Maximum	Average	Maximum	
1	230	310	220	240
2	230	290	180	200
3	230	330	200	220
4	250	370	180	200
5	270	310	200	220
6	250	310	180	200
7	250	350	180	200
8	270	310	160	180
9	270	430	180	200
10	230	370	180	200
11	250	350	180	200
12	250	630	200	220
13	250	310	180	200
14	230	290	180	200

ADMIN-1-D				
Operator A 10/12/2004		Operator B 12/20/2004		
Average	Maximum	Average	Maximum	
1	230	290	180	200
2	270	830	200	220
3	250	350	180	200
4	230	350	180	200
5	230	310	200	220
6	230	630	200	220
7	250	390	180	200
8	230	350	180	200
9	250	330	160	180
10	250	310	180	200
11	250	310	180	200
12	230	290	160	180
13	230	310	160	180
14	230	330	180	200

**OPERATOR PRECISION TEST**  
(Page 3 of 3)

**PERCENT DIFFERENCE IN OPERATOR A AND OPERATOR B MEASUREMENTS**  
[(Opp A - Opp B) / Opp A]

	ADMIN-1-B	
	Average	Maximum
1	23%	27%
2	16%	27%
3	23%	22%
4	26%	35%
5	22%	38%
6	20%	36%
7	23%	37%
8	29%	44%
9	23%	27%
10	23%	60%
11	7%	30%
12	22%	34%
13	42%	46%
14	37%	34%
15	37%	43%
16	27%	34%

	ADMIN-1-C	
	Average	Maximum
1	4%	23%
2	22%	31%
3	13%	33%
4	28%	46%
5	26%	29%
6	28%	35%
7	28%	43%
8	41%	42%
9	33%	53%
10	22%	46%
11	28%	43%
12	20%	65%
13	28%	35%
14	22%	31%

	ADMIN-1-D	
	Average	Maximum
1	22%	31%
2	26%	73%
3	28%	43%
4	22%	43%
5	13%	29%
6	13%	65%
7	28%	49%
8	22%	43%
9	36%	45%
10	28%	35%
11	28%	35%
12	30%	38%
13	30%	42%
14	22%	39%

Survey Unit		
Average	25%	36%

	24%	40%
--	-----	-----

	25%	44%
--	-----	-----

Total Averages	Average	Maximum
	25%	40%

**APPENDIX E**  
**BACKUP DATA – STRUCTURES**

## APPENDIX E - BACKUP DATA - STRUCTURES

Appendix E contains backup survey data for the survey units. This information includes technician notes and maps, downloaded data from the survey instruments (43-93), and printouts from the smear counting machine (Protean). It also includes removable survey data and location maps for locations that could not be surveyed directly. The data is presented by survey unit in the order provided in the next two pages.

Admin-1-A	Administration Area
Admin-1-B	Administration Area
Admin-1-C	Administration Area
Admin-1-D	Administration Area
Admin-1-E	Administration Area
Admin-1-F	Administration Area
Admin-1-G	Administration Area
Admin-1-H	Administration Area
Admin-1-I	Administration Area
Admin-1-J	Administration Area
Admin-1-K	Administration Area
Admin-1-L	Administration Area
Admin-1-M	Administration Area
Admin-1-N	Administration Area
Admin-1-O	Administration Area
Admin-1-P	Administration Area
Admin-1-Q	Administration Area
Admin-1-R	Administration Area
Admin-1-S	Administration Area
Admin-1-T	Administration Area
Admin-1-U	Administration Area
Admin-1-V	Administration Area
Admin-1-W	Administration Area
Admin-1-X	Administration Area
Admin-1-Y	Administration Area
HVAC-1-A	Office Mezzanine
HVAC-1-B	Office Mezzanine
HVAC-1-C	Office Mezzanine
HVAC-1-D	Office Mezzanine
HVAC-1-E	Office Mezzanine
HVAC-1-F	Office Mezzanine
SA-1-A	Service Area
SA-1-D	Service Area
SA-1-E	Service Area
SA-1-F	Service Area
SA-1-G	Service Area
SA-1-H	Service Area
SA-1-I	Service Area
SA-1-J	Service Area
SA-1-K	Service Area
SA-2-A	Service Area
CHEM-1-A	Chemistry Lab
CHEM-1-B	Chemistry Lab
CHEM-1-C	Chemistry Lab
DECON-1-A	Decontamination Room
DECON-1-B	Decontamination Room

DECON-1-C	Decontamination Room
FAN-1-A	Fan Room
FAN-1-B	Fan Room
FAN-1-C	Fan Room
FAN-1-D	Fan Room
FAN-1-E	Fan Room
FAN-1-F	Fan Room
GPOOL-1-A	Gamma Pool
VEST-1-A	Vestibule
VEST-1-B	Vestibule
VEST-1-C	Vestibule
FA-1-A	Finishing Area
FA-1-B	Finishing Area
FA-1-C	Finishing Area
FA-1-D	Finishing Area
FA-1-E	Finishing Area
FA-1-F	Finishing Area
FA-1-G	Finishing Area
FA-1-H	Finishing Area
FA-1-I	Finishing Area
FA-1-J	Finishing Area
FA-1-K	Finishing Area
FA-1-L	Finishing Area
FA-3-A	Finishing Area
FA-3-B	Finishing Area
DECON-2-A	Decontamination Area in Finishing Area
ELOF-3-A	Electrical Office
FABU-2-A	Finishing Area - Bunker
FABU-3-A	Finishing Area - Bunker
FAOF-3-A	Finishing Area - Office
FATC-2-A	Finishing Area - Tool Crib
BR-1-A	Boiler Room
BR-1-B	Boiler Room
BR-1-C	Boiler Room
BR-1-D	Boiler Room
BR-1-E	Boiler Room
BR-1-F	Boiler Room
BR-1-G	Boiler Room
HYDRO-1-A	Hydroblast Room
HYDRO-3-A	Hydroblast Room
ER-3-A	Electrical Room
ER-3-B	Electrical Room
ER-3-C	Electrical Room
RB-1-A	Reactor Bay

RB-1-B	Reactor Bay
RB-1-C	Reactor Bay
RB-1-D	Reactor Bay
RB-3-A	Reactor Bay
RB-3-C	Reactor Bay
RB-3-D	Reactor Bay
POOL-1-A	Reactor Pool
POOL-1-B	Reactor Pool
POOL-1-C	Reactor Pool
POOL-1-D	Reactor Pool
POOL-1-E	Reactor Pool
POOL-1-F	Reactor Pool
PUMP-2-A	Pump Room
PUMP-3-A	Pump Room
BEAM-2-A	Beam Room
BEAM-3-A	Beam Room
DUN-2-A	Dungeon
DUN-3-A	Dungeon
ROAD-3-A	Road
PLOT-3-A	Parking Lot
LZone-1-A	Loading Zone
SAW-2-A	Sawdust Shed
SAW-3-A	Sawdust Shed
WWTB-1-A	Waste Water Treatment Building
WWTB-1-B	Waste Water Treatment Building
WWTB-1-C	Waste Water Treatment Building
WWTB-1-D	Waste Water Treatment Building
Storage Building	

As the Lead Health Physics Technician for the Quehanna Decommissioning Project, I reviewed the survey documentation including smear reports and supporting surveys for all of the following survey units:

Admin-1-A Admin Area	DECON-1-A Decon Room	ER-3-C Electrical Room
Admin-1-B Admin Area	DECON-1-B Decon Room	RB-1-A Reactor Bay
Admin-1-C Admin Area	DECON-1-C Decon Room	RB-1-B Reactor Bay
Admin-1-D Admin Area	FAN-1-A Fan Room	RB-1-C Reactor Bay
Admin-1-E Admin Area	FAN-1-B Fan Room	RB-1-D Reactor Bay
Admin-1-F Admin Area	FAN-1-C Fan Room	RB-3-A Reactor Bay
Admin-1-G Admin Area	FAN-1-D Fan Room	RB-3-B Reactor Bay
Admin-1-H Admin Area	FAN-1-E Fan Room	RB-3-C Reactor Bay
Admin-1-I Admin Area	FAN-1-F Fan Room	RB-3-D Reactor Bay
Admin-1-J Admin Area	GPOOL-1-A Gamma Pool	POOL-1-A Reactor Pool
Admin-1-K Admin Area	VEST-1-A Vestibule	POOL-1-B Reactor Pool
Admin-1-L Admin Area	VEST-1-B Vestibule	POOL-1-C Reactor Pool
Admin-1-M Admin Area	VEST-1-C Vestibule	POOL-1-D Reactor Pool
Admin-1-N Admin Area	FA-1-A Finishing Area	POOL-1-E Reactor Pool
Admin-1-O Admin Area	FA-1-B Finishing Area	POOL-1-F Reactor Pool
Admin-1-P Admin Area	FA-1-C Finishing Area	PUMP-2-A Pump Room
Admin-1-Q Admin Area	FA-1-D Finishing Area	PUMP-3-A Pump Room
Admin-1-R Admin Area	FA-1-E Finishing Area	BEAM-2-A Beam Room
Admin-1-S Admin Area	FA-1-F Finishing Area	BEAM-3-A Beam Room
Admin-1-T Admin Area	FA-1-G Finishing Area	DUN-2-A Dungeon
Admin-1-U Admin Area	FA-1-H Finishing Area	DUN-3-A Dungeon
Admin-1-V Admin Area	FA-1-I Finishing Area	ROAD-3-A Road
Admin-1-W Admin Area	FA-1-J Finishing Area	PLOT-3-A Parking Lot
Admin-1-X Admin Area	FA-1-K Finishing Area	LZone-1-A Loading Zone
Admin-1-Y Admin Area	FA-1-L Finishing Area	SAW-2-A Sawdust Shed
HVAC-1-A Office	FA-3-A Finishing Area	SAW-3-A Sawdust Shed
Mezzanine	FA-3-B Finishing Area	WWTB-1-A Waste WaterTB
HVAC-1-B Office	DECON-2-A --	WWTB-1-B Waste Water TB
Mezzanine	Decon Area in Finishing	WWTB-1-C Waste Water TB
HVAC-1-C Office	Area	WWTB-1-D Waste WaterTB
Mezzanine	ELOF-3-A Electrical Office	
HVAC-1-D Office	FABU-2-A Finishing Area -	
Mezzanine	Bunker	
HVAC-1-E Office	FABU-3-A Finishing Area -	
Mezzanine	Bunker	
HVAC-1-F Office Mezzanine	FAOF-3-A Finishing Area -	
SA-1-A Service Area	Office	
SA-1-B Service Area	FATC-2-A Finishing Area -	
SA-1-C Service Area	Tool Crib	
SA-1-D Service Area	BR-1-A Boiler Room	
SA-1-E Service Area	BR-1-B Boiler Room	
SA-1-F Service Area	BR-1-C Boiler Room	
SA-1-G Service Area	BR-1-D Boiler Room	
SA-1-H Service Area	BR-1-E Boiler Room	
SA-1-I Service Area	BR-1-F Boiler Room	
SA-1-J Service Area	BR-1-G Boiler Room	
SA-1-K Service Area	HYDRO-1-A Hydroblast	
SA-1-L Service Area	Room	
SA-2-A Service Area	HYDRO-3-A Hydroblast	
CHEM-1-A Chemistry Lab	Room	
CHEM-1-B Chemistry Lab	ER-3-A Electrical Room	
CHEM-1-C Chemistry Lab	ER-3-B Electrical Room	

Signed

  
Joe Trowbridge

Date 02-04-05

**Admin-1-A Administration Area**





# ADMIN-1-A

Log #
7-1645 Source
8-127-BKG
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

	X	Y
	n/a	n/a
1	0.7	7.6
2	8.7	7.6
3	16.7	7.6
4	24.7	7.6
5	0.7	15.6
6	8.7	15.6
7	16.7	15.6
8	24.7	15.6
9	0.7	23.6
10	8.7	23.6
11	16.7	23.6
12	24.7	23.6
13	0.7	30
14	8.7	30
15	16.7	30
16	24.7	30

L (ft)= 8.0

A (ft²)= 900

	Fixed Points	Ave. (Scan)	Max. (Scan)
	1645	n/a	n/a
	127		
1	188	280	320
2	165	260	340
3	153	260	340
4	179	280	300
5	201	260	300
6	145	280	320
7	163	300	340
8	202	240	300
9	160	240	320
10	140	260	300
11	172	240	300
12	204	260	320
13	156	240	320
14	194	260	360
15	206	240	320

16 157

200

230

# Ludlum Measurements, Inc.

## Model 2360 Log Data

Date: 9/28/2004  
Time: 8:14:39 AM

Header 1: Technician  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 09/28/2004  
Model 2360 Time: 08:12:19  
Sample Number: 0043

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 050000  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 050000  
Alpha + Beta Scaler Alarm: 050000

Count - Count Time  
F - Ratemeter  
S - Scaler

### Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0005	09/23/04	07:26:38	000000	000183	S 001.0	Lab Background
0006	09/23/04	07:28:03	000001	034061	S 001.0	Lab Source
0007	09/23/04	14:17:12	000000	001645	S 001.0	Field Source
0008	09/23/04	14:20:25	000000	000127	S 001.0	Field Background
0009	09/23/04	14:22:19	000000	000188	S 001.0	Admin 1-A
0010	09/23/04	14:23:44	000000	000165	S 001.0	Admin 1-A
0011	09/23/04	14:25:10	000004	000153	S 001.0	Admin 1-A
0012	09/23/04	14:26:37	000000	000179	S 001.0	Admin 1-A
0013	09/23/04	14:28:27	000001	000201	S 001.0	Admin 1-A
0014	09/23/04	14:30:37	000002	000145	S 001.0	Admin 1-A
0015	09/23/04	14:31:58	000000	000163	S 001.0	Admin 1-A
0016	09/23/04	14:33:21	000001	000202	S 001.0	Admin 1-A
0017	09/23/04	14:35:25	000001	000160	S 001.0	Admin 1-A
0018	09/23/04	14:36:45	000000	000140	S 001.0	Admin 1-A
0019	09/23/04	14:38:12	000001	000172	S 001.0	Admin 1-A
0020	09/23/04	14:39:41	000000	000204	S 001.0	Admin 1-A
0021	09/23/04	15:19:33	000001	000156	S 001.0	Admin 1-A
0022	09/23/04	15:21:42	000001	000194	S 001.0	Admin 1-A
0023	09/23/04	15:22:58	000000	000206	S 001.0	Admin 1-A
0024	09/23/04	15:44:09	000003	001590	S 001.0	Field Source
0025	09/23/04	15:46:18	000002	000126	S 001.0	Field Background
0026	09/23/04	15:48:18	000000	000182	S 001.0	Admin 1-B
0027	09/23/04	15:50:46	000000	000166	S 001.0	VOID
0028	09/23/04	15:56:14	000002	000187	S 001.0	Admin 1-B
0029	09/23/04	15:59:30	000000	000193	S 001.0	Admin 1-B
0030	09/23/04	16:01:01	000002	000175	S 001.0	Admin 1-B
0031	09/23/04	16:02:41	000003	000180	S 001.0	Admin 1-B
0032	09/23/04	16:04:05	000000	000192	S 001.0	Admin 1-B
0033	09/23/04	16:05:52	000000	000161	S 001.0	Admin 1-B
0034	09/23/04	16:07:17	000000	000199	S 001.0	Admin 1-B
0035	09/23/04	16:08:52	000003	000174	S 001.0	Admin 1-B
0036	09/23/04	16:10:13	000001	000183	S 001.0	Admin 1-B
0037	09/23/04	16:11:56	000000	000237	S 001.0	Admin 1-B

J038 09/23/04 16:14:04 000001 000175 S 001.0 Admin 1-B  
J039 09/23/04 16:15:42 000001 000167 S 001.0 Admin 1-B  
J040 09/23/04 16:17:06 000000 000198 S 001.0 Admin 1-B  
J041 09/23/04 16:18:33 000000 000160 S 001.0 Admin 1-B  
J042 09/23/04 16:20:04 000000 000164 S 001.0 Admin 1-B

# Ludlum Measurements, Inc.

## Model 2360 Log Data

---

Date: 11/23/2004  
Time: 10:20:57 AM

Header 1: Chris Higgins  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: ADMIN-1-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/23/2004  
Model 2360 Time: 09:23:03  
Sample Number: 0004

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
R - Ratemeter  
S - Scaler

### Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	11/23/04	07:15:32	000004	000219	S 001.0	Lab Background
0002	11/23/04	07:22:33	000004	034133	S 001.0	Lab Source
0003	11/23/04	09:21:48	000005	000157	S 001.0	ADMIN-1-A 16

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
7	Smear 1	10/05/04	8:37:52	ADMIN-1-A	Final Status Survey	10/05/04	8:37:52	1.000	1.00
8	Smear 2	10/05/04	8:36:31	ADMIN-1-A	Final Status Survey	10/05/04	8:36:31	1.000	1.00
9	Smear 3	10/05/04	8:35:10	ADMIN-1-A	Final Status Survey	10/05/04	8:35:10	1.000	1.00
10	Smear 4	10/05/04	8:33:49	ADMIN-1-A	Final Status Survey	10/05/04	8:33:49	1.000	1.00
11	Smear 5	10/05/04	8:32:28	ADMIN-1-A	Final Status Survey	10/05/04	8:32:28	1.000	1.00
12	Smear 6	10/05/04	8:31:08	ADMIN-1-A	Final Status Survey	10/05/04	8:31:08	1.000	1.00
13	Smear 7	10/05/04	8:29:47	ADMIN-1-A	Final Status Survey	10/05/04	8:29:47	1.000	1.00
14	Smear 8	10/05/04	8:28:27	ADMIN-1-A	Final Status Survey	10/05/04	8:28:27	1.000	1.00
15	Smear 9	10/05/04	8:27:06	ADMIN-1-A	Final Status Survey	10/05/04	8:27:06	1.000	1.00
16	Smear 10	10/05/04	8:25:46	ADMIN-1-A	Final Status Survey	10/05/04	8:25:46	1.000	1.00
17	Smear 11	10/05/04	8:24:25	ADMIN-1-A	Final Status Survey	10/05/04	8:24:25	1.000	1.00
18	Smear 12	10/05/04	8:23:05	ADMIN-1-A	Final Status Survey	10/05/04	8:23:05	1.000	1.00
19	Smear 13	10/05/04	8:21:44	ADMIN-1-A	Final Status Survey	10/05/04	8:21:44	1.000	1.00
20	Smear 14	10/05/04	8:20:24	ADMIN-1-A	Final Status Survey	10/05/04	8:20:24	1.000	1.00
21	Smear 15	10/05/04	8:19:03	ADMIN-1-A	Final Status Survey	10/05/04	8:19:03	1.000	1.00
22	Smear 16	10/05/04	8:17:42	ADMIN-1-A	Final Status Survey	10/05/04	8:17:42	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-25-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 26.91 LLD: 13.28 dpm				Bkg: 0.63 cpm %Eff: 44.17 LLD: 11.66 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
7	Smear 1	10/05/04	8:37:52	0.00	-0.07	-0.25	13.28	1.00	0.47	1.06	11.66
8	Smear 2	10/05/04	8:38:31	0.00	-0.07	-0.25	13.28	1.00	0.47	1.06	11.66
9	Smear 3	10/05/04	8:35:10	0.00	-0.07	-0.25	13.28	1.00	0.47	1.06	11.66
10	Smear 4	10/05/04	8:33:49	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
11	Smear 5	10/05/04	8:32:28	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
12	Smear 6	10/05/04	8:31:08	0.00	-0.07	-0.25	13.28	1.00	0.47	1.06	11.66
13	Smear 7	10/05/04	8:29:47	0.00	-0.07	-0.25	13.28	1.00	0.47	1.06	11.66
14	Smear 8	10/05/04	8:28:27	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
15	Smear 9	10/05/04	8:27:06	0.00	-0.07	-0.25	13.28	2.00	1.47	3.32	11.66
16	Smear 10	10/05/04	8:25:46	0.00	-0.07	-0.25	13.28	3.00	2.47	5.58	11.66
17	Smear 11	10/05/04	8:24:25	0.00	-0.07	-0.25	13.28	1.00	0.47	1.06	11.66
18	Smear 12	10/05/04	8:23:05	0.00	-0.07	-0.25	13.28	2.00	1.47	3.32	11.66
19	Smear 13	10/05/04	8:21:44	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
20	Smear 14	10/05/04	8:20:24	0.00	-0.07	-0.25	13.28	2.00	1.47	3.32	11.66
21	Smear 15	10/05/04	8:19:03	0.00	-0.07	-0.25	13.28	3.00	2.47	5.58	11.66
22	Smear 16	10/05/04	8:17:42	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-05-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Surveyor: John Albert  
Print

Reviewer: Joe Trowbridge  
Print

John Albert  
Sign

Joe Trowbridge  
Sign

9/24/2004  
Date

9/24/2004  
Date

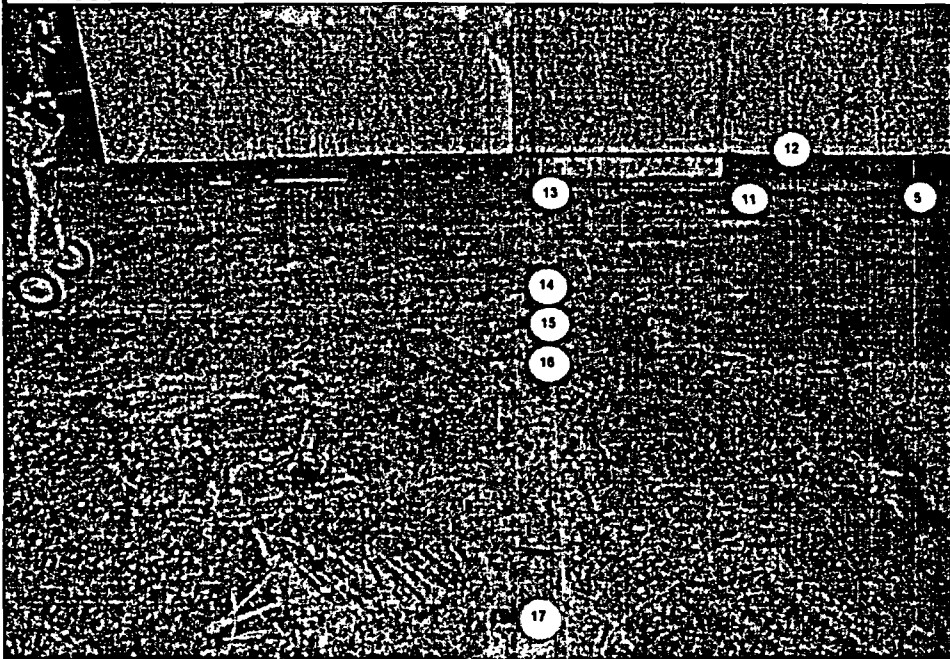
## Survey Meters

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 27%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG .17 cpm  
MDA 15 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 44%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.6 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Admin 1-A  
PURPOSE: Inaccessible Areas



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
5	<MDA	<MDA
11	<MDA	<MDA
12	<MDA	<MDA
13	<MDA	<MDA
14	<MDA	<MDA
15	<MDA	<MDA
16	<MDA	<MDA
17	<MDA	<MDA

$$MDA = \frac{2.71}{T_b} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff) ×  $\frac{100\text{cm}^2}{100\text{cm}^2}$

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate  
Tb = background counting time  
Ts = sample count time  
AI = action level



## Survey Cover Sheet

For: John Albert  
 Print  
 Reviewer: Joe Trowbridge  
 Print

[Signature]  
 Sign  
[Signature]  
 Sign

9/24/2004  
 Date  
9/24/2004  
 Date

## Survey Meters

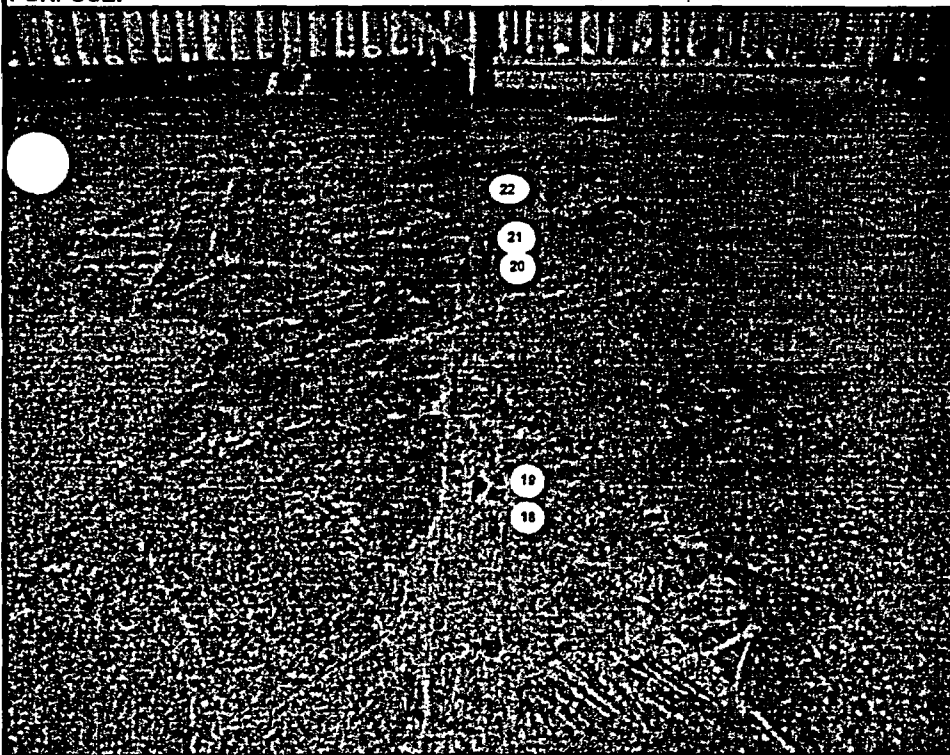
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG .17 cpm  
 MDA 15 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta \gamma$   $\beta \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.6 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta \gamma$   $\beta \gamma$   
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin 1-A (2)

PURPOSE: Inaccessible Areas



Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
18	<MDA	<MDA
19	<MDA	<MDA
20	<MDA	<MDA
21	<MDA	<MDA
22	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff.  $\times \frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate  
 Tb = background counting time  
 Ts = sample count time  
 AI = action level

SCIENTECH Inc.

82A8008 ATTACHMENT A  
Survey Cover Sheet

Survey No. 4310

Surveyor: John Albert

Print

Reviewer: Joe Trowbridge

Print

9/24/2004

Date

9/24/2004

Date

## Survey Meters

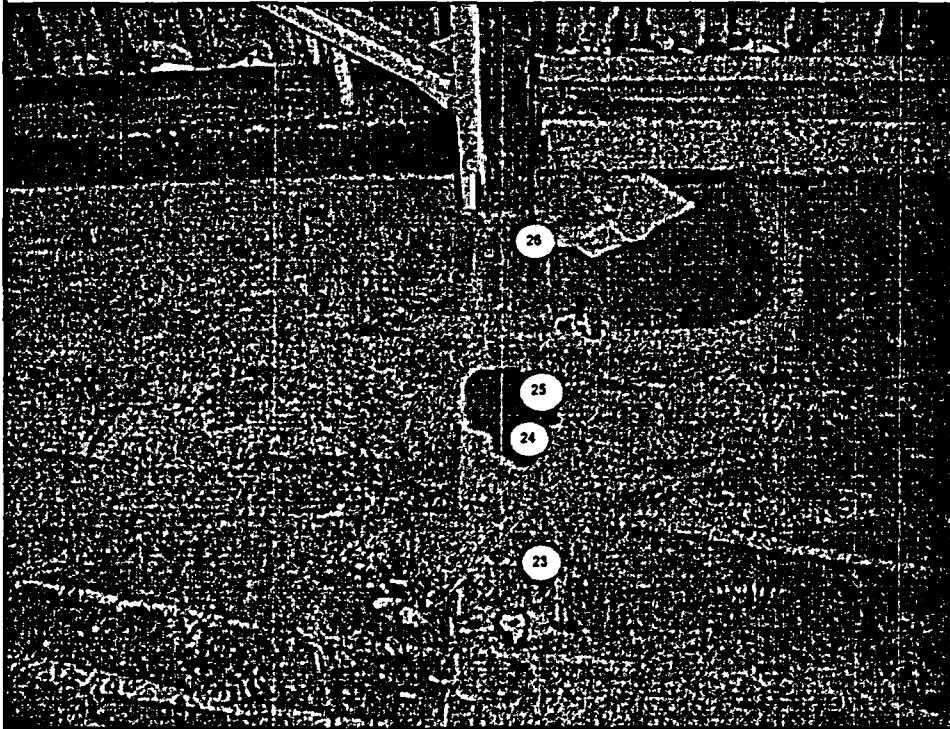
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG .17 cpm  
 MDA 15 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.6 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin 1-A (3) ..

PURPOSE: Inaccessible Areas



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
23	<MDA	<MDA
24	<MDA	<MDA
25	<MDA	<MDA
26	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff.  $\times \frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate

Tb = background counting time

Ts = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	09/22/04	11:29:45	Admin 1 - P	Inaccessible Area	09/22/04	11:29:45	1.000	1.00
2	Smear 2	09/22/04	11:28:24	Admin 1 - P	Inaccessible Area	09/22/04	11:28:24	1.000	1.00
3	Smear 3	09/22/04	11:27:03	Admin 1 - P	Inaccessible Area	09/22/04	11:27:03	1.000	1.00
4	Smear 4	09/22/04	11:25:43	Admin 1 - P	Inaccessible Area	09/22/04	11:25:43	1.000	1.00
5	Smear 5	09/22/04	11:24:22	Admin 1 - A	Inaccessible Area	09/22/04	11:24:22	1.000	1.00
6	Smear 6	09/22/04	11:23:02	Admin 1 - A	Inaccessible Area	09/22/04	11:23:02	1.000	1.00
7	Smear 7	09/22/04	11:21:41	Admin 1 - A	Inaccessible Area	09/22/04	11:21:41	1.000	1.00
8	Smear 8	09/22/04	11:20:20	Admin 1 - A	Inaccessible Area	09/22/04	11:20:20	1.000	1.00
9	Smear 9	09/22/04	11:19:00	Admin 1 - A	Inaccessible Area	09/22/04	11:19:00	1.000	1.00
10	Smear 10	09/22/04	11:17:39	Admin 1 - A	Inaccessible Area	09/22/04	11:17:39	1.000	1.00
11	Smear 11	09/22/04	11:16:18	Admin 1 - A	Inaccessible Area	09/22/04	11:16:18	1.000	1.00
12	Smear 12	09/22/04	11:14:58	Admin 1 - A	Inaccessible Area	09/22/04	11:14:58	1.000	1.00
13	Smear 13	09/22/04	11:13:37	Admin 1 - A	Inaccessible Area	09/22/04	11:13:37	1.000	1.00
14	Smear 14	09/22/04	11:12:17	Admin 1 - A	Inaccessible Area	09/22/04	11:12:17	1.000	1.00
15	Smear 15	09/22/04	11:10:56	Admin 1 - A	Inaccessible Area	09/22/04	11:10:56	1.000	1.00
16	Smear 16	09/22/04	11:09:35	Admin 1 - A	Inaccessible Area	09/22/04	11:09:35	1.000	1.00
17	Smear 17	09/22/04	11:08:15	Admin 1 - A	Inaccessible Area	09/22/04	11:08:15	1.000	1.00
18	Smear 18	09/22/04	11:06:54	Admin 1 - A	Inaccessible Area	09/22/04	11:06:54	1.000	1.00
19	Smear 19	09/22/04	11:05:33	Admin 1 - A	Inaccessible Area	09/22/04	11:05:33	1.000	1.00
20	Smear 20	09/22/04	11:04:13	Admin 1 - A	Inaccessible Area	09/22/04	11:04:13	1.000	1.00
21	Smear 21	09/22/04	11:02:52	Admin 1 - A	Inaccessible Area	09/22/04	11:02:52	1.000	1.00
22	Smear 22	09/22/04	11:01:32	Admin 1 - A	Inaccessible Area	09/22/04	11:01:32	1.000	1.00
23	Smear 23	09/22/04	11:00:11	Admin 1 - A	Inaccessible Area	09/22/04	11:00:11	1.000	1.00
24	Smear 24	09/22/04	10:58:50	Admin 1 - A	Inaccessible Area	09/22/04	10:58:50	1.000	1.00
25	Smear 25	09/22/04	10:57:30	Admin 1 - A	Inaccessible Area	09/22/04	10:57:30	1.000	1.00
26	Smear 26	09/22/04	10:56:09	Admin 1 - A	Inaccessible Area	09/22/04	10:56:09	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-24-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.17 cpm %Eff: 27.06 LLD: 15.06 dpm				Bkg: 0.63 cpm %Eff: 44.12 LLD: 12.18 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	09/22/04	11:29:45	0.00	-0.17	-0.62	15.06	1.00	0.37	0.83	12.18
2	Smear 2	09/22/04	11:28:24	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
3	Smear 3	09/22/04	11:27:03	0.00	-0.17	-0.62	15.06	1.00	0.37	0.83	12.18
4	Smear 4	09/22/04	11:25:43	0.00	-0.17	-0.62	15.06	1.00	0.37	0.83	12.18
5	Smear 5	09/22/04	11:24:22	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
6	Smear 6	09/22/04	11:23:02	0.00	-0.17	-0.62	15.06	2.00	1.37	3.10	12.18
7	Smear 7	09/22/04	11:21:41	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
8	Smear 8	09/22/04	11:20:20	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
9	Smear 9	09/22/04	11:19:00	0.00	-0.17	-0.62	15.06	3.00	2.37	5.36	12.18
10	Smear 10	09/22/04	11:17:39	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
11	Smear 11	09/22/04	11:16:18	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
12	Smear 12	09/22/04	11:14:58	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
13	Smear 13	09/22/04	11:13:37	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
14	Smear 14	09/22/04	11:12:17	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
15	Smear 15	09/22/04	11:10:58	0.00	-0.17	-0.62	15.06	2.00	1.37	3.10	12.18
16	Smear 16	09/22/04	11:09:35	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
17	Smear 17	09/22/04	11:08:15	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
18	Smear 18	09/22/04	11:06:54	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
19	Smear 19	09/22/04	11:05:33	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
20	Smear 20	09/22/04	11:04:13	0.00	-0.17	-0.62	15.06	2.00	1.37	3.10	12.18
21	Smear 21	09/22/04	11:02:52	0.00	-0.17	-0.62	15.06	3.00	2.37	5.36	12.18
22	Smear 22	09/22/04	11:01:32	0.00	-0.17	-0.62	15.06	1.00	0.37	0.83	12.18
23	Smear 23	09/22/04	11:00:11	0.00	-0.17	-0.62	15.06	2.00	1.37	3.10	12.18
24	Smear 24	09/22/04	10:58:50	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
25	Smear 25	09/22/04	10:57:30	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
26	Smear 26	09/22/04	10:56:09	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

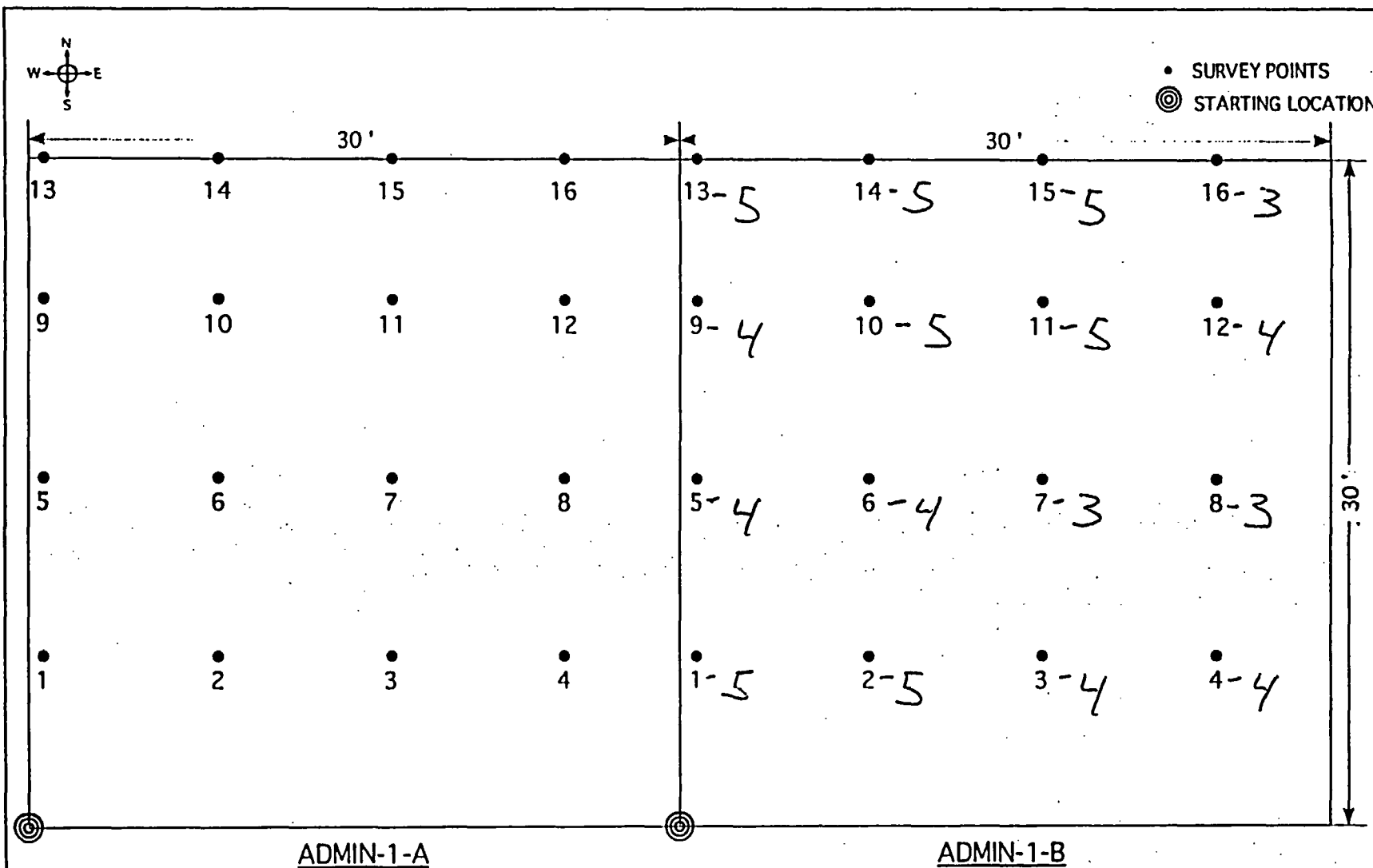
Date: 9-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-24-04

**Admin-1-B Administration Area**



ALL Readings in  
 MICRO-R

9-22-04 START-1300  
 STOP 1600

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Administration Area Floor (1 of 3)	
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06458	
PROJECT NO: 23529-0201	
FILE NAME:	
SCALE: N.T.S.	DATE: 06/29/2004
By:	CR:
FIGURE: ADMIN-1-A-B	

# ADMIN-1-B

Log #
24-1540 Source
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41

25 BKG 126

	X	Y
	n/a	n/a
1	0.7	7.6
2	8.7	7.6
3	16.7	7.6
4	24.7	7.6
5	0.7	15.6
6	8.7	15.6
7	16.7	15.6
8	24.7	15.6
9	0.7	23.6
10	8.7	23.6
11	16.7	23.6
12	24.7	23.6
13	0.7	30
14	8.7	30
15	16.7	30
16	24.7	30

L (ft)= 8.0

A (ft²)= 900

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
182	280	320
* 166	Void	Void
187	260	320
193	280	300
175	260	320
180	300	400
192	320	420
161	280	360
199	300	400
174	280	320
183	280	600
237	260	360
175	300	360
167	320	380
198	360	380
160	300	360

164

320

380

\*

## Admin 1-A, 1-B 092304

Num	Date	Time	Alpha	Beta	UsrTime	Location
0005	09/23/04	07:26:38	000000	000183	S	001.0 Lab Background
0006	09/23/04	07:28:03	000001	034061	S	001.0 Lab Source
0007	09/23/04	14:17:12	000000	001645	S	001.0 Field Source
0008	09/23/04	14:20:25	000000	000127	S	001.0 Field Background
0009	09/23/04	14:22:19	000000	000188	S	001.0 Admin 1-A
0010	09/23/04	14:23:44	000000	000165	S	001.0 Admin 1-A
0011	09/23/04	14:25:10	000004	000153	S	001.0 Admin 1-A
0012	09/23/04	14:26:37	000000	000179	S	001.0 Admin 1-A
0013	09/23/04	14:28:27	000001	000201	S	001.0 Admin 1-A
0014	09/23/04	14:30:37	000002	000145	S	001.0 Admin 1-A
0015	09/23/04	14:31:58	000000	000163	S	001.0 Admin 1-A
0016	09/23/04	14:33:21	000001	000202	S	001.0 Admin 1-A
0017	09/23/04	14:35:25	000001	000160	S	001.0 Admin 1-A
0018	09/23/04	14:36:45	000000	000140	S	001.0 Admin 1-A
0019	09/23/04	14:38:12	000001	000172	S	001.0 Admin 1-A
0020	09/23/04	14:39:41	000000	000204	S	001.0 Admin 1-A
0021	09/23/04	15:19:33	000001	000156	S	001.0 Admin 1-A
0022	09/23/04	15:21:42	000001	000194	S	001.0 Admin 1-A
0023	09/23/04	15:22:58	000000	000206	S	001.0 Admin 1-A
0024	09/23/04	15:44:09	000003	001590	S	001.0 Field Source
0025	09/23/04	15:46:18	000002	000126	S	001.0 Field Background
0026	09/23/04	15:48:18	000000	000182	S	001.0 Admin 1-B
0027	09/23/04	15:50:46	000000	000166	S	001.0 VOID
0028	09/23/04	15:56:14	000002	000187	S	001.0 Admin 1-B
0029	09/23/04	15:59:30	000000	000193	S	001.0 Admin 1-B
0030	09/23/04	16:01:01	000002	000175	S	001.0 Admin 1-B
0031	09/23/04	16:02:41	000003	000180	S	001.0 Admin 1-B
0032	09/23/04	16:04:05	000000	000192	S	001.0 Admin 1-B
0033	09/23/04	16:05:52	000000	000161	S	001.0 Admin 1-B
0034	09/23/04	16:07:17	000000	000199	S	001.0 Admin 1-B
0035	09/23/04	16:08:52	000003	000174	S	001.0 Admin 1-B
0036	09/23/04	16:10:13	000001	000183	S	001.0 Admin 1-B
0037	09/23/04	16:11:56	000000	000237	S	001.0 Admin 1-B
0038	09/23/04	16:14:04	000001	000175	S	001.0 Admin 1-B
0039	09/23/04	16:15:42	000001	000167	S	001.0 Admin 1-B
0040	09/23/04	16:17:06	000000	000198	S	001.0 Admin 1-B
0041	09/23/04	16:18:33	000000	000160	S	001.0 Admin 1-B
0042	09/23/04	16:20:04	000000	000164	S	001.0 Admin 1-B

\$



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 26.91 LLD: 13.28 dpm				Bkg: 0.63 cpm %Eff: 44.17 LLD: 11.66 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
23	Smear 1	10/05/04	10:26:43	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
24	Smear 2	10/05/04	10:25:22	0.00	-0.07	-0.25	13.28	1.00	0.47	1.06	11.66
25	Smear 3	10/05/04	10:24:02	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
26	Smear 4	10/05/04	10:22:41	0.00	-0.07	-0.25	13.28	4.00	3.47	7.85	11.66
27	Smear 5	10/05/04	10:21:21	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
28	Smear 6	10/05/04	10:20:00	0.00	-0.07	-0.25	13.28	4.00	3.47	7.85	11.66
29	Smear 7	10/05/04	10:18:39	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
30	Smear 8	10/05/04	10:17:18	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
31	Smear 9	10/05/04	10:15:57	0.00	-0.07	-0.25	13.28	3.00	2.47	5.58	11.66
32	Smear 10	10/05/04	10:14:37	0.00	-0.07	-0.25	13.28	4.00	3.47	7.85	11.66
33	Smear 11	10/05/04	10:13:18	0.00	-0.07	-0.25	13.28	3.00	2.47	5.58	11.66
34	Smear 12	10/05/04	10:11:56	0.00	-0.07	-0.25	13.28	1.00	0.47	1.06	11.66
35	Smear 13	10/05/04	10:10:35	0.00	-0.07	-0.25	13.28	2.00	1.47	3.32	11.66
36	Smear 14	10/05/04	10:09:14	0.00	-0.07	-0.25	13.28	5.00	4.47	10.11	11.66
37	Smear 15	10/05/04	10:07:54	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
38	Smear 16	10/05/04	10:06:33	0.00	-0.07	-0.25	13.28	1.00	0.47	1.06	11.66

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
23	Smear 1	10/05/04	10:28:43	ADMIN-1-B	Final Status Survey	10/05/04	10:28:43	1.000	1.00
24	Smear 2	10/05/04	10:25:22	ADMIN-1-B	Final Status Survey	10/05/04	10:25:22	1.000	1.00
25	Smear 3	10/05/04	10:24:02	ADMIN-1-B	Final Status Survey	10/05/04	10:24:02	1.000	1.00
26	Smear 4	10/05/04	10:22:41	ADMIN-1-B	Final Status Survey	10/05/04	10:22:41	1.000	1.00
27	Smear 5	10/05/04	10:21:21	ADMIN-1-B	Final Status Survey	10/05/04	10:21:21	1.000	1.00
28	Smear 6	10/05/04	10:20:00	ADMIN-1-B	Final Status Survey	10/05/04	10:20:00	1.000	1.00
29	Smear 7	10/05/04	10:18:39	ADMIN-1-B	Final Status Survey	10/05/04	10:18:39	1.000	1.00
30	Smear 8	10/05/04	10:17:18	ADMIN-1-B	Final Status Survey	10/05/04	10:17:18	1.000	1.00
31	Smear 9	10/05/04	10:15:57	ADMIN-1-B	Final Status Survey	10/05/04	10:15:57	1.000	1.00
32	Smear 10	10/05/04	10:14:37	ADMIN-1-B	Final Status Survey	10/05/04	10:14:37	1.000	1.00
33	Smear 11	10/05/04	10:13:16	ADMIN-1-B	Final Status Survey	10/05/04	10:13:16	1.000	1.00
34	Smear 12	10/05/04	10:11:56	ADMIN-1-B	Final Status Survey	10/05/04	10:11:56	1.000	1.00
35	Smear 13	10/05/04	10:10:35	ADMIN-1-B	Final Status Survey	10/05/04	10:10:35	1.000	1.00
36	Smear 14	10/05/04	10:09:14	ADMIN-1-B	Final Status Survey	10/05/04	10:09:14	1.000	1.00
37	Smear 15	10/05/04	10:07:54	ADMIN-1-B	Final Status Survey	10/05/04	10:07:54	1.000	1.00
38	Smear 16	10/05/04	10:06:33	ADMIN-1-B	Final Status Survey	10/05/04	10:06:33	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-05-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

## Survey Cover Sheet

Surveyor: Tom Malachina  
 Print  
 Reviewer: Joe Trowbridge  
 Print

Sign

Sign

10/18/2004  
 Date  
 10/18/2004  
 Date

## Survey Meters

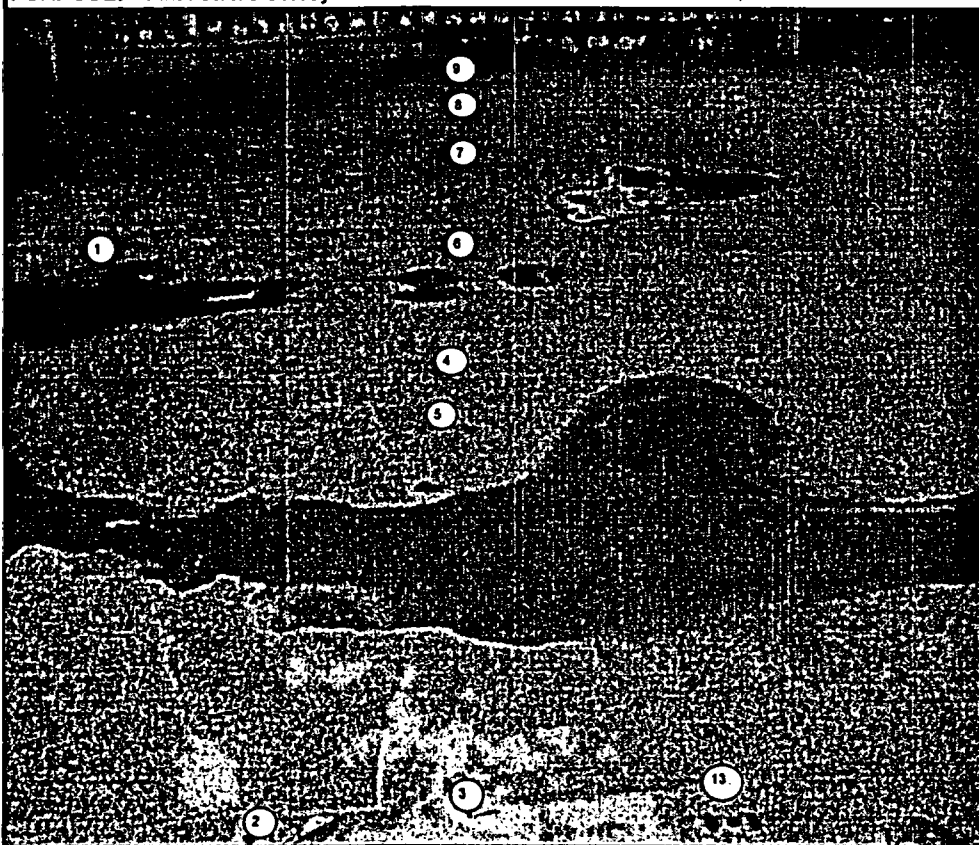
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta \gamma$   $\beta \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.6 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin-1-B Inaccessible Areas

PURPOSE: Final Status Survey



$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff X  $\frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline})(\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA
9	<MDA	<MDA
10	<MDA	<MDA
11	<MDA	<MDA
12	<MDA	<MDA
13	<MDA	<MDA
14	<MDA	<MDA
15	<MDA	<MDA
16	<MDA	<MDA
17	<MDA	<MDA
18	<MDA	<MDA
19	<MDA	<MDA
20	<MDA	<MDA
21	<MDA	<MDA
22	<MDA	<MDA
23	<MDA	<MDA
24	<MDA	<MDA
25	<MDA	<MDA

## Survey Cover Sheet

Surveyor: Tom Malachina  
 Print  
 Reviewer: Joe Trowbridge  
 Print

Sign

Sign

10/18/2004

Date

10/18/2004

Date

## Survey Meters

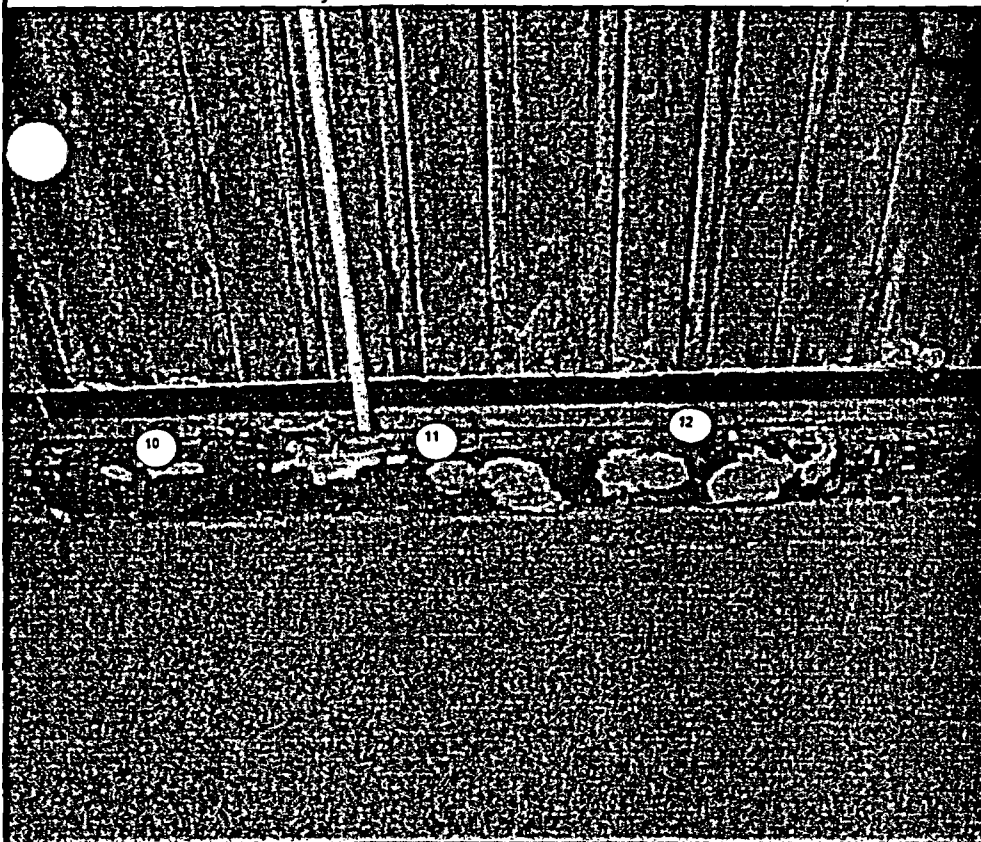
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.6 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta, \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin-1-B Inaccessible Areas

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA
9	<MDA	<MDA
10	<MDA	<MDA
11	<MDA	<MDA
12	<MDA	<MDA
13	<MDA	<MDA
14	<MDA	<MDA
15	<MDA	<MDA
16	<MDA	<MDA
17	<MDA	<MDA
18	<MDA	<MDA
19	<MDA	<MDA
20	<MDA	<MDA
21	<MDA	<MDA
22	<MDA	<MDA
23	<MDA	<MDA
24	<MDA	<MDA
25	<MDA	<MDA

$$DA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff. X  $\frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

10/18/2004  
Date

10/18/2004  
Date

Meter Model #	N/A
Meter / Probe Serial #	N/A
Cal Due	N/A
Efficiency	N/A
Type $\alpha, \beta, \gamma$	N/A
Sample Time	N/A
Background Time	N/A
BKG	N/A
MDA	N/A
Guideline	N/A
Action Level	N/A

where:  $R_b$  = background counting rate  
 $T_b$  = background counting time  
 $T_s$  = sample count time  
 $AI$  = action level

10/18/2004  
Date

10/18/2004  
Date

Meter Model #	N/A
Meter / Probe Serial #	N/A
Cal Due	N/A
Efficiency	N/A
Type $\alpha, \beta, \gamma$	N/A
Sample Time	N/A
Background Time	N/A
BKG	N/A
MDA	N/A
Guideline	N/A
Action Level	N/A

AI = action level

Surveyor: Tom Malachina  
Print  
Reviewer: Joe Trowbridge  
Print

Tom Malachina  
Sign  
Joe Trowbridge  
Sign

10/18/2004  
Date  
10/18/2004  
Date

## Survey Meters

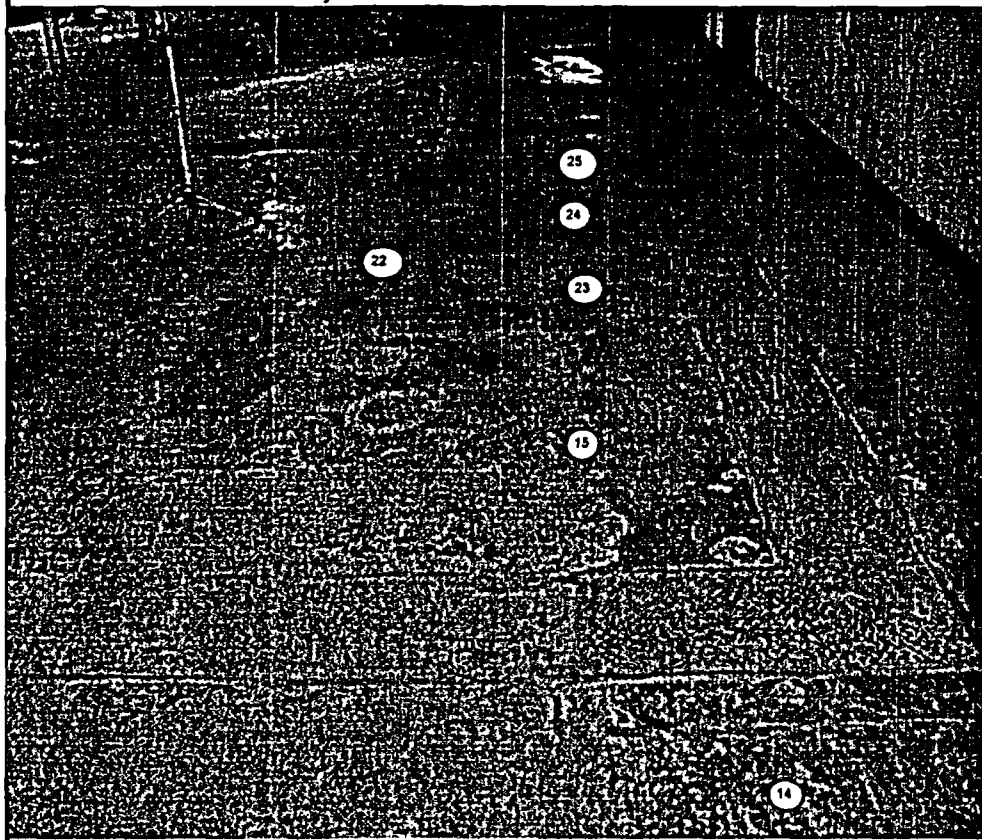
Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 27%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 44%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.6 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta, \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Admin-1-B Inaccessible Areas

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA
9	<MDA	<MDA
10	<MDA	<MDA
11	<MDA	<MDA
12	<MDA	<MDA
13	<MDA	<MDA
14	<MDA	<MDA
15	<MDA	<MDA
16	<MDA	<MDA
17	<MDA	<MDA
18	<MDA	<MDA
19	<MDA	<MDA
20	<MDA	<MDA
21	<MDA	<MDA
22	<MDA	<MDA
23	<MDA	<MDA
24	<MDA	<MDA
25	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff. X  $\frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate

Tb = background counting time

Ts = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/14/04	14:08:52	Admin-1-B	Inaccessible Area	10/14/04	14:08:52	1.000	1.00
2	Smear 2	10/14/04	14:07:31	Admin-1-B	Inaccessible Area	10/14/04	14:07:31	1.000	1.00
3	Smear 3	10/14/04	14:06:11	Admin-1-B	Inaccessible Area	10/14/04	14:06:11	1.000	1.00
4	Smear 4	10/14/04	14:04:50	Admin-1-B	Inaccessible Area	10/14/04	14:04:50	1.000	1.00
5	Smear 5	10/14/04	14:03:30	Admin-1-B	Inaccessible Area	10/14/04	14:03:30	1.000	1.00
6	Smear 6	10/14/04	14:02:10	Admin-1-B	Inaccessible Area	10/14/04	14:02:10	1.000	1.00
7	Smear 7	10/14/04	14:00:49	Admin-1-B	Inaccessible Area	10/14/04	14:00:49	1.000	1.00
8	Smear 8	10/14/04	13:59:29	Admin-1-B	Inaccessible Area	10/14/04	13:59:29	1.000	1.00
9	Smear 9	10/14/04	13:58:08	Admin-1-B	Inaccessible Area	10/14/04	13:58:08	1.000	1.00
10	Smear 10	10/14/04	13:56:48	Admin-1-B	Inaccessible Area	10/14/04	13:56:48	1.000	1.00
11	Smear 11	10/14/04	13:55:28	Admin-1-B	Inaccessible Area	10/14/04	13:55:28	1.000	1.00
12	Smear 12	10/14/04	13:54:07	Admin-1-B	Inaccessible Area	10/14/04	13:54:07	1.000	1.00
13	Smear 13	10/14/04	13:52:47	Admin-1-B	Inaccessible Area	10/14/04	13:52:47	1.000	1.00
14	Smear 14	10/14/04	13:51:27	Admin-1-B	Inaccessible Area	10/14/04	13:51:27	1.000	1.00
15	Smear 15	10/14/04	13:50:07	Admin-1-B	Inaccessible Area	10/14/04	13:50:07	1.000	1.00
16	Smear 16	10/14/04	13:48:46	Admin-1-B	Inaccessible Area	10/14/04	13:48:46	1.000	1.00
17	Smear 17	10/14/04	13:47:26	Admin-1-B	Inaccessible Area	10/14/04	13:47:26	1.000	1.00
18	Smear 18	10/14/04	13:46:06	Admin-1-B	Inaccessible Area	10/14/04	13:46:06	1.000	1.00
19	Smear 19	10/14/04	13:44:45	Admin-1-B	Inaccessible Area	10/14/04	13:44:45	1.000	1.00
20	Smear 20	10/14/04	13:43:25	Admin-1-B	Inaccessible Area	10/14/04	13:43:25	1.000	1.00
21	Smear 21	10/14/04	13:42:05	Admin-1-B	Inaccessible Area	10/14/04	13:42:05	1.000	1.00
22	Smear 22	10/14/04	13:40:45	Admin-1-B	Inaccessible Area	10/14/04	13:40:45	1.000	1.00
23	Smear 23	10/14/04	13:39:24	Admin-1-B	Inaccessible Area	10/14/04	13:39:24	1.000	1.00
24	Smear 24	10/14/04	13:38:04	Admin-1-B	Inaccessible Area	10/14/04	13:38:04	1.000	1.00
25	Smear 25	10/14/04	13:36:44	Admin-1-B	Inaccessible Area	10/14/04	13:36:44	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-14-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.17 cpm %Eff: 26.94 LLD: 15.13 dpm				Bkg: 0.63 cpm %Eff: 44.67 LLD: 12.03 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/14/04	14:08:52	0.00	-0.17	-0.62	15.13	2.00	1.37	3.06	12.03
2	Smear 2	10/14/04	14:07:31	0.00	-0.17	-0.62	15.13	2.00	1.37	3.06	12.03
3	Smear 3	10/14/04	14:06:11	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
4	Smear 4	10/14/04	14:04:50	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
5	Smear 5	10/14/04	14:03:30	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
6	Smear 6	10/14/04	14:02:10	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
7	Smear 7	10/14/04	14:00:49	0.00	-0.17	-0.62	15.13	3.00	2.37	5.30	12.03
8	Smear 8	10/14/04	13:59:29	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
9	Smear 9	10/14/04	13:58:08	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
10	Smear 10	10/14/04	13:56:48	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
11	Smear 11	10/14/04	13:55:28	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
12	Smear 12	10/14/04	13:54:07	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
13	Smear 13	10/14/04	13:52:47	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
14	Smear 14	10/14/04	13:51:27	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
15	Smear 15	10/14/04	13:50:07	0.00	-0.17	-0.62	15.13	3.00	2.37	5.30	12.03
16	Smear 16	10/14/04	13:48:46	0.00	-0.17	-0.62	15.13	2.00	1.37	3.06	12.03
17	Smear 17	10/14/04	13:47:26	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
18	Smear 18	10/14/04	13:46:06	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
19	Smear 19	10/14/04	13:44:45	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
20	Smear 20	10/14/04	13:43:25	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
21	Smear 21	10/14/04	13:42:05	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
22	Smear 22	10/14/04	13:40:45	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
23	Smear 23	10/14/04	13:39:24	0.00	-0.17	-0.62	15.13	6.00	5.37	12.01	12.03
24	Smear 24	10/14/04	13:38:04	1.00	0.83	3.09	15.13	1.00	0.37	0.82	12.03
25	Smear 25	10/14/04	13:36:44	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11/14/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Author: Tom Malachina  
Print  
Reviewer: Joe Trowbridge  
Print

*[Signature]*  
Sign  
*[Signature]*  
Sign

10/18/2004

Date

10/18/2004

Date

## Survey Meters

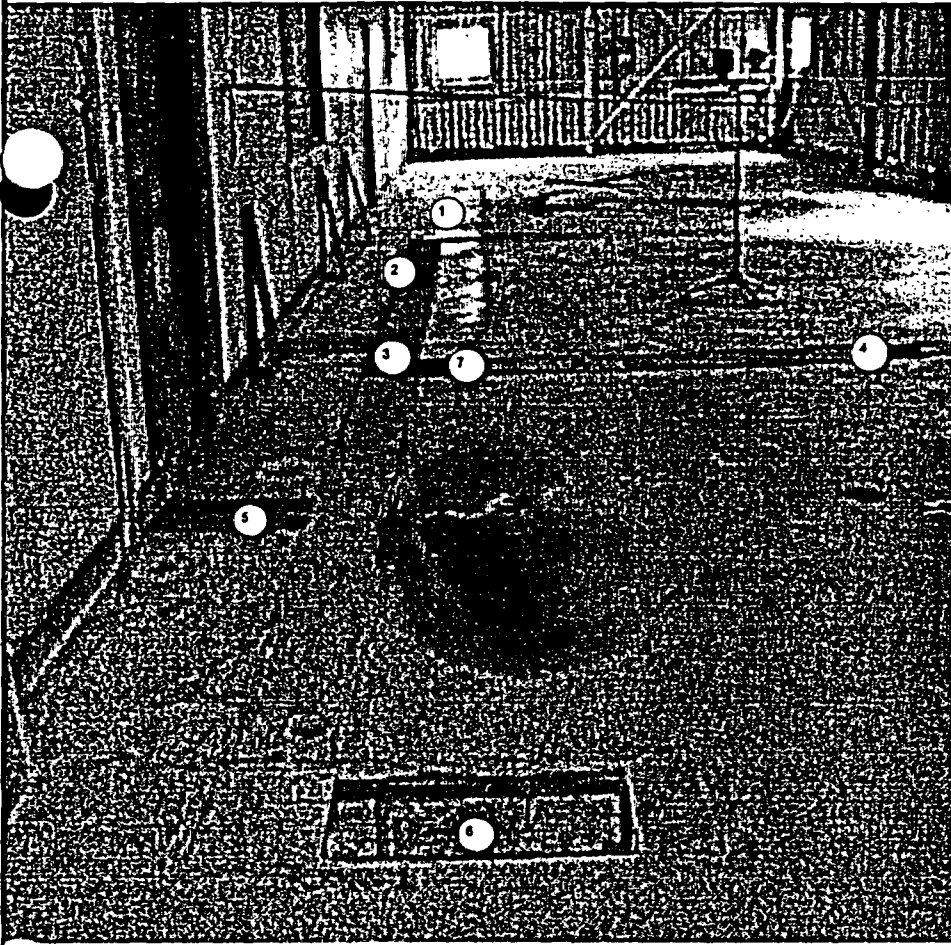
Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 27%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 44%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.6 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta, \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Admin Area Trench

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA
7	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff)  $\times$   $\frac{\text{probe area}}{100\text{cm}^2}$

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/18/04	12:43:11	Admin Area Trench	Final Status Survey	10/18/04	12:43:11	1.000	1.00
2	Smear 2	10/18/04	12:41:51	Admin Area Trench	Final Status Survey	10/18/04	12:41:51	1.000	1.00
3	Smear 3	10/18/04	12:40:31	Admin Area Trench	Final Status Survey	10/18/04	12:40:31	1.000	1.00
4	Smear 4	10/18/04	12:39:10	Admin Area Trench	Final Status Survey	10/18/04	12:39:10	1.000	1.00
5	Smear 5	10/18/04	12:37:50	Admin Area Trench	Final Status Survey	10/18/04	12:37:50	1.000	1.00
6	Smear 6	10/18/04	12:36:30	Admin Area Trench	Final Status Survey	10/18/04	12:36:30	1.000	1.00
7	Smear 7	10/18/04	12:35:10	Admin Area Trench	Final Status Survey	10/18/04	12:35:10	1.000	1.00

Technician (print): Rob Ellison

Technician (sign):

*Rob Ellison*

Date: 10-18-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 26.76 LLD: 13.36 dpm				Bkg: 0.63 cpm %Eff: 44.66 LLD: 12.06 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/18/04	12:43:11	0.00	-0.07	-0.25	13.36	0.00	-0.63	-1.42	12.05
2	Smear 2	10/18/04	12:41:51	0.00	-0.07	-0.25	13.36	0.00	-0.63	-1.42	12.05
3	Smear 3	10/18/04	12:40:31	0.00	-0.07	-0.25	13.36	4.00	3.37	7.55	12.05
4	Smear 4	10/18/04	12:39:10	1.00	0.93	3.49	13.36	0.00	-0.63	-1.42	12.05
5	Smear 5	10/18/04	12:37:50	0.00	-0.07	-0.25	13.36	0.00	-0.63	-1.42	12.05
6	Smear 6	10/18/04	12:36:30	0.00	-0.07	-0.25	13.36	2.00	1.37	3.07	12.05
7	Smear 7	10/18/04	12:35:10	0.00	-0.07	-0.25	13.36	3.00	2.37	5.31	12.05

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-18-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

SCIENTECH Inc.

82A8008 ATTACHMENT A

Survey No. 4668

Survey Cover Sheet

Surveyor: Leroy Cuneo  
Print  
Reviewer: Joe Trowbridge  
Print

[Signature]  
Sign  
[Signature]  
Sign

12/9/2004  
Date  
12/9/2004  
Date

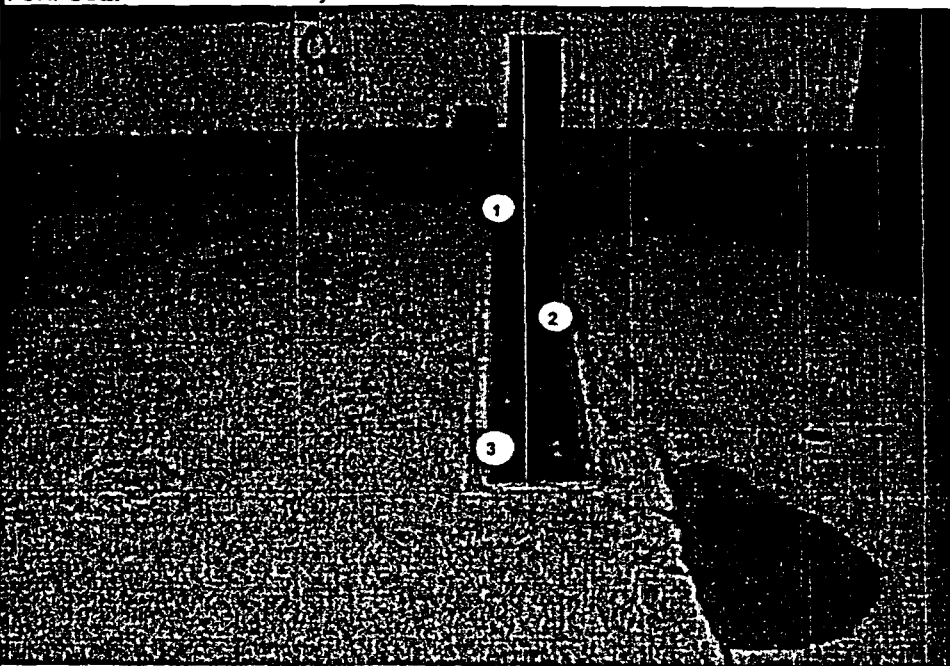
Survey Meters

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 24%  
Type  $\alpha, \beta \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG .07 cpm  
MDA 15 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 45%  
Type  $\alpha, \beta \gamma$   $\beta \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.5 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # 2221  
Meter / Probe Serial # 176953/182603  
Cal Due 9/15/2005  
Efficiency 22%  
Type  $\alpha, \beta \gamma$   $\beta \gamma$   
Sample Time 3 min.  
Background Time 10 min.  
BKG 60 cpm  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: ADMIN-1-B Trench  
PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA

Direct Frisk:  
Point 1 - 78 cpm  
Point 2 - 74 cpm  
Point 3 - 73 cpm

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff. X 100cm<sup>2</sup>)

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate

$T_b$  = background counting time

$T_s$  = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
20	Smear 1	12/09/04	14:28:38	ADMIN-1-B Trench	Final Status Survey	12/09/04	14:28:38	1.000	1.00
21	Smear 2	12/09/04	14:27:18	ADMIN-1-B Trench	Final Status Survey	12/09/04	14:27:18	1.000	1.00
22	Smear 3	12/09/04	14:25:58	ADMIN-1-B Trench	Final Status Survey	12/09/04	14:25:58	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date:

12-09-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 23.81 LLD: 16.01 dpm				Bkg: 0.6 cpm %Eff: 44.83 LLD: 11.37 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
20	Smear 1	12/09/04	14:28:38	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
21	Smear 2	12/09/04	14:27:18	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
22	Smear 3	12/09/04	14:25:58	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date:

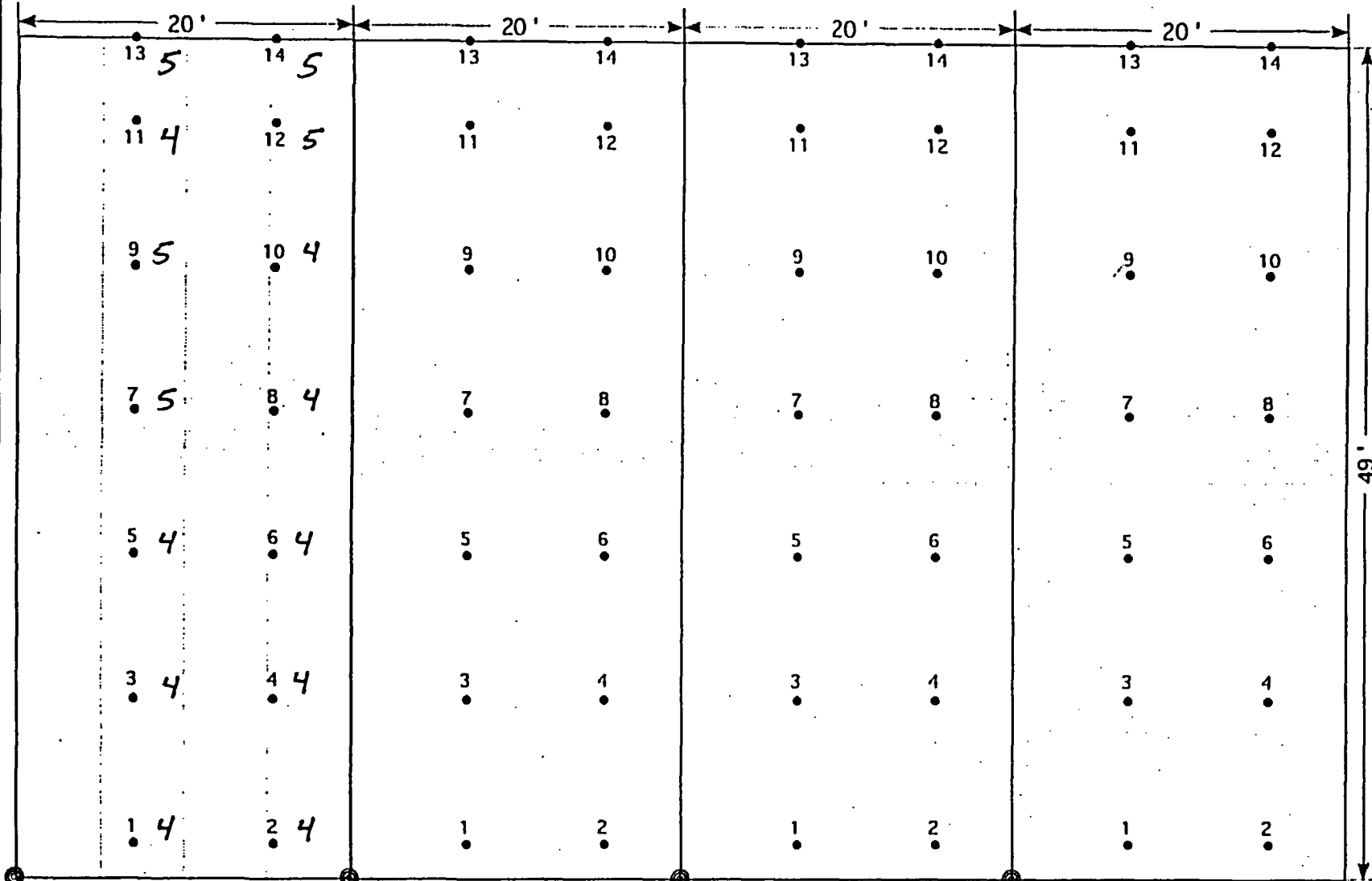
12-09-04

**Admin-1-C Administration Area**





• SURVEY POINTS  
◎ STARTING LOCATION



ADMIN-1-C

ADMIN-1-D

ADMIN-1-E

ADMIN-1-F

Start 1410 hrs. 10-11-04  
stop 1645 hrs 10-11-04

Note: All close rates in micro-R/Hr

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
KARTHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area Floor (2 of 3)

SCIENTECH  
SCIENTECH, Inc.  
140 WEST STREET  
NEW MILFORD, CT 06456

PROJECT NO:  
23529-0201

FILE NAME:

SCALE: N.T.S. DATE: 06/29/2004

BY: CK:

FIGURE:  
ADMIN-1-C, D, E, F

# ADMIN-1-C

Log #
4 Source
5
6
7
8
9
10
11
12
13
14
15
16
17
18

	X	Y
	n/a	n/a
1	7.0	2.0
2	15.4	2.0
3	7.0	10.4
4	15.4	10.4
5	7.0	18.8
6	15.4	18.8
7	7.0	27.2
8	15.4	27.2
9	7.0	35.6
10	15.4	35.6
11	7.0	44.0
12	15.4	44.0
13	7.0	49
14	15.4	49

L (ft)= 8.4

A (ft²)= 980

Fixed Points	Ave. (Scan)	Max. (Scan)
1615	n/a	n/a
185	220	280
177	200	260
172	200	300
157	220	340
198	240	280
149	220	280
191	220	320
178	240	280
165	240	400
178	200	340
197	220	320
156	220	600
200	220	280
200	200	260

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

D 10/11/2004  
T 4:59:53 PM

Header 1: Tom Malachina  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-C  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/11/2004  
Model 2360 Time: 17:03:11  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

C - Time - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	10/11/04	07:31:34	000000	000224	S 001.0	Lab Background
0002	10/11/04	07:33:59	000000	033862	S 001.0	Lab Source
0003	10/11/04	14:20:16	000000	000148	S 001.0	Field Background
0004	10/11/04	14:22:31	000000	001615	S 001.0	Field Source
0005	10/11/04	14:25:02	000000	000185	S 001.0	Admin-1-C
0006	10/11/04	14:27:14	000000	000177	S 001.0	Admin-1-C
0007	10/11/04	14:28:37	000001	000172	S 001.0	Admin-1-C
0008	10/11/04	14:33:01	000002	000157	S 001.0	Admin-1-C
0009	10/11/04	14:39:43	000003	000198	S 001.0	Admin-1-C
0010	10/11/04	15:10:15	000001	000149	S 001.0	Admin-1-C
0011	10/11/04	15:12:02	000000	000191	S 001.0	Admin-1-C
0012	10/11/04	15:13:51	000001	000178	S 001.0	Admin-1-C
0013	10/11/04	15:15:45	000003	000165	S 001.0	Admin-1-C
0014	10/11/04	15:17:08	000000	000178	S 001.0	Admin-1-C
0015	10/11/04	15:20:23	000003	000197	S 001.0	Admin-1-C
0016	10/11/04	15:26:51	000001	000156	S 001.0	Admin-1-C
0017	10/11/04	15:28:15	000002	000200	S 001.0	Admin-1-C
0018	10/11/04	15:30:21	000001	000200	S 001.0	Admin-1-C
0019	10/11/04	16:41:13	000000	000137	S 001.0	Field Background
0020	10/11/04	16:42:51	000005	001700	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/11/04	17:34:49	Admin-1-C	Final Status Survey	10/11/04	17:34:49	1.000	1.00
2	Smear 2	10/11/04	17:33:29	Admin-1-C	Final Status Survey	10/11/04	17:33:29	1.000	1.00
3	Smear 3	10/11/04	17:32:08	Admin-1-C	Final Status Survey	10/11/04	17:32:08	1.000	1.00
4	Smear 4	10/11/04	17:30:47	Admin-1-C	Final Status Survey	10/11/04	17:30:47	1.000	1.00
5	Smear 5	10/11/04	17:29:27	Admin-1-C	Final Status Survey	10/11/04	17:29:27	1.000	1.00
6	Smear 6	10/11/04	17:28:08	Admin-1-C	Final Status Survey	10/11/04	17:28:08	1.000	1.00
7	Smear 7	10/11/04	17:26:48	Admin-1-C	Final Status Survey	10/11/04	17:26:48	1.000	1.00
8	Smear 8	10/11/04	17:25:25	Admin-1-C	Final Status Survey	10/11/04	17:25:25	1.000	1.00
9	Smear 9	10/11/04	17:24:05	Admin-1-C	Final Status Survey	10/11/04	17:24:05	1.000	1.00
10	Smear 10	10/11/04	17:22:45	Admin-1-C	Final Status Survey	10/11/04	17:22:45	1.000	1.00
11	Smear 11	10/11/04	17:21:24	Admin-1-C	Final Status Survey	10/11/04	17:21:24	1.000	1.00
12	Smear 12	10/11/04	17:20:03	Admin-1-C	Final Status Survey	10/11/04	17:20:03	1.000	1.00
13	Smear 13	10/11/04	17:18:43	Admin-1-C	Final Status Survey	10/11/04	17:18:43	1.000	1.00
14	Smear 14	10/11/04	17:17:22	Admin-1-C	Final Status Survey	10/11/04	17:17:22	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11/1/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %EF: 27.06 LLD: 12.27 dpm				Bkg: 0.7 cpm %EF: 44.48 LLD: 12.38 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/11/04	17:34:49	0.00	-0.03	-0.12	12.27	4.00	3.30	7.42	12.38
2	Smear 2	10/11/04	17:33:29	0.00	-0.03	-0.12	12.27	8.00	7.30	16.41	12.38
3	Smear 3	10/11/04	17:32:08	0.00	-0.03	-0.12	12.27	1.00	0.30	0.67	12.38
4	Smear 4	10/11/04	17:30:47	0.00	-0.03	-0.12	12.27	3.00	2.30	5.17	12.38
5	Smear 5	10/11/04	17:29:27	0.00	-0.03	-0.12	12.27	1.00	0.30	0.67	12.38
6	Smear 6	10/11/04	17:28:06	0.00	-0.03	-0.12	12.27	2.00	1.30	2.92	12.38
7	Smear 7	10/11/04	17:26:46	0.00	-0.03	-0.12	12.27	0.00	-0.70	-1.57	12.38
8	Smear 8	10/11/04	17:25:25	0.00	-0.03	-0.12	12.27	1.00	0.30	0.67	12.38
9	Smear 9	10/11/04	17:24:05	0.00	-0.03	-0.12	12.27	0.00	-0.70	-1.57	12.38
10	Smear 10	10/11/04	17:22:45	0.00	-0.03	-0.12	12.27	1.00	0.30	0.67	12.38
11	Smear 11	10/11/04	17:21:24	0.00	-0.03	-0.12	12.27	0.00	-0.70	-1.57	12.38
12	Smear 12	10/11/04	17:20:03	0.00	-0.03	-0.12	12.27	2.00	1.30	2.92	12.38
13	Smear 13	10/11/04	17:18:43	0.00	-0.03	-0.12	12.27	0.00	-0.70	-1.57	12.38
14	Smear 14	10/11/04	17:17:22	0.00	-0.03	-0.12	12.27	0.00	-0.70	-1.57	12.38

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-11-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

## Survey Cover Sheet

Surveyor: Tom Malachina  
 Print  
 Reviewer: Joe Trowbridge  
 Print

*Tom Malachina*  
 Sign  
*Joe Trowbridge*  
 Sign

10/18/2004  
 Date  
10/18/2004  
 Date

## Survey Meters

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.6 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta, \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin-1-C Inaccessible Areas

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA
9	<MDA	<MDA
10	<MDA	<MDA
11	<MDA	<MDA
12	<MDA	<MDA
13	<MDA	<MDA
14	<MDA	<MDA
15	<MDA	<MDA
16	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff.  $\times \frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate

Tb = background counting time

Ts = sample count time

AI = action level

Sponsor: Tom Malachina  
Print  
Reviewer: Joe Trowbridge  
Print

*Joe Trowbridge*  
Sign  
\_\_\_\_\_  
Sign

10/18/2004  
Date  
10/18/2004  
Date

## Survey Meters

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 27%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 44%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.6 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta, \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Admin-1-C Inaccessible Areas

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA
9	<MDA	<MDA
10	<MDA	<MDA
11	<MDA	<MDA
12	<MDA	<MDA
13	<MDA	<MDA
14	<MDA	<MDA
15	<MDA	<MDA
16	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff. X  $\frac{100\text{cm}^2}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline})(\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate  
 $T_b$  = background counting time  
 $T_s$  = sample count time  
 $AI$  = action level

## Survey Cover Sheet

Surveyor: Tom Malachina  
 Print  
 Reviewer: Joe Trowbridge  
 Print

*Tom Malachina*  
 Sign  
 \_\_\_\_\_  
 Sign

10/18/2004  
 Date  
10/18/2004  
 Date

## Survey Meters

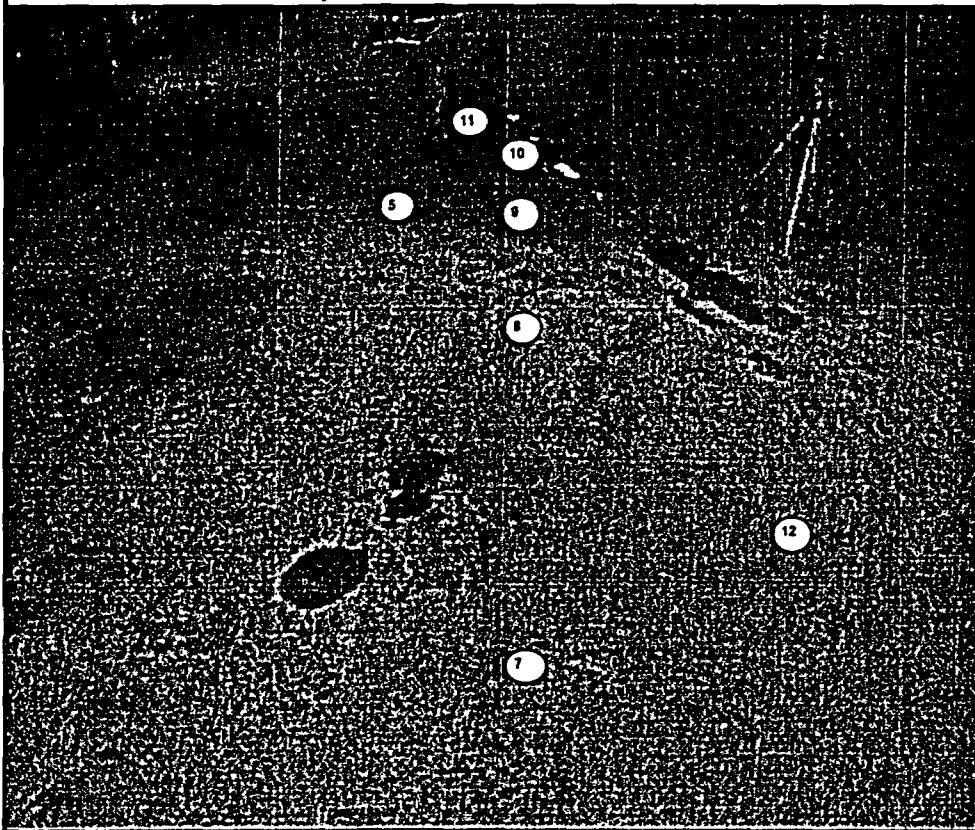
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.6 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta, \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin-1-C Inaccessible Areas

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA
9	<MDA	<MDA
10	<MDA	<MDA
11	<MDA	<MDA
12	<MDA	<MDA
13	<MDA	<MDA
14	<MDA	<MDA
15	<MDA	<MDA
16	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff. X 100cm<sup>2</sup>)

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm / 100cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate

Tb = background counting time

Ts = sample count time

AI = action level



Surveyor: Tom Malachina  
Print

Reviewer: Joe Trowbridge  
Print

*Joe M*  
Sign

\_\_\_\_\_  
Sign

10/18/2004  
Date

10/18/2004  
Date

## Survey Meters

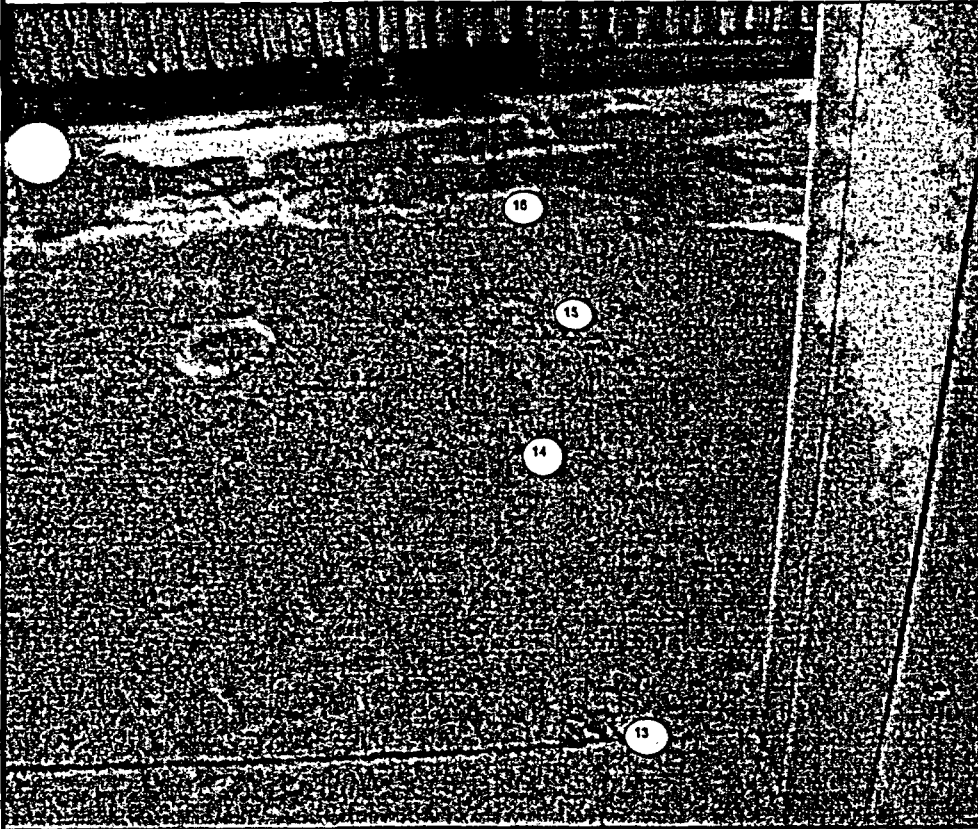
Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 27%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 44%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.6 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta, \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Admin-1-C Inaccessible Areas

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA
9	<MDA	<MDA
10	<MDA	<MDA
11	<MDA	<MDA
12	<MDA	<MDA
13	<MDA	<MDA
14	<MDA	<MDA
15	<MDA	<MDA
16	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff. X  $\frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate  
 $T_b$  = background counting time  
 $T_s$  = sample count time  
 $AI$  = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/14/04	15:16:53	Admin-1-C	Inaccessible Area	10/14/04	15:16:53	1.000	1.00
2	Smear 2	10/14/04	15:15:33	Admin-1-C	Inaccessible Area	10/14/04	15:15:33	1.000	1.00
3	Smear 3	10/14/04	15:14:13	Admin-1-C	Inaccessible Area	10/14/04	15:14:13	1.000	1.00
4	Smear 4	10/14/04	15:12:52	Admin-1-C	Inaccessible Area	10/14/04	15:12:52	1.000	1.00
5	Smear 5	10/14/04	15:11:32	Admin-1-C	Inaccessible Area	10/14/04	15:11:32	1.000	1.00
6	Smear 6	10/14/04	15:10:12	Admin-1-C	Inaccessible Area	10/14/04	15:10:12	1.000	1.00
7	Smear 7	10/14/04	15:08:52	Admin-1-C	Inaccessible Area	10/14/04	15:08:52	1.000	1.00
8	Smear 8	10/14/04	15:07:32	Admin-1-C	Inaccessible Area	10/14/04	15:07:32	1.000	1.00
9	Smear 9	10/14/04	15:06:12	Admin-1-C	Inaccessible Area	10/14/04	15:06:12	1.000	1.00
10	Smear 10	10/14/04	15:04:52	Admin-1-C	Inaccessible Area	10/14/04	15:04:52	1.000	1.00
11	Smear 11	10/14/04	15:03:31	Admin-1-C	Inaccessible Area	10/14/04	15:03:31	1.000	1.00
12	Smear 12	10/14/04	15:02:11	Admin-1-C	Inaccessible Area	10/14/04	15:02:11	1.000	1.00
13	Smear 13	10/14/04	15:00:51	Admin-1-C	Inaccessible Area	10/14/04	15:00:51	1.000	1.00
14	Smear 14	10/14/04	14:59:31	Admin-1-C	Inaccessible Area	10/14/04	14:59:31	1.000	1.00
15	Smear 15	10/14/04	14:58:11	Admin-1-C	Inaccessible Area	10/14/04	14:58:11	1.000	1.00
16	Smear 16	10/14/04	14:56:51	Admin-1-C	Inaccessible Area	10/14/04	14:56:51	1.000	1.00

Technician (print): Rob Ellison

Technician (sign):

Date:

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.17 cpm %ER: 26.94 LLD: 15.13 dpm				Bkg: 0.63 cpm %ER: 44.67 LLD: 12.03 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1 Smear 1		10/14/04	15:16:53	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
2 Smear 2		10/14/04	15:15:33	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
3 Smear 3		10/14/04	15:14:13	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
4 Smear 4		10/14/04	15:12:52	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
5 Smear 5		10/14/04	15:11:32	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
6 Smear 6		10/14/04	15:10:12	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
7 Smear 7		10/14/04	15:08:52	0.00	-0.17	-0.62	15.13	5.00	4.37	9.78	12.03
8 Smear 8		10/14/04	15:07:32	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
9 Smear 9		10/14/04	15:06:12	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
10 Smear 10		10/14/04	15:04:52	0.00	-0.17	-0.62	15.13	4.00	3.37	7.54	12.03
11 Smear 11		10/14/04	15:03:31	0.00	-0.17	-0.62	15.13	1.00	0.37	0.82	12.03
12 Smear 12		10/14/04	15:02:11	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
13 Smear 13		10/14/04	15:00:51	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
14 Smear 14		10/14/04	14:59:31	1.00	0.83	3.09	15.13	0.00	-0.63	-1.42	12.03
15 Smear 15		10/14/04	14:58:11	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03
16 Smear 16		10/14/04	14:56:51	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03

Technician (print): Rob Ellison

Technician (sign):

Date:

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

## Survey Cover Sheet

Surveyor: Leroy Cuneo  
 Print  
 Reviewer: Joe Trowbridge  
 Print

Leroy Cuneo  
 Sign  
Joe Trowbridge  
 Sign

12/9/2004  
 Date  
12/9/2004  
 Date

## Survey Meters

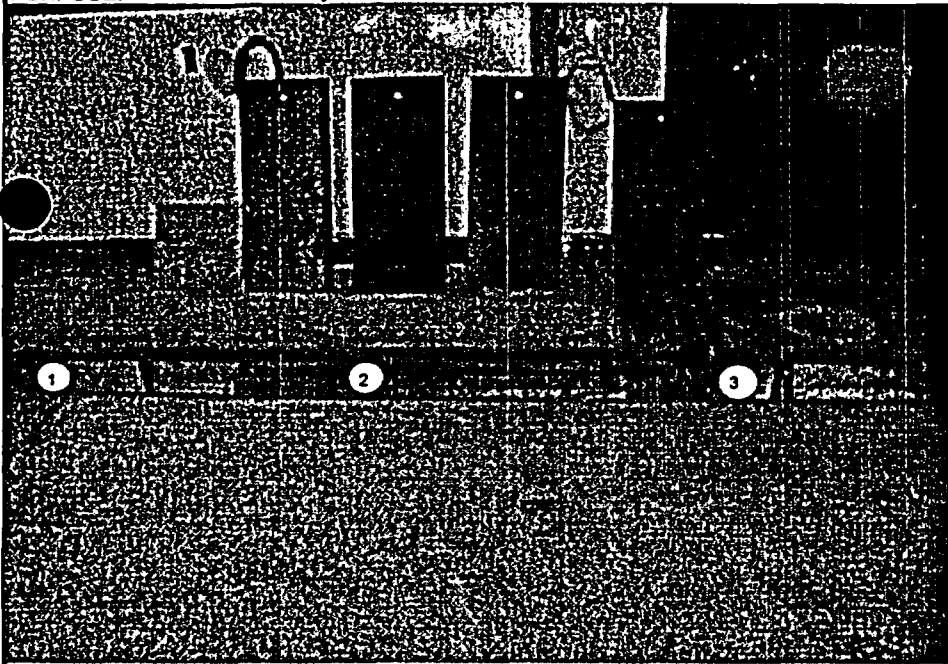
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 24%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG .07 cpm  
 MDA 15 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 45%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.5 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # 2221  
 Meter / Probe Serial # 176953/182603  
 Cal Due 9/15/2005  
 Efficiency 22%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 3 min.  
 Background Time 10 min.  
 BKG 60 cpm  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: ADMIN-1-C Trench

PURPOSE: Final Status Survey



## Direct Frisk:

Point 1 - 64 cpm  
 Point 2 - 77 cpm  
 Point 3 - 60 cpm

Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff.  $\times \frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
23	Smear 1	12/09/04	14:46:53	ADMIN-1-C Trench	Final Status Survey	12/09/04	14:46:53	1.000	1.00
24	Smear 2	12/09/04	14:45:33	ADMIN-1-C Trench	Final Status Survey	12/09/04	14:45:33	1.000	1.00
25	Smear 3	12/09/04	14:44:13	ADMIN-1-C Trench	Final Status Survey	12/09/04	14:44:13	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 12-09-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 23.81 LLD: 16.01 dpm				Bkg: 0.6 cpm %Eff: 44.63 LLD: 11.37 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
23	Smear 1	12/09/04	14:46:53	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
24	Smear 2	12/09/04	14:45:33	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
25	Smear 3	12/09/04	14:44:13	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

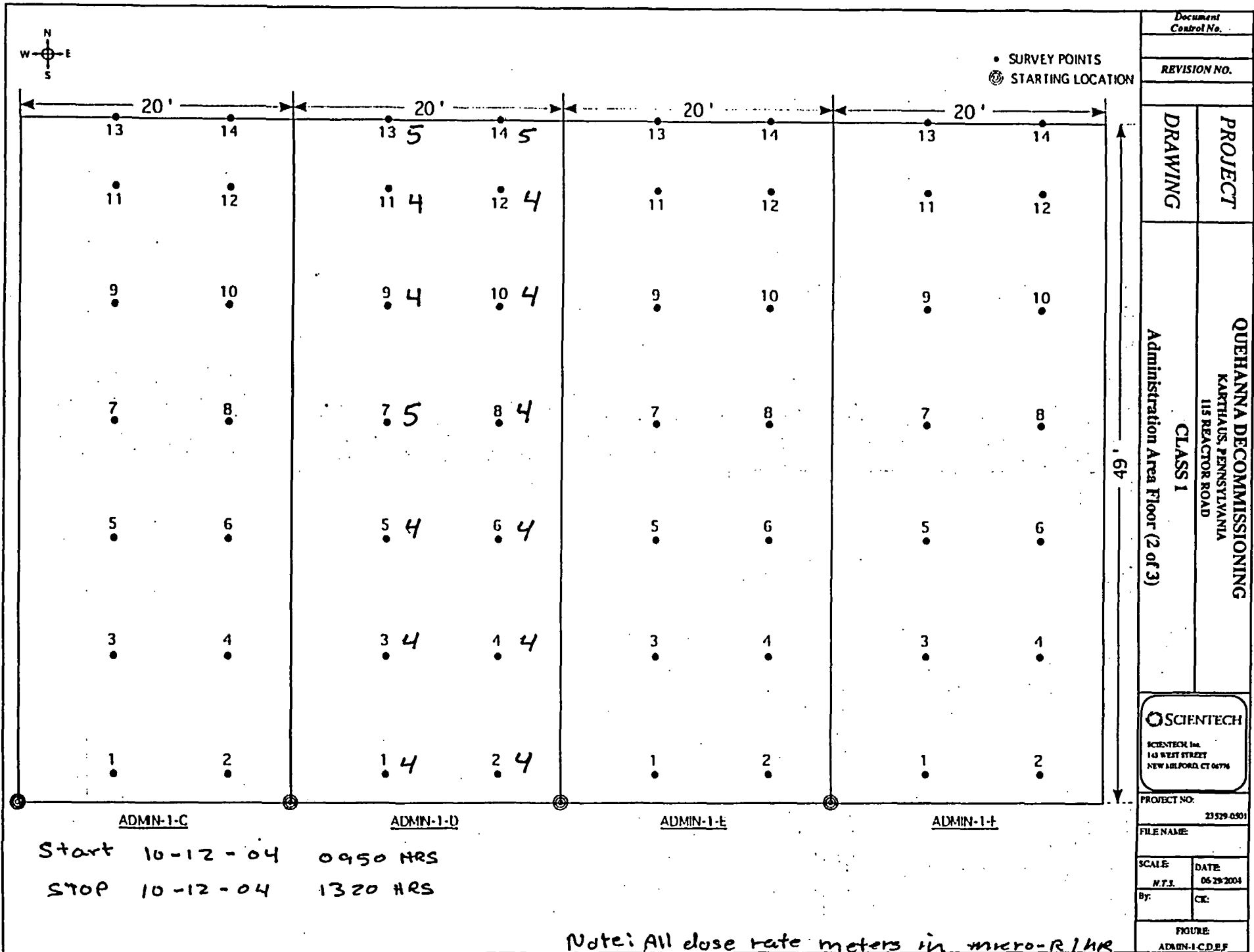
Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 12-09-04

**Admin-1-D Administration Area**





# ADMIN-1-D

Log #
4 Source
5
6
7
8
9
10
11
12
13
14
15
16
17
18

	X	Y
	n/a	n/a
1	7.0	2.0
2	15.4	2.0
3	7.0	10.4
4	15.4	10.4
5	7.0	18.8
6	15.4	18.8
7	7.0	27.2
8	15.4	27.2
9	7.0	35.6
10	15.4	35.6
11	7.0	44.0
12	15.4	44.0
13	7.0	49
14	15.4	49

L (ft)= 8.4

A (ft²)= 980

Fixed Points	Ave. (Scan)	Max. (Scan)
1666	n/a	n/a
186	200	260
174	240	800
166	220	320
197	200	320
182	200	280
184	200	600
170	220	360
177	200	320
199	220	300
226	220	280
177	220	280
220	200	260
184	200	280
184	200	300

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 10/12/2004  
Time: 13:32:17 PM

Header 1: Tom Malachina  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-D  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/12/2004  
Model 2360 Time: 13:29:39  
Sample Number: 0020

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

C - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	10/12/04	09:43:24	000000	000184	S 001.0	Lab Background
0002	10/12/04	09:46:03	000000	033437	S 001.0	Lab Source
0003	10/12/04	09:57:32	000001	000188	S 001.0	Field Background
0004	10/12/04	09:59:27	000002	001666	S 001.0	Field Source
0005	10/12/04	10:03:01	000001	000186	S 001.0	Admin-1-D
0006	10/12/04	10:04:39	000000	000174	S 001.0	Admin-1-D
0007	10/12/04	10:06:07	000000	000166	S 001.0	Admin-1-D
0008	10/12/04	10:07:37	000000	000197	S 001.0	Admin-1-D
0009	10/12/04	10:09:12	000003	000182	S 001.0	Admin-1-D
0010	10/12/04	10:10:51	000002	000184	S 001.0	Admin-1-D
0011	10/12/04	10:12:37	000000	000170	S 001.0	Admin-1-D
0012	10/12/04	10:14:29	000004	000177	S 001.0	Admin-1-D
0013	10/12/04	10:16:02	000000	000199	S 001.0	Admin-1-D
0014	10/12/04	10:17:33	000000	000226	S 001.0	Admin-1-D
0015	10/12/04	10:19:31	000000	000177	S 001.0	Admin-1-D
0016	10/12/04	10:20:54	000001	000220	S 001.0	Admin-1-D
0017	10/12/04	10:22:41	000002	000184	S 001.0	Admin-1-D
0018	10/12/04	10:24:26	000001	000184	S 001.0	Admin-1-D
0019	10/12/04	13:26:38	000001	035935	S 001.0	Lab Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/12/04	13:44:26	Admin-1-D	Final Status Survey	10/12/04	13:44:26	1.000	1.00
2	Smear 2	10/12/04	13:43:05	Admin-1-D	Final Status Survey	10/12/04	13:43:05	1.000	1.00
3	Smear 3	10/12/04	13:41:45	Admin-1-D	Final Status Survey	10/12/04	13:41:45	1.000	1.00
4	Smear 4	10/12/04	13:40:24	Admin-1-D	Final Status Survey	10/12/04	13:40:24	1.000	1.00
5	Smear 5	10/12/04	13:39:04	Admin-1-D	Final Status Survey	10/12/04	13:39:04	1.000	1.00
6	Smear 6	10/12/04	13:37:43	Admin-1-D	Final Status Survey	10/12/04	13:37:43	1.000	1.00
7	Smear 7	10/12/04	13:36:23	Admin-1-D	Final Status Survey	10/12/04	13:36:23	1.000	1.00
8	Smear 8	10/12/04	13:35:03	Admin-1-D	Final Status Survey	10/12/04	13:35:03	1.000	1.00
9	Smear 9	10/12/04	13:33:42	Admin-1-D	Final Status Survey	10/12/04	13:33:42	1.000	1.00
10	Smear 10	10/12/04	13:32:22	Admin-1-D	Final Status Survey	10/12/04	13:32:22	1.000	1.00
11	Smear 11	10/12/04	13:31:02	Admin-1-D	Final Status Survey	10/12/04	13:31:02	1.000	1.00
12	Smear 12	10/12/04	13:29:42	Admin-1-D	Final Status Survey	10/12/04	13:29:42	1.000	1.00
13	Smear 13	10/12/04	13:28:21	Admin-1-D	Final Status Survey	10/12/04	13:28:21	1.000	1.00
14	Smear 14	10/12/04	13:27:01	Admin-1-D	Final Status Survey	10/12/04	13:27:01	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-2-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 28.77 LLD: 10.12 dpm				Bkg: 0.6 cpm %Eff: 44.4 LLD: 11.94 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/12/04	13:44:26	0.00	0.00	0.00	10.12	5.00	4.40	9.91	11.94
2	Smear 2	10/12/04	13:43:05	0.00	0.00	0.00	10.12	9.00	8.40	18.92	11.94
3	Smear 3	10/12/04	13:41:45	0.00	0.00	0.00	10.12	2.00	1.40	3.15	11.94
4	Smear 4	10/12/04	13:40:24	0.00	0.00	0.00	10.12	5.00	4.40	9.91	11.94
5	Smear 5	10/12/04	13:39:04	0.00	0.00	0.00	10.12	6.00	5.40	12.16	11.94
6	Smear 6	10/12/04	13:37:43	0.00	0.00	0.00	10.12	10.00	9.40	21.17	11.94
7	Smear 7	10/12/04	13:36:23	0.00	0.00	0.00	10.12	1.00	0.40	0.90	11.94
8	Smear 8	10/12/04	13:35:03	0.00	0.00	0.00	10.12	10.00	9.40	21.17	11.94
9	Smear 9	10/12/04	13:33:42	0.00	0.00	0.00	10.12	2.00	1.40	3.15	11.94
10	Smear 10	10/12/04	13:32:22	0.00	0.00	0.00	10.12	5.00	4.40	9.91	11.94
11	Smear 11	10/12/04	13:31:02	1.00	1.00	3.74	10.12	1.00	0.40	0.90	11.94
12	Smear 12	10/12/04	13:29:42	0.00	0.00	0.00	10.12	4.00	3.40	7.66	11.94
13	Smear 13	10/12/04	13:28:21	0.00	0.00	0.00	10.12	3.00	2.40	5.41	11.94
14	Smear 14	10/12/04	13:27:01	0.00	0.00	0.00	10.12	3.00	2.40	5.41	11.94

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-12-04

Reviewed By (print): Joe Trowbridge

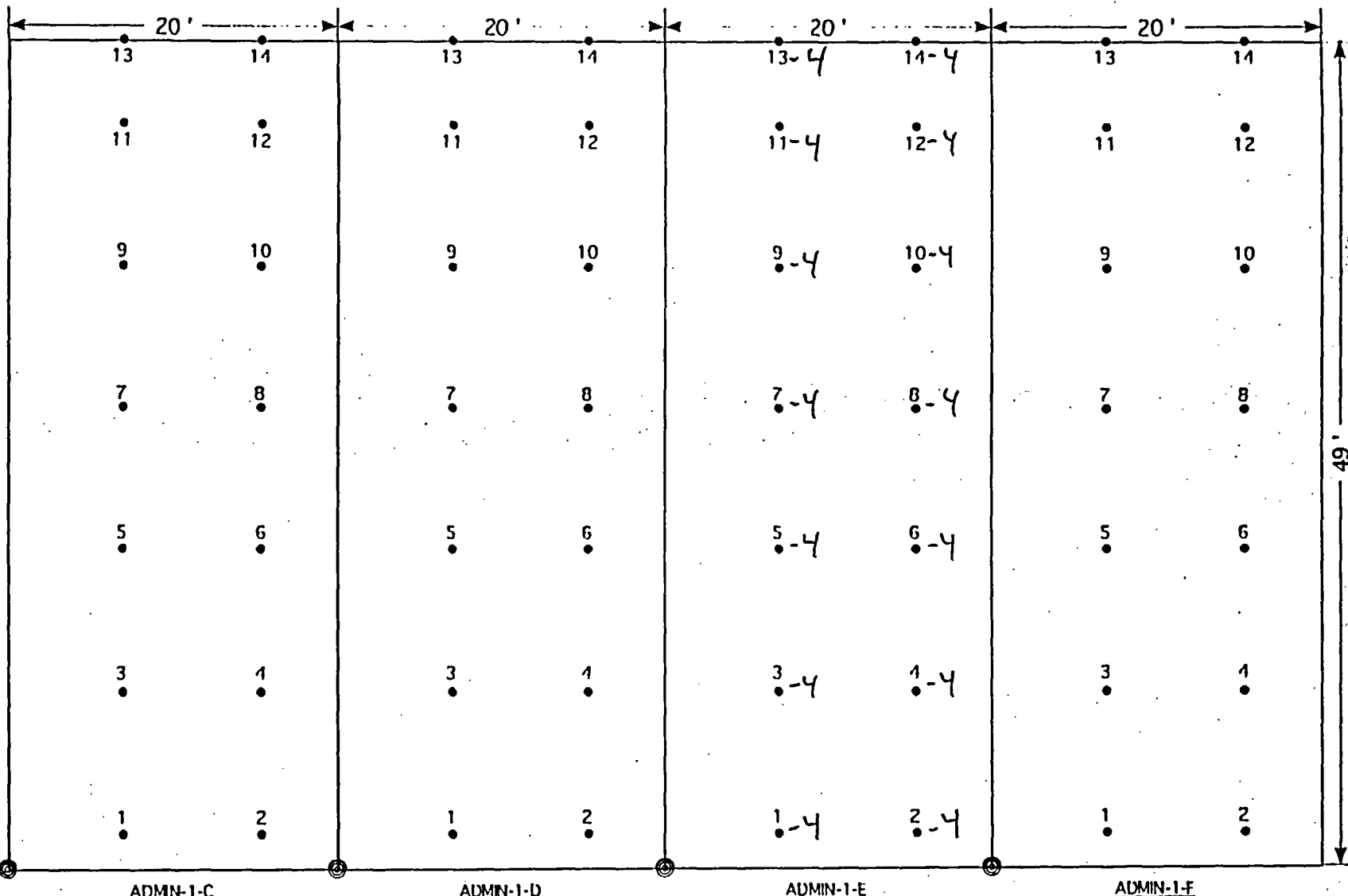
Reviewed By (sign):

Date:

**Admin-1-E Administration Area**



• SURVEY POINTS  
◎ STARTING LOCATION



ALL Readings in micro-R  
10-13-04  
START-0930  
SDP-1610

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area Floor (2 of 3)

SCIENTECH

SCIENTECH, Inc.  
140 WEST STREET  
NEW MILFORD, CT 06456

PROJECT NO:  
23529-0501

FILE NAME:

SCALE: N.T.S. DATE: 06/29/2004

BY: CR:

FIGURE:  
ADMIN-1-CDEF

# ADMIN-I-E

Log # 3-135
4-1679 Source
5
6
7
8
9
10
11
12
13
14
15
16
17
18

	X	Y
	n/a	n/a
1	7.0	2.0
2	15.4	2.0
3	7.0	10.4
4	15.4	10.4
5	7.0	18.8
6	15.4	18.8
7	7.0	27.2
8	15.4	27.2
9	7.0	35.6
10	15.4	35.6
11	7.0	44.0
12	15.4	44.0
13	7.0	49
14	15.4	49

L (ft)= 8.4

A (ft²)= 980

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
192	320	400
192	300	420
202	260	360
234	240	300
168	220	280
218	220	340
194	200	280
182	240	300
208	220	300
207	260	360
195	240	400
219	220	320
237	220	300
215	200	320

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Dr 10/15/2004  
Ti 10:03:14 AM

Header 1: Tom Malachina  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-E  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/15/2004  
Model 2360 Time: 10:06:43  
Sample Number: 0020

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

Cr - Count Time  
R - meter  
S - aler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	10/13/04	08:01:05	000000	000237	S 001.0	Lab Background
0002	10/13/04	08:07:03	000001	033431	S 001.0	Lab Source
0003	10/13/04	10:44:28	000000	000135	S 001.0	Field Background
0004	10/13/04	10:48:59	000003	001679	S 001.0	Field Source
0005	10/13/04	10:52:48	000000	000192	S 001.0	Admin-1-E
0006	10/13/04	10:58:02	000002	000192	S 001.0	Admin-1-E
0007	10/13/04	10:59:34	000000	000202	S 001.0	Admin-1-E
0008	10/13/04	11:01:06	000002	000234	S 001.0	Admin-1-E
0009	10/13/04	11:02:33	000000	000168	S 001.0	Admin-1-E
0010	10/13/04	11:04:01	000001	000218	S 001.0	Admin-1-E
0011	10/13/04	11:06:20	000001	000194	S 001.0	Admin-1-E
0012	10/13/04	11:08:24	000002	000182	S 001.0	Admin-1-E
0013	10/13/04	11:09:58	000001	000208	S 001.0	Admin-1-E
0014	10/13/04	11:11:17	000001	000207	S 001.0	Admin-1-E
0015	10/13/04	11:12:42	000002	000195	S 001.0	Admin-1-E
0016	10/13/04	11:14:28	000002	000219	S 001.0	Admin-1-E
0017	10/13/04	11:15:53	000003	000237	S 001.0	Admin-1-E
0018	10/13/04	11:17:11	000000	000215	S 001.0	Admin-1-E
0019	10/13/04	16:14:38	000004	001571	S 001.0	Field Source

S



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
26	Smear 1	10/15/04	10:43:09	Admin-1-E	Final Status Survey	10/15/04	10:43:09	1.000	1.00
27	Smear 2	10/15/04	10:41:49	Admin-1-E	Final Status Survey	10/15/04	10:41:49	1.000	1.00
28	Smear 3	10/15/04	10:40:29	Admin-1-E	Final Status Survey	10/15/04	10:40:29	1.000	1.00
29	Smear 4	10/15/04	10:39:09	Admin-1-E	Final Status Survey	10/15/04	10:39:09	1.000	1.00
30	Smear 5	10/15/04	10:37:49	Admin-1-E	Final Status Survey	10/15/04	10:37:49	1.000	1.00
31	Smear 6	10/15/04	10:36:29	Admin-1-E	Final Status Survey	10/15/04	10:36:29	1.000	1.00
32	Smear 7	10/15/04	10:35:09	Admin-1-E	Final Status Survey	10/15/04	10:35:09	1.000	1.00
33	Smear 8	10/15/04	10:33:49	Admin-1-E	Final Status Survey	10/15/04	10:33:49	1.000	1.00
34	Smear 9	10/15/04	10:32:29	Admin-1-E	Final Status Survey	10/15/04	10:32:29	1.000	1.00
35	Smear 10	10/15/04	10:31:09	Admin-1-E	Final Status Survey	10/15/04	10:31:09	1.000	1.00
36	Smear 11	10/15/04	10:29:49	Admin-1-E	Final Status Survey	10/15/04	10:29:49	1.000	1.00
37	Smear 12	10/15/04	10:28:29	Admin-1-E	Final Status Survey	10/15/04	10:28:29	1.000	1.00
38	Smear 13	10/15/04	10:27:09	Admin-1-E	Final Status Survey	10/15/04	10:27:09	1.000	1.00
39	Smear 14	10/15/04	10:25:49	Admin-1-E	Final Status Survey	10/15/04	10:25:49	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-5-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.17 cpm %Eff: 26.94 LLD: 15.13 dpm				Bkg: 0.63 cpm %Eff: 44.67 LLD: 12.03 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
26	Smear 1	10/15/04	10:43:09	0.00	-0.17	-0.62	15.13	7.00	6.37	14.25	12.03
27	Smear 2	10/15/04	10:41:49	0.00	-0.17	-0.62	15.13	4.00	3.37	7.54	12.03
28	Smear 3	10/15/04	10:40:29	0.00	-0.17	-0.62	15.13	10.00	9.37	20.97	12.03
29	Smear 4	10/15/04	10:39:09	0.00	-0.17	-0.62	15.13	4.00	3.37	7.54	12.03
30	Smear 5	10/15/04	10:37:49	0.00	-0.17	-0.62	15.13	2.00	1.37	3.06	12.03
31	Smear 6	10/15/04	10:36:29	0.00	-0.17	-0.62	15.13	7.00	6.37	14.25	12.03
32	Smear 7	10/15/04	10:35:09	1.00	0.83	3.09	15.13	8.00	7.37	16.49	12.03
33	Smear 8	10/15/04	10:33:49	0.00	-0.17	-0.62	15.13	5.00	4.37	9.78	12.03
34	Smear 9	10/15/04	10:32:29	0.00	-0.17	-0.62	15.13	10.00	9.37	20.97	12.03
35	Smear 10	10/15/04	10:31:09	0.00	-0.17	-0.62	15.13	2.00	1.37	3.06	12.03
36	Smear 11	10/15/04	10:29:49	0.00	-0.17	-0.62	15.13	4.00	3.37	7.54	12.03
37	Smear 12	10/15/04	10:28:29	1.00	0.83	3.09	15.13	2.00	1.37	3.06	12.03
38	Smear 13	10/15/04	10:27:09	0.00	-0.17	-0.62	15.13	8.00	7.37	16.49	12.03
39	Smear 14	10/15/04	10:25:49	0.00	-0.17	-0.62	15.13	0.00	-0.63	-1.42	12.03

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-15-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

SCIENTECH Inc.

82A8008 ATTACHMENT A  
Survey Cover Sheet

Survey No. 4478

Surveyor: Joe Kozyra

Print

Sign

10/19/2004

Date

Reviewer: Joe Trowbridge

Print

Sign

10/19/2004

Date

## Survey Meters

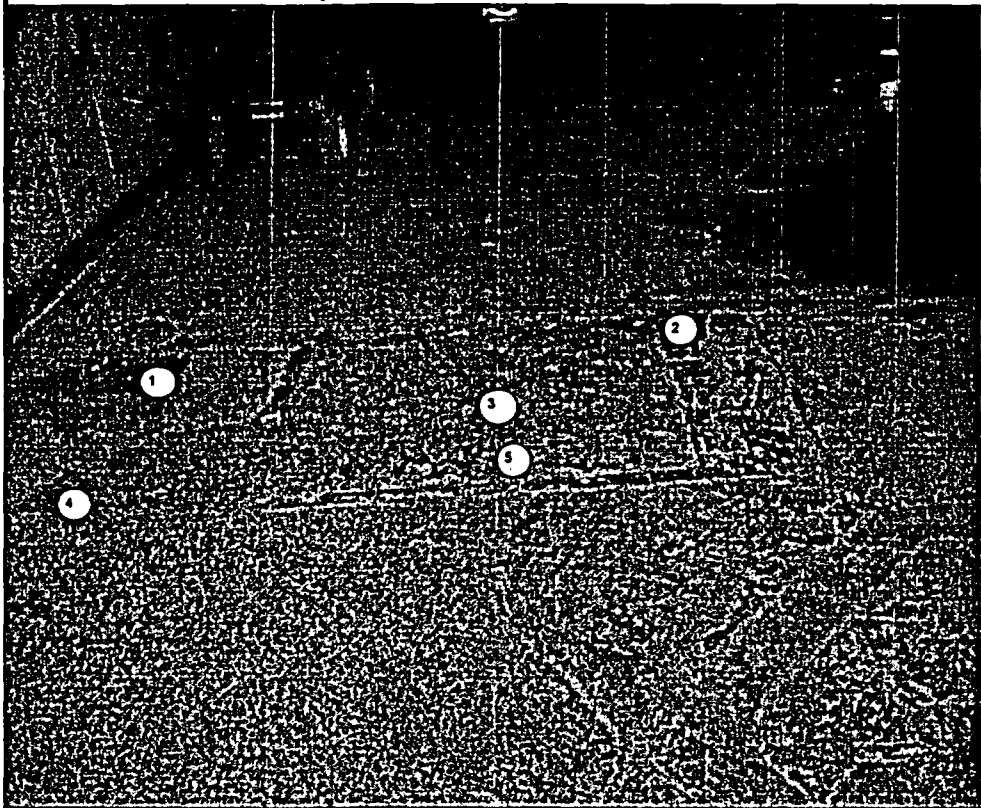
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0 cpm  
 MDA 10 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.6 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta, \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin-1-E Inaccessible Areas (6)

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(probe area)  
(eff. x 100cm<sup>2</sup>)

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

Survey No. 4479

10/19/2004  
Date

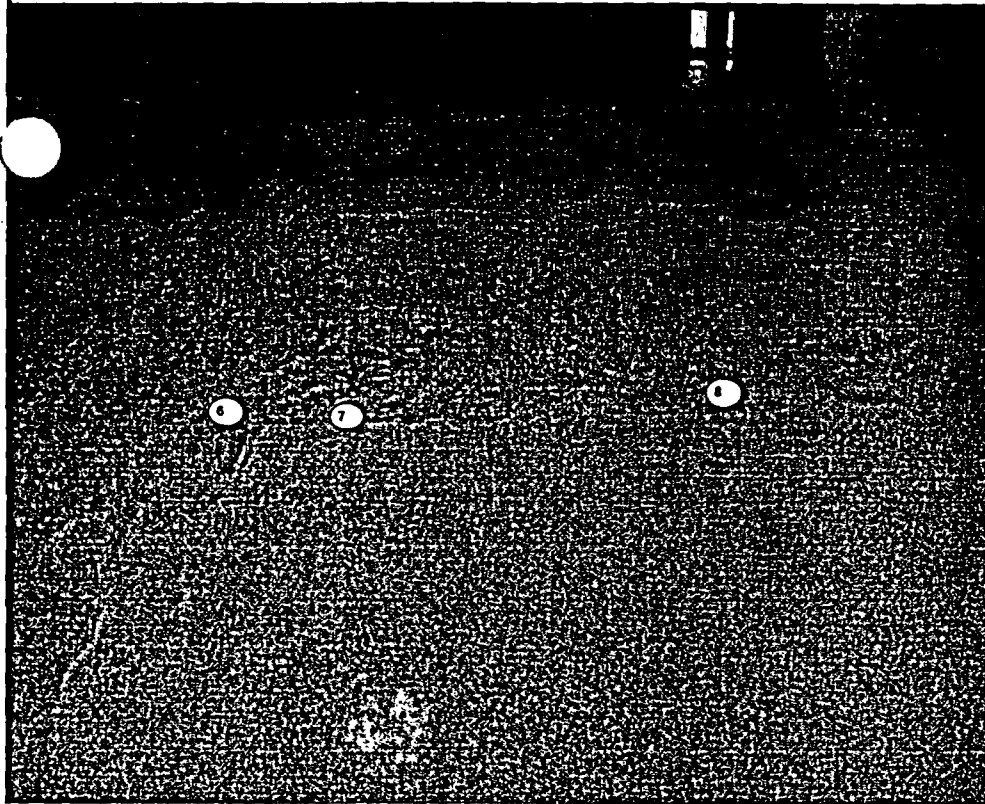
10/19/2004  
Date

## Survey Meters

Meter Model #	N/A
Meter / Probe Serial #	N/A
Cal Due	N/A
Efficiency	N/A
Type $\alpha, \beta, \gamma$	N/A
Sample Time	N/A
Background Time	N/A
BKG	N/A
MDA	N/A
Guideline	N/A
Action Level	N/A

**PURPOSE:** Final Status Survey

Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA



**A1 = action level**

SCIENTECH Inc.

82A8008 ATTACHMENT A  
Survey Cover SheetSurvey No. 4473Surveyor: Joe Kozyra

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10/19/2004

Date

Reviewer: Joe Trowbridge

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10/19/2004

Date

## Survey Meters

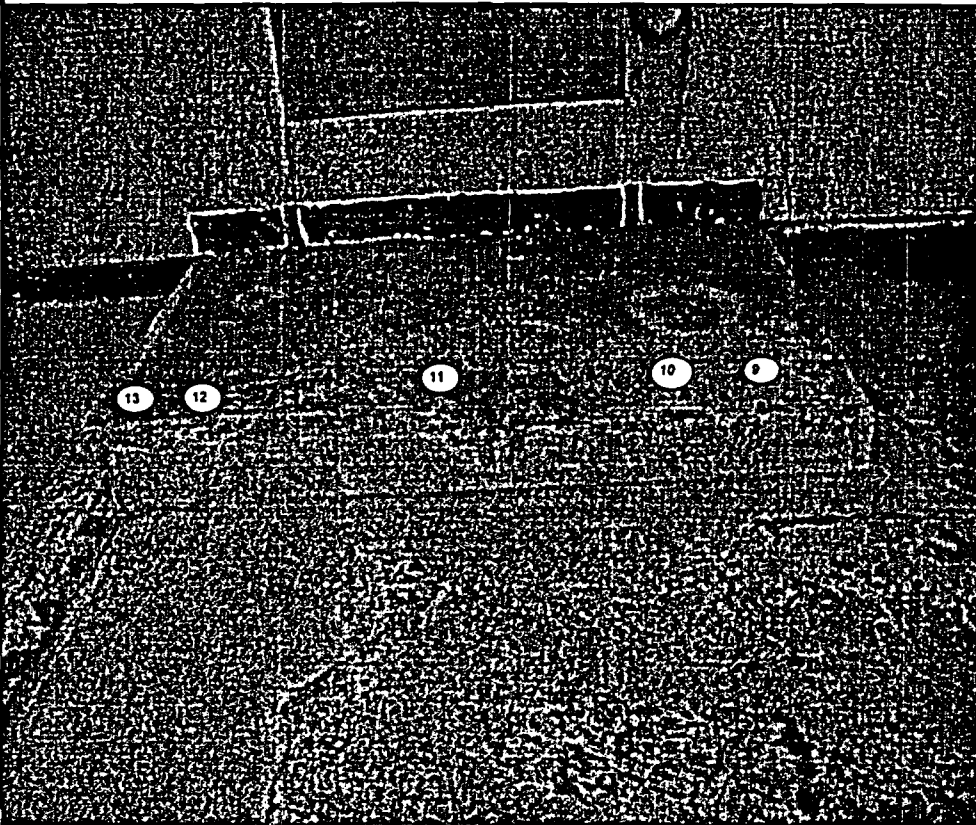
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0 cpm  
 MDA 10 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.6 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta, \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin-1-E Inaccessible Areas

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
9	<MDA	<MDA
10	<MDA	<MDA
11	<MDA	<MDA
12	<MDA	<MDA
13	<MDA	<MD

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff.  $\times \frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

Signature: Joe Kozyra  
Print

Reviewer: Joe Trowbridge  
Print

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10/19/2004  
Date

10/19/2004  
Date

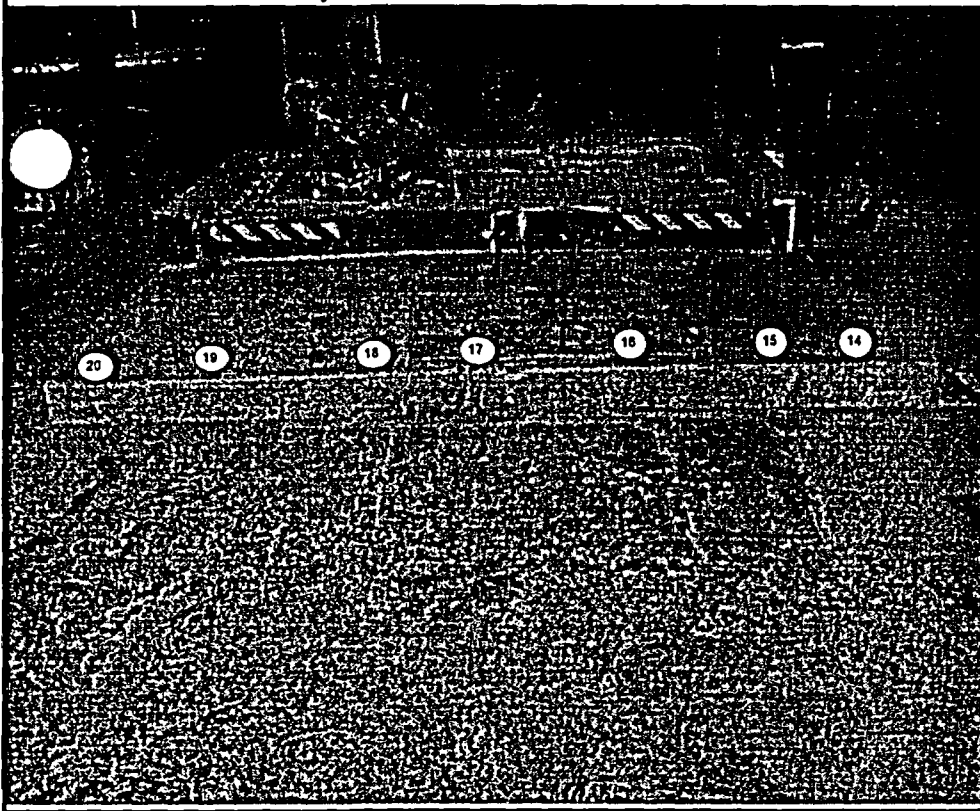
## Survey Meters

Meter Model #	WPC-9550
Meter / Probe Serial #	11P-1015
Cal Due	4/29/2005
Efficiency	27%
Type $\alpha, \beta, \gamma$	$\alpha$
Sample Time	1 min.
Background Time	30 min.
BKG	0 cpm
MDA	10 dpm/100cm <sup>2</sup>
Guideline	20 dpm/100cm <sup>2</sup>
Action Level	20 dpm/100cm <sup>2</sup>

Meter Model #	WPC-9550
Meter / Probe Serial #	11P-1015
Cal Due	4/29/2005
Efficiency	44%
Type $\alpha, \beta \gamma$	$\beta \gamma$
Sample Time	1 min.
Background Time	30 min.
BKG	0.6 cpm
MDA	12 dpm/100cm2
Guideline	200 dpm/100cm2
Action Level	200 dpm/100cm2

Meter Model #	N/A
Meter / Probe Serial #	N/A
Cal Due	N/A
Efficiency	N/A
Type $\alpha, \beta, \gamma$	N/A
Sample Time	N/A
Background Time	N/A
BKG	N/A
MDA	N/A
Guideline	N/A
Action Level	N/A

**LOCATION:** Admin-1-E Inaccessible Areas (2)

**PURPOSE:** Final Status Survey

Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
14	<MDA	<MDA
15	<MDA	<MDA
16	<MDA	<MDA
17	<MDA	<MDA
18	<MDA	<MDA
19	<MDA	<MDA
20	<MDA	<MDA

$$\text{MDA} = \frac{\frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}}{\left( \text{eff.} \times \frac{\text{probe area}}{100 \text{ cm}^2} \right)}$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate  
 $T_b$  = background counting time  
 $T_s$  = sample count time  
 $Al$  = action level

Surveyor: Joe Kozyra  
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Reviewer: Joe Trowbridge  
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[Signature]  
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[Signature]  
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10/19/2004  
Date

10/19/2004  
Date

## Survey Meters

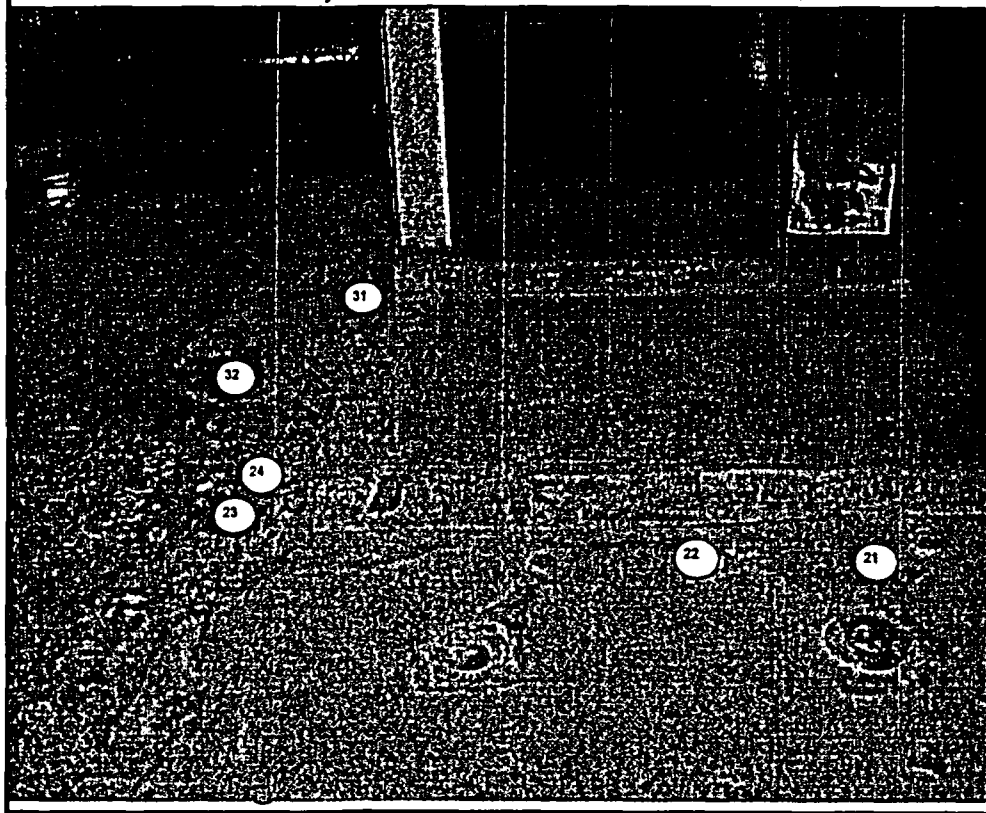
Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 27%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0 cpm  
MDA 10 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 44%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.6 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta, \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Admin-1-E Inaccessible Areas (5)

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
21	<MDA	<MDA
22	<MDA	<MDA
23	<MDA	<MDA
24	<MDA	<MDA
31	<MDA	<MF
32	<MDA	<ML

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff. X  $\frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline})(\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate

Tb = background counting time

Ts = sample count time

AI = action level

Survey No. 4476

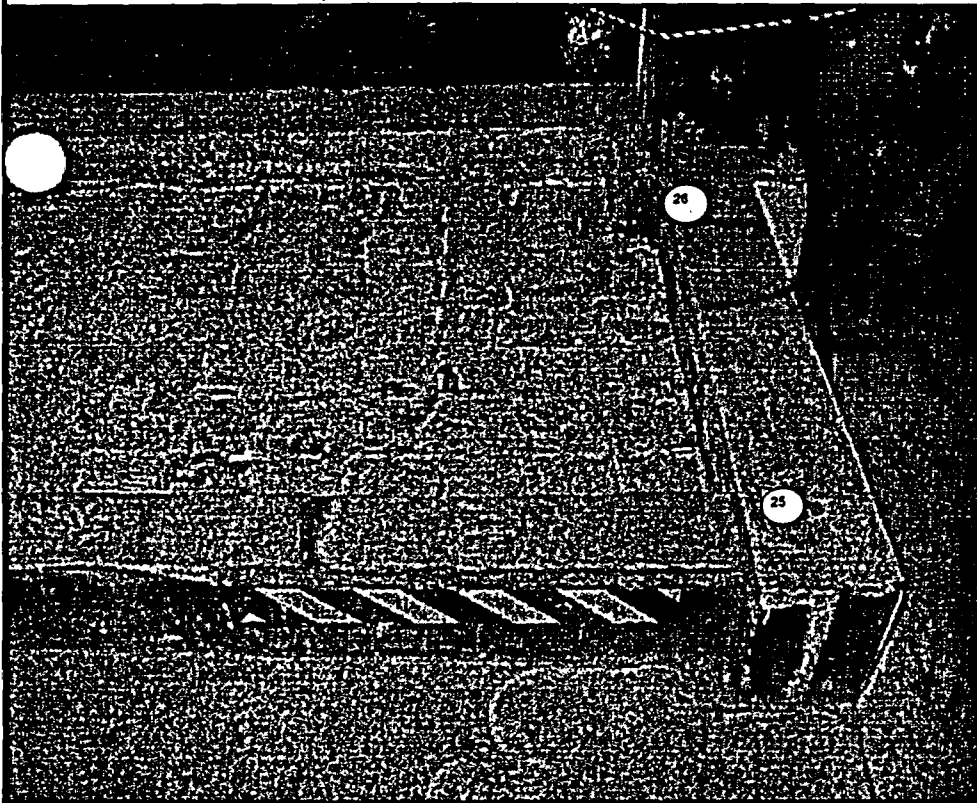
## Survey Cover Sheet

10/19/2004  
Date

10/19/2004  
Date

## Survey Meters

Meter Model #	N/A
Meter / Probe Serial #	N/A
Cal Due	N/A
Efficiency	N/A
Type $\alpha, \beta, \gamma$	N/A
Sample Time	N/A
Background Time	N/A
BKG	N/A
MDA	N/A
Guideline	N/A
Action Level	N/A

**PURPOSE:** Final Status Survey

Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
25	<MDA	<MDA
26	<MDA	<MDA

where:  $R_b$  = background counting rate  
 $T_b$  = background counting time  
 $T_s$  = sample count time  
 $A_l$  = action level



SCIENTECH Inc.

82A8008 ATTACHMENT A  
Survey Cover SheetSurvey No. 4475

Surveyor: Joe Kozyra  
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Reviewer: Joe Trowbridge  
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[Signature]  
Sign

[Signature]  
Sign

10/19/2004  
Date

10/19/2004  
Date

## Survey Meters

Meter Model # WPC-9550

Meter / Probe Serial # 11P-1015

Cal Due 4/29/2005

Efficiency 27%

Type  $\alpha, \beta, \gamma$   $\alpha$

Sample Time 1 min.

Background Time 30 min.

BKG 0 cpm

MDA 10 dpm/100cm<sup>2</sup>

Guideline 20 dpm/100cm<sup>2</sup>

Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550

Meter / Probe Serial # 11P-1015

Cal Due 4/29/2005

Efficiency 44%

Type  $\alpha, \beta, \gamma$   $\beta, \gamma$

Sample Time 1 min.

Background Time 30 min.

BKG 0.6 cpm

MDA 12 dpm/100cm<sup>2</sup>

Guideline 200 dpm/100cm<sup>2</sup>

Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A

Meter / Probe Serial # N/A

Cal Due N/A

Efficiency N/A

Type  $\alpha, \beta, \gamma$  N/A

Sample Time N/A

Background Time N/A

BKG N/A

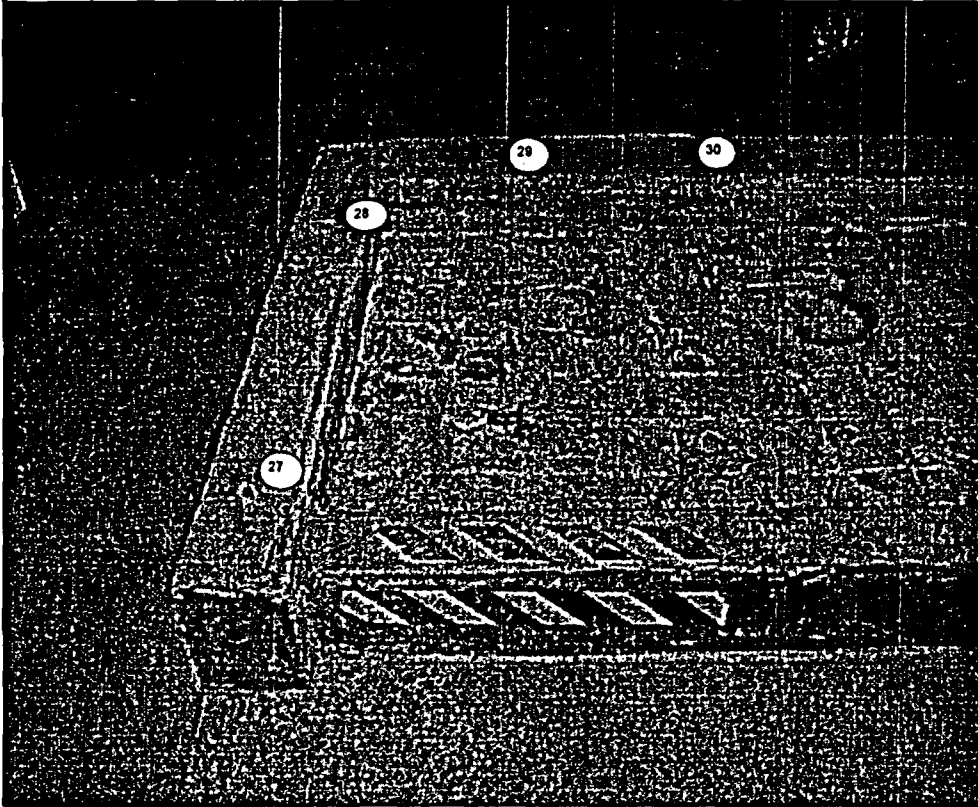
MDA N/A

Guideline N/A

Action Level N/A

LOCATION: Admin-1-E Inaccessible Areas (3)

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
27	<MDA	<MDA
28	<MDA	<MDA
29	<MDA	<MDA
30	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff. X  $\frac{100\text{cm}^2}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate  
 $T_b$  = background counting time  
 $T_s$  = sample count time  
 $AI$  = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/19/04	16:33:04	Admin-1-E	Inaccessible Area	10/19/04	16:33:04	1.000	1.00
2	Smear 2	10/19/04	16:31:43	Admin-1-E	Inaccessible Area	10/19/04	16:31:43	1.000	1.00
3	Smear 3	10/19/04	16:30:23	Admin-1-E	Inaccessible Area	10/19/04	16:30:23	1.000	1.00
4	Smear 4	10/19/04	16:29:03	Admin-1-E	Inaccessible Area	10/19/04	16:29:03	1.000	1.00
5	Smear 5	10/19/04	16:27:42	Admin-1-E	Inaccessible Area	10/19/04	16:27:42	1.000	1.00
6	Smear 6	10/19/04	16:26:22	Admin-1-E	Inaccessible Area	10/19/04	16:26:22	1.000	1.00
7	Smear 7	10/19/04	16:25:02	Admin-1-E	Inaccessible Area	10/19/04	16:25:02	1.000	1.00
8	Smear 8	10/19/04	16:23:42	Admin-1-E	Inaccessible Area	10/19/04	16:23:42	1.000	1.00
9	Smear 9	10/19/04	16:22:21	Admin-1-E	Inaccessible Area	10/19/04	16:22:21	1.000	1.00
10	Smear 10	10/19/04	16:21:01	Admin-1-E	Inaccessible Area	10/19/04	16:21:01	1.000	1.00
11	Smear 11	10/19/04	16:19:41	Admin-1-E	Inaccessible Area	10/19/04	16:19:41	1.000	1.00
12	Smear 12	10/19/04	16:18:20	Admin-1-E	Inaccessible Area	10/19/04	16:18:20	1.000	1.00
13	Smear 13	10/19/04	16:17:00	Admin-1-E	Inaccessible Area	10/19/04	16:17:00	1.000	1.00
14	Smear 14	10/19/04	16:15:40	Admin-1-E	Inaccessible Area	10/19/04	16:15:40	1.000	1.00
15	Smear 15	10/19/04	16:14:19	Admin-1-E	Inaccessible Area	10/19/04	16:14:19	1.000	1.00
16	Smear 16	10/19/04	16:12:59	Admin-1-E	Inaccessible Area	10/19/04	16:12:59	1.000	1.00
17	Smear 17	10/19/04	16:11:39	Admin-1-E	Inaccessible Area	10/19/04	16:11:39	1.000	1.00
18	Smear 18	10/19/04	16:10:18	Admin-1-E	Inaccessible Area	10/19/04	16:10:18	1.000	1.00
19	Smear 19	10/19/04	16:08:58	Admin-1-E	Inaccessible Area	10/19/04	16:08:58	1.000	1.00
20	Smear 20	10/19/04	16:07:38	Admin-1-E	Inaccessible Area	10/19/04	16:07:38	1.000	1.00
21	Smear 21	10/19/04	16:06:18	Admin-1-E	Inaccessible Area	10/19/04	16:06:18	1.000	1.00
22	Smear 22	10/19/04	16:04:57	Admin-1-E	Inaccessible Area	10/19/04	16:04:57	1.000	1.00
23	Smear 23	10/19/04	16:03:37	Admin-1-E	Inaccessible Area	10/19/04	16:03:37	1.000	1.00
24	Smear 24	10/19/04	16:02:17	Admin-1-E	Inaccessible Area	10/19/04	16:02:17	1.000	1.00
25	Smear 25	10/19/04	16:00:57	Admin-1-E	Inaccessible Area	10/19/04	16:00:57	1.000	1.00
26	Smear 26	10/19/04	15:59:36	Admin-1-E	Inaccessible Area	10/19/04	15:59:36	1.000	1.00
27	Smear 27	10/19/04	15:58:16	Admin-1-E	Inaccessible Area	10/19/04	15:58:16	1.000	1.00
28	Smear 28	10/19/04	15:56:56	Admin-1-E	Inaccessible Area	10/19/04	15:56:56	1.000	1.00
29	Smear 29	10/19/04	15:55:36	Admin-1-E	Inaccessible Area	10/19/04	15:55:36	1.000	1.00
30	Smear 30	10/19/04	15:54:16	Admin-1-E	Inaccessible Area	10/19/04	15:54:16	1.000	1.00
31	Smear 31	10/19/04	15:52:56	Admin-1-E	Inaccessible Area	10/19/04	15:52:56	1.000	1.00
32	Smear 32	10/19/04	15:51:36	Admin-1-E	Inaccessible Area	10/19/04	15:51:36	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-19-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 27.24 LLD: 9.96 dpm				Bkg: 0.63 cpm %Eff: 44.11 LLD: 12.18 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/19/04	16:33:04	0.00	0.00	0.00	9.95	2.00	1.37	3.10	12.18
2	Smear 2	10/19/04	16:31:43	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
3	Smear 3	10/19/04	16:30:23	0.00	0.00	0.00	9.95	3.00	2.37	5.37	12.18
4	Smear 4	10/19/04	16:29:03	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
5	Smear 5	10/19/04	16:27:42	0.00	0.00	0.00	9.95	2.00	1.37	3.10	12.18
6	Smear 6	10/19/04	16:26:22	0.00	0.00	0.00	9.95	1.00	0.37	0.83	12.18
7	Smear 7	10/19/04	16:25:02	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
8	Smear 8	10/19/04	16:23:42	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
9	Smear 9	10/19/04	16:22:21	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
10	Smear 10	10/19/04	16:21:01	0.00	0.00	0.00	9.95	4.00	3.37	7.63	12.18
11	Smear 11	10/19/04	16:19:41	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
12	Smear 12	10/19/04	16:18:20	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
13	Smear 13	10/19/04	16:17:00	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
14	Smear 14	10/19/04	16:15:40	0.00	0.00	0.00	9.95	2.00	1.37	3.10	12.18
15	Smear 15	10/19/04	16:14:19	0.00	0.00	0.00	9.95	1.00	0.37	0.83	12.18
16	Smear 16	10/19/04	16:12:59	1.00	1.00	3.67	9.95	0.00	-0.63	-1.44	12.18
17	Smear 17	10/19/04	16:11:39	0.00	0.00	0.00	9.95	1.00	0.37	0.83	12.18
18	Smear 18	10/19/04	16:10:18	0.00	0.00	0.00	9.95	1.00	0.37	0.83	12.18
19	Smear 19	10/19/04	16:08:58	0.00	0.00	0.00	9.95	1.00	0.37	0.83	12.18
20	Smear 20	10/19/04	16:07:38	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
21	Smear 21	10/19/04	16:06:18	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
22	Smear 22	10/19/04	16:04:57	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
23	Smear 23	10/19/04	16:03:37	0.00	0.00	0.00	9.95	2.00	1.37	3.10	12.18
24	Smear 24	10/19/04	16:02:17	0.00	0.00	0.00	9.95	1.00	0.37	0.83	12.18
25	Smear 25	10/19/04	16:00:57	0.00	0.00	0.00	9.95	1.00	0.37	0.83	12.18
26	Smear 26	10/19/04	15:59:36	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
27	Smear 27	10/19/04	15:58:16	0.00	0.00	0.00	9.95	1.00	0.37	0.83	12.18
28	Smear 28	10/19/04	15:56:56	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
29	Smear 29	10/19/04	15:55:36	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
30	Smear 30	10/19/04	15:54:16	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
31	Smear 31	10/19/04	15:52:56	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18
32	Smear 32	10/19/04	15:51:36	0.00	0.00	0.00	9.95	0.00	-0.63	-1.44	12.18

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-19-04

Reviewed By (print): Joe Trowbridge

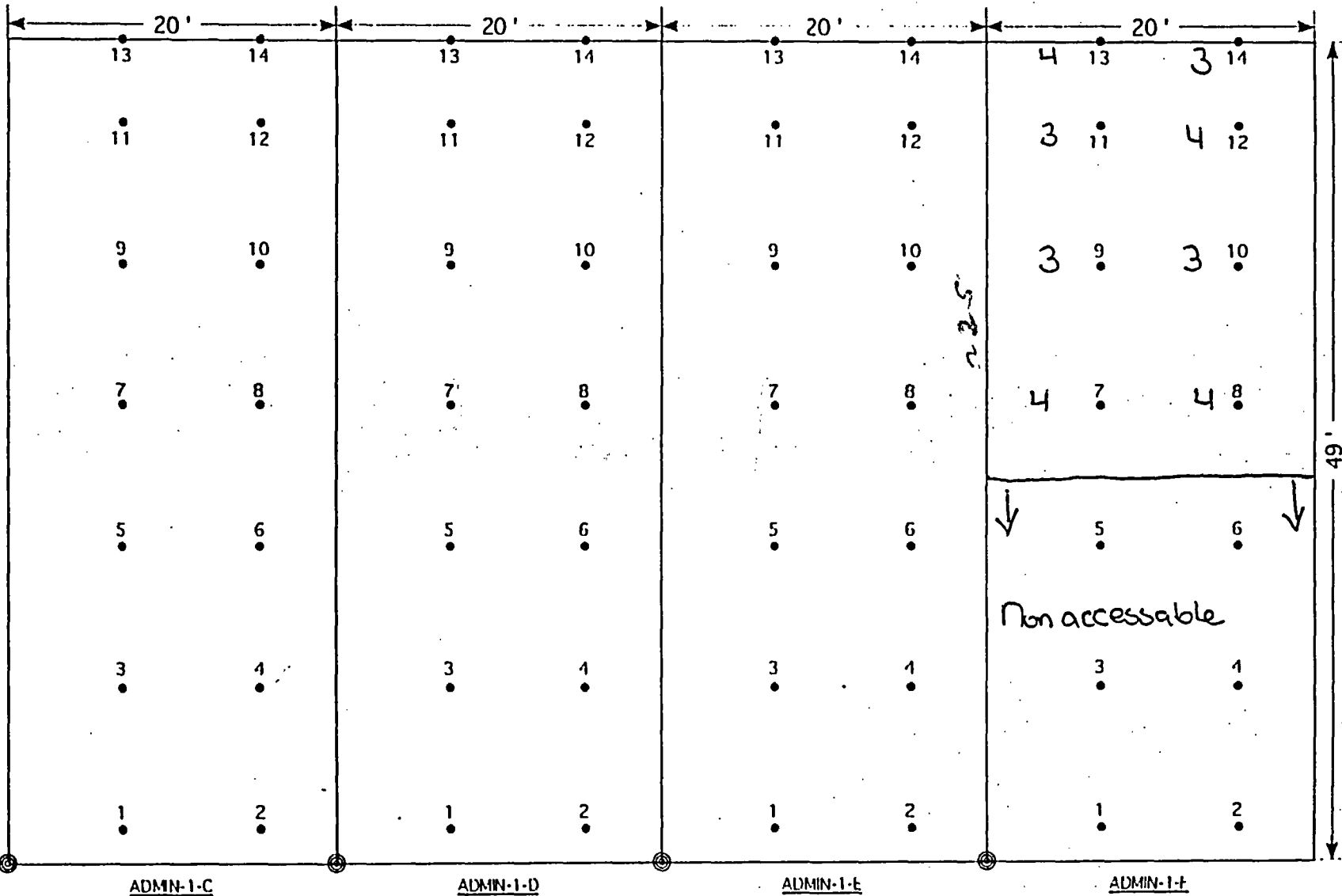
Reviewed By (sign):

Date:

**Admin-1-F Administration Area**



• SURVEY POINTS  
 ⊙ STARTING LOCATION



Document  
Control No.

REVISION NO.

DRAWING PROJECT

QUEHANNA DECOMMISSIONING  
 KATHAUS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS I  
 Administration Area Floor (2 of 3)

SCIENTECH  
 SCIENTECH Inc.  
 140 WEST STREET  
 NEW MILFORD, CT 06476

PROJECT NO.  
23529-0301

FILE NAME:

SCALE DATE  
 N.T.S. 06/29/2004  
 By: CK:

FIGURE  
ADMIN-1-C, D, E, F

All readings in micro B/h survey for Admin 1-F

Log #	Source
6	
7	
8	
9	
10	
11	
12	
13	
14	

	X	Y
	n/a	n/a
1	7.0	2.0
2	15.4	2.0
3	7.0	10.4
4	15.4	10.4
5	7.0	18.8
6	15.4	18.8
7	7.0	27.2
8	15.4	27.2
9	7.0	35.6
10	15.4	35.6
11	7.0	44.0
12	15.4	44.0
13	7.0	49
14	15.4	49

$$L \text{ (ft)} = 8.4$$
$$A \text{ (ft}^2\text{)} = 980$$

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
IN		
IN		
IN		
IN		
IN		
IN		
177	220	340
174	300	400
218	200	260
205	220	280
181	260	280
201	260	280
184	300	320
166	300	360

Floor monitor and

11-10-04

Start 0730

Stop 10:20

# 5 BK6 - 120

# 6 Source - 1676  
In

80k Found & cleaned up

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

at 11/10/2004  
Time: 1:07:06 AM

Header 1: Jason Bennett  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-F  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/10/2004  
Model 2360 Time: 12:09:50  
Sample Number: 0026

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000441  
Beta Ratemeter Alarm: 000441  
Alpha + Beta Ratemeter Alarm: 000441  
Alpha Scaler Alarm: 000441  
Beta Scaler Alarm: 000441  
Alpha + Beta Scaler Alarm: 000441

Cr - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	11/09/04	09:02:22	000000	000217	S 001.0	Lab Background
0002	11/09/04	09:07:03	000002	034968	S 001.0	Lab Source
0003	11/10/04	09:07:29	000000	000186	S 001.0	Lab Background
0004	11/10/04	09:08:42	000000	035231	S 001.0	Lab Source
0005	11/10/04	09:30:50	000000	000130	S 001.0	Field Background
0006	11/10/04	09:33:00	000002	001676	S 001.0	Field Source
0007	11/10/04	09:49:09	000000	000177	S 001.0	Admin-1-F 7
0008	11/10/04	09:52:34	000000	000174	S 001.0	Admin-1-F 5
0009	11/10/04	09:56:49	000002	000218	S 001.0	Admin-1-F 7
0010	11/10/04	09:58:49	000000	000205	S 001.0	Admin-1-F 10
0011	11/10/04	10:00:28	000001	000181	S 001.0	Admin-1-F 11
0012	11/10/04	10:02:26	000000	000201	S 001.0	Admin-1-F 12
0013	11/10/04	11:11:33	000000	000189	S 001.0	Admin-1-F 13
0014	11/10/04	11:13:04	000003	000166	S 001.0	Admin-1-F 14
0015	11/10/04	11:38:12	000001	001728	S 001.0	Field Source

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1 Smear 7		11/10/04	11:50:01	Admin-1-F	Final Status Survey	11/10/04	11:50:01	1.000	1.00
2 Smear 8		11/10/04	11:48:41	Admin-1-F	Final Status Survey	11/10/04	11:48:41	1.000	1.00
3 Smear 9		11/10/04	11:47:21	Admin-1-F	Final Status Survey	11/10/04	11:47:21	1.000	1.00
4 Smear 10		11/10/04	11:46:02	Admin-1-F	Final Status Survey	11/10/04	11:46:02	1.000	1.00
5 Smear 11		11/10/04	11:44:42	Admin-1-F	Final Status Survey	11/10/04	11:44:42	1.000	1.00
6 Smear 12		11/10/04	11:43:22	Admin-1-F	Final Status Survey	11/10/04	11:43:22	1.000	1.00
7 Smear 13		11/10/04	11:42:02	Admin-1-F	Final Status Survey	11/10/04	11:42:02	1.000	1.00
8 Smear 14		11/10/04	11:40:43	Admin-1-F	Final Status Survey	11/10/04	11:40:43	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-10-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.23 cpm %Eff: 24.57 LLD: 17.61 dpm				Bkg: 0.63 cpm %Eff: 44.31 LLD: 12.12 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1 Smear 7		11/10/04	11:50:01	0.00	-0.23	-0.95	17.61	1.00	0.37	0.83	12.12
2 Smear 8		11/10/04	11:48:41	0.00	-0.23	-0.95	17.61	3.00	2.37	5.34	12.12
3 Smear 9		11/10/04	11:47:21	0.00	-0.23	-0.95	17.61	0.00	-0.63	-1.43	12.12
4 Smear 10		11/10/04	11:46:02	0.00	-0.23	-0.95	17.61	0.00	-0.63	-1.43	12.12
5 Smear 11		11/10/04	11:44:42	0.00	-0.23	-0.95	17.61	1.00	0.37	0.83	12.12
6 Smear 12		11/10/04	11:43:22	0.00	-0.23	-0.95	17.61	1.00	0.37	0.83	12.12
7 Smear 13		11/10/04	11:42:02	0.00	-0.23	-0.95	17.61	1.00	0.37	0.83	12.12
8 Smear 14		11/10/04	11:40:43	1.00	0.77	3.12	17.61	2.00	1.37	3.08	12.12

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-10-04

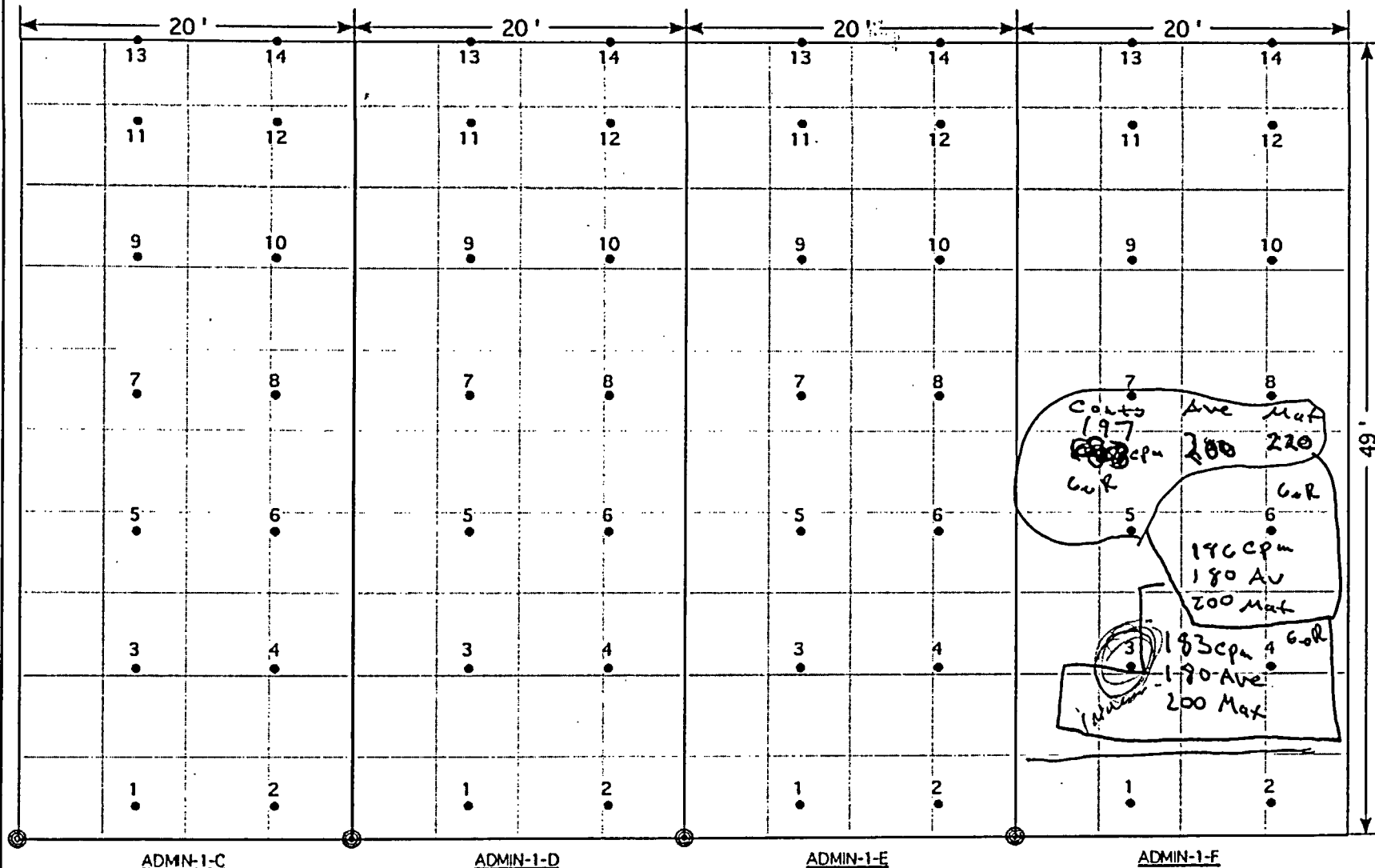
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



• SURVEY POINTS  
⊙ STARTING LOCATION



Document  
Control No.

REVISION NO.

PROJECT  
KARTIAUS, PENNSYLVANIA  
15 REACTOR ROAD

ADMINISTRATION AREA FLOOR (2 OF 3)  
CLASS 1

SCIENTECH  
SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06776

PROJECT NO:  
23529-0501

FILE NAME:

SCALE: DATE:  
N.T.S. 06/29/2004

By: CK:

FIGURE:  
ADMIN-1-C,D,E,F

Ludlum Measurements, Inc.  
Model 2360 Log Data

12/22/2004  
Time: 5:36:52 PM

Header 1: Chris Higgins  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: ADMIN  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/22/2004  
Model 2360 Time: 17:35:05  
Sample Number: 0011

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

1e - Count Time  
Ratometer  
S- Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/22/04	07:13:28	000000	000179	S 001.0	Lab Background
0002	12/22/04	07:15:40	000001	031578	S 001.0	Lab Source
0003	12/22/04	17:07:05	000001	012858	S 001.0	Field Source
0004	12/22/04	17:08:25	000001	000183	S 001.0	ADMIN-1-F 4
0005	12/22/04	17:09:31	000001	000197	S 001.0	ADMIN-1-F 5
0006	12/22/04	17:14:51	000004	000186	S 001.0	ADMIN-1-F 6
0007	12/22/04	17:16:11	000001	014086	S 001.0	Field Source
0008	12/22/04	17:17:32	000001	000208	S 001.0	ADMIN-1-G 4
0009	12/22/04	17:18:42	000000	000197	S 001.0	ADMIN-1-G 5
0010	12/22/04	17:20:55	000002	000196	S 001.0	ADMIN-1-G 6

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
11	Smear 4	12/22/04	17:48:25	ADMIN-1-G	Final Status Survey	12/22/04	17:48:25	1.000	1.00
12	Smear 5	12/22/04	17:47:06	ADMIN-1-G	Final Status Survey	12/22/04	17:47:06	1.000	1.00
13	Smear 6	12/22/04	17:45:46	ADMIN-1-G	Final Status Survey	12/22/04	17:45:46	1.000	1.00
14	Smear 4	12/22/04	17:44:26	ADMIN-1-H	Final Status Survey	12/22/04	17:44:26	1.000	1.00
15	Smear 5	12/22/04	17:43:07	ADMIN-1-H	Final Status Survey	12/22/04	17:43:07	1.000	1.00
16	Smear 6	12/22/04	17:41:47	ADMIN-1-H	Final Status Survey	12/22/04	17:41:47	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.78 LLD: 13.41 dpm				Bkg: 0.63 cpm %Eff: 46.16 LLD: 11.9 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
11	Smear 4	12/22/04	17:48:25	2.00	1.97	7.94	13.41	0.00	-0.63	-1.40	11.90
12	Smear 5	12/22/04	17:47:08	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
13	Smear 6	12/22/04	17:45:48	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
14	Smear 4	12/22/04	17:44:28	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
15	Smear 5	12/22/04	17:43:07	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
16	Smear 6	12/22/04	17:41:47	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

# Admin Areas F & G : Missing Data

Admin		Directs	Scan Avg	Scan Max	BKG			A		Scan	Scan
Area	Point	GCPM	cpm	cpm	cpm	Es	Ei	(dpm/100	sigma	Avg	Max
								cm <sup>2</sup> )		(dpm/100	(dpm/100
F	4	183	180	200	161	0.5	0.5	94	57	81	165
F	5	197	200	220				152	59	165	248
F	6	186	180	200				106	57	81	165
G	4	208	200	220				198	60	165	248
G	5	197	200	220				152	59	165	248
G	6	196	200	220				148	58	165	248

Points 1, 2, 3 were not accessible in both survey units (destroyed in demo)

F

SCIENTECH Inc.

82A8008 ATTACHMENT A

Survey No. 4482

## Survey Cover Sheet

Surveyor: Joe Kozyra  
 Print

Reviewer: Joe Trowbridge  
 Print

[Signature]  
 Sign

[Signature]  
 Sign

10/20/2004  
 Date

10/20/2004  
 Date

## Survey Meters

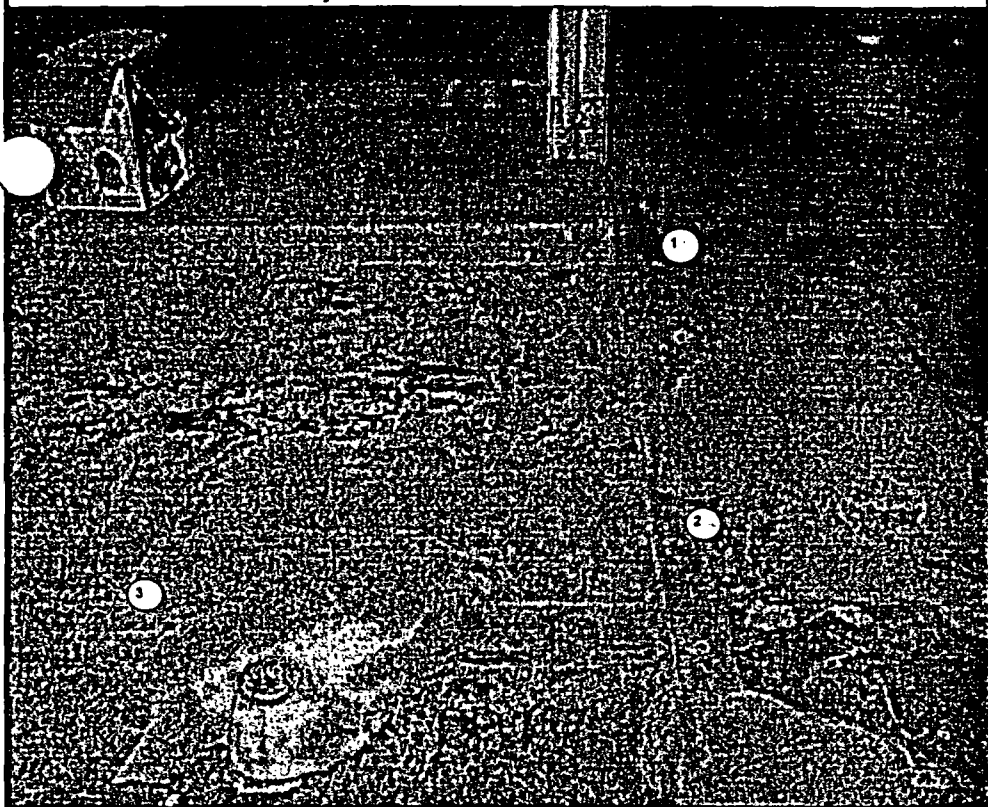
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0 cpm  
 MDA 10 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta \gamma$   $\beta \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.8 cpm  
 MDA 13 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin-1-F Inaccessible Areas

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff.)  $\times \left( \frac{100\text{cm}^2}{2} \right)$

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate  
 $T_b$  = background counting time  
 $T_s$  = sample count time  
 $AI$  = action level

## Survey Cover Sheet

Surveyor: Joe Kozyra  
 Print  
 Reviewer: Joe Trowbridge  
 Print

[Signature]  
 Sign  
[Signature]  
 Sign

10/20/2004  
 Date  
10/20/2004  
 Date

## Survey Meters

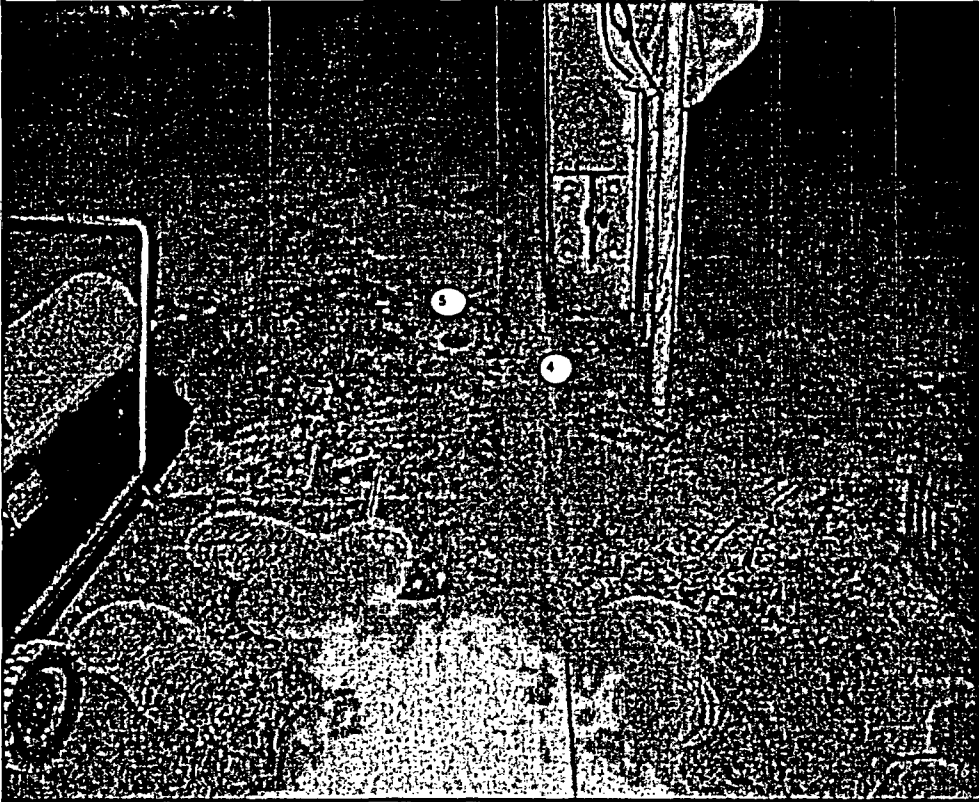
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0 cpm  
 MDA 10 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.8 cpm  
 MDA 13 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta, \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin-1-F Inaccessible Areas (2)

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
4	<MDA	<MDA
5	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff. X  $\frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate

Tb = background counting time

Ts = sample count time

AI = action level



## Survey Cover Sheet

Surveyor: Joe Kozyra  
 Print  
 Reviewer: Joe Trowbridge  
 Print

[Signature]  
 Sign  
[Signature]  
 Sign

10/20/2004  
 Date  
10/20/2004  
 Date

## Survey Meters

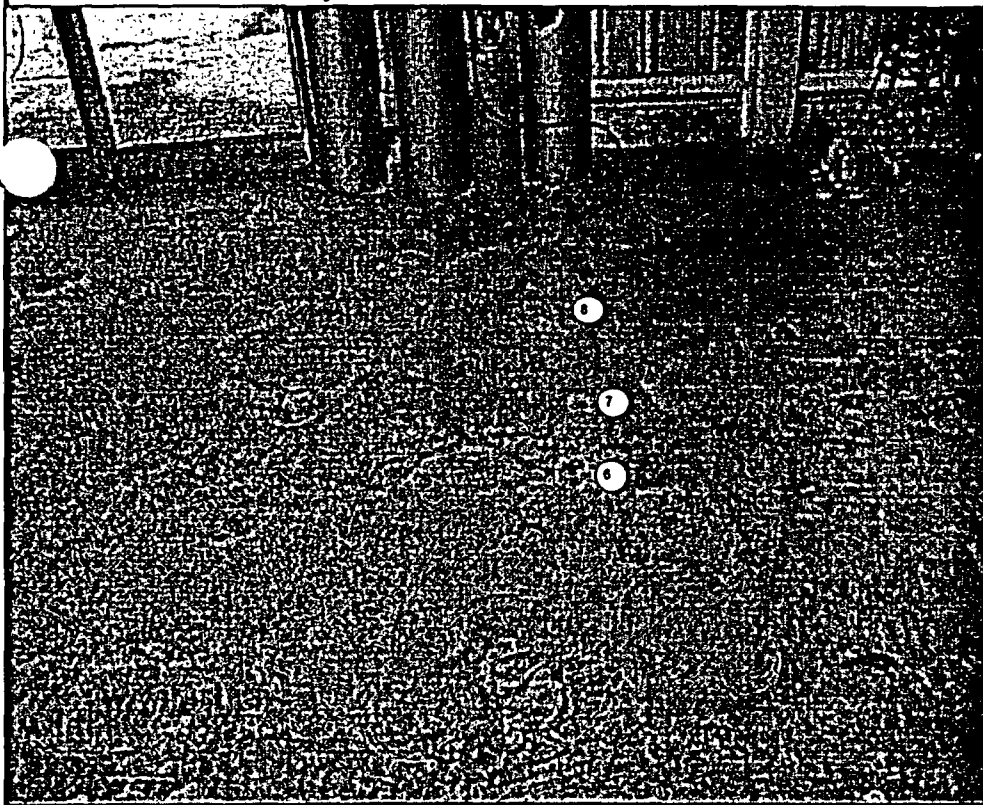
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0 cpm  
 MDA 10 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta \gamma$   $\beta \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.8 cpm  
 MDA 13 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin-1-F Inaccessible Areas (3)

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff.  $\times \frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline})(\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate

Tb = background counting time

Ts = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/20/04	10:07:33	Admin-1-F	Inaccessible Area	10/20/04	10:07:33	1.000	1.00
2	Smear 2	10/20/04	10:06:12	Admin-1-F	Inaccessible Area	10/20/04	10:06:12	1.000	1.00
3	Smear 3	10/20/04	10:04:52	Admin-1-F	Inaccessible Area	10/20/04	10:04:52	1.000	1.00
4	Smear 4	10/20/04	10:03:32	Admin-1-F	Inaccessible Area	10/20/04	10:03:32	1.000	1.00
5	Smear 5	10/20/04	10:02:11	Admin-1-F	Inaccessible Area	10/20/04	10:02:11	1.000	1.00
6	Smear 6	10/20/04	10:00:51	Admin-1-F	Inaccessible Area	10/20/04	10:00:51	1.000	1.00
7	Smear 7	10/20/04	9:59:31	Admin-1-F	Inaccessible Area	10/20/04	9:59:31	1.000	1.00
8	Smear 8	10/20/04	9:58:11	Admin-1-F	Inaccessible Area	10/20/04	9:58:11	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-2-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 27 LLD: 10.04 dpm				Bkg: 0.77 cpm %Eff: 44.34 LLD: 12.72 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/20/04	10:07:33	0.00	0.00	0.00	10.04	1.00	0.23	0.53	12.72
2	Smear 2	10/20/04	10:08:12	0.00	0.00	0.00	10.04	0.00	-0.77	-1.73	12.72
3	Smear 3	10/20/04	10:04:52	0.00	0.00	0.00	10.04	1.00	0.23	0.53	12.72
4	Smear 4	10/20/04	10:03:32	0.00	0.00	0.00	10.04	0.00	-0.77	-1.73	12.72
5	Smear 5	10/20/04	10:02:11	0.00	0.00	0.00	10.04	3.00	2.23	5.04	12.72
6	Smear 6	10/20/04	10:00:51	0.00	0.00	0.00	10.04	2.00	1.23	2.78	12.72
7	Smear 7	10/20/04	9:59:31	0.00	0.00	0.00	10.04	0.00	-0.77	-1.73	12.72
8	Smear 8	10/20/04	9:58:11	0.00	0.00	0.00	10.04	0.00	-0.77	-1.73	12.72

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-20-04

Reviewed By (print): Joe Trowbridge

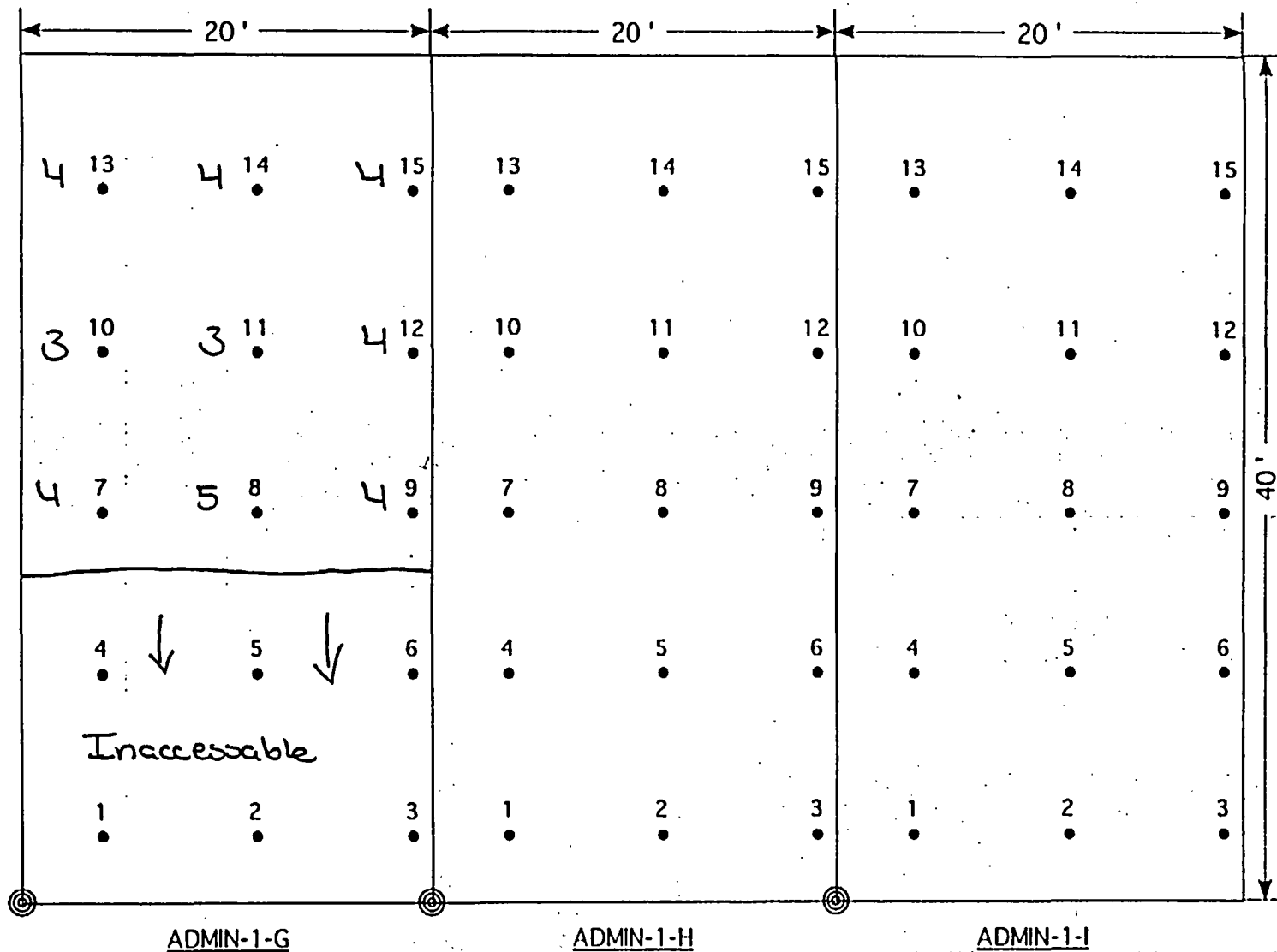
Reviewed By (sign):

Date:

**Admin-1-G Administration Area**



• SURVEY POINTS  
 • STARTING LOCATION



Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KARTHANUS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Administration Area Floor (3 of 3)

SCIENTECH

SCIENTECH, Inc.  
 145 WEST STREET  
 NEW MILFORD CT 06456

PROJECT NO:

23529-0501

FILE NAME:

SCALE:

N.T.S.

DATE

06/29/2004

By:

CR:

FIGURE

ADMIN-1-G.J11

All readings in micro R/h survey for 1-G

## ADMIN-1-G

Log #	Source
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	

	X	Y
	n/a	n/a
1	3.9	3.1
2	11.5	3.1
3	19.1	3.1
4	3.9	10.7
5	11.5	10.7
6	19.1	10.7
7	3.9	18.3
8	11.5	18.3
9	19.1	18.3
10	3.9	25.9
11	11.5	25.9
12	19.1	25.9
13	3.9	33.5
14	11.5	33.5
15	19.1	33.5

$$\begin{aligned} L \text{ (ft)} &= 7.6 \\ A \text{ (ft}^2\text{)} &= 800 \end{aligned}$$

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
5n		
↓		
↓		
↓		
↓		
↓		
215	200	300
159	220	320
160	220	280
205	260	360
229	220	300
265	270	300
223	270	320
213	260	320
223	220	300

11-10-04

Start 10:35

Stop 11:00

#15 source 1728

# 25 1674

Source  
out

Ludlum Measurements, Inc.  
Model 2360 Log Data

at 1/10/2004  
im 1:21:55 AM

Header 1: Technician  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-G  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/10/2004  
Model 2360 Time: 12:16:21  
Sample Number: 0026

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000441  
Beta Ratemeter Alarm: 000441  
Alpha + Beta Ratemeter Alarm: 000441  
Alpha Scaler Alarm: 000441  
Beta Scaler Alarm: 000441  
Alpha + Beta Scaler Alarm: 000441

Cr - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	11/09/04	09:02:22	000000	000217	S 001.0	Lab Background
0002	11/09/04	09:07:03	000002	034968	S 001.0	Lab Source
0003	11/10/04	09:07:29	000000	000186	S 001.0	Lab Background
0004	11/10/04	09:08:42	000000	035231	S 001.0	Lab Source
0005	11/10/04	09:30:50	000000	000130	S 001.0	Field Background
0006	11/10/04	09:33:00	000002	001676	S 001.0	Field Source
0007	11/10/04	09:49:09	000000	000177	S 001.0	Admin-1-F
0008	11/10/04	09:52:34	000000	000174	S 001.0	Admin-1-F
0009	11/10/04	09:56:49	000002	000218	S 001.0	Admin-1-F
0010	11/10/04	09:58:49	000000	000205	S 001.0	Admin-1-F
0011	11/10/04	10:00:28	000001	000181	S 001.0	Admin-1-F
0012	11/10/04	10:02:26	000000	000201	S 001.0	Admin-1-F
0013	11/10/04	11:11:33	000000	000189	S 001.0	Admin-1-F
0014	11/10/04	11:13:04	000003	000166	S 001.0	Admin-1-F
0015	11/10/04	11:38:12	000001	001728	S 001.0	Field Source
0016	11/10/04	11:41:24	000000	000215	S 001.0	Admin-1-G
0017	11/10/04	11:45:24	000000	000159	S 001.0	Admin-1-G
0018	11/10/04	11:50:16	000001	000160	S 001.0	Admin-1-G
0019	11/10/04	11:51:51	000001	000205	S 001.0	Admin-1-G
0020	11/10/04	11:53:14	000003	000229	S 001.0	Admin-1-G
0021	11/10/04	11:54:34	000000	000265	S 001.0	Admin-1-G
0022	11/10/04	11:55:58	000000	000223	S 001.0	Admin-1-G
0023	11/10/04	11:57:25	000001	000215	S 001.0	Admin-1-G
0024	11/10/04	11:58:51	000000	000223	S 001.0	Admin-1-G
0025	11/10/04	12:01:25	000003	001674	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1 Smear 7		11/10/04	12:50:55	Admin-1-G	Final Status Survey	11/10/04	12:50:55	1.000	1.00
2 Smear 8		11/10/04	12:49:36	Admin-1-G	Final Status Survey	11/10/04	12:49:36	1.000	1.00
3 Smear 9		11/10/04	12:48:16	Admin-1-G	Final Status Survey	11/10/04	12:48:16	1.000	1.00
4 Smear 10		11/10/04	12:46:57	Admin-1-G	Final Status Survey	11/10/04	12:46:57	1.000	1.00
5 Smear 11		11/10/04	12:45:37	Admin-1-G	Final Status Survey	11/10/04	12:45:37	1.000	1.00
6 Smear 12		11/10/04	12:44:17	Admin-1-G	Final Status Survey	11/10/04	12:44:17	1.000	1.00
7 Smear 13		11/10/04	12:42:57	Admin-1-G	Final Status Survey	11/10/04	12:42:57	1.000	1.00
8 Smear 14		11/10/04	12:41:37	Admin-1-G	Final Status Survey	11/10/04	12:41:37	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-10-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.23 cpm %Eff: 24.67 LLD: 17.61 dpm				Bkg: 0.63 cpm %Eff: 44.31 LLD: 12.12 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1 Smear 7		11/10/04	12:50:55	0.00	-0.23	-0.95	17.61	0.00	-0.63	-1.43	12.12
2 Smear 8		11/10/04	12:49:36	0.00	-0.23	-0.95	17.61	3.00	2.37	5.34	12.12
3 Smear 9		11/10/04	12:48:16	0.00	-0.23	-0.95	17.61	2.00	1.37	3.08	12.12
4 Smear 10		11/10/04	12:46:57	0.00	-0.23	-0.95	17.61	1.00	0.37	0.83	12.12
5 Smear 11		11/10/04	12:45:37	0.00	-0.23	-0.95	17.61	4.00	3.37	7.60	12.12
6 Smear 12		11/10/04	12:44:17	0.00	-0.23	-0.95	17.61	2.00	1.37	3.08	12.12
7 Smear 13		11/10/04	12:42:57	0.00	-0.23	-0.95	17.61	4.00	3.37	7.60	12.12
8 Smear 14		11/10/04	12:41:37	0.00	-0.23	-0.95	17.61	0.00	-0.63	-1.43	12.12

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-10-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Ludlum Measurements, Inc.  
Model 2360 Log Data

---

Ja 12/22/2004  
Time: 5:36:52 PM

Header 1: Chris Higgins  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: ADMIN  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/22/2004  
Model 2360 Time: 17:35:05  
Sample Number: 0011

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

C - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/22/04	07:13:28	000000	000179	S 001.0	Lab Background
0002	12/22/04	07:15:40	000001	031578	S 001.0	Lab Source
0003	12/22/04	17:07:05	000001	012858	S 001.0	Field Source
0004	12/22/04	17:08:25	000001	000183	S 001.0	ADMIN-1-F 4
0005	12/22/04	17:09:31	000001	000197	S 001.0	ADMIN-1-F 5
0006	12/22/04	17:14:51	000004	000186	S 001.0	ADMIN-1-F 6
0007	12/22/04	17:16:11	000001	014086	S 001.0	Field Source
0008	12/22/04	17:17:32	000001	000208	S 001.0	ADMIN-1-G 4
0009	12/22/04	17:18:42	000000	000197	S 001.0	ADMIN-1-G 5
0010	12/22/04	17:20:55	000002	000196	S 001.0	ADMIN-1-G 6

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
11	Smear 4	12/22/04	17:48:25	ADMIN-1-G	Final Status Survey	12/22/04	17:48:25	1.000	1.00
12	Smear 5	12/22/04	17:47:08	ADMIN-1-G	Final Status Survey	12/22/04	17:47:08	1.000	1.00
13	Smear 6	12/22/04	17:45:48	ADMIN-1-G	Final Status Survey	12/22/04	17:45:48	1.000	1.00
14	Smear 4	12/22/04	17:44:28	ADMIN-1-H	Final Status Survey	12/22/04	17:44:28	1.000	1.00
15	Smear 5	12/22/04	17:43:07	ADMIN-1-H	Final Status Survey	12/22/04	17:43:07	1.000	1.00
16	Smear 6	12/22/04	17:41:47	ADMIN-1-H	Final Status Survey	12/22/04	17:41:47	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.76 LLD: 13.41 dpm				Bkg: 0.63 cpm %Eff: 46.16 LLD: 11.9 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
11	Smear 4	12/22/04	17:48:25	2.00	1.97	7.94	13.41	0.00	-0.63	-1.40	11.90
12	Smear 5	12/22/04	17:47:06	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
13	Smear 6	12/22/04	17:45:46	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
14	Smear 4	12/22/04	17:44:26	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
15	Smear 5	12/22/04	17:43:07	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
16	Smear 6	12/22/04	17:41:47	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

SCIENTECH Inc.

82A8008 ATTACHMENT A  
Survey Cover Sheet

Survey No. 4486

Surveyor: Joe Kozyra

Print

Sign

10/20/2004

Date

Reviewer: Joe Trowbridge

Print

Sign

10/20/2004

Date

## Survey Meters

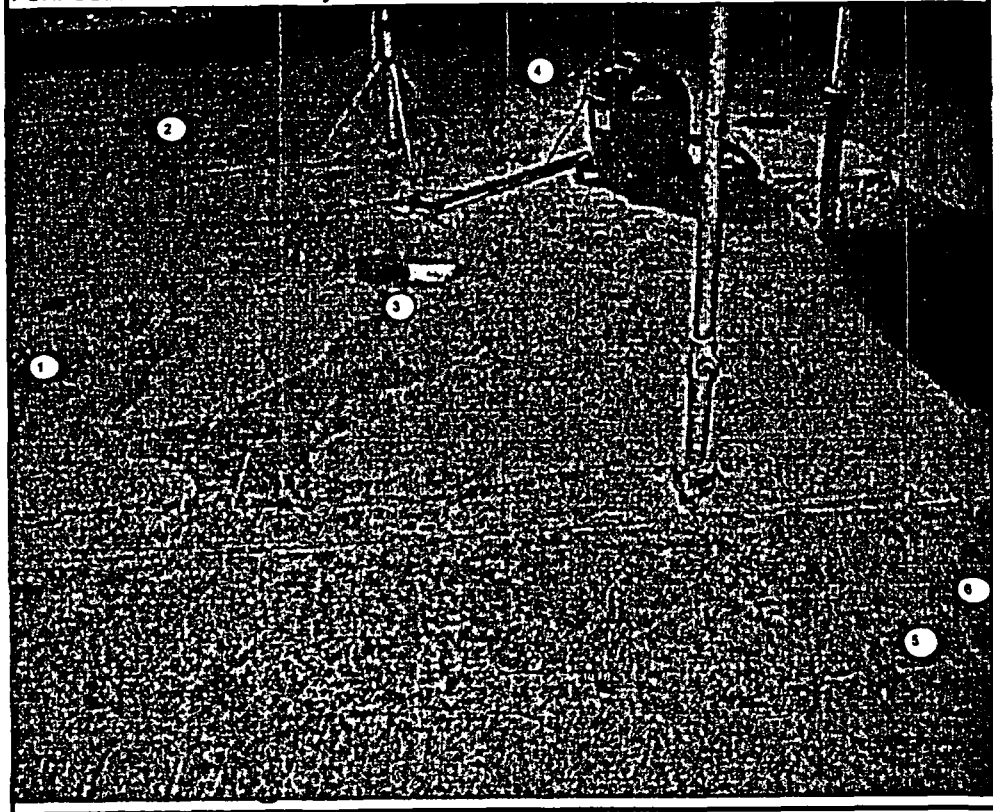
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0 cpm  
 MDA 10 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta \gamma$   $\beta \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.8 cpm  
 MDA 13 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin-1-G Inaccessible Areas (2)

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff.  $\times \frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate

Tb = background counting time

Ts = sample count time

AI = action level

Surveyor: Joe Kozyra  
Print  
Reviewer: Joe Trowbridge  
Print

\_\_\_\_\_  
Sign  
\_\_\_\_\_  
Sign

10/20/2004  
Date  
10/20/2004  
Date

## Survey Meters

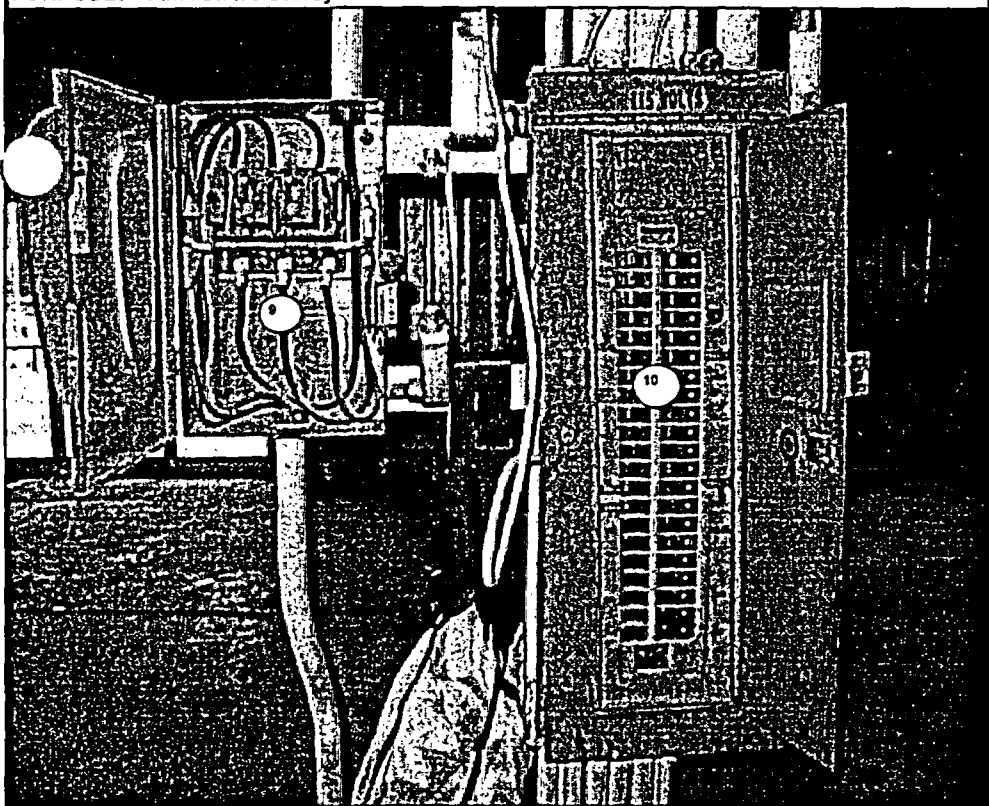
Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 27%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0 cpm  
MDA 10 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 44%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.8 cpm  
MDA 13 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta, \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Admin-1-G Inaccessible Areas

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
9	<MDA	<MDA
10	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff. X  $\frac{100\text{cm}^2}{100\text{cm}^2}$ )

$$AL = R_b + ((\text{guideline})(\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate

Tb = background counting time

Ts = sample count time

AL = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/20/04	13:36:22	Admin-1-G	Inaccessible Area	10/20/04	13:36:22	1.000	1.00
2	Smear 2	10/20/04	13:35:02	Admin-1-G	Inaccessible Area	10/20/04	13:35:02	1.000	1.00
3	Smear 3	10/20/04	13:33:42	Admin-1-G	Inaccessible Area	10/20/04	13:33:42	1.000	1.00
4	Smear 4	10/20/04	13:32:22	Admin-1-G	Inaccessible Area	10/20/04	13:32:22	1.000	1.00
5	Smear 5	10/20/04	13:31:01	Admin-1-G	Inaccessible Area	10/20/04	13:31:01	1.000	1.00
6	Smear 6	10/20/04	13:29:41	Admin-1-G	Inaccessible Area	10/20/04	13:29:41	1.000	1.00
7	Smear 7	10/20/04	13:28:20	Admin-1-G	Inaccessible Area	10/20/04	13:28:20	1.000	1.00
8	Smear 8	10/20/04	13:27:00	Admin-1-G	Inaccessible Area	10/20/04	13:27:00	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: ( 20-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date: (



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 27 LLD: 10.04 dpm				Bkg: 0.77 cpm %Eff: 44.34 LLD: 12.72 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/20/04	13:36:22	0.00	0.00	0.00	10.04	0.00	-0.77	-1.73	12.72
2	Smear 2	10/20/04	13:35:02	0.00	0.00	0.00	10.04	0.00	-0.77	-1.73	12.72
3	Smear 3	10/20/04	13:33:42	0.00	0.00	0.00	10.04	0.00	-0.77	-1.73	12.72
4	Smear 4	10/20/04	13:32:22	0.00	0.00	0.00	10.04	1.00	0.23	0.53	12.72
5	Smear 5	10/20/04	13:31:01	0.00	0.00	0.00	10.04	2.00	1.23	2.78	12.72
6	Smear 6	10/20/04	13:29:41	1.00	1.00	3.70	10.04	0.00	-0.77	-1.73	12.72
7	Smear 7/9	10/20/04	13:28:20	0.00	0.00	0.00	10.04	4.00	3.23	7.29	12.72
8	Smear 8/10	10/20/04	13:27:00	0.00	0.00	0.00	10.04	0.00	-0.77	-1.73	12.72

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-20-04

Reviewed By (print): Joe Trowbridge

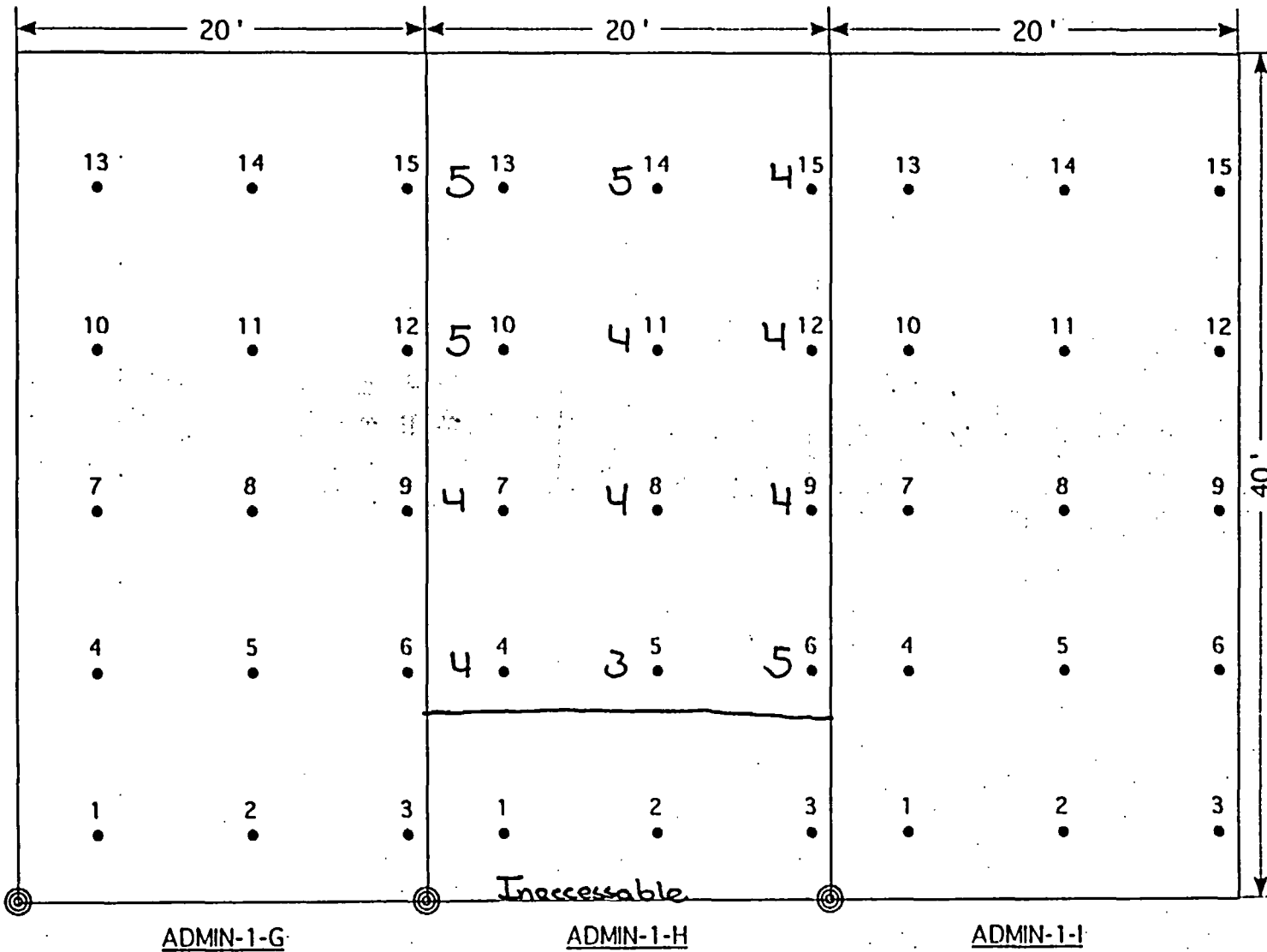
Reviewed By (sign):

Date:

**Admin-1-H Administration Area**



• SURVEY POINTS  
 ⊙ STARTING LOCATION



Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KARTHANS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Administration Area Floor (3 of 3)

SCIENTECH

SCIENTECH Inc.  
 141 WEST STREET  
 NEW MILFORD, CT 06756

PROJECT NO:  
23529-0501

FILE NAME:

SCALE: N.T.S. DATE: 06/29/2004

By: CK:

TITLE:  
ADMIN-1-G.HJ

All readings in micro R/h

Survey for 1-H

## ADMIN-1-H

[illegible]

	X	Y
	n/a	n/a
1	3.9	3.1
2	11.5	3.1
3	19.1	3.1
4	3.9	10.7
5	11.5	10.7
6	19.1	10.7
7	3.9	18.3
8	11.5	18.3
9	19.1	18.3
10	3.9	25.9
11	11.5	25.9
12	19.1	25.9
13	3.9	33.5
14	11.5	33.5
15	19.1	33.5

$$\begin{aligned} L \text{ (ft)} &= 7.6 \\ A \text{ (ft}^2\text{)} &= 800 \end{aligned}$$

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
IA		
IA		
IA		
167	250	340
184	250	340
183	250	340
202	250	305
203	240	350
230	210	340
211	250	330
171	230	350
156	250	350
172	230	310
208	220	340
203	210	350

11-10-04

Start 11:30  
Stop 14:00

# 3 source - 1626  
# 4 BIG - 156  
# 17 source - 1647

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

at 1/10/2004  
in 12:32:33 PM

Header 1: Jason Bennett  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-H  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/10/2004  
Model 2360 Time: 14:35:58  
Sample Number: 0018

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000441  
Beta Ratemeter Alarm: 000441  
Alpha + Beta Ratemeter Alarm: 000441  
Alpha Scaler Alarm: 000441  
Beta Scaler Alarm: 000441  
Alpha + Beta Scaler Alarm: 000441

2n - Count Time  
3- neter  
3- Scaler

Log Data:

lum	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

001	11/10/04	12:36:07	000001	000185	S 001.0	Lab Background
002	11/10/04	12:37:29	000005	034815	S 001.0	Lab Source
003	11/10/04	12:38:59	000001	001626	S 001.0	Field Source
004	11/10/04	13:58:57	000000	000156	S 001.0	Field Background
005	11/10/04	14:00:41	000000	000202	S 001.0	Admin-1-H Point 7
006	11/10/04	14:02:21	000001	000203	S 001.0	Admin-1-H Point 8
007	11/10/04	14:03:54	000003	000230	S 001.0	Admin-1-H Point 9
008	11/10/04	14:05:43	000000	000211	S 001.0	Admin-1-H Point 10
009	11/10/04	14:07:08	000002	000177	S 001.0	Admin-1-H Point 11
010	11/10/04	14:08:40	000001	000166	S 001.0	Admin-1-H Point 12
011	11/10/04	14:10:08	000000	000172	S 001.0	Admin-1-H Point 13
012	11/10/04	14:11:25	000000	000208	S 001.0	Admin-1-H Point 14
013	11/10/04	14:13:04	000000	000203	S 001.0	Admin-1-H Point 15
014	11/10/04	14:29:17	000000	000167	S 001.0	Admin-1-H Point 4
015	11/10/04	14:30:53	000003	000184	S 001.0	Admin-1-H Point 5
016	11/10/04	14:32:11	000000	000183	S 001.0	Admin-1-H Point 6
017	11/10/04	14:35:10	000001	001647	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1 Smear 4		11/10/04	13:54:41	Admin-1-H	Final Status Survey	11/10/04	13:54:41	1.000	1.00
2 Smear 5		11/10/04	13:53:21	Admin-1-H	Final Status Survey	11/10/04	13:53:21	1.000	1.00
3 Smear 6		11/10/04	13:52:01	Admin-1-H	Final Status Survey	11/10/04	13:52:01	1.000	1.00
4 Smear 7		11/10/04	13:50:42	Admin-1-H	Final Status Survey	11/10/04	13:50:42	1.000	1.00
5 Smear 8		11/10/04	13:49:22	Admin-1-H	Final Status Survey	11/10/04	13:49:22	1.000	1.00
6 Smear 9		11/10/04	13:48:02	Admin-1-H	Final Status Survey	11/10/04	13:48:02	1.000	1.00
7 Smear 10		11/10/04	13:46:43	Admin-1-H	Final Status Survey	11/10/04	13:46:43	1.000	1.00
8 Smear 11		11/10/04	13:45:23	Admin-1-H	Final Status Survey	11/10/04	13:45:23	1.000	1.00
9 Smear 12		11/10/04	13:44:03	Admin-1-H	Final Status Survey	11/10/04	13:44:03	1.000	1.00
10 Smear 13		11/10/04	13:42:43	Admin-1-H	Final Status Survey	11/10/04	13:42:43	1.000	1.00
11 Smear 14		11/10/04	13:41:24	Admin-1-H	Final Status Survey	11/10/04	13:41:24	1.000	1.00
12 Smear 15		11/10/04	13:40:04	Admin-1-H	Final Status Survey	11/10/04	13:40:04	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-10-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.23 cpm %Eff: 24.67 LLD: 17.61 dpm				Bkg: 0.63 cpm %Eff: 44.31 LLD: 12.12 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 4	11/10/04	13:54:41	0.00	-0.23	-0.95	17.61	0.00	-0.63	-1.43	12.12
2	Smear 5	11/10/04	13:53:21	0.00	-0.23	-0.95	17.61	0.00	-0.63	-1.43	12.12
3	Smear 6	11/10/04	13:52:01	0.00	-0.23	-0.95	17.61	1.00	0.37	0.83	12.12
4	Smear 7	11/10/04	13:50:42	0.00	-0.23	-0.95	17.61	0.00	-0.63	-1.43	12.12
5	Smear 8	11/10/04	13:49:22	0.00	-0.23	-0.95	17.61	1.00	0.37	0.83	12.12
6	Smear 9	11/10/04	13:48:02	0.00	-0.23	-0.95	17.61	1.00	0.37	0.83	12.12
7	Smear 10	11/10/04	13:46:43	0.00	-0.23	-0.95	17.61	3.00	2.37	5.34	12.12
8	Smear 11	11/10/04	13:45:23	0.00	-0.23	-0.95	17.61	4.00	3.37	7.60	12.12
9	Smear 12	11/10/04	13:44:03	0.00	-0.23	-0.95	17.61	1.00	0.37	0.83	12.12
10	Smear 13	11/10/04	13:42:43	0.00	-0.23	-0.95	17.61	1.00	0.37	0.83	12.12
11	Smear 14	11/10/04	13:41:24	1.00	0.77	3.12	17.61	1.00	0.37	0.83	12.12
12	Smear 15	11/10/04	13:40:04	0.00	-0.23	-0.95	17.61	2.00	1.37	3.08	12.12

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-10-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Surveyor: Joe Kozyra  
Print

Reviewer: Joe Trowbridge  
Print

Sign

Sign

10/20/2004  
Date

10/20/2004  
Date

## Survey Meters

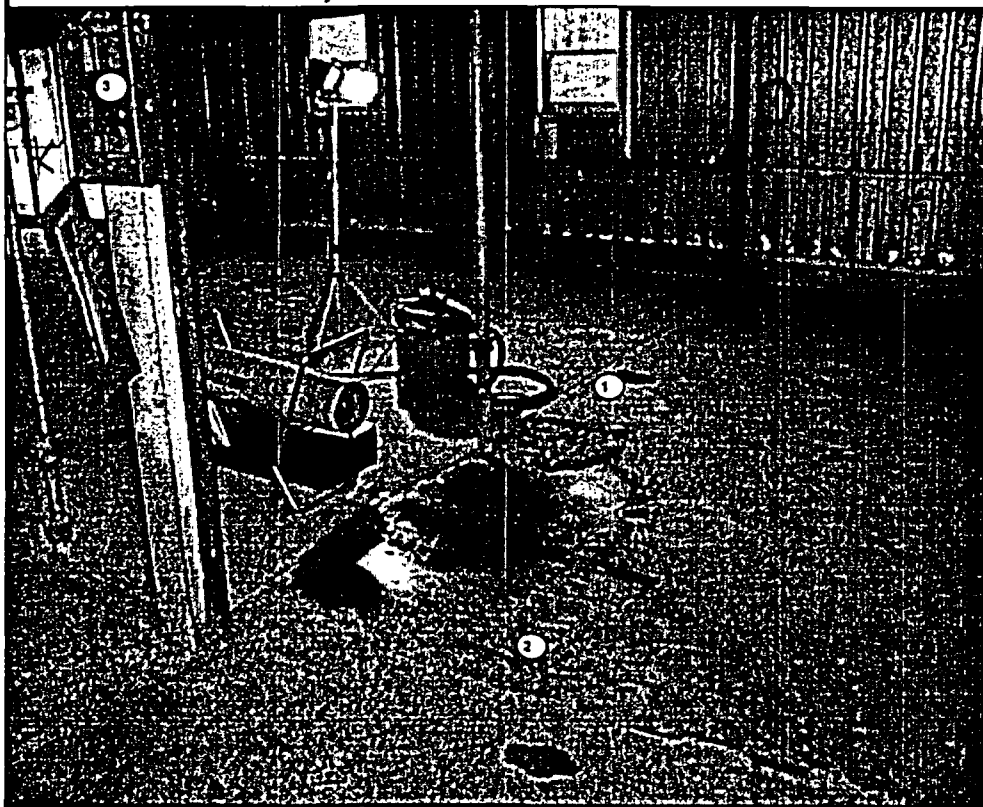
Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 27%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0 cpm  
MDA 10 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 44%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.8 cpm  
MDA 13 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta, \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Admin-1-H Inaccessible Areas

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff.  $\times \frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline})(\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/20/04	14:03:11	Admin-1-H	Inaccessible Area	10/20/04	14:03:11	1.000	1.00
2	Smear 2	10/20/04	14:01:51	Admin-1-H	Inaccessible Area	10/20/04	14:01:51	1.000	1.00
3	Smear 3	10/20/04	14:00:31	Admin-1-H	Inaccessible Area	10/20/04	14:00:31	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-20-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 27 LLD: 10.04 dpm				Bkg: 0.77 cpm %Eff: 44.34 LLD: 12.72 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/20/04	14:03:11	0.00	0.00	0.00	10.04	3.00	2.23	5.04	12.72
2	Smear 2	10/20/04	14:01:51	0.00	0.00	0.00	10.04	1.00	0.23	0.53	12.72
3	Smear 3	10/20/04	14:00:31	0.00	0.00	0.00	10.04	3.00	2.23	5.04	12.72

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

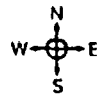
Date: 10-20-04

Reviewed By (print): Joe Trowbridge

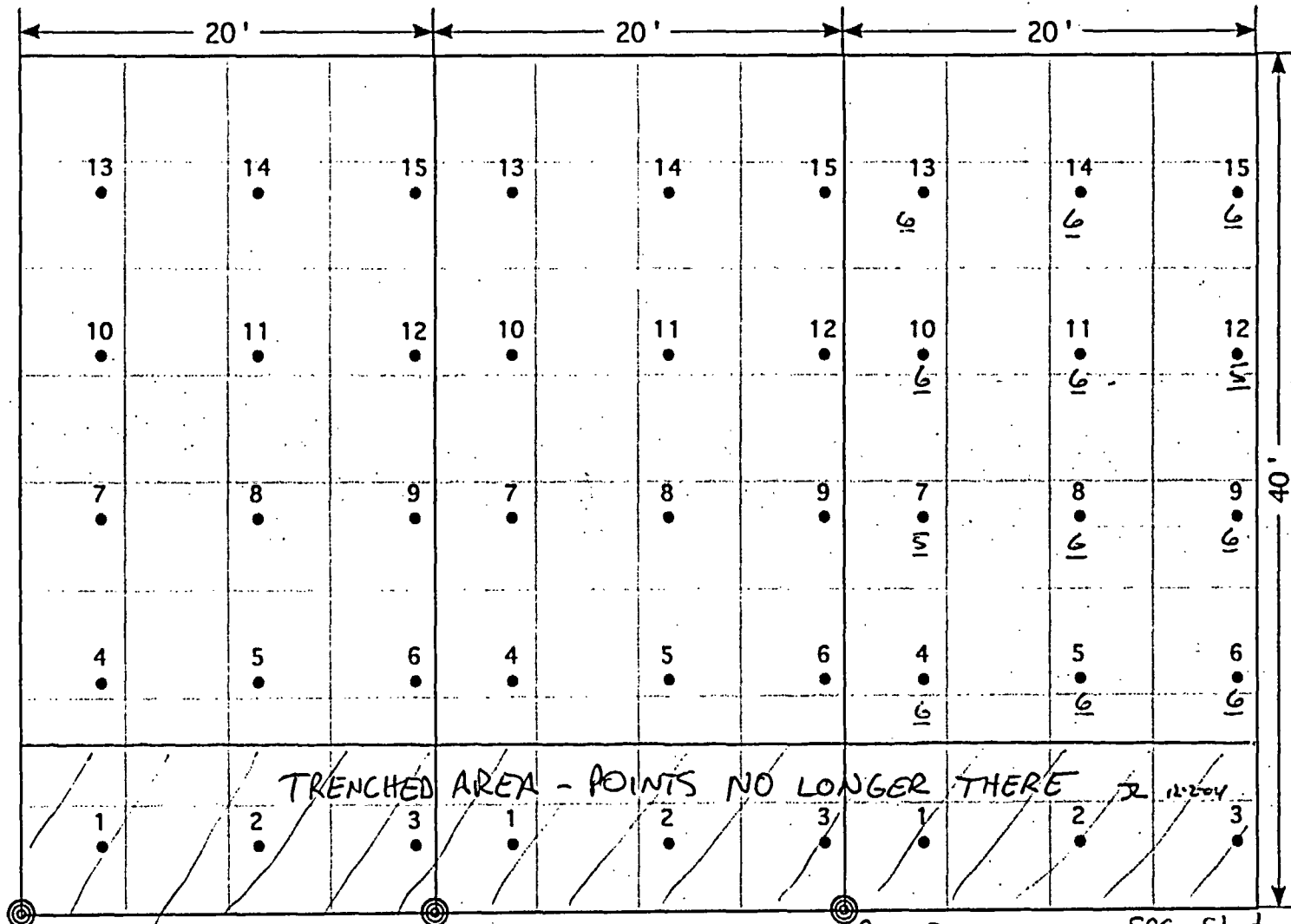
Reviewed By (sign):

Date:

**Admin-1-I Administration Area**



• SURVEY POINTS  
 ◎ STARTING LOCATION



ADMIN-1-G

ADMIN-1-H

Scan Survey ADMIN-1-I  
 Start 0700  
 Stop 1300  
 12-2-04  
 w/m-12 177863  
 43-37 160824  
 350 Avg.  
 860 Max.

FSS - Start 1300  
 12-2-04 Stop 1330

Dose rates in  $\mu\text{R/hr}$   
 w/m-19 062196  
 Cal. Due. 5-4-05

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KATHAUS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Administration Area Floor (3 of 3)

SCIENTECH

SCIENTECH, Inc.  
 140 WEST STREET  
 NEW MILFORD, CT 06756

PROJECT NO:

23529-0301

FILE NAME:

SCALE:

N.T.S.

DATE:

06/29/2004

BY:

CHK:

FIGURE:

ADMIN-1.0.HJ

# ADMIN-1-I

Log #
6 Source
N/A
N/A
N/A
7
8
9
11
12
13
14
15
16
17
18
19

	X	Y
	n/a	n/a
1	3.9	3.1
2	11.5	3.1
3	19.1	3.1
4	3.9	10.7
5	11.5	10.7
6	19.1	10.7
7	3.9	18.3
8	11.5	18.3
9	19.1	18.3
10	3.9	25.9
11	11.5	25.9
12	19.1	25.9
13	3.9	33.5
14	11.5	33.5
15	19.1	33.5

L (ft) = 7.6  
A (ft<sup>2</sup>) = 800

Fixed Points	Ave. (Scan)*	Max. (Scan)*
3672	n/a	n/a
N/A	_____	_____
N/A	_____	_____
N/A	_____	_____
164	350	800
182	350	500
183	350	500
277	350	600
220	350	500
209	350	500
205	350	500
187	350	500
201	350	500
198	350	500
167	350	500
184	350	500

\* Scan performed with M-12  
with 43-57 Flow monitor

Log 5 - Field bkgd - 150 cpm

Log 10 - VOID

Log 20 - Field source - 4291 cpm  
end of unit

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

at 12/2/2004  
in 3:33:51 PM

Header 1: James Lavender  
Header 2: Serial#202410  
Header 3: DetSer#PR208657  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-I  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/02/2004  
Model 2360 Time: 14:40:15  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000364  
Beta Ratemeter Alarm: 000364  
Alpha + Beta Ratemeter Alarm: 000364  
Alpha Scaler Alarm: 000364  
Beta Scaler Alarm: 000364  
Alpha + Beta Scaler Alarm: 000364

Count - Count Time  
Rate - Rate  
Source - Source

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
001	12/01/04	11:29:51	000000	000202	S 001.0	Lab Background
002	12/01/04	11:31:26	000000	034238	S 001.0	Lab Source
003	12/02/04	08:26:00	000001	000158	S 001.0	Lab Background
004	12/02/04	08:30:26	000002	034079	S 001.0	Lab Source
005	12/02/04	12:37:58	000000	000150	S 001.0	Field Background
006	12/02/04	12:39:29	000002	003672	S 001.0	Field Source
007	12/02/04	14:03:45	000000	000164	S 001.0	Admin-1-I
008	12/02/04	14:05:12	000000	000182	S 001.0	Admin-1-I
009	12/02/04	14:06:36	000001	000183	S 001.0	Admin-1-I
010	12/02/04	14:08:19	000001	000608	S 001.0	Void
011	12/02/04	14:15:15	000000	000277	S 001.0	Admin-1-I
012	12/02/04	14:16:50	000005	000220	S 001.0	Admin-1-I
013	12/02/04	14:18:12	000000	000209	S 001.0	Admin-1-I
014	12/02/04	14:19:41	000001	000205	S 001.0	Admin-1-I
015	12/02/04	14:21:06	000000	000187	S 001.0	Admin-1-I
016	12/02/04	14:22:34	000001	000201	S 001.0	Admin-1-I
017	12/02/04	14:24:11	000000	000198	S 001.0	Admin-1-I
018	12/02/04	14:25:41	000000	000167	S 001.0	Admin-1-I
019	12/02/04	14:27:07	000001	000184	S 001.0	Admin-1-I
020	12/02/04	14:30:34	000003	004291	S 001.0	Field Source

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.2 cpm %Eff: 24.68 LLD: 17.04 dpm				Bkg: 0.67 cpm %Eff: 44.48 LLD: 12.23 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/02/04	12:22:29	0.00	-0.20	-0.81	17.04	0.00	-0.67	-1.50	12.23
2	Smear 2	12/02/04	12:21:09	0.00	-0.20	-0.81	17.04	2.00	1.33	3.00	12.23
3	Smear 3	12/02/04	12:19:49	0.00	-0.20	-0.81	17.04	2.00	1.33	3.00	12.23
4	Smear 4	12/02/04	12:18:30	0.00	-0.20	-0.81	17.04	3.00	2.33	5.25	12.23
5	Smear 5	12/02/04	12:17:10	0.00	-0.20	-0.81	17.04	0.00	-0.67	-1.50	12.23
6	Smear 6	12/02/04	12:15:50	0.00	-0.20	-0.81	17.04	2.00	1.33	3.00	12.23
7	Smear 7	12/02/04	12:14:30	1.00	0.80	3.24	17.04	0.00	-0.67	-1.50	12.23
8	Smear 8	12/02/04	12:13:10	0.00	-0.20	-0.81	17.04	0.00	-0.67	-1.50	12.23
9	Smear 9	12/02/04	12:11:50	0.00	-0.20	-0.81	17.04	6.00	5.33	11.99	12.23
10	Smear 10	12/02/04	12:10:31	0.00	-0.20	-0.81	17.04	3.00	2.33	5.25	12.23
11	Smear 11	12/02/04	12:09:11	0.00	-0.20	-0.81	17.04	4.00	3.33	7.49	12.23
12	Smear 12	12/02/04	12:07:51	0.00	-0.20	-0.81	17.04	0.00	-0.67	-1.50	12.23

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/02/04	12:22:29	Admin-1-I	Final Status Survey	12/02/04	12:22:29	1.000	1.00
2	Smear 2	12/02/04	12:21:09	Admin-1-I	Final Status Survey	12/02/04	12:21:09	1.000	1.00
3	Smear 3	12/02/04	12:19:49	Admin-1-I	Final Status Survey	12/02/04	12:19:49	1.000	1.00
4	Smear 4	12/02/04	12:18:30	Admin-1-I	Final Status Survey	12/02/04	12:18:30	1.000	1.00
5	Smear 5	12/02/04	12:17:10	Admin-1-I	Final Status Survey	12/02/04	12:17:10	1.000	1.00
6	Smear 6	12/02/04	12:15:50	Admin-1-I	Final Status Survey	12/02/04	12:15:50	1.000	1.00
7	Smear 7	12/02/04	12:14:30	Admin-1-I	Final Status Survey	12/02/04	12:14:30	1.000	1.00
8	Smear 8	12/02/04	12:13:10	Admin-1-I	Final Status Survey	12/02/04	12:13:10	1.000	1.00
9	Smear 9	12/02/04	12:11:50	Admin-1-I	Final Status Survey	12/02/04	12:11:50	1.000	1.00
10	Smear 10	12/02/04	12:10:31	Admin-1-I	Final Status Survey	12/02/04	12:10:31	1.000	1.00
11	Smear 11	12/02/04	12:09:11	Admin-1-I	Final Status Survey	12/02/04	12:09:11	1.000	1.00
12	Smear 12	12/02/04	12:07:51	Admin-1-I	Final Status Survey	12/02/04	12:07:51	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-02-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



SCIENTECH Inc.

82A8008 ATTACHMENT A  
Survey Cover Sheet

Survey No. 4488

Surveyor: Joe Kozyra

Print

Sign

10/20/2004

Date

Reviewer: Joe Trowbridge

Print

Sign

10/20/2004

Date

## Survey Meters

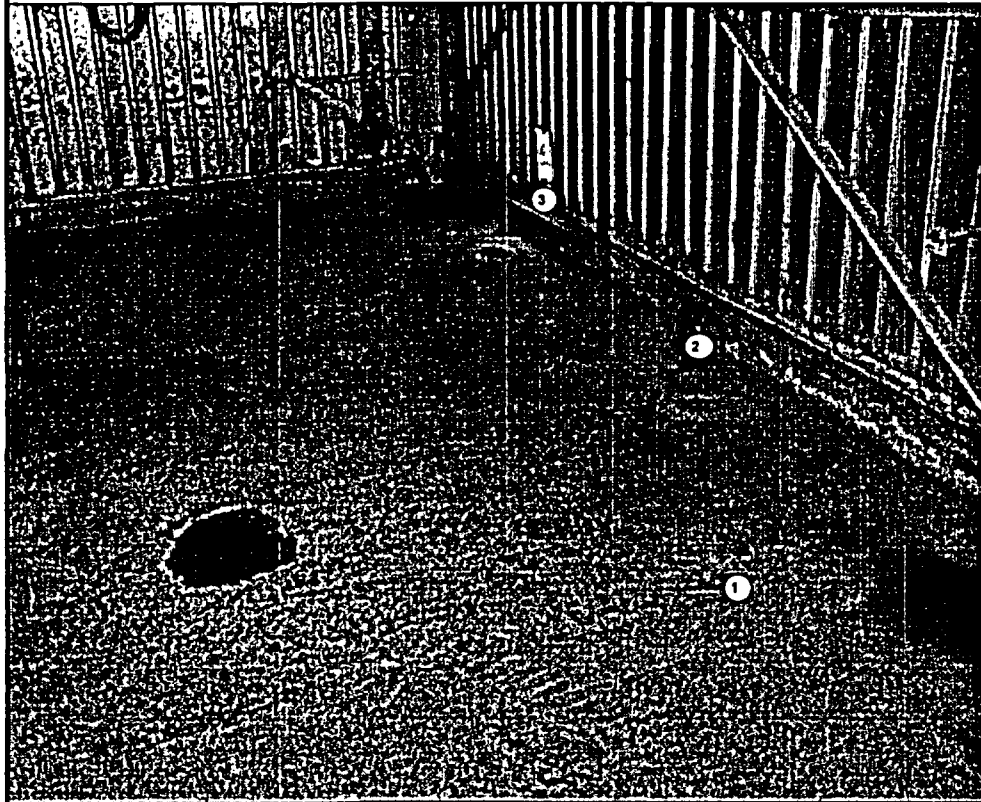
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0 cpm  
 MDA 10 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.8 cpm  
 MDA 13 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta, \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin-1-I Inaccessible Areas

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA

$$MDA = \frac{2.71}{T_b} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff. X  $\frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate

Tb = background counting time

Ts = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/20/04	14:12:25	Admin-1-I	Inaccessible Area	10/20/04	14:12:25	1.000	1.00
2	Smear 2	10/20/04	14:11:05	Admin-1-I	Inaccessible Area	10/20/04	14:11:05	1.000	1.00
3	Smear 3	10/20/04	14:09:45	Admin-1-I	Inaccessible Area	10/20/04	14:09:45	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-20-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 27 LLD: 10.04 dpm				Bkg: 0.77 cpm %Eff: 44.34 LLD: 12.72 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/20/04	14:12:25	0.00	0.00	0.00	10.04	0.00	-0.77	-1.73	12.72
2	Smear 2	10/20/04	14:11:05	1.00	1.00	3.70	10.04	0.00	-0.77	-1.73	12.72
3	Smear 3	10/20/04	14:09:45	0.00	0.00	0.00	10.04	0.00	-0.77	-1.73	12.72

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

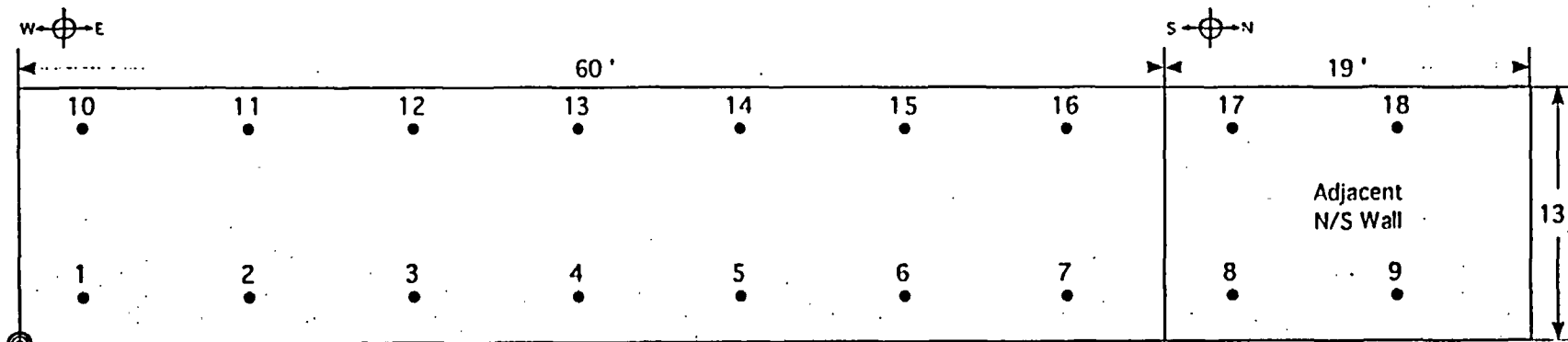
Date: 11/10/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**Admin-1-J Administration Area**



ADMIN-1-J

• SURVEY POINTS  
 ◎ STARTING LOCATION

9-18-04

START- 0740

STOP 1300

# 18 is #19 ON DATA Sheet

#18 is void

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Administration Area North Wall (1 of 3)	
SCIENTECH SCIENTECH, Inc. 145 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 06/29/2004
By:	CR:
FIGURE: ADMIN-1-J	

# ADMIN-1-J

Log #
Source
5
6
7
8
9
15
16
17
19
20
21
22
23
24
25
26
27
28

X	Y
n/a	n/a
1 3.3	2.3
2 11.9	2.3
3 20.5	2.3
4 29.1	2.3
5 37.7	2.3
6 46.3	2.3
7 54.9	2.3
8 63.5	2.3
9 72.1	2.3
10 3.3	10.9
11 11.9	10.9
12 20.5	10.9
13 29.1	10.9
14 37.7	10.9
15 46.3	10.9
16 54.9	10.9
17 63.5	10.9
18 72.1	10.9

L (ft)= 8.6  
A (ft²)= 1027

Fixed Points	Ave. (Scan)	Max. (Scan)
n/a	n/a	n/a
122	140	180
125	140	200
114	120	180
117	120	200
135	140	220
123	120	200
116	140	200
115	120	180
148	140	260
135	140	200
120	140	200
138	140	220
131	140	220
134	140	200
132	140	220
128	140	240
117	120	220
122	140	200

\* Survey points located on adjacent wall

Ludlum Measurements, Inc.  
Model 2360 Log Data

9/20/2004  
3:57:49 PM

Header 1: Technician  
Header 2: Serial#202410  
Header 3: DetSer#PR208657  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 09/20/2004  
Model 2360 Time: 15:57:53  
Sample Number: 0030

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 050000  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 050000  
Alpha + Beta Scaler Alarm: 050000

Count Time - Count Time  
meter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	09/18/04	11:22:06	000000	000252	S 001.0	Lab Background
0002	09/18/04	11:23:36	000002	033882	S 001.0	Lab Source
0003	09/18/04	12:39:27	000000	000136	S 001.0	Field Background
0004	09/18/04	12:41:42	000002	001660	S 001.0	Field Source
0005	09/18/04	13:12:15	000002	000122	S 001.0	Admin-1-J
0006	09/18/04	13:31:25	000005	000125	S 001.0	Admin-1-J
0007	09/18/04	13:54:16	000001	000114	S 001.0	Admin-1-J
0008	09/18/04	14:13:54	000001	000117	S 001.0	Admin-1-J
0009	09/18/04	14:38:08	000000	000135	S 001.0	Admin-1-J
0010	09/18/04	15:11:52	000001	001747	S 001.0	Field Source
0011	09/20/04	07:31:19	000000	000220	S 001.0	Lab Background
0012	09/20/04	07:33:16	000004	033985	S 001.0	Lab Source
0013	09/20/04	07:56:00	000004	001587	S 001.0	Field Source
0014	09/20/04	08:00:03	000000	000131	S 001.0	Field Background
0015	09/20/04	08:13:18	000004	000123	S 001.0	Admin-1-J
0016	09/20/04	08:26:42	000001	000116	S 001.0	Admin-1-J
0017	09/20/04	08:43:41	000002	000115	S 001.0	Admin-1-J
0018	09/20/04	08:44:50	000002	000139	S 001.0	VOID
0019	09/20/04	10:17:34	000000	000148	S 001.0	Admin-1-J
0020	09/20/04	10:40:42	000001	000135	S 001.0	Admin-1-J
0021	09/20/04	11:03:53	000000	000120	S 001.0	Admin-1-J
0022	09/20/04	11:25:23	000000	000138	S 001.0	Admin-1-J
0023	09/20/04	13:12:53	000001	000131	S 001.0	Admin-1-J
0024	09/20/04	13:38:29	000000	000134	S 001.0	Admin-1-J
0025	09/20/04	13:52:00	000000	000132	S 001.0	Admin-1-J
0026	09/20/04	14:12:05	000000	000128	S 001.0	Admin-1-J
0027	09/20/04	15:32:32	000001	000117	S 001.0	Admin-1-J
0028	09/20/04	15:49:54	000001	000122	S 001.0	Admin-1-J
0029	09/20/04	15:52:29	000002	001637	S 001.0	Admin-1-J

Field source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	09/13/04	10:21:10	Admin Area 1-J	Final Status Survey	09/13/04	10:21:10	1.000	1.00
2	Smear 2	09/13/04	10:19:49	Admin Area 1-J	Final Status Survey	09/13/04	10:19:49	1.000	1.00
3	Smear 3	09/13/04	10:18:29	Admin Area 1-J	Final Status Survey	09/13/04	10:18:29	1.000	1.00
4	Smear 4	09/13/04	10:17:08	Admin Area 1-J	Final Status Survey	09/13/04	10:17:08	1.000	1.00
5	Smear 5	09/13/04	10:15:48	Admin Area 1-J	Final Status Survey	09/13/04	10:15:48	1.000	1.00
6	Smear 6	09/13/04	10:14:27	Admin Area 1-J	Final Status Survey	09/13/04	10:14:27	1.000	1.00
7	Smear 7	09/13/04	10:13:06	Admin Area 1-J	Final Status Survey	09/13/04	10:13:06	1.000	1.00
8	Smear 8	09/13/04	10:11:45	Admin Area 1-J	Final Status Survey	09/13/04	10:11:45	1.000	1.00
9	Smear 9	09/13/04	10:10:25	Admin Area 1-J	Final Status Survey	09/13/04	10:10:25	1.000	1.00
10	Smear 10	09/13/04	10:09:05	Admin Area 1-J	Final Status Survey	09/13/04	10:09:05	1.000	1.00
11	Smear 11	09/13/04	10:07:44	Admin Area 1-J	Final Status Survey	09/13/04	10:07:44	1.000	1.00
12	Smear 12	09/13/04	10:06:24	Admin Area 1-J	Final Status Survey	09/13/04	10:06:24	1.000	1.00
13	Smear 13	09/13/04	10:05:03	Admin Area 1-J	Final Status Survey	09/13/04	10:05:03	1.000	1.00
14	Smear 14	09/13/04	10:03:43	Admin Area 1-J	Final Status Survey	09/13/04	10:03:43	1.000	1.00
15	Smear 15	09/13/04	10:02:22	Admin Area 1-J	Final Status Survey	09/13/04	10:02:22	1.000	1.00
16	Smear 16	09/13/04	10:01:02	Admin Area 1-J	Final Status Survey	09/13/04	10:01:02	1.000	1.00
17	Smear 17	09/13/04	9:59:41	Admin Area 1-J	Final Status Survey	09/13/04	9:59:41	1.000	1.00
18	Smear 18	09/13/04	9:58:20	Admin Area 1-J	Final Status Survey	09/13/04	9:58:20	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 13-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-13-04



Smears		Count Mins: 1		Alpha				Beta				Smears	
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %EF: 27.03 LLD: 13.94 dpm				Bkg: 0.8 cpm %EF: 44.24 LLD: 12.89 dpm				Sample Parameter Entry	
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA	Carrier No.	Sample ID
1 Smear 1		09/13/04	10:21:10	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89	1 Smear 1	
2 Smear 2		09/13/04	10:19:49	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89	2 Smear 2	
3 Smear 3		09/13/04	10:18:29	0.00	-0.10	-0.37	13.94	5.00	4.20	9.49	12.89	3 Smear 3	
4 Smear 4		09/13/04	10:17:08	0.00	-0.10	-0.37	13.94	1.00	0.20	0.45	12.89	4 Smear 4	
5 Smear 5		09/13/04	10:15:48	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89	5 Smear 5	
6 Smear 6		09/13/04	10:14:27	0.00	-0.10	-0.37	13.94	7.00	6.20	14.01	12.89	6 Smear 6	
7 Smear 7		09/13/04	10:13:06	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89	7 Smear 7	
8 Smear 8		09/13/04	10:11:45	0.00	-0.10	-0.37	13.94	1.00	0.20	0.45	12.89	8 Smear 8	
9 Smear 9		09/13/04	10:10:25	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89	9 Smear 9	
10 Smear 10		09/13/04	10:09:05	0.00	-0.10	-0.37	13.94	1.00	0.20	0.45	12.89	10 Smear 10	
11 Smear 11		09/13/04	10:07:44	0.00	-0.10	-0.37	13.94	3.00	2.20	4.97	12.89	11 Smear 11	
12 Smear 12		09/13/04	10:06:24	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89	12 Smear 12	
13 Smear 13		09/13/04	10:05:03	0.00	-0.10	-0.37	13.94	1.00	0.20	0.45	12.89	13 Smear 13	
14 Smear 14		09/13/04	10:03:43	0.00	-0.10	-0.37	13.94	2.00	1.20	2.71	12.89	14 Smear 14	
15 Smear 15		09/13/04	10:02:22	0.00	-0.10	-0.37	13.94	1.00	0.20	0.45	12.89	15 Smear 15	
16 Smear 16		09/13/04	10:01:02	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89	16 Smear 16	
17 Smear 17		09/13/04	9:59:41	1.00	0.90	3.33	13.94	0.00	-0.80	-1.81	12.89	17 Smear 17	
18 Smear 18		09/13/04	9:58:20	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89	18 Smear 18	

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-13-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-13-04

**Admin-1-K Administration Area**



70'

13'

ADMIN-1-K

• SURVEY POINTS

◎ STARTING LOCATION

9-30-04

START 0730

STOP-10-2-04

12:00

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARTHAS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area North Wall (2 of 3)

SCIENTECH

SCIENTECH Inc.  
143 WEST STREET  
NEW MILFORD CT 06456

PROJECT NO:  
23529 0501

FILENAME:

SCALE  
N.T.S.

DATE  
06/29/2004

By:

CK:

FIGURE  
ADMIN-1-K

# ADMIN-1-K

Log #	Source
4	
5	
6	
7	
8	
9	
10	
11	
12	
20	
21	
22	
23	
24	
25	
26	
33	

	X	Y
	n/a	n/a
1	7.1	4.1
2	15.2	4.1
3	23.3	4.1
4	31.4	4.1
5	39.5	4.1
6	47.6	4.1
7	55.7	4.1
8	63.8	4.1
9	7.1	12.2
10	15.2	12.2
11	23.3	12.2
12	31.4	12.2
13	39.5	12.2
14	47.6	12.2
15	55.7	12.2
16	63.8	12.2

L (ft)= 8.1  
A (ft²)= 910

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
142	120	220
104	140	200
119	100	180
145	140	220
133	140	220
101	100	160
120	140	200
107	130	200
109	120	200
106	120	200
128	120	200
112	120	180
91	120	180
129	120	200
117	100	200
120	120	160

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 10/2/2004  
Time: 10:17:40 AM

Header 1: Technician  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-K  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/02/2004  
Model 2360 Time: 10:12:34  
Sample Number: 0036

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

CntTime - Count Time  
R meter  
S er

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	09/30/04	07:51:11	000000	000192	S 001.0	Lab Background
0002	09/30/04	07:53:08	000000	032757	S 001.0	Lab Source
0003	09/30/04	08:50:35	000001	000120	S 001.0	Field Background
0004	09/30/04	08:52:08	000004	001628	S 001.0	Field Source
0005	09/30/04	09:08:11	000002	000142	S 001.0	Admin-1-K
0006	09/30/04	10:26:36	000001	000104	S 001.0	Admin-1-K
0007	09/30/04	11:33:27	000000	000119	S 001.0	Admin-1-K
0008	09/30/04	13:26:40	000000	000145	S 001.0	Admin-1-K
0009	09/30/04	13:48:03	000001	000133	S 001.0	Admin-1-K
0010	09/30/04	15:21:17	000001	000101	S 001.0	Admin-1-K
0011	09/30/04	15:50:58	000001	000120	S 001.0	Admin-1-K
0012	09/30/04	16:24:17	000000	000107	S 001.0	Admin-1-K
0013	09/30/04	16:26:54	000000	000120	S 001.0	Field Background
0014	09/30/04	16:29:14	000001	001578	S 001.0	Field Source
0015	10/01/04	07:35:39	000000	000183	S 001.0	Lab Background
0016	10/01/04	07:41:26	000000	032594	S 001.0	Lab Source
0017	10/01/04	07:59:20	000000	000154	S 001.0	Field Background
0018	10/01/04	08:01:07	000000	001614	S 001.0	Field Source
0019	10/01/04	08:33:22	000001	000128	S 001.0	Field Background
0020	10/01/04	10:38:51	000000	000109	S 001.0	Admin-1-K
0021	10/01/04	11:08:13	000001	000106	S 001.0	Admin-1-K
0022	10/01/04	13:26:05	000000	000128	S 001.0	Admin-1-K
0023	10/01/04	13:58:15	000000	000112	S 001.0	Admin-1-K
0024	10/01/04	14:16:51	000001	000091	S 001.0	Admin-1-K
0025	10/01/04	15:44:21	000000	000129	S 001.0	Admin-1-K
0026	10/01/04	16:05:50	000000	000117	S 001.0	Admin-1-K
0027	10/01/04	16:21:36	000001	000143	S 001.0	Field Background
0028	10/01/04	16:23:15	000003	001671	S 001.0	Field Source
0029	10/02/04	07:41:52	000000	000162	S 001.0	Lab Background
0030	10/02/04	07:43:28	000000	032860	S 001.0	Lab Source
0031	10/02/04	08:06:14	000000	000109	S 001.0	Field Background
0032	10/02/04	08:07:57	000003	001590	S 001.0	Field Source
0033	10/02/04	09:58:02	000002	000120	S 001.0	Admin-1-K
0034	10/02/04	10:03:32	000000	000110	S 001.0	Field Background

0035 10/02/04 10:05:05 000004 001642 S 001.0 Field Source  
\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/03/04	9:46:01	Admin-1-K	Final Status Survey	10/03/04	9:46:01	1.000	1.00
2	Smear 2	10/03/04	9:44:40	Admin-1-K	Final Status Survey	10/03/04	9:44:40	1.000	1.00
3	Smear 3	10/03/04	9:43:19	Admin-1-K	Final Status Survey	10/03/04	9:43:19	1.000	1.00
4	Smear 4	10/03/04	9:41:58	Admin-1-K	Final Status Survey	10/03/04	9:41:58	1.000	1.00
5	Smear 5	10/03/04	9:40:38	Admin-1-K	Final Status Survey	10/03/04	9:40:38	1.000	1.00
6	Smear 6	10/03/04	9:39:17	Admin-1-K	Final Status Survey	10/03/04	9:39:17	1.000	1.00
7	Smear 7	10/03/04	9:37:56	Admin-1-K	Final Status Survey	10/03/04	9:37:56	1.000	1.00
8	Smear 8	10/03/04	9:36:36	Admin-1-K	Final Status Survey	10/03/04	9:36:36	1.000	1.00
9	Smear 9	10/03/04	9:35:15	Admin-1-K	Final Status Survey	10/03/04	9:35:15	1.000	1.00
10	Smear 10	10/03/04	9:33:54	Admin-1-K	Final Status Survey	10/03/04	9:33:54	1.000	1.00
11	Smear 11	10/03/04	9:32:33	Admin-1-K	Final Status Survey	10/03/04	9:32:33	1.000	1.00
12	Smear 12	10/03/04	9:31:12	Admin-1-K	Final Status Survey	10/03/04	9:31:12	1.000	1.00
13	Smear 13	10/03/04	9:29:52	Admin-1-K	Final Status Survey	10/03/04	9:29:52	1.000	1.00
14	Smear 14	10/03/04	9:28:31	Admin-1-K	Final Status Survey	10/03/04	9:28:31	1.000	1.00
15	Smear 15	10/03/04	9:27:11	Admin-1-K	Final Status Survey	10/03/04	9:27:11	1.000	1.00
16	Smear 16	10/03/04	9:25:50	Admin-1-K	Final Status Survey	10/03/04	9:25:50	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-3-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta				Smears	
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 27.43 LLD: 9.88 dpm				Bkg: 0.6 cpm %Eff: 44.34 LLD: 11.96 dpm				Sample Parameter Entry	
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA	Carrier No.	Sample ID
1	Smear 1	10/03/04	9:46:01	0.00	0.00	0.00	9.88	2.00	1.40	3.16	11.96	1	Smear 1
2	Smear 2	10/03/04	9:44:40	0.00	0.00	0.00	9.88	2.00	1.40	3.16	11.96	2	Smear 2
3	Smear 3	10/03/04	9:43:19	0.00	0.00	0.00	9.88	2.00	1.40	3.16	11.96	3	Smear 3
4	Smear 4	10/03/04	9:41:58	0.00	0.00	0.00	9.88	1.00	0.40	0.90	11.96	4	Smear 4
5	Smear 5	10/03/04	9:40:38	0.00	0.00	0.00	9.88	2.00	1.40	3.16	11.96	5	Smear 5
6	Smear 6	10/03/04	9:39:17	0.00	0.00	0.00	9.88	1.00	0.40	0.90	11.96	6	Smear 6
7	Smear 7	10/03/04	9:37:56	0.00	0.00	0.00	9.88	0.00	-0.60	-1.35	11.96	7	Smear 7
8	Smear 8	10/03/04	9:36:36	0.00	0.00	0.00	9.88	0.00	-0.60	-1.35	11.96	8	Smear 8
9	Smear 9	10/03/04	9:35:15	0.00	0.00	0.00	9.88	2.00	1.40	3.16	11.96	9	Smear 9
10	Smear 10	10/03/04	9:33:54	1.00	1.00	3.65	9.88	1.00	0.40	0.90	11.96	10	Smear 10
11	Smear 11	10/03/04	9:32:33	0.00	0.00	0.00	9.88	1.00	0.40	0.90	11.96	11	Smear 11
12	Smear 12	10/03/04	9:31:12	0.00	0.00	0.00	9.88	2.00	1.40	3.16	11.96	12	Smear 12
13	Smear 13	10/03/04	9:29:52	0.00	0.00	0.00	9.88	0.00	-0.60	-1.35	11.96	13	Smear 13
14	Smear 14	10/03/04	9:28:31	0.00	0.00	0.00	9.88	0.00	-0.60	-1.35	11.96	14	Smear 14
15	Smear 15	10/03/04	9:27:11	0.00	0.00	0.00	9.88	0.00	-0.60	-1.35	11.96	15	Smear 15
16	Smear 16	10/03/04	9:25:50	1.00	1.00	3.65	9.88	0.00	-0.60	-1.35	11.96	16	Smear 16

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 3-04

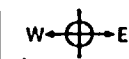
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



**Admin-1-L Administration Area**



70'

13'

ADMIN-1-L

• SURVLY POINTS  
◎ STARTING LOCATION

10-12-04  
START 12:30  
STOP 16:45

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

Administration Area North Wall (3 of 3)

CLASS 1

KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD

QUEHANNA DECOMMISSIONING

SCIENTECH  
SCIENTECH Inc.  
143 WEST STREET  
NEW MILFORD CT 06776

PROJECT NO:  
23529-0501

FILE NAME:

SCALE: DATE  
N.T.S. 06/29/2004

By: CK:

FIGURE  
ADMIN-1-L

## ADMIN-1-L

Log #3-146 BKG
4-1620 Source
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

	X	Y
	n/a	n/a
1	7.1	4.1
2	15.2	4.1
3	23.3	4.1
4	31.4	4.1
5	39.5	4.1
6	47.6	4.1
7	55.7	4.1
8	63.8	4.1
9	7.1	12.2
10	15.2	12.2
11	23.3	12.2
12	31.4	12.2
13	39.5	12.2
14	47.6	12.2
15	55.7	12.2
16	63.8	12.2

L (ft)= 8.1

A (ft<sup>2</sup>)= 910

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
113	140	200
122	120	180
130	120	200
146	140	180
144	120	200
136	120	220
123	120	280
123	140	200
135	120	220
134	120	180
116	140	220
140	140	220
135	120	240
137	120	200
115	160	220
152	120	200

Ludlum Measurements, Inc.  
Model 2360 Log Data

---

Date: 10/13/2004  
Time: 7:52:31 AM

Header 1: Tom Malachina  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-L  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/13/2004  
Model 2360 Time: 07:55:04  
Sample Number: 0022

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

C - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	10/12/04	14:07:28	000000	000216	S 001.0	Lab Background
0002	10/12/04	14:08:34	000001	033316	S 001.0	Lab Source
0003	10/12/04	14:23:26	000001	000146	S 001.0	Field Background
0004	10/12/04	14:25:13	000004	001620	S 001.0	Field Source
0005	10/12/04	14:31:23	000000	000113	S 001.0	Admin-1-L
0006	10/12/04	14:34:37	000001	000122	S 001.0	Admin-1-L
0007	10/12/04	15:13:59	000002	000130	S 001.0	Admin-1-L
0008	10/12/04	15:18:02	000001	000146	S 001.0	Admin-1-L
0009	10/12/04	15:20:05	000000	000144	S 001.0	Admin-1-L
0010	10/12/04	15:24:56	000002	000136	S 001.0	Admin-1-L
0011	10/12/04	15:26:18	000002	000123	S 001.0	Admin-1-L
0012	10/12/04	15:27:48	000001	000123	S 001.0	Admin-1-L
0013	10/12/04	15:38:42	000001	000135	S 001.0	Admin-1-L
0014	10/12/04	15:40:34	000003	000134	S 001.0	Admin-1-L
0015	10/12/04	15:42:25	000000	000116	S 001.0	Admin-1-L
0016	10/12/04	15:44:59	000000	000140	S 001.0	Admin-1-L
0017	10/12/04	15:47:05	000001	000135	S 001.0	Admin-1-L
0018	10/12/04	15:49:09	000000	000137	S 001.0	Admin-1-L
0019	10/12/04	15:51:32	000000	000115	S 001.0	Admin-1-L
0020	10/12/04	15:53:42	000001	000152	S 001.0	Admin-1-L
0021	10/12/04	16:10:04	000000	033624	S 001.0	Field Source

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
35	Smear 1	09/13/04	11:32:57	Admin Area 1-L	Final Status Survey	09/13/04	11:32:57	1.000	1.00
36	Smear 2	09/13/04	11:31:37	Admin Area 1-L	Final Status Survey	09/13/04	11:31:37	1.000	1.00
37	Smear 3	09/13/04	11:30:16	Admin Area 1-L	Final Status Survey	09/13/04	11:30:16	1.000	1.00
38	Smear 4	09/13/04	11:28:56	Admin Area 1-L	Final Status Survey	09/13/04	11:28:56	1.000	1.00
39	Smear 5	09/13/04	11:27:35	Admin Area 1-L	Final Status Survey	09/13/04	11:27:35	1.000	1.00
40	Smear 6	09/13/04	11:26:14	Admin Area 1-L	Final Status Survey	09/13/04	11:26:14	1.000	1.00
41	Smear 7	09/13/04	11:24:54	Admin Area 1-L	Final Status Survey	09/13/04	11:24:54	1.000	1.00
42	Smear 8	09/13/04	11:23:33	Admin Area 1-L	Final Status Survey	09/13/04	11:23:33	1.000	1.00
43	Smear 9	09/13/04	11:22:13	Admin Area 1-L	Final Status Survey	09/13/04	11:22:13	1.000	1.00
44	Smear 10	09/13/04	11:20:52	Admin Area 1-L	Final Status Survey	09/13/04	11:20:52	1.000	1.00
45	Smear 11	09/13/04	11:19:32	Admin Area 1-L	Final Status Survey	09/13/04	11:19:32	1.000	1.00
46	Smear 12	09/13/04	11:18:12	Admin Area 1-L	Final Status Survey	09/13/04	11:18:12	1.000	1.00
47	Smear 13	09/13/04	11:16:51	Admin Area 1-L	Final Status Survey	09/13/04	11:16:51	1.000	1.00
48	Smear 14	09/13/04	11:15:31	Admin Area 1-L	Final Status Survey	09/13/04	11:15:31	1.000	1.00
49	Smear 15	09/13/04	11:14:10	Admin Area 1-L	Final Status Survey	09/13/04	11:14:10	1.000	1.00
50	Smear 16	09/13/04	11:12:50	Admin Area 1-L	Final Status Survey	09/13/04	11:12:50	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-13-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %Eff: 27.03 LLD: 13.94 dpm				Bkg: 0.8 cpm %Eff: 44.24 LLD: 12.89 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
35	Smear 1	09/13/04	11:32:57	0.00	-0.10	-0.37	13.94	1.00	0.20	0.45	12.89
36	Smear 2	09/13/04	11:31:37	0.00	-0.10	-0.37	13.94	2.00	1.20	2.71	12.89
37	Smear 3	09/13/04	11:30:16	0.00	-0.10	-0.37	13.94	1.00	0.20	0.45	12.89
38	Smear 4	09/13/04	11:28:56	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89
39	Smear 5	09/13/04	11:27:35	0.00	-0.10	-0.37	13.94	1.00	0.20	0.45	12.89
40	Smear 6	09/13/04	11:26:14	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89
41	Smear 7	09/13/04	11:24:54	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89
42	Smear 8	09/13/04	11:23:33	0.00	-0.10	-0.37	13.94	3.00	2.20	4.97	12.89
43	Smear 9	09/13/04	11:22:13	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89
44	Smear 10	09/13/04	11:20:52	0.00	-0.10	-0.37	13.94	1.00	0.20	0.45	12.89
45	Smear 11	09/13/04	11:19:32	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89
46	Smear 12	09/13/04	11:18:12	0.00	-0.10	-0.37	13.94	1.00	0.20	0.45	12.89
47	Smear 13	09/13/04	11:16:51	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89
48	Smear 14	09/13/04	11:15:31	0.00	-0.10	-0.37	13.94	1.00	0.20	0.45	12.89
49	Smear 15	09/13/04	11:14:10	0.00	-0.10	-0.37	13.94	3.00	2.20	4.97	12.89
50	Smear 16	09/13/04	11:12:50	0.00	-0.10	-0.37	13.94	0.00	-0.80	-1.81	12.89

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

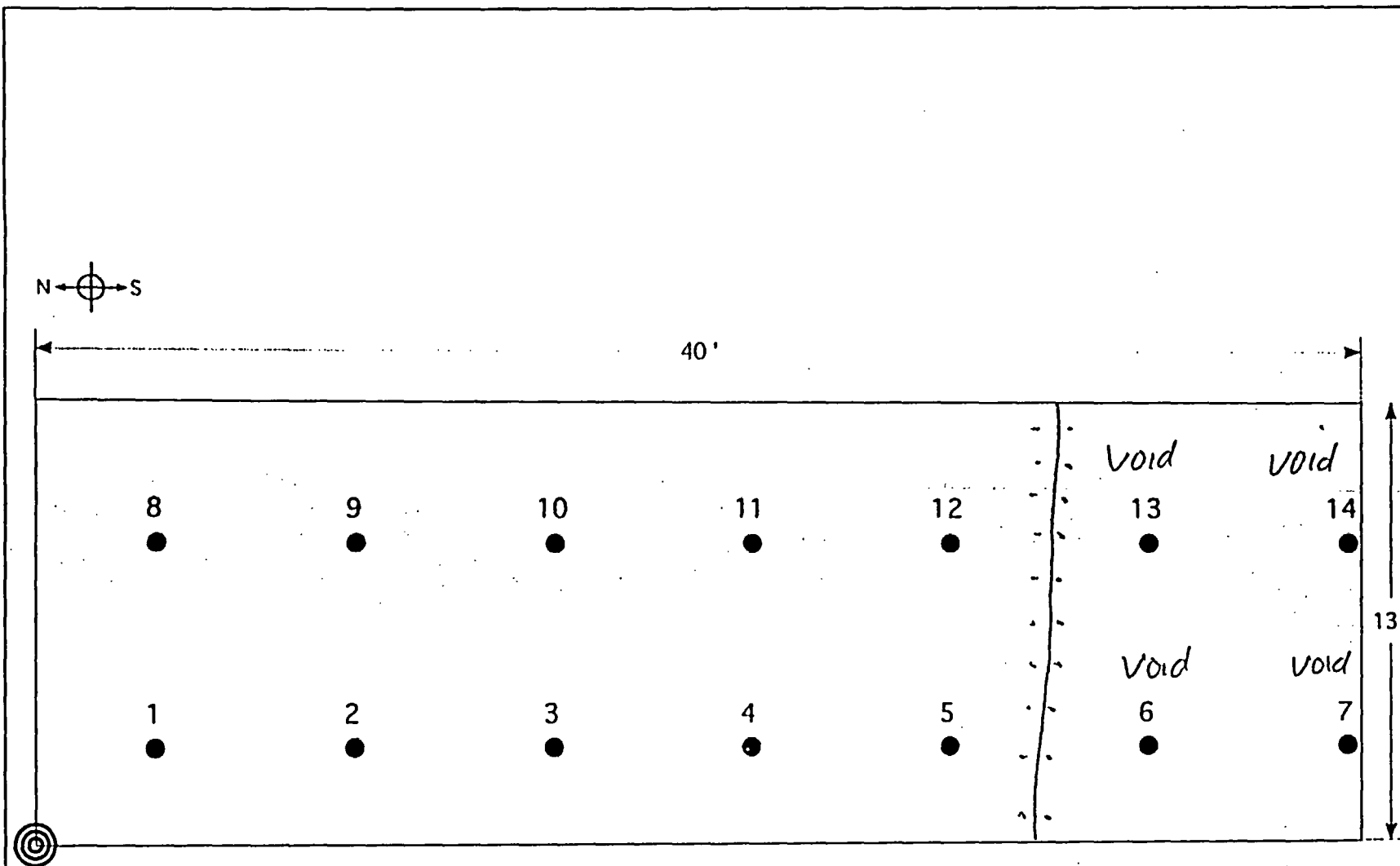
Date: 9-13-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**Admin-1-M Administration Area**



ADMIN-1-M

- SURVEY POINTS
- ◎ STARTING LOCATION

10-4-04  
 START 9:45  
 STOP 13:00

SET POINTS  
 6-7-13-14  
 VOID THEY ARE IN A ~~OLD~~  
 WORK ZONE (demo-ed)

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Administration Area East Wall	
SCIENTECH SCIENTECH Inc. 143 WEST STREET NEW MILFORD, CT 06458	
PROJECT NO. 23529-0301	
FILE NAME:	
SCALE: N.T.S.	DATE: 06/29/2004
BY:	CK:
FIGURE: ADMIN-1-M	



# ADMIN-1-M

Log #
Source
5
6
7
8
9
10
11
12
13
14

X	Y
n/a	n/a
1 3.6	2.8
2 9.6	2.8
3 15.6	2.8
4 21.6	2.8
5 27.6	2.8
6 33.6	2.8
7 39.6	2.8
8 3.6	8.8
9 9.6	8.8
10 15.6	8.8
11 21.6	8.8
12 27.6	8.8
13 33.6	8.8
14 39.6	8.8

L (ft) = 6.0

A (ft<sup>2</sup>) = 520

Fixed Points	Ave. (Scan)	Max. (Scan)
n/a	n/a	n/a
128	140	200
134	160	220
146	160	240
127	140	220
123	140	220
114	120	200
147	120	200
118	120	220
121	120	200
132	140	220

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 10/4/2004  
Time: 2:11:53 PM

Header 1: Tom Malachina  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: ADMIN-1-M  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/04/2004  
Model 2360 Time: 14:17:30  
Sample Number: 0001

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

CrTime - Count Time  
Ratmeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

---

0001	10/04/04	07:38:08	000000	000198	S 001.0	Lab Background
0002	10/04/04	07:39:16	000000	034596	S 001.0	Lab Source
0003	10/04/04	09:50:57	000000	000151	S 001.0	Field Background
0004	10/04/04	09:53:38	000001	001633	S 001.0	Field Source
0005	10/04/04	10:12:10	000002	000128	S 001.0	Admin-1-M
0006	10/04/04	10:23:26	000000	000134	S 001.0	Admin-1-M
0007	10/04/04	10:32:29	000000	000146	S 001.0	Admin-1-M
0008	10/04/04	10:55:36	000000	000127	S 001.0	Admin-1-M
0009	10/04/04	11:24:42	000000	000123	S 001.0	Admin-1-M
0010	10/04/04	12:47:28	000002	000114	S 001.0	Admin-1-M
0011	10/04/04	12:59:43	000001	000147	S 001.0	Admin-1-M
0012	10/04/04	13:31:15	000001	000118	S 001.0	Admin-1-M
0013	10/04/04	13:48:08	000001	000121	S 001.0	Admin-1-M
0014	10/04/04	13:59:14	000000	000132	S 001.0	Admin-1-M
0015	10/04/04	14:04:04	000002	001684	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/04/04	15:27:18	ADMIN-1-M	Final Status Survey	10/04/04	15:27:18	1.000	1.00
2	Smear 2	10/04/04	15:25:58	ADMIN-1-M	Final Status Survey	10/04/04	15:25:58	1.000	1.00
3	Smear 3	10/04/04	15:24:37	ADMIN-1-M	Final Status Survey	10/04/04	15:24:37	1.000	1.00
4	Smear 4	10/04/04	15:23:17	ADMIN-1-M	Final Status Survey	10/04/04	15:23:17	1.000	1.00
5	Smear 5	10/04/04	15:21:57	ADMIN-1-M	Final Status Survey	10/04/04	15:21:57	1.000	1.00
6	Smear 6	10/04/04	15:20:37	ADMIN-1-M	Final Status Survey	10/04/04	15:20:37	1.000	1.00
7	Smear 7	10/04/04	15:19:17	ADMIN-1-M	Final Status Survey	10/04/04	15:19:17	1.000	1.00
8	Smear 8	10/04/04	15:17:58	ADMIN-1-M	Final Status Survey	10/04/04	15:17:58	1.000	1.00
9	Smear 9	10/04/04	15:16:36	ADMIN-1-M	Final Status Survey	10/04/04	15:16:36	1.000	1.00
10	Smear 10	10/04/04	15:15:16	ADMIN-1-M	Final Status Survey	10/04/04	15:15:16	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 1 24-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Err: 27.76 LLD: 12.88 dpm				Bkg: 0.83 cpm %Err: 44.32 LLD: 13 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/04/04	15:27:18	0.00	-0.07	-0.24	12.88	1.00	0.17	0.38	13.00
2	Smear 2	10/04/04	15:25:58	0.00	-0.07	-0.24	12.88	0.00	-0.83	-1.88	13.00
3	Smear 3	10/04/04	15:24:37	0.00	-0.07	-0.24	12.88	3.00	2.17	4.89	13.00
4	Smear 4	10/04/04	15:23:17	0.00	-0.07	-0.24	12.88	1.00	0.17	0.38	13.00
5	Smear 5	10/04/04	15:21:57	0.00	-0.07	-0.24	12.88	2.00	1.17	2.63	13.00
6	Smear 6	10/04/04	15:20:37	0.00	-0.07	-0.24	12.88	0.00	-0.83	-1.88	13.00
7	Smear 7	10/04/04	15:19:17	1.00	0.93	3.36	12.88	0.00	-0.83	-1.88	13.00
8	Smear 8	10/04/04	15:17:56	0.00	-0.07	-0.24	12.88	0.00	-0.83	-1.88	13.00
9	Smear 9	10/04/04	15:16:36	0.00	-0.07	-0.24	12.88	0.00	-0.83	-1.88	13.00
10	Smear 10	10/04/04	15:15:16	0.00	-0.07	-0.24	12.88	0.00	-0.83	-1.88	13.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-04-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



## FSS QC REVIEW

Survey Area: ADMIN		
Survey Unit:	1-M	
Classification:	1	
Requirements:		
Number of Soil Samples:		
Number of Directs:	14	
Number of Smears:	14	
% Scan:	100%	
Survey Data:	Yes	No
Correct header info.	✓	
Daily instrument and background check recorded.	✓	
Any points not collected noted on the survey map.	✓	
Surface activity measurements (total and removable) equal requirements.	✓	
Date and start time indicated on the survey map.	✓	
Check source logged at start of this survey unit.	✓	
Fixed-point measurements logged in the same numerical order as provided on the survey map.		✓
All erroneous (void) measurements identified on the survey map.	✓	
Check source logged to indicate the completion of the survey unit.	✓	
Stop time marked on the survey map.	✓	
Smears collected at each sample location.		✓
Record of smear analysis in package?	✓	
Logged data file downloaded to computer and printed; attached to map.	✓	
Scanning survey data and map attached	✓	
Electronic avg and max measurements (gross cpm) recorded for each scanning section.	✓	
Results of soil samples included. Match requirements.		
COMMENTS		
Fixed Points And Smear # 6-7-13-14 ARE in A D&D work AREA D&D work Being Done in Area Next To Survey Unit		
Reviewed by:		
Date:		

**Admin-1-N Administration Area**

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
KATHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area South Wall (1 of 2)

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06756

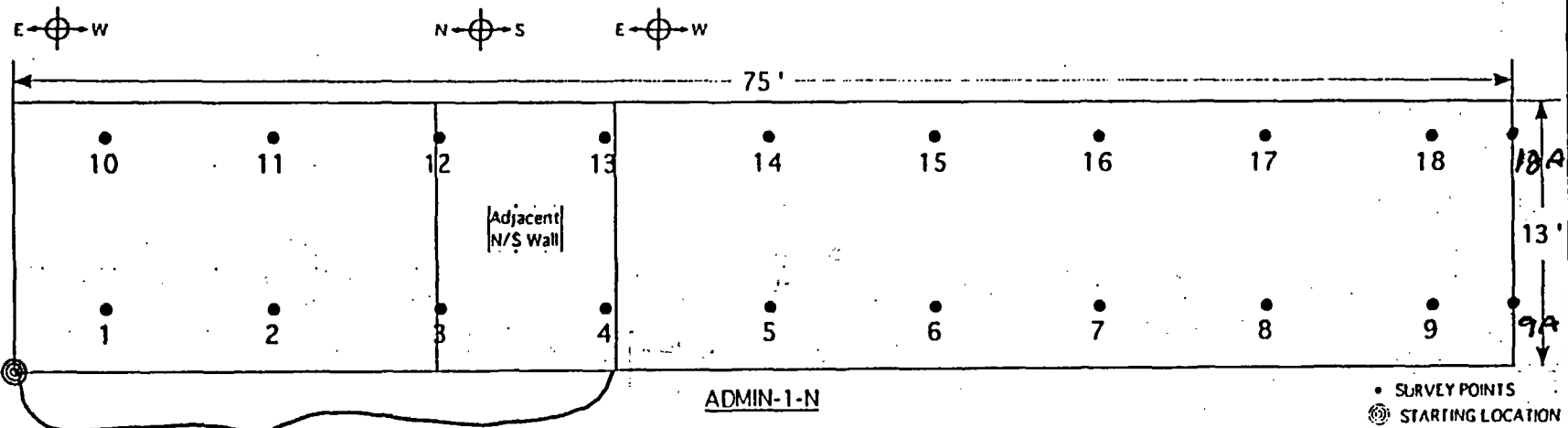
PROJECT NO:  
23529-0901

FILE NAME:

SCALE: DATE  
N.T.S. 06/29/2004

By: CHK:

FIGURE:  
ADMIN-1-N



• SURVEY POINTS  
• STARTING LOCATION

ADMIN-1-N

START 10-11-04 0835 hrs.  
STOP 10-11-04 1825 hrs.

WALL REMOVED  
Points not collected

# ADMIN-1-N

Log #
4 Source
NA
NA
NA
NA
10
9
8
7
6
NA
NA
NA
NA
22
15
14
13
12

	X	Y
	n/a	n/a
1	4.6	3.0
2	12.9	3.0
3	21.2	3.0
4	29.5	3.0
5	37.8	3.0
6	46.1	3.0
7	54.4	3.0
8	62.7	3.0
9	71.0	3.0
10	4.6	11.3
11	12.9	11.3
12	21.2	11.3
13	29.5	11.3
14	37.8	11.3
15	46.1	11.3
16	54.4	11.3
17	62.7	11.3
18	71.0	11.3

L (ft) = 8.3  
A (ft<sup>2</sup>) = 975

9A \*  
12A \* \*

Fixed Points	Ave. (Scan)	Max. (Scan)
1759	n/a	n/a
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
142	160	300
124	129	240
127	120	200
124	140	220
134	160	220
NA	NA 160 <sup>05A</sup>	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
136	140	260
121	140	300
194	160	260
117	120	160
144	160	240
140	160	240
127	160	200

\* Survey points located on adjacent wall

* 9A	80'	3'
* * 10A	79'	11.3'



Ludlum Measurements, Inc.  
Model 2360 Log Data

---

10/12/2004  
10:44:52 AM

Header 1: Joe Kozyra  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-N  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/12/2004  
Model 2360 Time: 10:25:12  
Sample Number: 0023

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

C - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	10/11/04	07:30:47	000000	000203	S 001.0	Lab Background
0002	10/11/04	07:32:00	000002	034594	S 001.0	Lab Source
0003	10/11/04	08:43:05	000000	000162	S 001.0	Field Background
0004	10/11/04	08:44:35	000003	001759	S 001.0	Field Source
0005	10/11/04	10:37:53	000000	000140	S 001.0	Admin-1-N Point 9A
0006	10/11/04	11:33:20	000001	000134	S 001.0	Admin-1-N Point 9
0007	10/11/04	14:07:38	000000	000124	S 001.0	Admin-1-N Point 8
0008	10/11/04	14:09:25	000000	000127	S 001.0	Admin-1-N Point 7
0009	10/11/04	14:40:31	000001	000124	S 001.0	Admin-1-N Point 6
0010	10/11/04	16:42:29	000000	000142	S 001.0	Admin-1-N Point 5
0011	10/11/04	17:01:06	000001	000127	S 001.0	Admin-1-N Point 18A
0012	10/11/04	17:09:48	000000	000144	S 001.0	Admin-1-N Point 18
0013	10/11/04	17:40:26	000001	000117	S 001.0	Admin-1-N Point 17
0014	10/11/04	17:57:32	000002	000194	S 001.0	Admin-1-N Point 16
0015	10/11/04	18:21:06	000001	000121	S 001.0	Admin-1-N Point 15
0016	10/11/04	18:30:39	000001	001704	S 001.0	Field Source
0017	10/11/04	18:32:07	000001	000138	S 001.0	Field Background
0018	10/12/04	07:37:03	000002	000207	S 001.0	Lab Background
0019	10/12/04	07:38:19	000004	034650	S 001.0	Lab Source
0020	10/12/04	07:53:54	000002	000167	S 001.0	Field Background
0021	10/12/04	07:55:34	000003	001693	S 001.0	Field Source
0022	10/12/04	10:02:45	000001	000136	S 001.0	Admin-1-N Point 14
0023	10/12/04	10:04:12	000001	001698	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 5	10/12/04	10:46:59	Admin-1-N	Final Status Survey	10/12/04	10:46:59	1.000	1.00
2	Smear 6	10/12/04	10:45:39	Admin-1-N	Final Status Survey	10/12/04	10:45:39	1.000	1.00
3	Smear 7	10/12/04	10:44:19	Admin-1-N	Final Status Survey	10/12/04	10:44:19	1.000	1.00
4	Smear 8	10/12/04	10:42:59	Admin-1-N	Final Status Survey	10/12/04	10:42:59	1.000	1.00
5	Smear 9	10/12/04	10:41:38	Admin-1-N	Final Status Survey	10/12/04	10:41:38	1.000	1.00
6	Smear 14	10/12/04	10:40:18	Admin-1-N	Final Status Survey	10/12/04	10:40:18	1.000	1.00
7	Smear 15	10/12/04	10:38:58	Admin-1-N	Final Status Survey	10/12/04	10:38:58	1.000	1.00
8	Smear 16	10/12/04	10:37:38	Admin-1-N	Final Status Survey	10/12/04	10:37:38	1.000	1.00
9	Smear 17	10/12/04	10:36:18	Admin-1-N	Final Status Survey	10/12/04	10:36:18	1.000	1.00
10	Smear 18	10/12/04	10:34:58	Admin-1-N	Final Status Survey	10/12/04	10:34:58	1.000	1.00
11	Smear 9A	10/12/04	10:33:38	Admin-1-N	Final Status Survey	10/12/04	10:33:38	1.000	1.00
12	Smear 18A	10/12/04	10:32:18	Admin-1-N	Final Status Survey	10/12/04	10:32:18	1.000	1.00
13	VOID	10/12/04	10:30:58			10/12/04	10:30:58	1.000	1.00
14	VOID	10/12/04	10:29:39			10/12/04	10:29:39	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11/12/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 26.77 LLD: 10.12 dpm				Bkg: 0.6 cpm %Eff: 44.4 LLD: 11.94 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 5	10/12/04	10:46:59	0.00	0.00	0.00	10.12	2.00	1.40	3.15	11.94
2	Smear 6	10/12/04	10:45:39	0.00	0.00	0.00	10.12	0.00	-0.60	-1.35	11.94
3	Smear 7	10/12/04	10:44:19	0.00	0.00	0.00	10.12	0.00	-0.60	-1.35	11.94
4	Smear 8	10/12/04	10:42:59	0.00	0.00	0.00	10.12	1.00	0.40	0.90	11.94
5	Smear 9	10/12/04	10:41:38	0.00	0.00	0.00	10.12	0.00	-0.60	-1.35	11.94
6	Smear 14	10/12/04	10:40:18	0.00	0.00	0.00	10.12	2.00	1.40	3.15	11.94
7	Smear 15	10/12/04	10:38:58	0.00	0.00	0.00	10.12	0.00	-0.60	-1.35	11.94
8	Smear 16	10/12/04	10:37:38	0.00	0.00	0.00	10.12	5.00	4.40	9.91	11.94
9	Smear 17	10/12/04	10:36:18	0.00	0.00	0.00	10.12	1.00	0.40	0.90	11.94
10	Smear 18	10/12/04	10:34:58	0.00	0.00	0.00	10.12	1.00	0.40	0.90	11.94
11	Smear 9A	10/12/04	10:33:38	0.00	0.00	0.00	10.12	2.00	1.40	3.15	11.94
12	Smear 18A	10/12/04	10:32:18	0.00	0.00	0.00	10.12	0.00	-0.60	-1.35	11.94
13	VOID	10/12/04	10:30:58	0.00	0.00	0.00	10.12	0.00	-0.60	-1.35	11.94
14	VOID	10/12/04	10:29:39	0.00	0.00	0.00	10.12	1.00	0.40	0.90	11.94

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-12-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**Admin-1-O Administration Area**



75'

10 11 12 13 14 15 16 17 18  
1 2 3 4 5 6 7 8 9

13'

ADMIN-1-0

• SURVEY POINTS  
⊙ STARTING LOCATION

START

STOP

9-29-04 —

10-1-04

START 14:15

STOP 1330

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARTHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS I  
Administration Area South Wall (2 of 2)

SCIENTECH

SCIENTECH Inc.  
143 WEST STREET  
NEW MILFORD CT 06756

PROJECT NO:

23529-0301

FILE NAME:

SCALE

N.T.S.

DATE

06/29/2004

By:

CK:

FIGURE

ADMIN-1-0

# ADMIN-1-O

Log #
Source
5
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

	X	Y
	n/a	n/a
1	4.6	3.0
2	12.9	3.0
3	21.2	3.0
4	29.5	3.0
5	37.8	3.0
6	46.1	3.0
7	54.4	3.0
8	62.7	3.0
9	71.0	3.0
10	4.6	11.3
11	12.9	11.3
12	21.2	11.3
13	29.5	11.3
14	37.8	11.3
15	46.1	11.3
16	54.4	11.3
17	62.7	11.3
18	71.0	11.3

L (ft)= 8.3  
A (ft²)= 975

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
149	140	240
144	120	220
159	140	260
176	160	240
151	140	220
152	140	240
150	140	200
149	120	180
109	120	180
167	160	300
165	180	260
154	160	200
158	160	220
143	160	200
140	140	220
129	120	200
159	140	220
140	140	200

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

-----

Date: 10/1/2004  
Time: 1:25:02 PM

Header 1: Technician  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/01/2004  
Model 2360 Time: 13:26:16  
Sample Number: 0004

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

CntTime - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	09/29/04	13:53:48	000000	000174	S 001.0	Lab Background
0002	09/29/04	13:54:57	000002	034411	S 001.0	Lab Source
0003	09/29/04	14:23:51	000001	000157	S 001.0	Field Background
0005	09/29/04	14:39:34	000000	000149	S 001.0	Admin-1-O Survey Point 9
0006	09/30/04	07:19:37	000000	000184	S 001.0	Lab Background
0007	09/30/04	07:23:05	000000	034120	S 001.0	Lab Source
0008	09/30/04	07:44:40	000000	000143	S 001.0	Field Background
0009	09/30/04	07:48:36	000004	001704	S 001.0	Field Source
0010	09/30/04	08:58:59	000002	000144	S 001.0	Admin-1-O Survey Point 8
0011	09/30/04	09:57:24	000001	000159	S 001.0	Admin-1-O Survey Point 7
0012	09/30/04	10:22:39	000000	000176	S 001.0	Admin-1-O Survey Point 6
0013	09/30/04	10:35:25	000001	000151	S 001.0	Admin-1-O Survey Point 5
0014	09/30/04	10:58:47	000001	000152	S 001.0	Admin-1-O Survey Point 4
0015	09/30/04	11:28:41	000000	000150	S 001.0	Admin-1-O Survey Point 3
0016	09/30/04	12:56:07	000002	000149	S 001.0	Admin-1-O Survey Point 2
0017	09/30/04	13:38:41	000000	000109	S 001.0	Admin-1-O Survey Point 1
0018	09/30/04	15:28:47	000000	000167	S 001.0	Admin-1-O Survey Point 18
0019	09/30/04	15:43:27	000000	000165	S 001.0	Admin-1-O Survey Point 17
0020	09/30/04	15:52:10	000000	000154	S 001.0	Admin-1-O Survey Point 16
0021	09/30/04	15:59:20	000003	000158	S 001.0	Admin-1-O Survey Point 15
0022	09/30/04	16:08:52	000001	000143	S 001.0	Admin-1-O Survey Point 14
0023	09/30/04	16:47:40	000003	001726	S 001.0	Field Source
0024	10/01/04	07:34:09	000000	000181	S 001.0	Lab Background
0025	10/01/04	07:36:39	000000	034662	S 001.0	Lab Source
0026	10/01/04	08:02:32	000001	000157	S 001.0	Field Background
0027	10/01/04	08:04:04	000001	001672	S 001.0	Field Source
0028	10/01/04	08:34:07	000003	000140	S 001.0	Admin-1-O Survey Point 13
0029	10/01/04	08:42:32	000000	000129	S 001.0	Admin-1-O Survey Point 12
0030	10/01/04	08:56:46	000000	000159	S 001.0	Admin-1-O Survey Point 11
0031	10/01/04	13:05:28	000000	000140	S 001.0	Admin-1-O Survey Point 10
0032	10/01/04	09:04:08	000001	001724	S 001.0	Field Source

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
31	Smear 1	10/01/04	13:15:32	Admin-1-O	Final Status Survey	10/01/04	13:15:32	1.000	1.00
32	Smear 2	10/01/04	13:14:11	Admin-1-O	Final Status Survey	10/01/04	13:14:11	1.000	1.00
33	Smear 3	10/01/04	13:12:50	Admin-1-O	Final Status Survey	10/01/04	13:12:50	1.000	1.00
34	Smear 4	10/01/04	13:11:29	Admin-1-O	Final Status Survey	10/01/04	13:11:29	1.000	1.00
35	Smear 5	10/01/04	13:10:09	Admin-1-O	Final Status Survey	10/01/04	13:10:09	1.000	1.00
36	Smear 6	10/01/04	13:08:48	Admin-1-O	Final Status Survey	10/01/04	13:08:48	1.000	1.00
37	Smear 7	10/01/04	13:07:28	Admin-1-O	Final Status Survey	10/01/04	13:07:28	1.000	1.00
38	Smear 8	10/01/04	13:06:07	Admin-1-O	Final Status Survey	10/01/04	13:06:07	1.000	1.00
39	Smear 9	10/01/04	13:04:46	Admin-1-O	Final Status Survey	10/01/04	13:04:46	1.000	1.00
40	Smear 10	10/01/04	13:03:26	Admin-1-O	Final Status Survey	10/01/04	13:03:26	1.000	1.00
41	Smear 11	10/01/04	13:02:05	Admin-1-O	Final Status Survey	10/01/04	13:02:05	1.000	1.00
42	Smear 12	10/01/04	13:00:44	Admin-1-O	Final Status Survey	10/01/04	13:00:44	1.000	1.00
43	Smear 13	10/01/04	12:59:24	Admin-1-O	Final Status Survey	10/01/04	12:59:24	1.000	1.00
44	Smear 14	10/01/04	12:58:03	Admin-1-O	Final Status Survey	10/01/04	12:58:03	1.000	1.00
45	Smear 15	10/01/04	12:56:42	Admin-1-O	Final Status Survey	10/01/04	12:56:42	1.000	1.00
46	Smear 16	10/01/04	12:55:21	Admin-1-O	Final Status Survey	10/01/04	12:55:21	1.000	1.00
47	Smear 17	10/01/04	12:54:01	Admin-1-O	Final Status Survey	10/01/04	12:54:01	1.000	1.00
48	Smear 18	10/01/04	12:52:40	Admin-1-O	Final Status Survey	10/01/04	12:52:40	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-01-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta				Smears	
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 27.48 LLD: 12.08 dpm				Bkg: 0.43 cpm %Eff: 44.62 LLD: 11.01 dpm				Sample Parameter Entry	
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA	Carrier No.	Sample ID
31	Smear 1	10/01/04	13:15:32	0.00	-0.03	-0.12	12.08	1.00	0.57	1.27	11.01	31	Smear 1
32	Smear 2	10/01/04	13:14:11	0.00	-0.03	-0.12	12.08	1.00	0.57	1.27	11.01	32	Smear 2
33	Smear 3	10/01/04	13:12:50	0.00	-0.03	-0.12	12.08	0.00	-0.43	-0.97	11.01	33	Smear 3
34	Smear 4	10/01/04	13:11:29	0.00	-0.03	-0.12	12.08	1.00	0.57	1.27	11.01	34	Smear 4
35	Smear 5	10/01/04	13:10:09	0.00	-0.03	-0.12	12.08	0.00	-0.43	-0.97	11.01	35	Smear 5
36	Smear 6	10/01/04	13:08:48	0.00	-0.03	-0.12	12.08	0.00	-0.43	-0.97	11.01	36	Smear 6
37	Smear 7	10/01/04	13:07:28	0.00	-0.03	-0.12	12.08	0.00	-0.43	-0.97	11.01	37	Smear 7
38	Smear 8	10/01/04	13:06:07	0.00	-0.03	-0.12	12.08	0.00	-0.43	-0.97	11.01	38	Smear 8
39	Smear 9	10/01/04	13:04:46	0.00	-0.03	-0.12	12.08	0.00	-0.43	-0.97	11.01	39	Smear 9
40	Smear 10	10/01/04	13:03:26	1.00	0.97	3.52	12.08	3.00	2.57	5.75	11.01	40	Smear 10
41	Smear 11	10/01/04	13:02:05	0.00	-0.03	-0.12	12.08	1.00	0.57	1.27	11.01	41	Smear 11
42	Smear 12	10/01/04	13:00:44	0.00	-0.03	-0.12	12.08	2.00	1.57	3.51	11.01	42	Smear 12
43	Smear 13	10/01/04	12:59:24	0.00	-0.03	-0.12	12.08	2.00	1.57	3.51	11.01	43	Smear 13
44	Smear 14	10/01/04	12:58:03	0.00	-0.03	-0.12	12.08	2.00	1.57	3.51	11.01	44	Smear 14
45	Smear 15	10/01/04	12:56:42	0.00	-0.03	-0.12	12.08	1.00	0.57	1.27	11.01	45	Smear 15
46	Smear 16	10/01/04	12:55:21	0.00	-0.03	-0.12	12.08	1.00	0.57	1.27	11.01	46	Smear 16
47	Smear 17	10/01/04	12:54:01	0.00	-0.03	-0.12	12.08	0.00	-0.43	-0.97	11.01	47	Smear 17
48	Smear 18	10/01/04	12:52:40	1.00	0.97	3.52	12.08	0.00	-0.43	-0.97	11.01	48	Smear 18

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

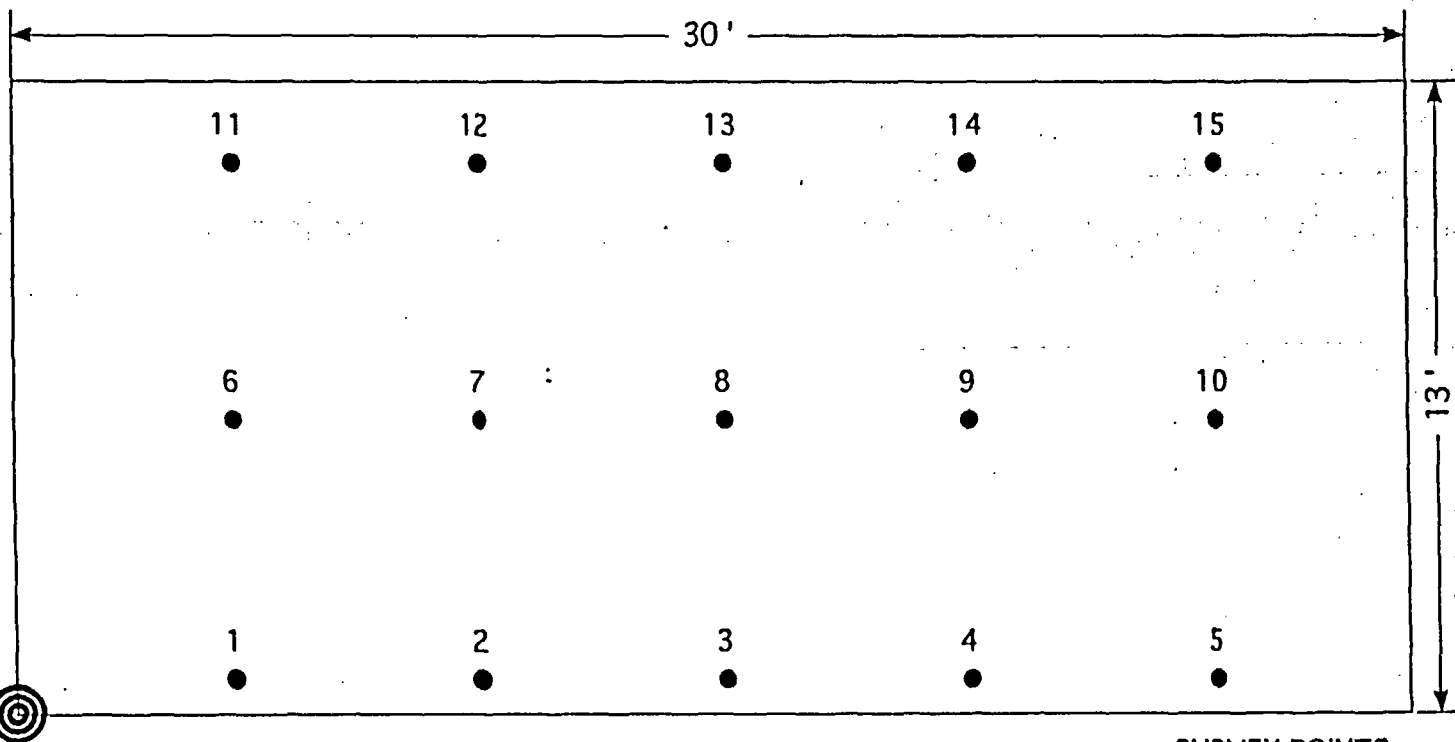
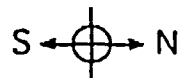
Date: 10-01-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**Admin-1-P Administration Area**



ADMIN-1-P

• SURVEY POINTS  
 ◎ STARTING LOCATION

START 9-16-04  
 0730

STOP 9-17-04  
 1340

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Administration Area West Wall	
SCIENCETECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 06/29/2004
By:	CR:
FIGURE: ADMIN-1-P	

# ADMIN-1-P

Log #
Source
19
20
21
22
23
24
25
26
31
32
33
34
35
36
37

	X	Y
	n/a	n/a
1	4.7	0.7
2	10.0	0.7
3	15.3	0.7
4	20.6	0.7
5	25.9	0.7
6	4.7	6.0
7	10.0	6.0
8	15.3	6.0
9	20.6	6.0
10	25.9	6.0
11	4.7	11.3
12	10.0	11.3
13	15.3	11.3
14	20.6	11.3
15	25.9	11.3

L (ft)= 5.3  
A (ft²)= 390

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
144	120	180
118	140	220
141	160	220
150	140	200
143	120	180
119	140	200
135	140	220
133	140	220
124	140	260
119	160	240
110	120	200
137	140	200
117	120	180
122	120	200
122	140	200

Ludlum Measurements, Inc.  
Model 2360 Log Data

09/18/2004  
10:13:54 AM

Header 1: Technician  
Header 2: Serial#202410  
Header 3: DetSer#PR208657  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 09/18/2004  
Model 2360 Time: 10:54:05  
Sample Number: 0039

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 050000  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 050000  
Alpha + Beta Scaler Alarm: 050000

CntTime - Count Time  
ster

Log Data:

Run Date	Time	Alpha	Beta	UsrTime	Location
				CntTime	

0014	09/17/04	07:15:22	000000	000184	S 001.0 Lab Background
0015	09/17/04	07:21:15	000002	033956	S 001.0 Lab Source
0016	09/17/04	13:40:02	000001	000135	S 001.0 VOID
0017	09/17/04	13:41:41	000001	000138	S 001.0 Field Background
0018	09/17/04	13:45:40	000003	001683	S 001.0 Field Source
0019	09/17/04	13:56:05	000001	000144	S 001.0 Admin Area 1-P West Wall
0020	09/17/04	14:11:08	000001	000118	S 001.0 Admin Area 1-P West Wall
0021	09/17/04	14:23:44	000000	000141	S 001.0 Admin Area 1-P West Wall
0022	09/17/04	15:13:39	000001	000150	S 001.0 Admin Area 1-P West Wall
0023	09/17/04	15:31:39	000000	000143	S 001.0 Admin Area 1-P West Wall
0024	09/17/04	15:44:39	000001	000119	S 001.0 Admin Area 1-P West Wall
0025	09/17/04	15:58:31	000000	000135	S 001.0 Admin Area 1-P West Wall
0026	09/17/04	16:15:08	000003	000133	S 001.0 Admin Area 1-P West Wall
0027	09/18/04	07:32:34	000001	033555	S 001.0 Lab Source
0028	09/18/04	07:35:48	000001	000214	S 001.0 Lab Background
0029	09/18/04	07:52:02	000003	001618	S 001.0 Field Source
0030	09/18/04	07:54:38	000000	000169	S 001.0 Field Background
0031	09/18/04	08:17:43	000000	000124	S 001.0 Admin Area 1-P West Wall
0032	09/18/04	08:43:41	000001	000119	S 001.0 Admin Area 1-P West Wall
0033	09/18/04	08:56:53	000000	000110	S 001.0 Admin Area 1-P West Wall
0034	09/18/04	09:56:18	000000	000134	S 001.0 Admin Area 1-P West Wall
0035	09/18/04	10:12:16	000002	000117	S 001.0 Admin Area 1-P West Wall
0036	09/18/04	10:23:58	000002	000122	S 001.0 Admin Area 1-P West Wall
0037	09/18/04	10:44:52	000002	000122	S 001.0 Admin Area 1-P West Wall
0038	09/18/04	10:46:57	000003	001661	S 001.0 Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	08/19/04	11:33:02	Admin-1-J	Final Status Survey	08/19/04	11:33:02	1.000	1.00
2	Smear 2	08/19/04	11:31:42	Admin-1-J	Final Status Survey	08/19/04	11:31:42	1.000	1.00
3	Smear 3	08/19/04	11:30:21	Admin-1-J	Final Status Survey	08/19/04	11:30:21	1.000	1.00
4	Smear 4	08/19/04	11:29:00	Admin-1-J	Final Status Survey	08/19/04	11:29:00	1.000	1.00
5	Smear 5	08/19/04	11:27:40	Admin-1-J	Final Status Survey	08/19/04	11:27:40	1.000	1.00
6	Smear 6	08/19/04	11:26:19	Admin-1-J	Final Status Survey	08/19/04	11:26:19	1.000	1.00
7	Smear 7	08/19/04	11:24:58	Admin-1-J	Final Status Survey	08/19/04	11:24:58	1.000	1.00
8	Smear 8	08/19/04	11:23:38	Admin-1-J	Final Status Survey	08/19/04	11:23:38	1.000	1.00
9	Smear 9	08/19/04	11:22:17	Admin-1-J	Final Status Survey	08/19/04	11:22:17	1.000	1.00
10	Smear 10	08/19/04	11:20:57	Admin-1-J	Final Status Survey	08/19/04	11:20:57	1.000	1.00
11	Smear 11	08/19/04	11:19:36	Admin-1-J	Final Status Survey	08/19/04	11:19:36	1.000	1.00
12	Smear 12	08/19/04	11:18:16	Admin-1-J	Final Status Survey	08/19/04	11:18:16	1.000	1.00
13	Smear 13	08/19/04	11:16:55	Admin-1-J	Final Status Survey	08/19/04	11:16:55	1.000	1.00
14	Smear 14	08/19/04	11:15:35	Admin-1-J	Final Status Survey	08/19/04	11:15:35	1.000	1.00
15	Smear 15	08/19/04	11:14:14	Admin-1-J	Final Status Survey	08/19/04	11:14:14	1.000	1.00
16	Smear 16	08/19/04	11:12:54	Admin-1-J	Final Status Survey	08/19/04	11:12:54	1.000	1.00
17	Smear 17	08/19/04	11:11:33	Admin-1-J	Final Status Survey	08/19/04	11:11:33	1.000	1.00
18	Smear 18	08/19/04	11:10:12	Admin-1-J	Final Status Survey	08/19/04	11:10:12	1.000	1.00
19	Smear 1	08/19/04	11:08:51	Admin-1-K	Final Status Survey	08/19/04	11:08:51	1.000	1.00
20	Smear 2	08/19/04	11:07:31	Admin-1-K	Final Status Survey	08/19/04	11:07:31	1.000	1.00
21	Smear 3	08/19/04	11:06:10	Admin-1-K	Final Status Survey	08/19/04	11:06:10	1.000	1.00
22	Smear 4	08/19/04	11:04:50	Admin-1-K	Final Status Survey	08/19/04	11:04:50	1.000	1.00
23	Smear 5	08/19/04	11:03:29	Admin-1-K	Final Status Survey	08/19/04	11:03:29	1.000	1.00
24	Smear 6	08/19/04	11:02:08	Admin-1-K	Final Status Survey	08/19/04	11:02:08	1.000	1.00
25	Smear 7	08/19/04	11:00:48	Admin-1-K	Final Status Survey	08/19/04	11:00:48	1.000	1.00
26	Smear 8	08/19/04	10:59:27	Admin-1-K	Final Status Survey	08/19/04	10:59:27	1.000	1.00
27	Smear 9	08/19/04	10:58:06	Admin-1-K	Final Status Survey	08/19/04	10:58:06	1.000	1.00
28	Smear 10	08/19/04	10:56:46	Admin-1-K	Final Status Survey	08/19/04	10:56:46	1.000	1.00
29	Smear 11	08/19/04	10:55:25	Admin-1-K	Final Status Survey	08/19/04	10:55:25	1.000	1.00
30	Smear 12	08/19/04	10:54:05	Admin-1-K	Final Status Survey	08/19/04	10:54:05	1.000	1.00
31	Smear 13	08/19/04	10:52:44	Admin-1-K	Final Status Survey	08/19/04	10:52:44	1.000	1.00
32	Smear 14	08/19/04	10:51:24	Admin-1-K	Final Status Survey	08/19/04	10:51:24	1.000	1.00
33	Smear 15	08/19/04	10:50:03	Admin-1-K	Final Status Survey	08/19/04	10:50:03	1.000	1.00
34	Smear 16	08/19/04	10:48:43	Admin-1-K	Final Status Survey	08/19/04	10:48:43	1.000	1.00
35	Smear 1	08/19/04	10:47:22	Admin-1-P	Final Status Survey	08/19/04	10:47:22	1.000	1.00
36	Smear 2	08/19/04	10:46:02	Admin-1-P	Final Status Survey	08/19/04	10:46:02	1.000	1.00
37	Smear 3	08/19/04	10:44:41	Admin-1-P	Final Status Survey	08/19/04	10:44:41	1.000	1.00
38	Smear 4	08/19/04	10:43:21	Admin-1-P	Final Status Survey	08/19/04	10:43:21	1.000	1.00
39	Smear 5	08/19/04	10:42:01	Admin-1-P	Final Status Survey	08/19/04	10:42:01	1.000	1.00
40	Smear 6	08/19/04	10:40:41	Admin-1-P	Final Status Survey	08/19/04	10:40:41	1.000	1.00
41	Smear 7	08/19/04	10:39:20	Admin-1-P	Final Status Survey	08/19/04	10:39:20	1.000	1.00
42	Smear 8	08/19/04	10:38:00	Admin-1-P	Final Status Survey	08/19/04	10:38:00	1.000	1.00
43	Smear 9	08/19/04	10:36:40	Admin-1-P	Final Status Survey	08/19/04	10:36:40	1.000	1.00
44	Smear 10	08/19/04	10:35:19	Admin-1-P	Final Status Survey	08/19/04	10:35:19	1.000	1.00
45	Smear 11	08/19/04	10:33:59	Admin-1-P	Final Status Survey	08/19/04	10:33:59	1.000	1.00
46	Smear 12	08/19/04	10:32:38	Admin-1-P	Final Status Survey	08/19/04	10:32:38	1.000	1.00
47	Smear 13	08/19/04	10:31:18	Admin-1-P	Final Status Survey	08/19/04	10:31:18	1.000	1.00
48	Smear 14	08/19/04	10:29:58	Admin-1-P	Final Status Survey	08/19/04	10:29:58	1.000	1.00
49	Smear 15	08/19/04	10:28:37	Admin-1-P	Final Status Survey	08/19/04	10:28:37	1.000	1.00

Technician (print): Rob Ellison

Reviewed By (print): Mike Taylor

Technician (sign): *Rob Ellison*

Reviewed By (sign): *Mike Taylor*

Date: 8-19-04

Date: 8-19-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 28.96 LLD: 10.06 dpm				Bkg: 0.77 cpm %Eff: 44.73 LLD: 12.61 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	08/19/04	11:33:02	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
2	Smear 2	08/19/04	11:31:42	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
3	Smear 3	08/19/04	11:30:21	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
4	Smear 4	08/19/04	11:29:00	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
5	Smear 5	08/19/04	11:27:40	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
6	Smear 6	08/19/04	11:26:19	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
7	Smear 7	08/19/04	11:24:58	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
8	Smear 8	08/19/04	11:23:38	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
9	Smear 9	08/19/04	11:22:17	1.00	1.00	3.71	10.06	1.00	0.23	0.52	12.61
10	Smear 10	08/19/04	11:20:57	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
11	Smear 11	08/19/04	11:19:36	1.00	1.00	3.71	10.06	1.00	0.23	0.52	12.61
12	Smear 12	08/19/04	11:18:16	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
13	Smear 13	08/19/04	11:16:55	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
14	Smear 14	08/19/04	11:15:35	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
15	Smear 15	08/19/04	11:14:14	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
16	Smear 16	08/19/04	11:12:54	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
17	Smear 17	08/19/04	11:11:33	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
18	Smear 18	08/19/04	11:10:12	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
19	Smear 1	08/19/04	11:08:51	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
20	Smear 2	08/19/04	11:07:31	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
21	Smear 3	08/19/04	11:06:10	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
22	Smear 4	08/19/04	11:04:50	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
23	Smear 5	08/19/04	11:03:29	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
24	Smear 6	08/19/04	11:02:08	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
25	Smear 7	08/19/04	11:00:48	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
26	Smear 8	08/19/04	10:59:27	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
27	Smear 9	08/19/04	10:58:06	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
28	Smear 10	08/19/04	10:56:46	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
29	Smear 11	08/19/04	10:55:25	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
30	Smear 12	08/19/04	10:54:05	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
31	Smear 13	08/19/04	10:52:44	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
32	Smear 14	08/19/04	10:51:24	0.00	0.00	0.00	10.06	4.00	3.23	7.23	12.61
33	Smear 15	08/19/04	10:50:03	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
34	Smear 16	08/19/04	10:48:43	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
35	Smear 1	08/19/04	10:47:22	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
36	Smear 2	08/19/04	10:46:02	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
37	Smear 3	08/19/04	10:44:41	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
38	Smear 4	08/19/04	10:43:21	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
39	Smear 5	08/19/04	10:42:01	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
40	Smear 6	08/19/04	10:40:41	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
41	Smear 7	08/19/04	10:39:20	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
42	Smear 8	08/19/04	10:38:00	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
43	Smear 9	08/19/04	10:36:40	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
44	Smear 10	08/19/04	10:35:19	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
45	Smear 11	08/19/04	10:33:59	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
46	Smear 12	08/19/04	10:32:38	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
47	Smear 13	08/19/04	10:31:18	0.00	0.00	0.00	10.06	3.00	2.23	4.99	12.61
48	Smear 14	08/19/04	10:29:58	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
49	Smear 15	08/19/04	10:28:37	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 8-19-04

Reviewed By (print): Mike Taylor

Reviewed By (sign): *[Signature]*

Date: 8-19-04

SCIENTECH Inc.

82A8008 ATTACHMENT A  
Survey Cover Sheet

Survey No. 4311

Surveyor: John Albert

Print

Sign

9/24/2004

Date

Reviewer: Joe Trowbridge

Print

Sign

9/24/2004

Date

## Survey Meters

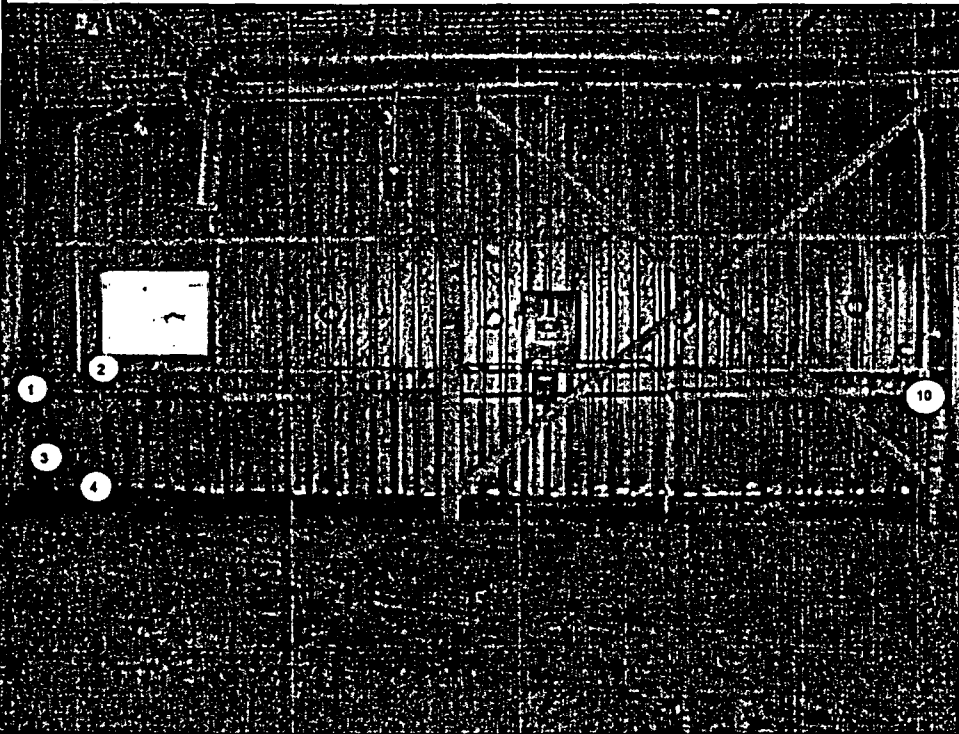
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 27%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG .17 cpm  
 MDA 15 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 44%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.6 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Admin 1-P

PURPOSE: Inaccessible Areas



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
10	<MDA	<MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff.)  $\times$   $\frac{\text{probe area}}{100\text{cm}^2}$

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate

Tb = background counting time

Ts = sample count time

AI = action level



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started				Date	Time	DF	of Sample
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1-8	1 Smear 1	09/22/04	11:29:45	Admin 1 - P	Inaccessible Area	09/22/04	11:29:45	1.000	1.00
	2 Smear 2	09/22/04	11:28:24	Admin 1 - P	Inaccessible Area	09/22/04	11:28:24	1.000	1.00
	3 Smear 3	09/22/04	11:27:03	Admin 1 - P	Inaccessible Area	09/22/04	11:27:03	1.000	1.00
	4 Smear 4	09/22/04	11:25:43	Admin 1 - P	Inaccessible Area	09/22/04	11:25:43	1.000	1.00
	5 Smear 5	09/22/04	11:24:22	Admin 1 - A	Inaccessible Area	09/22/04	11:24:22	1.000	1.00
	6 Smear 6	09/22/04	11:23:02	Admin 1 - A	Inaccessible Area	09/22/04	11:23:02	1.000	1.00
	7 Smear 7	09/22/04	11:21:41	Admin 1 - A	Inaccessible Area	09/22/04	11:21:41	1.000	1.00
1-8	8 Smear 8	09/22/04	11:20:20	Admin 1 - A	Inaccessible Area	09/22/04	11:20:20	1.000	1.00
	9 Smear 9	09/22/04	11:19:00	Admin 1 - A	Inaccessible Area	09/22/04	11:19:00	1.000	1.00
	10 Smear 10	09/22/04	11:17:39	Admin 1 - P	Inaccessible Area	09/22/04	11:17:39	1.000	1.00
	11 Smear 11	09/22/04	11:16:18	Admin 1 - A	Inaccessible Area	09/22/04	11:16:18	1.000	1.00
	12 Smear 12	09/22/04	11:14:58	Admin 1 - A	Inaccessible Area	09/22/04	11:14:58	1.000	1.00
	13 Smear 13	09/22/04	11:13:37	Admin 1 - A	Inaccessible Area	09/22/04	11:13:37	1.000	1.00
	14 Smear 14	09/22/04	11:12:17	Admin 1 - A	Inaccessible Area	09/22/04	11:12:17	1.000	1.00
	15 Smear 15	09/22/04	11:10:56	Admin 1 - A	Inaccessible Area	09/22/04	11:10:56	1.000	1.00
	16 Smear 16	09/22/04	11:09:35	Admin 1 - A	Inaccessible Area	09/22/04	11:09:35	1.000	1.00
	17 Smear 17	09/22/04	11:08:15	Admin 1 - A	Inaccessible Area	09/22/04	11:08:15	1.000	1.00
	18 Smear 18	09/22/04	11:06:54	Admin 1 - A	Inaccessible Area	09/22/04	11:06:54	1.000	1.00
	19 Smear 19	09/22/04	11:05:33	Admin 1 - A	Inaccessible Area	09/22/04	11:05:33	1.000	1.00
	20 Smear 20	09/22/04	11:04:13	Admin 1 - A	Inaccessible Area	09/22/04	11:04:13	1.000	1.00
	21 Smear 21	09/22/04	11:02:52	Admin 1 - A	Inaccessible Area	09/22/04	11:02:52	1.000	1.00
	22 Smear 22	09/22/04	11:01:32	Admin 1 - A	Inaccessible Area	09/22/04	11:01:32	1.000	1.00
	23 Smear 23	09/22/04	11:00:11	Admin 1 - A	Inaccessible Area	09/22/04	11:00:11	1.000	1.00
	24 Smear 24	09/22/04	10:58:50	Admin 1 - A	Inaccessible Area	09/22/04	10:58:50	1.000	1.00
	25 Smear 25	09/22/04	10:57:30	Admin 1 - A	Inaccessible Area	09/22/04	10:57:30	1.000	1.00
	26 Smear 26	09/22/04	10:56:09	Admin 1 - A	Inaccessible Area	09/22/04	10:56:09	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.17 cpm %Eff: 27.06 LLD: 15.06 dpm				Bkg: 0.63 cpm %Eff: 44.12 LLD: 12.18 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	09/22/04	11:29:45	0.00	-0.17	-0.62	15.06	1.00	0.37	0.83	12.18
2	Smear 2	09/22/04	11:28:24	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
3	Smear 3	09/22/04	11:27:03	0.00	-0.17	-0.62	15.06	1.00	0.37	0.83	12.18
4	Smear 4	09/22/04	11:25:43	0.00	-0.17	-0.62	15.06	1.00	0.37	0.83	12.18
5	Smear 5	09/22/04	11:24:22	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
6	Smear 6	09/22/04	11:23:02	0.00	-0.17	-0.62	15.06	2.00	1.37	3.10	12.18
7	Smear 7	09/22/04	11:21:41	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
8	Smear 8	09/22/04	11:20:20	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
9	Smear 9	09/22/04	11:19:00	0.00	-0.17	-0.62	15.06	3.00	2.37	5.36	12.18
10	Smear 10	09/22/04	11:17:39	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
11	Smear 11	09/22/04	11:16:18	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
12	Smear 12	09/22/04	11:14:58	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
13	Smear 13	09/22/04	11:13:37	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
14	Smear 14	09/22/04	11:12:17	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
15	Smear 15	09/22/04	11:10:56	0.00	-0.17	-0.62	15.06	2.00	1.37	3.10	12.18
16	Smear 16	09/22/04	11:09:35	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
17	Smear 17	09/22/04	11:08:15	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
18	Smear 18	09/22/04	11:06:54	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
19	Smear 19	09/22/04	11:05:33	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
20	Smear 20	09/22/04	11:04:13	0.00	-0.17	-0.62	15.06	2.00	1.37	3.10	12.18
21	Smear 21	09/22/04	11:02:52	0.00	-0.17	-0.62	15.06	3.00	2.37	5.36	12.18
22	Smear 22	09/22/04	11:01:32	0.00	-0.17	-0.62	15.06	1.00	0.37	0.83	12.18
23	Smear 23	09/22/04	11:00:11	0.00	-0.17	-0.62	15.06	2.00	1.37	3.10	12.18
24	Smear 24	09/22/04	10:58:50	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
25	Smear 25	09/22/04	10:57:30	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18
26	Smear 26	09/22/04	10:56:09	0.00	-0.17	-0.62	15.06	0.00	-0.63	-1.44	12.18

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

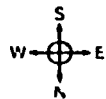
Date: 0-22-04

Reviewed By (print): Joe Trowbridge

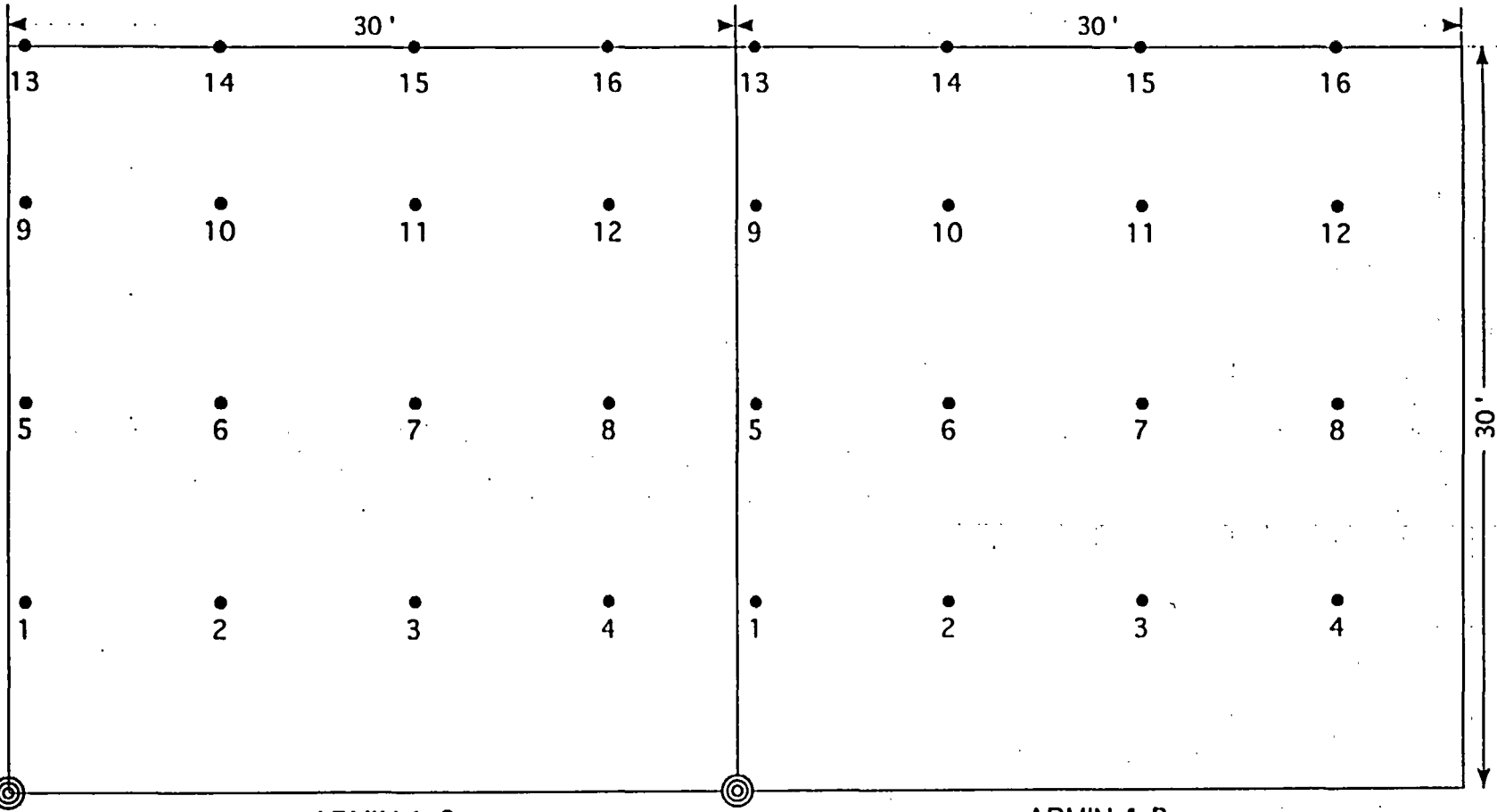
Reviewed By (sign):

Date:

**Admin-1-Q Administration Area**



• SURVEY POINTS  
◎ STARTING LOCATION



ADMIN-1-Q

ADMIN-1-R

10-5-04  
START 8:00 AM  
STOP 4:35 10.6.04

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Administration Area Ceiling (1 of 3)	
SCIENTECH SCIENTECH, Inc. 143 WEST STREET NEW HARTFORD, CT 06176	
PROJECT NO. 23529-0301	
FILE NAME	
SCALE: N.T.S.	DATE: 06/29/2004
BY:	CK:
FIGURE: ADMIN-1-QR	

# ADMIN-1-Q

Log #
Source
5
6
7
8
9
10
11
12
18
19
20
21
22
23
24
25

	X	Y
	n/a	n/a
1	0.7	7.6
2	8.7	7.6
3	16.7	7.6
4	24.7	7.6
5	0.7	15.6
6	8.7	15.6
7	16.7	15.6
8	24.7	15.6
9	0.7	23.6
10	8.7	23.6
11	16.7	23.6
12	24.7	23.6
13	0.7	30
14	8.7	30
15	16.7	30
16	24.7	30

L (ft)= 8.0  
A (ft²)= 900

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
173	180	280
129	140	280
118	146	260
125	140	240
145	120	280
168	120	280
137	140	220
138	140	280
171	140	260
146	140	260
144	120	200
132	160	260
197	160	280
153	160	280
146	140	280
143	140	260

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 10/7/2004  
Time: 7:45:15 AM

Header 1: Joe Kozyra  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-Q  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/07/2004  
Model 2360 Time: 07:42:29  
Sample Number: 0027

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

CntTime - Count Time  
F meter  
S ter

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	10/05/04	07:39:54	000001	000214	S 001.0	Lab Source
0002	10/05/04	07:41:27	000002	033147	S 001.0	Lab Source
0003	10/05/04	08:06:46	000001	000128	S 001.0	Field Background
0004	10/05/04	08:10:33	000002	001701	S 001.0	Field Source
0005	10/05/04	08:47:45	000000	000173	S 001.0	Admon-1-Q
0006	10/05/04	10:02:35	000000	000129	S 001.0	Admon-1-Q
0007	10/05/04	10:55:27	000000	000118	S 001.0	Admon-1-Q
0008	10/05/04	12:54:27	000001	000125	S 001.0	Admon-1-Q
0009	10/05/04	13:30:13	000001	000165	S 001.0	Admon-1-Q
0010	10/05/04	14:25:54	000001	000168	S 001.0	Admon-1-Q
0011	10/05/04	16:07:50	000000	000137	S 001.0	Admon-1-Q
0012	10/05/04	16:32:56	000000	000138	S 001.0	Admon-1-Q
0013	10/05/04	16:38:26	000001	005775	S 001.0	Field Source
0014	10/06/04	07:36:17	000000	000159	S 001.0	Lab Background
0015	10/06/04	07:39:09	000000	033060	S 001.0	Lab Source
0016	10/06/04	07:53:51	000000	000131	S 001.0	Field Background
0017	10/06/04	07:56:18	000004	001702	S 001.0	Field Source
0018	10/06/04	13:13:09	000000	000171	S 001.0	Admon-1-Q
0019	10/06/04	10:30:18	000002	000146	S 001.0	Admon-1-Q
0020	10/06/04	11:02:46	000002	000144	S 001.0	Admon-1-Q
0021	10/06/04	13:07:00	000001	000132	S 001.0	Admon-1-Q
0022	10/06/04	15:38:56	000002	000197	S 001.0	Admon-1-Q
0023	10/06/04	15:56:54	000000	000153	S 001.0	Admon-1-Q
0024	10/06/04	16:18:32	000002	000146	S 001.0	Admon-1-Q
0025	10/06/04	16:30:01	000000	000143	S 001.0	Admon-1-Q
0026	10/06/04	16:32:54	000001	001465	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
21	Smear 1	12/01/04	11:30:00	Admin-1-Q	FSS	12/01/04	11:30:00	1.000	1.00
22	Smear 2	12/01/04	11:28:39	Admin-1-Q	FSS	12/01/04	11:28:39	1.000	1.00
23	Smear 3	12/01/04	11:27:19	Admin-1-Q	FSS	12/01/04	11:27:19	1.000	1.00
24	Smear 4	12/01/04	11:25:59	Admin-1-Q	FSS	12/01/04	11:25:59	1.000	1.00
25	Smear 5	12/01/04	11:24:39	Admin-1-Q	FSS	12/01/04	11:24:39	1.000	1.00
26	Smear 6	12/01/04	11:23:18	Admin-1-Q	FSS	12/01/04	11:23:18	1.000	1.00
27	Smear 7	12/01/04	11:21:58	Admin-1-Q	FSS	12/01/04	11:21:58	1.000	1.00
28	Smear 8	12/01/04	11:20:38	Admin-1-Q	FSS	12/01/04	11:20:38	1.000	1.00
29	Smear 9	12/01/04	11:19:18	Admin-1-Q	FSS	12/01/04	11:19:18	1.000	1.00
30	Smear 10	12/01/04	11:17:57	Admin-1-Q	FSS	12/01/04	11:17:57	1.000	1.00
31	Smear 11	12/01/04	11:16:37	Admin-1-Q	FSS	12/01/04	11:16:37	1.000	1.00
32	Smear 12	12/01/04	11:15:17	Admin-1-Q	FSS	12/01/04	11:15:17	1.000	1.00
33	Smear 13	12/01/04	11:13:56	Admin-1-Q	FSS	12/01/04	11:13:56	1.000	1.00
34	Smear 14	12/01/04	11:12:36	Admin-1-Q	FSS	12/01/04	11:12:36	1.000	1.00
35	Smear 15	12/01/04	11:11:16	Admin-1-Q	FSS	12/01/04	11:11:16	1.000	1.00
36	Smear 16	12/01/04	11:09:56	Admin-1-Q	FSS	12/01/04	11:09:56	1.000	1.00
37	Smear 1	12/01/04	11:08:35	Admin-1-R	FSS	12/01/04	11:08:35	1.000	1.00
38	Smear 2	12/01/04	11:07:15	Admin-1-R	FSS	12/01/04	11:07:15	1.000	1.00
39	Smear 3	12/01/04	11:05:55	Admin-1-R	FSS	12/01/04	11:05:55	1.000	1.00
40	Smear 4	12/01/04	11:04:35	Admin-1-R	FSS	12/01/04	11:04:35	1.000	1.00
41	Smear 5	12/01/04	11:03:15	Admin-1-R	FSS	12/01/04	11:03:15	1.000	1.00
42	Smear 6	12/01/04	11:01:54	Admin-1-R	FSS	12/01/04	11:01:54	1.000	1.00
43	Smear 7	12/01/04	11:00:34	Admin-1-R	FSS	12/01/04	11:00:34	1.000	1.00
44	Smear 8	12/01/04	10:59:14	Admin-1-R	FSS	12/01/04	10:59:14	1.000	1.00
45	Smear 9	12/01/04	10:57:54	Admin-1-R	FSS	12/01/04	10:57:54	1.000	1.00
46	Smear 10	12/01/04	10:56:34	Admin-1-R	FSS	12/01/04	10:56:34	1.000	1.00
47	Smear 11	12/01/04	10:55:14	Admin-1-R	FSS	12/01/04	10:55:14	1.000	1.00
48	Smear 12	12/01/04	10:53:54	Admin-1-R	FSS	12/01/04	10:53:54	1.000	1.00
49	Smear 13	12/01/04	10:52:33	Admin-1-R	FSS	12/01/04	10:52:33	1.000	1.00
50	Smear 14	12/01/04	10:51:13	Admin-1-R	FSS	12/01/04	10:51:13	1.000	1.00
51	Smear 15	12/01/04	10:49:53	Admin-1-R	FSS	12/01/04	10:49:53	1.000	1.00
52	Smear 16	12/01/04	10:48:33	Admin-1-R	FSS	12/01/04	10:48:33	1.000	1.00
53	Smear 1	12/01/04	10:47:13	Admin-1-T	FSS	12/01/04	10:47:13	1.000	1.00
54	Smear 2	12/01/04	10:45:53	Admin-1-T	FSS	12/01/04	10:45:53	1.000	1.00
55	Smear 3	12/01/04	10:44:33	Admin-1-T	FSS	12/01/04	10:44:33	1.000	1.00
56	Smear 4	12/01/04	10:43:13	Admin-1-T	FSS	12/01/04	10:43:13	1.000	1.00
57	Smear 5	12/01/04	10:41:53	Admin-1-T	FSS	12/01/04	10:41:53	1.000	1.00
58	Smear 6	12/01/04	10:40:33	Admin-1-T	FSS	12/01/04	10:40:33	1.000	1.00
59	Smear 7	12/01/04	10:39:13	Admin-1-T	FSS	12/01/04	10:39:13	1.000	1.00
60	Smear 8	12/01/04	10:37:53	Admin-1-T	FSS	12/01/04	10:37:53	1.000	1.00
61	Smear 9	12/01/04	10:36:33	Admin-1-T	FSS	12/01/04	10:36:33	1.000	1.00
62	Smear 10	12/01/04	10:35:13	Admin-1-T	FSS	12/01/04	10:35:13	1.000	1.00
63	Smear 11	12/01/04	10:33:53	Admin-1-T	FSS	12/01/04	10:33:53	1.000	1.00
64	Smear 12	12/01/04	10:32:33	Admin-1-T	FSS	12/01/04	10:32:33	1.000	1.00
65	Smear 13	12/01/04	10:31:13	Admin-1-T	FSS	12/01/04	10:31:13	1.000	1.00
66	Smear 14	12/01/04	10:29:53	Admin-1-T	FSS	12/01/04	10:29:53	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): *CH*

Date: 12-1-04

Reviewed By (print): Claude Wiblin

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %Eff: 23.7 LLD: 15.9 dpm				Bkg: 0.77 cpm %Eff: 44.69 LLD: 12.64 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
21	Smear 1	12/01/04	11:30:00	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
22	Smear 2	12/01/04	11:28:39	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
23	Smear 3	12/01/04	11:27:19	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
24	Smear 4	12/01/04	11:25:59	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
25	Smear 5	12/01/04	11:24:39	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
26	Smear 6	12/01/04	11:23:18	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
27	Smear 7	12/01/04	11:21:58	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
28	Smear 8	12/01/04	11:20:38	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
29	Smear 9	12/01/04	11:19:18	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
30	Smear 10	12/01/04	11:17:57	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
31	Smear 11	12/01/04	11:16:37	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
32	Smear 12	12/01/04	11:15:17	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
33	Smear 13	12/01/04	11:13:56	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
34	Smear 14	12/01/04	11:12:36	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
35	Smear 15	12/01/04	11:11:16	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
36	Smear 16	12/01/04	11:09:56	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
37	Smear 1	12/01/04	11:08:35	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
38	Smear 2	12/01/04	11:07:15	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
39	Smear 3	12/01/04	11:05:55	0.00	-0.10	-0.42	15.90	3.00	2.23	5.01	12.64
40	Smear 4	12/01/04	11:04:35	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
41	Smear 5	12/01/04	11:03:15	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
42	Smear 6	12/01/04	11:01:54	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
43	Smear 7	12/01/04	11:00:34	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
44	Smear 8	12/01/04	10:59:14	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
45	Smear 9	12/01/04	10:57:54	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
46	Smear 10	12/01/04	10:56:34	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
47	Smear 11	12/01/04	10:55:14	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
48	Smear 12	12/01/04	10:53:54	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
49	Smear 13	12/01/04	10:52:33	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
50	Smear 14	12/01/04	10:51:13	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
51	Smear 15	12/01/04	10:49:53	0.00	-0.10	-0.42	15.90	3.00	2.23	5.01	12.64
52	Smear 16	12/01/04	10:48:33	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
53	Smear 1	12/01/04	10:47:13	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
54	Smear 2	12/01/04	10:45:53	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
55	Smear 3	12/01/04	10:44:33	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
56	Smear 4	12/01/04	10:43:13	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
57	Smear 5	12/01/04	10:41:53	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
58	Smear 6	12/01/04	10:40:33	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
59	Smear 7	12/01/04	10:39:13	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
60	Smear 8	12/01/04	10:37:53	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
61	Smear 9	12/01/04	10:36:33	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
62	Smear 10	12/01/04	10:35:13	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
63	Smear 11	12/01/04	10:33:53	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
64	Smear 12	12/01/04	10:32:33	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
65	Smear 13	12/01/04	10:31:13	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
66	Smear 14	12/01/04	10:29:53	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64

Technician (print): Chris Higgins

Technician (sign): 

Date: 12-1-04

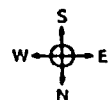
Reviewed By (print): Claude Wibilin

Reviewed By (sign):

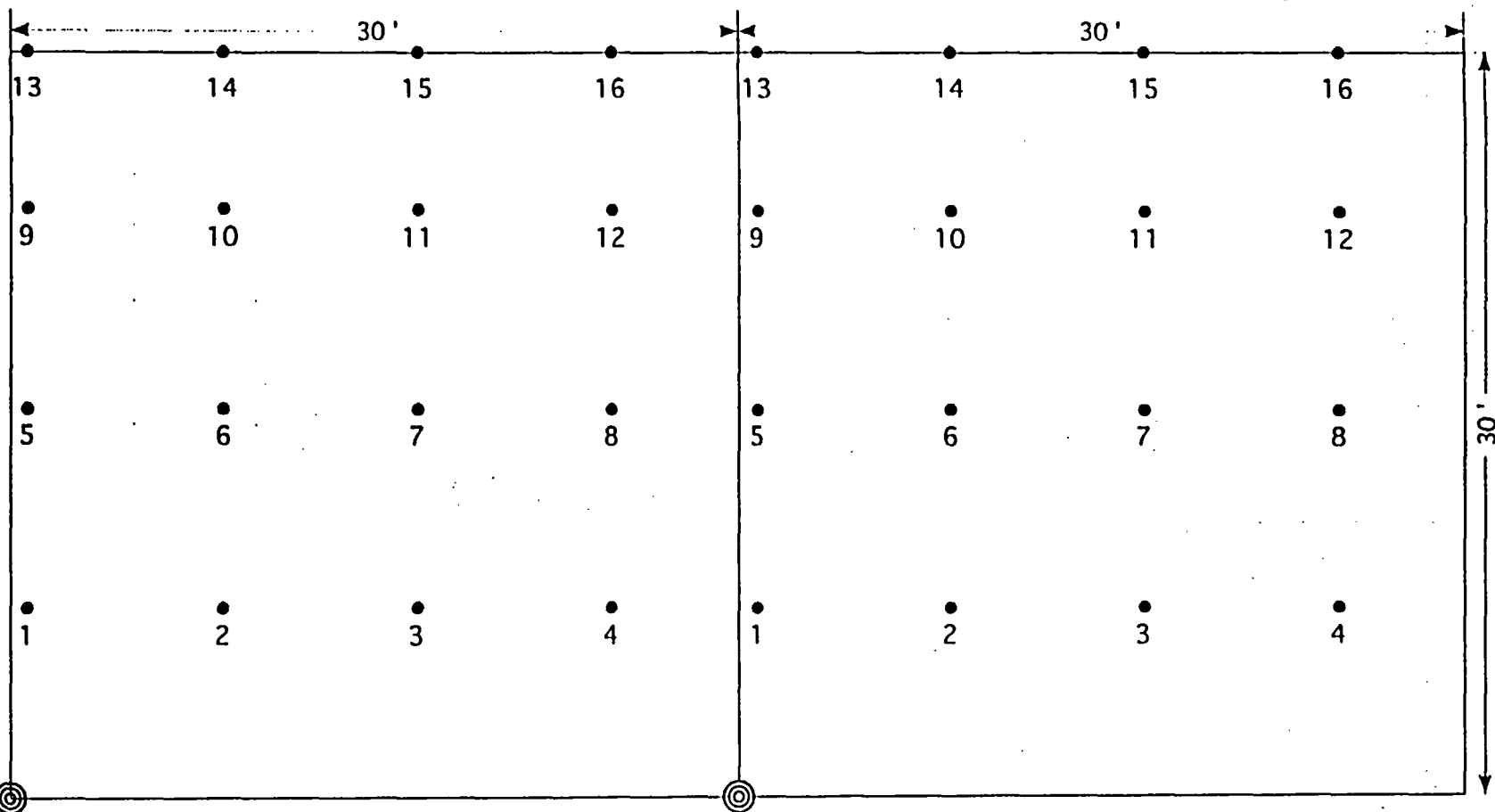
Date:



**Admin-1-R Administration Area**



• SURVEY POINTS  
◎ STARTING LOCATION



ADMIN-1-Q

ADMIN-1-R

10-7-04  
START 8:00  
STOP 10-8-04-1755

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARTHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area Ceiling (1 of 3)

SCIENTECH

SCIENTECH Inc.  
140 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO:  
23529-0301

FILENAME:

SCALE: DATE  
N.T.S. 06/29/2004

By: CK:

FIGURE  
ADMIN-1-Q.R

# ADMIN-1-R

Log #
Source
5
6
7
8
9
10
11
12
13
14
21
22
23
24
25

	X	Y
	n/a	n/a
1	0.7	7.6
2	8.7	7.6
3	16.7	7.6
4	24.7	7.6
5	0.7	15.6
6	8.7	15.6
7	16.7	15.6
8	24.7	15.6
9	0.7	23.6
10	8.7	23.6
11	16.7	23.6
12	24.7	23.6
13	0.7	30
14	8.7	30
15	16.7	30
16	24.7	30

L (ft)= 8.0

A (ft²)= 900

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
153	140	200
158	160	220
160	140	240
160	160	260
137	140	260
164	160	220
158	140	240
140	140	200
166	160	220
129	140	200
166	160	220
151	140	240
167	140	200
147	140	220
153	160	220
153	140	200

Ludlum Measurements, Inc.  
Model 2360 Log Data

Date: 10/9/2004  
Time: 07:37:11 AM

Header 1: Joe Kozyra  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: ADMIN-1-R  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/09/2004  
Model 2360 Time: 07:32:38  
Sample Number: 0029

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

Count Time - Count Time  
Ratmeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	10/07/04	08:10:30	000003	000189	S 001.0	Lab Background
0002	10/07/04	08:12:27	000004	034963	S 001.0	Lab Source
0003	10/07/04	08:16:01	000001	000159	S 001.0	Field Background
0004	10/07/04	08:18:26	000001	001715	S 001.0	Field Source
0005	10/07/04	10:05:35	000001	000153	S 001.0	Admin-1-R
0006	10/07/04	10:36:32	000002	000158	S 001.0	Admin-1-R
0007	10/07/04	11:35:46	000001	000160	S 001.0	Admin-1-R
0008	10/07/04	13:12:49	000001	000160	S 001.0	Admin-1-R
0009	10/07/04	14:22:41	000003	000137	S 001.0	Admin-1-R
0010	10/07/04	14:32:07	000000	000164	S 001.0	Admin-1-R
0011	10/07/04	15:47:46	000001	000158	S 001.0	Admin-1-R
0012	10/07/04	15:56:18	000003	000140	S 001.0	Admin-1-R
0013	10/07/04	17:56:26	000001	000166	S 001.0	Admin-1-R
0014	10/07/04	18:27:28	000000	000129	S 001.0	Admin-1-R
0015	10/07/04	18:36:00	000002	000146	S 001.0	Field Background
0016	10/07/04	18:37:34	000002	001800	S 001.0	Field Source
0017	10/08/04	07:33:56	000002	000279	S 001.0	Lab Background
0018	10/08/04	07:35:47	000003	034687	S 001.0	Lab Source
0019	10/08/04	07:47:49	000000	000148	S 001.0	Field Background
0020	10/08/04	07:49:22	000002	001635	S 001.0	Field Source
0021	10/08/04	09:56:25	000002	000166	S 001.0	Admin-1-R
0022	10/08/04	11:00:30	000000	000151	S 001.0	Admin-1-R
0023	10/08/04	13:36:29	000001	000167	S 001.0	Admin-1-R
0024	10/08/04	15:34:25	000001	000147	S 001.0	Admin-1-R
0025	10/08/04	16:40:34	000001	000153	S 001.0	Admin-1-R
0026	10/08/04	17:48:38	000000	000153	S 001.0	Admin-1-R
0027	10/08/04	18:00:42	000000	000168	S 001.0	Field Background
0028	10/08/04	18:02:09	000002	001795	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
21	Smear 1	12/01/04	11:30:00	Admin-1-Q	FSS	12/01/04	11:30:00	1.000	1.00
22	Smear 2	12/01/04	11:28:39	Admin-1-Q	FSS	12/01/04	11:28:39	1.000	1.00
23	Smear 3	12/01/04	11:27:19	Admin-1-Q	FSS	12/01/04	11:27:19	1.000	1.00
24	Smear 4	12/01/04	11:25:59	Admin-1-Q	FSS	12/01/04	11:25:59	1.000	1.00
25	Smear 5	12/01/04	11:24:39	Admin-1-Q	FSS	12/01/04	11:24:39	1.000	1.00
26	Smear 6	12/01/04	11:23:18	Admin-1-Q	FSS	12/01/04	11:23:18	1.000	1.00
27	Smear 7	12/01/04	11:21:58	Admin-1-Q	FSS	12/01/04	11:21:58	1.000	1.00
28	Smear 8	12/01/04	11:20:38	Admin-1-Q	FSS	12/01/04	11:20:38	1.000	1.00
29	Smear 9	12/01/04	11:19:18	Admin-1-Q	FSS	12/01/04	11:19:18	1.000	1.00
30	Smear 10	12/01/04	11:17:57	Admin-1-Q	FSS	12/01/04	11:17:57	1.000	1.00
31	Smear 11	12/01/04	11:16:37	Admin-1-Q	FSS	12/01/04	11:16:37	1.000	1.00
32	Smear 12	12/01/04	11:15:17	Admin-1-Q	FSS	12/01/04	11:15:17	1.000	1.00
33	Smear 13	12/01/04	11:13:56	Admin-1-Q	FSS	12/01/04	11:13:56	1.000	1.00
34	Smear 14	12/01/04	11:12:36	Admin-1-Q	FSS	12/01/04	11:12:36	1.000	1.00
35	Smear 15	12/01/04	11:11:16	Admin-1-Q	FSS	12/01/04	11:11:16	1.000	1.00
36	Smear 16	12/01/04	11:09:56	Admin-1-Q	FSS	12/01/04	11:09:56	1.000	1.00
37	Smear 1	12/01/04	11:08:35	Admin-1-R	FSS	12/01/04	11:08:35	1.000	1.00
38	Smear 2	12/01/04	11:07:15	Admin-1-R	FSS	12/01/04	11:07:15	1.000	1.00
39	Smear 3	12/01/04	11:05:55	Admin-1-R	FSS	12/01/04	11:05:55	1.000	1.00
40	Smear 4	12/01/04	11:04:35	Admin-1-R	FSS	12/01/04	11:04:35	1.000	1.00
41	Smear 5	12/01/04	11:03:15	Admin-1-R	FSS	12/01/04	11:03:15	1.000	1.00
42	Smear 6	12/01/04	11:01:54	Admin-1-R	FSS	12/01/04	11:01:54	1.000	1.00
43	Smear 7	12/01/04	11:00:34	Admin-1-R	FSS	12/01/04	11:00:34	1.000	1.00
44	Smear 8	12/01/04	10:59:14	Admin-1-R	FSS	12/01/04	10:59:14	1.000	1.00
45	Smear 9	12/01/04	10:57:54	Admin-1-R	FSS	12/01/04	10:57:54	1.000	1.00
46	Smear 10	12/01/04	10:56:34	Admin-1-R	FSS	12/01/04	10:56:34	1.000	1.00
47	Smear 11	12/01/04	10:55:14	Admin-1-R	FSS	12/01/04	10:55:14	1.000	1.00
48	Smear 12	12/01/04	10:53:54	Admin-1-R	FSS	12/01/04	10:53:54	1.000	1.00
49	Smear 13	12/01/04	10:52:33	Admin-1-R	FSS	12/01/04	10:52:33	1.000	1.00
50	Smear 14	12/01/04	10:51:13	Admin-1-R	FSS	12/01/04	10:51:13	1.000	1.00
51	Smear 15	12/01/04	10:49:53	Admin-1-R	FSS	12/01/04	10:49:53	1.000	1.00
52	Smear 16	12/01/04	10:48:33	Admin-1-R	FSS	12/01/04	10:48:33	1.000	1.00
53	Smear 1	12/01/04	10:47:13	Admin-1-T	FSS	12/01/04	10:47:13	1.000	1.00
54	Smear 2	12/01/04	10:45:53	Admin-1-T	FSS	12/01/04	10:45:53	1.000	1.00
55	Smear 3	12/01/04	10:44:33	Admin-1-T	FSS	12/01/04	10:44:33	1.000	1.00
56	Smear 4	12/01/04	10:43:13	Admin-1-T	FSS	12/01/04	10:43:13	1.000	1.00
57	Smear 5	12/01/04	10:41:53	Admin-1-T	FSS	12/01/04	10:41:53	1.000	1.00
58	Smear 6	12/01/04	10:40:33	Admin-1-T	FSS	12/01/04	10:40:33	1.000	1.00
59	Smear 7	12/01/04	10:39:13	Admin-1-T	FSS	12/01/04	10:39:13	1.000	1.00
60	Smear 8	12/01/04	10:37:53	Admin-1-T	FSS	12/01/04	10:37:53	1.000	1.00
61	Smear 9	12/01/04	10:36:33	Admin-1-T	FSS	12/01/04	10:36:33	1.000	1.00
62	Smear 10	12/01/04	10:35:13	Admin-1-T	FSS	12/01/04	10:35:13	1.000	1.00
63	Smear 11	12/01/04	10:33:53	Admin-1-T	FSS	12/01/04	10:33:53	1.000	1.00
64	Smear 12	12/01/04	10:32:33	Admin-1-T	FSS	12/01/04	10:32:33	1.000	1.00
65	Smear 13	12/01/04	10:31:13	Admin-1-T	FSS	12/01/04	10:31:13	1.000	1.00
66	Smear 14	12/01/04	10:29:53	Admin-1-T	FSS	12/01/04	10:29:53	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): *CH*

Date: 12-1-07

Reviewed By (print): Claude Wiblin

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %EF: 23.7 LLD: 15.9 dpm				Bkg: 0.77 cpm %EF: 44.69 LLD: 12.64 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
21	Smear 1	12/01/04	11:30:00	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
22	Smear 2	12/01/04	11:28:39	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
23	Smear 3	12/01/04	11:27:19	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
24	Smear 4	12/01/04	11:25:59	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
25	Smear 5	12/01/04	11:24:39	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
26	Smear 6	12/01/04	11:23:18	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
27	Smear 7	12/01/04	11:21:58	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
28	Smear 8	12/01/04	11:20:38	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
29	Smear 9	12/01/04	11:19:18	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
30	Smear 10	12/01/04	11:17:57	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
31	Smear 11	12/01/04	11:16:37	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
32	Smear 12	12/01/04	11:15:17	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
33	Smear 13	12/01/04	11:13:56	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
34	Smear 14	12/01/04	11:12:36	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
35	Smear 15	12/01/04	11:11:16	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
36	Smear 16	12/01/04	11:09:56	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
37	Smear 1	12/01/04	11:08:35	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
38	Smear 2	12/01/04	11:07:15	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
39	Smear 3	12/01/04	11:05:55	0.00	-0.10	-0.42	15.90	3.00	2.23	5.01	12.64
40	Smear 4	12/01/04	11:04:35	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
41	Smear 5	12/01/04	11:03:15	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
42	Smear 6	12/01/04	11:01:54	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
43	Smear 7	12/01/04	11:00:34	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
44	Smear 8	12/01/04	10:59:14	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
45	Smear 9	12/01/04	10:57:54	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
46	Smear 10	12/01/04	10:56:34	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
47	Smear 11	12/01/04	10:55:14	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
48	Smear 12	12/01/04	10:53:54	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
49	Smear 13	12/01/04	10:52:33	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
50	Smear 14	12/01/04	10:51:13	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
51	Smear 15	12/01/04	10:49:53	0.00	-0.10	-0.42	15.90	3.00	2.23	5.01	12.64
52	Smear 16	12/01/04	10:48:33	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
53	Smear 1	12/01/04	10:47:13	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
54	Smear 2	12/01/04	10:45:53	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
55	Smear 3	12/01/04	10:44:33	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
56	Smear 4	12/01/04	10:43:13	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
57	Smear 5	12/01/04	10:41:53	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
58	Smear 6	12/01/04	10:40:33	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
59	Smear 7	12/01/04	10:39:13	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
60	Smear 8	12/01/04	10:37:53	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
61	Smear 9	12/01/04	10:36:33	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
62	Smear 10	12/01/04	10:35:13	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
63	Smear 11	12/01/04	10:33:53	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
64	Smear 12	12/01/04	10:32:33	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
65	Smear 13	12/01/04	10:31:13	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
66	Smear 14	12/01/04	10:29:53	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64

Technician (print): Chris Higgins

Technician (sign): 

Date: 12-1-04

Reviewed By (print): Claude Wiblin

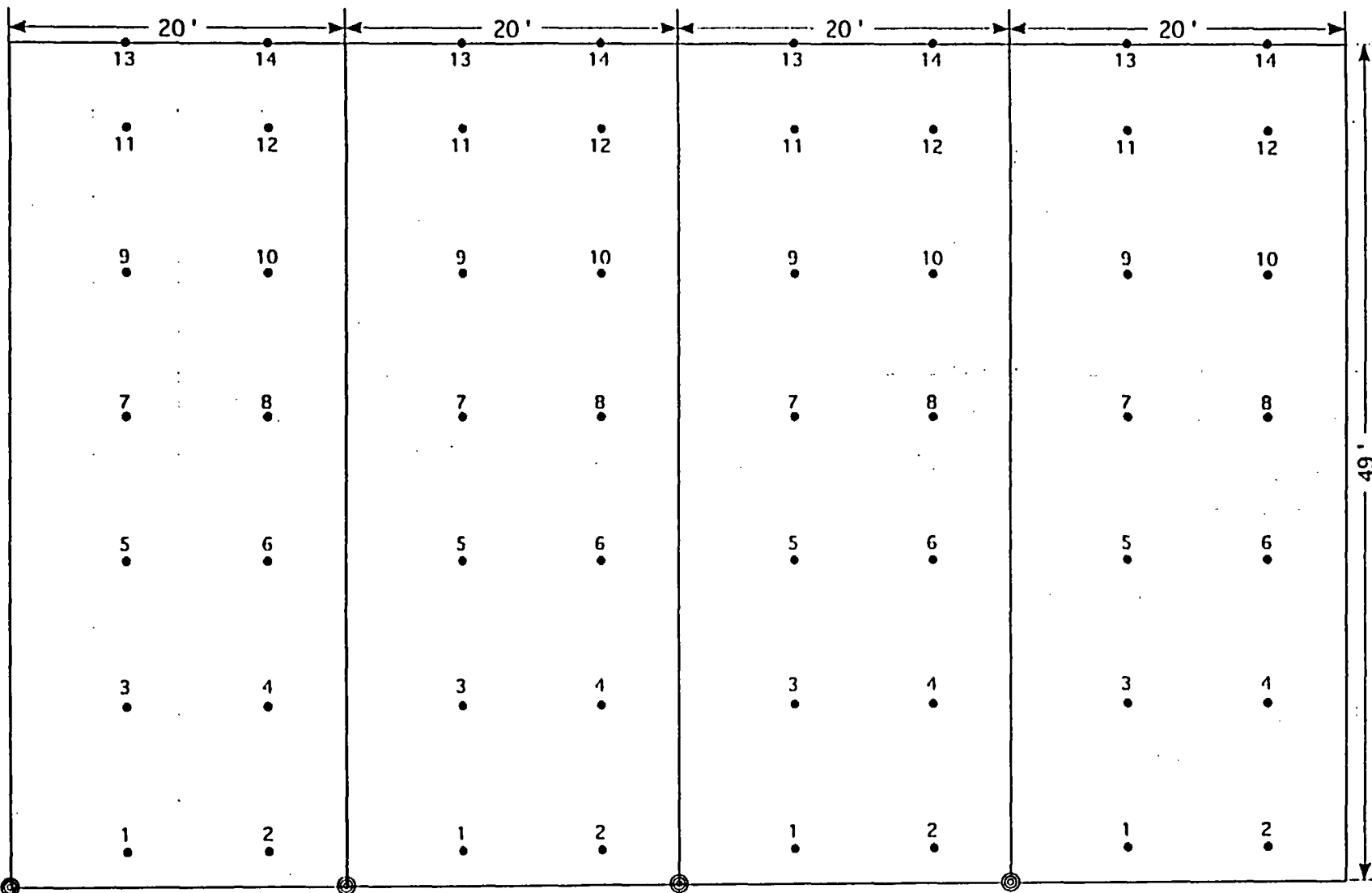
Reviewed By (sign):

Date:

**Admin-1-S Administration Area**



• SURVEY POINTS  
⊕ STARTING LOCATION



ADMIN-1-S

ADMIN-1-I

ADMIN-1-U

ADMIN-1-V

Scan - start 11-24-04 0800  
Stop 11-27-04 1400

PSS - 11-26-04  
Start 0815  
Stop 0800

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area Ceiling (2 of 3)

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW HAVEN, CT 06706

PROJECT NO.

23529-0301

FILE NAME:

SCALE:

N.T.S.

DATE

06/29/2004

By:

CK:

FIGURE:

ADMIN-1-S.T.U.V



# ADMIN-1-S

Log #
10 Source
11
12
13
14
15
16
17
18
19
20
21
22
23
24

	X	Y
	n/a	n/a
1	7.0	2.0
2	15.4	2.0
3	7.0	10.4
4	15.4	10.4
5	7.0	18.8
6	15.4	18.8
7	7.0	27.2
8	15.4	27.2
9	7.0	35.6
10	15.4	35.6
11	7.0	44.0
12	15.4	44.0
13	7.0	49
14	15.4	49

L (ft)= 8.4

A (ft²)= 980

Fixed Points	Ave. (Scan)	Max. (Scan)
1649	n/a	n/a
149	130	160
137	130	160
167	130	160
162	130	160
152	130	160
110	130	160
126	130	160
148	130	160
140	130	160
154	130	160
129	130	160
143	130	160
127	130	160
124	130	160

Log # 9 Field bkgd - 158 cpm

Log # 25 Field source - 2729 cpm  
end of section

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

D 11/29/2004  
Ti 7:25:04 AM

Header 1: James Lavender  
Header 2: Serial#202410  
Header 3: DetSer#PR208657  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-S  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/29/2004  
Model 2360 Time: 08:29:57  
Sample Number: 0026

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000364  
Beta Ratemeter Alarm: 000364  
Alpha + Beta Ratemeter Alarm: 000364  
Alpha Scaler Alarm: 000364  
Beta Scaler Alarm: 000364  
Alpha + Beta Scaler Alarm: 000364

Count - Count Time  
Ratometer  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	11/24/04	08:32:03	000000	000195	S 001.0	Lab Background
0002	11/24/04	08:38:35	000001	034118	S 001.0	Lab Source
0003	11/27/04	08:47:16	000000	000197	S 001.0	Lab Background
0004	11/27/04	08:48:27	000001	034096	S 001.0	Lab Source
0005	11/27/04	14:53:02	000000	000135	S 001.0	Field Background
0006	11/27/04	14:54:29	000002	010222	S 001.0	Field Source
0007	11/28/04	09:13:18	000000	000147	S 001.0	Lab Background
0008	11/28/04	09:15:38	000000	033527	S 001.0	Lab Source
0009	11/28/04	09:23:25	000000	000158	S 001.0	Field Background
0010	11/28/04	09:25:13	000003	001649	S 001.0	Field Source
0011	11/28/04	09:30:54	000001	000149	S 001.0	Admin-1-S
0012	11/28/04	09:33:30	000000	000137	S 001.0	Admin-1-S
0013	11/28/04	09:36:03	000000	000167	S 001.0	Admin-1-S
0014	11/28/04	09:38:23	000001	000162	S 001.0	Admin-1-S
0015	11/28/04	09:40:56	000000	000152	S 001.0	Admin-1-S
0016	11/28/04	09:43:43	000002	000110	S 001.0	Admin-1-S
0017	11/28/04	09:46:15	000000	000126	S 001.0	Admin-1-S
0018	11/28/04	09:48:34	000000	000148	S 001.0	Admin-1-S
0019	11/28/04	09:51:52	000000	000140	S 001.0	Admin-1-S
0020	11/28/04	09:54:11	000000	000154	S 001.0	Admin-1-S
0021	11/28/04	09:56:42	000001	000129	S 001.0	Admin-1-S
0022	11/28/04	09:59:10	000000	000143	S 001.0	Admin-1-S
0023	11/28/04	10:02:37	000000	000127	S 001.0	Admin-1-S
0024	11/28/04	10:05:02	000002	000124	S 001.0	Admin-1-S
	11/28/04	10:07:00	000004	002729	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
6	Smear 1	11/29/04	8:43:13	Admin-1-S	Final Status Survey	11/29/04	8:43:13	1.000	1.00
7	Smear 2	11/29/04	8:41:53	Admin-1-S	Final Status Survey	11/29/04	8:41:53	1.000	1.00
8	Smear 3	11/29/04	8:40:33	Admin-1-S	Final Status Survey	11/29/04	8:40:33	1.000	1.00
9	Smear 4	11/29/04	8:39:12	Admin-1-S	Final Status Survey	11/29/04	8:39:12	1.000	1.00
10	Smear 5	11/29/04	8:37:52	Admin-1-S	Final Status Survey	11/29/04	8:37:52	1.000	1.00
11	Smear 6	11/29/04	8:36:32	Admin-1-S	Final Status Survey	11/29/04	8:36:32	1.000	1.00
12	Smear 7	11/29/04	8:35:12	Admin-1-S	Final Status Survey	11/29/04	8:35:12	1.000	1.00
13	Smear 8	11/29/04	8:33:52	Admin-1-S	Final Status Survey	11/29/04	8:33:52	1.000	1.00
14	Smear 9	11/29/04	8:32:32	Admin-1-S	Final Status Survey	11/29/04	8:32:32	1.000	1.00
15	Smear 10	11/29/04	8:31:12	Admin-1-S	Final Status Survey	11/29/04	8:31:12	1.000	1.00
16	Smear 11	11/29/04	8:29:52	Admin-1-S	Final Status Survey	11/29/04	8:29:52	1.000	1.00
17	Smear 12	11/29/04	8:28:32	Admin-1-S	Final Status Survey	11/29/04	8:28:32	1.000	1.00
18	Smear 13	11/29/04	8:27:13	Admin-1-S	Final Status Survey	11/29/04	8:27:13	1.000	1.00
19	Smear 14	11/29/04	8:25:53	Admin-1-S	Final Status Survey	11/29/04	8:25:53	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-29-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %Eff: 24.07 LLD: 15.65 dpm				Bkg: 0.83 cpm %Eff: 44.05 LLD: 13.08 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
6	Smear 1	11/29/04	8:43:13	0.00	-0.10	-0.42	15.65	0.00	-0.83	-1.89	13.08
7	Smear 2	11/29/04	8:41:53	0.00	-0.10	-0.42	15.65	0.00	-0.83	-1.89	13.08
8	Smear 3	11/29/04	8:40:33	0.00	-0.10	-0.42	15.65	0.00	-0.83	-1.89	13.08
9	Smear 4	11/29/04	8:39:12	0.00	-0.10	-0.42	15.65	0.00	-0.83	-1.89	13.08
10	Smear 5	11/29/04	8:37:52	0.00	-0.10	-0.42	15.65	0.00	-0.83	-1.89	13.08
11	Smear 6	11/29/04	8:36:32	0.00	-0.10	-0.42	15.65	0.00	-0.83	-1.89	13.08
12	Smear 7	11/29/04	8:35:12	0.00	-0.10	-0.42	15.65	0.00	-0.83	-1.89	13.08
13	Smear 8	11/29/04	8:33:52	0.00	-0.10	-0.42	15.65	0.00	-0.83	-1.89	13.08
14	Smear 9	11/29/04	8:32:32	0.00	-0.10	-0.42	15.65	0.00	-0.83	-1.89	13.08
15	Smear 10	11/29/04	8:31:12	0.00	-0.10	-0.42	15.65	0.00	-0.83	-1.89	13.08
16	Smear 11	11/29/04	8:29:52	0.00	-0.10	-0.42	15.65	0.00	-0.83	-1.89	13.08
17	Smear 12	11/29/04	8:28:32	0.00	-0.10	-0.42	15.65	0.00	-0.83	-1.89	13.08
18	Smear 13	11/29/04	8:27:13	0.00	-0.10	-0.42	15.65	1.00	0.17	0.38	13.08
19	Smear 14	11/29/04	8:25:53	0.00	-0.10	-0.42	15.65	1.00	0.17	0.38	13.08

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-29-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

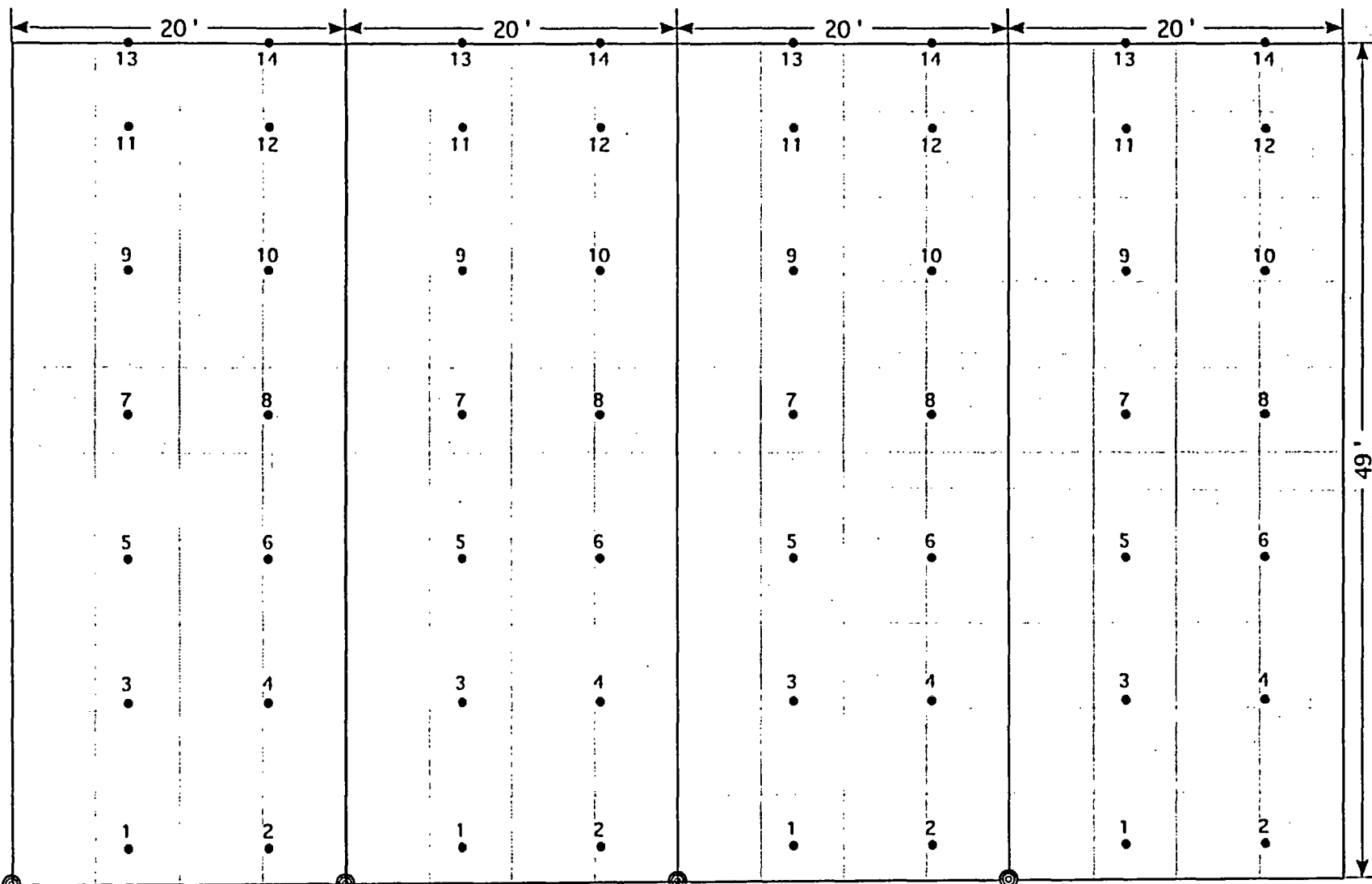
Date:

**Admin-1-T Administration Area**



Scam survey  
Start 0600 11-29-04  
Stop 1600 11-30-04

• SURVEY POINTS  
⊙ STARTING LOCATION



ADMIN-1-S

ADMIN-1-T

ADMIN-1-U

ADMIN-1-V

FSS  
Start 1605  
Stop 1700

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KATHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area Ceiling (2 of 3)

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06456

PROJECT NO:  
23529-0001

FILE NAME

SCALE: DATE:  
N.T.S. 06/29/2004  
By: CK:

FIGURE:  
ADMIN-1-S,T,U,V

# ADMIN-1-T

Log #	Source
6	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	

	X	Y
	n/a	n/a
1	7.0	2.0
2	15.4	2.0
3	7.0	10.4
4	15.4	10.4
5	7.0	18.8
6	15.4	18.8
7	7.0	27.2
8	15.4	27.2
9	7.0	35.6
10	15.4	35.6
11	7.0	44.0
12	15.4	44.0
13	7.0	49
14	15.4	49

L (ft)= 8.4

A (ft²)= 980

Fixed Points	Ave. (Scan)	Max. (Scan)
1973	n/a	n/a
130	120	190
130	120	180
194	120	180
156	120	180
125	120	180
120	120	180
135	120	180
147	120	180
137	120	180
140	120	180
112	120	180
157	120	180
126	120	180
136	120	180

Log 7 Field bkgd - 147 cpm  
 Log 22 Field source - 2312 cpm  
 end of unit

## FSS-Admin-1-T 120104

Num	Date	Time	Alpha	Beta	UsrTime	Location
0001	11/29/04	08:36:22	000000	000176	S 001.0	Lab Background
0002	11/29/04	08:38:56	000003	033920	S 001.0	Field Source
0003	11/30/04	08:27:43	000000	066867	S 002.0	Void
0004	11/30/04	17:06:18	000004	000261	S 002.0	Void
0005	11/30/04	17:12:33	000006	003930	S 002.0	Void
0006	11/30/04	17:13:42	000001	001973	S 001.0	Field Source
0007	11/30/04	17:15:11	000001	000147	S 001.0	Field Background
0008	11/30/04	17:17:42	000000	000130	S 001.0	Admin-1-T
0009	11/30/04	17:20:20	000000	000130	S 001.0	Admin-1-T
0010	11/30/04	17:23:29	000000	000194	S 001.0	Admin-1-T
0011	11/30/04	17:26:06	000001	000156	S 001.0	Admin-1-T
0012	11/30/04	17:29:19	000000	000125	S 001.0	Admin-1-T
0013	11/30/04	17:32:28	000001	000120	S 001.0	Admin-1-T
0014	11/30/04	17:36:09	000001	000135	S 001.0	Admin-1-T
0015	11/30/04	17:39:16	000001	000147	S 001.0	Admin-1-T
0016	11/30/04	17:42:53	000000	000137	S 001.0	Admin-1-T
0017	11/30/04	17:45:26	000000	000140	S 001.0	Admin-1-T
0018	11/30/04	17:48:17	000000	000112	S 001.0	Admin-1-T
0019	11/30/04	17:51:07	000000	000157	S 001.0	Admin-1-T
0020	11/30/04	17:53:47	000001	000126	S 001.0	Admin-1-T
0021	11/30/04	17:56:24	000001	000136	S 001.0	Admin-1-T
0022	11/30/04	17:59:24	000003	002312	S 001.0	Field Source

\$



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %Eff: 23.7 LLD: 15.9 dpm				Bkg: 0.77 cpm %Eff: 44.69 LLD: 12.64 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
21	Smear 1	12/01/04	11:30:00	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
22	Smear 2	12/01/04	11:28:39	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
23	Smear 3	12/01/04	11:27:19	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
24	Smear 4	12/01/04	11:25:59	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
25	Smear 5	12/01/04	11:24:39	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
26	Smear 6	12/01/04	11:23:18	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
27	Smear 7	12/01/04	11:21:58	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
28	Smear 8	12/01/04	11:20:38	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
29	Smear 9	12/01/04	11:19:18	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
30	Smear 10	12/01/04	11:17:57	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
31	Smear 11	12/01/04	11:16:37	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
32	Smear 12	12/01/04	11:15:17	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
33	Smear 13	12/01/04	11:13:56	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
34	Smear 14	12/01/04	11:12:36	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
35	Smear 15	12/01/04	11:11:16	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
36	Smear 16	12/01/04	11:09:56	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
37	Smear 1	12/01/04	11:08:35	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
38	Smear 2	12/01/04	11:07:15	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
39	Smear 3	12/01/04	11:05:55	0.00	-0.10	-0.42	15.90	3.00	2.23	5.01	12.64
40	Smear 4	12/01/04	11:04:35	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
41	Smear 5	12/01/04	11:03:15	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
42	Smear 6	12/01/04	11:01:54	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
43	Smear 7	12/01/04	11:00:34	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
44	Smear 8	12/01/04	10:59:14	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
45	Smear 9	12/01/04	10:57:54	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
46	Smear 10	12/01/04	10:56:34	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
47	Smear 11	12/01/04	10:55:14	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
48	Smear 12	12/01/04	10:53:54	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
49	Smear 13	12/01/04	10:52:33	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
50	Smear 14	12/01/04	10:51:13	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
51	Smear 15	12/01/04	10:49:53	0.00	-0.10	-0.42	15.90	3.00	2.23	5.01	12.64
52	Smear 16	12/01/04	10:48:33	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
53	Smear 1	12/01/04	10:47:13	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
54	Smear 2	12/01/04	10:45:53	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
55	Smear 3	12/01/04	10:44:33	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
56	Smear 4	12/01/04	10:43:13	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
57	Smear 5	12/01/04	10:41:53	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
58	Smear 6	12/01/04	10:40:33	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
59	Smear 7	12/01/04	10:39:13	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
60	Smear 8	12/01/04	10:37:53	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
61	Smear 9	12/01/04	10:36:33	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
62	Smear 10	12/01/04	10:35:13	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
63	Smear 11	12/01/04	10:33:53	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
64	Smear 12	12/01/04	10:32:33	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
65	Smear 13	12/01/04	10:31:13	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
66	Smear 14	12/01/04	10:29:53	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64

Technician (print): Chris Higgins

Technician (sign): 

Date: ( -1-09

Reviewed By (print): Claude Wiblin

Reviewed By (sign):

Date: (

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
21	Smear 1	12/01/04	11:30:00	Admin-1-Q	FSS	12/01/04	11:30:00	1.000	1.00
22	Smear 2	12/01/04	11:28:39	Admin-1-Q	FSS	12/01/04	11:28:39	1.000	1.00
23	Smear 3	12/01/04	11:27:19	Admin-1-Q	FSS	12/01/04	11:27:19	1.000	1.00
24	Smear 4	12/01/04	11:25:59	Admin-1-Q	FSS	12/01/04	11:25:59	1.000	1.00
25	Smear 5	12/01/04	11:24:39	Admin-1-Q	FSS	12/01/04	11:24:39	1.000	1.00
26	Smear 6	12/01/04	11:23:18	Admin-1-Q	FSS	12/01/04	11:23:18	1.000	1.00
27	Smear 7	12/01/04	11:21:58	Admin-1-Q	FSS	12/01/04	11:21:58	1.000	1.00
28	Smear 8	12/01/04	11:20:38	Admin-1-Q	FSS	12/01/04	11:20:38	1.000	1.00
29	Smear 9	12/01/04	11:19:18	Admin-1-Q	FSS	12/01/04	11:19:18	1.000	1.00
30	Smear 10	12/01/04	11:17:57	Admin-1-Q	FSS	12/01/04	11:17:57	1.000	1.00
31	Smear 11	12/01/04	11:16:37	Admin-1-Q	FSS	12/01/04	11:16:37	1.000	1.00
32	Smear 12	12/01/04	11:15:17	Admin-1-Q	FSS	12/01/04	11:15:17	1.000	1.00
33	Smear 13	12/01/04	11:13:56	Admin-1-Q	FSS	12/01/04	11:13:56	1.000	1.00
34	Smear 14	12/01/04	11:12:36	Admin-1-Q	FSS	12/01/04	11:12:36	1.000	1.00
35	Smear 15	12/01/04	11:11:16	Admin-1-Q	FSS	12/01/04	11:11:16	1.000	1.00
36	Smear 16	12/01/04	11:09:56	Admin-1-Q	FSS	12/01/04	11:09:56	1.000	1.00
37	Smear 1	12/01/04	11:08:35	Admin-1-R	FSS	12/01/04	11:08:35	1.000	1.00
38	Smear 2	12/01/04	11:07:15	Admin-1-R	FSS	12/01/04	11:07:15	1.000	1.00
39	Smear 3	12/01/04	11:05:55	Admin-1-R	FSS	12/01/04	11:05:55	1.000	1.00
40	Smear 4	12/01/04	11:04:35	Admin-1-R	FSS	12/01/04	11:04:35	1.000	1.00
41	Smear 5	12/01/04	11:03:15	Admin-1-R	FSS	12/01/04	11:03:15	1.000	1.00
42	Smear 6	12/01/04	11:01:54	Admin-1-R	FSS	12/01/04	11:01:54	1.000	1.00
43	Smear 7	12/01/04	11:00:34	Admin-1-R	FSS	12/01/04	11:00:34	1.000	1.00
44	Smear 8	12/01/04	10:59:14	Admin-1-R	FSS	12/01/04	10:59:14	1.000	1.00
45	Smear 9	12/01/04	10:57:54	Admin-1-R	FSS	12/01/04	10:57:54	1.000	1.00
46	Smear 10	12/01/04	10:56:34	Admin-1-R	FSS	12/01/04	10:56:34	1.000	1.00
47	Smear 11	12/01/04	10:55:14	Admin-1-R	FSS	12/01/04	10:55:14	1.000	1.00
48	Smear 12	12/01/04	10:53:54	Admin-1-R	FSS	12/01/04	10:53:54	1.000	1.00
49	Smear 13	12/01/04	10:52:33	Admin-1-R	FSS	12/01/04	10:52:33	1.000	1.00
50	Smear 14	12/01/04	10:51:13	Admin-1-R	FSS	12/01/04	10:51:13	1.000	1.00
51	Smear 15	12/01/04	10:49:53	Admin-1-R	FSS	12/01/04	10:49:53	1.000	1.00
52	Smear 16	12/01/04	10:48:33	Admin-1-R	FSS	12/01/04	10:48:33	1.000	1.00
53	Smear 1	12/01/04	10:47:13	Admin-1-T	FSS	12/01/04	10:47:13	1.000	1.00
54	Smear 2	12/01/04	10:45:53	Admin-1-T	FSS	12/01/04	10:45:53	1.000	1.00
55	Smear 3	12/01/04	10:44:33	Admin-1-T	FSS	12/01/04	10:44:33	1.000	1.00
56	Smear 4	12/01/04	10:43:13	Admin-1-T	FSS	12/01/04	10:43:13	1.000	1.00
57	Smear 5	12/01/04	10:41:53	Admin-1-T	FSS	12/01/04	10:41:53	1.000	1.00
58	Smear 6	12/01/04	10:40:33	Admin-1-T	FSS	12/01/04	10:40:33	1.000	1.00
59	Smear 7	12/01/04	10:39:13	Admin-1-T	FSS	12/01/04	10:39:13	1.000	1.00
60	Smear 8	12/01/04	10:37:53	Admin-1-T	FSS	12/01/04	10:37:53	1.000	1.00
61	Smear 9	12/01/04	10:36:33	Admin-1-T	FSS	12/01/04	10:36:33	1.000	1.00
62	Smear 10	12/01/04	10:35:13	Admin-1-T	FSS	12/01/04	10:35:13	1.000	1.00
63	Smear 11	12/01/04	10:33:53	Admin-1-T	FSS	12/01/04	10:33:53	1.000	1.00
64	Smear 12	12/01/04	10:32:33	Admin-1-T	FSS	12/01/04	10:32:33	1.000	1.00
65	Smear 13	12/01/04	10:31:13	Admin-1-T	FSS	12/01/04	10:31:13	1.000	1.00
66	Smear 14	12/01/04	10:29:53	Admin-1-T	FSS	12/01/04	10:29:53	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): *CH*

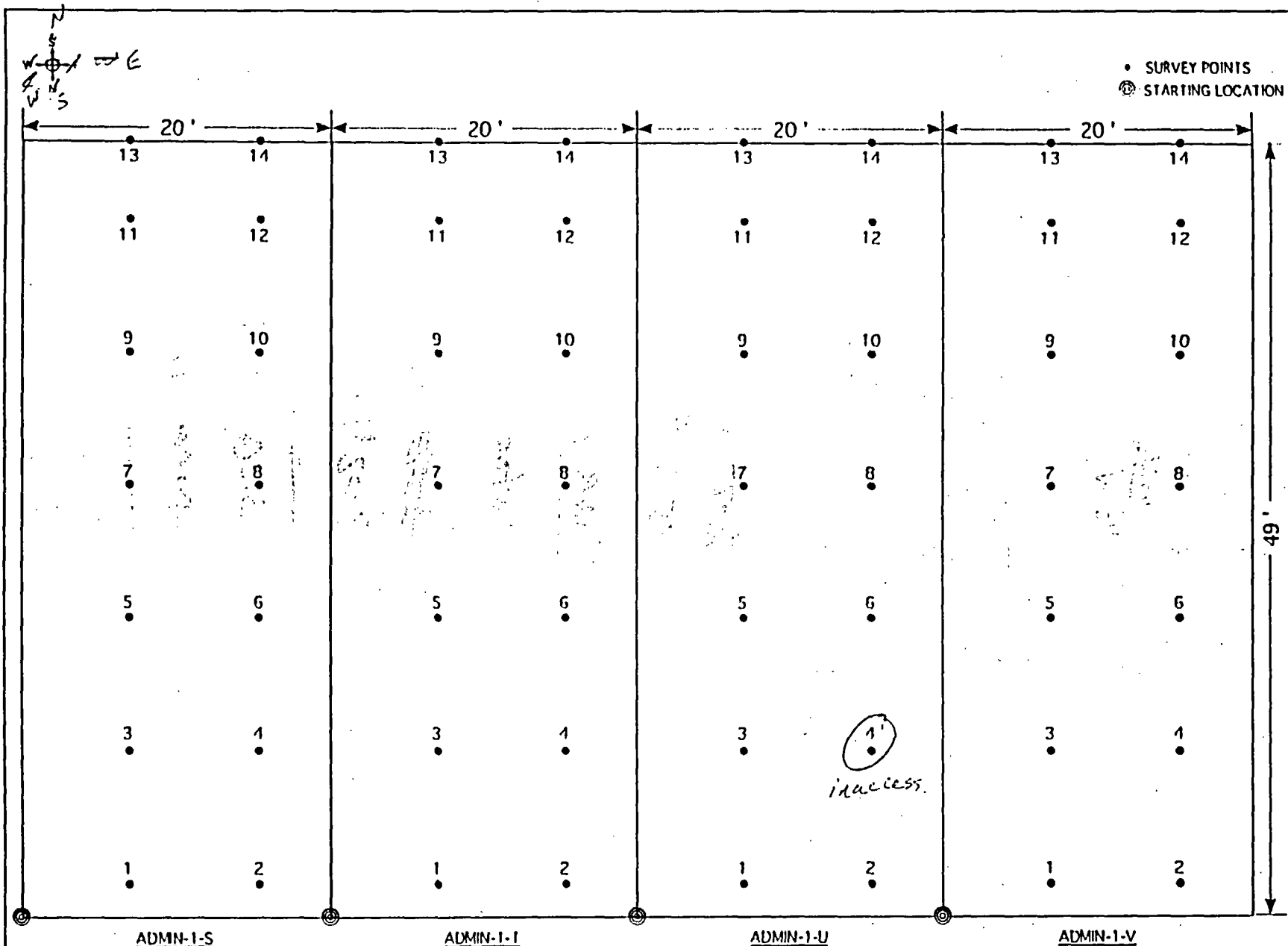
Date: 12-1-04

Reviewed By (print): Claude Wibilin

Reviewed By (sign):

Date:

**Admin-1-U Administration Area**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Administration Area Ceiling (2 of 3)	
SCIENTECH Inc. 143 WEST STREET NEW HAVEN, CT 06511	
PROJECT NO: 23529-0001	
FILE NAME:	
SCALE: N.T.S.	DATE: 05/29/2004
BY:	CR:
FIGURE: ADMIN-1-S, I, U, V	

ADMIN-1-U

Log #	Source
5	
6	
7	
Void	
8	
9	
10	
11	
10	
11	
12	
13	
14	
15	
16	

11-2-3

11-4

	X	Y
	n/a	n/a
1	7.0	2.0
2	15.4	2.0
3	7.0	10.4
4	15.4	10.4
5	7.0	18.8
6	15.4	18.8
7	7.0	27.2
8	15.4	27.2
9	7.0	35.6
10	15.4	35.6
11	7.0	44.0
12	15.4	44.0
13	7.0	49
14	15.4	49

void → inaccessible v

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
124	160	220
144	180	200
147	Void	Void
142	160	200
134	180	220
140	160	200
127	140	600
150	140	400
146	140	360
181	120	280
159	120	240
130	140	400
180	160	460
142	160	300

L (ft) = 8.4

A (ft²) = 980

11-3-04

START #3 BKG - 145

07:15 #4 Source IN B69

OUT 9425

MILAR has Hole STOP 14:30

11-3-04 New Meter

#3 BKG - 1308  
162

no Reading Taken

1515

S/N

~~202430~~

#4 Source IN

Source out #4

202433

1676

1634 OUT

11-4-04 0730

#8 BKG = 141

#17 Source

#9 Source IN

OUT

1797

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 11/9/2004  
Time: 7:52:17 AM

Header 1: Technician  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-U  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/09/2004  
Model 2360 Time: 08:56:32  
Sample Number: 0018

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000441  
Beta Ratemeter Alarm: 000441  
Alpha + Beta Ratemeter Alarm: 000441  
Alpha Scaler Alarm: 000441  
Beta Scaler Alarm: 000441  
Alpha + Beta Scaler Alarm: 000441

CntTime - Count Time  
Ratmeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

---

0001	11/03/04	16:38:49	000000	000169	S 001.0	Lab Background
0002	11/03/04	16:40:22	000002	034792	S 001.0	Lab Source
0003	11/03/04	16:44:26	000000	000162	S 001.0	Field Background
0004	11/03/04	16:46:03	000001	001676	S 001.0	Field Source
0005	11/03/04	17:51:39	000000	001634	S 001.0	Field Source
0006	11/04/04	08:23:28	000000	000189	S 001.0	Lab Background
0007	11/04/04	08:30:04	000002	034537	S 001.0	Lab Source
0008	11/04/04	08:40:44	000003	000141	S 001.0	Field Background
0009	11/04/04	08:43:34	000000	001603	S 001.0	Field Source
0010	11/04/04	09:42:17	000000	000150	S 001.0	Admin-1-U
0011	11/04/04	09:59:38	000001	000146	S 001.0	Admin-1-U
0012	11/04/04	11:07:55	000000	000181	S 001.0	Admin-1-U
0013	11/04/04	16:19:18	000002	000159	S 001.0	Admin-1-U
0014	11/04/04	16:53:48	000002	000130	S 001.0	Admin-1-U
0015	11/04/04	17:14:17	000000	000180	S 001.0	Admin-1-U
0016	11/04/04	17:18:03	000001	000142	S 001.0	Admin-1-U
0017	11/04/04	17:20:48	000003	001797	S 001.0	Field Source

\$

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 11/3/2004  
Time: 3:04:50 PM

Header 1: Tom Malachina  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/27/2004  
Model 2360 Time: 14:59:44  
Sample Number: 0013

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000441  
Beta Ratemeter Alarm: 000441  
Alpha + Beta Ratemeter Alarm: 000441  
Alpha Scaler Alarm: 000441  
Beta Scaler Alarm: 000441  
Alpha + Beta Scaler Alarm: 000441

CntTime - Count Time  
R- Ratemeter  
S- Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

---

0001	10/27/04	09:56:05	000001	000156	S 001.0	Lab Background
0002	10/27/04	09:57:28	000001	033228	S 001.0	Lab Source
0003	10/27/04	10:02:16	000007	000138	S 001.0	Field Background
0004	10/27/04	10:03:53	000002	001567	S 001.0	Field Source
0005	10/27/04	10:11:07	000000	000124	S 001.0	Admin-1-U
0006	10/27/04	10:14:11	000000	000144	S 001.0	Admin-1-U
0007	10/27/04	10:20:09	000000	000147	S 001.0	VOID
0008	10/27/04	10:24:11	000000	000142	S 001.0	Admin-1-U
0009	10/27/04	10:32:03	000001	000134	S 001.0	Admin-1-U
0010	10/27/04	10:45:04	000000	000140	S 001.0	Admin-1-U
0011	10/27/04	13:22:03	000000	000127	S 001.0	Admin-1-U
0012	10/27/04	14:47:30	000002	009425	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/01/04	13:22:17	Admin-1-U	FSS	12/01/04	13:22:17	1.000	1.00
2	Smear 2	12/01/04	13:20:57	Admin-1-U	FSS	12/01/04	13:20:57	1.000	1.00
3	Smear 3	12/01/04	13:19:37	Admin-1-U	FSS	12/01/04	13:19:37	1.000	1.00
4	Smear 4	12/01/04	13:18:17	Admin-1-U	FSS	12/01/04	13:18:17	1.000	1.00
5	Smear 5	12/01/04	13:16:57	Admin-1-U	FSS	12/01/04	13:16:57	1.000	1.00
6	Smear 6	12/01/04	13:15:36	Admin-1-U	FSS	12/01/04	13:15:36	1.000	1.00
7	Smear 7	12/01/04	13:14:16	Admin-1-U	FSS	12/01/04	13:14:16	1.000	1.00
8	Smear 8	12/01/04	13:12:56	Admin-1-U	FSS	12/01/04	13:12:56	1.000	1.00
9	Smear 9	12/01/04	13:11:36	Admin-1-U	FSS	12/01/04	13:11:36	1.000	1.00
10	Smear 10	12/01/04	13:10:16	Admin-1-U	FSS	12/01/04	13:10:16	1.000	1.00
11	Smear 11	12/01/04	13:08:56	Admin-1-U	FSS	12/01/04	13:08:56	1.000	1.00
12	Smear 12	12/01/04	13:07:36	Admin-1-U	FSS	12/01/04	13:07:36	1.000	1.00
13	Smear 13	12/01/04	13:06:16	Admin-1-U	FSS	12/01/04	13:06:16	1.000	1.00
14	Smear 14	12/01/04	13:04:56	Admin-1-U	FSS	12/01/04	13:04:56	1.000	1.00

Technician (print): Chris Higgins

Technician (sign):

Date:

12-1-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %Eff: 23.7 LLD: 16.9 dpm				Bkg: 0.77 cpm %Eff: 44.69 LLD: 12.64 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/01/04	13:22:17	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
2	Smear 2	12/01/04	13:20:57	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
3	Smear 3	12/01/04	13:19:37	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
4	Smear 4	12/01/04	13:18:17	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
5	Smear 5	12/01/04	13:16:57	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
6	Smear 6	12/01/04	13:15:36	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
7	Smear 7	12/01/04	13:14:16	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
8	Smear 8	12/01/04	13:12:56	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
9	Smear 9	12/01/04	13:11:36	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
10	Smear 10	12/01/04	13:10:16	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
11	Smear 11	12/01/04	13:08:56	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
12	Smear 12	12/01/04	13:07:36	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
13	Smear 13	12/01/04	13:06:16	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
14	Smear 14	12/01/04	13:04:56	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64

Technician (print): Chris Higgins

Technician (sign): 

Date: 1-1-07

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date: (

High lighted values (\*) were retaken - see attached map. - changed 12/1/04

# ADMIN-1-U

Log #
Source
5
6
7
Void
8 9
10
11
10
11
12
13
14
15
16

11-2-3

11-4

	X	Y
	n/a	n/a
1	7.0	2.0
2	15.4	2.0
3	7.0	10.4
4	15.4	10.4 inaccessible
5	7.0	18.8
6	15.4	18.8
7	7.0	27.2
8	15.4	27.2
9	7.0	35.6
10	15.4	35.6
11	7.0	44.0
12	15.4	44.0
13	7.0	49
14	15.4	49

L (ft) = 8.4  
A (ft) = 980

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
124	160	220
144	180	200
147	Void	Void
142	160	200
134	180	220
140	160	200
127	140	180
150	140	160
146	140	180
181	120	280
159	120	240
130	140	160
180	160	160
142	160	180

void

(\*)

(\*)

(\*)

(\*)

(\*)

(\*)

START #3 BKG - 145

07:15 #4 Source IN 1369

OUT 9425

MILAR has Hole STOP 14:30

11-3-04 New Meter

#3 BKG - 138  
162

NO  
Reading  
Taken

15.15

S/N

~~202433~~

#4 Source IN

Source out #4

202433

1676

1634 OUT

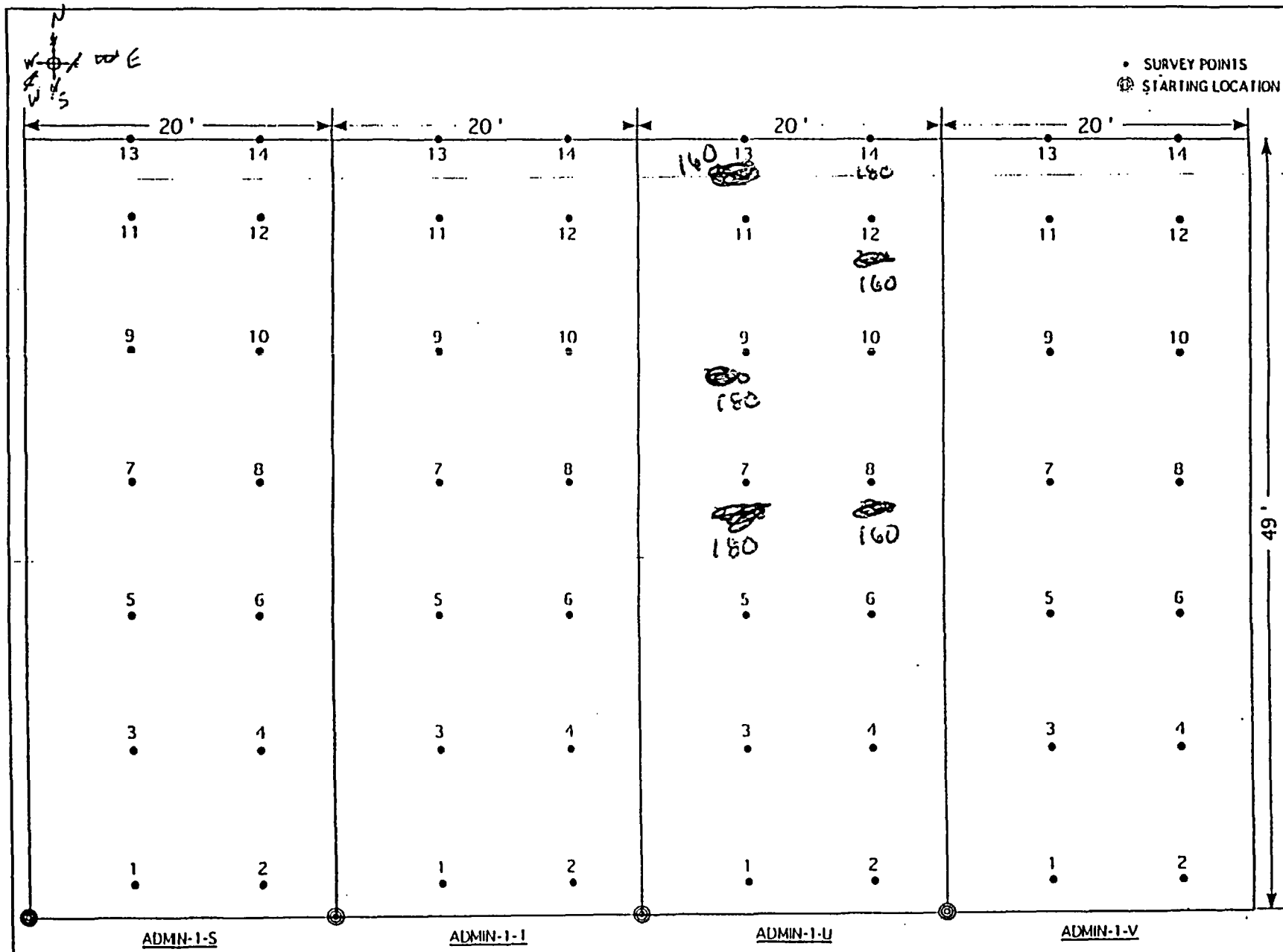
11-4-04 0730

#8 BKG - 141

#17 Source

#9 Source IN

OUT  
1797



NGEBS SINGARI  
 & RE SCANS ON  
 7, 12, 13, 14

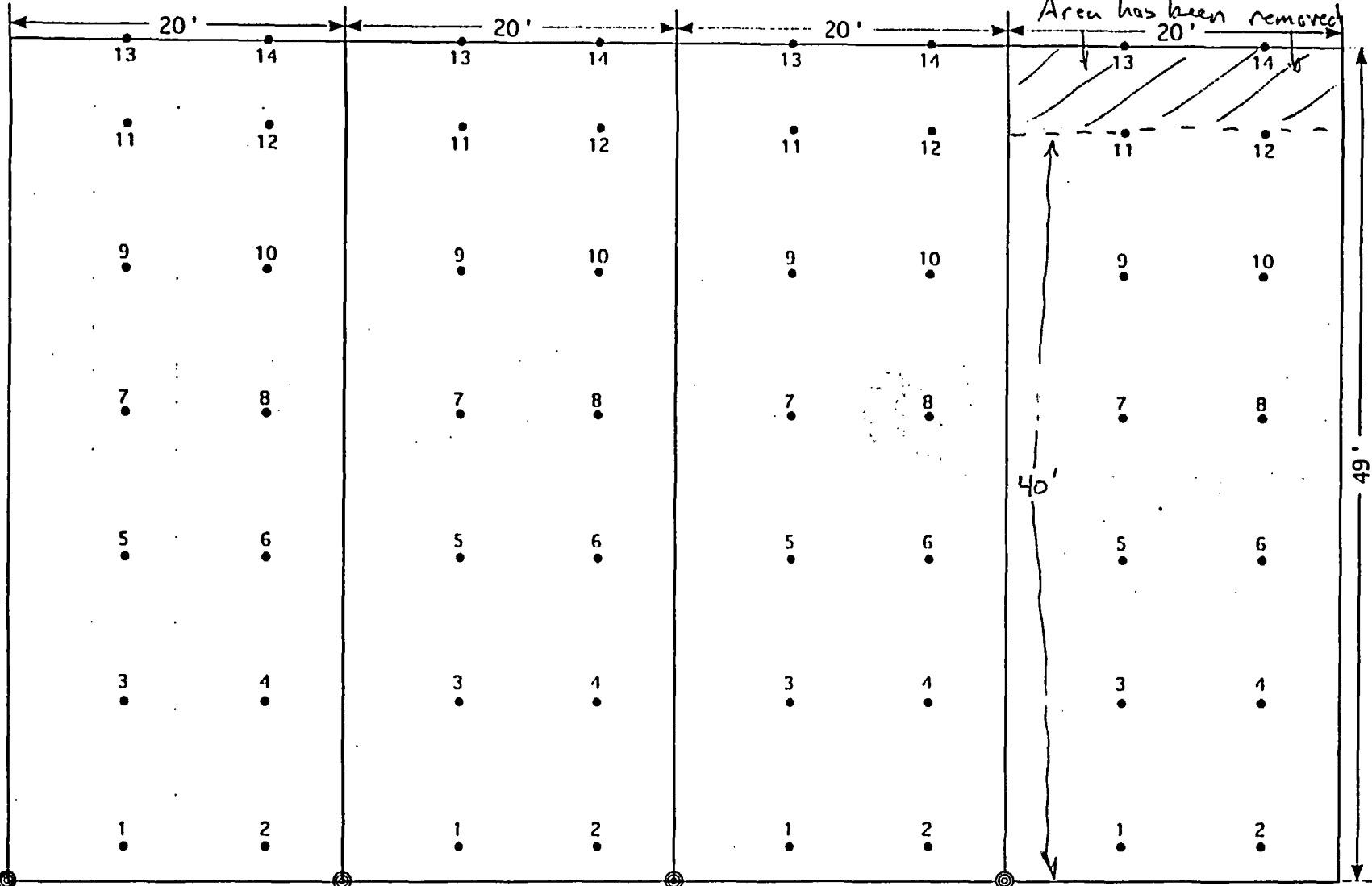
Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Administration Area Ceiling (2 of 3)	
SCIENSTECH SCIENSTECH Inc. 140 WEST STREET NEW HAVEN, CT 06510	
PROJECT NO. 23329-0001	
FILE NAME	
SCALE N.T.S.	DATE 06/28/2004
By	CR
FIGURE	

**Admin-1-V Administration Area**

2360/202410

C.B. 4-13-05

11-16-04 1700 Start  
11-16-04 1745 Stop



• SURVEY POINTS  
• STARTING LOCATION

Area has been removed

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KATHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area Ceiling (2 of 3)

SCIENTECH  
SCIENTECH Inc.  
143 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO:  
23529-0301

FILE NAME:

SCALE: DATE:  
N.T.S. 05/29/2004  
By: CK:

FIGURE:  
ADMIN-1-S,T,U,V

100%  
Scan  
Completed  
1700 11-16-04

ADMIN-1-V

11-15-16  
Flamender

2360/202410

ADMIN-1-V

Log #
5 Source
6
7
8
9
10
11
12
13
14
15
16
17

	X	Y
	n/a	n/a
1	7.0	2.0
2	15.4	2.0
3	7.0	10.4
4	15.4	10.4
5	7.0	18.8
6	15.4	18.8
7	7.0	27.2
8	15.4	27.2
9	7.0	35.6
10	15.4	35.6
11	7.0	40.0 $\approx$
12	15.4	40.0 $\approx$
13	7.0	49
14	15.4	49

$L (ft) = 8.4$   
 $A (ft^2) = 980$

} Area is only 40' long

Fixed Points	Ave. (Scan)	Max. (Scan)
3672	n/a	n/a
137	120	160
140	120	160
148	120	220
149	130	240
122	120	180
107	120	220
131	120	250
144	120	220
159	130	260
130	130	260
137	130	280
96	130	280
N/A	N/A	N/A
N/A	N/A	N/A

File Source  
3618 gpm

2360 / 202410

C.D. 4-13-05

# Ludlum Measurements, Inc.

## Model 2360 Log Data

Date: 11/22/2004  
Time: 7:47:05 AM

Header 1: James Lavender  
Header 2: Serial#202410  
Header 3: DetSer#PR208657  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/22/2004  
Model 2360 Time: 08:43:50  
Sample Number: 0060

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000441  
Beta Ratemeter Alarm: 000441  
Alpha + Beta Ratemeter Alarm: 000441  
Alpha Scaler Alarm: 000441  
Beta Scaler Alarm: 000441  
Alpha + Beta Scaler Alarm: 000441

CntTime - Count Time  
          temeter  
          aler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	11/15/04	11:18:11	000000	035025	S 001.0	Lab Source
0002	11/15/04	17:45:11	000001	002870	S 001.0	Field Source
0003	11/16/04	09:03:09	000001	036062	S 001.0	Lab Source
0004	11/16/04	15:56:17	000000	005072	S 001.0	Void
0005	11/16/04	16:59:43	000000	003672	S 001.0	Field Source
0006	11/16/04	17:03:12	000000	000137	S 001.0	Admin-1-V
0007	11/16/04	17:05:34	000000	000140	S 001.0	Admin-1-V
0008	11/16/04	17:08:39	000002	000148	S 001.0	Admin-1-V
0009	11/16/04	17:11:51	000000	000149	S 001.0	Admin-1-V
0010	11/16/04	17:14:57	000000	000122	S 001.0	Admin-1-V
0011	11/16/04	17:18:05	000000	000107	S 001.0	Admin-1-V
0012	11/16/04	17:21:40	000001	000131	S 001.0	Admin-1-V
0013	11/16/04	17:25:23	000001	000144	S 001.0	Admin-1-V
0014	11/16/04	17:28:20	000000	000159	S 001.0	Admin-1-V
0015	11/16/04	17:31:02	000001	000130	S 001.0	Admin-1-V
0016	11/16/04	17:33:51	000000	000137	S 001.0	Admin-1-V
0017	11/16/04	17:36:11	000000	000096	S 001.0	Admin-1-V
0018	11/16/04	17:51:00	000004	003818	S 001.0	Field Source
0019	11/17/04	08:25:49	000000	034061	S 001.0	Lab Source
0020	11/17/04	08:27:04	000000	000168	S 001.0	Lab Background
0021	11/18/04	07:59:05	000000	033274	S 001.0	Lab Source
0022	11/18/04	18:00:47	000002	000120	S 001.0	Field Background
0023	11/18/04	18:02:33	000001	036269	S 001.0	Field Source
0024	11/18/04	18:07:53	000001	000149	S 001.0	Admin-1-W
0025	11/18/04	18:10:29	000001	000140	S 001.0	Admin-1-W
0026	11/18/04	18:13:11	000000	000141	S 001.0	Admin-1-W
0027	11/18/04	19:00:27	000001	000151	S 001.0	Admin-1-W
0028	11/18/04	19:03:14	000000	000145	S 001.0	Admin-1-W
0029	11/18/04	19:05:38	000000	000143	S 001.0	Admin-1-W
0030	11/18/04	19:09:07	000000	000156	S 001.0	Admin-1-W
0031	11/18/04	19:11:36	000001	000134	S 001.0	Admin-1-W
0032	11/18/04	19:14:23	000000	000127	S 001.0	Admin-1-W
0033	11/18/04	19:17:43	000002	000144	S 001.0	Admin-1-W
0034	11/18/04	19:20:15	000000	000136	S 001.0	Admin-1-W

0035 11/18/04 19:22:39 000000 000132 S 001.0 Admin-1-W  
0036 11/18/04 19:26:25 000000 000120 S 001.0 Admin-1-W  
0037 11/18/04 19:29:47 000000 000143 S 001.0 Admin-1-W  
0038 11/18/04 19:33:07 000001 000133 S 001.0 Admin-1-W  
0039 11/18/04 19:39:30 000000 036559 S 001.0 Field Source  
0040 11/19/04 08:25:56 000001 034686 S 001.0 Lab Source  
0041 11/20/04 08:20:29 000000 034702 S 001.0 Lab Source  
0042 11/20/04 12:04:22 000000 000140 S 001.0 Field Background  
0043 11/20/04 12:06:08 000001 001963 S 001.0 Field Source  
0044 11/20/04 12:08:48 000000 000147 S 001.0 Admin-1-X  
0045 11/20/04 12:11:14 000000 000128 S 001.0 Admin-1-X  
0046 11/20/04 12:13:47 000000 000183 S 001.0 Admin-1-X  
0047 11/20/04 12:16:52 000000 000156 S 001.0 Admin-1-X  
0048 11/20/04 12:19:12 000001 000153 S 001.0 Admin-1-X  
0049 11/20/04 12:21:34 000001 000163 S 001.0 Admin-1-X  
0050 11/20/04 12:24:24 000000 000138 S 001.0 Admin-1-X  
0051 11/20/04 12:26:41 000000 000152 S 001.0 Admin-1-X  
0052 11/20/04 12:29:02 000002 000134 S 001.0 Admin-1-X  
0053 11/20/04 12:31:52 000000 000121 S 001.0 Admin-1-X  
0054 11/20/04 12:34:20 000000 000148 S 001.0 Admin-1-X  
0055 11/20/04 12:36:48 000001 000154 S 001.0 Admin-1-X  
0056 11/20/04 12:39:59 000000 000114 S 001.0 Admin-1-X  
0057 11/20/04 12:43:41 000002 000142 S 001.0 Admin-1-X  
0058 11/20/04 12:46:26 000001 000126 S 001.0 Admin-1-X  
0059 11/20/04 12:49:31 000000 002017 S 001.0 Field Source  
S



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	11/22/04	10:01:01	Admin-1-V	Final Status Survey	11/22/04	10:01:01	1.000	1.00
2	Smear 2	11/22/04	9:59:41	Admin-1-V	Final Status Survey	11/22/04	9:59:41	1.000	1.00
3	Smear 3	11/22/04	9:58:21	Admin-1-V	Final Status Survey	11/22/04	9:58:21	1.000	1.00
4	Smear 4	11/22/04	9:57:01	Admin-1-V	Final Status Survey	11/22/04	9:57:01	1.000	1.00
5	Smear 5	11/22/04	9:55:41	Admin-1-V	Final Status Survey	11/22/04	9:55:41	1.000	1.00
6	Smear 6	11/22/04	9:54:21	Admin-1-V	Final Status Survey	11/22/04	9:54:21	1.000	1.00
7	Smear 7	11/22/04	9:53:01	Admin-1-V	Final Status Survey	11/22/04	9:53:01	1.000	1.00
8	Smear 8	11/22/04	9:51:41	Admin-1-V	Final Status Survey	11/22/04	9:51:41	1.000	1.00
9	Smear 9	11/22/04	9:50:21	Admin-1-V	Final Status Survey	11/22/04	9:50:21	1.000	1.00
10	Smear 10	11/22/04	9:49:01	Admin-1-V	Final Status Survey	11/22/04	9:49:01	1.000	1.00
11	Smear 11	11/22/04	9:47:41	Admin-1-V	Final Status Survey	11/22/04	9:47:41	1.000	1.00
12	Smear 12	11/22/04	9:46:21	Admin-1-V	Final Status Survey	11/22/04	9:46:21	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %Eff: 23.71 LLD: 15.89 dpm				Bkg: 0.37 cpm %Eff: 43.89 LLD: 10.79 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	11/22/04	10:01:01	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
2	Smear 2	11/22/04	9:59:41	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79
3	Smear 3	11/22/04	9:58:21	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
4	Smear 4	11/22/04	9:57:01	1.00	0.90	3.80	15.89	1.00	0.63	1.44	10.79
5	Smear 5	11/22/04	9:55:41	0.00	-0.10	-0.42	15.89	3.00	2.63	6.00	10.79
6	Smear 6	11/22/04	9:54:21	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
7	Smear 7	11/22/04	9:53:01	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79
8	Smear 8	11/22/04	9:51:41	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
9	Smear 9	11/22/04	9:50:21	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
10	Smear 10	11/22/04	9:49:01	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79
11	Smear 11	11/22/04	9:47:41	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79
12	Smear 12	11/22/04	9:46:21	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79

Technician (print): Rob Ellison

Technician (sign):

*Rob Ellison*

Date: ( 22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date: (

**Admin-1-W Administration Area**

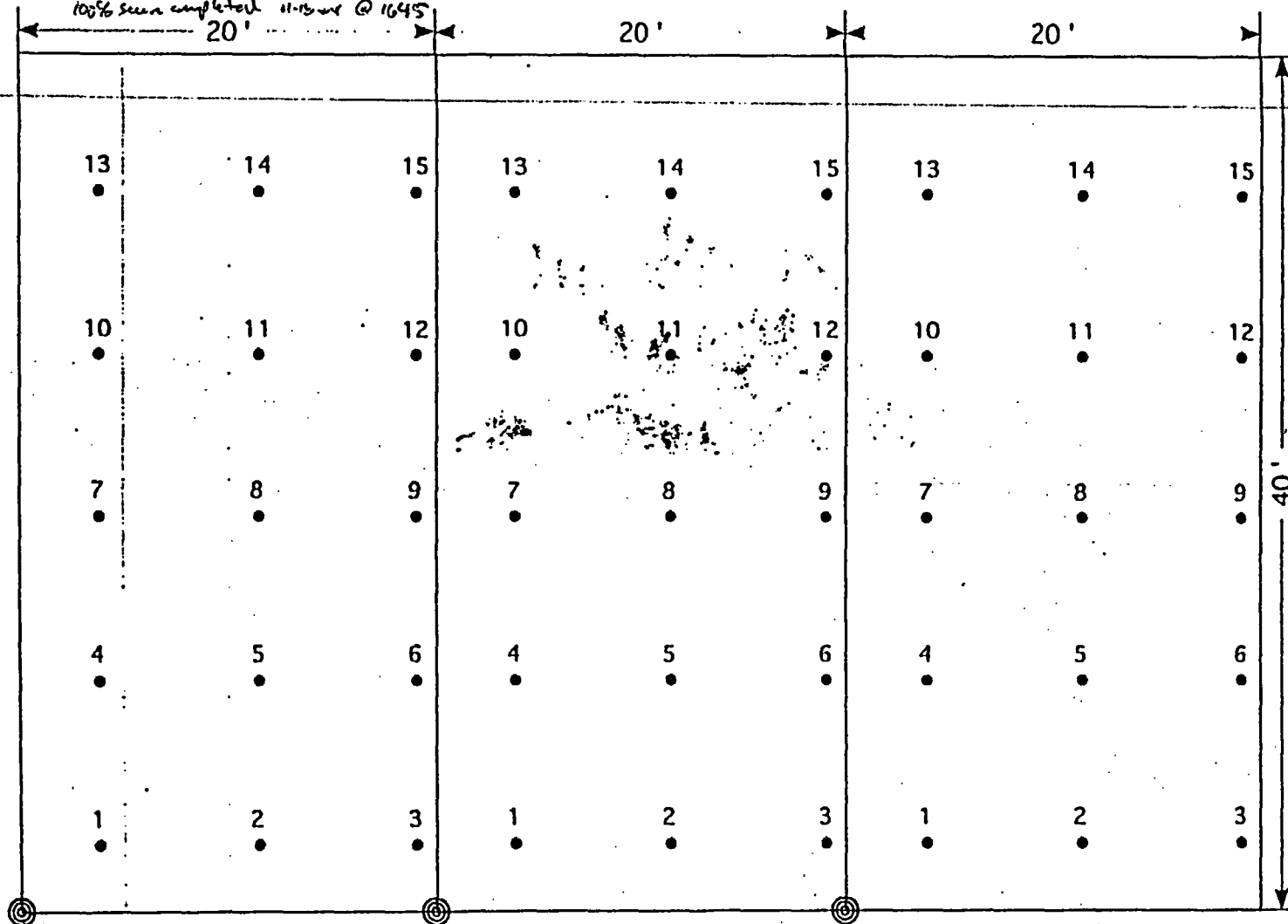


2360-202410

C.D. - 4-13-05

100% scan completed 11-15-04 @ 1645

- SURVEY POINTS
- ⊙ STARTING LOCATION



ADMIN-1-W

ADMIN-1-X

ADMIN-1-Y

11-14-04 1655 Start  
11-16-04 1830 Stop  
JLander

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KATHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area Ceiling (3 of 3)

SCIENTECH

SCIENTECH, Inc.  
140 WEST STREET  
NEW MILFORD, CT 06455

PROJECT NO.: 23529-0501

FILE NAME:

SCALE: N.T.S. DATE: 06/29/2004  
BY: CK:

FIGURE:

ADMIN-1-W.X.Y

2360 / 202410

# ADMIN-1-W

Log #
23 Source
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38

	X	Y
	n/a	n/a
1	2.6	0.9
2	11.3	0.9
3	20.0	0.9
4	2.6	9.6
5	11.3	9.6
6	20.0	9.6
7	2.6	18.3
8	11.3	18.3
9	20.0	18.3
10	2.6	27.0
11	11.3	27.0
12	20.0	27.0
13	2.6	35.7
14	11.3	35.7
15	20.0	35.7

L (ft)= 8.7

A (ft²)= 1067

Log # 22 - Bkgrd. - 120 cpm

Log # 39. Source - 36554 cpm

Fixed Points	Ave. (Scan)	Max. (Scan)
36269	n/a	n/a
149	120	150
140	120	160
141	130	150
151	120	200
145	130	170
143	130	160
156	130	180
134	130	150
127	120	160
144	130	200
136	130	220
132	130	200
120	130	300
173	130	220
133	130	320

# Ludlum Measurements, Inc.

## Model 2360 Log Data

Date: 11/22/2004  
Time: 7:47:05 AM

Header 1: James Lavender  
Header 2: Serial#202410  
Header 3: DetSer#PR208657  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/22/2004  
Model 2360 Time: 08:43:50  
Sample Number: 0060

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000441  
Beta Ratemeter Alarm: 000441  
Alpha + Beta Ratemeter Alarm: 000441  
Alpha Scaler Alarm: 000441  
Beta Scaler Alarm: 000441  
Alpha + Beta Scaler Alarm: 000441

CntTime - Count Time  
Ratemeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	11/15/04	11:18:11	000000	035025	S 001.0	Lab Source
0002	11/15/04	17:45:11	000001	002870	S 001.0	Field Source
0003	11/16/04	09:03:09	000001	036062	S 001.0	Lab Source
0004	11/16/04	15:56:17	000000	005072	S 001.0	Void
0005	11/16/04	16:59:43	000000	003672	S 001.0	Field Source
0006	11/16/04	17:03:12	000000	000137	S 001.0	Admin-1-V
0007	11/16/04	17:05:34	000000	000140	S 001.0	Admin-1-V
0008	11/16/04	17:08:39	000002	000148	S 001.0	Admin-1-V
0009	11/16/04	17:11:51	000000	000149	S 001.0	Admin-1-V
0010	11/16/04	17:14:57	000000	000122	S 001.0	Admin-1-V
0011	11/16/04	17:18:05	000000	000107	S 001.0	Admin-1-V
0012	11/16/04	17:21:40	000001	000131	S 001.0	Admin-1-V
0013	11/16/04	17:25:23	000001	000144	S 001.0	Admin-1-V
0014	11/16/04	17:28:20	000000	000159	S 001.0	Admin-1-V
0015	11/16/04	17:31:02	000001	000130	S 001.0	Admin-1-V
0016	11/16/04	17:33:51	000000	000137	S 001.0	Admin-1-V
0017	11/16/04	17:36:11	000000	000096	S 001.0	Admin-1-V
0018	11/16/04	17:51:00	000004	003818	S 001.0	Field Source
0019	11/17/04	08:25:49	000000	034061	S 001.0	Lab Source
0020	11/17/04	08:27:04	000000	000168	S 001.0	Lab Background
0021	11/18/04	07:59:05	000000	033274	S 001.0	Lab Source
0022	11/18/04	18:00:47	000002	000120	S 001.0	Field Background
0023	11/18/04	18:02:33	000001	036269	S 001.0	Field Source
0024	11/18/04	18:07:53	000001	000149	S 001.0	Admin-1-W
0025	11/18/04	18:10:29	000001	000140	S 001.0	Admin-1-W
	11/18/04	18:13:11	000000	000141	S 001.0	Admin-1-W
	11/18/04	19:00:27	000001	000151	S 001.0	Admin-1-W
0028	11/18/04	19:03:14	000000	000145	S 001.0	Admin-1-W
0029	11/18/04	19:05:38	000000	000143	S 001.0	Admin-1-W
0030	11/18/04	19:09:07	000000	000156	S 001.0	Admin-1-W
0031	11/18/04	19:11:36	000001	000134	S 001.0	Admin-1-W
0032	11/18/04	19:14:23	000000	000127	S 001.0	Admin-1-W
0033	11/18/04	19:17:43	000002	000144	S 001.0	Admin-1-W
0034	11/18/04	19:20:15	000000	000136	S 001.0	Admin-1-W

0035 11/18/04 19:22:39 000000 000132 S 001.0 Admin-1-W  
0036 11/18/04 19:26:25 000000 000120 S 001.0 Admin-1-W  
0037 11/18/04 19:29:47 000000 000143 S 001.0 Admin-1-W  
0038 11/18/04 19:33:07 000001 000133 S 001.0 Admin-1-W  
0039 11/18/04 19:39:30 000000 036559 S 001.0 Field Source  
0040 11/19/04 08:25:56 000001 034686 S 001.0 Lab Source  
0041 11/20/04 08:20:29 000000 034702 S 001.0 Lab Source  
0042 11/20/04 12:04:22 000000 000140 S 001.0 Field Background  
0043 11/20/04 12:06:08 000001 001963 S 001.0 Field Source  
0044 11/20/04 12:08:48 000000 000147 S 001.0 Admin-1-X  
0045 11/20/04 12:11:14 000000 000128 S 001.0 Admin-1-X  
0046 11/20/04 12:13:47 000000 000183 S 001.0 Admin-1-X  
0047 11/20/04 12:16:52 000000 000156 S 001.0 Admin-1-X  
0048 11/20/04 12:19:12 000001 000153 S 001.0 Admin-1-X  
0049 11/20/04 12:21:34 000001 000163 S 001.0 Admin-1-X  
0050 11/20/04 12:24:24 000000 000138 S 001.0 Admin-1-X  
0051 11/20/04 12:26:41 000000 000152 S 001.0 Admin-1-X  
0052 11/20/04 12:29:02 000002 000134 S 001.0 Admin-1-X  
0053 11/20/04 12:31:52 000000 000121 S 001.0 Admin-1-X  
0054 11/20/04 12:34:20 000000 000148 S 001.0 Admin-1-X  
0055 11/20/04 12:36:48 000001 000154 S 001.0 Admin-1-X  
0056 11/20/04 12:39:59 000000 000114 S 001.0 Admin-1-X  
0057 11/20/04 12:43:41 000002 000142 S 001.0 Admin-1-X  
0058 11/20/04 12:46:26 000001 000126 S 001.0 Admin-1-X  
0059 11/20/04 12:49:31 000000 002017 S 001.0 Field Source  
S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	11/22/04	10:34:58	Admin-1-W	Final Status Survey	11/22/04	10:34:58	1.000	1.00
2	Smear 2	11/22/04	10:33:38	Admin-1-W	Final Status Survey	11/22/04	10:33:38	1.000	1.00
3	Smear 3	11/22/04	10:32:18	Admin-1-W	Final Status Survey	11/22/04	10:32:18	1.000	1.00
4	Smear 4	11/22/04	10:30:58	Admin-1-W	Final Status Survey	11/22/04	10:30:58	1.000	1.00
5	Smear 5	11/22/04	10:29:38	Admin-1-W	Final Status Survey	11/22/04	10:29:38	1.000	1.00
6	Smear 6	11/22/04	10:28:18	Admin-1-W	Final Status Survey	11/22/04	10:28:18	1.000	1.00
7	Smear 7	11/22/04	10:26:58	Admin-1-W	Final Status Survey	11/22/04	10:26:58	1.000	1.00
8	Smear 8	11/22/04	10:25:39	Admin-1-W	Final Status Survey	11/22/04	10:25:39	1.000	1.00
9	Smear 9	11/22/04	10:24:19	Admin-1-W	Final Status Survey	11/22/04	10:24:19	1.000	1.00
10	Smear 10	11/22/04	10:22:59	Admin-1-W	Final Status Survey	11/22/04	10:22:59	1.000	1.00
11	Smear 11	11/22/04	10:21:39	Admin-1-W	Final Status Survey	11/22/04	10:21:39	1.000	1.00
12	Smear 12	11/22/04	10:20:19	Admin-1-W	Final Status Survey	11/22/04	10:20:19	1.000	1.00
13	Smear 13	11/22/04	10:18:59	Admin-1-W	Final Status Survey	11/22/04	10:18:59	1.000	1.00
14	Smear 14	11/22/04	10:17:40	Admin-1-W	Final Status Survey	11/22/04	10:17:40	1.000	1.00
15	Smear 15	11/22/04	10:16:20	Admin-1-W	Final Status Survey	11/22/04	10:16:20	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %Eff: 23.71 LLD: 15.89 dpm				Bkg: 0.37 cpm %Eff: 43.89 LLD: 10.79 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	11/22/04	10:34:58	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79
2	Smear 2	11/22/04	10:33:38	0.00	-0.10	-0.42	15.89	4.00	3.63	8.28	10.79
3	Smear 3	11/22/04	10:32:18	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79
4	Smear 4	11/22/04	10:30:58	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79
5	Smear 5	11/22/04	10:29:38	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79
6	Smear 6	11/22/04	10:28:18	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
7	Smear 7	11/22/04	10:26:58	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79
8	Smear 8	11/22/04	10:25:39	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
9	Smear 9	11/22/04	10:24:19	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
10	Smear 10	11/22/04	10:22:59	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79
11	Smear 11	11/22/04	10:21:39	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79
12	Smear 12	11/22/04	10:20:19	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
13	Smear 13	11/22/04	10:18:59	1.00	0.90	3.80	15.89	1.00	0.63	1.44	10.79
14	Smear 14	11/22/04	10:17:40	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
15	Smear 15	11/22/04	10:16:20	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

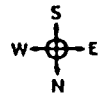
Date:





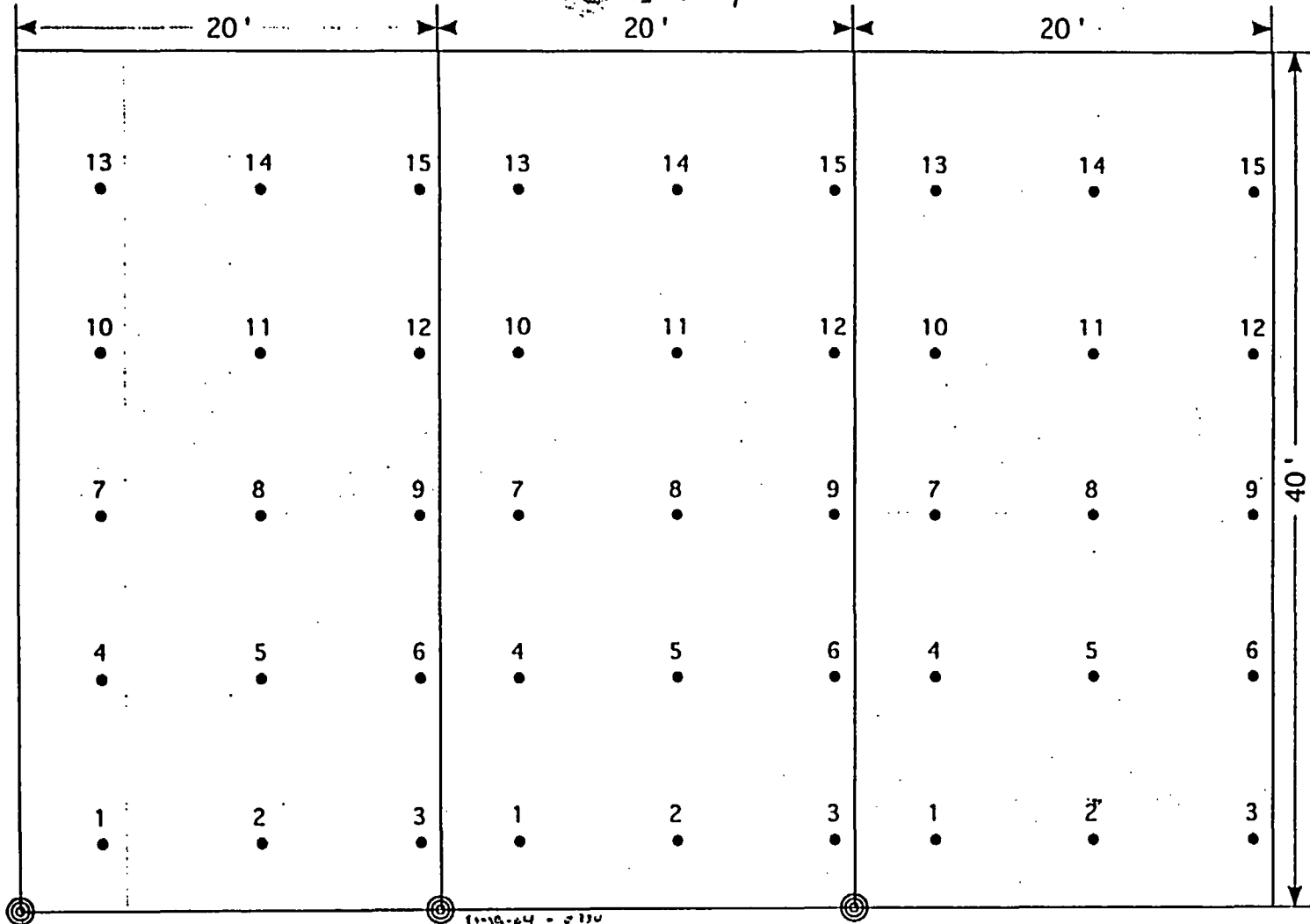
**Admin-1-X Administration Area**

2360/202410  
C.D. 4-12-05



11/20/04 - 11:00 : Start  
11-20-04 - 11:45 : Stop  
20'

• SURVEY POINTS  
⊙ STARTING LOCATION



ADMIN-1-W

11-19-04 = 2:30  
11-20-04 = 11:45

ADMIN-1-X

100% seen complete bed @ 10:50  
11-20-04

ADMIN-1-Y

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARTHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Administration Area Ceiling (3 of 3)

SCIENTECH

SCIENTECH, Inc.  
140 WEST STREET  
NEW MILFORD, CT 06456

PROJECT NO:  
23529-0301

FILE NAME:

SCALE: DATE:  
N.T.S. 06/29/2004

By: CK:

FIGURE:  
ADMIN-1-W,X,Y

11/20/04

## ADMIN-1-X

Log #
43 Source
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58

	X	Y
	n/a	n/a
1	2.6	0.9
2	11.3	0.9
3	20.0	0.9
4	2.6	9.6
5	11.3	9.6
6	20.0	9.6
7	2.6	18.3
8	11.3	18.3
9	20.0	18.3
10	2.6	27.0
11	11.3	27.0
12	20.0	27.0
13	2.6	35.7
14	11.3	35.7
15	20.0	35.7

L (ft)= 8.7

A (ft<sup>2</sup>)= 1067

2360/202410

Log # 42 - Bkgd - 140 cpm  
 Log # 59 - Source - 2017 cpm

Fixed Points	Ave. (Scan)	Max. (Scan)
1963	n/a	n/a
147	130	220
128	130	220
183	130	260
156	130	200
153	130	180
163	130	180
138	130	200
152	130	180
134	130	160
121	120	200
148	130	180
154	130	180
114	120	280
142	120	280
126	130	320

# Ludlum Measurements, Inc.

## Model 2360 Log Data

11/22/2004

7:47:05 AM

Header 1: James Lavender  
Header 2: Serial#202410  
Header 3: DetSer#PR208657  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/22/2004  
Model 2360 Time: 08:43:50  
Sample Number: 0060

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000441  
Beta Ratemeter Alarm: 000441  
Alpha + Beta Ratemeter Alarm: 000441  
Alpha Scaler Alarm: 000441  
Beta Scaler Alarm: 000441  
Alpha + Beta Scaler Alarm: 000441

Time - Count Time

Ratemeter

Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	11/15/04	11:18:11	000000	035025	S 001.0	Lab Source
0002	11/15/04	17:45:11	000001	002870	S 001.0	Field Source
0003	11/16/04	09:03:09	000001	036062	S 001.0	Lab Source
0004	11/16/04	15:56:17	000000	005072	S 001.0	Void
0005	11/16/04	16:59:43	000000	003672	S 001.0	Field Source
0006	11/16/04	17:03:12	000000	000137	S 001.0	Admin-1-V
0007	11/16/04	17:05:34	000000	000140	S 001.0	Admin-1-V
0008	11/16/04	17:08:39	000002	000148	S 001.0	Admin-1-V
0009	11/16/04	17:11:51	000000	000149	S 001.0	Admin-1-V
0010	11/16/04	17:14:57	000000	000122	S 001.0	Admin-1-V
0011	11/16/04	17:18:05	000000	000107	S 001.0	Admin-1-V
0012	11/16/04	17:21:40	000001	000131	S 001.0	Admin-1-V
0013	11/16/04	17:25:23	000001	000144	S 001.0	Admin-1-V
0014	11/16/04	17:28:20	000000	000159	S 001.0	Admin-1-V
0015	11/16/04	17:31:02	000001	000130	S 001.0	Admin-1-V
0016	11/16/04	17:33:51	000000	000137	S 001.0	Admin-1-V
0017	11/16/04	17:36:11	000000	000096	S 001.0	Admin-1-V
0018	11/16/04	17:51:00	000004	003818	S 001.0	Field Source
0019	11/17/04	08:25:49	000000	034061	S 001.0	Lab Source
0020	11/17/04	08:27:04	000000	000168	S 001.0	Lab Background
0021	11/18/04	07:59:05	000000	033274	S 001.0	Lab Source
0022	11/18/04	18:00:47	000002	000120	S 001.0	Field Background
0023	11/18/04	18:02:33	000001	036269	S 001.0	Field Source
0024	11/18/04	18:07:53	000001	000149	S 001.0	Admin-1-W
	11/18/04	18:10:29	000001	000140	S 001.0	Admin-1-W
	11/18/04	18:13:11	000000	000141	S 001.0	Admin-1-W
0027	11/18/04	19:00:27	000001	000151	S 001.0	Admin-1-W
0028	11/18/04	19:03:14	000000	000145	S 001.0	Admin-1-W
0029	11/18/04	19:05:38	000000	000143	S 001.0	Admin-1-W
0030	11/18/04	19:09:07	000000	000156	S 001.0	Admin-1-W
0031	11/18/04	19:11:36	000001	000134	S 001.0	Admin-1-W
0032	11/18/04	19:14:23	000000	000127	S 001.0	Admin-1-W
0033	11/18/04	19:17:43	000002	000144	S 001.0	Admin-1-W
0034	11/18/04	19:20:15	000000	000136	S 001.0	Admin-1-W

0035 11/18/04 19:22:39 000000 000132 S 001.0 Admin-1-W  
0036 11/18/04 19:26:25 000000 000120 S 001.0 Admin-1-W  
0037 11/18/04 19:29:47 000000 000143 S 001.0 Admin-1-W  
0038 11/18/04 19:33:07 000001 000133 S 001.0 Admin-1-W  
0039 11/18/04 19:39:30 000000 036559 S 001.0 Field Source  
0040 11/19/04 08:25:56 000001 034686 S 001.0 Lab Source  
0041 11/20/04 08:20:29 000000 034702 S 001.0 Lab Source  
0042 11/20/04 12:04:22 000000 000140 S 001.0 Field Background  
0043 11/20/04 12:06:08 000001 001963 S 001.0 Field Source  
0044 11/20/04 12:08:48 000000 000147 S 001.0 Admin-1-X  
0045 11/20/04 12:11:14 000000 000128 S 001.0 Admin-1-X  
0046 11/20/04 12:13:47 000000 000183 S 001.0 Admin-1-X  
0047 11/20/04 12:16:52 000000 000156 S 001.0 Admin-1-X  
0048 11/20/04 12:19:12 000001 000153 S 001.0 Admin-1-X  
0049 11/20/04 12:21:34 000001 000163 S 001.0 Admin-1-X  
0050 11/20/04 12:24:24 000000 000138 S 001.0 Admin-1-X  
0051 11/20/04 12:26:41 000000 000152 S 001.0 Admin-1-X  
0052 11/20/04 12:29:02 000002 000134 S 001.0 Admin-1-X  
0053 11/20/04 12:31:52 000000 000121 S 001.0 Admin-1-X  
0054 11/20/04 12:34:20 000000 000148 S 001.0 Admin-1-X  
0055 11/20/04 12:36:48 000001 000154 S 001.0 Admin-1-X  
0056 11/20/04 12:39:59 000000 000114 S 001.0 Admin-1-X  
0057 11/20/04 12:43:41 000002 000142 S 001.0 Admin-1-X  
0058 11/20/04 12:46:26 000001 000126 S 001.0 Admin-1-X  
0059 11/20/04 12:49:31 000000 002017 S 001.0 Field Source  
\$



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	11/22/04	11:07:28	Admin-1-X	Final Status Survey	11/22/04	11:07:28	1.000	1.00
2	Smear 2	11/22/04	11:06:08	Admin-1-X	Final Status Survey	11/22/04	11:06:08	1.000	1.00
3	Smear 3	11/22/04	11:04:49	Admin-1-X	Final Status Survey	11/22/04	11:04:49	1.000	1.00
4	Smear 4	11/22/04	11:03:29	Admin-1-X	Final Status Survey	11/22/04	11:03:29	1.000	1.00
5	Smear 5	11/22/04	11:02:09	Admin-1-X	Final Status Survey	11/22/04	11:02:09	1.000	1.00
6	Smear 6	11/22/04	11:00:49	Admin-1-X	Final Status Survey	11/22/04	11:00:49	1.000	1.00
7	Smear 7	11/22/04	10:59:29	Admin-1-X	Final Status Survey	11/22/04	10:59:29	1.000	1.00
8	Smear 8	11/22/04	10:58:09	Admin-1-X	Final Status Survey	11/22/04	10:58:09	1.000	1.00
9	Smear 9	11/22/04	10:56:49	Admin-1-X	Final Status Survey	11/22/04	10:56:49	1.000	1.00
10	Smear 10	11/22/04	10:55:30	Admin-1-X	Final Status Survey	11/22/04	10:55:30	1.000	1.00
11	Smear 11	11/22/04	10:54:10	Admin-1-X	Final Status Survey	11/22/04	10:54:10	1.000	1.00
12	Smear 12	11/22/04	10:52:50	Admin-1-X	Final Status Survey	11/22/04	10:52:50	1.000	1.00
13	Smear 13	11/22/04	10:51:30	Admin-1-X	Final Status Survey	11/22/04	10:51:30	1.000	1.00
14	Smear 14	11/22/04	10:50:10	Admin-1-X	Final Status Survey	11/22/04	10:50:10	1.000	1.00
15	Smear 15	11/22/04	10:48:50	Admin-1-X	Final Status Survey	11/22/04	10:48:50	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %Eff: 23.71 LLD: 15.89 dpm				Bkg: 0.37 cpm %Eff: 43.89 LLD: 10.79 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	11/22/04	11:07:28	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
2	Smear 2	11/22/04	11:08:08	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
3	Smear 3	11/22/04	11:04:49	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79
4	Smear 4	11/22/04	11:03:29	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
5	Smear 5	11/22/04	11:02:09	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
6	Smear 6	11/22/04	11:00:49	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79
7	Smear 7	11/22/04	10:59:29	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
8	Smear 8	11/22/04	10:58:09	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
9	Smear 9	11/22/04	10:58:49	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
10	Smear 10	11/22/04	10:55:30	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79
11	Smear 11	11/22/04	10:54:10	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79
12	Smear 12	11/22/04	10:52:50	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
13	Smear 13	11/22/04	10:51:30	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79
14	Smear 14	11/22/04	10:50:10	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79
15	Smear 15	11/22/04	10:48:50	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11/22/04

Reviewed By (print): Joe Trowbridge

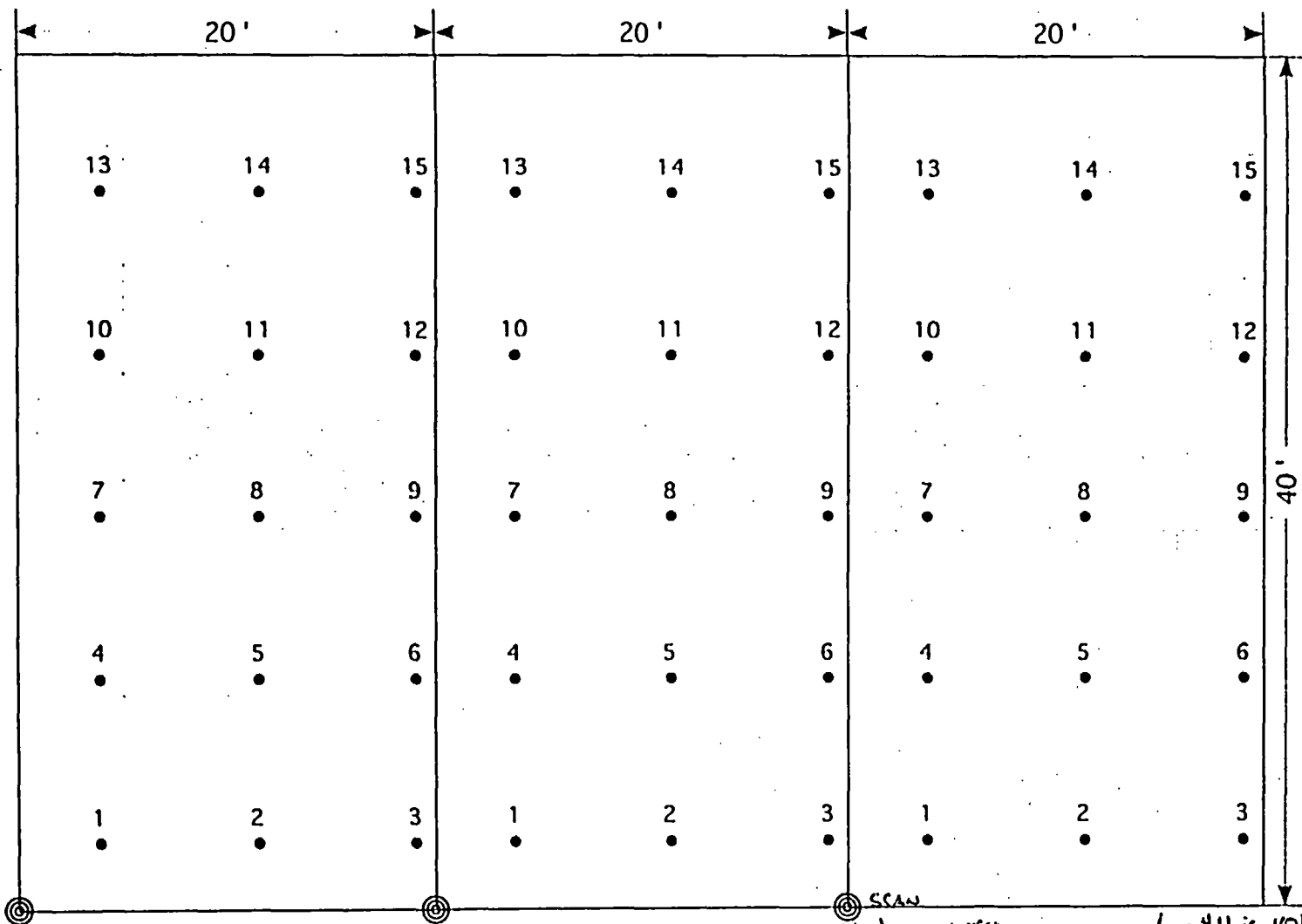
Reviewed By (sign):

Date:

**Admin-1-Y Administration Area**



• SURVEY POINTS  
 ⊙ STARTING LOCATION



ADMIN-1-W

ADMIN-1-X

SCAN

Start 11-22-04 0700  
 Stop 11-23 1600 ADMIN-1-Y

Log #11 is void.

FINAL

Start 1715 11-23-04

Stop 1800 11-23-04 D. Rowender

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KARTHANUS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Administration Area Ceiling (3 of 3)

SCIENTECH

SCIENTECH Inc.  
 141 WEST STREET  
 NEW HAVEN, CT 06511

PROJECT NO:

23529-0501

FILE NAME:

SCALE:

N.T.S.

BY:

DATE:

06 29 2004

CHK:

FIGURE:

ADMIN-1-W.X.Y

# ADMIN-1-Y

Log #
6 Source
7
8
9
10
12
13
14
15
16
17
18
19
20
21
22

	X	Y
	n/a	n/a
1	2.6	0.9
2	11.3	0.9
3	20.0	0.9
4	2.6	9.6
5	11.3	9.6
6	20.0	9.6
7	2.6	18.3
8	11.3	18.3
9	20.0	18.3
10	2.6	27.0
11	11.3	27.0
12	20.0	27.0
13	2.6	35.7
14	11.3	35.7
15	20.0	35.7

L (ft)= 8.7

A (ft²)= 1067

Log #5 - Field bkgd. - 146 cpm

Log #11 - VOID

Log #23 - Field source - 2227 cpm

Fixed Points	Ave. (Scan)	Max. (Scan)
3225	n/a	n/a
138	120	180
138	120	200
130	120	180
169	130	190
166	130	180
165	120	190
161	130	180
144	120	170
157	130	170
135	130	180
150	130	180
149	130	180
158	130	260
139	130	220
135	130	250

Ludlum Measurements, Inc.  
Model 2360 Log Data

Date: 11/23/2004  
Time: 6:47:07 PM

Header 1: James Lavender  
Header 2: Serial#202410  
Header 3: DetSer#PR208657  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin-1-Y  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/23/2004  
Model 2360 Time: 18:52:25  
Sample Number: 0024

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000441  
Beta Ratemeter Alarm: 000441  
Alpha + Beta Ratemeter Alarm: 000441  
Alpha Scaler Alarm: 000441  
Beta Scaler Alarm: 000441  
Alpha + Beta Scaler Alarm: 000441

C - Count Time  
F - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	11/22/04	08:59:13	000000	000195	S 001.0	Lab Background
0002	11/22/04	09:01:06	000000	035629	S 001.0	Lab Source
0003	11/23/04	08:25:35	000000	000205	S 001.0	Lab Background
0004	11/23/04	08:26:46	000003	035534	S 001.0	Lab Source
0005	11/23/04	17:21:28	000000	000146	S 001.0	Field Background
0006	11/23/04	17:22:51	000003	003225	S 001.0	Field Source
0007	11/23/04	17:27:15	000000	000138	S 001.0	Admin-1-Y
0008	11/23/04	17:29:37	000000	000138	S 001.0	Admin-1-Y
0009	11/23/04	17:32:02	000000	000130	S 001.0	Admin-1-Y
0010	11/23/04	17:35:15	000001	000169	S 001.0	Admin-1-Y
0011	11/23/04	17:36:21	000001	000117	S 001.0	Void
0012	11/23/04	17:37:51	000001	000166	S 001.0	Admin-1-Y
0013	11/23/04	17:40:30	000000	000165	S 001.0	Admin-1-Y
0014	11/23/04	17:43:25	000000	000161	S 001.0	Admin-1-Y
0015	11/23/04	17:45:59	000000	000144	S 001.0	Admin-1-Y
0016	11/23/04	17:48:20	000000	000157	S 001.0	Admin-1-Y
0017	11/23/04	17:51:32	000001	000135	S 001.0	Admin-1-Y
0018	11/23/04	17:53:48	000001	000150	S 001.0	Admin-1-Y
0019	11/23/04	17:56:02	000001	000149	S 001.0	Admin-1-Y
0020	11/23/04	17:59:32	000000	000158	S 001.0	Admin-1-Y
0021	11/23/04	18:03:18	000001	000139	S 001.0	Admin-1-Y
0022	11/23/04	18:06:44	000001	000135	S 001.0	Admin-1-Y
0023	11/23/04	18:10:49	000002	002227	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	11/23/04	17:51:38	Admin-1-Y	Final Status Survey	11/23/04	17:51:38	1.000	1.00
2	Smear 2	11/23/04	17:50:18	Admin-1-Y	Final Status Survey	11/23/04	17:50:18	1.000	1.00
3	Smear 3	11/23/04	17:48:58	Admin-1-Y	Final Status Survey	11/23/04	17:48:58	1.000	1.00
4	Smear 4	11/23/04	17:47:38	Admin-1-Y	Final Status Survey	11/23/04	17:47:38	1.000	1.00
5	Smear 5	11/23/04	17:46:18	Admin-1-Y	Final Status Survey	11/23/04	17:46:18	1.000	1.00
6	Smear 6	11/23/04	17:44:58	Admin-1-Y	Final Status Survey	11/23/04	17:44:58	1.000	1.00
7	Smear 7	11/23/04	17:43:38	Admin-1-Y	Final Status Survey	11/23/04	17:43:38	1.000	1.00
8	Smear 8	11/23/04	17:42:17	Admin-1-Y	Final Status Survey	11/23/04	17:42:17	1.000	1.00
9	Smear 9	11/23/04	17:40:57	Admin-1-Y	Final Status Survey	11/23/04	17:40:57	1.000	1.00
10	Smear 10	11/23/04	17:39:37	Admin-1-Y	Final Status Survey	11/23/04	17:39:37	1.000	1.00
11	Smear 11	11/23/04	17:38:17	Admin-1-Y	Final Status Survey	11/23/04	17:38:17	1.000	1.00
12	Smear 12	11/23/04	17:36:57	Admin-1-Y	Final Status Survey	11/23/04	17:36:57	1.000	1.00
13	Smear 13	11/23/04	17:35:37	Admin-1-Y	Final Status Survey	11/23/04	17:35:37	1.000	1.00
14	Smear 14	11/23/04	17:34:17	Admin-1-Y	Final Status Survey	11/23/04	17:34:17	1.000	1.00
15	Smear 15	11/23/04	17:32:58	Admin-1-Y	Final Status Survey	11/23/04	17:32:58	1.000	1.00

Technician (print): Rob Ellison

Technician (sign):

Date: 11-23-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %Eff: 23.19 LLD: 16.24 dpm				Bkg: 0.3 cpm %Eff: 44.43 LLD: 10.22 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	11/23/04	17:51:38	0.00	-0.10	-0.43	16.24	0.00	-0.30	-0.68	10.22
2	Smear 2	11/23/04	17:50:18	0.00	-0.10	-0.43	16.24	0.00	-0.30	-0.68	10.22
3	Smear 3	11/23/04	17:48:58	0.00	-0.10	-0.43	16.24	0.00	-0.30	-0.68	10.22
4	Smear 4	11/23/04	17:47:38	0.00	-0.10	-0.43	16.24	3.00	2.70	6.08	10.22
5	Smear 5	11/23/04	17:46:18	0.00	-0.10	-0.43	16.24	0.00	-0.30	-0.68	10.22
6	Smear 6	11/23/04	17:44:58	0.00	-0.10	-0.43	16.24	0.00	-0.30	-0.68	10.22
7	Smear 7	11/23/04	17:43:38	0.00	-0.10	-0.43	16.24	2.00	1.70	3.83	10.22
8	Smear 8	11/23/04	17:42:17	0.00	-0.10	-0.43	16.24	1.00	0.70	1.58	10.22
9	Smear 9	11/23/04	17:40:57	0.00	-0.10	-0.43	16.24	0.00	-0.30	-0.68	10.22
10	Smear 10	11/23/04	17:39:37	0.00	-0.10	-0.43	16.24	1.00	0.70	1.58	10.22
11	Smear 11	11/23/04	17:38:17	0.00	-0.10	-0.43	16.24	0.00	-0.30	-0.68	10.22
12	Smear 12	11/23/04	17:36:57	0.00	-0.10	-0.43	16.24	0.00	-0.30	-0.68	10.22
13	Smear 13	11/23/04	17:35:37	0.00	-0.10	-0.43	16.24	1.00	0.70	1.58	10.22
14	Smear 14	11/23/04	17:34:17	0.00	-0.10	-0.43	16.24	0.00	-0.30	-0.68	10.22
15	Smear 15	11/23/04	17:32:58	0.00	-0.10	-0.43	16.24	8.00	7.70	17.33	10.22

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-23-04

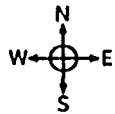
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



**HVAC-1-A    Office Mezzanine**



26' 6"

26' 6"

30'

13 4

14 4

15 3

16 3

13

14

15

16

9 4

10 4

11 4

12 4

9

10

11

12

5 5

6 4

7 4

8 3

5

6

7

8

1 5

2 5

3 4

4 4

1

2

3

4

HVAC-1-A

HVAC-1-B

• SURVEY POINTS

• STARTING LOCATION

9-27-04

START 08:00

STOP 15:00

ALL Readings ARE  
IN MICRO-RDocument  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING

KARTHIAUS, PENNSYLVANIA  
115 REACTOR ROAD

CLASS 1

Office Mezz. (HVAC) Floor

SCIENTECH

SCIENTECH, Inc.  
140 WEST STREET  
NEW MILFORD, CT 06456PROJECT NO:  
23529 0501

FILENAME:

SCALE: DATE:  
N.T.S. 07 06 2004

By: CK:

FIGURE:  
HVAC-1-A-B

# HVAC-1-A

Log #
Source
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34

	X	Y
	n/a	n/a
1	1.5	1.2
2	9.0	1.2
3	16.5	1.2
4	24.0	1.2
5	1.5	8.7
6	9.0	8.7
7	16.5	8.7
8	24.0	8.7
9	1.5	16.2
10	9.0	16.2
11	16.5	16.2
12	24.0	16.2
13	1.5	23.7
14	9.0	23.7
15	16.5	23.7
16	24.0	23.7

L (ft)= 7.5  
A (ft²)= 795

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
211	150	300
219	150	300
209	175	325
202	150	300
157	150	250
183	175	250
183	150	275
202	150	225
196	150	225
163	125	275
203	125	300
166	150	275
166	125	325
170	150	250
198	175	275
167	125	300

Ludlum Measurements, Inc.  
Model 2360 Log Data

09/28/2004  
08:02:31 AM

Header 1: Technician  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 09/28/2004  
Model 2360 Time: 08:05:36  
Sample Number: 0003

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000476  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000476  
Alpha + Beta Scaler Alarm: 050000

C - Count Time  
F - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0015	09/27/04	07:54:55	000000	000181	S 001.0	Lab Background
0016	09/27/04	07:56:27	000002	032501	S 001.0	Lab Source
0017	09/27/04	08:24:41	000000	000155	S 001.0	Field Background
0018	09/27/04	08:26:30	000002	001639	S 001.0	Field Source
0019	09/27/04	08:35:57	000002	000211	S 001.0	HVAC 1-A
0020	09/27/04	08:48:07	000003	000219	S 001.0	HVAC 1-A
0021	09/27/04	08:51:22	000001	000209	S 001.0	HVAC 1-A
0022	09/27/04	09:05:06	000000	000202	S 001.0	HVAC 1-A
0023	09/27/04	09:51:42	000001	000157	S 001.0	HVAC 1-A
0024	09/27/04	09:53:56	000003	000183	S 001.0	HVAC 1-A
0025	09/27/04	09:57:57	000003	000183	S 001.0	HVAC 1-A
0026	09/27/04	10:00:58	000002	000202	S 001.0	HVAC 1-A
0027	09/27/04	10:08:50	000000	000196	S 001.0	HVAC 1-A
0028	09/27/04	10:16:44	000000	000163	S 001.0	HVAC 1-A
0029	09/27/04	10:18:26	000000	000203	S 001.0	HVAC 1-A
0030	09/27/04	10:33:08	000001	000166	S 001.0	HVAC 1-A
0031	09/27/04	10:58:04	000002	000166	S 001.0	HVAC 1-A
0032	09/27/04	10:59:33	000000	000170	S 001.0	HVAC 1-A
0033	09/27/04	11:06:34	000001	000198	S 001.0	HVAC 1-A
0034	09/27/04	11:08:15	000001	000167	S 001.0	HVAC 1-A
0035	09/27/04	13:03:06	000000	000154	S 001.0	HVAC 1-B
0036	09/27/04	13:04:47	000003	001665	S 001.0	HVAC 1-B
0037	09/27/04	13:07:17	000002	000192	S 001.0	HVAC 1-B
0038	09/27/04	13:09:33	000000	000175	S 001.0	HVAC 1-B
0039	09/27/04	13:13:18	000001	000167	S 001.0	HVAC 1-B
0040	09/27/04	13:15:30	000001	000185	S 001.0	HVAC 1-B
0041	09/27/04	13:19:31	000000	000185	S 001.0	HVAC 1-B
0042	09/27/04	13:21:22	000001	000164	S 001.0	HVAC 1-B
0043	09/27/04	13:30:37	000003	000157	S 001.0	HVAC 1-B
0044	09/27/04	13:32:54	000000	000147	S 001.0	HVAC 1-B
0045	09/27/04	14:00:19	000002	000179	S 001.0	HVAC 1-B
0046	09/27/04	14:03:20	000000	000172	S 001.0	HVAC 1-B
0047	09/27/04	14:05:04	000001	000207	S 001.0	HVAC 1-B
0048	09/27/04	14:06:41	000002	000180	S 001.0	HVAC 1-B

049 09/27/04 16:03:25 000001 000122 S 001.0 Void  
050 09/27/04 16:06:42 000002 001659 S 001.0 Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
13	Smear 1	09/27/04	18:13:54	HVAC 1-A	Final Status Survey	09/27/04	18:13:54	1.000	1.00
14	Smear 2	09/27/04	18:12:33	HVAC 1-A	Final Status Survey	09/27/04	18:12:33	1.000	1.00
15	Smear 3	09/27/04	18:11:13	HVAC 1-A	Final Status Survey	09/27/04	18:11:13	1.000	1.00
16	Smear 4	09/27/04	18:09:52	HVAC 1-A	Final Status Survey	09/27/04	18:09:52	1.000	1.00
17	Smear 5	09/27/04	18:08:32	HVAC 1-A	Final Status Survey	09/27/04	18:08:32	1.000	1.00
18	Smear 6	09/27/04	18:07:11	HVAC 1-A	Final Status Survey	09/27/04	18:07:11	1.000	1.00
19	Smear 7	09/27/04	18:05:51	HVAC 1-A	Final Status Survey	09/27/04	18:05:51	1.000	1.00
20	Smear 8	09/27/04	18:04:31	HVAC 1-A	Final Status Survey	09/27/04	18:04:31	1.000	1.00
21	Smear 9	09/27/04	18:03:10	HVAC 1-A	Final Status Survey	09/27/04	18:03:10	1.000	1.00
22	Smear 10	09/27/04	18:01:49	HVAC 1-A	Final Status Survey	09/27/04	18:01:49	1.000	1.00
23	Smear 11	09/27/04	18:00:29	HVAC 1-A	Final Status Survey	09/27/04	18:00:29	1.000	1.00
24	Smear 12	09/27/04	15:59:09	HVAC 1-A	Final Status Survey	09/27/04	15:59:09	1.000	1.00
25	Smear 13	09/27/04	15:57:48	HVAC 1-A	Final Status Survey	09/27/04	15:57:48	1.000	1.00
26	Smear 14	09/27/04	15:56:28	HVAC 1-A	Final Status Survey	09/27/04	15:56:28	1.000	1.00
27	Smear 15	09/27/04	15:55:08	HVAC 1-A	Final Status Survey	09/27/04	15:55:08	1.000	1.00
28	Smear 16	09/27/04	15:53:47	HVAC 1-A	Final Status Survey	09/27/04	15:53:47	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-27-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-27-04

Smears		Count Mins: 1		Alpha				Beta				Smears	
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 27.37 LLD: 9.9 dpm				Bkg: 0.6 cpm %Eff: 44.67 LLD: 11.39 dpm				Sample Parameter Entry	
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA	Carrier No.	Sample ID
13	Smear 1	09/27/04	16:13:54	1.00	1.00	3.65	9.90	2.00	1.50	3.37	11.39	13	Smear 1
14	Smear 2	09/27/04	16:12:33	0.00	0.00	0.00	9.90	2.00	1.50	3.37	11.39	14	Smear 2
15	Smear 3	09/27/04	16:11:13	0.00	0.00	0.00	9.90	2.00	1.50	3.37	11.39	15	Smear 3
16	Smear 4	09/27/04	16:09:52	0.00	0.00	0.00	9.90	6.00	5.50	12.34	11.39	16	Smear 4
17	Smear 5	09/27/04	16:08:32	0.00	0.00	0.00	9.90	1.00	0.50	1.12	11.39	17	Smear 5
18	Smear 6	09/27/04	16:07:11	1.00	1.00	3.65	9.90	1.00	0.50	1.12	11.39	18	Smear 6
19	Smear 7	09/27/04	16:05:51	0.00	0.00	0.00	9.90	2.00	1.50	3.37	11.39	19	Smear 7
20	Smear 8	09/27/04	16:04:31	0.00	0.00	0.00	9.90	4.00	3.50	7.85	11.39	20	Smear 8
21	Smear 9	09/27/04	16:03:10	0.00	0.00	0.00	9.90	0.00	-0.50	-1.12	11.39	21	Smear 9
22	Smear 10	09/27/04	16:01:49	0.00	0.00	0.00	9.90	2.00	1.50	3.37	11.39	22	Smear 10
23	Smear 11	09/27/04	16:00:29	0.00	0.00	0.00	9.90	0.00	-0.50	-1.12	11.39	23	Smear 11
24	Smear 12	09/27/04	15:59:09	0.00	0.00	0.00	9.90	1.00	0.50	1.12	11.39	24	Smear 12
25	Smear 13	09/27/04	15:57:48	0.00	0.00	0.00	9.90	3.00	2.50	5.61	11.39	25	Smear 13
26	Smear 14	09/27/04	15:56:28	0.00	0.00	0.00	9.90	0.00	-0.50	-1.12	11.39	26	Smear 14
27	Smear 15	09/27/04	15:55:08	1.00	1.00	3.65	9.90	2.00	1.50	3.37	11.39	27	Smear 15
28	Smear 16	09/27/04	15:53:47	0.00	0.00	0.00	9.90	2.00	1.50	3.37	11.39	28	Smear 16

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: ( 27-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-27-04

Surveyor: Tom Malachina  
Print  
Reviewer: Joe Trowbridge  
Print

[Signature]  
Sign  
[Signature]  
Sign

9/1/2004

Date

9/1/2004

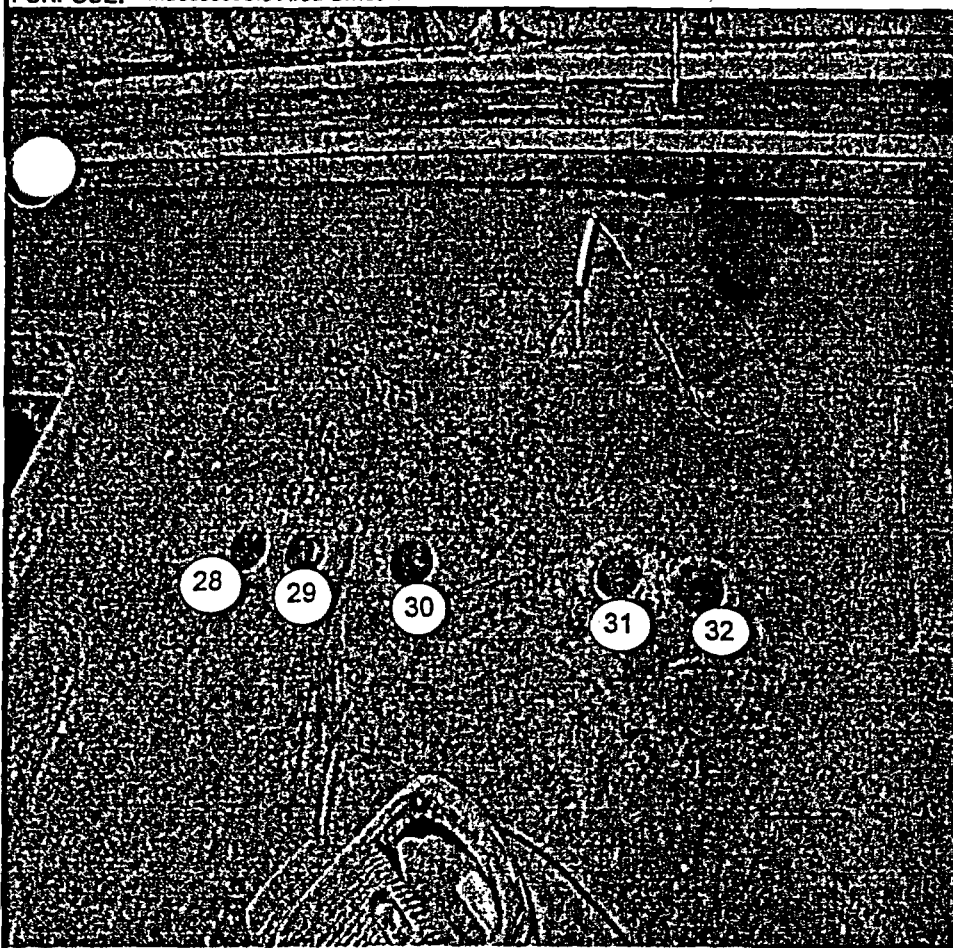
Date

## Survey Meters

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 1/20/2005  
Efficiency 28%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.03 cpm  
MDA 11.9 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 1/20/2005  
Efficiency 44%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.4 cpm  
MDA 10.85 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta, \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Permagrain Mezz Floor Northwest CornerPURPOSE: Inaccessible Area Smears

Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
28	3.6	-0.12
29	14.85	-0.12
30	-0.9	-0.12
31	-0.9	3.46
32	3.6	-0.12

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff.)  $\times$   $\left(\frac{100\text{cm}^2}{\text{cm}^2}\right)$

$$AL = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time $AL$  = action level



Surveyor: Tom Malachina  
Print  
Reviewer: Joe Trowbridge  
Print

[Signature]  
Sign  
[Signature]  
Sign

9/1/2004  
Date  
9/1/2004  
Date

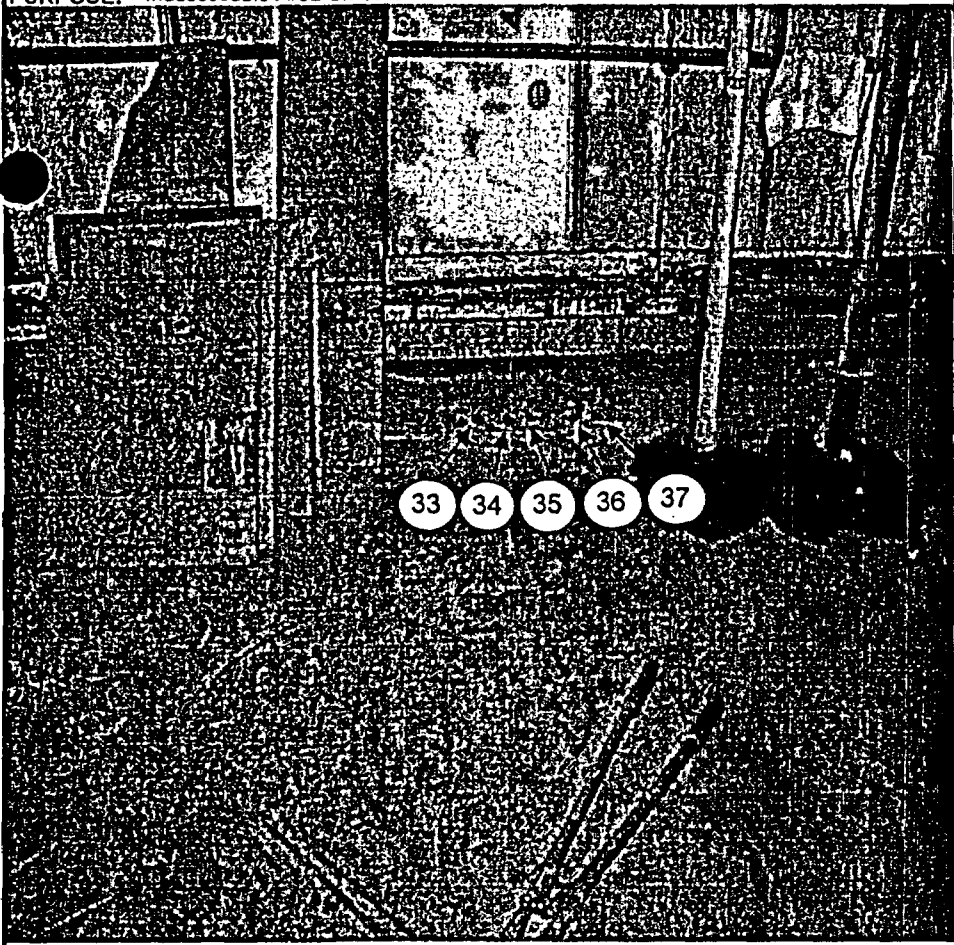
## Survey Meters

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 1/20/2005  
Efficiency 28%  
Type  $\alpha, \beta \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.03 cpm  
MDA 11.9 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 1/20/2005  
Efficiency 44%  
Type  $\alpha, \beta \gamma$   $\beta \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.4 cpm  
MDA 10.85 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Permagrain Mezz Floor North Central  
PURPOSE: Inaccessible Area Smears



Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
33	-0.9	-0.12
34	-0.9	-0.12
35	-0.9	-0.12
36	3.6	-0.12
37	-0.9	-0.12

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff.)  $\times \frac{2}{100\text{cm}}$

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate

$T_b$  = background counting time

$T_s$  = sample count time

AI = action level

Surveyor: Tom Malachina

Print

Viewer: Joe Trowbridge

Print

9/1/2004

Date

9/1/2004

Date

*Tom Malachina*  
Sign

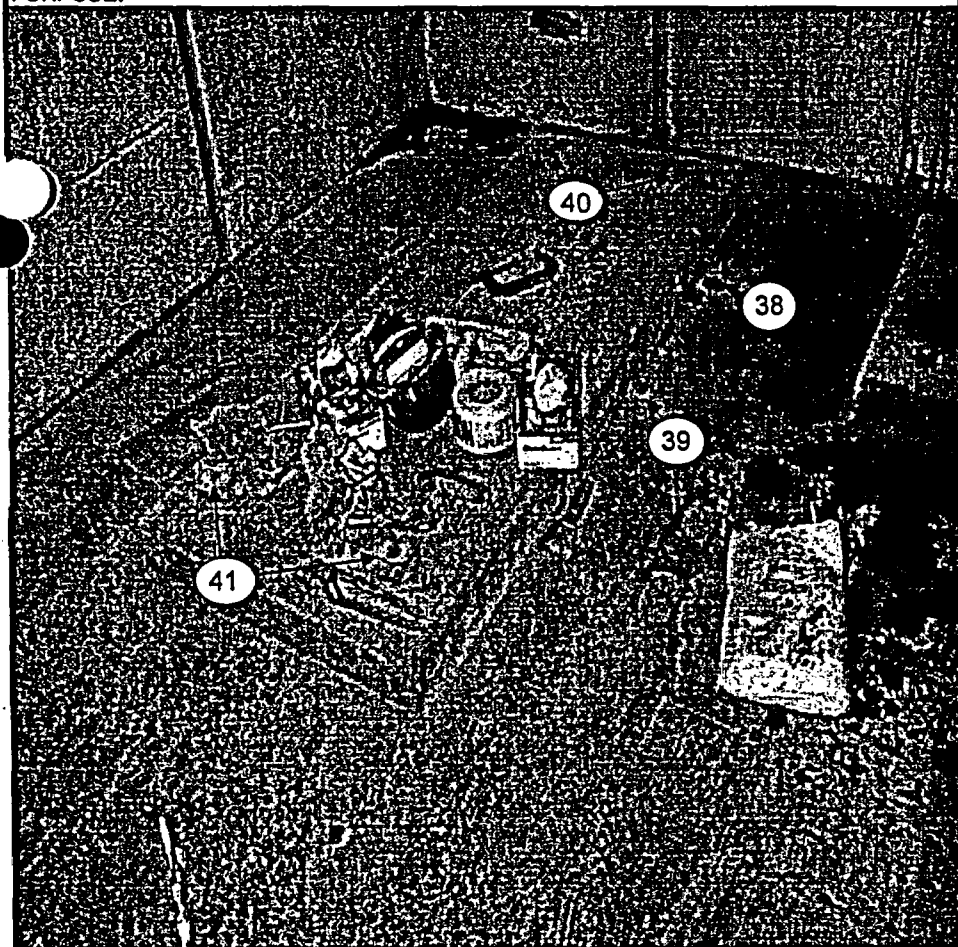
*Joe Trowbridge*  
Sign

## Survey Meters

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 1/20/2005  
 Efficiency 28%  
 Type  $\alpha, \beta \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.03 cpm  
 MDA 11.9 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 1/20/2005  
 Efficiency 44%  
 Type  $\alpha, \beta \gamma$   $\beta \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.4 cpm  
 MDA 10.85 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Permagrain Mezz Floor South CentralPURPOSE: Inaccessible Area Smears

Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
38	1.35	-0.12
39	1.35	-0.12
40	-0.9	-0.12
41	-0.9	-0.12

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(probe area  
100cm<sup>2</sup>)

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

SCIENTECH Inc.

82A8008 ATTACHMENT A

Survey No. 4209

## Survey Cover Sheet

Surveyor: Tom Malachina

Print

Reviewer: Joe Trowbridge

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*Tom Malachina*  
Sign

*Joe Trowbridge*  
Sign

9/1/2004

Date

9/1/2004

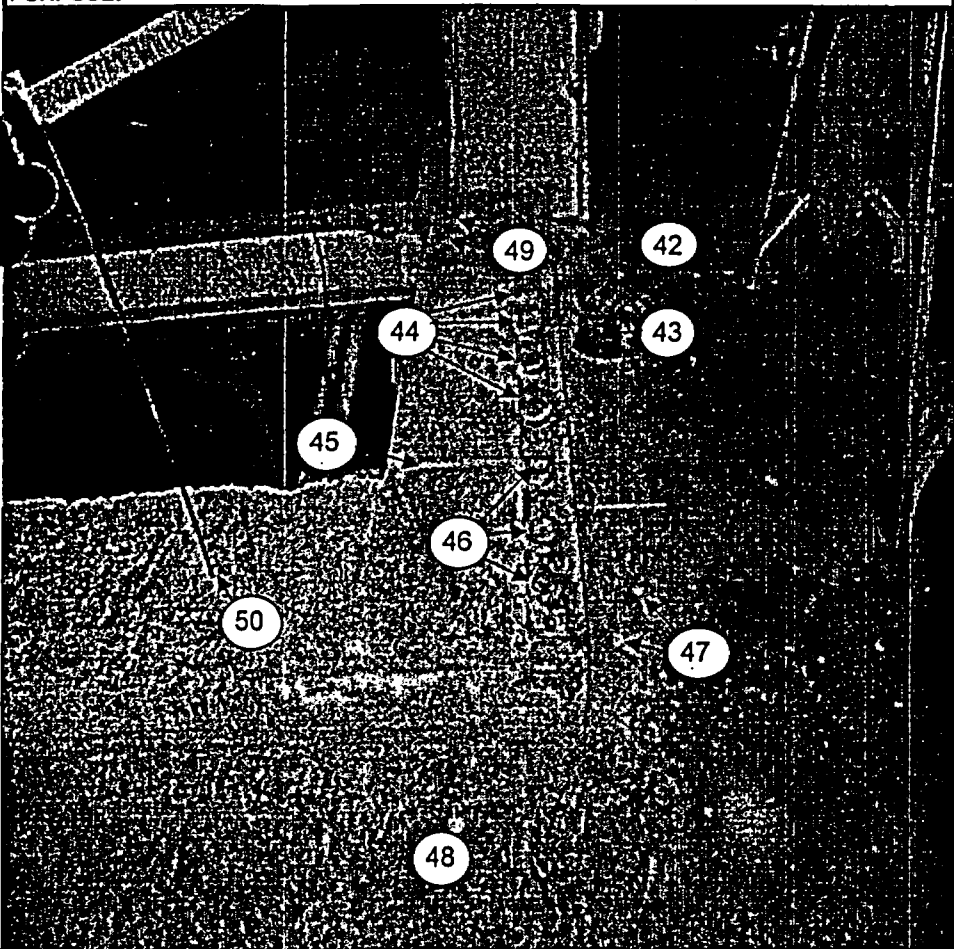
Date

## Survey Meters

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 1/20/2005  
 Efficiency 28%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.03 cpm  
 MDA 11.9 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 1/20/2005  
 Efficiency 44%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.4 cpm  
 MDA 10.85 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta, \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Permagrain Mezz Floor South CentralPURPOSE: Inaccessible Area Smears

Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
42	1.35	-0.12
43	10.35	-0.12
44	1.35	-0.12
45	1.35	-0.12
46	-0.9	-0.12
47	-0.9	-0.12
48	1.35	-0.12
49	8.1	-0.12
50	5.85	-0.12

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff. X  $\frac{100cm^2}{100cm^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$dpm / 100cm^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

Surveyor: Tom Malachina

Print

Reviewer: Joe Trowbridge

Print

9/1/2004

Date

9/1/2004

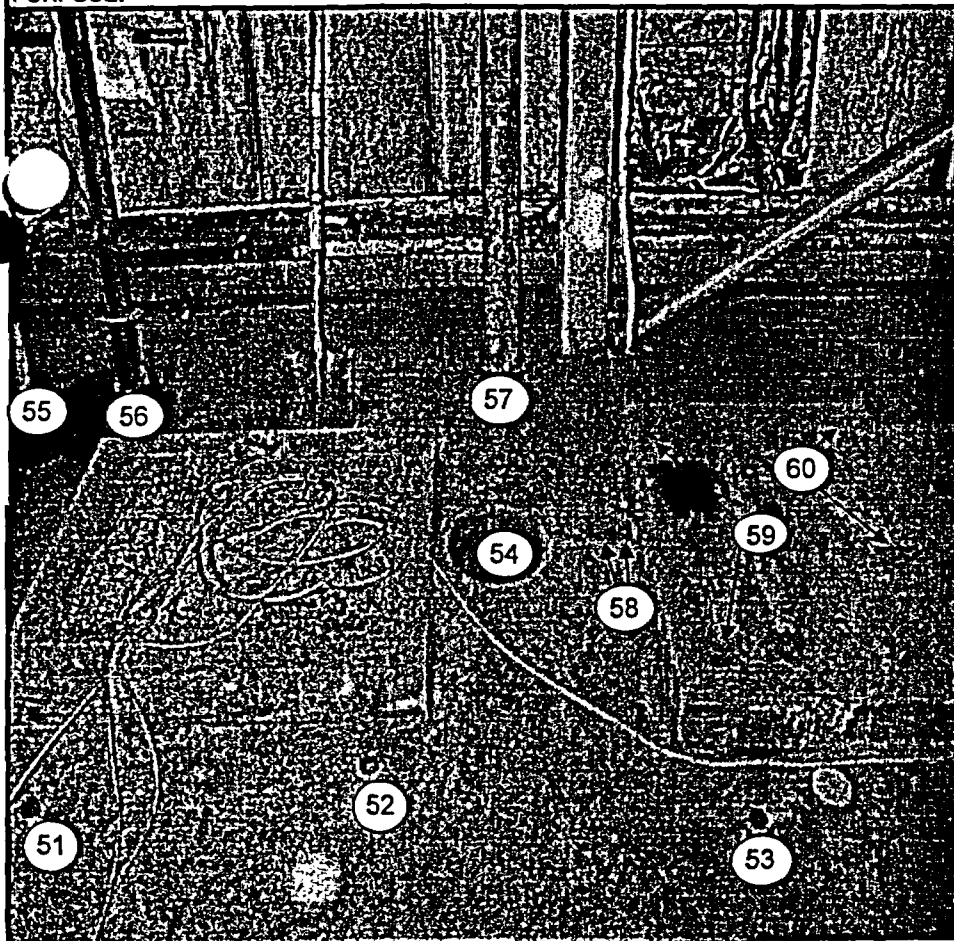
Date

## Survey Meters

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 1/20/2005  
 Efficiency 28%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.03 cpm  
 MDA 11.9 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 1/20/2005  
 Efficiency 44%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.4 cpm  
 MDA 10.85 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta, \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Permagrain Mezz Floor North CentralPURPOSE: Inaccessible Area Smears

Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
51	3.6	-0.12
52	-0.9	-0.12
53	1.35	-0.12
54	8.1	-0.12
55	-0.9	-0.12
56	-0.9	-0.12
57	3.6	-0.12
58	1.35	-0.12
59	3.6	-0.12
60	-0.9	-0.12

$$MDA = \frac{2.71}{T_s} + 1.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff. X  $\frac{100cm^2}{100cm^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$dpm / 100cm^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

## Survey Cover Sheet

Surveyor: Tom Malachina

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Reviewer: Joe Trowbridge

Print

Sign

Sign

9/1/2004

Date

9/1/2004

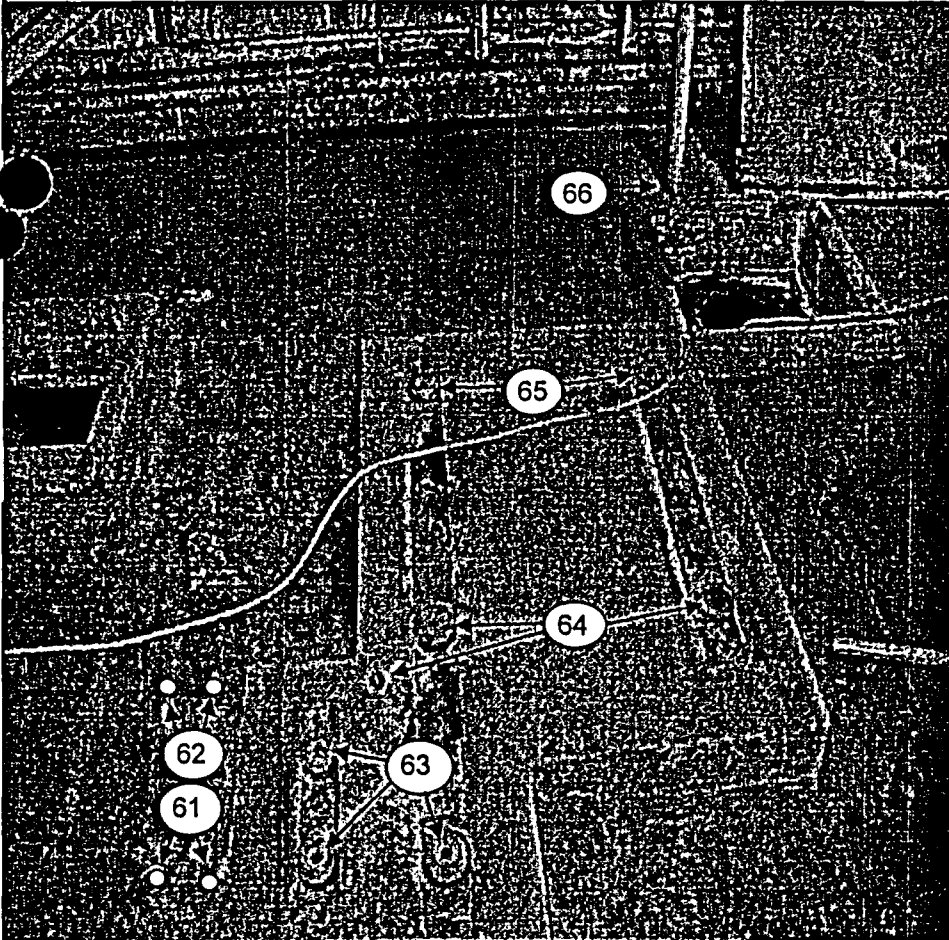
Date

## Survey Meters

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 1/20/2005  
 Efficiency 28%  
 Type  $\alpha, \beta \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.03 cpm  
 MDA 11.9 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 1/20/2005  
 Efficiency 44%  
 Type  $\alpha, \beta \gamma$   $\beta \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.4 cpm  
 MDA 10.85 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Pernagrain Mezz Floor North EastPURPOSE: Inaccessible Area Smears

Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
61	-0.9	-0.12
62	-0.9	-0.12
63	-0.9	-0.12
64	1.35	-0.12
65	5.85	-0.12
66	3.6	-0.12

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff. X 100cm<sup>2</sup>)

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

Surveyor: Tom Malachina  
Print  
Reviewer: Joe Trowbridge  
Print

Tom Malachina  
Sign  
Joe Trowbridge  
Sign

9/1/2004  
Date  
9/1/2004  
Date

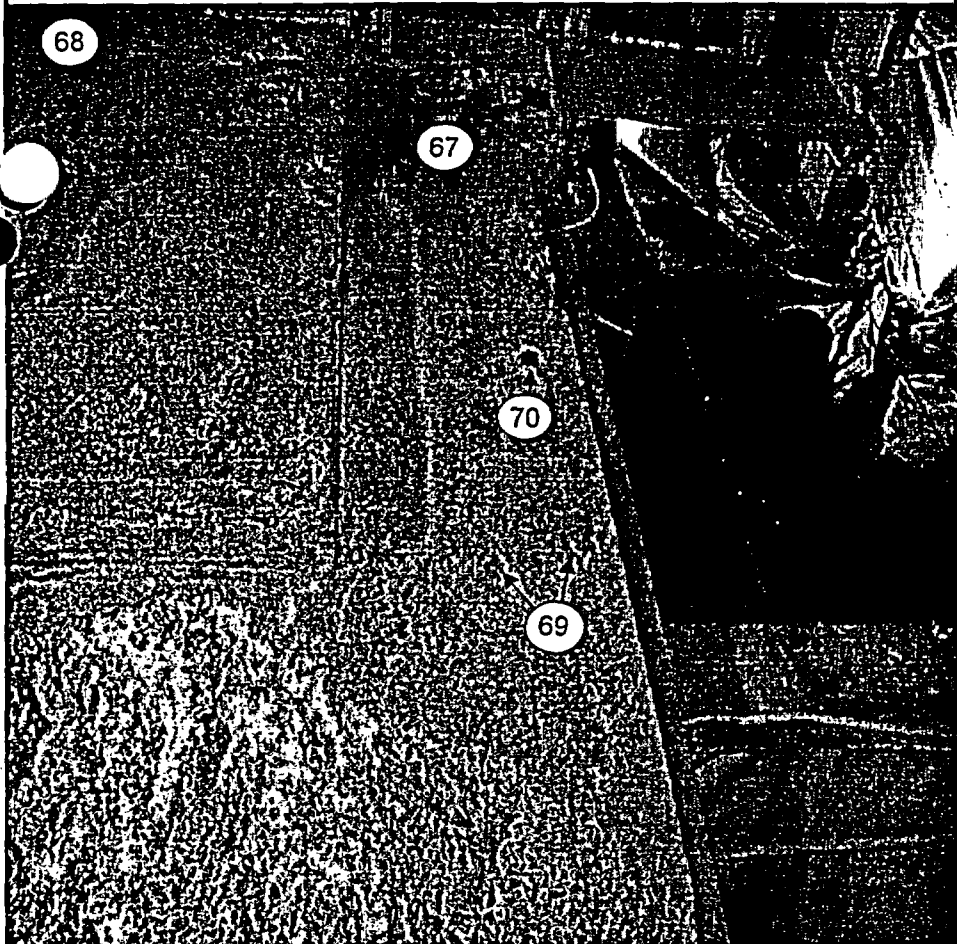
## Survey Meters

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 1/20/2005  
Efficiency 28%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.03 cpm  
MDA 11.9 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 1/20/2005  
Efficiency 44%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.4 cpm  
MDA 10.85 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta, \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Permagrain Mezz Floor South East  
PURPOSE: Inaccessible Area Smears



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
67	-0.9	-0.12
68	1.35	-0.12
69	-0.9	-0.12
70	-0.9	-0.12

$$MDA = \frac{2.71}{T_s} + 1.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff. x 100cm<sup>2</sup>)

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm / 100cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate

$T_b$  = background counting time

$T_s$  = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 28	09/01/04	12:04:23	Permagrain Mezz	Inaccessible Area	09/01/04	12:04:23	1.000	1.00
2	Smear 29	09/01/04	12:03:03	Permagrain Mezz	Inaccessible Area	09/01/04	12:03:03	1.000	1.00
3	Smear 30	09/01/04	12:01:43	Permagrain Mezz	Inaccessible Area	09/01/04	12:01:43	1.000	1.00
4	Smear 31	09/01/04	12:00:22	Permagrain Mezz	Inaccessible Area	09/01/04	12:00:22	1.000	1.00
5	Smear 32	09/01/04	11:59:02	Permagrain Mezz	Inaccessible Area	09/01/04	11:59:02	1.000	1.00
6	Smear 33	09/01/04	11:57:41	Permagrain Mezz	Inaccessible Area	09/01/04	11:57:41	1.000	1.00
7	Smear 34	09/01/04	11:56:21	Permagrain Mezz	Inaccessible Area	09/01/04	11:56:21	1.000	1.00
8	Smear 35	09/01/04	11:55:00	Permagrain Mezz	Inaccessible Area	09/01/04	11:55:00	1.000	1.00
9	Smear 36	09/01/04	11:53:40	Permagrain Mezz	Inaccessible Area	09/01/04	11:53:40	1.000	1.00
10	Smear 37	09/01/04	11:52:19	Permagrain Mezz	Inaccessible Area	09/01/04	11:52:19	1.000	1.00
11	Smear 38	09/01/04	11:50:59	Permagrain Mezz	Inaccessible Area	09/01/04	11:50:59	1.000	1.00
12	Smear 39	09/01/04	11:49:38	Permagrain Mezz	Inaccessible Area	09/01/04	11:49:38	1.000	1.00
13	Smear 40	09/01/04	11:48:18	Permagrain Mezz	Inaccessible Area	09/01/04	11:48:18	1.000	1.00
14	Smear 41	09/01/04	11:46:57	Permagrain Mezz	Inaccessible Area	09/01/04	11:46:57	1.000	1.00
15	Smear 42	09/01/04	11:45:37	Permagrain Mezz	Inaccessible Area	09/01/04	11:45:37	1.000	1.00
16	Smear 43	09/01/04	11:44:16	Permagrain Mezz	Inaccessible Area	09/01/04	11:44:16	1.000	1.00
17	Smear 44	09/01/04	11:42:56	Permagrain Mezz	Inaccessible Area	09/01/04	11:42:56	1.000	1.00
18	Smear 45	09/01/04	11:41:35	Permagrain Mezz	Inaccessible Area	09/01/04	11:41:35	1.000	1.00
19	Smear 46	09/01/04	11:40:15	Permagrain Mezz	Inaccessible Area	09/01/04	11:40:15	1.000	1.00
20	Smear 47	09/01/04	11:38:54	Permagrain Mezz	Inaccessible Area	09/01/04	11:38:54	1.000	1.00
21	Smear 48	09/01/04	11:37:34	Permagrain Mezz	Inaccessible Area	09/01/04	11:37:34	1.000	1.00
22	Smear 49	09/01/04	11:36:13	Permagrain Mezz	Inaccessible Area	09/01/04	11:36:13	1.000	1.00
23	Smear 50	09/01/04	11:34:53	Permagrain Mezz	Inaccessible Area	09/01/04	11:34:53	1.000	1.00
24	Smear 51	09/01/04	11:33:32	Permagrain Mezz	Inaccessible Area	09/01/04	11:33:32	1.000	1.00
25	Smear 52	09/01/04	11:32:12	Permagrain Mezz	Inaccessible Area	09/01/04	11:32:12	1.000	1.00
26	Smear 53	09/01/04	11:30:51	Permagrain Mezz	Inaccessible Area	09/01/04	11:30:51	1.000	1.00
27	Smear 54	09/01/04	11:29:31	Permagrain Mezz	Inaccessible Area	09/01/04	11:29:31	1.000	1.00
28	Smear 55	09/01/04	11:28:10	Permagrain Mezz	Inaccessible Area	09/01/04	11:28:10	1.000	1.00
29	Smear 56	09/01/04	11:26:50	Permagrain Mezz	Inaccessible Area	09/01/04	11:26:50	1.000	1.00
30	Smear 57	09/01/04	11:25:29	Permagrain Mezz	Inaccessible Area	09/01/04	11:25:29	1.000	1.00
31	Smear 58	09/01/04	11:24:09	Permagrain Mezz	Inaccessible Area	09/01/04	11:24:09	1.000	1.00
32	Smear 59	09/01/04	11:22:48	Permagrain Mezz	Inaccessible Area	09/01/04	11:22:48	1.000	1.00
33	Smear 60	09/01/04	11:21:28	Permagrain Mezz	Inaccessible Area	09/01/04	11:21:28	1.000	1.00
34	Smear 61	09/01/04	11:20:07	Permagrain Mezz	Inaccessible Area	09/01/04	11:20:07	1.000	1.00
35	Smear 62	09/01/04	11:18:47	Permagrain Mezz	Inaccessible Area	09/01/04	11:18:47	1.000	1.00
36	Smear 63	09/01/04	11:17:27	Permagrain Mezz	Inaccessible Area	09/01/04	11:17:27	1.000	1.00
37	Smear 64	09/01/04	11:16:06	Permagrain Mezz	Inaccessible Area	09/01/04	11:16:06	1.000	1.00
38	Smear 65	09/01/04	11:14:46	Permagrain Mezz	Inaccessible Area	09/01/04	11:14:46	1.000	1.00
39	Smear 66	09/01/04	11:13:26	Permagrain Mezz	Inaccessible Area	09/01/04	11:13:26	1.000	1.00
40	Smear 67	09/01/04	11:12:05	Permagrain Mezz	Inaccessible Area	09/01/04	11:12:05	1.000	1.00
41	Smear 68	09/01/04	11:10:44	Permagrain Mezz	Inaccessible Area	09/01/04	11:10:44	1.000	1.00
42	Smear 69	09/01/04	11:09:24	Permagrain Mezz	Inaccessible Area	09/01/04	11:09:24	1.000	1.00
43	Smear 70	09/01/04	11:08:03	Permagrain Mezz	Inaccessible Area	09/01/04	11:08:03	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 1-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-1-04

Smears		Count Mins: 1		Alpha				Beta				Smears	
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %EFF: 27.32 LLD: 11.9 dpm				Bkg: 0.4 cpm %EFF: 44.46 LLD: 10.86 dpm				Sample Parameter Entry	
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA	Carrier No.	Sample ID
1	Smear 28	09/01/04	12:04:23	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85	1	Smear 28
2	Smear 29	09/01/04	12:03:03	0.00	-0.03	-0.12	11.90	7.00	6.60	14.85	10.85	2	Smear 29
3	Smear 30	09/01/04	12:01:43	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	3	Smear 30
4	Smear 31	09/01/04	12:00:22	1.00	0.97	3.46	11.90	0.00	-0.40	-0.90	10.85	4	Smear 31
5	Smear 32	09/01/04	11:59:02	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85	5	Smear 32
6	Smear 33	09/01/04	11:57:41	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	6	Smear 33
7	Smear 34	09/01/04	11:56:21	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	7	Smear 34
8	Smear 35	09/01/04	11:55:00	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	8	Smear 35
9	Smear 36	09/01/04	11:53:40	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85	9	Smear 36
10	Smear 37	09/01/04	11:52:19	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	10	Smear 37
11	Smear 38	09/01/04	11:50:59	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85	11	Smear 38
12	Smear 39	09/01/04	11:49:38	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85	12	Smear 39
13	Smear 40	09/01/04	11:48:18	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	13	Smear 40
14	Smear 41	09/01/04	11:46:57	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	14	Smear 41
15	Smear 42	09/01/04	11:45:37	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85	15	Smear 42
16	Smear 43	09/01/04	11:44:16	0.00	-0.03	-0.12	11.90	5.00	4.60	10.35	10.85	16	Smear 43
17	Smear 44	09/01/04	11:42:56	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85	17	Smear 44
18	Smear 45	09/01/04	11:41:35	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85	18	Smear 45
19	Smear 46	09/01/04	11:40:15	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	19	Smear 46
20	Smear 47	09/01/04	11:38:54	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	20	Smear 47
21	Smear 48	09/01/04	11:37:34	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85	21	Smear 48
22	Smear 49	09/01/04	11:36:13	0.00	-0.03	-0.12	11.90	4.00	3.60	8.10	10.85	22	Smear 49
23	Smear 50	09/01/04	11:34:53	0.00	-0.03	-0.12	11.90	3.00	2.60	5.85	10.85	23	Smear 50
24	Smear 51	09/01/04	11:33:32	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85	24	Smear 51
25	Smear 52	09/01/04	11:32:12	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	25	Smear 52
26	Smear 53	09/01/04	11:30:51	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85	26	Smear 53
27	Smear 54	09/01/04	11:29:31	0.00	-0.03	-0.12	11.90	4.00	3.60	8.10	10.85	27	Smear 54
28	Smear 55	09/01/04	11:28:10	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	28	Smear 55
29	Smear 56	09/01/04	11:26:50	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	29	Smear 56
30	Smear 57	09/01/04	11:25:29	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85	30	Smear 57
31	Smear 58	09/01/04	11:24:09	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85	31	Smear 58
32	Smear 59	09/01/04	11:22:48	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85	32	Smear 59
33	Smear 60	09/01/04	11:21:28	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	33	Smear 60
34	Smear 61	09/01/04	11:20:07	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	34	Smear 61
35	Smear 62	09/01/04	11:18:47	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	35	Smear 62
36	Smear 63	09/01/04	11:17:27	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	36	Smear 63
37	Smear 64	09/01/04	11:16:06	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85	37	Smear 64
38	Smear 65	09/01/04	11:14:46	0.00	-0.03	-0.12	11.90	3.00	2.60	5.85	10.85	38	Smear 65
39	Smear 66	09/01/04	11:13:26	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85	39	Smear 66
40	Smear 67	09/01/04	11:12:05	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	40	Smear 67
41	Smear 68	09/01/04	11:10:44	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85	41	Smear 68
42	Smear 69	09/01/04	11:09:24	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	42	Smear 69
43	Smear 70	09/01/04	11:08:03	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85	43	Smear 70

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-1-04

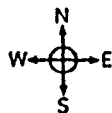
Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-1-04



**HVAC-1-B Office Mezzanine**



26' 6"

26' 6"

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

Office Mezz. (HVAC) Floor

CLASS 1

QUEHANNA DECOMMISSIONING  
KARTHAKS, PENNSYLVANIA  
115 REACTOR ROAD

SCIENTECH

SCIENTECH Inc.  
143 WEST STREET  
NEW HAVEN, CT 06511

PROJECT NO.

23529-0501

FILE NAME:

SCALE:

N.T.S.

DATE:

07.06.2004

By:

CK:

FIGURE:

HVAC-1-A,B

• SURVEY POINTS

• STARTING LOCATION

HVAC-1-A

HVAC-1-B

POINTS 3-4-7-8  
N/A9-26-04  
0700  
1600

13

14

15

16

13

14

15

16

9

10

11

12

9

10

11

12

5

6

7

8

5

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7

8

1

2

3

4

1

2

3

4

3

4

5

5

4

3

4

5

3

4

N/A

N/A

4

5

N/A

N/A

# HVAC-1-B

35-BKGRD-154

Log #
36 Source #1665
37
38
39 N/A
40 N/A
39
40
43 N/A
44 N/A
45
40
43
44
45
46
47
48

	X	Y
	n/a	n/a
1	1.5	1.2
2	9.0 → 7.8	1.2
3	16.5	1.2
4	24.0	1.2
5	1.5	8.7
6	9.0	8.7
7	16.5	8.7
8	24.0	8.7
9	1.5	16.2
10	9.0	16.2
11	16.5	16.2
12	24.0	16.2
13	1.5	23.7
14	9.0	23.7
15	16.5	23.7
16	24.0	23.7

L (ft)= 7.5

A (ft²)= 795

	Fixed Points	Ave. (Scan)	Max. (Scan)
		n/a	n/a
1	192	125	225
2	175	150	325
3	N/A	—	—
4	N/A	—	—
5	167	150	200
6	185	165	300
7	N/A	—	—
8	N/A	—	—
9	185	150	250
10	164	135	225
11	157	150	235
12	147	145	225
13	179	125	200
14	172	150	275
15	207	175	275
16	180	125	200

Ludlum Measurements, Inc.  
Model 2360 Log Data

9/28/2004  
10:02:31 AM

Header 1: Technician  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 09/28/2004  
Model 2360 Time: 08:05:36  
Sample Number: 0003

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000476  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000476  
Alpha + Beta Scaler Alarm: 050000

Count Rate - Count Time  
Field meter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0015	09/27/04	07:54:55	000000	000181	S	001.0 Lab Background
0016	09/27/04	07:56:27	000002	032501	S	001.0 Lab Source
0017	09/27/04	08:24:41	000000	000155	S	001.0 Field Background
0018	09/27/04	08:26:30	000002	001639	S	001.0 Field Source
0019	09/27/04	08:35:57	000002	000211	S	001.0 HVAC 1-A
0020	09/27/04	08:48:07	000003	000219	S	001.0 HVAC 1-A
0021	09/27/04	08:51:22	000001	000209	S	001.0 HVAC 1-A
0022	09/27/04	09:05:06	000000	000202	S	001.0 HVAC 1-A
0023	09/27/04	09:51:42	000001	000157	S	001.0 HVAC 1-A
0024	09/27/04	09:53:56	000003	000183	S	001.0 HVAC 1-A
0025	09/27/04	09:57:57	000003	000183	S	001.0 HVAC 1-A
0026	09/27/04	10:00:58	000002	000202	S	001.0 HVAC 1-A
0027	09/27/04	10:08:50	000000	000196	S	001.0 HVAC 1-A
0028	09/27/04	10:16:44	000000	000163	S	001.0 HVAC 1-A
0029	09/27/04	10:18:26	000000	000203	S	001.0 HVAC 1-A
0030	09/27/04	10:33:08	000001	000166	S	001.0 HVAC 1-A
0031	09/27/04	10:58:04	000002	000166	S	001.0 HVAC 1-A
0032	09/27/04	10:59:33	000000	000170	S	001.0 HVAC 1-A
0033	09/27/04	11:06:34	000001	000198	S	001.0 HVAC 1-A
0034	09/27/04	11:08:15	000001	000167	S	001.0 HVAC 1-A
0035	09/27/04	13:03:06	000000	000154	S	001.0 HVAC 1-B
0036	09/27/04	13:04:47	000003	001665	S	001.0 HVAC 1-B
0037	09/27/04	13:07:17	000002	000192	S	001.0 HVAC 1-B
0038	09/27/04	13:09:33	000000	000175	S	001.0 HVAC 1-B
0039	09/27/04	13:13:18	000001	000167	S	001.0 HVAC 1-B
0040	09/27/04	13:15:30	000001	000185	S	001.0 HVAC 1-B
0041	09/27/04	13:19:31	000000	000185	S	001.0 HVAC 1-B
0042	09/27/04	13:21:22	000001	000164	S	001.0 HVAC 1-B
0043	09/27/04	13:30:37	000003	000157	S	001.0 HVAC 1-B
0044	09/27/04	13:32:54	000000	000147	S	001.0 HVAC 1-B
0045	09/27/04	14:00:19	000002	000179	S	001.0 HVAC 1-B
0046	09/27/04	14:03:20	000000	000172	S	001.0 HVAC 1-B
0047	09/27/04	14:05:04	000001	000207	S	001.0 HVAC 1-B
0048	09/27/04	14:06:41	000002	000180	S	001.0 HVAC 1-B

*Background - Source Ch*

049 09/27/04 16:03:25 000001 000122 S 001.0 Void  
050 09/27/04 16:06:42 000002 001659 S 001.0 Field Source •

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1 Smear 1		09/27/04	15:37:48	HVAC 1-B	Final Status Survey	09/27/04	15:37:48	1.000	1.00
2 Smear 2		09/27/04	15:36:28	HVAC 1-B	Final Status Survey	09/27/04	15:36:28	1.000	1.00
3 Smear 3		09/27/04	15:35:07	HVAC 1-B	Final Status Survey	09/27/04	15:35:07	1.000	1.00
4 Smear 4		09/27/04	15:33:47	HVAC 1-B	Final Status Survey	09/27/04	15:33:47	1.000	1.00
5 Smear 5		09/27/04	15:32:26	HVAC 1-B	Final Status Survey	09/27/04	15:32:26	1.000	1.00
6 Smear 6		09/27/04	15:31:06	HVAC 1-B	Final Status Survey	09/27/04	15:31:06	1.000	1.00
7 Smear 7		09/27/04	15:29:46	HVAC 1-B	Final Status Survey	09/27/04	15:29:46	1.000	1.00
8 Smear 8		09/27/04	15:28:25	HVAC 1-B	Final Status Survey	09/27/04	15:28:25	1.000	1.00
9 Smear 9		09/27/04	15:27:04	HVAC 1-B	Final Status Survey	09/27/04	15:27:04	1.000	1.00
10 Smear 10		09/27/04	15:25:44	HVAC 1-B	Final Status Survey	09/27/04	15:25:44	1.000	1.00
11 Smear 11		09/27/04	15:24:24	HVAC 1-B	Final Status Survey	09/27/04	15:24:24	1.000	1.00
12 Smear 12		09/27/04	15:23:03	HVAC 1-B	Final Status Survey	09/27/04	15:23:03	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-27-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-27-04

Smears		Count Mins: 1		Alpha				Beta				Smears	
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 27.37 LLD: 9.9 dpm				Bkg: 0.6 cpm %Eff: 44.67 LLD: 11.39 dpm				Sample Parameter Entry	
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA	Carrier No.	Sample ID
1	Smear 1	09/27/04	15:37:48	0.00	0.00	0.00	9.90	20.00	19.50	43.75	11.39	1	Smear 1
2	Smear 2	09/27/04	15:36:28	0.00	0.00	0.00	9.90	9.00	8.50	19.07	11.39	2	Smear 2
3	Smear 3	09/27/04	15:35:07	0.00	0.00	0.00	9.90	5.00	4.50	10.10	11.39	3	Smear 3
4	Smear 4	09/27/04	15:33:47	0.00	0.00	0.00	9.90	10.00	9.50	21.31	11.39	4	Smear 4
5	Smear 5	09/27/04	15:32:26	0.00	0.00	0.00	9.90	5.00	4.50	10.10	11.39	5	Smear 5
6	Smear 6	09/27/04	15:31:06	0.00	0.00	0.00	9.90	2.00	1.50	3.37	11.39	6	Smear 6
7	Smear 7	09/27/04	15:29:46	0.00	0.00	0.00	9.90	0.00	-0.50	-1.12	11.39	7	Smear 7
8	Smear 8	09/27/04	15:28:25	0.00	0.00	0.00	9.90	7.00	6.50	14.58	11.39	8	Smear 8
9	Smear 9	09/27/04	15:27:04	0.00	0.00	0.00	9.90	5.00	4.50	10.10	11.39	9	Smear 9
10	Smear 10	09/27/04	15:25:44	0.00	0.00	0.00	9.90	3.00	2.50	5.61	11.39	10	Smear 10
11	Smear 11	09/27/04	15:24:24	0.00	0.00	0.00	9.90	0.00	-0.50	-1.12	11.39	11	Smear 11
12	Smear 12	09/27/04	15:23:03	0.00	0.00	0.00	9.90	3.00	2.50	5.61	11.39	12	Smear 12

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-27-04

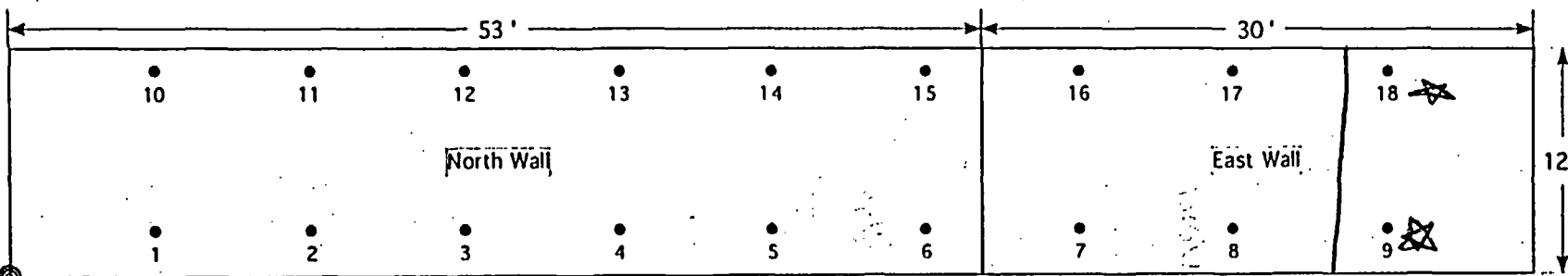
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**HVAC-1-C Office Mezzanine**





HVAC-1-C

• SURVEY POINTS

◎ STARTING LOCATION

9-27-04  
START 0800  
STOP 1630

9-28-04  
START 7:34  
STOP 8:44

Points 9 & 18  
INACCESSIBLE

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
KARTHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Office Mezz (HVAC) North and East Walls

SCIENTECH

SCIENTECH Inc.  
143 WEST STREET  
NEW MILFORD CT 06476

PROJECT NO:  
23529-0301

FILE NAME:

SCALE: DATE:  
N.T.S. 07.06.2004

BY: CK:

FIGURE:  
HVAC-1-C

# HVAC-1-C

Log #
Source
11
12
13
14
15
16
17
18
19 Void
20
21
22
23
24
29
30
31
32

X	Y
n/a	n/a
1 7.9	2.4
2 16.3	2.4
3 24.7	2.4
4 33.1	2.4
5 41.5	2.4
6 49.9	2.4
7 58.3	2.4
8 66.7	2.4
9 75.1	10.8
10 7.9	10.8
11 16.3	10.8
12 24.7	10.8
13 33.1	10.8
14 41.5	10.8
15 49.9	10.8
16 58.3	10.8
17 66.7	10.8
18 75.1	10.8

L (ft)= 8.4

A (ft²)= 996

Fixed Points	Ave. (Scan)	Max. (Scan)
n/a	n/a	n/a
138	140	220
174	140	240
140	120	200
112	120	240
156	160	220
168	160	220
107	140	200
120	160	220
<del>126</del>	-	-
99	120	200
105	100	200
98	100	225
103	125	325
123	160	300
126	125	320
120	150	300
129	150	260
<del>119</del>	<del>150</del>	<del>320</del>

Void

Void

see map

Ludlum Measurements, Inc.  
Model 2360 Log Data

9/28/2004  
9:48:28 AM

Header 1: Technician  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 09/28/2004  
Model 2360 Time: 09:52:31  
Sample Number: 0002

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 050000

me - Count Time  
emeter  
caler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0007	09/27/04	07:57:50	000000	000185	S	001.0 Lab Background
0008	09/27/04	07:59:04	000003	035119	S	001.0 Lab Source
0009	09/27/04	08:19:49	000001	000157	S	001.0 Field Background
0010	09/27/04	08:21:59	000002	001870	S	001.0 Field Source
0011	09/27/04	08:47:16	000000	000138	S	001.0 HVAC 1-C
0012	09/27/04	09:07:00	000000	000174	S	001.0 HVAC 1-C
0013	09/27/04	10:07:43	000000	000140	S	001.0 HVAC 1-C
0014	09/27/04	10:18:13	000001	000112	S	001.0 HVAC 1-C
0015	09/27/04	10:36:28	000001	000156	S	001.0 HVAC 1-C
0016	09/27/04	11:29:09	000003	000168	S	001.0 HVAC 1-C
0017	09/27/04	13:23:38	000002	000107	S	001.0 HVAC 1-C
0018	09/27/04	15:25:05	000000	000120	S	001.0 HVAC 1-C
0019	09/27/04	15:35:08	000004	000126	S	001.0 VOID
0020	09/27/04	16:00:45	000001	000099	S	001.0 HVAC 1-C
0021	09/27/04	16:05:40	000000	000105	S	001.0 HVAC 1-C
0022	09/27/04	16:19:12	000000	000098	S	001.0 HVAC 1-C
0023	09/27/04	16:26:43	000000	000103	S	001.0 HVAC 1-C
0024	09/27/04	16:34:45	000002	000123	S	001.0 HVAC 1-C
0025	09/28/04	07:34:44	000002	000200	S	001.0 Lab Background
0026	09/28/04	07:36:02	000001	034872	S	001.0 Lab Source
0027	09/28/04	07:51:18	000001	000176	S	001.0 Field Background
0028	09/28/04	07:53:13	000003	001746	S	001.0 Field Source
0029	09/28/04	08:11:16	000001	000126	S	001.0 HVAC 1-C
0030	09/28/04	08:21:09	000001	000120	S	001.0 HVAC 1-C
0031	09/28/04	08:31:49	000000	000129	S	001.0 HVAC 1-C
0032	09/28/04	08:44:18	000000	000119	S	001.0 HVAC 1-C

VOID, See Map

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
11	Smear 1	09/29/04	9:37:00	HVAC 1-C	Final Status Survey	09/29/04	9:37:00	1.000	1.00
12	Smear 2	09/29/04	9:35:39	HVAC 1-C	Final Status Survey	09/29/04	9:35:39	1.000	1.00
13	Smear 3	09/29/04	9:34:18	HVAC 1-C	Final Status Survey	09/29/04	9:34:18	1.000	1.00
14	Smear 4	09/29/04	9:32:58	HVAC 1-C	Final Status Survey	09/29/04	9:32:58	1.000	1.00
15	Smear 5	09/29/04	9:31:37	HVAC 1-C	Final Status Survey	09/29/04	9:31:37	1.000	1.00
16	Smear 6	09/29/04	9:30:16	HVAC 1-C	Final Status Survey	09/29/04	9:30:16	1.000	1.00
17	Smear 7	09/29/04	9:28:56	HVAC 1-C	Final Status Survey	09/29/04	9:28:56	1.000	1.00
18	Smear 8	09/29/04	9:27:35	HVAC 1-C	Final Status Survey	09/29/04	9:27:35	1.000	1.00
19	Smear 9	09/29/04	9:26:15	HVAC 1-C	Final Status Survey	09/29/04	9:26:15	1.000	1.00
20	Smear 10	09/29/04	9:24:54	HVAC 1-C	Final Status Survey	09/29/04	9:24:54	1.000	1.00
21	Smear 11	09/29/04	9:23:34	HVAC 1-C	Final Status Survey	09/29/04	9:23:34	1.000	1.00
22	Smear 12	09/29/04	9:22:13	HVAC 1-C	Final Status Survey	09/29/04	9:22:13	1.000	1.00
23	Smear 13	09/29/04	9:20:53	HVAC 1-C	Final Status Survey	09/29/04	9:20:53	1.000	1.00
24	Smear 14	09/29/04	9:19:32	HVAC 1-C	Final Status Survey	09/29/04	9:19:32	1.000	1.00
25	Smear 15	09/29/04	9:18:12	HVAC 1-C	Final Status Survey	09/29/04	9:18:12	1.000	1.00
26	Smear 16	09/29/04	9:16:51	HVAC 1-C	Final Status Survey	09/29/04	9:16:51	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-29-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 26.87 LLD: 12.36 dpm				Bkg: 0.47 cpm %Eff: 44.46 LLD: 11.23 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
11	Smear 1	09/29/04	9:37:00	0.00	-0.03	-0.12	12.36	0.00	-0.47	-1.05	11.23
12	Smear 2	09/29/04	9:35:39	0.00	-0.03	-0.12	12.36	0.00	-0.47	-1.05	11.23
13	Smear 3	09/29/04	9:34:18	0.00	-0.03	-0.12	12.36	2.00	1.53	3.45	11.23
14	Smear 4	09/29/04	9:32:58	0.00	-0.03	-0.12	12.36	0.00	-0.47	-1.05	11.23
15	Smear 5	09/29/04	9:31:37	0.00	-0.03	-0.12	12.36	1.00	0.53	1.20	11.23
16	Smear 6	09/29/04	9:30:16	0.00	-0.03	-0.12	12.36	2.00	1.53	3.45	11.23
17	Smear 7	09/29/04	9:28:56	0.00	-0.03	-0.12	12.36	0.00	-0.47	-1.05	11.23
18	Smear 8	09/29/04	9:27:35	0.00	-0.03	-0.12	12.36	0.00	-0.47	-1.05	11.23
19	Smear 9	09/29/04	9:26:15	0.00	-0.03	-0.12	12.36	0.00	-0.47	-1.05	11.23
20	Smear 10	09/29/04	9:24:54	0.00	-0.03	-0.12	12.36	0.00	-0.47	-1.05	11.23
21	Smear 11	09/29/04	9:23:34	1.00	0.97	3.60	12.36	1.00	0.53	1.20	11.23
22	Smear 12	09/29/04	9:22:13	0.00	-0.03	-0.12	12.36	3.00	2.53	5.70	11.23
23	Smear 13	09/29/04	9:20:53	0.00	-0.03	-0.12	12.36	0.00	-0.47	-1.05	11.23
24	Smear 14	09/29/04	9:19:32	0.00	-0.03	-0.12	12.36	2.00	1.53	3.45	11.23
25	Smear 15	09/29/04	9:18:12	0.00	-0.03	-0.12	12.36	9.00	8.53	19.19	11.23
26	Smear 16	09/29/04	9:16:51	0.00	-0.03	-0.12	12.36	1.00	0.53	1.20	11.23

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-29-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

## Survey Cover Sheet

Surveyor: Tom Malachina  
 Print  
 Reviewer: Joe Trowbridge  
 Print

[Signature]  
 Sign  
[Signature]  
 Sign

9/1/2004

Date

9/1/2004

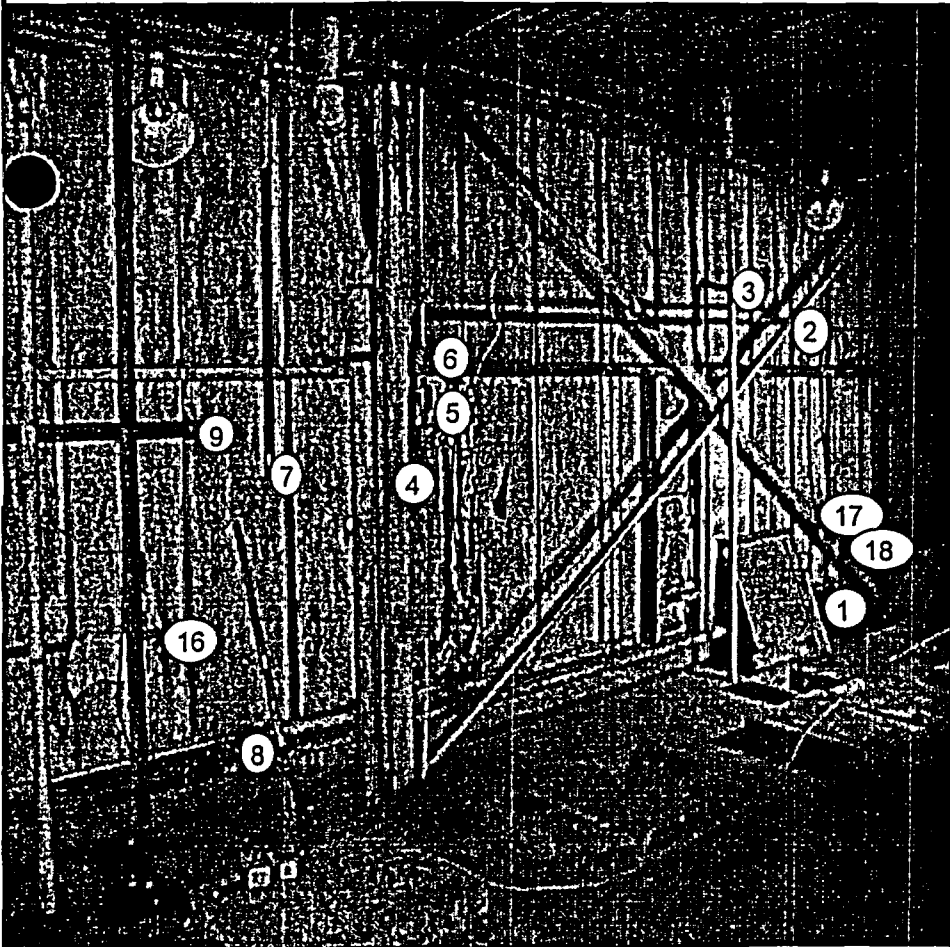
Date

## Survey Meters

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 1/20/2005  
 Efficiency 28%  
 Type  $\alpha, \beta \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.03 cpm  
 MDA 11.9 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 1/20/2005  
 Efficiency 44%  
 Type  $\alpha, \beta \gamma$   $\beta \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.4 cpm  
 MDA 10.85 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
 Meter / Probe Serial # N/A  
 Cal Due N/A  
 Efficiency N/A  
 Type  $\alpha, \beta \gamma$  N/A  
 Sample Time N/A  
 Background Time N/A  
 BKG N/A  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Permagrain Mezz North Wall, East SectionPURPOSE: Inaccessible Area Smears

Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
1	8.1	-0.12
2	-0.9	-0.12
3	1.35	-0.12
4	-0.9	-0.12
5	1.35	-0.12
6	-0.9	-0.12
7	-0.9	-0.12
8	5.85	-0.12
9	-0.9	-0.12
16	3.6	-0.12
17	-0.9	3.46
18	1.35	-0.12

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff.  $\times \frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

## Survey Cover Sheet

Prepared by: Tom Malachina  
Print  
Reviewer: Joe Trowbridge  
Print

Tom Malachina  
Sign  
Joe Trowbridge  
Sign

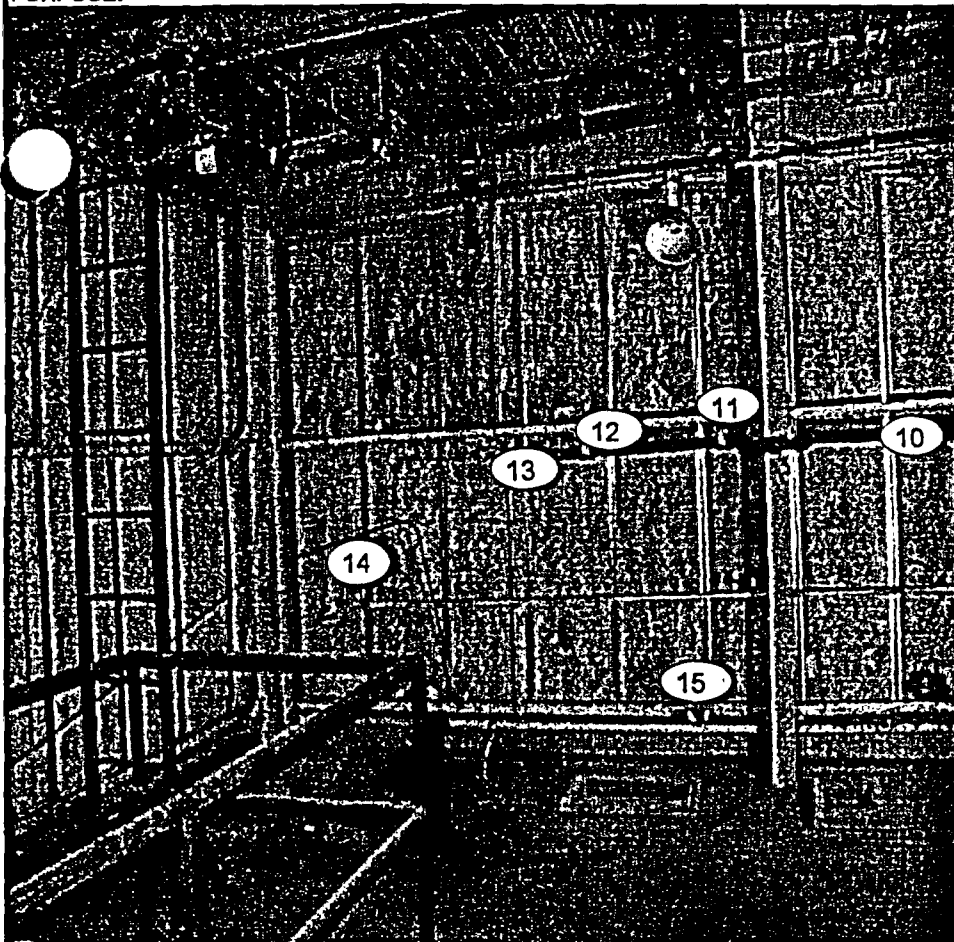
9/1/2004  
Date  
9/1/2004  
Date

## Survey Meters

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 1/20/2005  
Efficiency 28%  
Type  $\alpha, \beta \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.03 cpm  
MDA 11.9 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 1/20/2005  
Efficiency 44%  
Type  $\alpha, \beta \gamma$   $\beta \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.4 cpm  
MDA 10.85 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Permagrain Mezz North Wall, West SectionPURPOSE: Inaccessible Area Smears

Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
10	-0.9	-0.12
11	1.35	-0.12
12	1.35	-0.12
13	-0.9	-0.12
14	-0.9	-0.12
15	1.35	-0.12

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff. X 100cm<sup>2</sup>)

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$dpm / 100cm^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	09/01/04	9:35:49	Permagrain Mezz	Innaccessable Area	09/01/04	9:35:49	1.000	1.00
2	Smear 2	09/01/04	9:34:28	Permagrain Mezz	Innaccessable Area	09/01/04	9:34:28	1.000	1.00
3	Smear 3	09/01/04	9:33:07	Permagrain Mezz	Innaccessable Area	09/01/04	9:33:07	1.000	1.00
4	Smear 4	09/01/04	9:31:46	Permagrain Mezz	Innaccessable Area	09/01/04	9:31:46	1.000	1.00
5	Smear 5	09/01/04	9:30:25	Permagrain Mezz	Innaccessable Area	09/01/04	9:30:25	1.000	1.00
6	Smear 6	09/01/04	9:29:05	Permagrain Mezz	Innaccessable Area	09/01/04	9:29:05	1.000	1.00
7	Smear 7	09/01/04	9:27:44	Permagrain Mezz	Innaccessable Area	09/01/04	9:27:44	1.000	1.00
8	Smear 8	09/01/04	9:26:24	Permagrain Mezz	Innaccessable Area	09/01/04	9:26:24	1.000	1.00
9	Smear 9	09/01/04	9:25:03	Permagrain Mezz	Innaccessable Area	09/01/04	9:25:03	1.000	1.00
10	Smear 10	09/01/04	9:23:43	Permagrain Mezz	Innaccessable Area	09/01/04	9:23:43	1.000	1.00
11	Smear 11	09/01/04	9:22:23	Permagrain Mezz	Innaccessable Area	09/01/04	9:22:23	1.000	1.00
12	Smear 12	09/01/04	9:21:03	Permagrain Mezz	Innaccessable Area	09/01/04	9:21:03	1.000	1.00
13	Smear 13	09/01/04	9:19:42	Permagrain Mezz	Innaccessable Area	09/01/04	9:19:42	1.000	1.00
14	Smear 14	09/01/04	9:18:21	Permagrain Mezz	Innaccessable Area	09/01/04	9:18:21	1.000	1.00
15	Smear 15	09/01/04	9:17:01	Permagrain Mezz	Innaccessable Area	09/01/04	9:17:01	1.000	1.00
16	Smear 16	09/01/04	9:15:40	Permagrain Mezz	Innaccessable Area	09/01/04	9:15:40	1.000	1.00
17	Smear 17	09/01/04	9:14:20	Permagrain Mezz	Innaccessable Area	09/01/04	9:14:20	1.000	1.00
18	Smear 18	09/01/04	9:12:59	Permagrain Mezz	Innaccessable Area	09/01/04	9:12:59	1.000	1.00
19	Smear 19	09/01/04	9:11:39	Permagrain Mezz	Innaccessable Area	09/01/04	9:11:39	1.000	1.00
20	Smear 20	09/01/04	9:10:19	Permagrain Mezz	Innaccessable Area	09/01/04	9:10:19	1.000	1.00
21	Smear 21	09/01/04	9:08:58	Permagrain Mezz	Innaccessable Area	09/01/04	9:08:58	1.000	1.00
22	Smear 22	09/01/04	9:07:37	Permagrain Mezz	Innaccessable Area	09/01/04	9:07:37	1.000	1.00
23	Smear 23	09/01/04	9:06:17	Permagrain Mezz	Innaccessable Area	09/01/04	9:06:17	1.000	1.00
24	Smear 24	09/01/04	9:04:57	Permagrain Mezz	Innaccessable Area	09/01/04	9:04:57	1.000	1.00
25	Smear 25	09/01/04	9:03:36	Permagrain Mezz	Innaccessable Area	09/01/04	9:03:36	1.000	1.00
26	Smear 26	09/01/04	9:02:16	Permagrain Mezz	Innaccessable Area	09/01/04	9:02:16	1.000	1.00
27	Smear 27	09/01/04	9:00:56	Permagrain Mezz	Innaccessable Area	09/01/04	9:00:56	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-1-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-1-04



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 27.92 LLD: 11.9 dpm				Bkg: 0.4 cpm %Eff: 44.46 LLD: 10.86 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	09/01/04	9:35:49	0.00	-0.03	-0.12	11.90	4.00	3.60	8.10	10.85
2	Smear 2	09/01/04	9:34:28	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
3	Smear 3	09/01/04	9:33:07	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85
4	Smear 4	09/01/04	9:31:46	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
5	Smear 5	09/01/04	9:30:25	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85
6	Smear 6	09/01/04	9:29:05	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
7	Smear 7	09/01/04	9:27:44	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
8	Smear 8	09/01/04	9:26:24	0.00	-0.03	-0.12	11.90	3.00	2.60	5.85	10.85
9	Smear 9	09/01/04	9:25:03	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
10	Smear 10	09/01/04	9:23:43	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85
11	Smear 11	09/01/04	9:22:23	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
12	Smear 12	09/01/04	9:21:03	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
13	Smear 13	09/01/04	9:19:42	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85
14	Smear 14	09/01/04	9:18:21	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
15	Smear 15	09/01/04	9:17:01	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
16	Smear 16	09/01/04	9:15:40	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85
17	Smear 17	09/01/04	9:14:20	1.00	0.97	3.46	11.90	0.00	-0.40	-0.90	10.85
18	Smear 18	09/01/04	9:12:59	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85
19	Smear 19	09/01/04	9:11:39	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85
20	Smear 20	09/01/04	9:10:19	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
21	Smear 21	09/01/04	9:08:58	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85
22	Smear 22	09/01/04	9:07:37	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
23	Smear 23	09/01/04	9:06:17	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
24	Smear 24	09/01/04	9:04:57	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85
25	Smear 25	09/01/04	9:03:36	0.00	-0.03	-0.12	11.90	4.00	3.60	8.10	10.85
26	Smear 26	09/01/04	9:02:16	0.00	-0.03	-0.12	11.90	3.00	2.60	5.85	10.85
27	Smear 27	09/01/04	9:00:56	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

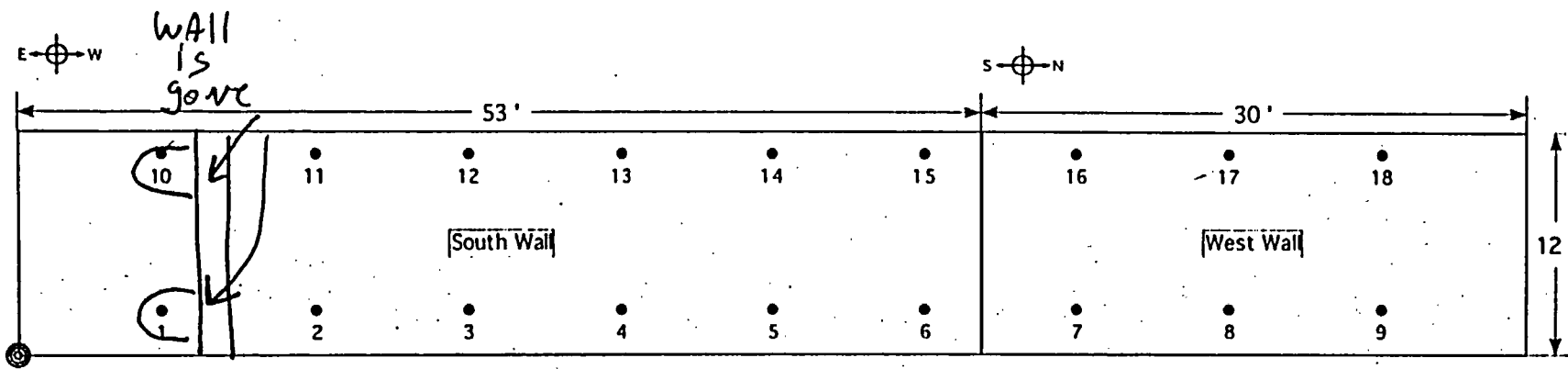
Date: 9-1-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-1-04

**HVAC-1-D Office Mezzanine**



HVAC-1-D

• SURVEY POINTS  
 ◎ STARTING LOCATION

Start 9-28-04 / 0745  
 Stop 9-29-04 / 10:50

#1 & 10 are void - wall is gone.

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Office Mezz (HVAC) South and West Walls	
SCIENSTECH SCIENSTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: HVAC-1-D	

## HVAC-I-D

Log #
Source
5
6
7
8
9
10
11
17
19
20
21
22
23
24
25
26

X	Y
n/a	n/a
7.9	2.4
16.3	2.4
24.7	2.4
33.1	2.4
41.5	2.4
49.9	2.4
58.3	2.4
66.7	2.4
75.1	10.8
7.9	10.8
16.3	10.8
24.7	10.8
33.1	10.8
41.5	10.8
49.9	10.8
58.3	10.8
66.7	10.8
75.1	10.8

L (ft)= 8.4

A (ft<sup>2</sup>)= 996

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
136	120	200
135	140	400
136	120	200
141	150	200
129	120	200
117	120	160
115	100	160
116	120	180
236	180	300
137	140	180
118	120	200
140	140	220
121	130	160
113	120	220
83	120	260
109	130	180

only 16 points available.

C. Wilkin

11/2/04

Ludlum Measurements, Inc.  
Model 2360 Log Data

D: 9/30/2004  
Ti: 7:37:28 AM

Header 1: Technician  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 09/30/2004  
Model 2360 Time: 07:38:57  
Sample Number: 0029

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

C - Count Time  
F - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	09/28/04	07:59:57	000000	000154	S 001.0	Lab Background
0002	09/28/04	08:03:05	000001	032071	S 001.0	Lab Source
0003	09/28/04	08:20:31	000001	000126	S 001.0	Field Background
0004	09/28/04	08:23:10	000003	001568	S 001.0	Field Source
0005	09/28/04	09:54:01	000000	000136	S 001.0	HVAC 1-D
0006	09/28/04	11:14:40	000000	000135	S 001.0	HVAC 1-D
0007	09/28/04	13:22:00	000003	000136	S 001.0	HVAC 1-D
0008	09/28/04	14:04:27	000001	000141	S 001.0	HVAC 1-D
0009	09/28/04	14:20:38	000001	000129	S 001.0	HVAC 1-D
0010	09/28/04	15:47:26	000000	000117	S 001.0	HVAC 1-D
0011	09/28/04	16:25:37	000003	000115	S 001.0	HVAC 1-D
0012	09/28/04	16:39:07	000003	001593	S 001.0	Field Source
0013	09/29/04	07:24:06	000000	000193	S 001.0	Lab Background
0014	09/29/04	07:28:00	000000	032661	S 001.0	Lab Source
0015	09/29/04	07:44:43	000001	000133	S 001.0	Field Background
0016	09/29/04	07:46:30	000004	001582	S 001.0	Field Source
0017	09/29/04	08:17:41	000001	000116	S 001.0	HVAC 1-D
0018	09/29/04	11:12:31	000000	000136	S 001.0	VOID
0019	09/29/04	11:14:26	000000	000236	S 001.0	HVAC 1-D
0020	09/29/04	12:46:33	000001	000137	S 001.0	HVAC 1-D
0021	09/29/04	13:18:59	000001	000118	S 001.0	HVAC 1-D
0022	09/29/04	13:29:21	000000	000140	S 001.0	HVAC 1-D
0023	09/29/04	13:52:17	000000	000121	S 001.0	HVAC 1-D
0024	09/29/04	14:32:58	000001	000113	S 001.0	HVAC 1-D
0025	09/29/04	16:06:41	000002	000083	S 001.0	HVAC 1-D
0026	09/29/04	16:25:44	000000	000109	S 001.0	HVAC 1-D
0027	09/29/04	16:38:13	000002	001590	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
11	Smear 1	09/30/04	8:19:01	HVAC 1-D	Final Status Survey	09/30/04	8:19:01	1.000	1.00
12	Smear 2	09/30/04	8:17:41	HVAC 1-D	Final Status Survey	09/30/04	8:17:41	1.000	1.00
13	Smear 3	09/30/04	8:16:20	HVAC 1-D	Final Status Survey	09/30/04	8:16:20	1.000	1.00
14	Smear 4	09/30/04	8:15:00	HVAC 1-D	Final Status Survey	09/30/04	8:15:00	1.000	1.00
15	Smear 5	09/30/04	8:13:39	HVAC 1-D	Final Status Survey	09/30/04	8:13:39	1.000	1.00
16	Smear 6	09/30/04	8:12:19	HVAC 1-D	Final Status Survey	09/30/04	8:12:19	1.000	1.00
17	Smear 7	09/30/04	8:10:59	HVAC 1-D	Final Status Survey	09/30/04	8:10:59	1.000	1.00
18	Smear 8	09/30/04	8:09:38	HVAC 1-D	Final Status Survey	09/30/04	8:09:38	1.000	1.00
19	Smear 9	09/30/04	8:08:17	HVAC 1-D	Final Status Survey	09/30/04	8:08:17	1.000	1.00
20	Smear 10	09/30/04	8:06:57	HVAC 1-D	Final Status Survey	09/30/04	8:06:57	1.000	1.00
21	Smear 11	09/30/04	8:05:37	HVAC 1-D	Final Status Survey	09/30/04	8:05:37	1.000	1.00
22	Smear 12	09/30/04	8:04:17	HVAC 1-D	Final Status Survey	09/30/04	8:04:17	1.000	1.00
23	Smear 13	09/30/04	8:02:56	HVAC 1-D	Final Status Survey	09/30/04	8:02:56	1.000	1.00
24	Smear 14	09/30/04	8:01:36	HVAC 1-D	Final Status Survey	09/30/04	8:01:36	1.000	1.00
25	Smear 15	09/30/04	8:00:16	HVAC 1-D	Final Status Survey	09/30/04	8:00:16	1.000	1.00
26	Smear 16	09/30/04	7:58:55	HVAC 1-D	Final Status Survey	09/30/04	7:58:55	1.000	1.00
<del>27</del>	<del>Smear 17</del>	09/30/04	7:57:34	HVAC 1-D	Final Status Survey	09/30/04	7:57:34	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-30-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha					Beta					Smears	
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 27.22 LLD: 9.96 dpm					Bkg: 0.8 cpm %Eff: 44.43 LLD: 12.83 dpm					Sample Parameter Entry	
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA	Carrier No.	Sample ID		
11	Smear 1	09/30/04	8:19:01	0.00	0.00	0.00	9.96	1.00	0.20	0.45	12.83	11	Smear 1		
12	Smear 2	09/30/04	8:17:41	0.00	0.00	0.00	9.96	1.00	0.20	0.45	12.83	12	Smear 2		
13	Smear 3	09/30/04	8:16:20	0.00	0.00	0.00	9.96	1.00	0.20	0.45	12.83	13	Smear 3		
14	Smear 4	09/30/04	8:15:00	0.00	0.00	0.00	9.96	0.00	-0.80	-1.80	12.83	14	Smear 4		
15	Smear 5	09/30/04	8:13:39	0.00	0.00	0.00	9.96	0.00	-0.80	-1.80	12.83	15	Smear 5		
16	Smear 6	09/30/04	8:12:19	0.00	0.00	0.00	9.96	2.00	1.20	2.70	12.83	16	Smear 6		
17	Smear 7	09/30/04	8:10:59	0.00	0.00	0.00	9.96	0.00	-0.80	-1.80	12.83	17	Smear 7		
18	Smear 8	09/30/04	8:09:38	0.00	0.00	0.00	9.96	2.00	1.20	2.70	12.83	18	Smear 8		
19	Smear 9	09/30/04	8:08:17	0.00	0.00	0.00	9.96	0.00	-0.80	-1.80	12.83	19	Smear 9		
20	Smear 10	09/30/04	8:06:57	0.00	0.00	0.00	9.96	2.00	1.20	2.70	12.83	20	Smear 10		
21	Smear 11	09/30/04	8:05:37	0.00	0.00	0.00	9.96	0.00	-0.80	-1.80	12.83	21	Smear 11		
22	Smear 12	09/30/04	8:04:17	0.00	0.00	0.00	9.96	1.00	0.20	0.45	12.83	22	Smear 12		
23	Smear 13	09/30/04	8:02:56	0.00	0.00	0.00	9.96	1.00	0.20	0.45	12.83	23	Smear 13		
24	Smear 14	09/30/04	8:01:36	0.00	0.00	0.00	9.96	0.00	-0.80	-1.80	12.83	24	Smear 14		
25	Smear 15	09/30/04	8:00:16	0.00	0.00	0.00	9.96	1.00	0.20	0.45	12.83	25	Smear 15		
26	Smear 16	09/30/04	7:58:55	0.00	0.00	0.00	9.96	1.00	0.20	0.45	12.83	26	Smear 16		
<del>27</del>	<del>Smear 17</del>	09/30/04	7:57:34	2.00	2.00	7.35	9.96	1.00	0.20	0.45	12.83	27	Smear 17		

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-30-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Surveyor: Tom Malachina  
Print  
Reviewer: Joe Trowbridge  
Print

[Signature]  
Sign  
[Signature]  
Sign

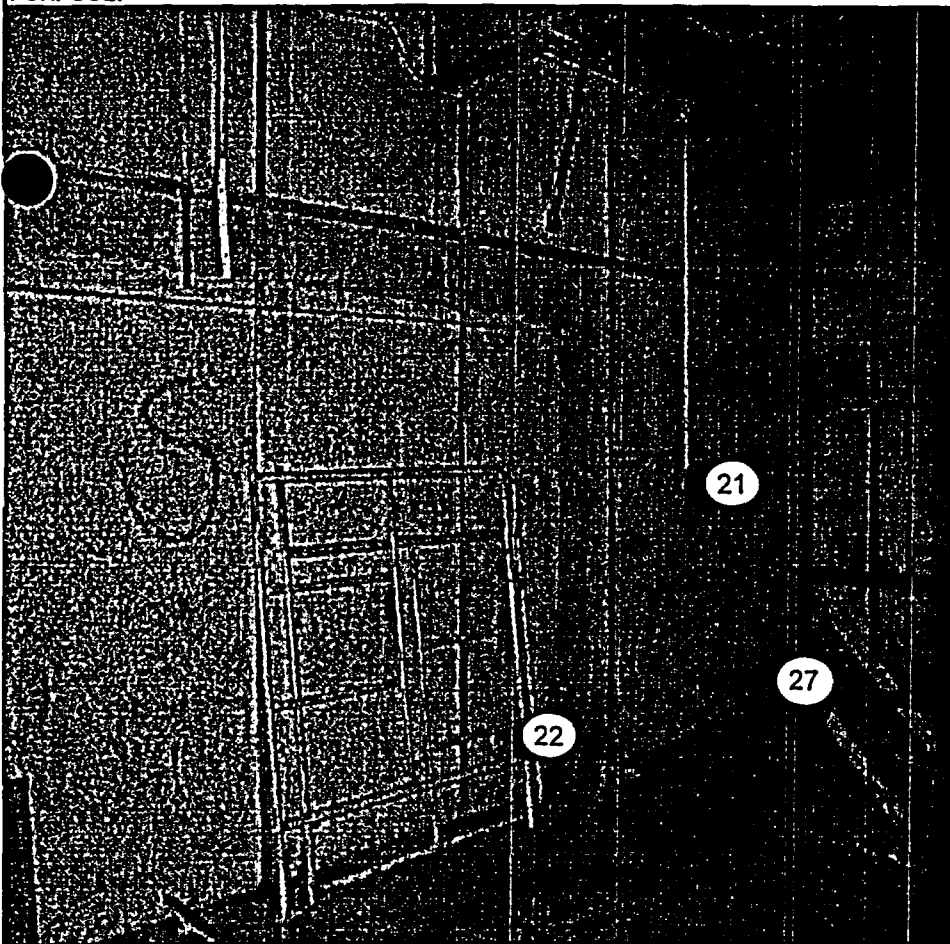
9/1/2004  
Date  
9/1/2004  
Date

## Survey Meters

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 1/20/2005  
Efficiency 28%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.03 cpm  
MDA 11.9 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 1/20/2005  
Efficiency 44%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.4 cpm  
MDA 10.85 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta, \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Permagrain Mezz South Wall, West SectionPURPOSE: Inaccessible Area Smears

Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
21	3.6	-0.12
22	-0.9	-0.12
27	1.35	-0.12

$$MDA = \frac{\frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}}{\left( \frac{\text{probe area}}{\text{eff.} \times 100 \text{cm}^2} \right)}$$

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100 \text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level



Surveyor: Tom Malachina  
Print  
Reviewer: Joe Trowbridge  
Print

Tom Malachina  
Sign  
Joe Trowbridge  
Sign

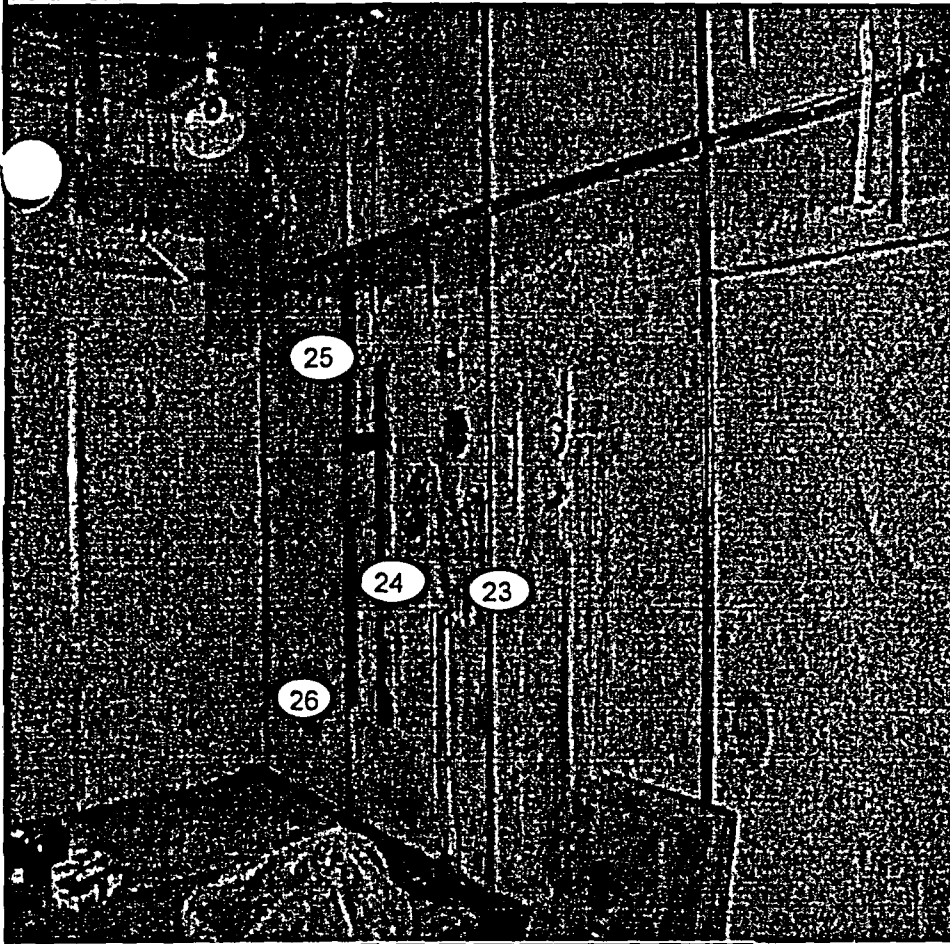
9/1/2004  
Date  
9/1/2004  
Date

## Survey Meters

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 1/20/2005  
Efficiency 28%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.03 cpm  
MDA 11.9 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 1/20/2005  
Efficiency 44%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.4 cpm  
MDA 10.85 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # N/A  
Meter / Probe Serial # N/A  
Cal Due N/A  
Efficiency N/A  
Type  $\alpha, \beta, \gamma$  N/A  
Sample Time N/A  
Background Time N/A  
BKG N/A  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Permagrain Mezz South Wall, East SectionPURPOSE: Inaccessible Area Smears

Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
23	-0.9	-0.12
24	1.35	-0.12
25	8.1	-0.12
26	5.85	-0.12

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff.  $\times \frac{100\text{cm}^2}{2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	09/01/04	9:35:49	Permagrain Mezz	Innaccessable Area	09/01/04	9:35:49	1.000	1.00
2	Smear 2	09/01/04	9:34:28	Permagrain Mezz	Innaccessable Area	09/01/04	9:34:28	1.000	1.00
3	Smear 3	09/01/04	9:33:07	Permagrain Mezz	Innaccessable Area	09/01/04	9:33:07	1.000	1.00
4	Smear 4	09/01/04	9:31:46	Permagrain Mezz	Innaccessable Area	09/01/04	9:31:46	1.000	1.00
5	Smear 5	09/01/04	9:30:25	Permagrain Mezz	Innaccessable Area	09/01/04	9:30:25	1.000	1.00
6	Smear 6	09/01/04	9:29:05	Permagrain Mezz	Innaccessable Area	09/01/04	9:29:06	1.000	1.00
7	Smear 7	09/01/04	9:27:44	Permagrain Mezz	Innaccessable Area	09/01/04	9:27:44	1.000	1.00
8	Smear 8	09/01/04	9:26:24	Permagrain Mezz	Innaccessable Area	09/01/04	9:26:24	1.000	1.00
9	Smear 9	09/01/04	9:25:03	Permagrain Mezz	Innaccessable Area	09/01/04	9:25:03	1.000	1.00
10	Smear 10	09/01/04	9:23:43	Permagrain Mezz	Innaccessable Area	09/01/04	9:23:43	1.000	1.00
11	Smear 11	09/01/04	9:22:23	Permagrain Mezz	Innaccessable Area	09/01/04	9:22:23	1.000	1.00
12	Smear 12	09/01/04	9:21:03	Permagrain Mezz	Innaccessable Area	09/01/04	9:21:03	1.000	1.00
13	Smear 13	09/01/04	9:19:42	Permagrain Mezz	Innaccessable Area	09/01/04	9:19:42	1.000	1.00
14	Smear 14	09/01/04	9:18:21	Permagrain Mezz	Innaccessable Area	09/01/04	9:18:21	1.000	1.00
15	Smear 15	09/01/04	9:17:01	Permagrain Mezz	Innaccessable Area	09/01/04	9:17:01	1.000	1.00
16	Smear 16	09/01/04	9:15:40	Permagrain Mezz	Innaccessable Area	09/01/04	9:15:40	1.000	1.00
17	Smear 17	09/01/04	9:14:20	Permagrain Mezz	Innaccessable Area	09/01/04	9:14:20	1.000	1.00
18	Smear 18	09/01/04	9:12:59	Permagrain Mezz	Innaccessable Area	09/01/04	9:12:59	1.000	1.00
19	Smear 19	09/01/04	9:11:39	Permagrain Mezz	Innaccessable Area	09/01/04	9:11:39	1.000	1.00
20	Smear 20	09/01/04	9:10:19	Permagrain Mezz	Innaccessable Area	09/01/04	9:10:19	1.000	1.00
21	Smear 21	09/01/04	9:08:58	Permagrain Mezz	Innaccessable Area	09/01/04	9:08:58	1.000	1.00
22	Smear 22	09/01/04	9:07:37	Permagrain Mezz	Innaccessable Area	09/01/04	9:07:37	1.000	1.00
23	Smear 23	09/01/04	9:06:17	Permagrain Mezz	Innaccessable Area	09/01/04	9:06:17	1.000	1.00
24	Smear 24	09/01/04	9:04:57	Permagrain Mezz	Innaccessable Area	09/01/04	9:04:57	1.000	1.00
25	Smear 25	09/01/04	9:03:36	Permagrain Mezz	Innaccessable Area	09/01/04	9:03:36	1.000	1.00
26	Smear 26	09/01/04	9:02:16	Permagrain Mezz	Innaccessable Area	09/01/04	9:02:16	1.000	1.00
27	Smear 27	09/01/04	9:00:56	Permagrain Mezz	Innaccessable Area	09/01/04	9:00:56	1.000	1.00

HVAC-1-D  
Inaccess

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 1-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-1-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 27.92 LLD: 11.9 dpm				Bkg: 0.4 cpm %Eff: 44.46 LLD: 10.85 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	09/01/04	9:35:49	0.00	-0.03	-0.12	11.90	4.00	3.60	8.10	10.85
2	Smear 2	09/01/04	9:34:28	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
3	Smear 3	09/01/04	9:33:07	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85
4	Smear 4	09/01/04	9:31:48	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
5	Smear 5	09/01/04	9:30:25	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85
6	Smear 6	09/01/04	9:29:05	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
7	Smear 7	09/01/04	9:27:44	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
8	Smear 8	09/01/04	9:26:24	0.00	-0.03	-0.12	11.90	3.00	2.60	5.85	10.85
9	Smear 9	09/01/04	9:25:03	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
10	Smear 10	09/01/04	9:23:43	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85
11	Smear 11	09/01/04	9:22:23	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
12	Smear 12	09/01/04	9:21:03	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
13	Smear 13	09/01/04	9:19:42	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85
14	Smear 14	09/01/04	9:18:21	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
15	Smear 15	09/01/04	9:17:01	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
16	Smear 16	09/01/04	9:15:40	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85
17	Smear 17	09/01/04	9:14:20	1.00	0.97	3.48	11.90	0.00	-0.40	-0.90	10.85
18	Smear 18	09/01/04	9:12:59	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85
19	Smear 19	09/01/04	9:11:39	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85
20	Smear 20	09/01/04	9:10:19	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
21	Smear 21	09/01/04	9:08:58	0.00	-0.03	-0.12	11.90	2.00	1.60	3.60	10.85
22	Smear 22	09/01/04	9:07:37	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
23	Smear 23	09/01/04	9:06:17	0.00	-0.03	-0.12	11.90	0.00	-0.40	-0.90	10.85
24	Smear 24	09/01/04	9:04:57	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85
25	Smear 25	09/01/04	9:03:38	0.00	-0.03	-0.12	11.90	4.00	3.60	8.10	10.85
26	Smear 26	09/01/04	9:02:18	0.00	-0.03	-0.12	11.90	3.00	2.60	5.85	10.85
27	Smear 27	09/01/04	9:00:58	0.00	-0.03	-0.12	11.90	1.00	0.60	1.35	10.85

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

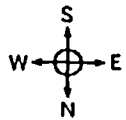
Date: 9-1-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 9-1-04

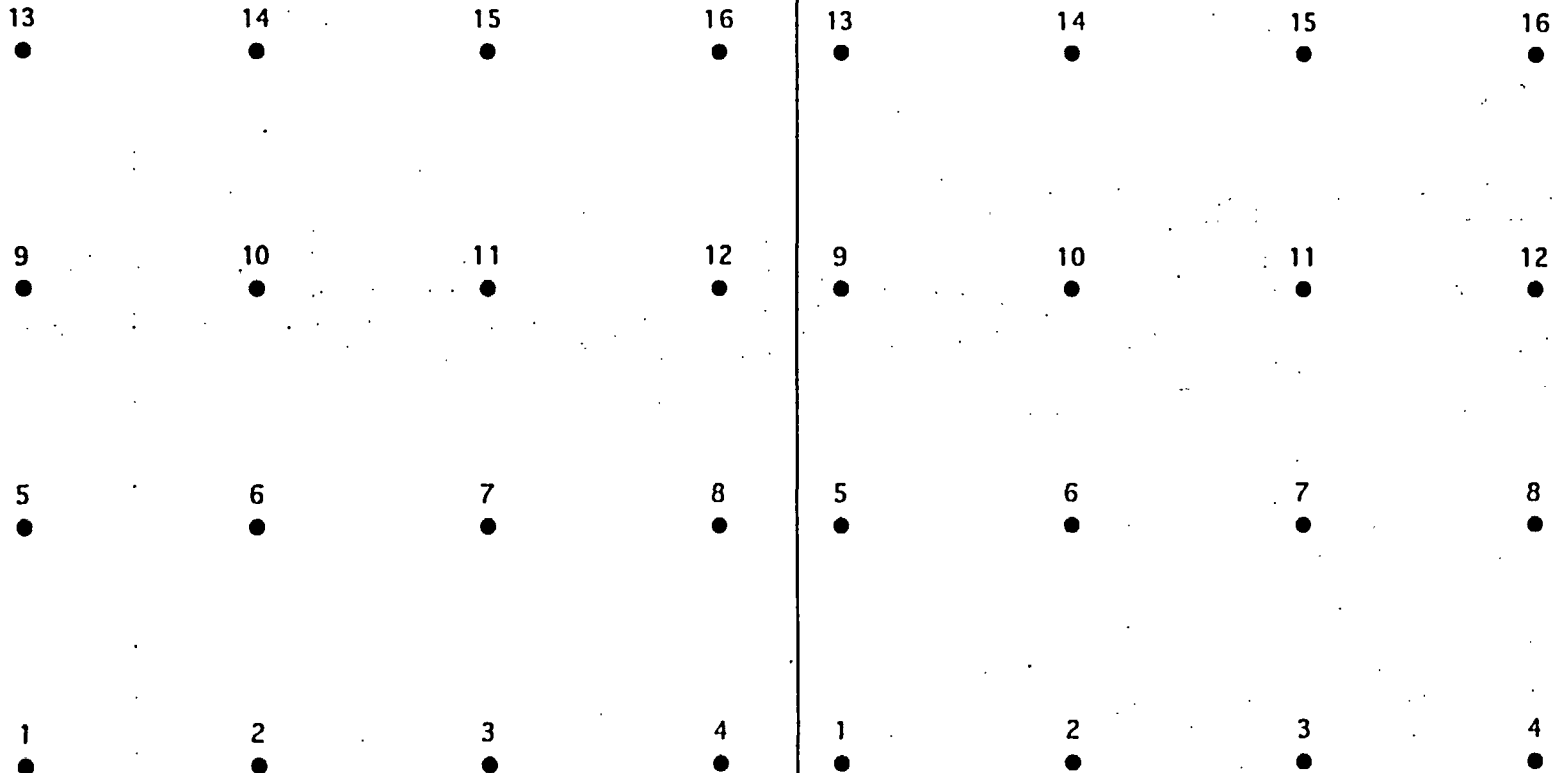
**HVAC-1-E Office Mezzanine**



26' 6"

26' 6"

30'



HVAC-1-E

HVAC-1-F

• SURVEY POINTS

• STARTING LOCATION

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS I  
Office Mezz (HVAC) Ceiling

SCIENTECH

SCIENTECH Inc.  
140 WEST STREET  
NEW MILFORD, CT 06476

PROJECT NO:  
23529-0301

FILE NAME:

SCALE: DATE:  
N.T.S. 07/06/2004

By: CK:

FIGURE:  
HVAC-1-EF

9-28-04

START 0950/9-28-04

STOP 16:30/9-29-04

# HVAC-1-E

Log #
Source
5
11
12
13
14
15
16
17
24
25
26
27
28
29
30
31

	X	Y
	n/a	n/a
1	1.5	1.2
2	9.0	1.2
3	16.5	1.2
4	24.0	1.2
5	1.5	8.7
6	9.0	8.7
7	16.5	8.7
8	24.0	8.7
9	1.5	16.2
10	9.0	16.2
11	16.5	16.2
12	24.0	16.2
13	1.5	23.7
14	9.0	23.7
15	16.5	23.7
16	24.0	23.7

L (ft)= 7.5  
A (ft²)= 795

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
125	150	400
126	150	340
139	120	360
160	150	350
120	170	380
139	150	300
138	160	280
138	170	320
143	100	250
129	100	400
152	160	320
129	150	350
160	120	280
136	120	280
140	150	300
132	150	325

Ludlum Measurements, Inc.  
Model 2360 Log Data

Date: 9/30/2004  
Time: 3:19:27 PM

Header 1: Technician  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 09/30/2004  
Model 2360 Time: 15:19:30  
Sample Number: 0033

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 050000

CntTime - Count Time  
R- Ratemeter  
S- Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	09/28/04	09:50:42	000000	000210	S 001.0	Lab Background
0002	09/28/04	09:56:43	000005	035117	S 001.0	Lab Source
0003	09/28/04	16:02:48	000002	000159	S 001.0	Field Background
0004	09/28/04	16:05:30	000000	001786	S 001.0	Field Source
0005	09/28/04	16:30:56	000002	000125	S 001.0	HVAC-1-E
0006	09/28/04	16:40:01	000003	001683	S 001.0	Field Source
0007	09/29/04	07:23:33	000001	000235	S 001.0	Lab Background
0008	09/29/04	07:29:24	000002	034866	S 001.0	Lab Source
0009	09/29/04	11:21:40	000000	000160	S 001.0	Field Background
0010	09/29/04	11:25:04	000004	001635	S 001.0	Field Source
0011	09/29/04	13:00:17	000000	000126	S 001.0	HVAC-1-E
0012	09/29/04	13:25:50	000002	000139	S 001.0	HVAC-1-E
0013	09/29/04	14:01:09	000000	000160	S 001.0	HVAC-1-E
0014	09/29/04	15:29:25	000000	000120	S 001.0	HVAC-1-E
0015	09/29/04	15:55:17	000000	000139	S 001.0	HVAC-1-E
0016	09/29/04	16:09:37	000000	000138	S 001.0	HVAC-1-E
0017	09/29/04	16:23:05	000001	000138	S 001.0	HVAC-1-E
0018	09/29/04	16:30:10	000002	001489	S 001.0	Field Source
0019	09/30/04	07:13:27	000003	000222	S 001.0	Lab Background
0020	09/30/04	07:19:47	000003	033605	S 001.0	VOID
0021	09/30/04	07:24:59	000003	035065	S 001.0	Lab Source
0022	09/30/04	07:58:26	000000	000174	S 001.0	Field Background
0023	09/30/04	08:00:06	000003	001724	S 001.0	Field Source
0024	09/30/04	08:28:05	000000	000143	S 001.0	HVAC-1-E
0025	09/30/04	08:51:29	000000	000129	S 001.0	HVAC-1-E
0026	09/30/04	13:02:15	000000	000152	S 001.0	HVAC-1-E
0027	09/30/04	13:25:32	000002	000129	S 001.0	HVAC-1-E
0028	09/30/04	13:41:31	000000	000160	S 001.0	HVAC-1-E
0029	09/30/04	13:58:43	000001	000136	S 001.0	HVAC-1-E
0030	09/30/04	14:12:29	000000	000140	S 001.0	HVAC-1-E
0031	09/30/04	14:23:47	000001	000132	S 001.0	HVAC-1-E
0032	09/30/04	14:38:15	000002	001618	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	09/30/04	16:52:33	HVAC-1-E	Final Status Survey	09/30/04	16:52:33	1.000	1.00
2	Smear 2	09/30/04	16:51:13	HVAC-1-E	Final Status Survey	09/30/04	16:51:13	1.000	1.00
3	Smear 3	09/30/04	16:49:52	HVAC-1-E	Final Status Survey	09/30/04	16:49:52	1.000	1.00
4	Smear 4	09/30/04	16:48:32	HVAC-1-E	Final Status Survey	09/30/04	16:48:32	1.000	1.00
5	Smear 5	09/30/04	16:47:11	HVAC-1-E	Final Status Survey	09/30/04	16:47:11	1.000	1.00
6	Smear 6	09/30/04	16:45:51	HVAC-1-E	Final Status Survey	09/30/04	16:45:51	1.000	1.00
7	Smear 7	09/30/04	16:44:30	HVAC-1-E	Final Status Survey	09/30/04	16:44:30	1.000	1.00
8	Smear 8	09/30/04	16:43:10	HVAC-1-E	Final Status Survey	09/30/04	16:43:10	1.000	1.00
9	Smear 9	09/30/04	16:41:49	HVAC-1-E	Final Status Survey	09/30/04	16:41:49	1.000	1.00
10	Smear 10	09/30/04	16:40:28	HVAC-1-E	Final Status Survey	09/30/04	16:40:28	1.000	1.00
11	Smear 11	09/30/04	16:39:07	HVAC-1-E	Final Status Survey	09/30/04	16:39:07	1.000	1.00
12	Smear 12	09/30/04	16:37:47	HVAC-1-E	Final Status Survey	09/30/04	16:37:47	1.000	1.00
13	Smear 13	09/30/04	16:36:26	HVAC-1-E	Final Status Survey	09/30/04	16:36:26	1.000	1.00
14	Smear 14	09/30/04	16:35:06	HVAC-1-E	Final Status Survey	09/30/04	16:35:06	1.000	1.00
15	Smear 15	09/30/04	16:33:45	HVAC-1-E	Final Status Survey	09/30/04	16:33:45	1.000	1.00
16	Smear 16	09/30/04	16:32:25	HVAC-1-E	Final Status Survey	09/30/04	16:32:25	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta				Smears	
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %EF: 27.22 LLD: 9.96 dpm				Bkg: 0.8 cpm %EF: 44.43 LLD: 12.83 dpm				Sample Parameter Entry	
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA	Carrier No.	Sample ID
1	Smear 1	09/30/04	16:52:33	0.00	0.00	0.00	9.96	6.00	5.20	11.70	12.83	1	Smear 1
2	Smear 2	09/30/04	16:51:13	0.00	0.00	0.00	9.96	2.00	1.20	2.70	12.83	2	Smear 2
3	Smear 3	09/30/04	16:49:52	0.00	0.00	0.00	9.96	1.00	0.20	0.45	12.83	3	Smear 3
4	Smear 4	09/30/04	16:48:32	0.00	0.00	0.00	9.96	0.00	-0.80	-1.80	12.83	4	Smear 4
5	Smear 5	09/30/04	16:47:11	0.00	0.00	0.00	9.96	4.00	3.20	7.20	12.83	5	Smear 5
6	Smear 6	09/30/04	16:45:51	0.00	0.00	0.00	9.96	1.00	0.20	0.45	12.83	6	Smear 6
7	Smear 7	09/30/04	16:44:30	0.00	0.00	0.00	9.96	4.00	3.20	7.20	12.83	7	Smear 7
8	Smear 8	09/30/04	16:43:10	0.00	0.00	0.00	9.96	1.00	0.20	0.45	12.83	8	Smear 8
9	Smear 9	09/30/04	16:41:49	0.00	0.00	0.00	9.96	3.00	2.20	4.95	12.83	9	Smear 9
10	Smear 10	09/30/04	16:40:28	0.00	0.00	0.00	9.96	1.00	0.20	0.45	12.83	10	Smear 10
11	Smear 11	09/30/04	16:39:07	0.00	0.00	0.00	9.96	0.00	-0.80	-1.80	12.83	11	Smear 11
12	Smear 12	09/30/04	16:37:47	0.00	0.00	0.00	9.96	0.00	-0.80	-1.80	12.83	12	Smear 12
13	Smear 13	09/30/04	16:36:26	0.00	0.00	0.00	9.96	6.00	5.20	11.70	12.83	13	Smear 13
14	Smear 14	09/30/04	16:35:06	0.00	0.00	0.00	9.96	1.00	0.20	0.45	12.83	14	Smear 14
15	Smear 15	09/30/04	16:33:45	0.00	0.00	0.00	9.96	2.00	1.20	2.70	12.83	15	Smear 15
16	Smear 16	09/30/04	16:32:25	1.00	1.00	3.67	9.96	2.00	1.20	2.70	12.83	16	Smear 16

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 9-30-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

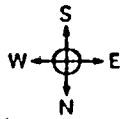
Date:



## FSS QC REVIEW

Survey Area: HVAC		
Survey Unit:	1 E	
Classification:	1	
Requirements:		
Number of Soil Samples:		
Number of Directs:	16	
Number of Smears:	16	
% Scan:	100%	
Survey Data:	Yes	No
Correct header info.	✓	
Daily instrument and background check recorded.	✓	
Any points not collected noted on the survey map.	N/A	
Surface activity measurements (total and removable) equal requirements.	✓	
Date and start time indicated on the survey map.	✓	
Check source logged at start of this survey unit.	✓	
Fixed-point measurements logged in the same numerical order as provided on the survey map.	✓	
All erroneous (void) measurements identified on the survey map.	✓	
Check source logged to indicate the completion of the survey unit.	✓	
Stop time marked on the survey map.	✓	
Smears collected at each sample location.	✓	
Record of smear analysis in package?	✓	
Logged data file downloaded to computer and printed; attached to map.	✓	
Scanning survey data and map attached	✓	
Electronic avg and max measurements (gross cpm) recorded for each scanning section.	✓	
Results of soil samples included. Match requirements.		
COMMENTS		
Reviewed by:		
Date:		

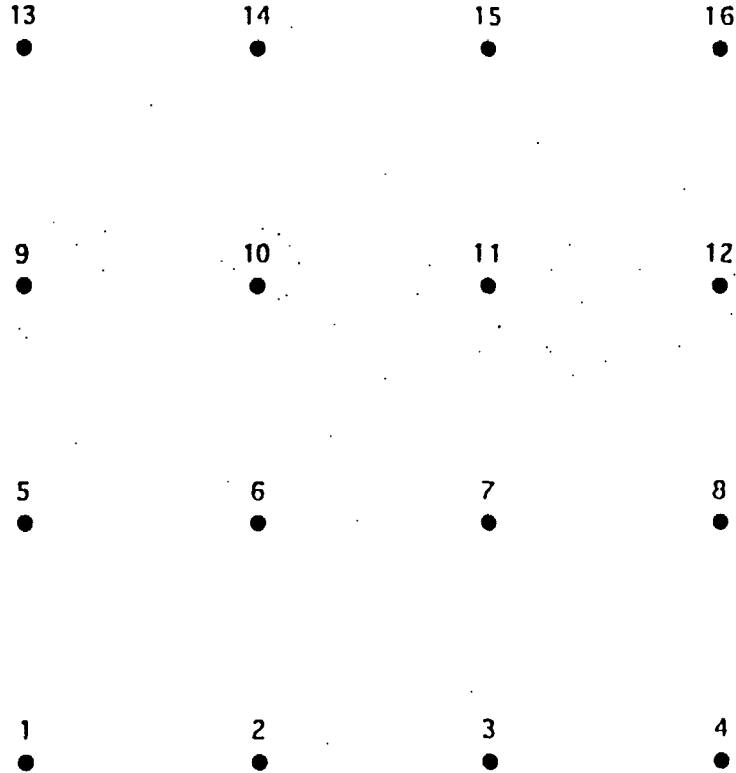
**HVAC-1-F    Office Mezzanine**



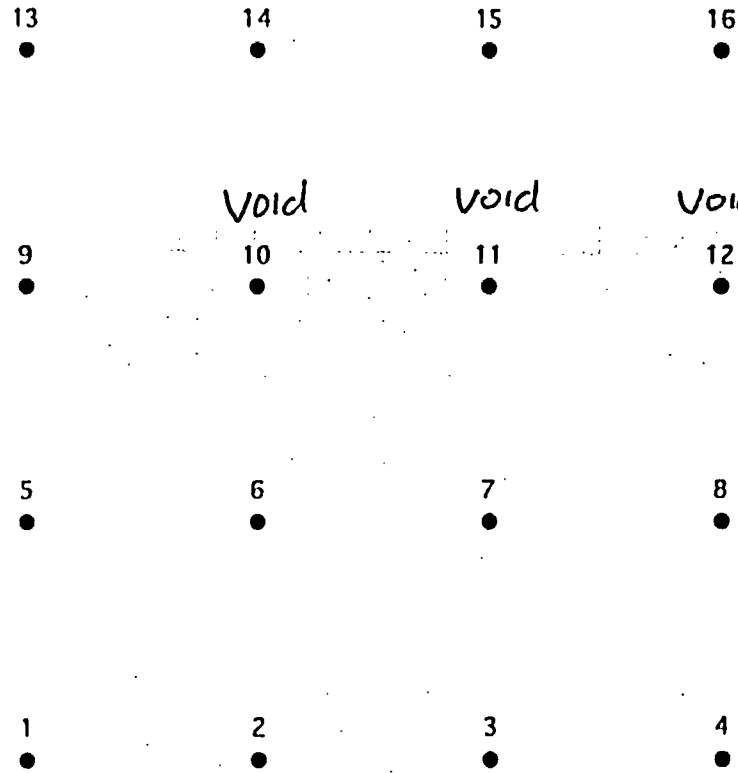
26' 6"

26' 6"

30'



HVAC-1-E



HVAC-1-F

• SURVEY POINTS  
 (Symbol) STARTING LOCATION

10-1-04  
 START 0730  
 STOP 1630

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KARTHANS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Office Mezz (HVAC) Ceiling

SCIENTECH

SCIENTECH, Inc.  
 143 WEST STREET  
 NEW MILFORD, CT 06456

PROJECT NO:  
23529 0501

FILE NAME:

SCALE: N.T.S. DATE: 07/06/2004

By: CR:

FIGURE:  
HVAC-1-EF

# HVAC-1-F

Log #
Source
7
8
9
10
11
12
13
14
15
16
RTM 10-21-04

	X	Y
	n/a	n/a
1	1.5	1.2
2	9.0	1.2
3	16.5	1.2
4	24.0	1.2
5	1.5	8.7
6	9.0	8.7
7	16.5	8.7
8	24.0	8.7
9	1.5	16.2
10	9.0	16.2
11	16.5	16.2
12	24.0	16.2
13	1.5	23.7
14	9.0	23.7
15	16.5	23.7
16	24.0	23.7

L (ft)= 7.5

A (ft²)= 795

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
150	180	350
153	120	380
155	100	380
125	180	350
110	100	300
114	120	400
143	150	425
110	180	400
146	160	380
171	120	320
171	120	320

14

Smears		Count Mins: 1		Alpha				Beta				Smears	
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 27.06 LLD: 10.02 dpm				Bkg: 0.93 cpm %Eff: 44.41 LLD: 13.38 dpm				Sample Parameter Entry	
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA	Carrier No.	Sample ID
1	Smear 1	10/02/04	9:10:46	0.00	0.00	0.00	10.02	0.00	-0.93	-2.10	13.38	1	Smear 1
2	Smear 2	10/02/04	9:09:25	0.00	0.00	0.00	10.02	0.00	-0.93	-2.10	13.38	2	Smear 2
3	Smear 3	10/02/04	9:08:05	0.00	0.00	0.00	10.02	1.00	0.07	0.15	13.38	3	Smear 3
4	Smear 4	10/02/04	9:06:45	0.00	0.00	0.00	10.02	9.00	8.07	18.16	13.38	4	Smear 4
5	Smear 5	10/02/04	9:05:25	0.00	0.00	0.00	10.02	18.00	17.07	38.43	13.38	5	Smear 5
6	Smear 6	10/02/04	9:04:04	0.00	0.00	0.00	10.02	9.00	8.07	18.16	13.38	6	Smear 6
7	Smear 7	10/02/04	9:02:44	0.00	0.00	0.00	10.02	12.00	11.07	24.92	13.38	7	Smear 7
8	Smear 8	10/02/04	9:01:23	0.00	0.00	0.00	10.02	10.00	9.07	20.41	13.38	8	Smear 8
9	Smear 9	10/02/04	9:00:03	0.00	0.00	0.00	10.02	16.00	15.07	33.92	13.38	9	Smear 9
10	Smear 10	10/02/04	8:58:42	2.00	2.00	7.39	10.02	11.00	10.07	22.67	13.38	10	Smear 10

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-2-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**SA-1-A      Service Area**





SA-1-A

Log #	Source
3	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	

19
20
21

	X	Y
	n/a	n/a
1	4	2
2	14	2
3	24	2
4	34	2
5	44	2
6	54	2
7	74	2
8	74	12
9	74	22
10	64	22
11	54	22
12	4	32
13	14	32
14	4	42
15	14	42
16	4	52
17	14	52

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
196	100	200
221	160	240
210	220	300
261	260	340
247	240	300
313	300	360
224	200	280
215	200	250
339	280	360
243	220	280
290	300	360
348	290	360
331	300	340
299	260	320
322	300	340
224	200	280
248	220	340

L (ft)= 10  
A (ft)= 1150

#3 Field Source ~~17213~~ 17213

#4 Bg 191

#22 END 12608

M# 2360

S# 202476

# Ludlum Measurements, Inc.

## Model 2360 Log Data

Ja' 2/19/2004  
in. 58:32 AM

Header 1: Leroy Cuneo  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: SA-1-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/19/2004  
Model 2360 Time: 09:57:35  
Sample Number: 0023

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Cr - Count Time  
R - Ratemeter  
S - Scaler

### Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/19/04	09:15:44	000000	000159	S 001.0	Lab Background
0002	12/19/04	09:17:28	000001	031533	S 001.0	Lab Source
0003	12/19/04	09:20:35	000001	017293	S 001.0	Field Source
0004	12/19/04	09:22:34	000000	000191	S 001.0	Field Background
0005	12/19/04	09:26:26	000001	000196	S 001.0	SA-1-A
0006	12/19/04	09:27:52	000001	000221	S 001.0	SA-1-A
0007	12/19/04	09:29:13	000002	000210	S 001.0	SA-1-A
0008	12/19/04	09:30:34	000000	000261	S 001.0	SA-1-A
0009	12/19/04	09:31:57	000001	000247	S 001.0	SA-1-A
0010	12/19/04	09:33:27	000000	000313	S 001.0	SA-1-A
0011	12/19/04	09:34:53	000000	000224	S 001.0	SA-1-A
0012	12/19/04	09:36:10	000002	000215	S 001.0	SA-1-A
0013	12/19/04	09:37:55	000002	000339	S 001.0	SA-1-A
0014	12/19/04	09:40:36	000000	000243	S 001.0	SA-1-A
0015	12/19/04	09:43:26	000000	000290	S 001.0	SA-1-A
0016	12/19/04	09:44:57	000004	000348	S 001.0	SA-1-A
0017	12/19/04	09:46:45	000000	000331	S 001.0	SA-1-A
0018	12/19/04	09:48:17	000001	000299	S 001.0	SA-1-A
0019	12/19/04	09:49:40	000000	000322	S 001.0	SA-1-A
0020	12/19/04	09:51:06	000001	000224	S 001.0	SA-1-A
0021	12/19/04	09:52:30	000001	000248	S 001.0	SA-1-A
0022	12/19/04	09:54:56	000000	012608	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/20/04	8:31:39	SA-1-A	Final Status Survey	12/20/04	8:31:39	1.000	1.00
2	Smear 2	12/20/04	8:30:18	SA-1-A	Final Status Survey	12/20/04	8:30:18	1.000	1.00
3	Smear 3	12/20/04	8:28:57	SA-1-A	Final Status Survey	12/20/04	8:28:57	1.000	1.00
4	Smear 4	12/20/04	8:27:37	SA-1-A	Final Status Survey	12/20/04	8:27:37	1.000	1.00
5	Smear 5	12/20/04	8:26:17	SA-1-A	Final Status Survey	12/20/04	8:26:17	1.000	1.00
6	Smear 6	12/20/04	8:24:56	SA-1-A	Final Status Survey	12/20/04	8:24:56	1.000	1.00
7	Smear 7	12/20/04	8:23:36	SA-1-A	Final Status Survey	12/20/04	8:23:36	1.000	1.00
8	Smear 8	12/20/04	8:22:15	SA-1-A	Final Status Survey	12/20/04	8:22:15	1.000	1.00
9	Smear 9	12/20/04	8:20:54	SA-1-A	Final Status Survey	12/20/04	8:20:54	1.000	1.00
10	Smear 10	12/20/04	8:19:34	SA-1-A	Final Status Survey	12/20/04	8:19:34	1.000	1.00
11	Smear 11	12/20/04	8:18:13	SA-1-A	Final Status Survey	12/20/04	8:18:13	1.000	1.00
12	Smear 12	12/20/04	8:16:53	SA-1-A	Final Status Survey	12/20/04	8:16:53	1.000	1.00
13	Smear 13	12/20/04	8:15:33	SA-1-A	Final Status Survey	12/20/04	8:15:33	1.000	1.00
14	Smear 14	12/20/04	8:14:12	SA-1-A	Final Status Survey	12/20/04	8:14:12	1.000	1.00
15	Smear 15	12/20/04	8:12:52	SA-1-A	Final Status Survey	12/20/04	8:12:52	1.000	1.00
16	Smear 16	12/20/04	8:11:31	SA-1-A	Final Status Survey	12/20/04	8:11:31	1.000	1.00
17	Smear 17	12/20/04	8:10:11	SA-1-A	Final Status Survey	12/20/04	8:10:11	1.000	1.00

Technician (print): Rob Ellison

Technician (sign):

*Rob Ellison*

Date:

12-20-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Surveyor: Chris Higgins  
Print

Reviewer: Joe Trowbridge  
Print

\_\_\_\_\_  
Sign

\_\_\_\_\_  
Sign

12/22/2004  
Date

12/22/2004  
Date

## Survey Meters

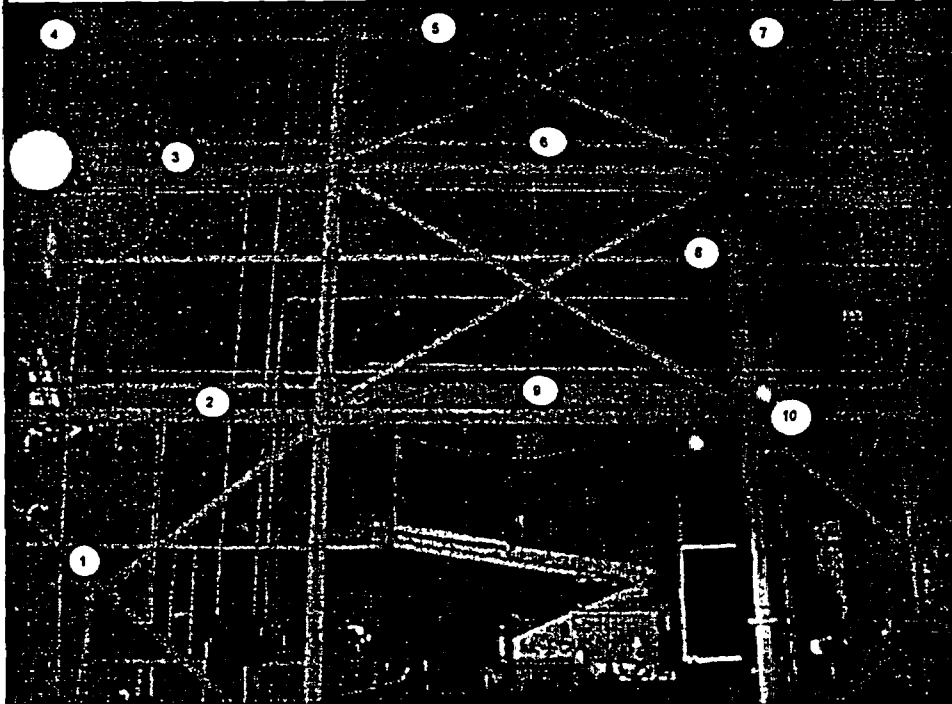
Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 25%  
Type  $\alpha, \beta, \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG .03 cpm  
MDA 14 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 45%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.7 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # 2221  
Meter / Probe Serial # 169226/182611  
Cal Due 12/6/2005  
Efficiency 22%  
Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
Sample Time N/A  
Background Time N/A  
BKG 60 cpm  
MDA N/A  
Guideline N/A  
Action Level N/A

LOCATION: Service Area West Wall I-Beams

PURPOSE: Free Release Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA
9	<MDA	<MDA
10	<MDA	<MDA

Frisked 100% with no detectable activity above background.

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

(eff.  $\times \frac{\text{probe area}}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 25.8 LLD: 10.6 dpm				Bkg: 0.7 cpm %Eff: 44.81 LLD: 12.29 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/20/04	8:31:39	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
2	Smear 2	12/20/04	8:30:18	0.00	0.00	0.00	10.50	6.00	5.30	11.83	12.29
3	Smear 3	12/20/04	8:28:57	0.00	0.00	0.00	10.50	2.00	1.30	2.90	12.29
4	Smear 4	12/20/04	8:27:37	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
5	Smear 5	12/20/04	8:26:17	0.00	0.00	0.00	10.50	1.00	0.30	0.67	12.29
6	Smear 6	12/20/04	8:24:56	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
7	Smear 7	12/20/04	8:23:36	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
8	Smear 8	12/20/04	8:22:15	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
9	Smear 9	12/20/04	8:20:54	0.00	0.00	0.00	10.50	1.00	0.30	0.67	12.29
10	Smear 10	12/20/04	8:19:34	0.00	0.00	0.00	10.50	3.00	2.30	5.13	12.29
11	Smear 11	12/20/04	8:18:13	0.00	0.00	0.00	10.50	2.00	1.30	2.90	12.29
12	Smear 12	12/20/04	8:16:53	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
13	Smear 13	12/20/04	8:15:33	0.00	0.00	0.00	10.50	1.00	0.30	0.67	12.29
14	Smear 14	12/20/04	8:14:12	0.00	0.00	0.00	10.50	2.00	1.30	2.90	12.29
15	Smear 15	12/20/04	8:12:52	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
16	Smear 16	12/20/04	8:11:31	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
17	Smear 17	12/20/04	8:10:11	1.00	1.00	3.88	10.50	3.00	2.30	5.13	12.29

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-20-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/22/04	17:34:37	Service Area West Wall	Final Status Survey	12/22/04	17:34:37	1.000	1.00
2	Smear 2	12/22/04	17:33:17	Service Area West Wall	Final Status Survey	12/22/04	17:33:17	1.000	1.00
3	Smear 3	12/22/04	17:31:58	Service Area West Wall	Final Status Survey	12/22/04	17:31:58	1.000	1.00
4	Smear 4	12/22/04	17:30:38	Service Area West Wall	Final Status Survey	12/22/04	17:30:38	1.000	1.00
5	Smear 5	12/22/04	17:29:18	Service Area West Wall	Final Status Survey	12/22/04	17:29:18	1.000	1.00
6	Smear 6	12/22/04	17:27:58	Service Area West Wall	Final Status Survey	12/22/04	17:27:58	1.000	1.00
7	Smear 7	12/22/04	17:26:38	Service Area West Wall	Final Status Survey	12/22/04	17:26:38	1.000	1.00
8	Smear 8	12/22/04	17:25:19	Service Area West Wall	Final Status Survey	12/22/04	17:25:19	1.000	1.00
9	Smear 9	12/22/04	17:23:59	Service Area West Wall	Final Status Survey	12/22/04	17:23:59	1.000	1.00
10	Smear 10	12/22/04	17:22:39	Service Area West Wall	Final Status Survey	12/22/04	17:22:39	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.76 LLD: 13.41 dpm				Bkg: 0.63 cpm %Eff: 45.16 LLD: 11.9 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/22/04	17:34:37	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
2	Smear 2	12/22/04	17:33:17	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
3	Smear 3	12/22/04	17:31:58	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
4	Smear 4	12/22/04	17:30:38	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
5	Smear 5	12/22/04	17:29:18	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
6	Smear 6	12/22/04	17:27:58	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
7	Smear 7	12/22/04	17:26:38	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
8	Smear 8	12/22/04	17:25:19	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
9	Smear 9	12/22/04	17:23:59	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
10	Smear 10	12/22/04	17:22:39	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: ( 22-04

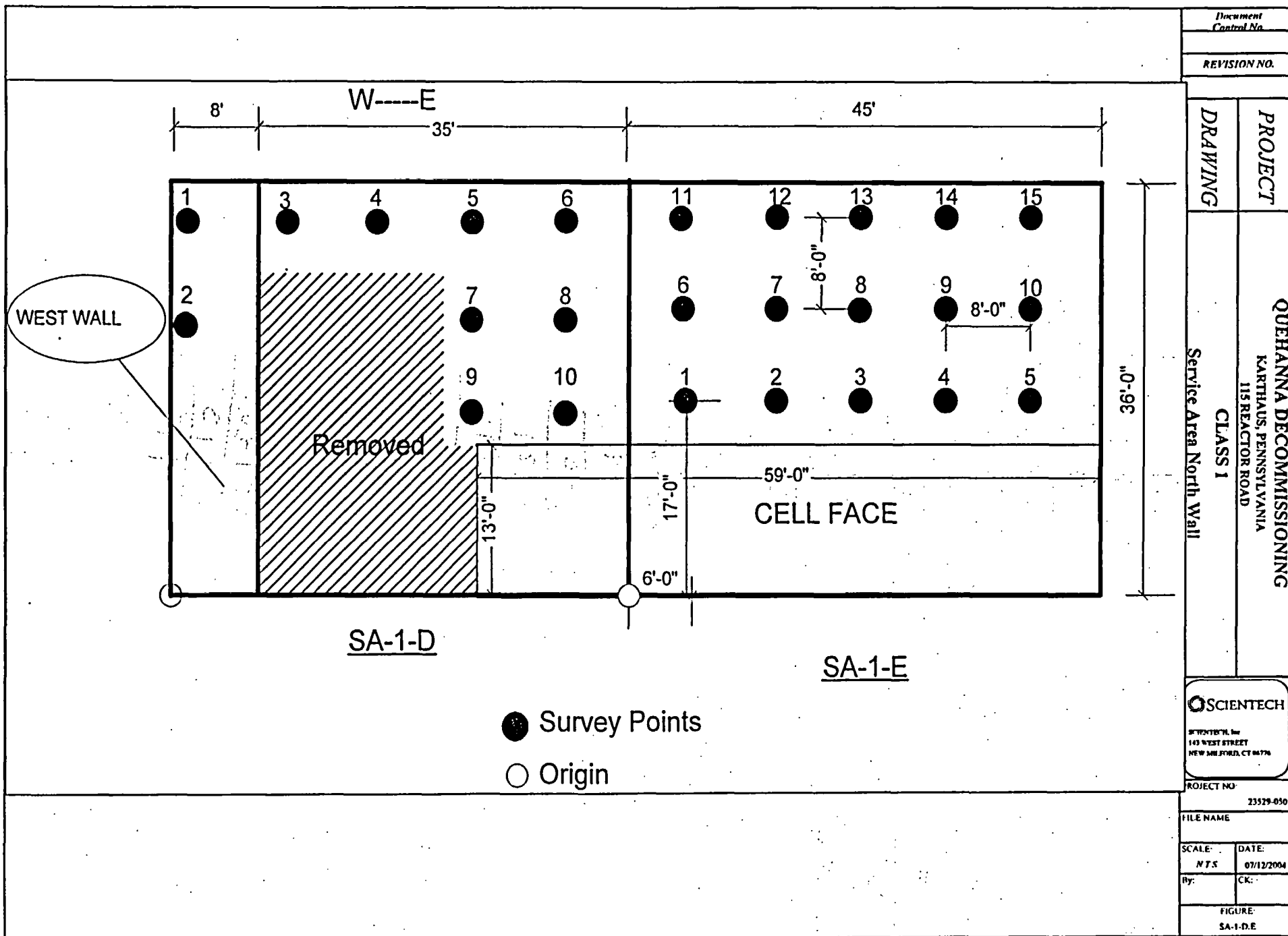
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date: (

**SA-1-D      Service Area**





SA-1-D

Log #	Source
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	

	X	Y
	n/a	n/a
1	2.5	2.9
2	11.2	2.9
3	19.9	2.9
4	2.5	11.6
5	11.2	11.6
6	19.9	11.6
7	2.5	20.3
8	11.2	20.3
9	19.9	20.3
10	28.6	20.3
11	2.5	29.0
12	11.2	29.0
13	19.9	29.0
14	28.6	29.0

L (ft) = 8.7  
A (ft²) = 1064

	Fixed Points	Ave. (Scan)	Max. (Scan)
		n/a	n/a
1	174	100	160
2	142	100	180
3	117	120	160
4	100	80	140
5	284	200	300
6	107	120	200
7	140	80	160
8	133	120	180
9	145	140	180
10	127	80	140

Points

	X	Y
1	3	29
2	3	20
3	9	29
4	18	29
5	26	29
6	35	29
7	26	20
8	35	20
9	26	13
10	35	13

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/22/2004  
Time: 4:11:38 PM

Header 1: Joe Trowbridge  
Header 2: Serial#202442  
Header 3: DetSer#PR221482  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: SA-1-D  
Calibration Due Date: 12/13/2005  
Model 2360 Date: 12/22/2004  
Model 2360 Time: 16:09:52  
Sample Number: 0015

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Count - Count Time  
F. Ratemeter  
S. Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/22/04	07:26:45	000000	000168	S 001.0	Lab Background
0002	12/22/04	07:28:50	000000	032034	S 001.0	Lab Source
0003	12/22/04	15:25:22	000002	000150	S 001.0	Field Background
0004	12/22/04	15:26:51	000003	001679	S 001.0	Field Source
0005	12/22/04	15:32:34	000001	000143	S 001.0	SA-1-D
0006	12/22/04	15:35:59	000000	000142	S 001.0	SA-1-D
0007	12/22/04	15:39:08	000001	000116	S 001.0	SA-1-D
0008	12/22/04	15:42:52	000000	000100	S 001.0	SA-1-D
0009	12/22/04	15:45:34	000000	000284	S 001.0	SA-1-D
0010	12/22/04	15:48:51	000001	000106	S 001.0	SA-1-D
0011	12/22/04	15:52:42	000001	000139	S 001.0	SA-1-D
0012	12/22/04	15:56:09	000001	000132	S 001.0	SA-1-D
0013	12/22/04	15:59:20	000001	000144	S 001.0	SA-1-D
0014	12/22/04	16:02:41	000002	000125	S 001.0	SA-1-D

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/22/04	18:25:08	SA-1-D	Final Status Survey	12/22/04	18:25:08	1.000	1.00
2	Smear 2	12/22/04	18:23:48	SA-1-D	Final Status Survey	12/22/04	18:23:48	1.000	1.00
3	Smear 3	12/22/04	18:22:28	SA-1-D	Final Status Survey	12/22/04	18:22:28	1.000	1.00
4	Smear 4	12/22/04	18:21:07	SA-1-D	Final Status Survey	12/22/04	18:21:07	1.000	1.00
5	Smear 5	12/22/04	18:19:47	SA-1-D	Final Status Survey	12/22/04	18:19:47	1.000	1.00
6	Smear 6	12/22/04	18:18:27	SA-1-D	Final Status Survey	12/22/04	18:18:27	1.000	1.00
7	Smear 7	12/22/04	18:17:07	SA-1-D	Final Status Survey	12/22/04	18:17:07	1.000	1.00
8	Smear 8	12/22/04	18:15:47	SA-1-D	Final Status Survey	12/22/04	18:15:47	1.000	1.00
9	Smear 9	12/22/04	18:14:28	SA-1-D	Final Status Survey	12/22/04	18:14:28	1.000	1.00
10	Smear 10	12/22/04	18:13:08	SA-1-D	Final Status Survey	12/22/04	18:13:08	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %EF: 24.7% LLD: 13.41 dpm				Bkg: 0.63 cpm %EF: 46.1% LLD: 11.9 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1 Smear 1		12/22/04	16:25:08	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
2 Smear 2		12/22/04	16:23:48	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
3 Smear 3		12/22/04	16:22:28	0.00	-0.03	-0.13	13.41	7.00	6.37	14.10	11.90
4 Smear 4		12/22/04	16:21:07	0.00	-0.03	-0.13	13.41	29.00	28.37	62.83	11.90
5 Smear 5		12/22/04	16:19:47	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
6 Smear 6		12/22/04	16:18:27	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
7 Smear 7		12/22/04	16:17:07	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
8 Smear 8		12/22/04	16:15:47	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
9 Smear 9		12/22/04	16:14:28	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
10 Smear 10		12/22/04	16:13:08	0.00	-0.03	-0.13	13.41	5.00	4.37	9.67	11.90

Technician (print): Rob Ellison

Technician (sign):

*Rob Ellison*

Date: 12-22-04

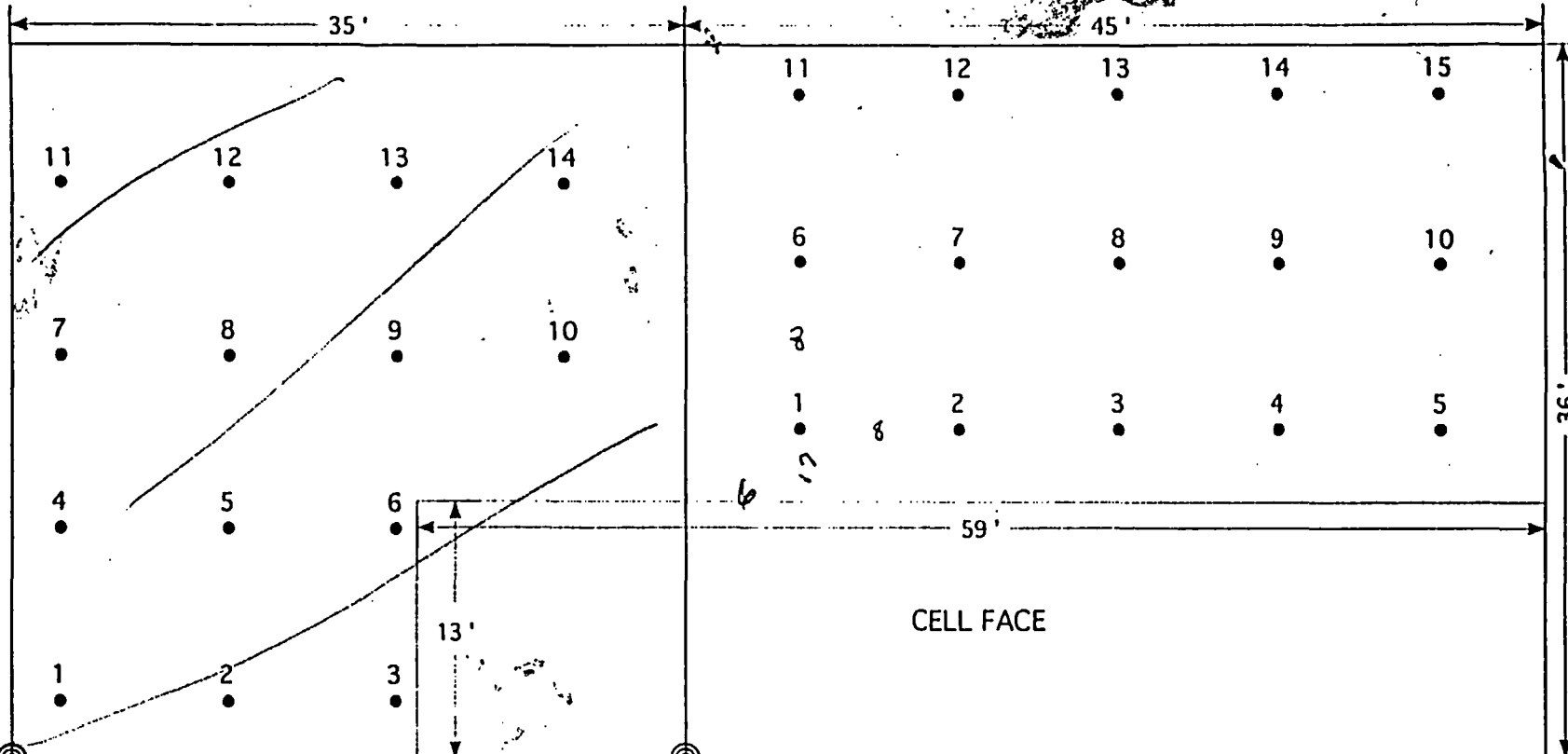
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



• SURVEY POINTS  
◎ STARTING LOCATION



Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD

CLASS 1

Service Area North Wall

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06456

PROJECT NO.

23529-0501

FILE NAME

SCALE

N.T.S.

BY

DATE

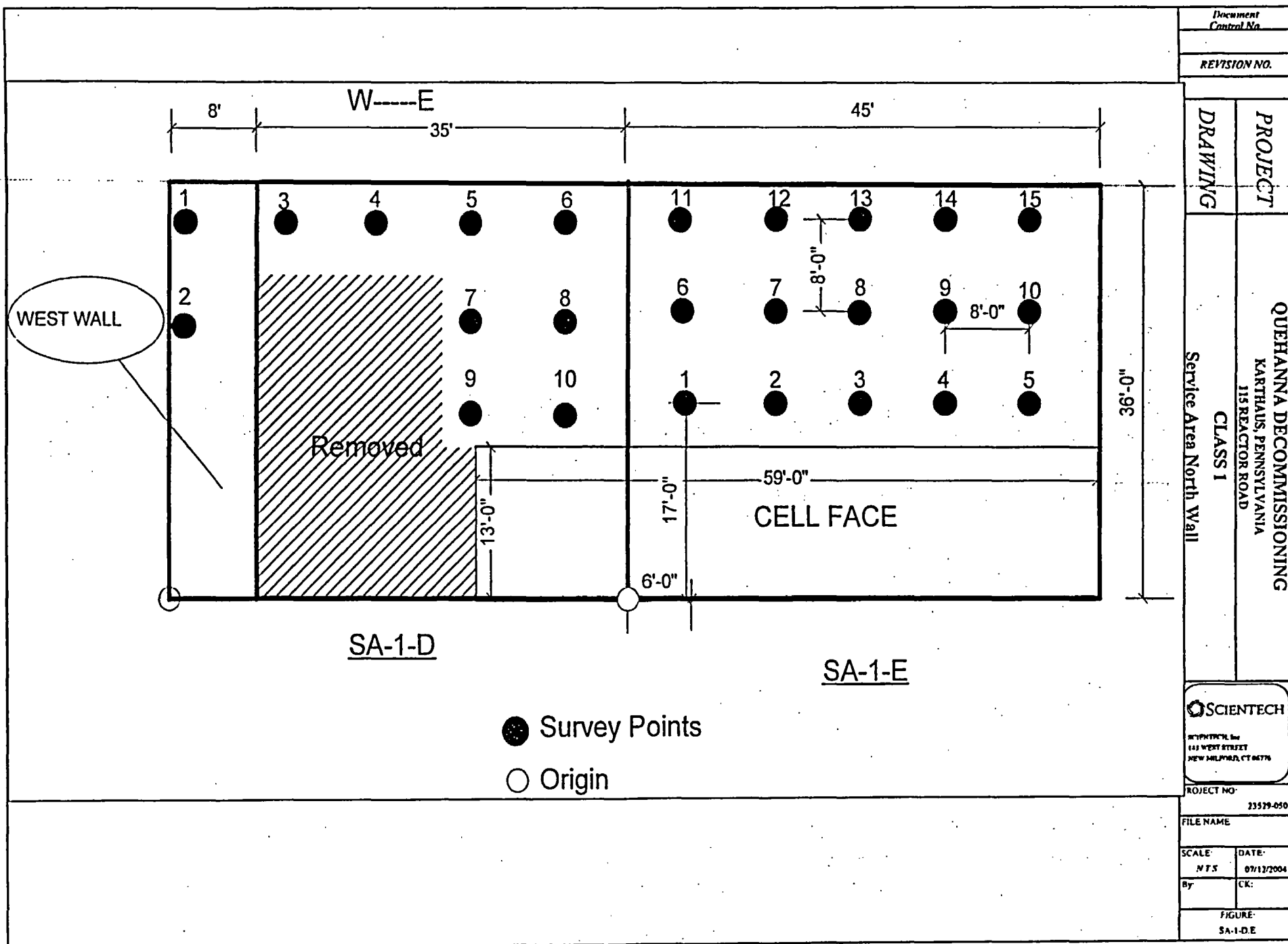
07/12

CK

FIGURE

1-D-E

**SA-1-E      Service Area**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Service Area North Wall	
SCIENTECH 870 PINEAPPLE BLVD 141 WEST STREET NEW HAVEN, CT 06510	
PROJECT NO. 23529-0501	
FILE NAME	
SCALE: N.T.S.	DATE: 07/12/2004
By	CK:
FIGURE: SA-1-D-E	



## SA-1-E

3

Log # BKG	Source
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19

20 1480

M#2360

SA 202475

12-22-04

	X	Y
	n/a	n/a
1	6.0	16.7
2	14.4	16.7
3	22.8	16.7
4	31.2	16.7
5	39.6	16.7
6	6.0	25.1
7	14.4	25.1
8	22.8	25.1
9	31.2	25.1
10	39.6	25.1
11	6.0	33.5
12	14.4	33.5
13	22.8	33.5
14	31.2	33.5
15	39.6	33.5

L (ft)= 8.4

A (ft²)= 990

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
131	120	140
156	130	160
140	125	140
128	110	130
142	130	160
154	140	168
149	140	168
125	120	130
112	110	130
180	160	200
130	120	150
290	260	320
122	100	130
155	140	170
126	120	140

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 11/22/2004  
Time: 11:07:05 AM

Header 1: John Mojica  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: SA-1-E  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/22/2004  
Model 2360 Time: 11:08:01  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Run Date	Time	Alpha	Beta	UsrTime	Location
				CntTime	

0001	11/22/04	07:14:03	000000	000196	S 001.0 Lab Background
0002	11/22/04	07:16:09	000000	032160	S 001.0 Lab Source
0003	11/22/04	10:36:31	000000	000169	S 001.0 Field Background
0004	11/22/04	10:38:38	000000	001709	S 001.0 Field Source
0005	11/22/04	10:40:26	000000	000131	S 001.0 SA-1-E
0006	11/22/04	10:41:41	000000	000156	S 001.0 SA-1-E
0007	11/22/04	10:42:55	000001	000140	S 001.0 SA-1-E
0008	11/22/04	10:44:24	000002	000128	S 001.0 SA-1-E
0009	11/22/04	10:46:16	000000	000142	S 001.0 SA-1-E
0010	11/22/04	10:47:27	000000	000154	S 001.0 SA-1-E
0011	11/22/04	10:48:40	000001	000149	S 001.0 SA-1-E
0012	11/22/04	10:50:38	000001	000125	S 001.0 SA-1-E
0013	11/22/04	10:51:50	000000	000112	S 001.0 SA-1-E
0014	11/22/04	10:54:41	000002	000180	S 001.0 SA-1-E
0015	11/22/04	10:55:53	000000	000130	S 001.0 SA-1-E
0016	11/22/04	10:58:12	000000	000290	S 001.0 SA-1-E
0017	11/22/04	10:59:27	000001	000122	S 001.0 SA-1-E
0018	11/22/04	11:01:05	000001	000155	S 001.0 SA-1-E
0019	11/22/04	11:02:22	000000	000126	S 001.0 SA-1-E
0020	11/22/04	11:05:55	000000	001480	S 001.0 Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
21	Smear 1	12/22/04	11:35:51	SA-1-E	Final Status Survey	12/22/04	11:35:51	1.000	1.00
22	Smear 2	12/22/04	11:34:32	SA-1-E	Final Status Survey	12/22/04	11:34:32	1.000	1.00
23	Smear 3	12/22/04	11:33:12	SA-1-E	Final Status Survey	12/22/04	11:33:12	1.000	1.00
24	Smear 4	12/22/04	11:31:52	SA-1-E	Final Status Survey	12/22/04	11:31:52	1.000	1.00
25	Smear 5	12/22/04	11:30:32	SA-1-E	Final Status Survey	12/22/04	11:30:32	1.000	1.00
26	Smear 6	12/22/04	11:29:12	SA-1-E	Final Status Survey	12/22/04	11:29:12	1.000	1.00
27	Smear 7	12/22/04	11:27:52	SA-1-E	Final Status Survey	12/22/04	11:27:52	1.000	1.00
28	Smear 8	12/22/04	11:26:32	SA-1-E	Final Status Survey	12/22/04	11:26:32	1.000	1.00
29	Smear 9	12/22/04	11:25:12	SA-1-E	Final Status Survey	12/22/04	11:25:12	1.000	1.00
30	Smear 10	12/22/04	11:23:52	SA-1-E	Final Status Survey	12/22/04	11:23:52	1.000	1.00
31	Smear 11	12/22/04	11:22:32	SA-1-E	Final Status Survey	12/22/04	11:22:32	1.000	1.00
32	Smear 12	12/22/04	11:21:13	SA-1-E	Final Status Survey	12/22/04	11:21:13	1.000	1.00
33	Smear 13	12/22/04	11:19:53	SA-1-E	Final Status Survey	12/22/04	11:19:53	1.000	1.00
34	Smear 14	12/22/04	11:18:33	SA-1-E	Final Status Survey	12/22/04	11:18:33	1.000	1.00
35	Smear 15	12/22/04	11:17:13	SA-1-E	Final Status Survey	12/22/04	11:17:13	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-2-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.76 LLD: 13.41 dpm				Bkg: 0.63 cpm %Eff: 46.16 LLD: 11.9 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
21	Smear 1	12/22/04	11:35:51	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
22	Smear 2	12/22/04	11:34:32	0.00	-0.03	-0.13	13.41	5.00	4.37	9.67	11.90
23	Smear 3	12/22/04	11:33:12	0.00	-0.03	-0.13	13.41	8.00	7.37	16.32	11.90
24	Smear 4	12/22/04	11:31:52	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
25	Smear 5	12/22/04	11:30:32	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
26	Smear 6	12/22/04	11:29:12	0.00	-0.03	-0.13	13.41	4.00	3.37	7.46	11.90
27	Smear 7	12/22/04	11:27:52	0.00	-0.03	-0.13	13.41	6.00	5.37	11.89	11.90
28	Smear 8	12/22/04	11:26:32	0.00	-0.03	-0.13	13.41	4.00	3.37	7.46	11.90
29	Smear 9	12/22/04	11:25:12	0.00	-0.03	-0.13	13.41	5.00	4.37	9.67	11.90
30	Smear 10	12/22/04	11:23:52	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
31	Smear 11	12/22/04	11:22:32	0.00	-0.03	-0.13	13.41	9.00	8.37	18.53	11.90
32	Smear 12	12/22/04	11:21:13	1.00	0.97	3.90	13.41	2.00	1.37	3.03	11.90
33	Smear 13	12/22/04	11:19:53	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
34	Smear 14	12/22/04	11:18:33	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
35	Smear 15	12/22/04	11:17:13	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-22-04

Reviewed By (print): Joe Trowbridge

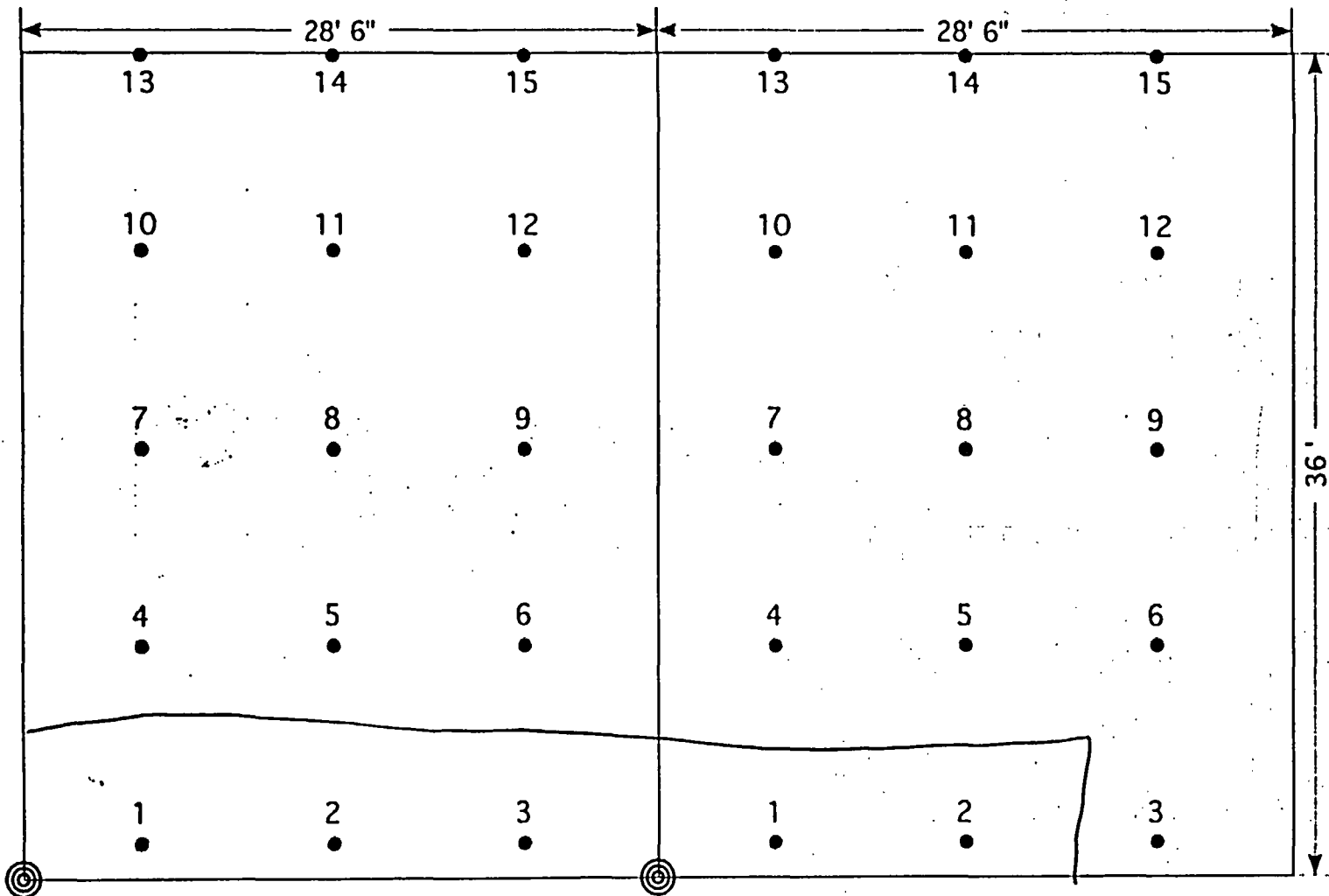
Reviewed By (sign):

Date:

**SA-1-F      Service Area**



• SURVEY POINTS  
 ◎ STARTING LOCATION



Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KARTHUS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS I  
 Service Area East Wall

SCIENTECH  
 SCIENTECH Inc.  
 143 WEST STREET  
 NEW MILFORD CT 06756

PROJECT NO:  
23529-0201

FILE NAME:

SCALE: DATE  
 N.T.S. 07/12/2004  
 BY: CR:

FIGURE:  
SA-1-FD

## SA-1-F

Log #
7 Source
5
4
7
4
9
10
11
12
13
14
15
16

X	Y
n/a	n/a
5.3	1.5
13.9	1.5
22.5	1.5
5.3	10.1
13.9	10.1
22.5	10.1
5.3	18.7
13.9	18.7
22.5	18.7
5.3	27.3
13.9	27.3
22.5	27.3
5.3	35.9
13.9	35.9
22.5	35.9

L (ft)= 8.6  
A (ft<sup>2</sup>)= 1026

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
190	200	220
174	180	160
182	180	200
199	200	220
176	180	200
253	260	280
169	160	140
260	260	280
292	290	300
195	180	200
200	200	220
211	220	240

up

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/20/2004  
Time: 8:10:14 AM

Header 1: Chris Higgins  
Header 2: Serial#193629  
Header 3: DetSer#PR193917  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: SA-1-F  
Calibration Due Date: 12/13/2005  
Model 2360 Date: 12/20/2004  
Model 2360 Time: 07:54:36  
Sample Number: 0018

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
Rat  
emeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/19/04	08:41:57	000000	000178	S 001.0	Lab Background
0002	12/19/04	08:43:05	000000	033753	S 001.0	Lab Source
0003	12/19/04	10:08:53	000000	000235	S 001.0	Field Background
0004	12/19/04	10:10:58	000000	001796	S 001.0	Field Source
0005	12/19/04	10:14:52	000002	000190	S 001.0	SA-1-F
0006	12/19/04	10:15:57	000002	000144	S 001.0	SA-1-F
0007	12/19/04	10:19:22	000000	000183	S 001.0	SA-1-F
0008	12/19/04	10:23:37	000001	000199	S 001.0	SA-1-F
0009	12/19/04	10:24:42	000000	000176	S 001.0	SA-1-F
0010	12/19/04	10:26:23	000000	000253	S 001.0	SA-1-F
0011	12/19/04	10:29:09	000000	000169	S 001.0	SA-1-F
0012	12/19/04	10:30:47	000001	000260	S 001.0	SA-1-F
0013	12/19/04	10:32:25	000000	000292	S 001.0	SA-1-F
0014	12/19/04	10:34:54	000000	000185	S 001.0	SA-1-F
0015	12/19/04	10:36:10	000000	000200	S 001.0	SA-1-F
0016	12/19/04	10:37:34	000001	000211	S 001.0	SA-1-F
0017	12/19/04	10:39:09	000000	001792	S 001.0	Field Source

\$



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/20/04	9:59:11	SA-1-F	Final Status Survey	12/20/04	9:59:11	1.000	1.00
2	Smear 2	12/20/04	9:57:51	SA-1-F	Final Status Survey	12/20/04	9:57:51	1.000	1.00
3	Smear 3	12/20/04	9:56:31	SA-1-F	Final Status Survey	12/20/04	9:56:31	1.000	1.00
4	Smear 4	12/20/04	9:55:11	SA-1-F	Final Status Survey	12/20/04	9:55:11	1.000	1.00
5	Smear 5	12/20/04	9:53:50	SA-1-F	Final Status Survey	12/20/04	9:53:50	1.000	1.00
6	Smear 6	12/20/04	9:52:30	SA-1-F	Final Status Survey	12/20/04	9:52:30	1.000	1.00
7	Smear 7	12/20/04	9:51:10	SA-1-F	Final Status Survey	12/20/04	9:51:10	1.000	1.00
8	Smear 8	12/20/04	9:49:50	SA-1-F	Final Status Survey	12/20/04	9:49:50	1.000	1.00
9	Smear 9	12/20/04	9:48:30	SA-1-F	Final Status Survey	12/20/04	9:48:30	1.000	1.00
10	Smear 10	12/20/04	9:47:10	SA-1-F	Final Status Survey	12/20/04	9:47:10	1.000	1.00
11	Smear 11	12/20/04	9:45:50	SA-1-F	Final Status Survey	12/20/04	9:45:50	1.000	1.00
12	Smear 12	12/20/04	9:44:30	SA-1-F	Final Status Survey	12/20/04	9:44:30	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 1/ 30/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 26.8 LLD: 10.6 dpm				Bkg: 0.7 cpm %Eff: 44.81 LLD: 12.29 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/20/04	9:59:11	0.00	0.00	0.00	10.50	1.00	0.30	0.67	12.29
2	Smear 2	12/20/04	9:57:51	0.00	0.00	0.00	10.50	4.00	3.30	7.36	12.29
3	Smear 3	12/20/04	9:58:31	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
4	Smear 4	12/20/04	9:55:11	0.00	0.00	0.00	10.50	1.00	0.30	0.67	12.29
5	Smear 5	12/20/04	9:53:50	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
6	Smear 6	12/20/04	9:52:30	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
7	Smear 7	12/20/04	9:51:10	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
8	Smear 8	12/20/04	9:49:50	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
9	Smear 9	12/20/04	9:48:30	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
10	Smear 10	12/20/04	9:47:10	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
11	Smear 11	12/20/04	9:45:50	0.00	0.00	0.00	10.50	1.00	0.30	0.67	12.29
12	Smear 12	12/20/04	9:44:30	0.00	0.00	0.00	10.50	3.00	2.30	5.13	12.29

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-20-04

Reviewed By (print): Joe Trowbridge

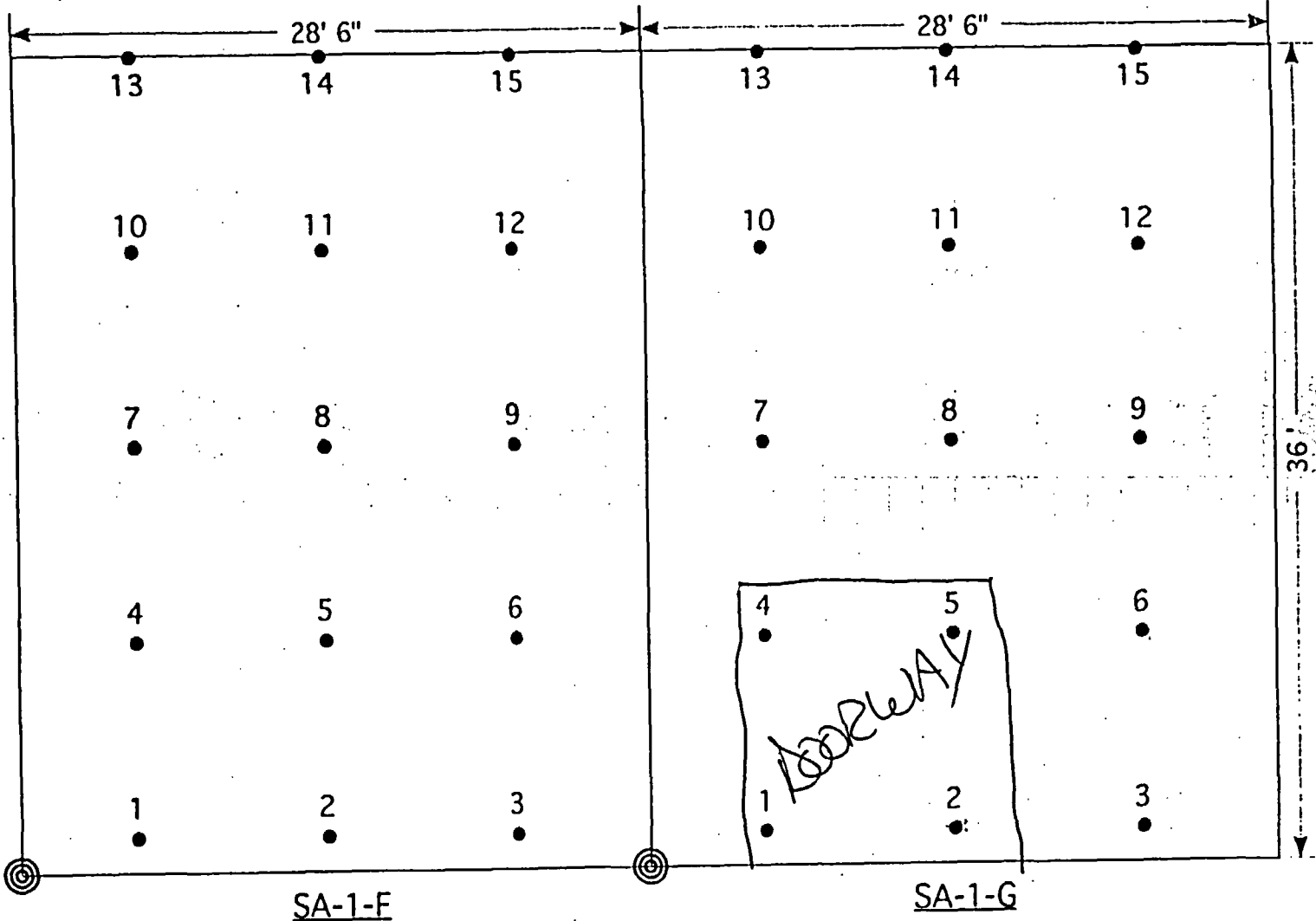
Reviewed By (sign):

Date:

**SA-1-G      Service Area**



• SURVEY POINTS  
 ◎ STARTING LOCATION



Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KARTHIAUS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Service Area East Wall

SCIENTECH  
 SCIENTECH Inc.  
 143 WEST STREET  
 NEW MILFORD CT 06776

PROJECT NO:  
23529 0301

FILE NAME

SCALE  
N.T.S.

DATE  
07 12 2004

By: CK:

FIGURE  
SA-1-F.0

SA-I-G

MOJO

#3

Log #
1680 Source
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11
#12
#13
#14

15-18305

10 Bkg 133

2360 M#

202476 S#

12-21-04

	X	Y
	n/a	n/a
1	5.3	1.5
2	13.9	1.5
3	22.5	1.5
4	5.3	10.1
5	13.9	10.1
6	22.5	10.1
7	5.3	18.7
8	13.9	18.7
9	22.5	18.7
10	5.3	27.3
11	13.9	27.3
12	22.5	27.3
13	5.3	35.9
14	13.9	35.9
15	22.5	35.9

L (ft) = 8.6

A (ft<sup>2</sup>) = 1026

NO CAN DO

NO CAN DO

NO CAN DO  
NO CAN DO

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
—	DOOR WAY	—
—	DOOR WAY	—
123	80	140
DOOR WAY	—	—
DOOR WAY	—	—
117	100	120
127	90	150
116	80	140
125	100	140
133	120	160
114	100	130
103	100	120
127	110	140
111	80	130
115	100	120

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

1a' 2/21/2004  
im 4:57:10 PM

Header 1: John Mojica  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: SA-1-G  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/21/2004  
Model 2360 Time: 16:56:00  
Sample Number: 0017

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Cr - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/21/04	07:17:28	000000	000144	S 001.0	Lab Background
0002	12/21/04	07:19:20	000000	031127	S 001.0	Lab Source
0003	12/21/04	16:26:50	000002	016806	S 001.0	Field Source
0004	12/21/04	16:33:41	000000	000123	S 001.0	SA-1-G
0005	12/21/04	16:35:38	000001	000117	S 001.0	SA-1-G
0006	12/21/04	16:36:51	000001	000127	S 001.0	SA-1-G
0007	12/21/04	16:38:08	000000	000116	S 001.0	SA-1-G
0008	12/21/04	16:39:54	000001	000125	S 001.0	SA-1-G
0009	12/21/04	16:41:04	000002	000133	S 001.0	SA-1-G
0010	12/21/04	16:42:15	000001	000114	S 001.0	SA-1-G
0011	12/21/04	16:43:54	000001	000103	S 001.0	SA-1-G
0012	12/21/04	16:45:15	000001	000127	S 001.0	SA-1-G
0013	12/21/04	16:46:22	000000	000111	S 001.0	SA-1-G
0014	12/21/04	16:47:34	000001	000115	S 001.0	SA-1-G
0015	12/21/04	16:49:01	000002	018305	S 001.0	Field Source
0016	12/21/04	16:50:26	000000	000133	S 001.0	Field Background

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/22/04	10:38:14	SA-1-G	Final Status Survey	12/22/04	10:38:14	1.000	1.00
2	Smear 2	12/22/04	10:36:55	SA-1-G	Final Status Survey	12/22/04	10:36:55	1.000	1.00
3	Smear 3	12/22/04	10:35:35	SA-1-G	Final Status Survey	12/22/04	10:35:35	1.000	1.00
4	Smear 4	12/22/04	10:34:15	SA-1-G	Final Status Survey	12/22/04	10:34:15	1.000	1.00
5	Smear 5	12/22/04	10:32:55	SA-1-G	Final Status Survey	12/22/04	10:32:55	1.000	1.00
6	Smear 6	12/22/04	10:31:35	SA-1-G	Final Status Survey	12/22/04	10:31:35	1.000	1.00
7	Smear 7	12/22/04	10:30:15	SA-1-G	Final Status Survey	12/22/04	10:30:15	1.000	1.00
8	Smear 8	12/22/04	10:28:55	SA-1-G	Final Status Survey	12/22/04	10:28:55	1.000	1.00
9	Smear 9	12/22/04	10:27:36	SA-1-G	Final Status Survey	12/22/04	10:27:36	1.000	1.00
10	Smear 10	12/22/04	10:26:16	SA-1-G	Final Status Survey	12/22/04	10:26:16	1.000	1.00
11	Smear 11	12/22/04	10:24:56	SA-1-G	Final Status Survey	12/22/04	10:24:56	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.7% LLD: 13.41 dpm				Bkg: 0.63 cpm %Eff: 46.1% LLD: 11.9 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/22/04	10:38:14	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
2	Smear 2	12/22/04	10:38:55	1.00	0.97	3.90	13.41	0.00	-0.63	-1.40	11.90
3	Smear 3	12/22/04	10:35:35	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
4	Smear 4	12/22/04	10:34:15	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
5	Smear 5	12/22/04	10:32:55	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
6	Smear 6	12/22/04	10:31:35	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
7	Smear 7	12/22/04	10:30:15	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
8	Smear 8	12/22/04	10:28:55	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
9	Smear 9	12/22/04	10:27:36	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
10	Smear 10	12/22/04	10:26:16	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
11	Smear 11	12/22/04	10:24:56	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-22-04

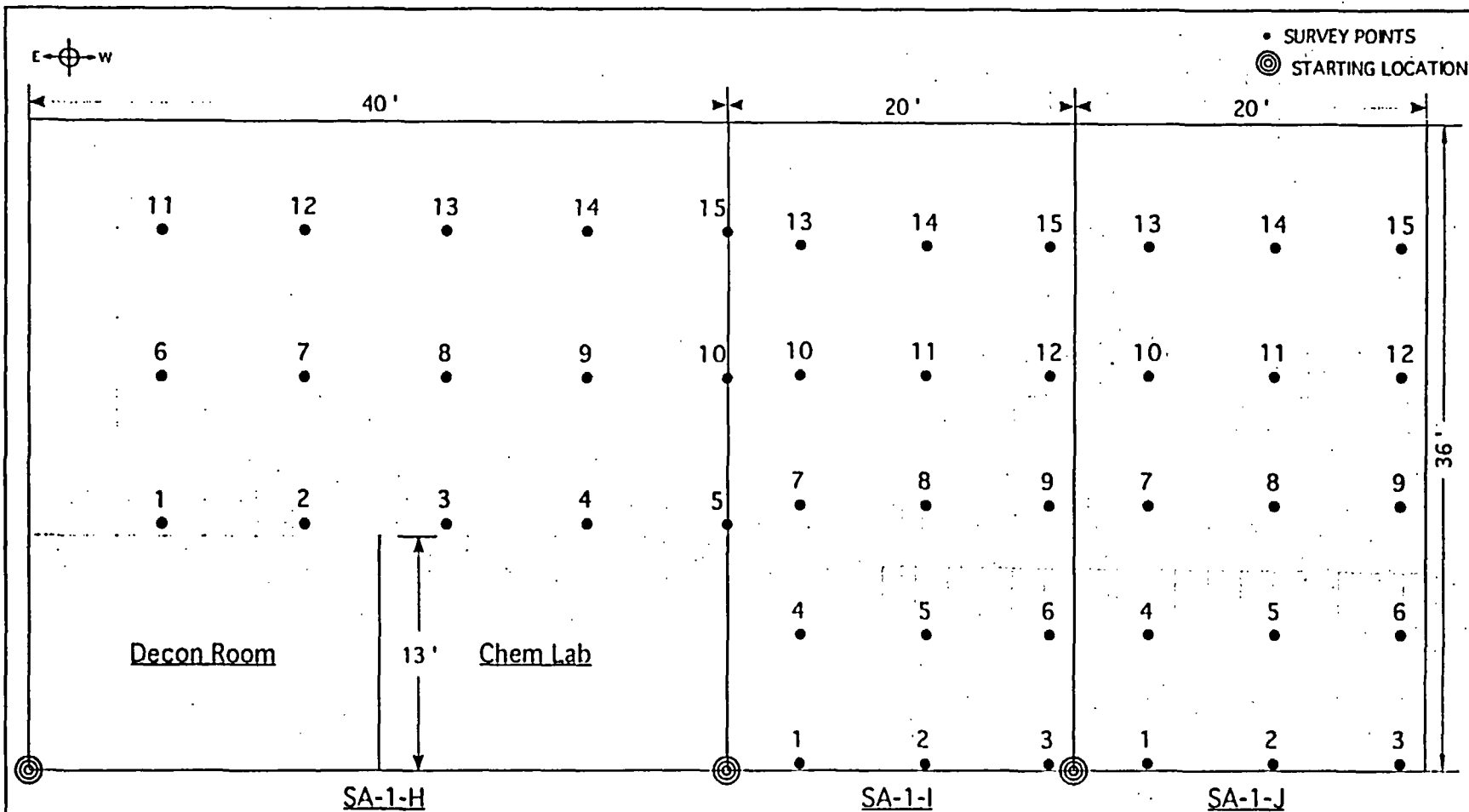
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



**SA-1-H      Service Area**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Service Area South Wall	
SCIEN TECH SCIEN TECH, Inc. 141 WY 11 STREET NEW MILFORD, CT 06456	
PROJECT NO. 23529 0501	
FIRE NAME	
SCALE N.T.S.	DATE 07.12.2004
By:	CR:
FIGURE SA-1-HJJ	

SA-1-H

3

Log #
1989 Source
11
12
13
14
15
8
9
10
14
15
5
6
7
18
19

8

7

END 20 L 3435

4BK9 245

2360

202475

12-22-04

	X	Y
	n/a	n/a
1	7.6	13.7
2	15.7	13.7
3	23.8	13.7
4	31.9	13.7
5	40.0	13.7
6	7.6	21.8
7	15.7	21.8
8	23.8	21.8
9	31.9	21.8
10	40.0	21.8
11	7.6	29.9
12	15.7	29.9
13	23.8	29.9
14	31.9	29.9
15	40.0	29.9

L (ft) = 8.1

A (ft<sup>2</sup>) = 920

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
139	100	150
159	140	180
183	180	210
198	180	250
239	190	260
122	120	140
132	110	140
129	120	140
109	100	120
142	100	160
110	100	120
116	110	130
125	120	130
123	90	150
145	100	180

# Model 2360 Log Data

Date: 12/22/2004

Time: 5:45:44 PM

Header 1: Leroy Cuneo

Header 2: Serial#202475

Header 3: DetSer#208661

Header 4: Quehanna

Header 5: Karthaus, PA

Header 6: FSS

Location: SA

Calibration Due Date: 04/13/2005

Model 2360 Date: 11/22/2004

Model 2360 Time: 17:44:39

Sample Number: 0037

User PC Time: 001.0

Alpha Ratemeter Alarm: 999999

Beta Ratemeter Alarm: 000400

Alpha + Beta Ratemeter Alarm: 000400

Alpha Scaler Alarm: 999999

Beta Scaler Alarm: 000400

Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time

P Ratemeter

caler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001 11/22/04 11:12:08 000000 000166 S 001.0 Lab Background

0002 11/22/04 11:13:27 000002 033135 S 001.0 Lab Source

0003 11/22/04 12:49:24 000001 001989 S 001.0 Field Source

0004 11/22/04 12:52:29 000000 000245 S 001.0 Field Background

0005 11/22/04 12:54:00 000001 000110 S 001.0 SA-1-H

0006 11/22/04 12:55:09 000000 000116 S 001.0 SA-1-H

0007 11/22/04 12:56:23 000001 000125 S 001.0 SA-1-H

0008 11/22/04 13:17:55 000001 000122 S 001.0 SA-1-H

0009 11/22/04 13:19:10 000000 000132 S 001.0 SA-1-H

0010 11/22/04 13:20:26 000001 000129 S 001.0 SA-1-H

0011 11/22/04 14:32:31 000000 000139 S 001.0 SA-1-H

0012 11/22/04 14:34:04 000002 000159 S 001.0 SA-1-H

0013 11/22/04 14:35:19 000002 000183 S 001.0 SA-1-H

0014 11/22/04 16:11:21 000005 000198 S 001.0 SA-1-H

0015 11/22/04 16:12:50 000005 000239 S 001.0 SA-1-H

0016 11/22/04 16:14:47 000005 000109 S 001.0 SA-1-H

0017 11/22/04 16:16:26 000004 000142 S 001.0 SA-1-H

0018 11/22/04 16:17:40 000008 000123 S 001.0 SA-1-H

0019 11/22/04 16:19:06 000003 000145 S 001.0 SA-1-H

0020 11/22/04 16:20:22 000004 003445 S 001.0 Field Source

0021 11/22/04 16:30:39 000002 000122 S 001.0 SA-1-I

0022 11/22/04 16:36:31 000007 000151 S 001.0 SA-1-I

0023 11/22/04 16:37:45 000006 000134 S 001.0 SA-1-I

0024 11/22/04 16:44:30 000006 000144 S 001.0 SA-1-I

0025 11/22/04 16:46:42 000005 000116 S 001.0 SA-1-I

0026 11/22/04 16:48:35 000003 000136 S 001.0 SA-1-I

0027 11/22/04 16:49:42 000001 000177 S 001.0 SA-1-I

0028 11/22/04 16:53:20 000007 000125 S 001.0 SA-1-I

0029 11/22/04 17:01:22 000007 000137 S 001.0 SA-1-I

0030 11/22/04 17:02:39 000006 000127 S 001.0 SA-1-I

0031 11/22/04 17:04:09 000004 000126 S 001.0 SA-1-I

0032 11/22/04 17:05:19 000004 000113 S 001.0 SA-1-I

0033 11/22/04 17:22:43 000006 000140 S 001.0 SA-1-I

0034 11/22/04 17:24:21 000006 000118 S 001.0 SA-1-I



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
21	Smear 1	12/22/04	18:34:10	SA-1-H	FSS	12/22/04	18:34:10	1.000	1.00
22	Smear 2	12/22/04	18:32:51	SA-1-H	FSS	12/22/04	18:32:51	1.000	1.00
23	Smear 3	12/22/04	18:31:31	SA-1-H	FSS	12/22/04	18:31:31	1.000	1.00
24	Smear 4	12/22/04	18:30:11	SA-1-H	FSS	12/22/04	18:30:11	1.000	1.00
25	Smear 5	12/22/04	18:28:52	SA-1-H	FSS	12/22/04	18:28:52	1.000	1.00
26	Smear 6	12/22/04	18:27:32	SA-1-H	FSS	12/22/04	18:27:32	1.000	1.00
27	Smear 7	12/22/04	18:26:12	SA-1-H	FSS	12/22/04	18:26:12	1.000	1.00
28	Smear 8	12/22/04	18:24:52	SA-1-H	FSS	12/22/04	18:24:52	1.000	1.00
29	Smear 9	12/22/04	18:23:32	SA-1-H	FSS	12/22/04	18:23:32	1.000	1.00
30	Smear 10	12/22/04	18:22:12	SA-1-H	FSS	12/22/04	18:22:12	1.000	1.00
31	Smear 11	12/22/04	18:20:52	SA-1-H	FSS	12/22/04	18:20:52	1.000	1.00
32	Smear 12	12/22/04	18:19:32	SA-1-H	FSS	12/22/04	18:19:32	1.000	1.00
33	Smear 13	12/22/04	18:18:12	SA-1-H	FSS	12/22/04	18:18:12	1.000	1.00
34	Smear 14	12/22/04	18:16:52	SA-1-H	FSS	12/22/04	18:16:52	1.000	1.00
35	Smear 15	12/22/04	18:15:32	SA-1-H	FSS	12/22/04	18:15:32	1.000	1.00
36	Smear 1	12/22/04	18:14:12	SA-1-I	FSS	12/22/04	18:14:12	1.000	1.00
37	Smear 2	12/22/04	18:12:53	SA-1-I	FSS	12/22/04	18:12:53	1.000	1.00
38	Smear 3	12/22/04	18:11:33	SA-1-I	FSS	12/22/04	18:11:33	1.000	1.00
39	Smear 4	12/22/04	18:10:13	SA-1-I	FSS	12/22/04	18:10:13	1.000	1.00
40	Smear 5	12/22/04	18:08:53	SA-1-I	FSS	12/22/04	18:08:53	1.000	1.00
41	Smear 6	12/22/04	18:07:33	SA-1-I	FSS	12/22/04	18:07:33	1.000	1.00
42	Smear 7	12/22/04	18:06:13	SA-1-I	FSS	12/22/04	18:06:13	1.000	1.00
43	Smear 8	12/22/04	18:04:53	SA-1-I	FSS	12/22/04	18:04:53	1.000	1.00
44	Smear 9	12/22/04	18:03:33	SA-1-I	FSS	12/22/04	18:03:33	1.000	1.00
45	Smear 10	12/22/04	18:02:13	SA-1-I	FSS	12/22/04	18:02:13	1.000	1.00
46	Smear 11	12/22/04	18:00:53	SA-1-I	FSS	12/22/04	18:00:53	1.000	1.00
47	Smear 12	12/22/04	17:59:33	SA-1-I	FSS	12/22/04	17:59:33	1.000	1.00
48	Smear 13	12/22/04	17:58:14	SA-1-I	FSS	12/22/04	17:58:14	1.000	1.00
49	Smear 14	12/22/04	17:56:54	SA-1-I	FSS	12/22/04	17:56:54	1.000	1.00
50	Smear 15	12/22/04	17:55:34	SA-1-I	FSS	12/22/04	17:55:34	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.76 LLD: 13.41 dpm				Bkg: 0.63 cpm %Eff: 46.16 LLD: 11.9 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
21	Smear 1	12/22/04	18:34:10	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
22	Smear 2	12/22/04	18:32:51	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
23	Smear 3	12/22/04	18:31:31	1.00	0.97	3.90	13.41	0.00	-0.63	-1.40	11.90
24	Smear 4	12/22/04	18:30:11	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
25	Smear 5	12/22/04	18:28:52	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
26	Smear 6	12/22/04	18:27:32	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
27	Smear 7	12/22/04	18:26:12	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
28	Smear 8	12/22/04	18:24:52	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
29	Smear 9	12/22/04	18:23:32	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
30	Smear 10	12/22/04	18:22:12	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
31	Smear 11	12/22/04	18:20:52	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
32	Smear 12	12/22/04	18:19:32	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
33	Smear 13	12/22/04	18:18:12	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
34	Smear 14	12/22/04	18:16:52	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
35	Smear 15	12/22/04	18:15:32	1.00	0.97	3.90	13.41	2.00	1.37	3.03	11.90
36	Smear 1	12/22/04	18:14:12	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
37	Smear 2	12/22/04	18:12:53	1.00	0.97	3.90	13.41	0.00	-0.63	-1.40	11.90
38	Smear 3	12/22/04	18:11:33	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
39	Smear 4	12/22/04	18:10:13	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
40	Smear 5	12/22/04	18:08:53	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
41	Smear 6	12/22/04	18:07:33	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
42	Smear 7	12/22/04	18:06:13	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
43	Smear 8	12/22/04	18:04:53	1.00	0.97	3.90	13.41	1.00	0.37	0.81	11.90
44	Smear 9	12/22/04	18:03:33	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
45	Smear 10	12/22/04	18:02:13	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
46	Smear 11	12/22/04	18:00:53	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
47	Smear 12	12/22/04	17:59:33	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
48	Smear 13	12/22/04	17:58:14	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
49	Smear 14	12/22/04	17:56:54	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
50	Smear 15	12/22/04	17:55:34	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-23-04

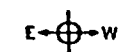
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

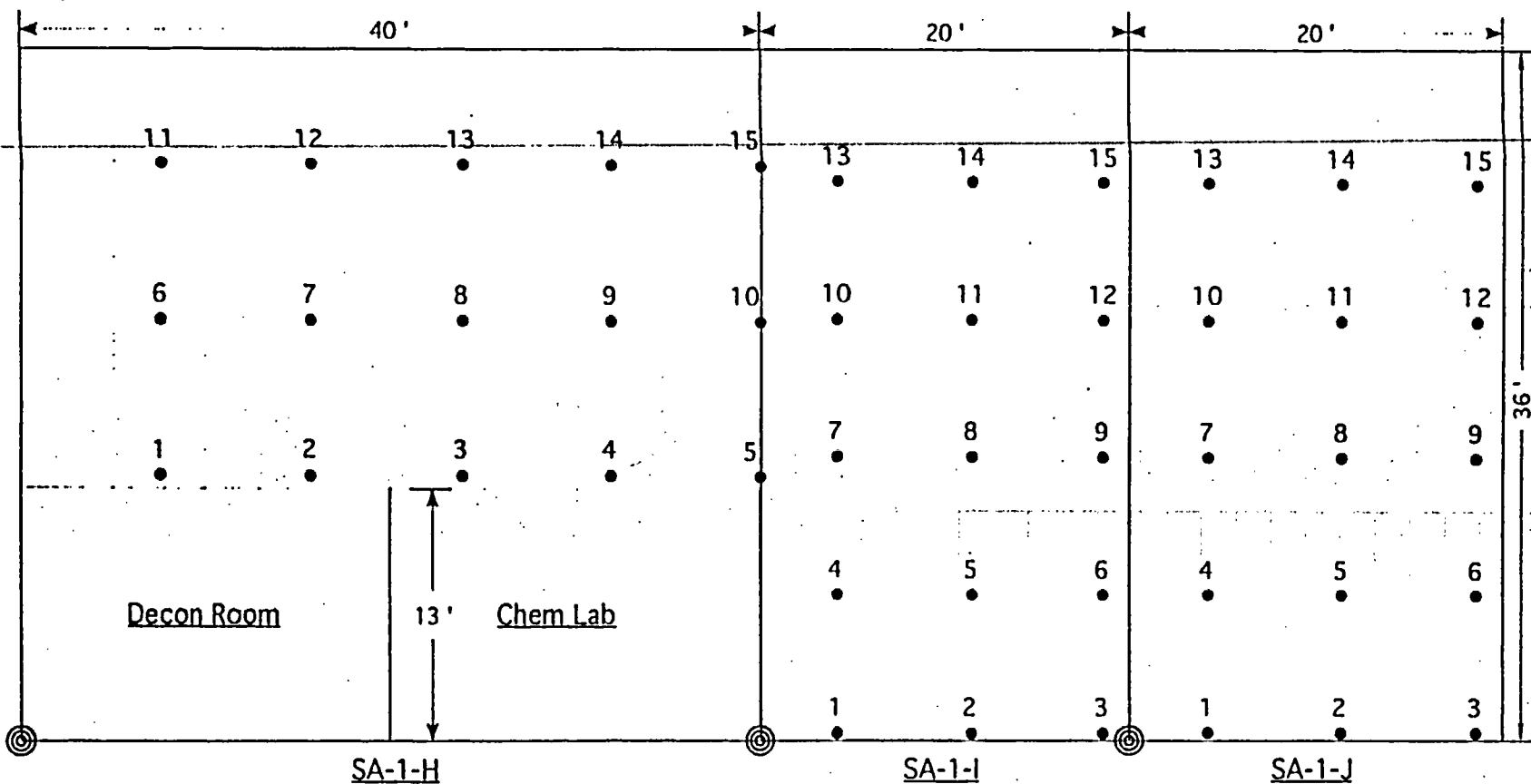
**SA-1-I      Service Area**





• SURVEY POINTS

◎ STARTING LOCATION



Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KATHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Service Area South Wall

SCIENTECH

SCIENTECH Inc.  
141 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO.

23529-0301

FILE NAME

SCALE

N.T.S.

By

DATE

07/12/2004

CK

FIGURE

## SA-1-I

Log #
Source
35
34
33
30
31
32
<del>29</del> 29
<del>28</del> 28
<del>27</del> 27
26
<del>25</del> 25
<del>24</del> 24
21
22
23

END#36 3055

2360

3# 202475

12-22-04

	X	Y
	n/a	n/a
1	4.2	0.4
2	11.4	0.4
3	18.6	0.4
4	4.2	7.6
5	11.4	7.6
6	18.6	7.6
7	4.2	14.8
8	11.4	14.8
9	18.6	14.8
10	4.2	22.0
11	11.4	22.0
12	18.6	22.0
13	4.2	29.2
14	11.4	29.2
15	18.6	29.2

L (ft)= 7.2

A (ft<sup>2</sup>)= 720

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
122	100	140
118	100	120
140	130	160
127	100	140
126	120	140
113	100	130
137	130	150
125	100	130
177	160	200
136	120	180
116	100	140
144	130	150
122	100	140
151	140	190
134	100	140

see - H  
for rest of data.

Ludlum Measurements, Inc.  
Model 2360 Log Data

Date: 11/22/2004  
Time: 3:45:44 PM

Header 1: Leroy Cuneo  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: SA  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/22/2004  
Model 2360 Time: 17:44:39  
Sample Number: 0037

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Count - Count Time  
Rate - meter  
Scale - Scaler

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location	CntTime
-----	------	------	-------	------	---------	----------	---------

001	11/22/04	11:12:08	000000	000166	S 001.0	Lab Background	
002	11/22/04	11:13:27	000002	033135	S 001.0	Lab Source	
003	11/22/04	12:49:24	000001	001989	S 001.0	Field Source	
004	11/22/04	12:52:29	000000	000245	S 001.0	Field Background	
005	11/22/04	12:54:00	000001	000110	S 001.0	SA-1-H	
006	11/22/04	12:55:09	000000	000116	S 001.0	SA-1-H	
007	11/22/04	12:56:23	000001	000125	S 001.0	SA-1-H	
008	11/22/04	13:17:55	000001	000122	S 001.0	SA-1-H	
009	11/22/04	13:19:10	000000	000132	S 001.0	SA-1-H	
010	11/22/04	13:20:26	000001	000129	S 001.0	SA-1-H	
011	11/22/04	14:32:31	000000	000139	S 001.0	SA-1-H	
012	11/22/04	14:34:04	000002	000159	S 001.0	SA-1-H	
013	11/22/04	14:35:19	000002	000183	S 001.0	SA-1-H	
014	11/22/04	16:11:21	000005	000198	S 001.0	SA-1-H	
015	11/22/04	16:12:50	000005	000239	S 001.0	SA-1-H	
016	11/22/04	16:14:47	000005	000109	S 001.0	SA-1-H	
017	11/22/04	16:16:26	000004	000142	S 001.0	SA-1-H	
018	11/22/04	16:17:40	000008	000123	S 001.0	SA-1-H	
019	11/22/04	16:19:06	000003	000145	S 001.0	SA-1-H	
020	11/22/04	16:20:22	000004	003445	S 001.0	Field Source	
021	11/22/04	16:30:39	000002	000122	S 001.0	SA-1-I	
022	11/22/04	16:36:31	000007	000151	S 001.0	SA-1-I	
023	11/22/04	16:37:45	000006	000134	S 001.0	SA-1-I	
024	11/22/04	16:44:30	000006	000144	S 001.0	SA-1-I	
025	11/22/04	16:46:42	000005	000116	S 001.0	SA-1-I	
026	11/22/04	16:48:35	000003	000136	S 001.0	SA-1-I	
027	11/22/04	16:49:42	000001	000177	S 001.0	SA-1-I	
028	11/22/04	16:53:20	000007	000125	S 001.0	SA-1-I	
029	11/22/04	17:01:22	000007	000137	S 001.0	SA-1-I	
030	11/22/04	17:02:39	000006	000127	S 001.0	SA-1-I	
031	11/22/04	17:04:09	000004	000126	S 001.0	SA-1-I	
032	11/22/04	17:05:19	000004	000113	S 001.0	SA-1-I	
033	11/22/04	17:22:43	000006	000140	S 001.0	SA-1-I	
034	11/22/04	17:24:21	000006	000118	S 001.0	SA-1-I	

35 11/22/04 17:26:04 000004 000122 S 001.0 SA-1-I  
36 11/22/04 17:27:23 000005 003055 S 001.0 Location 1

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
21	Smear 1	12/22/04	18:34:10	SA-1-H	FSS	12/22/04	18:34:10	1.000	1.00
22	Smear 2	12/22/04	18:32:51	SA-1-H	FSS	12/22/04	18:32:51	1.000	1.00
23	Smear 3	12/22/04	18:31:31	SA-1-H	FSS	12/22/04	18:31:31	1.000	1.00
24	Smear 4	12/22/04	18:30:11	SA-1-H	FSS	12/22/04	18:30:11	1.000	1.00
25	Smear 5	12/22/04	18:28:52	SA-1-H	FSS	12/22/04	18:28:52	1.000	1.00
26	Smear 6	12/22/04	18:27:32	SA-1-H	FSS	12/22/04	18:27:32	1.000	1.00
27	Smear 7	12/22/04	18:26:12	SA-1-H	FSS	12/22/04	18:26:12	1.000	1.00
28	Smear 8	12/22/04	18:24:52	SA-1-H	FSS	12/22/04	18:24:52	1.000	1.00
29	Smear 9	12/22/04	18:23:32	SA-1-H	FSS	12/22/04	18:23:32	1.000	1.00
30	Smear 10	12/22/04	18:22:12	SA-1-H	FSS	12/22/04	18:22:12	1.000	1.00
31	Smear 11	12/22/04	18:20:52	SA-1-H	FSS	12/22/04	18:20:52	1.000	1.00
32	Smear 12	12/22/04	18:19:32	SA-1-H	FSS	12/22/04	18:19:32	1.000	1.00
33	Smear 13	12/22/04	18:18:12	SA-1-H	FSS	12/22/04	18:18:12	1.000	1.00
34	Smear 14	12/22/04	18:16:52	SA-1-H	FSS	12/22/04	18:16:52	1.000	1.00
35	Smear 15	12/22/04	18:15:32	SA-1-H	FSS	12/22/04	18:15:32	1.000	1.00
36	Smear 1	12/22/04	18:14:12	SA-1-I	FSS	12/22/04	18:14:12	1.000	1.00
37	Smear 2	12/22/04	18:12:53	SA-1-I	FSS	12/22/04	18:12:53	1.000	1.00
38	Smear 3	12/22/04	18:11:33	SA-1-I	FSS	12/22/04	18:11:33	1.000	1.00
39	Smear 4	12/22/04	18:10:13	SA-1-I	FSS	12/22/04	18:10:13	1.000	1.00
40	Smear 5	12/22/04	18:08:53	SA-1-I	FSS	12/22/04	18:08:53	1.000	1.00
41	Smear 6	12/22/04	18:07:33	SA-1-I	FSS	12/22/04	18:07:33	1.000	1.00
42	Smear 7	12/22/04	18:06:13	SA-1-I	FSS	12/22/04	18:06:13	1.000	1.00
43	Smear 8	12/22/04	18:04:53	SA-1-I	FSS	12/22/04	18:04:53	1.000	1.00
44	Smear 9	12/22/04	18:03:33	SA-1-I	FSS	12/22/04	18:03:33	1.000	1.00
45	Smear 10	12/22/04	18:02:13	SA-1-I	FSS	12/22/04	18:02:13	1.000	1.00
46	Smear 11	12/22/04	18:00:53	SA-1-I	FSS	12/22/04	18:00:53	1.000	1.00
47	Smear 12	12/22/04	17:59:33	SA-1-I	FSS	12/22/04	17:59:33	1.000	1.00
48	Smear 13	12/22/04	17:58:14	SA-1-I	FSS	12/22/04	17:58:14	1.000	1.00
49	Smear 14	12/22/04	17:56:54	SA-1-I	FSS	12/22/04	17:56:54	1.000	1.00
50	Smear 15	12/22/04	17:55:34	SA-1-I	FSS	12/22/04	17:55:34	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.76 LLD: 13.41 dpm				Bkg: 0.63 cpm %Eff: 45.16 LLD: 11.9 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
21	Smear 1	12/22/04	18:34:10	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
22	Smear 2	12/22/04	18:32:51	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
23	Smear 3	12/22/04	18:31:31	1.00	0.97	3.90	13.41	0.00	-0.63	-1.40	11.90
24	Smear 4	12/22/04	18:30:11	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
25	Smear 5	12/22/04	18:28:52	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
26	Smear 6	12/22/04	18:27:32	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
27	Smear 7	12/22/04	18:26:12	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
28	Smear 8	12/22/04	18:24:52	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
29	Smear 9	12/22/04	18:23:32	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
30	Smear 10	12/22/04	18:22:12	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
31	Smear 11	12/22/04	18:20:52	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
32	Smear 12	12/22/04	18:19:32	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
33	Smear 13	12/22/04	18:18:12	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
34	Smear 14	12/22/04	18:16:52	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
35	Smear 15	12/22/04	18:15:32	1.00	0.97	3.90	13.41	2.00	1.37	3.03	11.90
36	Smear 1	12/22/04	18:14:12	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
37	Smear 2	12/22/04	18:12:53	1.00	0.97	3.90	13.41	0.00	-0.63	-1.40	11.90
38	Smear 3	12/22/04	18:11:33	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
39	Smear 4	12/22/04	18:10:13	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
40	Smear 5	12/22/04	18:08:53	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
41	Smear 6	12/22/04	18:07:33	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
42	Smear 7	12/22/04	18:06:13	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
43	Smear 8	12/22/04	18:04:53	1.00	0.97	3.90	13.41	1.00	0.37	0.81	11.90
44	Smear 9	12/22/04	18:03:33	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
45	Smear 10	12/22/04	18:02:13	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
46	Smear 11	12/22/04	18:00:53	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
47	Smear 12	12/22/04	17:59:33	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
48	Smear 13	12/22/04	17:58:14	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
49	Smear 14	12/22/04	17:56:54	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
50	Smear 15	12/22/04	17:55:34	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-23-04

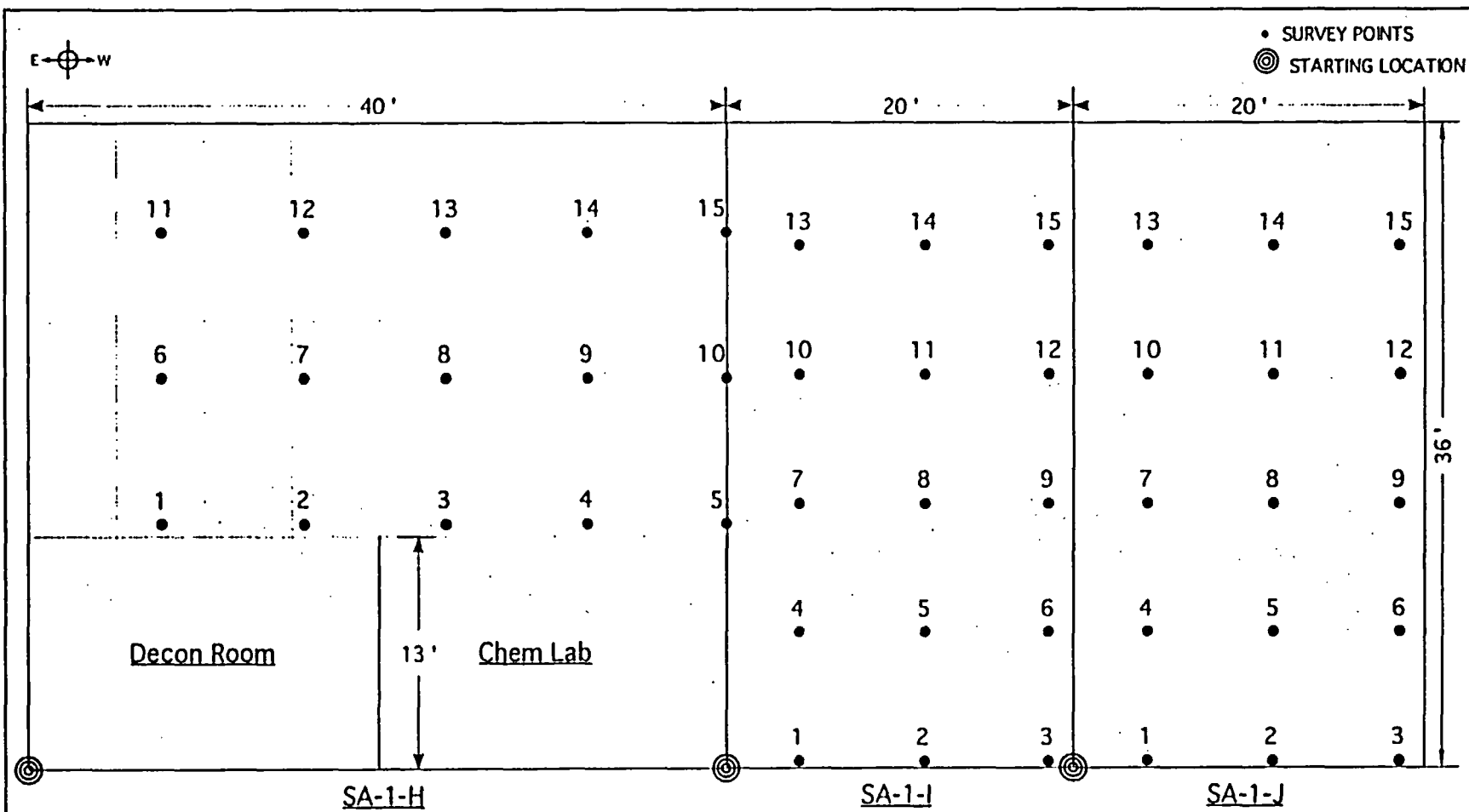
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**SA-1-J**

**Service Area**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Service Area South Wall	
SCIENTECH SCIENTECH, Inc. 141 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO. 23529 0301	
FILE NAME:	
SCALE:	DATE:
N.T.S.	07/12/2004
By:	CK:
FIGURE: SA-1-H11	



## SA-1-J

Log #
1620 Source
0005
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	X	Y
	n/a	n/a
1	4.2	0.4
2	11.4	0.4
3	18.6	0.4
4	4.2	7.6
5	11.4	7.6
6	18.6	7.6
7	4.2	14.8
8	11.4	14.8
9	18.6	14.8
10	4.2	22.0
11	11.4	22.0
12	18.6	22.0
13	4.2	29.2
14	11.4	29.2
15	18.6	29.2

L (ft)= 7.2

A (ft<sup>2</sup>)= 720

	Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a	n/a
5	327	240	380
6	283	240	400
7	207	300	380
8	249	200	260
9	270	160	200
10	131	140	190
11	125	200	260
12	134	100	160
13	124	160	240
14	98	140	220
15	101	120	180
16	131	100	160
17	121	120	180
18	110	160	220
19	106	120	200

672

✓

27' 10"

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

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Date: 12/21/2004  
Time: 3:06:30 PM

Header 1: Joe Trowbridge  
Header 2: Serial#193629  
Header 3: DetSer#PR193917  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: SA-1-J  
Calibration Due Date: 12/13/2005  
Model 2360 Date: 12/21/2004  
Model 2360 Time: 15:00:06  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Count - Count Time  
Rate - Rate  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/21/04	07:23:32	000000	000151	S 001.0	Lab Background
0002	12/21/04	07:25:25	000000	033947	S 001.0	Lab Source
0003	12/21/04	10:58:14	000003	001620	S 001.0	Field Source
0004	12/21/04	11:01:08	000001	000160	S 001.0	Field Background
0005	12/21/04	14:03:07	000000	000327	S 001.0	SA-1-J
0006	12/21/04	14:04:23	000001	000283	S 001.0	SA-1-J
0007	12/21/04	14:06:21	000000	000207	S 001.0	SA-1-J
0008	12/21/04	14:11:35	000000	000249	S 001.0	SA-1-J
0009	12/21/04	14:12:51	000002	000270	S 001.0	SA-1-J
0010	12/21/04	14:15:32	000000	000131	S 001.0	SA-1-J
0011	12/21/04	14:18:29	000002	000125	S 001.0	SA-1-J
0012	12/21/04	14:20:20	000000	000134	S 001.0	SA-1-J
0013	12/21/04	14:22:59	000000	000124	S 001.0	SA-1-J
0014	12/21/04	14:26:52	000001	000098	S 001.0	SA-1-J
0015	12/21/04	14:28:48	000001	000101	S 001.0	SA-1-J
0016	12/21/04	14:30:44	000001	000131	S 001.0	SA-1-J
0017	12/21/04	14:34:41	000001	000121	S 001.0	SA-1-J
0018	12/21/04	14:36:44	000001	000110	S 001.0	SA-1-J
0019	12/21/04	14:38:54	000002	000106	S 001.0	SA-1-J
0020	12/21/04	14:42:39	000005	001584	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started				Date	Time	DF	of Sample
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
49	Smear 1	12/22/04	9:59:50	SA-1-J	Final Status Survey	12/22/04	9:59:50	1.000	1.00
50	Smear 2	12/22/04	9:58:30	SA-1-J	Final Status Survey	12/22/04	9:58:30	1.000	1.00
51	Smear 3	12/22/04	9:57:10	SA-1-J	Final Status Survey	12/22/04	9:57:10	1.000	1.00
52	Smear 4	12/22/04	9:55:50	SA-1-J	Final Status Survey	12/22/04	9:55:50	1.000	1.00
53	Smear 5	12/22/04	9:54:30	SA-1-J	Final Status Survey	12/22/04	9:54:30	1.000	1.00
54	Smear 6	12/22/04	9:53:10	SA-1-J	Final Status Survey	12/22/04	9:53:10	1.000	1.00
55	Smear 7	12/22/04	9:51:51	SA-1-J	Final Status Survey	12/22/04	9:51:51	1.000	1.00
56	Smear 8	12/22/04	9:50:31	SA-1-J	Final Status Survey	12/22/04	9:50:31	1.000	1.00
57	Smear 9	12/22/04	9:49:11	SA-1-J	Final Status Survey	12/22/04	9:49:11	1.000	1.00
58	Smear 10	12/22/04	9:47:52	SA-1-J	Final Status Survey	12/22/04	9:47:52	1.000	1.00
59	Smear 11	12/22/04	9:46:32	SA-1-J	Final Status Survey	12/22/04	9:46:32	1.000	1.00
60	Smear 12	12/22/04	9:45:12	SA-1-J	Final Status Survey	12/22/04	9:45:12	1.000	1.00
61	Smear 13	12/22/04	9:43:52	SA-1-J	Final Status Survey	12/22/04	9:43:52	1.000	1.00
62	Smear 14	12/22/04	9:42:32	SA-1-J	Final Status Survey	12/22/04	9:42:32	1.000	1.00
63	Smear 15	12/22/04	9:41:13	SA-1-J	Final Status Survey	12/22/04	9:41:13	1.000	1.00

Technician (print): Rob Ellison

Technician (sign):

Date: 12-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.7% LLD: 13.41 dpm				Bkg: 0.63 cpm %Eff: 46.1% LLD: 11.9 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
49	Smear 1	12/22/04	9:59:50	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
50	Smear 2	12/22/04	9:58:30	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
51	Smear 3	12/22/04	9:57:10	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
52	Smear 4	12/22/04	9:55:50	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
53	Smear 5	12/22/04	9:54:30	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
54	Smear 6	12/22/04	9:53:10	0.00	-0.03	-0.13	13.41	5.00	4.37	9.67	11.90
55	Smear 7	12/22/04	9:51:51	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
56	Smear 8	12/22/04	9:50:31	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
57	Smear 9	12/22/04	9:49:11	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
58	Smear 10	12/22/04	9:47:52	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
59	Smear 11	12/22/04	9:46:32	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
60	Smear 12	12/22/04	9:45:12	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
61	Smear 13	12/22/04	9:43:52	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
62	Smear 14	12/22/04	9:42:32	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
63	Smear 15	12/22/04	9:41:13	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90

Technician (print): Rob Ellison

Technician (sign):

*Rob Ellison*

Date: 12-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

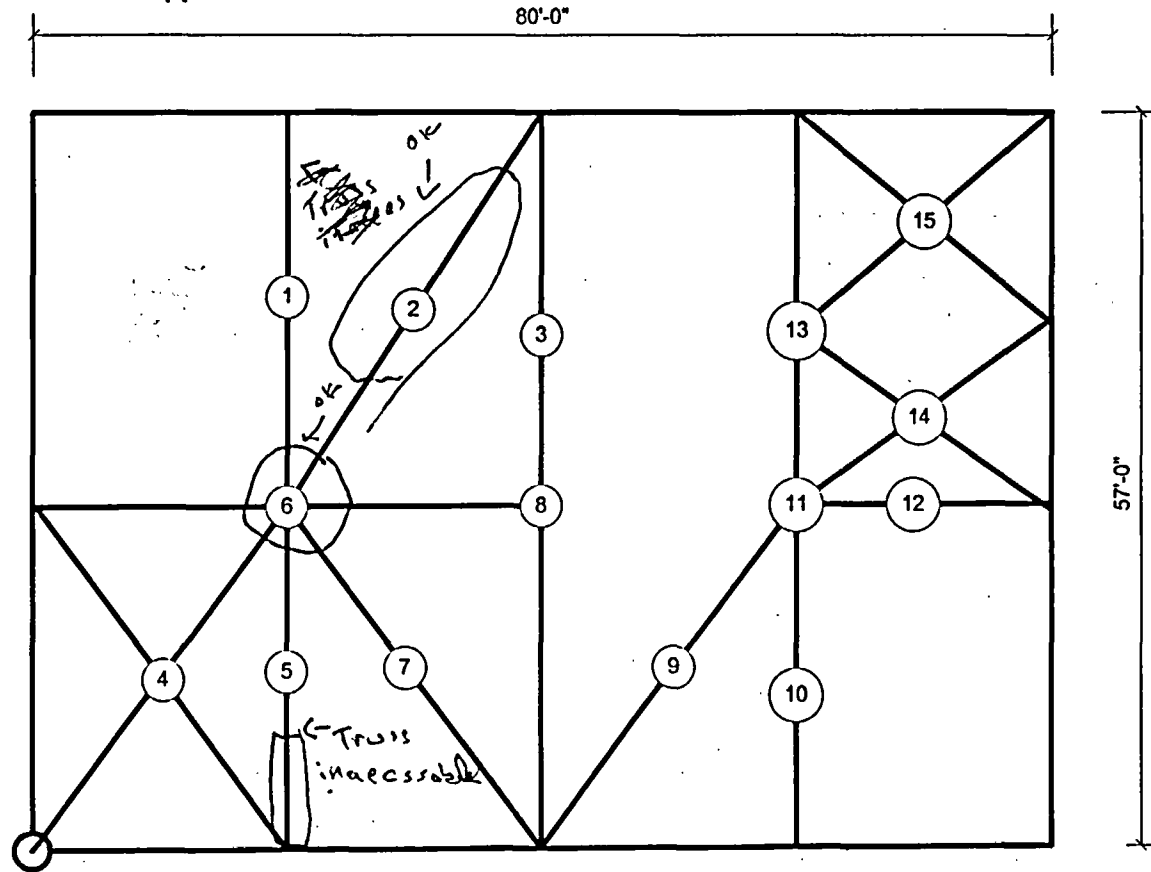
Date:

**SA-1-K      Service Area**

Looking Up



Lower Ceiling Beams



1-1C  
SA ~~2~~ A Beams  
~~SA-1Q~~

Log #
4 Source
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16 <del>15</del>
17 <del>15</del>
18 <del>15</del>
19 <del>15</del>
20 <del>15</del>
21 <del>15</del>
22 <del>18</del>
23 <del>14</del>

	X	Y
	n/a	n/a
1	5.1	2.1
2	13.2	2.1
3	5.1	10.2
4	13.2	10.2
5	5.1	18.3
6	13.2	18.3
7	5.1	26.4
8	13.2	26.4
9	5.1	34.5
10	13.2	34.5
11	5.1	42.6
12	13.2	42.6
13	5.1	50.7
14	13.2	50.7

L (ft) = 8.1  
A (ft<sup>2</sup>) = 912

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
260	260	280
212 <del>221</del>	220	240
207	200	240
149	160	180
221	220	240
160	160	180
240	240	260
188	180	200
225/197	200	220
167	160	180
234	240	260
246	240	260
165	160	180
192	200	220
100	120	140

# 202442

BKGD-3

#14 BKGD

#15 Source

Short!

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

at 12/18/2004  
m 11:25 PM

Header 1: Chris Higgins  
Header 2: Serial#202442  
Header 3: DetSer#PR221482  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: SA-2-A  
Calibration Due Date: 12/13/2005  
Model 2360 Date: 12/18/2004  
Model 2360 Time: 14:05:32  
Sample Number: 0025

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Cr - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/17/04	07:24:20	000000	000160	S 001.0	Lab Background
0002	12/17/04	07:29:06	000001	033207	S 001.0	Lab Source
0003	12/17/04	13:05:39	000000	000150	S 001.0	Field Background
0004	12/17/04	13:12:53	000000	001564	S 001.0	Field Source
0005	12/17/04	13:18:26	000001	000260	S 001.0	SA-2-A Beams
0006	12/17/04	13:33:57	000001	000212	S 001.0	SA-2-A Beams
0007	12/17/04	14:13:59	000000	000207	S 001.0	SA-2-A Beams
0008	12/17/04	14:37:26	000001	000169	S 001.0	SA-2-A Beams
0009	12/17/04	14:39:06	000000	000221	S 001.0	SA-2-A Beams
0010	12/17/04	14:41:12	000000	000160	S 001.0	SA-2-A Beams
0011	12/17/04	16:12:50	000001	000240	S 001.0	SA-2-A Beams
0012	12/18/04	07:35:30	000000	000164	S 001.0	Lab Background
0013	12/18/04	07:38:42	000000	033002	S 001.0	Lab Source
0014	12/18/04	08:13:49	000001	000143	S 001.0	Field Background
0015	12/18/04	08:15:23	000000	001613	S 001.0	Field Source
0016	12/18/04	09:49:15	000001	000188	S 001.0	SA-2-A Beams
0017	12/18/04	11:56:01	000002	000197	S 001.0	SA-2-A Beams
0018	12/18/04	12:06:28	000000	000167	S 001.0	SA-2-A Beams
0019	12/18/04	12:46:00	000002	000234	S 001.0	SA-2-A Beams
0020	12/18/04	12:47:49	000000	000246	S 001.0	SA-2-A Beams
0021	12/18/04	12:55:45	000001	000165	S 001.0	SA-2-A Beams
0022	12/18/04	12:57:23	000000	000193	S 001.0	SA-2-A Beams
0023	12/18/04	13:02:08	000001	000130	S 001.0	SA-2-A Beams
0024	12/18/04	13:04:32	000000	001733	S 001.0	Field Source



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/18/04	14:45:33	SA Beams	Final Status Survey	12/18/04	14:45:33	1.000	1.00
2	Smear 2	12/18/04	14:44:14	SA Beams	Final Status Survey	12/18/04	14:44:14	1.000	1.00
3	Smear 3	12/18/04	14:42:54	SA Beams	Final Status Survey	12/18/04	14:42:54	1.000	1.00
4	Smear 4	12/18/04	14:41:35	SA Beams	Final Status Survey	12/18/04	14:41:35	1.000	1.00
5	Smear 5	12/18/04	14:40:15	SA Beams	Final Status Survey	12/18/04	14:40:15	1.000	1.00
6	Smear 6	12/18/04	14:38:56	SA Beams	Final Status Survey	12/18/04	14:38:56	1.000	1.00
7	Smear 7	12/18/04	14:37:36	SA Beams	Final Status Survey	12/18/04	14:37:36	1.000	1.00
8	Smear 8	12/18/04	14:36:16	SA Beams	Final Status Survey	12/18/04	14:36:16	1.000	1.00
9	Smear 9	12/18/04	14:34:56	SA Beams	Final Status Survey	12/18/04	14:34:56	1.000	1.00
10	Smear 10	12/18/04	14:33:36	SA Beams	Final Status Survey	12/18/04	14:33:36	1.000	1.00
11	Smear 11	12/18/04	14:32:16	SA Beams	Final Status Survey	12/18/04	14:32:16	1.000	1.00
12	Smear 12	12/18/04	14:30:57	SA Beams	Final Status Survey	12/18/04	14:30:57	1.000	1.00
13	Smear 13	12/18/04	14:29:37	SA Beams	Final Status Survey	12/18/04	14:29:37	1.000	1.00
14	Smear 14	12/18/04	14:28:17	SA Beams	Final Status Survey	12/18/04	14:28:17	1.000	1.00
15	Smear 15	12/18/04	14:26:58	SA Beams	Final Status Survey	12/18/04	14:26:58	1.000	1.00
16	Smear 1	12/18/04	14:25:38	SA-2-A Ceiling	Final Status Survey	12/18/04	14:25:38	1.000	1.00
17	Smear 2	12/18/04	14:24:18	SA-2-A Ceiling	Final Status Survey	12/18/04	14:24:18	1.000	1.00
18	Smear 3	12/18/04	14:22:58	SA-2-A Ceiling	Final Status Survey	12/18/04	14:22:58	1.000	1.00
19	Smear 4	12/18/04	14:21:38	SA-2-A Ceiling	Final Status Survey	12/18/04	14:21:38	1.000	1.00
20	Smear 5	12/18/04	14:20:18	SA-2-A Ceiling	Final Status Survey	12/18/04	14:20:18	1.000	1.00
21	Smear 6	12/18/04	14:18:59	SA-2-A Ceiling	Final Status Survey	12/18/04	14:18:59	1.000	1.00
22	Smear 7	12/18/04	14:17:39	SA-2-A Ceiling	Final Status Survey	12/18/04	14:17:39	1.000	1.00
23	Smear 8	12/18/04	14:16:20	SA-2-A Ceiling	Final Status Survey	12/18/04	14:16:20	1.000	1.00
24	Smear 9	12/18/04	14:15:00	SA-2-A Ceiling	Final Status Survey	12/18/04	14:15:00	1.000	1.00
25	Smear 10	12/18/04	14:13:40	SA-2-A Ceiling	Final Status Survey	12/18/04	14:13:40	1.000	1.00
26	Smear 11	12/18/04	14:12:20	SA-2-A Ceiling	Final Status Survey	12/18/04	14:12:20	1.000	1.00
27	Smear 12	12/18/04	14:11:01	SA-2-A Ceiling	Final Status Survey	12/18/04	14:11:01	1.000	1.00
28	Smear 13	12/18/04	14:09:41	SA-2-A Ceiling	Final Status Survey	12/18/04	14:09:41	1.000	1.00
29	Smear 14	12/18/04	14:08:22	SA-2-A Ceiling	Final Status Survey	12/18/04	14:08:22	1.000	1.00
30	Smear 15	12/18/04	14:07:02	SA-2-A Ceiling	Final Status Survey	12/18/04	14:07:02	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-18-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.13 cpm %Eff: 24.46 LLD: 16.07 dpm				Bkg: 0.47 cpm %Eff: 44.48 LLD: 11.23 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/18/04	14:45:33	0.00	-0.13	-0.55	16.07	2.00	1.53	3.45	11.23
2	Smear 2	12/18/04	14:44:14	0.00	-0.13	-0.55	16.07	4.00	3.53	7.94	11.23
3	Smear 3	12/18/04	14:42:54	0.00	-0.13	-0.55	16.07	1.00	0.53	1.20	11.23
4	Smear 4	12/18/04	14:41:35	0.00	-0.13	-0.55	16.07	2.00	1.53	3.45	11.23
5	Smear 5	12/18/04	14:40:15	0.00	-0.13	-0.55	16.07	3.00	2.53	5.70	11.23
6	Smear 6	12/18/04	14:38:56	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
7	Smear 7	12/18/04	14:37:36	0.00	-0.13	-0.55	16.07	1.00	0.53	1.20	11.23
8	Smear 8	12/18/04	14:36:16	0.00	-0.13	-0.55	16.07	2.00	1.53	3.45	11.23
9	Smear 9	12/18/04	14:34:56	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
10	Smear 10	12/18/04	14:33:36	0.00	-0.13	-0.55	16.07	1.00	0.53	1.20	11.23
11	Smear 11	12/18/04	14:32:16	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
12	Smear 12	12/18/04	14:30:57	0.00	-0.13	-0.55	16.07	2.00	1.53	3.45	11.23
13	Smear 13	12/18/04	14:29:37	0.00	-0.13	-0.55	16.07	1.00	0.53	1.20	11.23
14	Smear 14	12/18/04	14:28:17	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
15	Smear 15	12/18/04	14:26:58	0.00	-0.13	-0.55	16.07	1.00	0.53	1.20	11.23
16	Smear 1	12/18/04	14:25:38	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
17	Smear 2	12/18/04	14:24:18	0.00	-0.13	-0.55	16.07	6.00	5.53	12.44	11.23
18	Smear 3	12/18/04	14:22:58	0.00	-0.13	-0.55	16.07	5.00	4.53	10.19	11.23
19	Smear 4	12/18/04	14:21:38	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
20	Smear 5	12/18/04	14:20:18	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
21	Smear 6	12/18/04	14:18:59	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
22	Smear 7	12/18/04	14:17:39	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
23	Smear 8	12/18/04	14:16:20	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
24	Smear 9	12/18/04	14:15:00	0.00	-0.13	-0.55	16.07	2.00	1.53	3.45	11.23
25	Smear 10	12/18/04	14:13:40	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
26	Smear 11	12/18/04	14:12:20	0.00	-0.13	-0.55	16.07	1.00	0.53	1.20	11.23
27	Smear 12	12/18/04	14:11:01	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
28	Smear 13	12/18/04	14:09:41	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
29	Smear 14	12/18/04	14:08:22	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
30	Smear 15	12/18/04	14:07:02	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

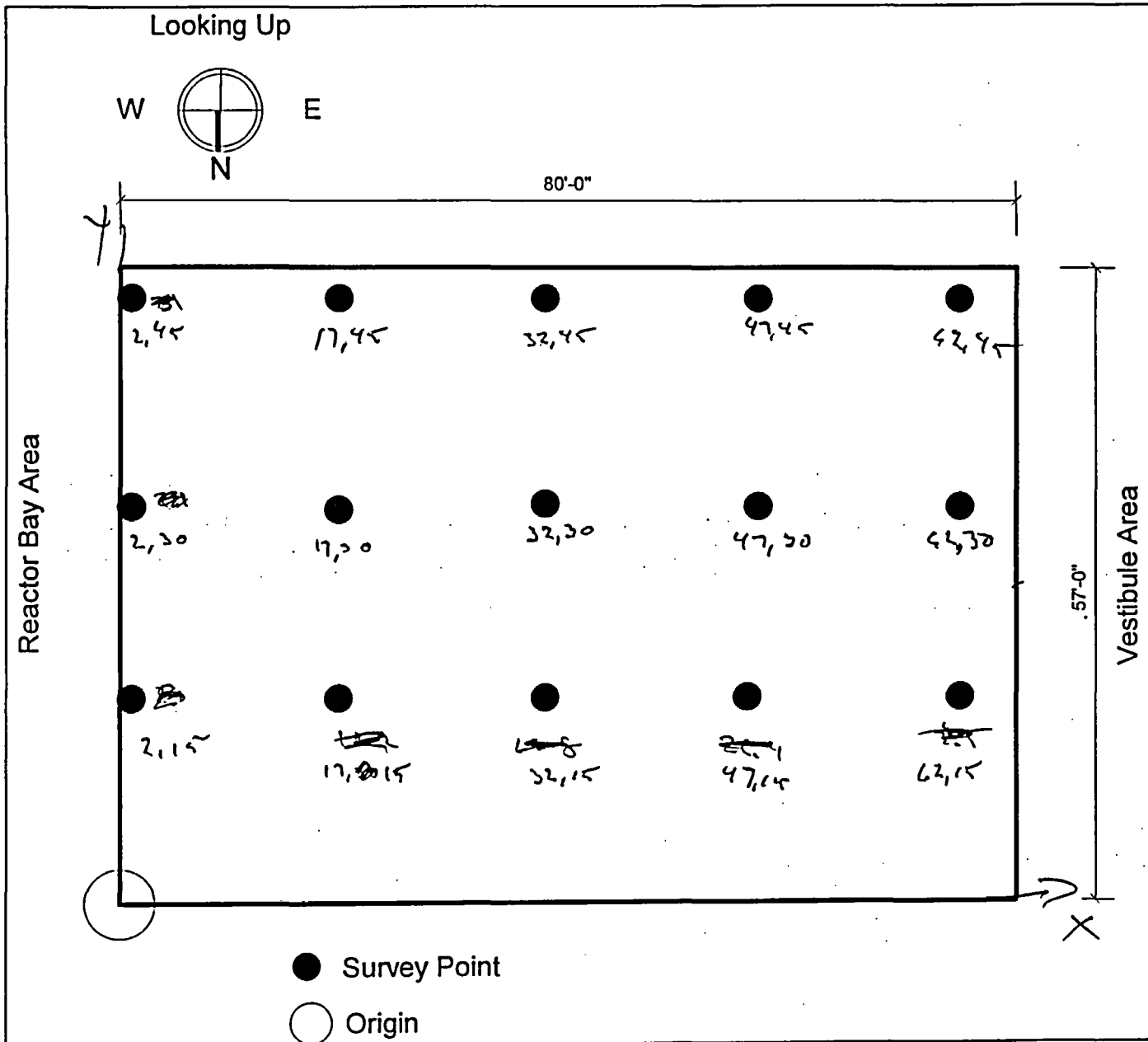
Date: 12-18-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**SA-2-A      Service Area**



Documents Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 2 Service Area Ceiling	
SCIENTECH SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/22/2004
By: CW	CK:
FIGURE: SA-2-A	

2-A  
SA-T-M

Log #
4 Source
5
6
7
8
9
10
11
12
13
18 14
19 15
20 16
21 17
22 18
23 19

	X	Y
	n/a	n/a
1	5.1 2	2.1 15
2	13.2 2	2.1 30
3	5.1 2	10.2 45
4	13.2 17	10.2 15
5	5.1 17	18.3 30
6	13.2 17	18.3 45
7	5.1 32	26.4 15
8	13.2 32	26.4 30
9	5.1 32	34.5 45
10	13.2 47	34.5 15
11	5.1 47	42.6 30
12	13.2 47	42.6 45
13	5.1 62	50.7 15
14	13.2 62	50.7 30

L (ft) = 8.1

A (ft²) = 912

6.2	45
-----	----

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
213	200	240
231	240	260
224	220	240
195	200	220
191	200	220
200	200	220
207	200	220
203	200	220
186	180	240
256	260	280
215	220	240
218	220	240
203	200	220
219	220	240
237	240	260

#17 8 162

#16 BLED

#17 Source

Ludlum Measurements, Inc.  
Model 2360 Log Data

Time: 2/18/2004  
Time: 2:16:50 PM

Header 1: Chris Higgins  
Header 2: Serial#178162  
Header 3: DetSer#200135  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: SA-2-A  
Calibration Due Date: 10/11/2005  
Model 2360 Date: 12/18/2004  
Model 2360 Time: 14:15:03  
Sample Number: 0025

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

C - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/17/04	12:02:18	000010	000272	S 001.0	Lab Background
0002	12/17/04	12:06:12	000003	033929	S 001.0	Lab Source
0003	12/17/04	13:03:08	000006	000208	S 001.0	Field Background
0004	12/17/04	13:12:48	000003	002072	S 001.0	Field Source
0005	12/17/04	13:14:39	000006	000213	S 001.0	SA-2-A Ceiling
0006	12/17/04	13:43:51	000004	000231	S 001.0	SA-2-A Ceiling
0007	12/17/04	14:22:02	000003	000224	S 001.0	SA-2-A Ceiling
0008	12/17/04	15:05:23	000007	000195	S 001.0	SA-2-A Ceiling
0009	12/17/04	15:54:33	000006	000191	S 001.0	SA-2-A Ceiling
0010	12/17/04	15:56:50	000006	000200	S 001.0	SA-2-A Ceiling
0011	12/17/04	15:59:01	000005	000207	S 001.0	SA-2-A Ceiling
0012	12/17/04	16:01:43	000001	000203	S 001.0	SA-2-A Ceiling
0013	12/17/04	16:04:13	000008	000186	S 001.0	SA-2-A Ceiling
0014	12/18/04	07:36:38	000006	000261	S 001.0	Lab Background
0015	12/18/04	07:38:21	000010	036285	S 001.0	Lab Source
0016	12/18/04	08:14:59	000005	000231	S 001.0	Field Background
0017	12/18/04	08:18:06	000001	002106	S 001.0	Field Source
0018	12/18/04	10:52:07	000005	000256	S 001.0	SA-2-A Ceiling
0019	12/18/04	11:06:33	000005	000215	S 001.0	SA-2-A Ceiling
0020	12/18/04	11:42:52	000011	000218	S 001.0	SA-2-A Ceiling
0021	12/18/04	13:00:51	000005	000203	S 001.0	SA-2-A Ceiling
0022	12/18/04	13:03:24	000006	000219	S 001.0	SA-2-A Ceiling
0023	12/18/04	13:04:38	000008	000237	S 001.0	SA-2-A Ceiling
0024	12/18/04	13:06:57	000000	002220	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/18/04	14:45:33	SA Beams	Final Status Survey	12/18/04	14:45:33	1.000	1.00
2	Smear 2	12/18/04	14:44:14	SA Beams	Final Status Survey	12/18/04	14:44:14	1.000	1.00
3	Smear 3	12/18/04	14:42:54	SA Beams	Final Status Survey	12/18/04	14:42:54	1.000	1.00
4	Smear 4	12/18/04	14:41:35	SA Beams	Final Status Survey	12/18/04	14:41:35	1.000	1.00
5	Smear 5	12/18/04	14:40:15	SA Beams	Final Status Survey	12/18/04	14:40:15	1.000	1.00
6	Smear 6	12/18/04	14:38:56	SA Beams	Final Status Survey	12/18/04	14:38:56	1.000	1.00
7	Smear 7	12/18/04	14:37:36	SA Beams	Final Status Survey	12/18/04	14:37:36	1.000	1.00
8	Smear 8	12/18/04	14:36:16	SA Beams	Final Status Survey	12/18/04	14:36:16	1.000	1.00
9	Smear 9	12/18/04	14:34:56	SA Beams	Final Status Survey	12/18/04	14:34:56	1.000	1.00
10	Smear 10	12/18/04	14:33:36	SA Beams	Final Status Survey	12/18/04	14:33:36	1.000	1.00
11	Smear 11	12/18/04	14:32:16	SA Beams	Final Status Survey	12/18/04	14:32:16	1.000	1.00
12	Smear 12	12/18/04	14:30:57	SA Beams	Final Status Survey	12/18/04	14:30:57	1.000	1.00
13	Smear 13	12/18/04	14:29:37	SA Beams	Final Status Survey	12/18/04	14:29:37	1.000	1.00
14	Smear 14	12/18/04	14:28:17	SA Beams	Final Status Survey	12/18/04	14:28:17	1.000	1.00
15	Smear 15	12/18/04	14:26:58	SA Beams	Final Status Survey	12/18/04	14:26:58	1.000	1.00
16	Smear 1	12/18/04	14:25:38	SA-2-A Ceiling	Final Status Survey	12/18/04	14:25:38	1.000	1.00
17	Smear 2	12/18/04	14:24:18	SA-2-A Ceiling	Final Status Survey	12/18/04	14:24:18	1.000	1.00
18	Smear 3	12/18/04	14:22:58	SA-2-A Ceiling	Final Status Survey	12/18/04	14:22:58	1.000	1.00
19	Smear 4	12/18/04	14:21:38	SA-2-A Ceiling	Final Status Survey	12/18/04	14:21:38	1.000	1.00
20	Smear 5	12/18/04	14:20:18	SA-2-A Ceiling	Final Status Survey	12/18/04	14:20:18	1.000	1.00
21	Smear 6	12/18/04	14:18:59	SA-2-A Ceiling	Final Status Survey	12/18/04	14:18:59	1.000	1.00
22	Smear 7	12/18/04	14:17:39	SA-2-A Ceiling	Final Status Survey	12/18/04	14:17:39	1.000	1.00
23	Smear 8	12/18/04	14:16:20	SA-2-A Ceiling	Final Status Survey	12/18/04	14:16:20	1.000	1.00
24	Smear 9	12/18/04	14:15:00	SA-2-A Ceiling	Final Status Survey	12/18/04	14:15:00	1.000	1.00
25	Smear 10	12/18/04	14:13:40	SA-2-A Ceiling	Final Status Survey	12/18/04	14:13:40	1.000	1.00
26	Smear 11	12/18/04	14:12:20	SA-2-A Ceiling	Final Status Survey	12/18/04	14:12:20	1.000	1.00
27	Smear 12	12/18/04	14:11:01	SA-2-A Ceiling	Final Status Survey	12/18/04	14:11:01	1.000	1.00
28	Smear 13	12/18/04	14:09:41	SA-2-A Ceiling	Final Status Survey	12/18/04	14:09:41	1.000	1.00
29	Smear 14	12/18/04	14:08:22	SA-2-A Ceiling	Final Status Survey	12/18/04	14:08:22	1.000	1.00
30	Smear 15	12/18/04	14:07:02	SA-2-A Ceiling	Final Status Survey	12/18/04	14:07:02	1.000	1.00

2-A

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-18-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.13 cpm %Eff: 24.46 LLD: 16.07 dpm				Bkg: 0.47 cpm %Eff: 44.48 LLD: 11.23 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/18/04	14:45:33	0.00	-0.13	-0.55	16.07	2.00	1.53	3.45	11.23
2	Smear 2	12/18/04	14:44:14	0.00	-0.13	-0.55	16.07	4.00	3.53	7.94	11.23
3	Smear 3	12/18/04	14:42:54	0.00	-0.13	-0.55	16.07	1.00	0.53	1.20	11.23
4	Smear 4	12/18/04	14:41:35	0.00	-0.13	-0.55	16.07	2.00	1.53	3.45	11.23
5	Smear 5	12/18/04	14:40:15	0.00	-0.13	-0.55	16.07	3.00	2.53	5.70	11.23
6	Smear 6	12/18/04	14:38:56	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
7	Smear 7	12/18/04	14:37:36	0.00	-0.13	-0.55	16.07	1.00	0.53	1.20	11.23
8	Smear 8	12/18/04	14:36:16	0.00	-0.13	-0.55	16.07	2.00	1.53	3.45	11.23
9	Smear 9	12/18/04	14:34:56	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
10	Smear 10	12/18/04	14:33:36	0.00	-0.13	-0.55	16.07	1.00	0.53	1.20	11.23
11	Smear 11	12/18/04	14:32:16	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
12	Smear 12	12/18/04	14:30:57	0.00	-0.13	-0.55	16.07	2.00	1.53	3.45	11.23
13	Smear 13	12/18/04	14:29:37	0.00	-0.13	-0.55	16.07	1.00	0.53	1.20	11.23
14	Smear 14	12/18/04	14:28:17	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
15	Smear 15	12/18/04	14:26:58	0.00	-0.13	-0.55	16.07	1.00	0.53	1.20	11.23
16	Smear 1	12/18/04	14:25:38	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
17	Smear 2	12/18/04	14:24:18	0.00	-0.13	-0.55	16.07	6.00	5.53	12.44	11.23
18	Smear 3	12/18/04	14:22:58	0.00	-0.13	-0.55	16.07	5.00	4.53	10.19	11.23
19	Smear 4	12/18/04	14:21:38	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
20	Smear 5	12/18/04	14:20:18	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
21	Smear 6	12/18/04	14:18:59	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
22	Smear 7	12/18/04	14:17:39	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
23	Smear 8	12/18/04	14:16:20	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
24	Smear 9	12/18/04	14:15:00	0.00	-0.13	-0.55	16.07	2.00	1.53	3.45	11.23
25	Smear 10	12/18/04	14:13:40	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
26	Smear 11	12/18/04	14:12:20	0.00	-0.13	-0.55	16.07	1.00	0.53	1.20	11.23
27	Smear 12	12/18/04	14:11:01	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
28	Smear 13	12/18/04	14:09:41	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
29	Smear 14	12/18/04	14:08:22	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23
30	Smear 15	12/18/04	14:07:02	0.00	-0.13	-0.55	16.07	0.00	-0.47	-1.05	11.23

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-18-04

Reviewed By (print): Joe Trowbridge

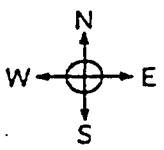
Reviewed By (sign):

Date:

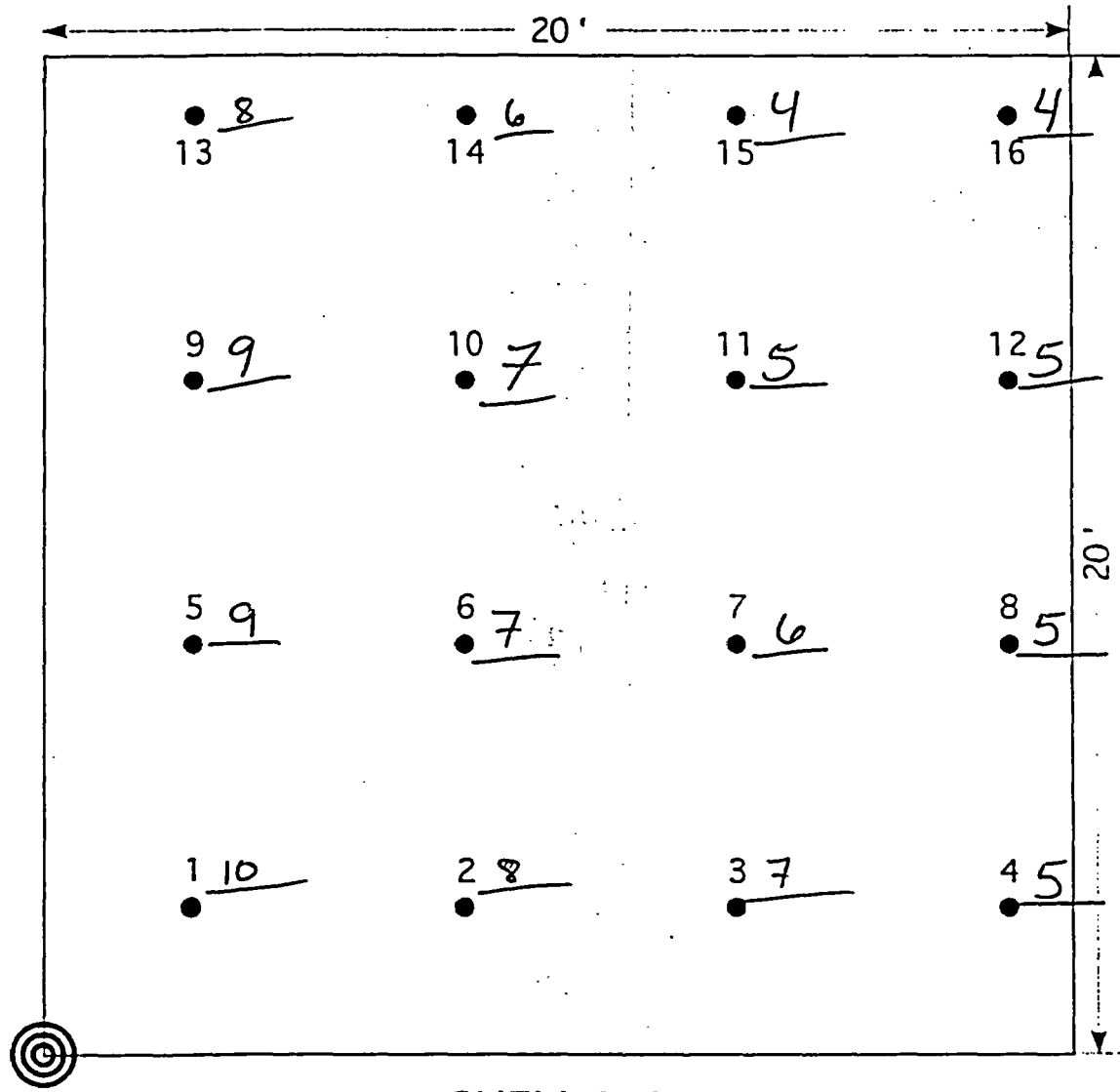


**CHEM-1-A Chemistry Lab**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENTECH LLC 10 WEST STREET NEW HAVEN, CT 06511	PROJECT NO. 21379-0301	FILE NAME	DATE	07/12/2004	By	CC	FIGURE	CHELL-1A
		DRAWING	CLASS 1 Chem Lab Floor				SCALE	N.T.S.				



• SURVEY POINTS  
 STARTING LOCATION



CHEM-1-A

M-19  
 S# 209746

CHEM-1-A ~~1000~~ PHIL  
LeRoy

#3

Log #	Source
5	
6	
7	
8	
9	
10	
11	10
12	
13	
14	
15	
16	
17	
18	
19	
20	

#4 BK9  
205

	X	Y
	n/a	n/a
1	2.9	2.9
2	8.2	2.9
3	13.5	2.9
4	18.8	2.9
5	2.9	8.2
6	8.2	8.2
7	13.5	8.2
8	18.8	8.2
9	2.9	13.5
10	8.2	13.5
11	13.5	13.5
12	18.8	13.5
13	2.9	18.8
14	8.2	18.8
15	13.5	18.8
16	18.8	18.8

L (ft) = 5.3  
A (ft²) = 400

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
302	280	340
212	200	280
243	200	300
204	180	260
262	220	280
181	160	230
256	200	320
196	180	250
295	240	340
241	230	340
333	280	340
251	240	300
307	280	350
271	240	320
265	240	300
261	200	280

#21 END 18423

M2360

S# 193629

12-17-04

ON

OFF

floor frisk 100% with

M12

S# 177883

# Model 2360 Log Data

Date: 12/17/2004  
Time: 3:18:38 PM

Header 1: Leroy Cuneo  
Header 2: Serial#193629  
Header 3: DetSer#PR193917  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Chem-1  
Calibration Due Date: 12/13/2005  
Model 2360 Date: 12/17/2004  
Model 2360 Time: 15:15:33  
Sample Number: 0055

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/17/04	07:23:20	000001	000174	S	001.0 Lab Background
0002	12/17/04	07:27:29	000000	032412	S	001.0 Lab Source
0003	12/17/04	12:36:51	000002	001532	S	001.0 Field Source
0004	12/17/04	13:00:17	000000	000205	S	001.0 Field Background
0005	12/17/04	13:06:13	000000	000302	S	001.0 Chem-1-A
0006	12/17/04	13:08:15	000000	000212	S	001.0 Chem-1-A
0007	12/17/04	13:10:40	000003	000243	S	001.0 Chem-1-A
0008	12/17/04	13:13:24	000001	000204	S	001.0 Chem-1-A
0009	12/17/04	13:16:27	000003	000262	S	001.0 Chem-1-A
0010	12/17/04	13:18:06	000001	000181	S	001.0 Chem-1-A
0011	12/17/04	13:20:37	000001	000256	S	001.0 Chem-1-A
0012	12/17/04	13:22:08	000001	000196	S	001.0 Chem-1-A
0013	12/17/04	13:26:52	000000	000295	S	001.0 Chem-1-A
0014	12/17/04	13:32:43	000003	000241	S	001.0 Chem-1-A
0015	12/17/04	13:35:07	000002	000333	S	001.0 Chem-1-A
0016	12/17/04	13:36:42	000000	000251	S	001.0 Chem-1-A
0017	12/17/04	13:47:19	000003	000307	S	001.0 Chem-1-A
0018	12/17/04	13:51:11	000001	000271	S	001.0 Chem-1-A
0019	12/17/04	13:52:56	000001	000265	S	001.0 Chem-1-A
0020	12/17/04	13:54:14	000002	000261	S	001.0 Chem-1-A
0021	12/17/04	13:56:13	000002	018423	S	001.0 Field Source
0022	12/17/04	14:16:01	000002	000137	S	001.0 Chem-1-B
0023	12/17/04	14:17:33	000000	000160	S	001.0 Chem-1-B
0024	12/17/04	14:18:47	000003	000134	S	001.0 Chem-1-B
0025	12/17/04	14:20:12	000000	000272	S	001.0 Chem-1-B
0026	12/17/04	14:21:25	000001	000293	S	001.0 Chem-1-B
0027	12/17/04	14:22:42	000001	000284	S	001.0 Chem-1-B
0028	12/17/04	14:23:53	000002	000346	S	001.0 Chem-1-B
0029	12/17/04	14:25:31	000001	000304	S	001.0 Chem-1-B
0030	12/17/04	14:26:54	000000	000174	S	001.0 Chem-1-B
0031	12/17/04	14:28:19	000001	000151	S	001.0 Chem-1-B
0032	12/17/04	14:29:37	000001	000138	S	001.0 Chem-1-B
0033	12/17/04	14:31:06	000000	000279	S	001.0 Chem-1-B
0034	12/17/04	14:33:25	000000	000290	S	001.0 Chem-1-B

0036 12/17/04 14:38:21 000001 000233 S 001.0 Chem-1-B  
0037 12/17/04 14:38:13 000001 000267 S 001.0 Chem-1-B  
0038 12/17/04 14:39:34 000000 017541 S 001.0 Field Source  
0039 12/17/04 14:46:51 000002 000167 S 001.0 Chem-1-C  
0040 12/17/04 14:48:07 000000 000151 S 001.0 Chem-1-C  
0041 12/17/04 14:50:07 000000 000165 S 001.0 Chem-1-C  
0042 12/17/04 14:51:53 000000 000151 S 001.0 Chem-1-C  
0043 12/17/04 14:54:39 000002 000147 S 001.0 Chem-1-C  
0044 12/17/04 14:55:54 000000 000146 S 001.0 Chem-1-C  
0045 12/17/04 14:57:11 000001 000172 S 001.0 Chem-1-C  
0046 12/17/04 14:58:30 000001 000164 S 001.0 Chem-1-C  
0047 12/17/04 14:59:47 000001 000174 S 001.0 Chem-1-C  
0048 12/17/04 15:01:29 000001 000154 S 001.0 Chem-1-C  
0049 12/17/04 15:02:54 000000 000151 S 001.0 Chem-1-C  
0050 12/17/04 15:04:11 000001 000168 S 001.0 Chem-1-C  
0051 12/17/04 15:05:25 000001 000165 S 001.0 Chem-1-C  
0052 12/17/04 15:06:40 000001 000160 S 001.0 Chem-1-C  
0053 12/17/04 15:07:56 000003 000140 S 001.0 Chem-1-C  
0054 12/17/04 15:10:48 000000 018235 S 001.0 Field Source

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							of Sample
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	
1	Smear 1	12/17/04	16:37:06	Chem-1-A	Final Status Survey	12/17/04	16:37:06	1.000	1.00
2	Smear 2	12/17/04	16:35:48	Chem-1-A	Final Status Survey	12/17/04	16:35:48	1.000	1.00
3	Smear 3	12/17/04	16:34:27	Chem-1-A	Final Status Survey	12/17/04	16:34:27	1.000	1.00
4	Smear 4	12/17/04	16:33:07	Chem-1-A	Final Status Survey	12/17/04	16:33:07	1.000	1.00
5	Smear 5	12/17/04	16:31:47	Chem-1-A	Final Status Survey	12/17/04	16:31:47	1.000	1.00
6	Smear 6	12/17/04	16:30:27	Chem-1-A	Final Status Survey	12/17/04	16:30:27	1.000	1.00
7	Smear 7	12/17/04	16:29:07	Chem-1-A	Final Status Survey	12/17/04	16:29:07	1.000	1.00
8	Smear 8	12/17/04	16:27:47	Chem-1-A	Final Status Survey	12/17/04	16:27:47	1.000	1.00
9	Smear 9	12/17/04	16:26:27	Chem-1-A	Final Status Survey	12/17/04	16:26:27	1.000	1.00
10	Smear 10	12/17/04	16:25:07	Chem-1-A	Final Status Survey	12/17/04	16:25:07	1.000	1.00
11	Smear 11	12/17/04	16:23:48	Chem-1-A	Final Status Survey	12/17/04	16:23:48	1.000	1.00
12	Smear 12	12/17/04	16:22:28	Chem-1-A	Final Status Survey	12/17/04	16:22:28	1.000	1.00
13	Smear 13	12/17/04	16:21:08	Chem-1-A	Final Status Survey	12/17/04	16:21:08	1.000	1.00
14	Smear 14	12/17/04	16:19:48	Chem-1-A	Final Status Survey	12/17/04	16:19:48	1.000	1.00
15	Smear 15	12/17/04	16:18:28	Chem-1-A	Final Status Survey	12/17/04	16:18:28	1.000	1.00
16	Smear 16	12/17/04	16:17:08	Chem-1-A	Final Status Survey	12/17/04	16:17:08	1.000	1.00
17	Smear 1	12/17/04	16:15:48	Chem-1-B	Final Status Survey	12/17/04	16:15:48	1.000	1.00
18	Smear 2	12/17/04	16:14:28	Chem-1-B	Final Status Survey	12/17/04	16:14:28	1.000	1.00
19	Smear 3	12/17/04	16:13:08	Chem-1-B	Final Status Survey	12/17/04	16:13:08	1.000	1.00
20	Smear 4	12/17/04	16:11:47	Chem-1-B	Final Status Survey	12/17/04	16:11:47	1.000	1.00
21	Smear 5	12/17/04	16:10:27	Chem-1-B	Final Status Survey	12/17/04	16:10:27	1.000	1.00
22	Smear 6	12/17/04	16:09:07	Chem-1-B	Final Status Survey	12/17/04	16:09:07	1.000	1.00
23	Smear 7	12/17/04	16:07:48	Chem-1-B	Final Status Survey	12/17/04	16:07:48	1.000	1.00
24	Smear 8	12/17/04	16:06:28	Chem-1-B	Final Status Survey	12/17/04	16:06:28	1.000	1.00
25	Smear 9	12/17/04	16:05:08	Chem-1-B	Final Status Survey	12/17/04	16:05:08	1.000	1.00
26	Smear 10	12/17/04	16:03:48	Chem-1-B	Final Status Survey	12/17/04	16:03:48	1.000	1.00
27	Smear 11	12/17/04	16:02:29	Chem-1-B	Final Status Survey	12/17/04	16:02:29	1.000	1.00
28	Smear 12	12/17/04	16:01:09	Chem-1-B	Final Status Survey	12/17/04	16:01:09	1.000	1.00
29	Smear 13	12/17/04	15:59:49	Chem-1-B	Final Status Survey	12/17/04	15:59:49	1.000	1.00
30	Smear 14	12/17/04	15:58:29	Chem-1-B	Final Status Survey	12/17/04	15:58:29	1.000	1.00
31	Smear 15	12/17/04	15:57:09	Chem-1-B	Final Status Survey	12/17/04	15:57:09	1.000	1.00
32	Smear 16	12/17/04	15:55:49	Chem-1-B	Final Status Survey	12/17/04	15:55:49	1.000	1.00
33	Smear 1	12/17/04	15:54:29	Chem-1-C	Final Status Survey	12/17/04	15:54:29	1.000	1.00
34	Smear 2	12/17/04	15:53:09	Chem-1-C	Final Status Survey	12/17/04	15:53:09	1.000	1.00
35	Smear 3	12/17/04	15:51:49	Chem-1-C	Final Status Survey	12/17/04	15:51:49	1.000	1.00
36	Smear 4	12/17/04	15:50:29	Chem-1-C	Final Status Survey	12/17/04	15:50:29	1.000	1.00
37	Smear 5	12/17/04	15:49:09	Chem-1-C	Final Status Survey	12/17/04	15:49:09	1.000	1.00
38	Smear 6	12/17/04	15:47:49	Chem-1-C	Final Status Survey	12/17/04	15:47:49	1.000	1.00
39	Smear 7	12/17/04	15:46:29	Chem-1-C	Final Status Survey	12/17/04	15:46:29	1.000	1.00
40	Smear 8	12/17/04	15:45:09	Chem-1-C	Final Status Survey	12/17/04	15:45:09	1.000	1.00
41	Smear 9	12/17/04	15:43:50	Chem-1-C	Final Status Survey	12/17/04	15:43:50	1.000	1.00
42	Smear 10	12/17/04	15:42:30	Chem-1-C	Final Status Survey	12/17/04	15:42:30	1.000	1.00
43	Smear 11	12/17/04	15:41:10	Chem-1-C	Final Status Survey	12/17/04	15:41:10	1.000	1.00
44	Smear 12	12/17/04	15:39:50	Chem-1-C	Final Status Survey	12/17/04	15:39:50	1.000	1.00
45	Smear 13	12/17/04	15:38:30	Chem-1-C	Final Status Survey	12/17/04	15:38:30	1.000	1.00
46	Smear 14	12/17/04	15:37:10	Chem-1-C	Final Status Survey	12/17/04	15:37:10	1.000	1.00
47	Smear 15	12/17/04	15:35:50	Chem-1-C	Final Status Survey	12/17/04	15:35:50	1.000	1.00
48	Smear 16	12/17/04	15:34:31	Chem-1-C	Final Status Survey	12/17/04	15:34:31	1.000	1.00

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

Technician (sign): *Rob Ellison*

Reviewed By (sign):

Date: 12-17-04

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 24.16 LLD: 11.22 dpm				Bkg: 0.43 cpm %Eff: 44.72 LLD: 10.98 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/17/04	16:37:08	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
2	Smear 2	12/17/04	16:35:48	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
3	Smear 3	12/17/04	16:34:27	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
4	Smear 4	12/17/04	16:33:07	0.00	0.00	0.00	11.22	3.00	2.57	5.74	10.98
5	Smear 5	12/17/04	16:31:47	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
6	Smear 6	12/17/04	16:30:27	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
7	Smear 7	12/17/04	16:29:07	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
8	Smear 8	12/17/04	16:27:47	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
9	Smear 9	12/17/04	16:26:27	0.00	0.00	0.00	11.22	5.00	4.57	10.21	10.98
10	Smear 10	12/17/04	16:25:07	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
11	Smear 11	12/17/04	16:23:48	0.00	0.00	0.00	11.22	3.00	2.57	5.74	10.98
12	Smear 12	12/17/04	16:22:28	0.00	0.00	0.00	11.22	5.00	4.57	10.21	10.98
13	Smear 13	12/17/04	16:21:08	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
14	Smear 14	12/17/04	16:19:48	0.00	0.00	0.00	11.22	13.00	12.57	28.10	10.98
15	Smear 15	12/17/04	16:18:28	0.00	0.00	0.00	11.22	15.00	14.57	32.57	10.98
16	Smear 16	12/17/04	16:17:08	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
17	Smear 1	12/17/04	16:15:48	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
18	Smear 2	12/17/04	16:14:28	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
19	Smear 3	12/17/04	16:13:08	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
20	Smear 4	12/17/04	16:11:47	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
21	Smear 5	12/17/04	16:10:27	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
22	Smear 6	12/17/04	16:09:07	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
23	Smear 7	12/17/04	16:07:48	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
24	Smear 8	12/17/04	16:06:28	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
25	Smear 9	12/17/04	16:05:08	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
26	Smear 10	12/17/04	16:03:48	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
27	Smear 11	12/17/04	16:02:29	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
28	Smear 12	12/17/04	16:01:09	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
29	Smear 13	12/17/04	15:59:49	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
30	Smear 14	12/17/04	15:58:29	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
31	Smear 15	12/17/04	15:57:09	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
32	Smear 16	12/17/04	15:55:49	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
33	Smear 1	12/17/04	15:54:29	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
34	Smear 2	12/17/04	15:53:09	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
35	Smear 3	12/17/04	15:51:49	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
36	Smear 4	12/17/04	15:50:29	0.00	0.00	0.00	11.22	3.00	2.57	5.74	10.98
37	Smear 5	12/17/04	15:49:09	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
38	Smear 6	12/17/04	15:47:49	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
39	Smear 7	12/17/04	15:46:29	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
40	Smear 8	12/17/04	15:45:09	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
41	Smear 9	12/17/04	15:43:50	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
42	Smear 10	12/17/04	15:42:30	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
43	Smear 11	12/17/04	15:41:10	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
44	Smear 12	12/17/04	15:39:50	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
45	Smear 13	12/17/04	15:38:30	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
46	Smear 14	12/17/04	15:37:10	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
47	Smear 15	12/17/04	15:35:50	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
48	Smear 16	12/17/04	15:34:31	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 1-17-04

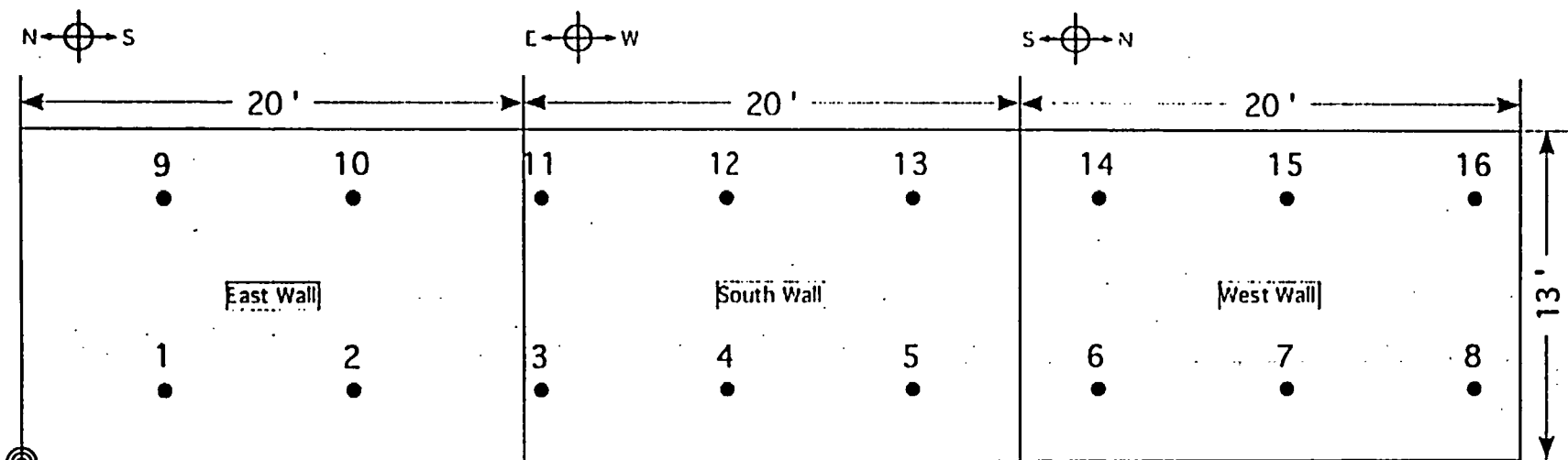
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**CHEM-1-B Chemistry Lab**





CHEM-1-B

- SURVEY POINTS
- STARTING LOCATION

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARTHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Chem Lab Walls

SCIENTECH

SCIENTECH Inc.  
113 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO.

23529 0501

FILENAME:

SCALE:

N.T.S.

BY:

DATE

07.12.2004

CK:

FIGURE

CHEM-1-B

CHEM-1-B

21

Log #
18423 Source
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37

END 38

1754/

	X	Y
	n/a	n/a
1	5.7	2.8
2	13.2	2.8
3	20.7	2.8
4	28.2	2.8
5	35.7	2.8
6	43.2	2.8
7	50.7	2.8
8	58.2	2.8
9	5.7	10.3
10	13.2	10.3
11	20.7	10.3
12	28.2	10.3
13	35.7	10.3
14	43.2	10.3
15	50.7	10.3
16	58.2	10.3

L (ft)= 7.5

A (ft²)= 780

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
137	150	190
160	180	220
134	140	200
272	240	320
293	280	360
284	270	340
346	360	380
304	330	350
174	220	260
151	180	200
138	175	210
279	310	360
290	305	340
249	270	320
293	280	350
267	280	340

2360

# 193629

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

12/17/2004  
Time: 3:18:38 PM

Header 1: Leroy Cuneo  
Header 2: Serial#193629  
Header 3: DetSer#PR193917  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Chem-1  
Calibration Due Date: 12/13/2005  
Model 2360 Date: 12/17/2004  
Model 2360 Time: 15:15:33  
Sample Number: 0055

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

me - Count Time  
Ratemeter  
S- Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

---

0001	12/17/04	07:23:20	000001	000174	S 001.0	Lab Background
0002	12/17/04	07:27:29	000000	032412	S 001.0	Lab Source
0003	12/17/04	12:36:51	000002	001532	S 001.0	Field Source
0004	12/17/04	13:00:17	000000	000205	S 001.0	Field Background
0005	12/17/04	13:06:13	000000	000302	S 001.0	Chem-1-A
0006	12/17/04	13:08:15	000000	000212	S 001.0	Chem-1-A
0007	12/17/04	13:10:40	000003	000243	S 001.0	Chem-1-A
0008	12/17/04	13:13:24	000001	000204	S 001.0	Chem-1-A
0009	12/17/04	13:16:27	000003	000262	S 001.0	Chem-1-A
0010	12/17/04	13:18:06	000001	000181	S 001.0	Chem-1-A
0011	12/17/04	13:20:37	000001	000256	S 001.0	Chem-1-A
0012	12/17/04	13:22:08	000001	000196	S 001.0	Chem-1-A
0013	12/17/04	13:26:52	000000	000295	S 001.0	Chem-1-A
0014	12/17/04	13:32:43	000003	000241	S 001.0	Chem-1-A
0015	12/17/04	13:35:07	000002	000333	S 001.0	Chem-1-A
0016	12/17/04	13:36:42	000000	000251	S 001.0	Chem-1-A
0017	12/17/04	13:47:19	000003	000307	S 001.0	Chem-1-A
0018	12/17/04	13:51:11	000001	000271	S 001.0	Chem-1-A
0019	12/17/04	13:52:56	000001	000265	S 001.0	Chem-1-A
0020	12/17/04	13:54:14	000002	000261	S 001.0	Chem-1-A
0021	12/17/04	13:56:13	000002	018423	S 001.0	Field Source
0022	12/17/04	14:16:01	000002	000137	S 001.0	Chem-1-B
0023	12/17/04	14:17:33	000000	000160	S 001.0	Chem-1-B
0024	12/17/04	14:18:47	000003	000134	S 001.0	Chem-1-B
0025	12/17/04	14:20:12	000000	000272	S 001.0	Chem-1-B
0026	12/17/04	14:21:25	000001	000293	S 001.0	Chem-1-B
0027	12/17/04	14:22:42	000001	000284	S 001.0	Chem-1-B
0028	12/17/04	14:23:53	000002	000346	S 001.0	Chem-1-B
0029	12/17/04	14:25:31	000001	000304	S 001.0	Chem-1-B
0030	12/17/04	14:26:54	000000	000174	S 001.0	Chem-1-B
0031	12/17/04	14:28:19	000001	000151	S 001.0	Chem-1-B
0032	12/17/04	14:29:37	000001	000138	S 001.0	Chem-1-B
0033	12/17/04	14:31:06	000000	000279	S 001.0	Chem-1-B
0034	12/17/04	14:33:25	000000	000290	S 001.0	Chem-1-B

1-B

0035 12/17/04 14:34:32 000002 000249 S 001.0 Chem-1-B  
0036 12/17/04 14:36:21 000001 000293 S 001.0 Chem-1-B  
0037 12/17/04 14:38:13 000001 000267 S 001.0 Chem-1-B  
0038 12/17/04 14:39:34 000000 017541 S 001.0 Field Source  
0039 12/17/04 14:46:51 000002 000167 S 001.0 Chem-1-C  
0040 12/17/04 14:48:07 000000 000151 S 001.0 Chem-1-C  
0041 12/17/04 14:50:07 000000 000165 S 001.0 Chem-1-C  
0042 12/17/04 14:51:53 000000 000151 S 001.0 Chem-1-C  
0043 12/17/04 14:54:39 000002 000147 S 001.0 Chem-1-C  
0044 12/17/04 14:55:54 000000 000146 S 001.0 Chem-1-C  
0045 12/17/04 14:57:11 000001 000172 S 001.0 Chem-1-C  
0046 12/17/04 14:58:30 000001 000164 S 001.0 Chem-1-C  
0047 12/17/04 14:59:47 000001 000174 S 001.0 Chem-1-C  
0048 12/17/04 15:01:29 000001 000154 S 001.0 Chem-1-C  
0049 12/17/04 15:02:54 000000 000151 S 001.0 Chem-1-C  
0050 12/17/04 15:04:11 000001 000168 S 001.0 Chem-1-C  
0051 12/17/04 15:05:25 000001 000165 S 001.0 Chem-1-C  
0052 12/17/04 15:06:40 000001 000160 S 001.0 Chem-1-C  
0053 12/17/04 15:07:56 000003 000140 S 001.0 Chem-1-C  
0054 12/17/04 15:10:48 000000 018235 S 001.0 Field Source  
S

Smears		Count Mins: 1								
PIC WPC-9550 Instr No 1		Count Started					Sample Collected			Fraction
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample	
1	Smear 1	12/17/04	16:37:06	Chem-1-A	Final Status Survey	12/17/04	16:37:06	1.000	1.00	
2	Smear 2	12/17/04	16:35:48	Chem-1-A	Final Status Survey	12/17/04	16:35:48	1.000	1.00	
3	Smear 3	12/17/04	16:34:27	Chem-1-A	Final Status Survey	12/17/04	16:34:27	1.000	1.00	
4	Smear 4	12/17/04	16:33:07	Chem-1-A	Final Status Survey	12/17/04	16:33:07	1.000	1.00	
5	Smear 5	12/17/04	16:31:47	Chem-1-A	Final Status Survey	12/17/04	16:31:47	1.000	1.00	
6	Smear 6	12/17/04	16:30:27	Chem-1-A	Final Status Survey	12/17/04	16:30:27	1.000	1.00	
7	Smear 7	12/17/04	16:29:07	Chem-1-A	Final Status Survey	12/17/04	16:29:07	1.000	1.00	
8	Smear 8	12/17/04	16:27:47	Chem-1-A	Final Status Survey	12/17/04	16:27:47	1.000	1.00	
9	Smear 9	12/17/04	16:26:27	Chem-1-A	Final Status Survey	12/17/04	16:26:27	1.000	1.00	
10	Smear 10	12/17/04	16:25:07	Chem-1-A	Final Status Survey	12/17/04	16:25:07	1.000	1.00	
11	Smear 11	12/17/04	16:23:48	Chem-1-A	Final Status Survey	12/17/04	16:23:48	1.000	1.00	
12	Smear 12	12/17/04	16:22:28	Chem-1-A	Final Status Survey	12/17/04	16:22:28	1.000	1.00	
13	Smear 13	12/17/04	16:21:08	Chem-1-A	Final Status Survey	12/17/04	16:21:08	1.000	1.00	
14	Smear 14	12/17/04	16:19:48	Chem-1-A	Final Status Survey	12/17/04	16:19:48	1.000	1.00	
15	Smear 15	12/17/04	16:18:28	Chem-1-A	Final Status Survey	12/17/04	16:18:28	1.000	1.00	
16	Smear 16	12/17/04	16:17:08	Chem-1-A	Final Status Survey	12/17/04	16:17:08	1.000	1.00	
17	Smear 1	12/17/04	16:15:48	Chem-1-B	Final Status Survey	12/17/04	16:15:48	1.000	1.00	
18	Smear 2	12/17/04	16:14:28	Chem-1-B	Final Status Survey	12/17/04	16:14:28	1.000	1.00	
19	Smear 3	12/17/04	16:13:08	Chem-1-B	Final Status Survey	12/17/04	16:13:08	1.000	1.00	
20	Smear 4	12/17/04	16:11:47	Chem-1-B	Final Status Survey	12/17/04	16:11:47	1.000	1.00	
21	Smear 5	12/17/04	16:10:27	Chem-1-B	Final Status Survey	12/17/04	16:10:27	1.000	1.00	
22	Smear 6	12/17/04	16:09:07	Chem-1-B	Final Status Survey	12/17/04	16:09:07	1.000	1.00	
23	Smear 7	12/17/04	16:07:48	Chem-1-B	Final Status Survey	12/17/04	16:07:48	1.000	1.00	
24	Smear 8	12/17/04	16:06:28	Chem-1-B	Final Status Survey	12/17/04	16:06:28	1.000	1.00	
25	Smear 9	12/17/04	16:05:08	Chem-1-B	Final Status Survey	12/17/04	16:05:08	1.000	1.00	
26	Smear 10	12/17/04	16:03:48	Chem-1-B	Final Status Survey	12/17/04	16:03:48	1.000	1.00	
27	Smear 11	12/17/04	16:02:29	Chem-1-B	Final Status Survey	12/17/04	16:02:29	1.000	1.00	
28	Smear 12	12/17/04	16:01:09	Chem-1-B	Final Status Survey	12/17/04	16:01:09	1.000	1.00	
29	Smear 13	12/17/04	15:59:49	Chem-1-B	Final Status Survey	12/17/04	15:59:49	1.000	1.00	
30	Smear 14	12/17/04	15:58:29	Chem-1-B	Final Status Survey	12/17/04	15:58:29	1.000	1.00	
31	Smear 15	12/17/04	15:57:09	Chem-1-B	Final Status Survey	12/17/04	15:57:09	1.000	1.00	
32	Smear 16	12/17/04	15:55:49	Chem-1-B	Final Status Survey	12/17/04	15:55:49	1.000	1.00	
33	Smear 1	12/17/04	15:54:29	Chem-1-C	Final Status Survey	12/17/04	15:54:29	1.000	1.00	
34	Smear 2	12/17/04	15:53:09	Chem-1-C	Final Status Survey	12/17/04	15:53:09	1.000	1.00	
35	Smear 3	12/17/04	15:51:49	Chem-1-C	Final Status Survey	12/17/04	15:51:49	1.000	1.00	
36	Smear 4	12/17/04	15:50:29	Chem-1-C	Final Status Survey	12/17/04	15:50:29	1.000	1.00	
37	Smear 5	12/17/04	15:49:09	Chem-1-C	Final Status Survey	12/17/04	15:49:09	1.000	1.00	
38	Smear 6	12/17/04	15:47:49	Chem-1-C	Final Status Survey	12/17/04	15:47:49	1.000	1.00	
39	Smear 7	12/17/04	15:46:29	Chem-1-C	Final Status Survey	12/17/04	15:46:29	1.000	1.00	
40	Smear 8	12/17/04	15:45:09	Chem-1-C	Final Status Survey	12/17/04	15:45:09	1.000	1.00	
41	Smear 9	12/17/04	15:43:50	Chem-1-C	Final Status Survey	12/17/04	15:43:50	1.000	1.00	
42	Smear 10	12/17/04	15:42:30	Chem-1-C	Final Status Survey	12/17/04	15:42:30	1.000	1.00	
43	Smear 11	12/17/04	15:41:10	Chem-1-C	Final Status Survey	12/17/04	15:41:10	1.000	1.00	
44	Smear 12	12/17/04	15:39:50	Chem-1-C	Final Status Survey	12/17/04	15:39:50	1.000	1.00	
45	Smear 13	12/17/04	15:38:30	Chem-1-C	Final Status Survey	12/17/04	15:38:30	1.000	1.00	
46	Smear 14	12/17/04	15:37:10	Chem-1-C	Final Status Survey	12/17/04	15:37:10	1.000	1.00	
47	Smear 15	12/17/04	15:35:50	Chem-1-C	Final Status Survey	12/17/04	15:35:50	1.000	1.00	
48	Smear 16	12/17/04	15:34:31	Chem-1-C	Final Status Survey	12/17/04	15:34:31	1.000	1.00	

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

Technician (sign): *Rob Ellison*

Reviewed By (sign):

Date: 12-17-04

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %EN: 24.16 LLD: 11.22 dpm				Bkg: 0.43 cpm %EN: 44.72 LLD: 10.98 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/17/04	16:37:06	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
2	Smear 2	12/17/04	16:35:46	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
3	Smear 3	12/17/04	16:34:27	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
4	Smear 4	12/17/04	16:33:07	0.00	0.00	0.00	11.22	3.00	2.57	5.74	10.98
5	Smear 5	12/17/04	16:31:47	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
6	Smear 6	12/17/04	16:30:27	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
7	Smear 7	12/17/04	16:29:07	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
8	Smear 8	12/17/04	16:27:47	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
9	Smear 9	12/17/04	16:26:27	0.00	0.00	0.00	11.22	5.00	4.57	10.21	10.98
10	Smear 10	12/17/04	16:25:07	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
11	Smear 11	12/17/04	16:23:48	0.00	0.00	0.00	11.22	3.00	2.57	5.74	10.98
12	Smear 12	12/17/04	16:22:28	0.00	0.00	0.00	11.22	5.00	4.57	10.21	10.98
13	Smear 13	12/17/04	16:21:08	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
14	Smear 14	12/17/04	16:19:48	0.00	0.00	0.00	11.22	13.00	12.57	28.10	10.98
15	Smear 15	12/17/04	16:18:28	0.00	0.00	0.00	11.22	15.00	14.57	32.57	10.98
16	Smear 16	12/17/04	16:17:08	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
17	Smear 1	12/17/04	16:15:48	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
18	Smear 2	12/17/04	16:14:28	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
19	Smear 3	12/17/04	16:13:08	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
20	Smear 4	12/17/04	16:11:47	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
21	Smear 5	12/17/04	16:10:27	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
22	Smear 6	12/17/04	16:09:07	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
23	Smear 7	12/17/04	16:07:48	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
24	Smear 8	12/17/04	16:06:28	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
25	Smear 9	12/17/04	16:05:08	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
26	Smear 10	12/17/04	16:03:48	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
27	Smear 11	12/17/04	16:02:29	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
28	Smear 12	12/17/04	16:01:09	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
29	Smear 13	12/17/04	15:59:49	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
30	Smear 14	12/17/04	15:58:29	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
31	Smear 15	12/17/04	15:57:09	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
32	Smear 16	12/17/04	15:55:49	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
33	Smear 1	12/17/04	15:54:29	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
34	Smear 2	12/17/04	15:53:09	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
35	Smear 3	12/17/04	15:51:49	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
36	Smear 4	12/17/04	15:50:29	0.00	0.00	0.00	11.22	3.00	2.57	5.74	10.98
37	Smear 5	12/17/04	15:49:09	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
38	Smear 6	12/17/04	15:47:49	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
39	Smear 7	12/17/04	15:46:29	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
40	Smear 8	12/17/04	15:45:09	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
41	Smear 9	12/17/04	15:43:50	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
42	Smear 10	12/17/04	15:42:30	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
43	Smear 11	12/17/04	15:41:10	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
44	Smear 12	12/17/04	15:39:50	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
45	Smear 13	12/17/04	15:38:30	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
46	Smear 14	12/17/04	15:37:10	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
47	Smear 15	12/17/04	15:35:50	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
48	Smear 16	12/17/04	15:34:31	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

Technician (sign): *Rob Ellison*

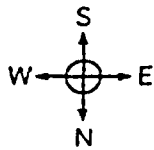
Reviewed By (sign):

Date: 12-17-04

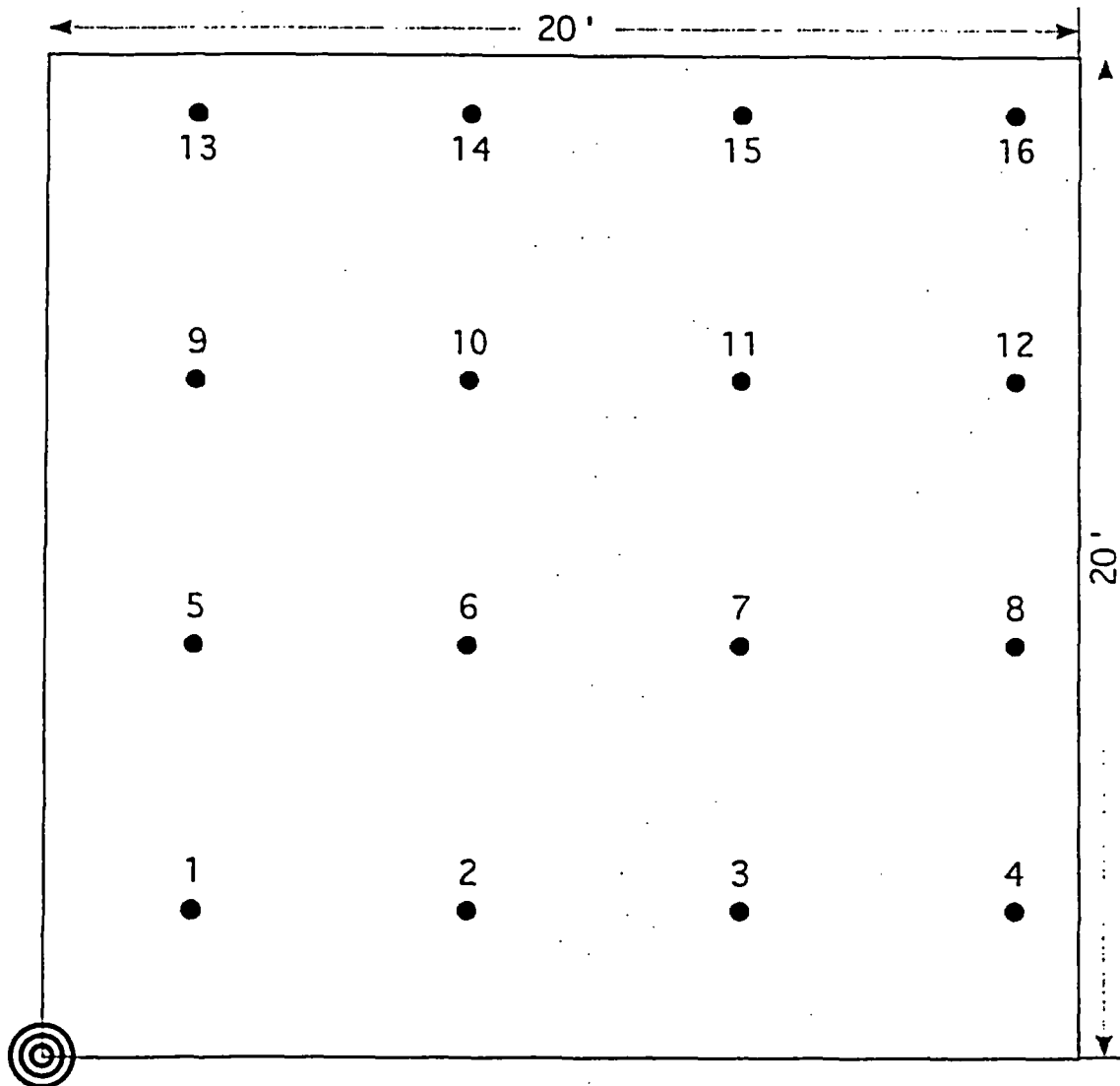
Date:

**CHEM-1-C Chemistry Lab**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD		 SCIENTECH INC. 10 WEST STREET NEW MILFORD, CT 06455	PROJECT NO. 21579 0301	FILE NAME	SCALE N.T.S.	DATE 07/12/2004	BY	CHK	FIGURE CHEM-1-C
		DRAWING	CLASS 1 Chem Lab Ceiling									



- SURVEY POINTS
- ◎ STARTING LOCATION



CHEM-1-C



CHEM-1-C

Log #
1754
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ENR 18235

	X	Y
	n/a	n/a
1	2.9	2.9
2	8.2	2.9
3	13.5	2.9
4	18.8	2.9
5	2.9	8.2
6	8.2	8.2
7	13.5	8.2
8	18.8	8.2
9	2.9	13.5
10	8.2	13.5
11	13.5	13.5
12	18.8	13.5
13	2.9	18.8
14	8.2	18.8
15	13.5	18.8
16	18.8	18.8

L (ft) = 5.3  
A (ft²) = 400

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
167	120	200
151	100	200
165	140	180
151	100	160
147	120	200
146	120	200
172	120	180
164	130	200
174	120	200
154	100	220
151	100	180
168	110	200
165	120	180
160	100	180
140	100	160
150	140	160

See C. Higgins Survey 12/29/04

2360

## 18629

# Model 2360 Log Data

Date: 12/17/2004

3:18:38 PM

Header 1: Leroy Cuneo  
Header 2: Serial#193629  
Header 3: DetSer#PR193917  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Chem-1  
Calibration Due Date: 12/13/2005  
Model 2360 Date: 12/17/2004  
Model 2360 Time: 15:15:33  
Sample Number: 0055

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
Ratemeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/17/04	07:23:20	000001	000174	S 001.0	Lab Background
0002	12/17/04	07:27:29	000000	032412	S 001.0	Lab Source
0003	12/17/04	12:36:51	000002	001532	S 001.0	Field Source
0004	12/17/04	13:00:17	000000	000205	S 001.0	Field Background
0005	12/17/04	13:06:13	000000	000302	S 001.0	Chem-1-A
0006	12/17/04	13:08:15	000000	000212	S 001.0	Chem-1-A
0007	12/17/04	13:10:40	000003	000243	S 001.0	Chem-1-A
0008	12/17/04	13:13:24	000001	000204	S 001.0	Chem-1-A
0009	12/17/04	13:16:27	000003	000262	S 001.0	Chem-1-A
0010	12/17/04	13:18:06	000001	000181	S 001.0	Chem-1-A
0011	12/17/04	13:20:37	000001	000256	S 001.0	Chem-1-A
0012	12/17/04	13:22:08	000001	000196	S 001.0	Chem-1-A
0013	12/17/04	13:26:52	000000	000295	S 001.0	Chem-1-A
0014	12/17/04	13:32:43	000003	000241	S 001.0	Chem-1-A
0015	12/17/04	13:35:07	000002	000333	S 001.0	Chem-1-A
0016	12/17/04	13:36:42	000000	000251	S 001.0	Chem-1-A
0017	12/17/04	13:47:19	000003	000307	S 001.0	Chem-1-A
0018	12/17/04	13:51:11	000001	000271	S 001.0	Chem-1-A
0019	12/17/04	13:52:56	000001	000265	S 001.0	Chem-1-A
0020	12/17/04	13:54:14	000002	000261	S 001.0	Chem-1-A
0021	12/17/04	13:56:13	000002	018423	S 001.0	Field Source
0022	12/17/04	14:16:01	000002	000137	S 001.0	Chem-1-B
0023	12/17/04	14:17:33	000000	000160	S 001.0	Chem-1-B
0024	12/17/04	14:18:47	000003	000134	S 001.0	Chem-1-B
0025	12/17/04	14:20:12	000000	000272	S 001.0	Chem-1-B
0026	12/17/04	14:21:25	000001	000293	S 001.0	Chem-1-B
0027	12/17/04	14:22:42	000001	000284	S 001.0	Chem-1-B
0028	12/17/04	14:23:53	000002	000346	S 001.0	Chem-1-B
0029	12/17/04	14:25:31	000001	000304	S 001.0	Chem-1-B
0030	12/17/04	14:26:54	000000	000174	S 001.0	Chem-1-B
0031	12/17/04	14:28:19	000001	000151	S 001.0	Chem-1-B
0032	12/17/04	14:29:37	000001	000138	S 001.0	Chem-1-B
0033	12/17/04	14:31:06	000000	000279	S 001.0	Chem-1-B
0034	12/17/04	14:33:25	000000	000290	S 001.0	Chem-1-B

0036 12/17/04 14:36:21 000001 000293 S 001.0 Chem-1-B  
0037 12/17/04 14:38:13 000001 000267 S 001.0 Chem-1-B  
0038 12/17/04 14:39:34 000000 017541 S 001.0 Field Source  
0039 12/17/04 14:46:51 000002 000167 S 001.0 Chem-1-C 1  
0040 12/17/04 14:48:07 000000 000151 S 001.0 Chem-1-C 2  
0041 12/17/04 14:50:07 000000 000165 S 001.0 Chem-1-C 3  
0042 12/17/04 14:51:53 000000 000151 S 001.0 Chem-1-C 4  
0043 12/17/04 14:54:39 000002 000147 S 001.0 Chem-1-C 5  
0044 12/17/04 14:55:54 000000 000146 S 001.0 Chem-1-C 6  
0045 12/17/04 14:57:11 000001 000172 S 001.0 Chem-1-C 7  
0046 12/17/04 14:58:30 000001 000164 S 001.0 Chem-1-C 8  
0047 12/17/04 14:59:47 000001 000174 S 001.0 Chem-1-C 9  
0048 12/17/04 15:01:29 000001 000154 S 001.0 Chem-1-C 10  
0049 12/17/04 15:02:54 000000 000151 S 001.0 Chem-1-C 11  
0050 12/17/04 15:04:11 000001 000168 S 001.0 Chem-1-C 12  
0051 12/17/04 15:05:25 000001 000165 S 001.0 Chem-1-C 13  
0052 12/17/04 15:06:40 000001 000160 S 001.0 Chem-1-C 14  
0053 12/17/04 15:07:56 000003 000140 S 001.0 Chem-1-C 15  
0054 12/17/04 15:10:48 000000 018235 S 001.0 Field Source  
\$

# Ludlum Measurements, Inc. Model 2360 Log Data

Date: 12/29/2004  
Time: 8:33:16 AM

Header 1: Chris Higgins  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Chem-1-C  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/29/2004  
Model 2360 Time: 08:34:27  
Sample Number: 0005

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
R- Ratemeter  
S- Scaler

## Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	11/29/04	08:20:59	000004	000140	S	001.0 Field Background
0002	11/29/04	08:23:34	000009	013122	S	001.0 Field Source
0003	11/29/04	08:26:06	000006	000150	S	001.0 Location 16
0004	11/29/04	08:34:01	000003	017690	S	001.0 Field Source

S

Chem-1-C

Ave 140

Mat 160

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/17/04	16:37:06	Chem-1-A	Final Status Survey	12/17/04	16:37:06	1.000	1.00
2	Smear 2	12/17/04	16:35:46	Chem-1-A	Final Status Survey	12/17/04	16:35:46	1.000	1.00
3	Smear 3	12/17/04	16:34:27	Chem-1-A	Final Status Survey	12/17/04	16:34:27	1.000	1.00
4	Smear 4	12/17/04	16:33:07	Chem-1-A	Final Status Survey	12/17/04	16:33:07	1.000	1.00
5	Smear 5	12/17/04	16:31:47	Chem-1-A	Final Status Survey	12/17/04	16:31:47	1.000	1.00
6	Smear 6	12/17/04	16:30:27	Chem-1-A	Final Status Survey	12/17/04	16:30:27	1.000	1.00
7	Smear 7	12/17/04	16:29:07	Chem-1-A	Final Status Survey	12/17/04	16:29:07	1.000	1.00
8	Smear 8	12/17/04	16:27:47	Chem-1-A	Final Status Survey	12/17/04	16:27:47	1.000	1.00
9	Smear 9	12/17/04	16:26:27	Chem-1-A	Final Status Survey	12/17/04	16:26:27	1.000	1.00
10	Smear 10	12/17/04	16:25:07	Chem-1-A	Final Status Survey	12/17/04	16:25:07	1.000	1.00
11	Smear 11	12/17/04	16:23:48	Chem-1-A	Final Status Survey	12/17/04	16:23:48	1.000	1.00
12	Smear 12	12/17/04	16:22:28	Chem-1-A	Final Status Survey	12/17/04	16:22:28	1.000	1.00
13	Smear 13	12/17/04	16:21:08	Chem-1-A	Final Status Survey	12/17/04	16:21:08	1.000	1.00
14	Smear 14	12/17/04	16:19:48	Chem-1-A	Final Status Survey	12/17/04	16:19:48	1.000	1.00
15	Smear 15	12/17/04	16:18:28	Chem-1-A	Final Status Survey	12/17/04	16:18:28	1.000	1.00
16	Smear 16	12/17/04	16:17:08	Chem-1-A	Final Status Survey	12/17/04	16:17:08	1.000	1.00
17	Smear 1	12/17/04	16:15:48	Chem-1-B	Final Status Survey	12/17/04	16:15:48	1.000	1.00
18	Smear 2	12/17/04	16:14:28	Chem-1-B	Final Status Survey	12/17/04	16:14:28	1.000	1.00
19	Smear 3	12/17/04	16:13:08	Chem-1-B	Final Status Survey	12/17/04	16:13:08	1.000	1.00
20	Smear 4	12/17/04	16:11:47	Chem-1-B	Final Status Survey	12/17/04	16:11:47	1.000	1.00
21	Smear 5	12/17/04	16:10:27	Chem-1-B	Final Status Survey	12/17/04	16:10:27	1.000	1.00
22	Smear 6	12/17/04	16:09:07	Chem-1-B	Final Status Survey	12/17/04	16:09:07	1.000	1.00
23	Smear 7	12/17/04	16:07:48	Chem-1-B	Final Status Survey	12/17/04	16:07:48	1.000	1.00
24	Smear 8	12/17/04	16:06:28	Chem-1-B	Final Status Survey	12/17/04	16:06:28	1.000	1.00
25	Smear 9	12/17/04	16:05:08	Chem-1-B	Final Status Survey	12/17/04	16:05:08	1.000	1.00
26	Smear 10	12/17/04	16:03:48	Chem-1-B	Final Status Survey	12/17/04	16:03:48	1.000	1.00
27	Smear 11	12/17/04	16:02:29	Chem-1-B	Final Status Survey	12/17/04	16:02:29	1.000	1.00
28	Smear 12	12/17/04	16:01:09	Chem-1-B	Final Status Survey	12/17/04	16:01:09	1.000	1.00
29	Smear 13	12/17/04	15:59:49	Chem-1-B	Final Status Survey	12/17/04	15:59:49	1.000	1.00
30	Smear 14	12/17/04	15:58:29	Chem-1-B	Final Status Survey	12/17/04	15:58:29	1.000	1.00
31	Smear 15	12/17/04	15:57:09	Chem-1-B	Final Status Survey	12/17/04	15:57:09	1.000	1.00
32	Smear 16	12/17/04	15:55:49	Chem-1-B	Final Status Survey	12/17/04	15:55:49	1.000	1.00
33	Smear 1	12/17/04	15:54:29	Chem-1-C	Final Status Survey	12/17/04	15:54:29	1.000	1.00
34	Smear 2	12/17/04	15:53:09	Chem-1-C	Final Status Survey	12/17/04	15:53:09	1.000	1.00
35	Smear 3	12/17/04	15:51:49	Chem-1-C	Final Status Survey	12/17/04	15:51:49	1.000	1.00
36	Smear 4	12/17/04	15:50:29	Chem-1-C	Final Status Survey	12/17/04	15:50:29	1.000	1.00
37	Smear 5	12/17/04	15:49:09	Chem-1-C	Final Status Survey	12/17/04	15:49:09	1.000	1.00
38	Smear 6	12/17/04	15:47:49	Chem-1-C	Final Status Survey	12/17/04	15:47:49	1.000	1.00
39	Smear 7	12/17/04	15:46:29	Chem-1-C	Final Status Survey	12/17/04	15:46:29	1.000	1.00
40	Smear 8	12/17/04	15:45:09	Chem-1-C	Final Status Survey	12/17/04	15:45:09	1.000	1.00
41	Smear 9	12/17/04	15:43:50	Chem-1-C	Final Status Survey	12/17/04	15:43:50	1.000	1.00
42	Smear 10	12/17/04	15:42:30	Chem-1-C	Final Status Survey	12/17/04	15:42:30	1.000	1.00
43	Smear 11	12/17/04	15:41:10	Chem-1-C	Final Status Survey	12/17/04	15:41:10	1.000	1.00
44	Smear 12	12/17/04	15:39:50	Chem-1-C	Final Status Survey	12/17/04	15:39:50	1.000	1.00
45	Smear 13	12/17/04	15:38:30	Chem-1-C	Final Status Survey	12/17/04	15:38:30	1.000	1.00
46	Smear 14	12/17/04	15:37:10	Chem-1-C	Final Status Survey	12/17/04	15:37:10	1.000	1.00
47	Smear 15	12/17/04	15:35:50	Chem-1-C	Final Status Survey	12/17/04	15:35:50	1.000	1.00
48	Smear 16	12/17/04	15:34:31	Chem-1-C	Final Status Survey	12/17/04	15:34:31	1.000	1.00

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

Technician (sign): *Rob Ellison*

Reviewed By (sign):

Date: 1-04

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %EF: 24.16 LLD: 11.22 dpm				Bkg: 0.43 cpm %EF: 44.72 LLD: 10.98 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/17/04	16:37:06	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
2	Smear 2	12/17/04	16:35:46	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
3	Smear 3	12/17/04	16:34:27	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
4	Smear 4	12/17/04	16:33:07	0.00	0.00	0.00	11.22	3.00	2.57	5.74	10.98
5	Smear 5	12/17/04	16:31:47	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
6	Smear 6	12/17/04	16:30:27	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
7	Smear 7	12/17/04	16:29:07	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
8	Smear 8	12/17/04	16:27:47	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
9	Smear 9	12/17/04	16:26:27	0.00	0.00	0.00	11.22	5.00	4.57	10.21	10.98
10	Smear 10	12/17/04	16:25:07	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
11	Smear 11	12/17/04	16:23:48	0.00	0.00	0.00	11.22	3.00	2.57	5.74	10.98
12	Smear 12	12/17/04	16:22:28	0.00	0.00	0.00	11.22	5.00	4.57	10.21	10.98
13	Smear 13	12/17/04	16:21:08	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
14	Smear 14	12/17/04	16:19:48	0.00	0.00	0.00	11.22	13.00	12.57	28.10	10.98
15	Smear 15	12/17/04	16:18:28	0.00	0.00	0.00	11.22	15.00	14.57	32.57	10.98
16	Smear 16	12/17/04	16:17:08	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
17	Smear 1	12/17/04	16:15:48	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
18	Smear 2	12/17/04	16:14:28	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
19	Smear 3	12/17/04	16:13:08	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
20	Smear 4	12/17/04	16:11:47	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
21	Smear 5	12/17/04	16:10:27	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
22	Smear 6	12/17/04	16:09:07	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
23	Smear 7	12/17/04	16:07:48	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
24	Smear 8	12/17/04	16:06:28	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
25	Smear 9	12/17/04	16:05:08	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
26	Smear 10	12/17/04	16:03:48	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
27	Smear 11	12/17/04	16:02:29	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
28	Smear 12	12/17/04	16:01:09	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
29	Smear 13	12/17/04	15:59:49	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
30	Smear 14	12/17/04	15:58:29	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
31	Smear 15	12/17/04	15:57:09	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
32	Smear 16	12/17/04	15:55:49	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
33	Smear 1	12/17/04	15:54:29	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
34	Smear 2	12/17/04	15:53:09	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
35	Smear 3	12/17/04	15:51:49	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
36	Smear 4	12/17/04	15:50:29	0.00	0.00	0.00	11.22	3.00	2.57	5.74	10.98
37	Smear 5	12/17/04	15:49:09	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
38	Smear 6	12/17/04	15:47:49	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
39	Smear 7	12/17/04	15:46:29	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
40	Smear 8	12/17/04	15:45:09	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
41	Smear 9	12/17/04	15:43:50	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
42	Smear 10	12/17/04	15:42:30	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
43	Smear 11	12/17/04	15:41:10	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
44	Smear 12	12/17/04	15:39:50	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
45	Smear 13	12/17/04	15:38:30	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
46	Smear 14	12/17/04	15:37:10	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
47	Smear 15	12/17/04	15:35:50	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
48	Smear 16	12/17/04	15:34:31	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

Technician (sign): *Rob Ellison*

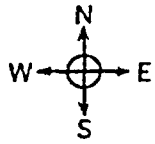
Reviewed By (sign):

Date: 12-17-04

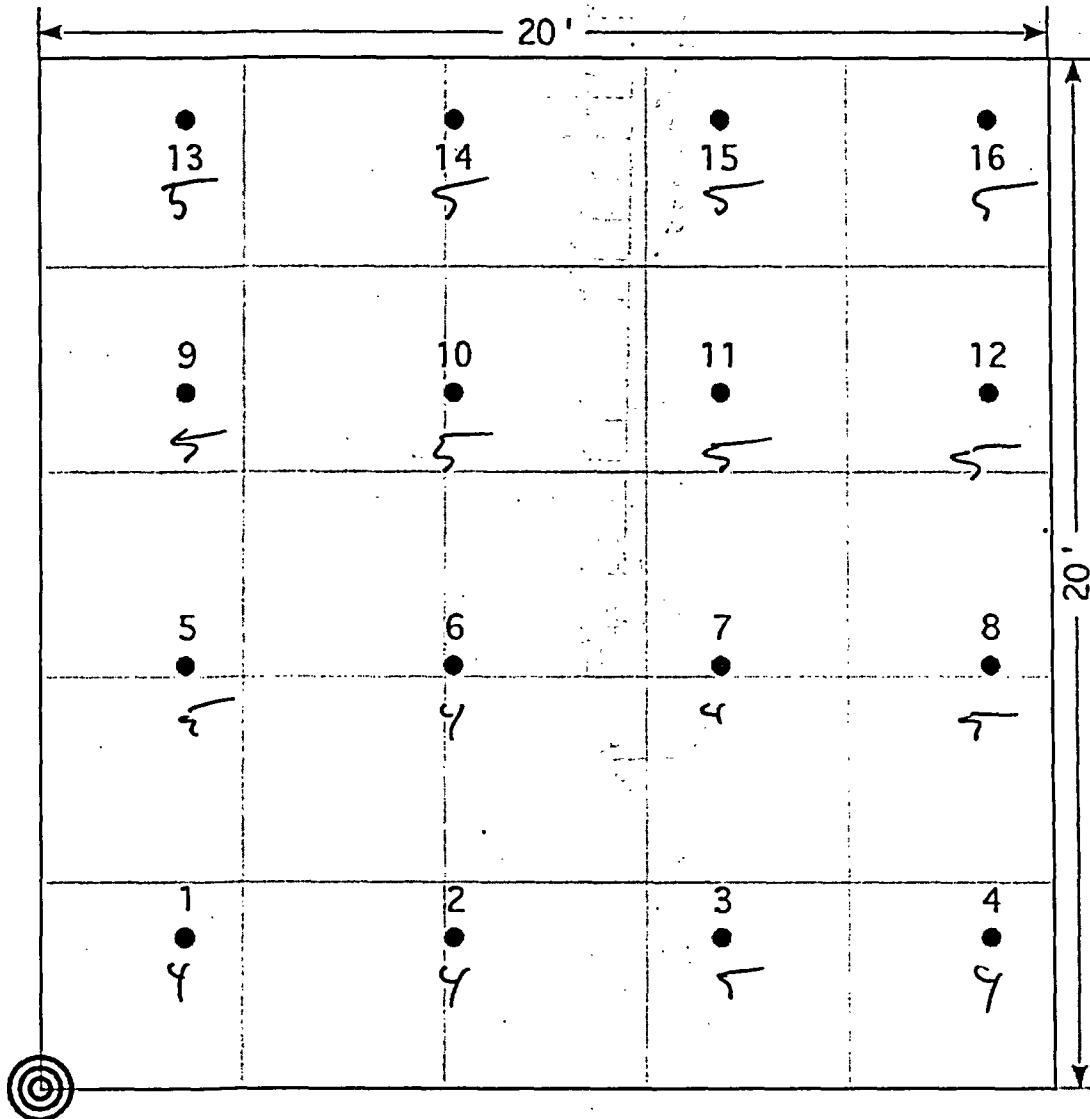
Date:

**DECON-1-A Decontamination Room**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHUS, PENNSYLVANIA 115 REACTOR ROAD	 OSCIENTECH, Inc. 141 WEST STREET NEW MILFORD, CT 06455	PROJECT NO: 21529-0501	FILE NAME:	DATE:	07/12/2004	By:	FIGURE: DECON-1-A
		DRAWING	CLASS 1 Decon Room Floor				SCALE:	N.T.S.		



• SURVEY POINTS  
 STARTING LOCATION





DECON-1-A

OK 799 Source

Log #
0006
7
8
9
10
11
12
13
14
15
16
17
18
19
20

	X	Y
	n/a	n/a
1	2.9	2.9
2	8.2	2.9
3	13.5	2.9
4	18.8	2.9
5	2.9	8.2
6	8.2	8.2
7	13.5	8.2
8	18.8	8.2
9	2.9	13.5
10	8.2	13.5
11	13.5	13.5
12	18.8	13.5
13	2.9	18.8
14	8.2	18.8
15	13.5	18.8
16	18.8	18.8

L (ft) = 5.3  
A (ft²) = 400

Bkg-158

Source-91800

End 87001

use printout further!  
=  $\alpha + \beta$   
↓

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
270	300	320
228	280	310
233	260	280
214	240	260
326	340	380
296	320	340
247	280	310
275	260	300
268	300	340
301	340	360
254	280	300
* 404	380	410
291	300	340
253	260	270
263	280	280

16 388  
\* 378 340 370 ✓  
recount @ F78 Decon  
351 - 360 380  
for C. Higgins  
12/28/04

# Model 2360 Log Data

Date: 12/21/2004  
Time: 2:39:58 PM

Header 1: John Mojica  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: DECON  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/21/2004  
Model 2360 Time: 14:35:36  
Sample Number: 0059

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location	CntTime
001	12/21/04	07:23:16	000000	000190	S	001.0 Location 1	
002	12/21/04	07:24:27	000000	034999	S	001.0 Lab Source	
003	12/21/04	07:58:35	000000	000158	S	001.0 Lab Background	
004	12/21/04	08:01:41	000001	091799	S	001.0 Field Source	
005	12/21/04	08:04:29	000002	000268	S	001.0 Field Background	
006	12/21/04	08:06:01	000001	000227	S	001.0 DECON-1-A	1
007	12/21/04	08:07:25	000000	000233	S	001.0 DECON-1-A	2
008	12/21/04	08:09:22	000002	000212	S	001.0 DECON-1-A	3
009	12/21/04	08:10:34	000001	000325	S	001.0 DECON-1-A	4
010	12/21/04	08:12:42	000003	000293	S	001.0 DECON-1-A	5
011	12/21/04	08:14:00	000002	000245	S	001.0 DECON-1-A	6
012	12/21/04	08:15:27	000000	000225	S	001.0 DECON-1-A	7
013	12/21/04	08:22:00	000000	000268	S	001.0 DECON-1-A	8
014	12/21/04	08:24:19	000002	000299	S	001.0 DECON-1-A	9
015	12/21/04	08:25:40	000001	000253	S	001.0 DECON-1-A	10
016	12/21/04	08:27:18	000003	000407	S	001.0 DECON-1-A	11
017	12/21/04	08:28:53	000000	000294	S	001.0 DECON-1-A	12
018	12/21/04	08:30:36	000002	000251	S	001.0 DECON-1-A	13
019	12/21/04	08:32:24	000002	000261	S	001.0 DECON-1-A	14
020	12/21/04	08:33:54	000002	000386	S	001.0 DECON-1-A	15
021	12/21/04	08:55:37	000001	000377	S	001.0 DECON-1-A	16
022	12/21/04	08:57:58	000001	087000	S	001.0 Field Source	
023	12/21/04	08:59:47	000000	000180	S	001.0 Field Background	
024	12/21/04	09:42:05	000000	000133	S	001.0 DECON-1-B	
025	12/21/04	09:43:24	000000	000132	S	001.0 DECON-1-B	
026	12/21/04	09:45:04	000000	000273	S	001.0 DECON-1-B	
027	12/21/04	09:46:41	000000	000276	S	001.0 DECON-1-B	
028	12/21/04	09:48:16	000004	000262	S	001.0 DECON-1-B	
029	12/21/04	09:49:51	000000	000221	S	001.0 DECON-1-B	
030	12/21/04	09:51:58	000003	000358	S	001.0 DECON-1-B	
031	12/21/04	09:53:38	000000	000250	S	001.0 DECON-1-B	
032	12/21/04	09:55:44	000000	000135	S	001.0 DECON-1-B	
033	12/21/04	09:57:47	000001	000135	S	001.0 DECON-1-B	
034	12/21/04	09:59:57	000003	000312	S	001.0 DECON-1-B	

1-A

378 ppm re survey

1-B

335 12/21/04 10:02:03 000001 000217 S 001.0 DECON-1-B  
336 12/21/04 10:05:11 000001 000314 S 001.0 DECON-1-B  
337 12/21/04 10:08:43 000000 000180 S 001.0 DECON-1-B  
338 12/21/04 10:11:24 000001 000224 S 001.0 DECON-1-B  
339 12/21/04 10:13:41 000000 000202 S 001.0 DECON-1-B  
340 12/21/04 10:30:27 000000 099149 S 001.0 Field Source  
341 12/21/04 10:33:19 000000 000167 S 001.0 Field Background  
342 12/21/04 10:34:51 000001 000167 S 001.0 DECON-1-C  
343 12/21/04 10:36:15 000000 000175 S 001.0 DECON-1-C  
344 12/21/04 10:37:50 000001 000346 S 001.0 DECON-1-C  
345 12/21/04 10:39:23 000000 000168 S 001.0 DECON-1-C  
046 12/21/04 10:40:51 000001 000211 S 001.0 DECON-1-C  
047 12/21/04 10:42:16 000000 000160 S 001.0 DECON-1-C  
048 12/21/04 10:43:44 000000 000164 S 001.0 DECON-1-C  
049 12/21/04 10:45:11 000000 000157 S 001.0 DECON-1-C  
050 12/21/04 10:46:42 000001 000153 S 001.0 DECON-1-C  
051 12/21/04 10:48:01 000001 000170 S 001.0 DECON-1-C  
052 12/21/04 10:49:21 000001 000154 S 001.0 DECON-1-C  
053 12/21/04 10:50:30 000001 000173 S 001.0 DECON-1-C  
054 12/21/04 10:51:42 000001 000293 S 001.0 DECON-1-C  
055 12/21/04 10:57:52 000001 000250 S 001.0 DECON-1-C  
056 12/21/04 10:59:01 000002 000235 S 001.0 DECON-1-C  
057 12/21/04 11:00:15 000000 000188 S 001.0 DECON-1-C  
058 12/21/04 11:02:03 000002 097302 S 001.0 Field Source

↑  
↓  
1-C

Smears		Count Mins: 1							
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	Fraction of Sample
1	Smear 1	12/22/04	8:53:07	DECON-1-A	Final Status Survey	12/22/04	8:53:07	1.000	1.00
2	Smear 2	12/22/04	8:51:47	DECON-1-A	Final Status Survey	12/22/04	8:51:47	1.000	1.00
3	Smear 3	12/22/04	8:50:27	DECON-1-A	Final Status Survey	12/22/04	8:50:27	1.000	1.00
4	Smear 4	12/22/04	8:49:07	DECON-1-A	Final Status Survey	12/22/04	8:49:07	1.000	1.00
5	Smear 5	12/22/04	8:47:48	DECON-1-A	Final Status Survey	12/22/04	8:47:48	1.000	1.00
6	Smear 6	12/22/04	8:46:28	DECON-1-A	Final Status Survey	12/22/04	8:46:28	1.000	1.00
7	Smear 7	12/22/04	8:45:08	DECON-1-A	Final Status Survey	12/22/04	8:45:08	1.000	1.00
8	Smear 8	12/22/04	8:43:49	DECON-1-A	Final Status Survey	12/22/04	8:43:49	1.000	1.00
9	Smear 9	12/22/04	8:42:29	DECON-1-A	Final Status Survey	12/22/04	8:42:29	1.000	1.00
10	Smear 10	12/22/04	8:41:09	DECON-1-A	Final Status Survey	12/22/04	8:41:09	1.000	1.00
11	Smear 11	12/22/04	8:39:49	DECON-1-A	Final Status Survey	12/22/04	8:39:49	1.000	1.00
12	Smear 12	12/22/04	8:38:29	DECON-1-A	Final Status Survey	12/22/04	8:38:29	1.000	1.00
13	Smear 13	12/22/04	8:37:09	DECON-1-A	Final Status Survey	12/22/04	8:37:09	1.000	1.00
14	Smear 14	12/22/04	8:35:49	DECON-1-A	Final Status Survey	12/22/04	8:35:49	1.000	1.00
15	Smear 15	12/22/04	8:34:29	DECON-1-A	Final Status Survey	12/22/04	8:34:29	1.000	1.00
16	Smear 16	12/22/04	8:33:10	DECON-1-A	Final Status Survey	12/22/04	8:33:10	1.000	1.00
17	Smear 1	12/22/04	8:31:50	DECON-1-B	Final Status Survey	12/22/04	8:31:50	1.000	1.00
18	Smear 2	12/22/04	8:30:31	DECON-1-B	Final Status Survey	12/22/04	8:30:31	1.000	1.00
19	Smear 3	12/22/04	8:29:11	DECON-1-B	Final Status Survey	12/22/04	8:29:11	1.000	1.00
20	Smear 4	12/22/04	8:27:52	DECON-1-B	Final Status Survey	12/22/04	8:27:52	1.000	1.00
21	Smear 5	12/22/04	8:26:32	DECON-1-B	Final Status Survey	12/22/04	8:26:32	1.000	1.00
22	Smear 6	12/22/04	8:25:12	DECON-1-B	Final Status Survey	12/22/04	8:25:12	1.000	1.00
23	Smear 7	12/22/04	8:23:52	DECON-1-B	Final Status Survey	12/22/04	8:23:52	1.000	1.00
24	Smear 8	12/22/04	8:22:33	DECON-1-B	Final Status Survey	12/22/04	8:22:33	1.000	1.00
25	Smear 9	12/22/04	8:21:13	DECON-1-B	Final Status Survey	12/22/04	8:21:13	1.000	1.00
26	Smear 10	12/22/04	8:19:53	DECON-1-B	Final Status Survey	12/22/04	8:19:53	1.000	1.00
27	Smear 11	12/22/04	8:18:33	DECON-1-B	Final Status Survey	12/22/04	8:18:33	1.000	1.00
28	Smear 12	12/22/04	8:17:14	DECON-1-B	Final Status Survey	12/22/04	8:17:14	1.000	1.00
29	Smear 13	12/22/04	8:15:54	DECON-1-B	Final Status Survey	12/22/04	8:15:54	1.000	1.00
30	Smear 14	12/22/04	8:14:35	DECON-1-B	Final Status Survey	12/22/04	8:14:35	1.000	1.00
31	Smear 15	12/22/04	8:13:15	DECON-1-B	Final Status Survey	12/22/04	8:13:15	1.000	1.00
32	Smear 16	12/22/04	8:11:56	DECON-1-B	Final Status Survey	12/22/04	8:11:56	1.000	1.00
33	Smear 1	12/22/04	8:10:36	DECON-1-C	Final Status Survey	12/22/04	8:10:36	1.000	1.00
34	Smear 2	12/22/04	8:09:16	DECON-1-C	Final Status Survey	12/22/04	8:09:16	1.000	1.00
35	Smear 3	12/22/04	8:07:56	DECON-1-C	Final Status Survey	12/22/04	8:07:56	1.000	1.00
36	Smear 4	12/22/04	8:06:37	DECON-1-C	Final Status Survey	12/22/04	8:06:37	1.000	1.00
37	Smear 5	12/22/04	8:05:17	DECON-1-C	Final Status Survey	12/22/04	8:05:17	1.000	1.00
38	Smear 6	12/22/04	8:03:58	DECON-1-C	Final Status Survey	12/22/04	8:03:58	1.000	1.00
39	Smear 7	12/22/04	8:02:38	DECON-1-C	Final Status Survey	12/22/04	8:02:38	1.000	1.00
40	Smear 8	12/22/04	8:01:18	DECON-1-C	Final Status Survey	12/22/04	8:01:18	1.000	1.00
41	Smear 9	12/22/04	7:59:58	DECON-1-C	Final Status Survey	12/22/04	7:59:58	1.000	1.00
42	Smear 10	12/22/04	7:58:39	DECON-1-C	Final Status Survey	12/22/04	7:58:39	1.000	1.00
43	Smear 11	12/22/04	7:57:19	DECON-1-C	Final Status Survey	12/22/04	7:57:19	1.000	1.00
44	Smear 12	12/22/04	7:56:00	DECON-1-C	Final Status Survey	12/22/04	7:56:00	1.000	1.00
45	Smear 13	12/22/04	7:54:40	DECON-1-C	Final Status Survey	12/22/04	7:54:40	1.000	1.00
46	Smear 14	12/22/04	7:53:20	DECON-1-C	Final Status Survey	12/22/04	7:53:20	1.000	1.00
47	Smear 15	12/22/04	7:52:00	DECON-1-C	Final Status Survey	12/22/04	7:52:00	1.000	1.00
48	Smear 16	12/22/04	7:50:40	DECON-1-C	Final Status Survey	12/22/04	7:50:40	1.000	1.00

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

Technician (sign): *Rob Ellison*

Reviewed By (sign):

Date: 12-21-04

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.76 LLD: 13.41 dpm				Bkg: 0.63 cpm %Eff: 45.15 LLD: 11.9 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/22/04	8:53:07	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
2	Smear 2	12/22/04	8:51:47	1.00	0.97	3.90	13.41	1.00	0.37	0.81	11.90
3	Smear 3	12/22/04	8:50:27	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
4	Smear 4	12/22/04	8:49:07	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
5	Smear 5	12/22/04	8:47:48	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
6	Smear 6	12/22/04	8:46:28	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
7	Smear 7	12/22/04	8:45:08	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
8	Smear 8	12/22/04	8:43:49	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
9	Smear 9	12/22/04	8:42:29	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
10	Smear 10	12/22/04	8:41:09	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
11	Smear 11	12/22/04	8:39:49	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
12	Smear 12	12/22/04	8:38:29	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
13	Smear 13	12/22/04	8:37:09	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
14	Smear 14	12/22/04	8:35:49	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
15	Smear 15	12/22/04	8:34:29	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
16	Smear 16	12/22/04	8:33:10	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
17	Smear 1	12/22/04	8:31:50	0.00	-0.03	-0.13	13.41	42.00	41.37	91.62	11.90
18	Smear 2	12/22/04	8:30:31	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
19	Smear 3	12/22/04	8:29:11	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
20	Smear 4	12/22/04	8:27:52	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
21	Smear 5	12/22/04	8:26:32	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
22	Smear 6	12/22/04	8:25:12	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
23	Smear 7	12/22/04	8:23:52	0.00	-0.03	-0.13	13.41	11.00	10.37	22.98	11.90
24	Smear 8	12/22/04	8:22:33	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
25	Smear 9	12/22/04	8:21:13	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
26	Smear 10	12/22/04	8:19:53	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
27	Smear 11	12/22/04	8:18:33	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
28	Smear 12	12/22/04	8:17:14	0.00	-0.03	-0.13	13.41	9.00	8.37	18.53	11.90
29	Smear 13	12/22/04	8:15:54	1.00	0.97	3.90	13.41	2.00	1.37	3.03	11.90
30	Smear 14	12/22/04	8:14:35	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
31	Smear 15	12/22/04	8:13:15	0.00	-0.03	-0.13	13.41	5.00	4.37	9.67	11.90
32	Smear 16	12/22/04	8:11:56	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
33	Smear 1	12/22/04	8:10:36	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
34	Smear 2	12/22/04	8:09:16	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
35	Smear 3	12/22/04	8:07:56	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
36	Smear 4	12/22/04	8:06:37	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
37	Smear 5	12/22/04	8:05:17	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
38	Smear 6	12/22/04	8:03:58	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
39	Smear 7	12/22/04	8:02:38	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
40	Smear 8	12/22/04	8:01:18	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
41	Smear 9	12/22/04	7:59:58	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
42	Smear 10	12/22/04	7:58:39	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
43	Smear 11	12/22/04	7:57:19	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
44	Smear 12	12/22/04	7:56:00	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
45	Smear 13	12/22/04	7:54:40	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
46	Smear 14	12/22/04	7:53:20	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
47	Smear 15	12/22/04	7:52:00	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
48	Smear 16	12/22/04	7:50:40	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

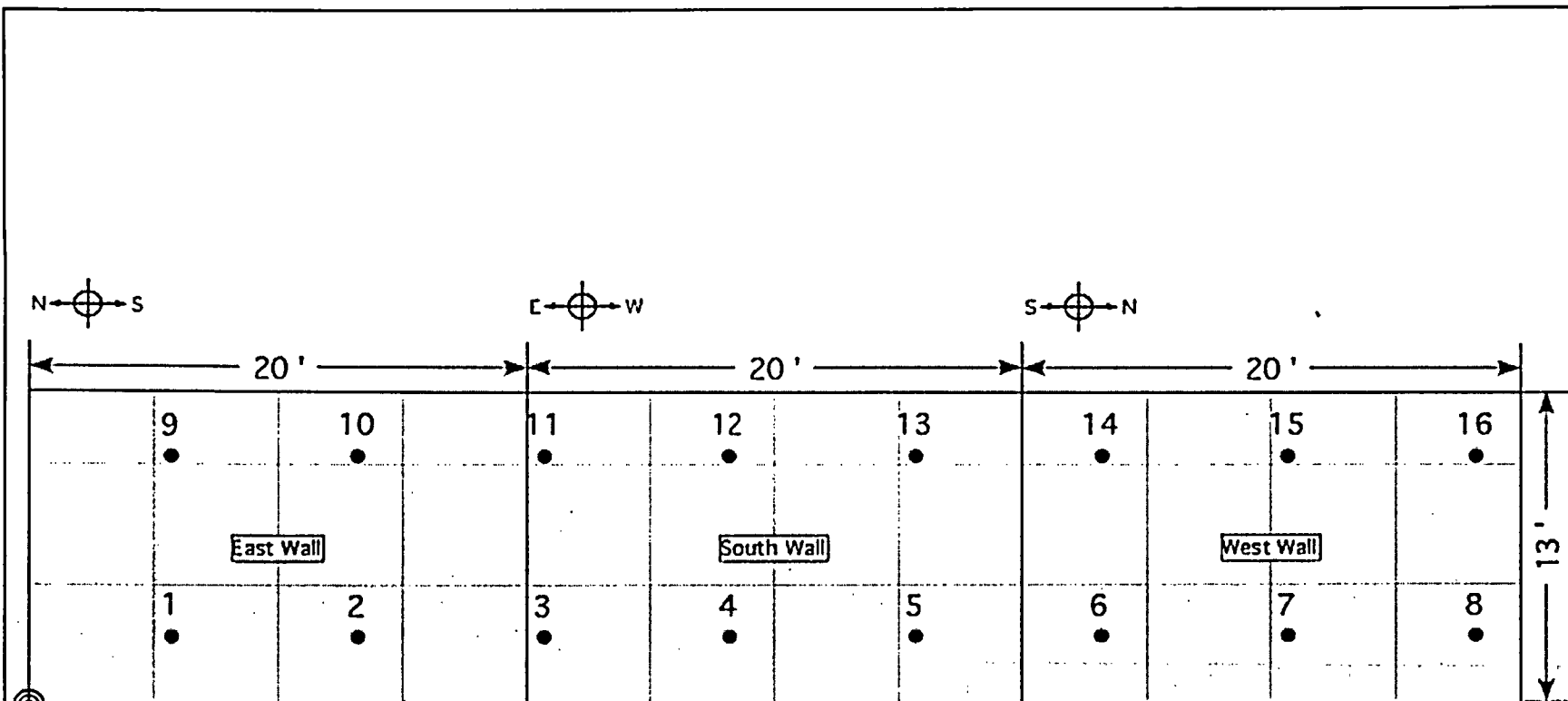
Technician (sign): *Rob Ellison*

Reviewed By (sign):

Date: 21-04

Date:

**DECON-1-B Decontamination Room**



DECON-1-B

- SURVEY POINTS
- STARTING LOCATION

*See  
Decon 1-A  
for dimensions  
& elevation*

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Decon Room Walls	
SCIENTECH SCIENTECH, Inc. 141 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/12/2004
By:	CK:
FIGURE: DECON-1-B	

**DECON-1-B**

[illegible]

	X	Y
	n/a	n/a
1	5.7	2.8
2	13.2	2.8
3	20.7	2.8
4	28.2	2.8
5	35.7	2.8
6	43.2	2.8
7	50.7	2.8
8	58.2	2.8
9	5.7	10.3
10	13.2	10.3
11	20.7	10.3
12	28.2	10.3
13	35.7	10.3
14	43.2	10.3
15	50.7	10.3
16	58.2	10.3

$$L \text{ (ft)} = 7.5$$
$$A \text{ (ft}^2\text{)} = 780$$

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
290133	190	160
232	140	100
273	290	300
276	290	300
266	280	280
221	220	270
361	300	380
250	240	260
135	140	160
136	140	160
315	320	340
276	290	300
315	320	340
180	180	200
225	220	240
202	200	220

Bkg stat  $\Rightarrow 100$

End source 99149



Ludlum Measurements, Inc.  
Model 2360 Log Data

12/21/2004  
Time: 2:39:58 PM

Header 1: John Mojica  
Header 2: Serial#202438  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: DECON  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/21/2004  
Model 2360 Time: 14:35:36  
Sample Number: 0059

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

me - Count Time  
temeter  
S- Scaler

Log Data:

Item	Date	Time	Alpha	Beta	UsrTime	Location	CntTime
001	12/21/04	07:23:16	000000	000190	S 001.0	Location 1	
002	12/21/04	07:24:27	000000	034999	S 001.0	Lab Source	
003	12/21/04	07:58:35	000000	000158	S 001.0	Lab Background	
004	12/21/04	08:01:41	000001	091799	S 001.0	Field Source	
005	12/21/04	08:04:29	000002	000268	S 001.0	Field Background	
006	12/21/04	08:06:01	000001	000227	S 001.0	DECON-1-A	1
007	12/21/04	08:07:25	000000	000233	S 001.0	DECON-1-A	2
008	12/21/04	08:09:22	000002	000212	S 001.0	DECON-1-A	3
009	12/21/04	08:10:34	000001	000325	S 001.0	DECON-1-A	4
010	12/21/04	08:12:42	000003	000293	S 001.0	DECON-1-A	5
011	12/21/04	08:14:00	000002	000245	S 001.0	DECON-1-A	6
012	12/21/04	08:15:27	000000	000225	S 001.0	DECON-1-A	7
013	12/21/04	08:22:00	000000	000268	S 001.0	DECON-1-A	8
014	12/21/04	08:24:19	000002	000299	S 001.0	DECON-1-A	9
015	12/21/04	08:25:40	000001	000253	S 001.0	DECON-1-A	10
016	12/21/04	08:27:18	000003	000401	S 001.0	DECON-1-A	11
017	12/21/04	08:28:53	000000	000294	S 001.0	DECON-1-A	12
018	12/21/04	08:30:36	000002	000251	S 001.0	DECON-1-A	13
019	12/21/04	08:32:24	000002	000261	S 001.0	DECON-1-A	14
020	12/21/04	08:33:54	000002	000386	S 001.0	DECON-1-A	15
021	12/21/04	08:55:37	000001	000377	S 001.0	DECON-1-A	16
022	12/21/04	08:57:58	000001	087000	S 001.0	Field Source	
023	12/21/04	08:59:47	000000	000180	S 001.0	Field Background	
024	12/21/04	09:42:05	000000	000133	S 001.0	DECON-1-B	
	12/21/04	09:43:24	000000	000132	S 001.0	DECON-1-B	
	12/21/04	09:45:04	000000	000273	S 001.0	DECON-1-B	
027	12/21/04	09:46:41	000000	000276	S 001.0	DECON-1-B	
028	12/21/04	09:48:16	000004	000262	S 001.0	DECON-1-B	
029	12/21/04	09:49:51	000000	000221	S 001.0	DECON-1-B	
030	12/21/04	09:51:58	000003	000358	S 001.0	DECON-1-B	
031	12/21/04	09:53:38	000000	000250	S 001.0	DECON-1-B	
032	12/21/04	09:55:44	000000	000135	S 001.0	DECON-1-B	
033	12/21/04	09:57:47	000001	000135	S 001.0	DECON-1-B	
034	12/21/04	09:59:57	000003	000312	S 001.0	DECON-1-B	

1-A

378 ppm recovery

1-B

035 12/21/04 10:02:05 000001 000275 S 001.0 DECON-1-B  
036 12/21/04 10:05:11 000001 000314 S 001.0 DECON-1-B  
037 12/21/04 10:08:43 000000 000180 S 001.0 DECON-1-B  
038 12/21/04 10:11:24 000001 000224 S 001.0 DECON-1-B  
039 12/21/04 10:13:41 000000 000202 S 001.0 DECON-1-B  
040 12/21/04 10:30:27 000000 099149 S 001.0 Field Source  
041 12/21/04 10:33:19 000000 000167 S 001.0 Field Background  
042 12/21/04 10:34:51 000001 000167 S 001.0 DECON-1-C  
043 12/21/04 10:36:15 000000 000175 S 001.0 DECON-1-C  
044 12/21/04 10:37:50 000001 000346 S 001.0 DECON-1-C  
045 12/21/04 10:39:23 000000 000168 S 001.0 DECON-1-C  
046 12/21/04 10:40:51 000001 000211 S 001.0 DECON-1-C  
047 12/21/04 10:42:16 000000 000160 S 001.0 DECON-1-C  
048 12/21/04 10:43:44 000000 000164 S 001.0 DECON-1-C  
049 12/21/04 10:45:11 000000 000157 S 001.0 DECON-1-C  
050 12/21/04 10:46:42 000001 000153 S 001.0 DECON-1-C  
051 12/21/04 10:48:01 000001 000170 S 001.0 DECON-1-C  
052 12/21/04 10:49:21 000001 000154 S 001.0 DECON-1-C  
053 12/21/04 10:50:30 000001 000173 S 001.0 DECON-1-C  
054 12/21/04 10:51:42 000001 000293 S 001.0 DECON-1-C  
055 12/21/04 10:57:52 000001 000250 S 001.0 DECON-1-C  
056 12/21/04 10:59:01 000002 000235 S 001.0 DECON-1-C  
057 12/21/04 11:00:15 000000 000188 S 001.0 DECON-1-C  
058 12/21/04 11:02:03 000002 097302 S 001.0 Field Source



1-C

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/22/04	8:53:07	DECON-1-A	Final Status Survey	12/22/04	8:53:07	1.000	1.00
2	Smear 2	12/22/04	8:51:47	DECON-1-A	Final Status Survey	12/22/04	8:51:47	1.000	1.00
3	Smear 3	12/22/04	8:50:27	DECON-1-A	Final Status Survey	12/22/04	8:50:27	1.000	1.00
4	Smear 4	12/22/04	8:49:07	DECON-1-A	Final Status Survey	12/22/04	8:49:07	1.000	1.00
5	Smear 5	12/22/04	8:47:48	DECON-1-A	Final Status Survey	12/22/04	8:47:48	1.000	1.00
6	Smear 6	12/22/04	8:46:28	DECON-1-A	Final Status Survey	12/22/04	8:46:28	1.000	1.00
7	Smear 7	12/22/04	8:45:08	DECON-1-A	Final Status Survey	12/22/04	8:45:08	1.000	1.00
8	Smear 8	12/22/04	8:43:49	DECON-1-A	Final Status Survey	12/22/04	8:43:49	1.000	1.00
9	Smear 9	12/22/04	8:42:29	DECON-1-A	Final Status Survey	12/22/04	8:42:29	1.000	1.00
10	Smear 10	12/22/04	8:41:09	DECON-1-A	Final Status Survey	12/22/04	8:41:09	1.000	1.00
11	Smear 11	12/22/04	8:39:49	DECON-1-A	Final Status Survey	12/22/04	8:39:49	1.000	1.00
12	Smear 12	12/22/04	8:38:29	DECON-1-A	Final Status Survey	12/22/04	8:38:29	1.000	1.00
13	Smear 13	12/22/04	8:37:09	DECON-1-A	Final Status Survey	12/22/04	8:37:09	1.000	1.00
14	Smear 14	12/22/04	8:35:49	DECON-1-A	Final Status Survey	12/22/04	8:35:49	1.000	1.00
15	Smear 15	12/22/04	8:34:29	DECON-1-A	Final Status Survey	12/22/04	8:34:29	1.000	1.00
16	Smear 16	12/22/04	8:33:10	DECON-1-A	Final Status Survey	12/22/04	8:33:10	1.000	1.00
17	Smear 1	12/22/04	8:31:50	DECON-1-B	Final Status Survey	12/22/04	8:31:50	1.000	1.00
18	Smear 2	12/22/04	8:30:31	DECON-1-B	Final Status Survey	12/22/04	8:30:31	1.000	1.00
19	Smear 3	12/22/04	8:29:11	DECON-1-B	Final Status Survey	12/22/04	8:29:11	1.000	1.00
20	Smear 4	12/22/04	8:27:52	DECON-1-B	Final Status Survey	12/22/04	8:27:52	1.000	1.00
21	Smear 5	12/22/04	8:26:32	DECON-1-B	Final Status Survey	12/22/04	8:26:32	1.000	1.00
22	Smear 6	12/22/04	8:25:12	DECON-1-B	Final Status Survey	12/22/04	8:25:12	1.000	1.00
23	Smear 7	12/22/04	8:23:52	DECON-1-B	Final Status Survey	12/22/04	8:23:52	1.000	1.00
24	Smear 8	12/22/04	8:22:33	DECON-1-B	Final Status Survey	12/22/04	8:22:33	1.000	1.00
25	Smear 9	12/22/04	8:21:13	DECON-1-B	Final Status Survey	12/22/04	8:21:13	1.000	1.00
26	Smear 10	12/22/04	8:19:53	DECON-1-B	Final Status Survey	12/22/04	8:19:53	1.000	1.00
27	Smear 11	12/22/04	8:18:33	DECON-1-B	Final Status Survey	12/22/04	8:18:33	1.000	1.00
28	Smear 12	12/22/04	8:17:14	DECON-1-B	Final Status Survey	12/22/04	8:17:14	1.000	1.00
29	Smear 13	12/22/04	8:15:54	DECON-1-B	Final Status Survey	12/22/04	8:15:54	1.000	1.00
30	Smear 14	12/22/04	8:14:35	DECON-1-B	Final Status Survey	12/22/04	8:14:35	1.000	1.00
31	Smear 15	12/22/04	8:13:15	DECON-1-B	Final Status Survey	12/22/04	8:13:15	1.000	1.00
32	Smear 16	12/22/04	8:11:56	DECON-1-B	Final Status Survey	12/22/04	8:11:56	1.000	1.00
33	Smear 1	12/22/04	8:10:36	DECON-1-C	Final Status Survey	12/22/04	8:10:36	1.000	1.00
34	Smear 2	12/22/04	8:09:16	DECON-1-C	Final Status Survey	12/22/04	8:09:16	1.000	1.00
35	Smear 3	12/22/04	8:07:56	DECON-1-C	Final Status Survey	12/22/04	8:07:56	1.000	1.00
36	Smear 4	12/22/04	8:06:37	DECON-1-C	Final Status Survey	12/22/04	8:06:37	1.000	1.00
37	Smear 5	12/22/04	8:05:17	DECON-1-C	Final Status Survey	12/22/04	8:05:17	1.000	1.00
38	Smear 6	12/22/04	8:03:58	DECON-1-C	Final Status Survey	12/22/04	8:03:58	1.000	1.00
39	Smear 7	12/22/04	8:02:38	DECON-1-C	Final Status Survey	12/22/04	8:02:38	1.000	1.00
40	Smear 8	12/22/04	8:01:18	DECON-1-C	Final Status Survey	12/22/04	8:01:18	1.000	1.00
41	Smear 9	12/22/04	7:59:58	DECON-1-C	Final Status Survey	12/22/04	7:59:58	1.000	1.00
42	Smear 10	12/22/04	7:58:39	DECON-1-C	Final Status Survey	12/22/04	7:58:39	1.000	1.00
43	Smear 11	12/22/04	7:57:19	DECON-1-C	Final Status Survey	12/22/04	7:57:19	1.000	1.00
44	Smear 12	12/22/04	7:56:00	DECON-1-C	Final Status Survey	12/22/04	7:56:00	1.000	1.00
45	Smear 13	12/22/04	7:54:40	DECON-1-C	Final Status Survey	12/22/04	7:54:40	1.000	1.00
46	Smear 14	12/22/04	7:53:20	DECON-1-C	Final Status Survey	12/22/04	7:53:20	1.000	1.00
47	Smear 15	12/22/04	7:52:00	DECON-1-C	Final Status Survey	12/22/04	7:52:00	1.000	1.00
48	Smear 16	12/22/04	7:50:40	DECON-1-C	Final Status Survey	12/22/04	7:50:40	1.000	1.00

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

Technician (sign): *Rob Ellison*

Reviewed By (sign):

Date: 12-21-04

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.76 LLD: 13.41 dpm				Bkg: 0.63 cpm %Eff: 45.16 LLD: 11.9 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/22/04	8:53:07	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
2	Smear 2	12/22/04	8:51:47	1.00	0.97	3.90	13.41	1.00	0.37	0.81	11.90
3	Smear 3	12/22/04	8:50:27	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
4	Smear 4	12/22/04	8:49:07	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
5	Smear 5	12/22/04	8:47:48	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
6	Smear 6	12/22/04	8:46:28	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
7	Smear 7	12/22/04	8:45:08	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
8	Smear 8	12/22/04	8:43:49	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
9	Smear 9	12/22/04	8:42:29	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
10	Smear 10	12/22/04	8:41:09	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
11	Smear 11	12/22/04	8:39:49	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
12	Smear 12	12/22/04	8:38:29	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
13	Smear 13	12/22/04	8:37:09	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
14	Smear 14	12/22/04	8:35:49	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
15	Smear 15	12/22/04	8:34:29	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
16	Smear 16	12/22/04	8:33:10	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
17	Smear 1	12/22/04	8:31:50	0.00	-0.03	-0.13	13.41	42.00	41.37	91.62	11.90
18	Smear 2	12/22/04	8:30:31	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
19	Smear 3	12/22/04	8:29:11	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
20	Smear 4	12/22/04	8:27:52	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
21	Smear 5	12/22/04	8:26:32	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
22	Smear 6	12/22/04	8:25:12	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
23	Smear 7	12/22/04	8:23:52	0.00	-0.03	-0.13	13.41	11.00	10.37	22.98	11.90
24	Smear 8	12/22/04	8:22:33	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
25	Smear 9	12/22/04	8:21:13	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
26	Smear 10	12/22/04	8:19:53	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
27	Smear 11	12/22/04	8:18:33	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
28	Smear 12	12/22/04	8:17:14	0.00	-0.03	-0.13	13.41	9.00	8.37	18.53	11.90
29	Smear 13	12/22/04	8:15:54	1.00	0.97	3.90	13.41	2.00	1.37	3.03	11.90
30	Smear 14	12/22/04	8:14:35	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
31	Smear 15	12/22/04	8:13:15	0.00	-0.03	-0.13	13.41	5.00	4.37	9.67	11.90
32	Smear 16	12/22/04	8:11:56	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
33	Smear 1	12/22/04	8:10:36	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
34	Smear 2	12/22/04	8:09:16	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
35	Smear 3	12/22/04	8:07:56	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
36	Smear 4	12/22/04	8:06:37	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
37	Smear 5	12/22/04	8:05:17	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
38	Smear 6	12/22/04	8:03:58	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
39	Smear 7	12/22/04	8:02:38	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
40	Smear 8	12/22/04	8:01:18	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
41	Smear 9	12/22/04	7:59:58	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
42	Smear 10	12/22/04	7:58:39	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
43	Smear 11	12/22/04	7:57:19	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
44	Smear 12	12/22/04	7:56:00	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
45	Smear 13	12/22/04	7:54:40	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
46	Smear 14	12/22/04	7:53:20	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
47	Smear 15	12/22/04	7:52:00	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
48	Smear 16	12/22/04	7:50:40	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-04

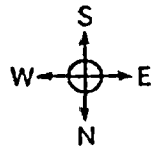
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

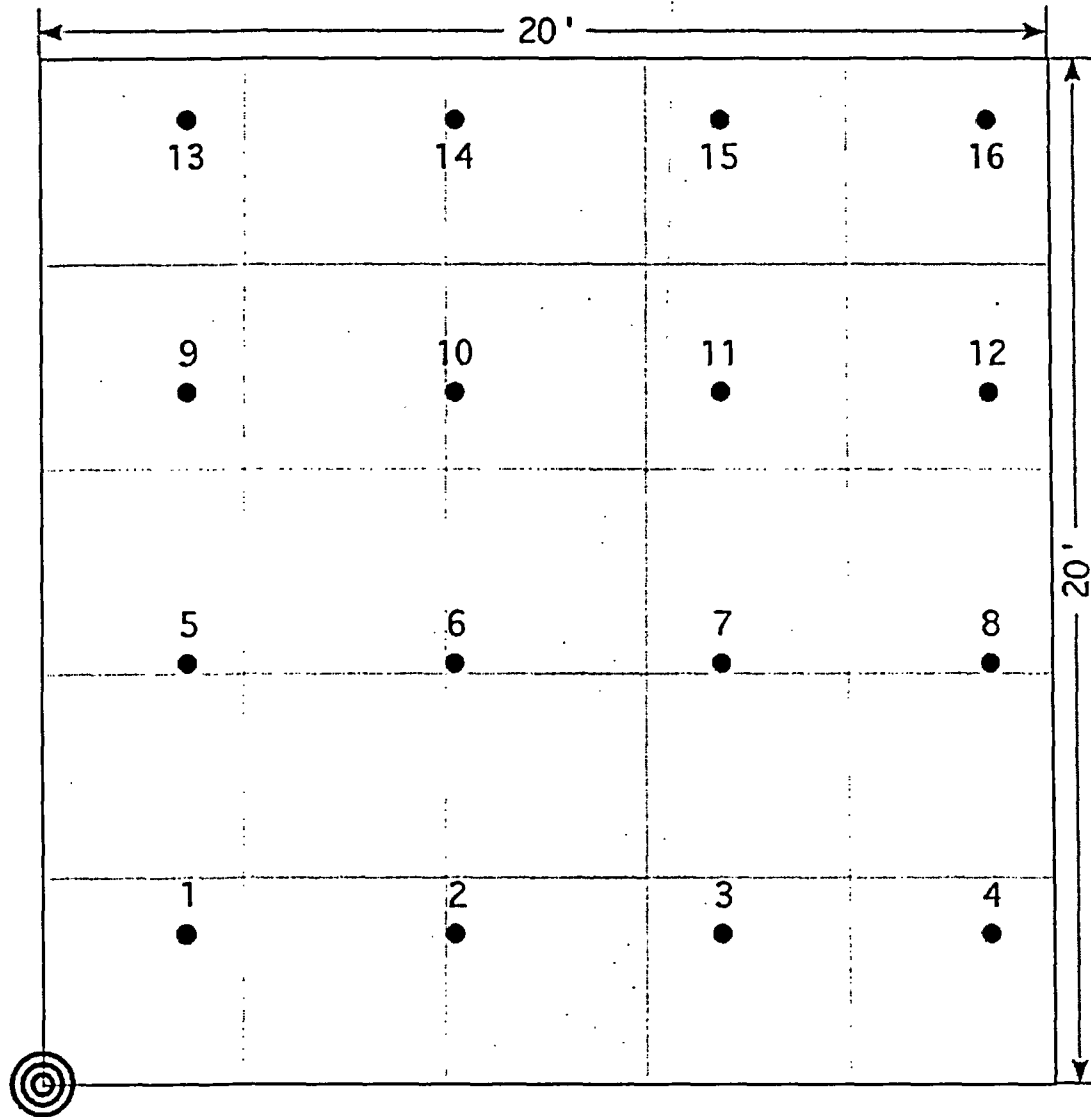
Date:

**DECON-1-C Decontamination Room**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 OSCIENTECH, Inc. 115 WEST STREET NEW HARTFORD, CT 06794	PROJECT NO.	23329-0501
		DRAWING	CLASS 1 Decon Room Ceiling		FILE NAME:	
		SCALE:	N.T.S.	DATE:	07/12/2004	By:
		FIGURE:	DECON-1-C			



- SURVEY POINTS
- ◎ STARTING LOCATION



DECON-1-C

*see Decon-1-A  
for sneaks  
& revisions*

DECON-1-C

[illegible]

	X	Y
	n/a	n/a
1	2.9	2.9
2	8.2	2.9
3	13.5	2.9
4	18.8	2.9
5	2.9	8.2
6	8.2	8.2
7	13.5	8.2
8	18.8	8.2
9	2.9	13.5
10	8.2	13.5
11	13.5	13.5
12	18.8	13.5
13	2.9	18.8
14	8.2	18.8
15	13.5	18.8
16	18.8	18.8

$$A \text{ (ft}^2\text{)} = 400$$
$$A \text{ (ft}^2\text{)} = 400$$

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
168	180	180
175	160	180
347	340	360
168	180	180
212	220	230
160	140	180
164	160	180
157	150	160
154	140	160
171	160	180
155	160	160
174	160	180
294	280	300
251	240	280
237	220	240
188	180	200

Stake Bkg 167

End Source  $\rightarrow 97304$

# Model 2360 Log Data

Date: 12/21/2004  
Time: 2:39:58 PM.

Header 1: John Mojica  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: DECON  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/21/2004  
Model 2360 Time: 14:35:36  
Sample Number: 0059

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
R- Ratemeter  
caler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/21/04	07:23:16	000000	000190	S 001.0	Location 1
0002	12/21/04	07:24:27	000000	034999	S 001.0	Lab Source
0003	12/21/04	07:58:35	000000	000158	S 001.0	Lab Background
0004	12/21/04	08:01:41	000001	091799	S 001.0	Field Source
0005	12/21/04	08:04:29	000002	000268	S 001.0	Field Background
0006	12/21/04	08:06:01	000001	000227	S 001.0	DECON-1-A
0007	12/21/04	08:07:25	000000	000233	S 001.0	DECON-1-A
0008	12/21/04	08:09:22	000002	000212	S 001.0	DECON-1-A
0009	12/21/04	08:10:34	000001	000325	S 001.0	DECON-1-A
0010	12/21/04	08:12:42	000003	000293	S 001.0	DECON-1-A
0011	12/21/04	08:14:00	000002	000245	S 001.0	DECON-1-A
0012	12/21/04	08:15:27	000000	000225	S 001.0	DECON-1-A
0013	12/21/04	08:22:00	000000	000268	S 001.0	DECON-1-A
0014	12/21/04	08:24:19	000002	000299	S 001.0	DECON-1-A
0015	12/21/04	08:25:40	000001	000253	S 001.0	DECON-1-A
0016	12/21/04	08:27:18	000003	000401	S 001.0	DECON-1-A
0017	12/21/04	08:28:53	000000	000291	S 001.0	DECON-1-A
0018	12/21/04	08:30:36	000002	000251	S 001.0	DECON-1-A
0019	12/21/04	08:32:24	000002	000261	S 001.0	DECON-1-A
0020	12/21/04	08:33:54	000002	000386	S 001.0	DECON-1-A
0021	12/21/04	08:55:37	000001	000377	S 001.0	DECON-1-A
0022	12/21/04	08:57:58	000001	087000	S 001.0	Field Source
0023	12/21/04	08:59:47	000000	000180	S 001.0	Field Background
0024	12/21/04	09:42:05	000000	000133	S 001.0	DECON-1-B
0025	12/21/04	09:43:24	000000	000132	S 001.0	DECON-1-B
0026	12/21/04	09:45:04	000000	000273	S 001.0	DECON-1-B
0027	12/21/04	09:46:41	000000	000276	S 001.0	DECON-1-B
0028	12/21/04	09:48:16	000004	000262	S 001.0	DECON-1-B
0029	12/21/04	09:49:51	000000	000221	S 001.0	DECON-1-B
0030	12/21/04	09:51:58	000003	000358	S 001.0	DECON-1-B
0031	12/21/04	09:53:38	000000	000250	S 001.0	DECON-1-B
0032	12/21/04	09:55:44	000000	000135	S 001.0	DECON-1-B
0033	12/21/04	09:57:47	000001	000135	S 001.0	DECON-1-B
0034	12/21/04	09:59:57	000003	000312	S 001.0	DECON-1-B

1-A

378 ppm resurvey

1-B



0036 12/21/04 10:05:11 000001 000314 S 001.0 DECON-1-B  
0037 12/21/04 10:08:43 000000 000180 S 001.0 DECON-1-B  
0038 12/21/04 10:11:24 000001 000224 S 001.0 DECON-1-B  
0039 12/21/04 10:13:41 000000 000202 S 001.0 DECON-1-B  
0040 12/21/04 10:30:27 000000 099149 S 001.0 Field Source  
0041 12/21/04 10:33:19 000000 000167 S 001.0 Field Background  
0042 12/21/04 10:34:51 000001 000167 S 001.0 DECON-1-C  
0043 12/21/04 10:36:15 000000 000175 S 001.0 DECON-1-C  
0044 12/21/04 10:37:50 000001 000346 S 001.0 DECON-1-C  
0045 12/21/04 10:39:23 000000 000168 S 001.0 DECON-1-C  
0046 12/21/04 10:40:51 000001 000211 S 001.0 DECON-1-C  
0047 12/21/04 10:42:16 000000 000160 S 001.0 DECON-1-C  
0048 12/21/04 10:43:44 000000 000164 S 001.0 DECON-1-C  
0049 12/21/04 10:45:11 000000 000157 S 001.0 DECON-1-C  
0050 12/21/04 10:46:42 000001 000153 S 001.0 DECON-1-C  
0051 12/21/04 10:48:01 000001 000170 S 001.0 DECON-1-C  
0052 12/21/04 10:49:21 000001 000154 S 001.0 DECON-1-C  
0053 12/21/04 10:50:30 000001 000173 S 001.0 DECON-1-C  
0054 12/21/04 10:51:42 000001 000293 S 001.0 DECON-1-C  
0055 12/21/04 10:57:52 000001 000250 S 001.0 DECON-1-C  
0056 12/21/04 10:59:01 000002 000235 S 001.0 DECON-1-C  
0057 12/21/04 11:00:15 000000 000188 S 001.0 DECON-1-C  
0058 12/21/04 11:02:03 000002 097302 S 001.0 Field Source  
\$

1-C

Smears		Count Mins: 1			Sample Collected			Fraction	
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/22/04	8:53:07	DECON-1-A	Final Status Survey	12/22/04	8:53:07	1.000	1.00
2	Smear 2	12/22/04	8:51:47	DECON-1-A	Final Status Survey	12/22/04	8:51:47	1.000	1.00
3	Smear 3	12/22/04	8:50:27	DECON-1-A	Final Status Survey	12/22/04	8:50:27	1.000	1.00
4	Smear 4	12/22/04	8:49:07	DECON-1-A	Final Status Survey	12/22/04	8:49:07	1.000	1.00
5	Smear 5	12/22/04	8:47:48	DECON-1-A	Final Status Survey	12/22/04	8:47:48	1.000	1.00
6	Smear 6	12/22/04	8:46:28	DECON-1-A	Final Status Survey	12/22/04	8:46:28	1.000	1.00
7	Smear 7	12/22/04	8:45:08	DECON-1-A	Final Status Survey	12/22/04	8:45:08	1.000	1.00
8	Smear 8	12/22/04	8:43:49	DECON-1-A	Final Status Survey	12/22/04	8:43:49	1.000	1.00
9	Smear 9	12/22/04	8:42:29	DECON-1-A	Final Status Survey	12/22/04	8:42:29	1.000	1.00
10	Smear 10	12/22/04	8:41:09	DECON-1-A	Final Status Survey	12/22/04	8:41:09	1.000	1.00
11	Smear 11	12/22/04	8:39:49	DECON-1-A	Final Status Survey	12/22/04	8:39:49	1.000	1.00
12	Smear 12	12/22/04	8:38:29	DECON-1-A	Final Status Survey	12/22/04	8:38:29	1.000	1.00
13	Smear 13	12/22/04	8:37:09	DECON-1-A	Final Status Survey	12/22/04	8:37:09	1.000	1.00
14	Smear 14	12/22/04	8:35:49	DECON-1-A	Final Status Survey	12/22/04	8:35:49	1.000	1.00
15	Smear 15	12/22/04	8:34:29	DECON-1-A	Final Status Survey	12/22/04	8:34:29	1.000	1.00
16	Smear 16	12/22/04	8:33:10	DECON-1-A	Final Status Survey	12/22/04	8:33:10	1.000	1.00
17	Smear 1	12/22/04	8:31:50	DECON-1-B	Final Status Survey	12/22/04	8:31:50	1.000	1.00
18	Smear 2	12/22/04	8:30:31	DECON-1-B	Final Status Survey	12/22/04	8:30:31	1.000	1.00
19	Smear 3	12/22/04	8:29:11	DECON-1-B	Final Status Survey	12/22/04	8:29:11	1.000	1.00
20	Smear 4	12/22/04	8:27:52	DECON-1-B	Final Status Survey	12/22/04	8:27:52	1.000	1.00
21	Smear 5	12/22/04	8:26:32	DECON-1-B	Final Status Survey	12/22/04	8:26:32	1.000	1.00
22	Smear 6	12/22/04	8:25:12	DECON-1-B	Final Status Survey	12/22/04	8:25:12	1.000	1.00
23	Smear 7	12/22/04	8:23:52	DECON-1-B	Final Status Survey	12/22/04	8:23:52	1.000	1.00
24	Smear 8	12/22/04	8:22:33	DECON-1-B	Final Status Survey	12/22/04	8:22:33	1.000	1.00
25	Smear 9	12/22/04	8:21:13	DECON-1-B	Final Status Survey	12/22/04	8:21:13	1.000	1.00
26	Smear 10	12/22/04	8:19:53	DECON-1-B	Final Status Survey	12/22/04	8:19:53	1.000	1.00
27	Smear 11	12/22/04	8:18:33	DECON-1-B	Final Status Survey	12/22/04	8:18:33	1.000	1.00
28	Smear 12	12/22/04	8:17:14	DECON-1-B	Final Status Survey	12/22/04	8:17:14	1.000	1.00
29	Smear 13	12/22/04	8:15:54	DECON-1-B	Final Status Survey	12/22/04	8:15:54	1.000	1.00
30	Smear 14	12/22/04	8:14:35	DECON-1-B	Final Status Survey	12/22/04	8:14:35	1.000	1.00
31	Smear 15	12/22/04	8:13:15	DECON-1-B	Final Status Survey	12/22/04	8:13:15	1.000	1.00
32	Smear 16	12/22/04	8:11:56	DECON-1-B	Final Status Survey	12/22/04	8:11:56	1.000	1.00
33	Smear 1	12/22/04	8:10:36	DECON-1-C	Final Status Survey	12/22/04	8:10:36	1.000	1.00
34	Smear 2	12/22/04	8:09:16	DECON-1-C	Final Status Survey	12/22/04	8:09:16	1.000	1.00
35	Smear 3	12/22/04	8:07:56	DECON-1-C	Final Status Survey	12/22/04	8:07:56	1.000	1.00
36	Smear 4	12/22/04	8:06:37	DECON-1-C	Final Status Survey	12/22/04	8:06:37	1.000	1.00
37	Smear 5	12/22/04	8:05:17	DECON-1-C	Final Status Survey	12/22/04	8:05:17	1.000	1.00
38	Smear 6	12/22/04	8:03:58	DECON-1-C	Final Status Survey	12/22/04	8:03:58	1.000	1.00
39	Smear 7	12/22/04	8:02:38	DECON-1-C	Final Status Survey	12/22/04	8:02:38	1.000	1.00
40	Smear 8	12/22/04	8:01:18	DECON-1-C	Final Status Survey	12/22/04	8:01:18	1.000	1.00
41	Smear 9	12/22/04	7:59:58	DECON-1-C	Final Status Survey	12/22/04	7:59:58	1.000	1.00
42	Smear 10	12/22/04	7:58:39	DECON-1-C	Final Status Survey	12/22/04	7:58:39	1.000	1.00
43	Smear 11	12/22/04	7:57:19	DECON-1-C	Final Status Survey	12/22/04	7:57:19	1.000	1.00
44	Smear 12	12/22/04	7:56:00	DECON-1-C	Final Status Survey	12/22/04	7:56:00	1.000	1.00
45	Smear 13	12/22/04	7:54:40	DECON-1-C	Final Status Survey	12/22/04	7:54:40	1.000	1.00
46	Smear 14	12/22/04	7:53:20	DECON-1-C	Final Status Survey	12/22/04	7:53:20	1.000	1.00
47	Smear 15	12/22/04	7:52:00	DECON-1-C	Final Status Survey	12/22/04	7:52:00	1.000	1.00
48	Smear 16	12/22/04	7:50:40	DECON-1-C	Final Status Survey	12/22/04	7:50:40	1.000	1.00

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

Technician (sign): *Rob Ellison*

Reviewed By (sign):

Date: 12-21-04

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.7% LLD: 13.41 dpm				Bkg: 0.63 cpm %Eff: 45.1% LLD: 11.9 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/22/04	8:53:07	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
2	Smear 2	12/22/04	8:51:47	1.00	0.97	3.90	13.41	1.00	0.37	0.81	11.90
3	Smear 3	12/22/04	8:50:27	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
4	Smear 4	12/22/04	8:49:07	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
5	Smear 5	12/22/04	8:47:48	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
6	Smear 6	12/22/04	8:46:28	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
7	Smear 7	12/22/04	8:45:08	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
8	Smear 8	12/22/04	8:43:49	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
9	Smear 9	12/22/04	8:42:29	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
10	Smear 10	12/22/04	8:41:09	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
11	Smear 11	12/22/04	8:39:49	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
12	Smear 12	12/22/04	8:38:29	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
13	Smear 13	12/22/04	8:37:09	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
14	Smear 14	12/22/04	8:35:49	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
15	Smear 15	12/22/04	8:34:29	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
16	Smear 16	12/22/04	8:33:10	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
17	Smear 1	12/22/04	8:31:50	0.00	-0.03	-0.13	13.41	42.00	41.37	91.62	11.90
18	Smear 2	12/22/04	8:30:31	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
19	Smear 3	12/22/04	8:29:11	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
20	Smear 4	12/22/04	8:27:52	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
21	Smear 5	12/22/04	8:26:32	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
22	Smear 6	12/22/04	8:25:12	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
23	Smear 7	12/22/04	8:23:52	0.00	-0.03	-0.13	13.41	11.00	10.37	22.96	11.90
24	Smear 8	12/22/04	8:22:33	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
25	Smear 9	12/22/04	8:21:13	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
26	Smear 10	12/22/04	8:19:53	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
27	Smear 11	12/22/04	8:18:33	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
28	Smear 12	12/22/04	8:17:14	0.00	-0.03	-0.13	13.41	9.00	8.37	18.53	11.90
29	Smear 13	12/22/04	8:15:54	1.00	0.97	3.90	13.41	2.00	1.37	3.03	11.90
30	Smear 14	12/22/04	8:14:35	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
31	Smear 15	12/22/04	8:13:15	0.00	-0.03	-0.13	13.41	5.00	4.37	9.67	11.90
32	Smear 16	12/22/04	8:11:56	0.00	-0.03	-0.13	13.41	3.00	2.37	5.24	11.90
33	Smear 1	12/22/04	8:10:36	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
34	Smear 2	12/22/04	8:09:16	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
35	Smear 3	12/22/04	8:07:56	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
36	Smear 4	12/22/04	8:06:37	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
37	Smear 5	12/22/04	8:05:17	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
38	Smear 6	12/22/04	8:03:58	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
39	Smear 7	12/22/04	8:02:38	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
40	Smear 8	12/22/04	8:01:18	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
41	Smear 9	12/22/04	7:59:58	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
42	Smear 10	12/22/04	7:58:39	0.00	-0.03	-0.13	13.41	2.00	1.37	3.03	11.90
43	Smear 11	12/22/04	7:57:19	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
44	Smear 12	12/22/04	7:56:00	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
45	Smear 13	12/22/04	7:54:40	0.00	-0.03	-0.13	13.41	1.00	0.37	0.81	11.90
46	Smear 14	12/22/04	7:53:20	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
47	Smear 15	12/22/04	7:52:00	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90
48	Smear 16	12/22/04	7:50:40	0.00	-0.03	-0.13	13.41	0.00	-0.63	-1.40	11.90

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

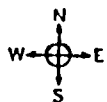
Date: 12-21-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**FAN-1-A    Fan Room**



• SURVEY POINTS  
◎ STARTING LOCATION

59'

92'

FAN-1-B

FAN-1-A

BKGD = 4 M/H/12

MODEL 19 # 209746

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING

KARHAUS, PENNSYLVANIA  
115 REACTOR ROAD

CLASS 1

Fan Room Floor

SCIENTECH

SCIENTECH Inc.  
143 WEST STREET  
NEW MILFORD, CT 06455

PROJECT NO.

23529-0501

FILE NAME:

SCALE

N.T.S.

DATE

07/13/2004

BY:

CK:

TITLE

FAN-1-A,B

FAN-1-A

2221-197784 11-6-04

BKGO v

[illegible]

	X	Y
	n/a	n/a
1	0.5	5.5
2	7.9	5.5
3	15.3	5.5
4	22.7	5.5
5	30.1	5.5
6	37.5	5.5
7	44.9	5.5
8	52.3	5.5
9	0.5	12.9
10	7.9	12.9
11	15.3	12.9
12	22.7	12.9
13	30.1	12.9
14	37.5	12.9
15	52.3	12.9

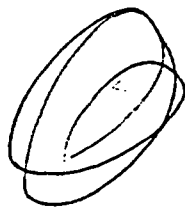
$$\begin{aligned} L \text{ (ft)} &= 7.4 \\ A \text{ (ft}^2\text{)} &= 770 \end{aligned}$$

Fixed Points	Ave. (Scan)	Max. (Scan)
<del>1</del>	n/a	n/a
266	50 cpm	65 cpm
133	45 cpm	55 cpm
139	50 cpm	60 cpm
128	60 cpm	75 cpm
214	85 cpm	95 cpm
137	50 cpm	65 cpm
159	65 cpm	70 cpm
286	65 cpm	75 cpm
<del>286</del> 142	50 cpm	65 cpm
134	55 cpm	65 cpm
159	40 cpm	50 cpm
140	70 cpm	55 cpm
139	55 cpm	65 cpm
129	75 cpm	85 cpm
147	50 cpm	60 cpm

### 3 minute Counts

У/К/Н/К

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



Survey conducted  
w/ 2221 ± 44-9 (GM)  
∴ NO logged data.

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/06/04	16:24:25	FAN-1-A	Final Status Survey	12/06/04	16:24:25	1.000	1.00
2	Smear 2	12/06/04	16:23:05	FAN-1-A	Final Status Survey	12/06/04	16:23:05	1.000	1.00
3	Smear 3	12/06/04	16:21:46	FAN-1-A	Final Status Survey	12/06/04	16:21:46	1.000	1.00
4	Smear 4	12/06/04	16:20:26	FAN-1-A	Final Status Survey	12/06/04	16:20:26	1.000	1.00
5	Smear 5	12/06/04	16:19:07	FAN-1-A	Final Status Survey	12/06/04	16:19:07	1.000	1.00
6	Smear 6	12/06/04	16:17:47	FAN-1-A	Final Status Survey	12/06/04	16:17:47	1.000	1.00
7	Smear 7	12/06/04	16:16:27	FAN-1-A	Final Status Survey	12/06/04	16:16:27	1.000	1.00
8	Smear 8	12/06/04	16:15:07	FAN-1-A	Final Status Survey	12/06/04	16:15:07	1.000	1.00
9	Smear 9	12/06/04	16:13:48	FAN-1-A	Final Status Survey	12/06/04	16:13:48	1.000	1.00
10	Smear 10	12/06/04	16:12:28	FAN-1-A	Final Status Survey	12/06/04	16:12:28	1.000	1.00
11	Smear 11	12/06/04	16:11:09	FAN-1-A	Final Status Survey	12/06/04	16:11:09	1.000	1.00
12	Smear 12	12/06/04	16:09:49	FAN-1-A	Final Status Survey	12/06/04	16:09:49	1.000	1.00
13	Smear 13	12/06/04	16:08:30	FAN-1-A	Final Status Survey	12/06/04	16:08:30	1.000	1.00
14	Smear 14	12/06/04	16:07:10	FAN-1-A	Final Status Survey	12/06/04	16:07:10	1.000	1.00
15	Smear 15	12/06/04	16:05:50	FAN-1-A	Final Status Survey	12/06/04	16:05:50	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-06-04

Reviewed By (print): Joe Towbridge

Reviewed By (sign): *Joe Towbridge*

Date: 12-06-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.83 LLD: 13.93 dpm				Bkg: 0.63 cpm %Eff: 44.46 LLD: 11.59 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/06/04	16:24:25	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
2	Smear 2	12/06/04	16:23:05	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
3	Smear 3	12/06/04	16:21:46	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
4	Smear 4	12/06/04	16:20:26	0.00	-0.03	-0.14	13.93	2.00	1.47	3.30	11.59
5	Smear 5	12/06/04	16:19:07	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
6	Smear 6	12/06/04	16:17:47	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
7	Smear 7	12/06/04	16:16:27	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
8	Smear 8	12/06/04	16:15:07	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
9	Smear 9	12/06/04	16:13:48	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
10	Smear 10	12/06/04	16:12:28	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
11	Smear 11	12/06/04	16:11:09	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
12	Smear 12	12/06/04	16:09:49	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
13	Smear 13	12/06/04	16:08:30	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
14	Smear 14	12/06/04	16:07:10	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
15	Smear 15	12/06/04	16:05:50	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-06-04

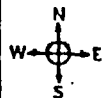
Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 12-06-04



**FAN-1-B      Fan Room**



• SURVEY POINTS  
◎ STARTING LOCATION

59'

92'

FAN-1-B

FAN-1-A

BKGD = 4 JPHR

MODEL 19 # 209746

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING

KARTHUS, PENNSYLVANIA

115 REACTOR ROAD

CLASS 1

Fan Room Floor

SCIENTECH

SCIENTECH, Inc.  
140 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO:  
23529-0301

FILE NAME:

SCALE:  
N.T.S.

DATE:  
07/13/2004

BY:

CR:

FIGURE:  
FAN-1-A,B

96 cpm  
3 min CT

**FAN-I-B**

0980-1130  
2221 # 176964  
STAFF 1230

11-6-04 BKGU 424

[illegible]

	X	Y
	n/a	n/a
1	4.6	1.1
2	10.4	1.1
3	16.2	1.1
4	22.0	1.1
5	27.8	1.1
6	33.6	1.1
7	39.4	1.1
8	45.2	1.1
9	51.0	1.1
10	4.6	6.9
11	10.4	6.9
12	16.2	6.9
13	22.0	6.9
14	27.8	6.9
15	33.6	6.9
16	39.4	6.9
17	45.2	6.9
18	51.0	6.9

$$\begin{aligned} L \text{ (ft)} &= 5.8 \\ A \text{ (ft}^2\text{)} &= 470 \end{aligned}$$

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
136	42 cpm	69 cpm
201	60 cpm	84 cpm
154	64 cpm	87 cpm
172	65 cpm	90 cpm
125	45 cpm	58 cpm
154	46 cpm	60 cpm
158	60 cpm	83 cpm
135	52 cpm	70 cpm
173	80 cpm	95 cpm
139	50 cpm	65 cpm
275	82 cpm	95 cpm
158	80 cpm	90 cpm
174	84 cpm	94 cpm
135	53 cpm	60 cpm
157	65 cpm	72 cpm
185	62 cpm	70 cpm
198	65 cpm	75 cpm
240	85 cpm	90 cpm

Survey ~~is~~ conducted  
w/ 2221 ± 44-9 (GM)  
∴ No logged data.

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/07/04	8:21:54	FAN-1-B	Final Status Survey	12/07/04	8:21:54	1.000	1.00
2	Smear 2	12/07/04	8:20:35	FAN-1-B	Final Status Survey	12/07/04	8:20:35	1.000	1.00
3	Smear 3	12/07/04	8:19:15	FAN-1-B	Final Status Survey	12/07/04	8:19:15	1.000	1.00
4	Smear 4	12/07/04	8:17:56	FAN-1-B	Final Status Survey	12/07/04	8:17:56	1.000	1.00
5	Smear 5	12/07/04	8:16:36	FAN-1-B	Final Status Survey	12/07/04	8:16:36	1.000	1.00
6	Smear 6	12/07/04	8:15:17	FAN-1-B	Final Status Survey	12/07/04	8:15:17	1.000	1.00
7	Smear 7	12/07/04	8:13:57	FAN-1-B	Final Status Survey	12/07/04	8:13:57	1.000	1.00
8	Smear 8	12/07/04	8:12:38	FAN-1-B	Final Status Survey	12/07/04	8:12:38	1.000	1.00
9	Smear 9	12/07/04	8:11:18	FAN-1-B	Final Status Survey	12/07/04	8:11:18	1.000	1.00
10	Smear 10	12/07/04	8:09:58	FAN-1-B	Final Status Survey	12/07/04	8:09:58	1.000	1.00
11	Smear 11	12/07/04	8:08:38	FAN-1-B	Final Status Survey	12/07/04	8:08:38	1.000	1.00
12	Smear 12	12/07/04	8:07:19	FAN-1-B	Final Status Survey	12/07/04	8:07:19	1.000	1.00
13	Smear 13	12/07/04	8:05:59	FAN-1-B	Final Status Survey	12/07/04	8:05:59	1.000	1.00
14	Smear 14	12/07/04	8:04:40	FAN-1-B	Final Status Survey	12/07/04	8:04:40	1.000	1.00
15	Smear 15	12/07/04	8:03:20	FAN-1-B	Final Status Survey	12/07/04	8:03:20	1.000	1.00
16	Smear 16	12/07/04	8:02:01	FAN-1-B	Final Status Survey	12/07/04	8:02:01	1.000	1.00
17	Smear 17	12/07/04	8:00:41	FAN-1-B	Final Status Survey	12/07/04	8:00:41	1.000	1.00
18	Smear 18	12/07/04	7:59:22	FAN-1-B	Final Status Survey	12/07/04	7:59:22	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-07-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 12-07-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 24.91 LLD: 14.36 dpm				Bkg: 0.4 cpm %Eff: 44.93 LLD: 10.74 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/07/04	8:21:54	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
2	Smear 2	12/07/04	8:20:35	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
3	Smear 3	12/07/04	8:19:15	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
4	Smear 4	12/07/04	8:17:58	0.00	-0.07	-0.27	14.35	2.00	1.60	3.56	10.74
5	Smear 5	12/07/04	8:16:38	1.00	0.93	3.75	14.35	0.00	-0.40	-0.89	10.74
6	Smear 6	12/07/04	8:15:17	0.00	-0.07	-0.27	14.35	2.00	1.60	3.56	10.74
7	Smear 7	12/07/04	8:13:57	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
8	Smear 8	12/07/04	8:12:38	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
9	Smear 9	12/07/04	8:11:18	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
10	Smear 10	12/07/04	8:09:58	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
11	Smear 11	12/07/04	8:08:38	0.00	-0.07	-0.27	14.35	5.00	4.60	10.24	10.74
12	Smear 12	12/07/04	8:07:19	0.00	-0.07	-0.27	14.35	2.00	1.60	3.56	10.74
13	Smear 13	12/07/04	8:05:59	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
14	Smear 14	12/07/04	8:04:40	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
15	Smear 15	12/07/04	8:03:20	0.00	-0.07	-0.27	14.35	2.00	1.60	3.56	10.74
16	Smear 16	12/07/04	8:02:01	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
17	Smear 17	12/07/04	8:00:41	0.00	-0.07	-0.27	14.35	5.00	4.60	10.24	10.74
18	Smear 18	12/07/04	7:59:22	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74

Technician (print): Rob Ellison

Technician (sign):

*Rob Ellison*

Date: 12-07-04

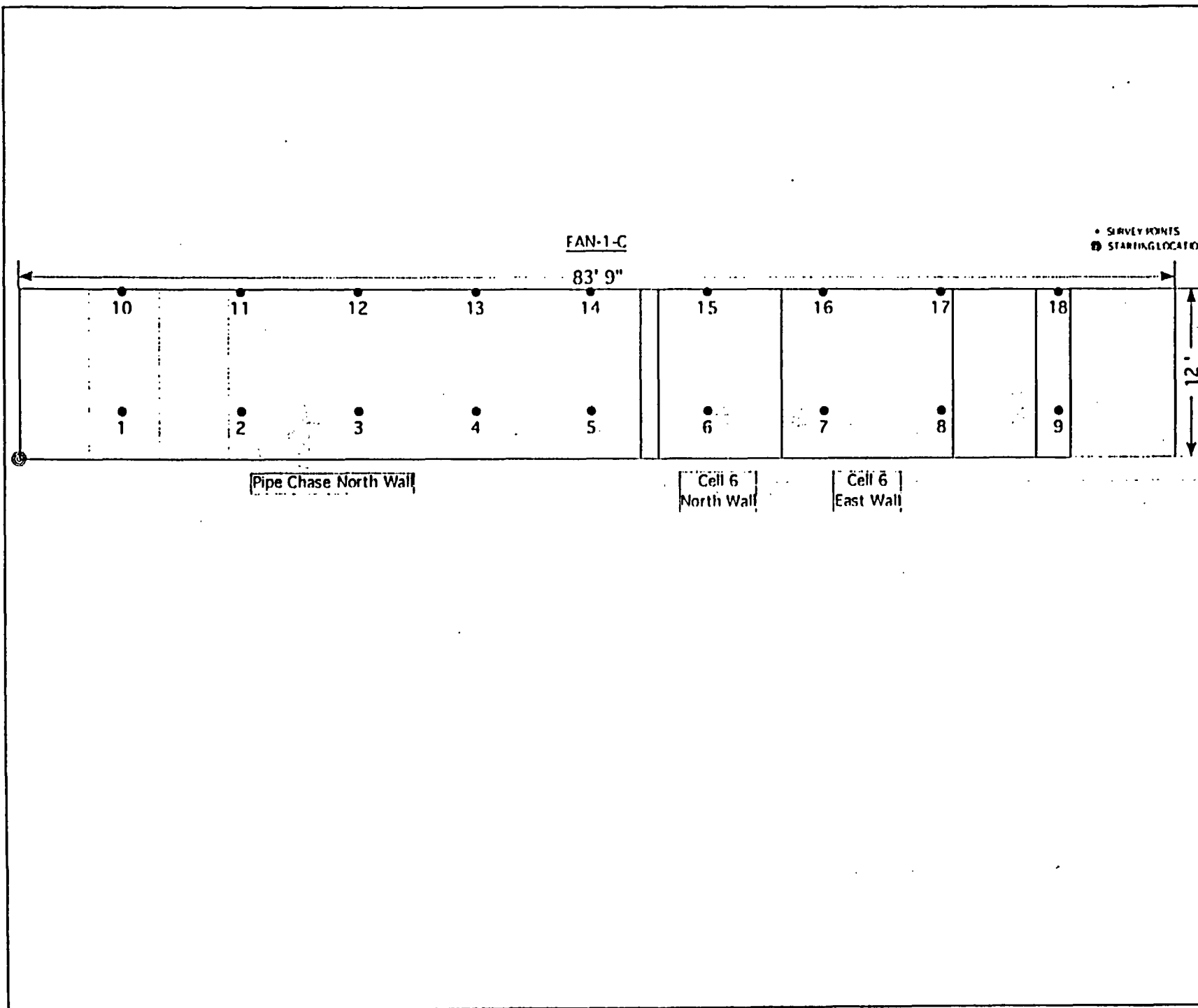
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

*Joe Trowbridge*

Date: 12-07-04

**FAN-1-C    Fan Room**



Document Control No.	
REVISION NO.	
PROJECT	<b>QUEHANNA DECOMMISSIONING</b> KATHAUS, PENNSYLVANIA 115 REACTOR ROAD <b>CLASS 1</b> Fan Room Walls (1 of 4)
DRAWING	
<b>SCIENTECH</b> <small>SCIENTECH, Inc.          145 WEST STREET          NEW MILFORD, CT 06455</small>	
PROJECT NO: 23529 0001	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/13/2004
By:	CK:
FIGURE FAN-1-C	

FAN-1-C

Log #
1659 Source
0005
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

	X	Y
	n/a	n/a
1	7.4	3.3
2	15.9	3.3
3	24.4	3.3
4	32.9	3.3
5	41.4	3.3
6	49.9	3.3
7	58.4	3.3
8	66.9	3.3
9	75.4	3.3
10	7.4	11.8
11	15.9	11.8
12	24.4	11.8
13	32.9	11.8
14	41.4	11.8
15	49.9	11.8
16	58.4	11.8
17	66.9	11.8
18	75.4	11.8

L (ft) = 8.5

A (ft<sup>2</sup>) = 1005

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
271	200	380
423	360	380
407	240	380
226	180	360
212	280	400
181	200	380
347	200	300
235	140	200
335	160	220
139	240	340
260	200	340
141	240	350
226	320	400
225	240	360
202	200	300
299	280	400
180	140	200
235	150	260

\* Points deconed and resurveyed  
on 12/20/04

2 → 238

3 → 279

\*\* Area received light decon and  
re-scanned on 12/20/04

Max qm

5 → 300

13 → 300

16 → 300



# Ludlum Measurements, Inc.

## Model 2360 Log Data

D 12/11/2004  
T 2:29:35 PM

Header 1: Technician  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/11/2004  
Model 2360 Time: 14:27:54  
Sample Number: 0023

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 999999  
Alpha + Beta Ratemeter Alarm: 999999  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 999999  
Alpha + Beta Scaler Alarm: 999999

me - Count Time  
emeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/11/04	13:38:59	000001	000185	S 001.0	Lab Background
0002	12/11/04	13:40:09	000001	034396	S 001.0	Lab Source
0003	12/11/04	13:43:52	000000	000128	S 001.0	Field Background
0004	12/11/04	13:45:36	000005	001659	S 001.0	Field Source
0005	12/11/04	13:47:39	000001	000271	S 001.0	FAN-1-C Location 1
0006	12/11/04	13:49:11	000000	000423	S 001.0	FAN-1-C Location 2
0007	12/11/04	13:50:30	000001	000407	S 001.0	FAN-1-C Location 3
0008	12/11/04	13:52:41	000001	000226	S 001.0	FAN-1-C Location 4
0009	12/11/04	13:54:50	000000	000212	S 001.0	FAN-1-C Location 5
0010	12/11/04	13:56:03	000001	000181	S 001.0	FAN-1-C Location 6
0011	12/11/04	13:57:12	000001	000347	S 001.0	FAN-1-C Location 7
0012	12/11/04	13:58:39	000000	000193	S 001.0	FAN-1-C Location 8
0013	12/11/04	13:59:52	000000	000335	S 001.0	FAN-1-C Location 9
0014	12/11/04	14:03:14	000000	000139	S 001.0	FAN-1-C Location 10
0015	12/11/04	14:05:38	000001	000266	S 001.0	FAN-1-C Location 11
0016	12/11/04	14:07:27	000003	000141	S 001.0	FAN-1-C Location 12
0017	12/11/04	14:09:37	000000	000226	S 001.0	FAN-1-C Location 13
0018	12/11/04	14:11:25	000002	000225	S 001.0	FAN-1-C Location 14
0019	12/11/04	14:13:15	000000	000202	S 001.0	FAN-1-C Location 15
0020	12/11/04	14:15:26	000001	000299	S 001.0	FAN-1-C Location 16
0021	12/11/04	14:17:50	000000	000180	S 001.0	FAN-1-C Location 17
0022	12/11/04	14:20:31	000001	000235	S 001.0	FAN-1-C Location 18

S

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/20/2004  
Time: 2:10:49 PM

Header 1: Chris Higgins  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FAN-1-C  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/20/2004  
Model 2360 Time: 14:08:31  
Sample Number: 0005

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

*Chris Higgins*

CntTime - Count Time  
R- Ratemeter  
S- Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

---

0001	12/20/04	11:20:29	000001	000178	S 001.0	Lab Background
0002	12/20/04	11:23:11	000002	032971	S 001.0	Lab Source
0003	12/20/04	12:44:36	000002	000238	S 001.0	FAN-1-C Point 2
0004	12/20/04	12:45:43	000001	000279	S 001.0	FAN-1-C Point 3

\$

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %EM: 24.25 LLD: 15.54 dpm				Bkg: 0.6 cpm %EM: 46 LLD: 11.28 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/12/04	10:00:27	0.00	-0.10	-0.41	15.54	0.00	-0.50	-1.11	11.28
2	Smear 2	12/12/04	9:59:07	0.00	-0.10	-0.41	15.54	3.00	2.50	5.56	11.28
3	Smear 3	12/12/04	9:57:47	0.00	-0.10	-0.41	15.54	1.00	0.50	1.11	11.28
4	Smear 4	12/12/04	9:56:28	0.00	-0.10	-0.41	15.54	2.00	1.50	3.33	11.28
5	Smear 5	12/12/04	9:55:08	0.00	-0.10	-0.41	15.54	2.00	1.50	3.33	11.28
6	Smear 6	12/12/04	9:53:48	0.00	-0.10	-0.41	15.54	0.00	-0.50	-1.11	11.28
7	Smear 7	12/12/04	9:52:28	0.00	-0.10	-0.41	15.54	2.00	1.50	3.33	11.28
8	Smear 8	12/12/04	9:51:08	0.00	-0.10	-0.41	15.54	0.00	-0.50	-1.11	11.28
9	Smear 9	12/12/04	9:49:48	0.00	-0.10	-0.41	15.54	3.00	2.50	5.56	11.28
10	Smear 10	12/12/04	9:48:28	0.00	-0.10	-0.41	15.54	2.00	1.50	3.33	11.28
11	Smear 11	12/12/04	9:47:08	0.00	-0.10	-0.41	15.54	2.00	1.50	3.33	11.28
12	Smear 12	12/12/04	9:45:48	0.00	-0.10	-0.41	15.54	2.00	1.50	3.33	11.28
13	Smear 13	12/12/04	9:44:29	0.00	-0.10	-0.41	15.54	4.00	3.50	7.78	11.28
14	Smear 14	12/12/04	9:43:09	0.00	-0.10	-0.41	15.54	17.00	16.50	36.67	11.28
15	Smear 15	12/12/04	9:41:49	0.00	-0.10	-0.41	15.54	3.00	2.50	5.56	11.28
16	Smear 16	12/12/04	9:40:29	0.00	-0.10	-0.41	15.54	0.00	-0.50	-1.11	11.28
17	Smear 17	12/12/04	9:39:10	0.00	-0.10	-0.41	15.54	4.00	3.50	7.78	11.28
18	Smear 18	12/12/04	9:37:50	0.00	-0.10	-0.41	15.54	4.00	3.50	7.78	11.28

Technician (print): Rob Ellison

Technician (sign):

*Rob Ellison*

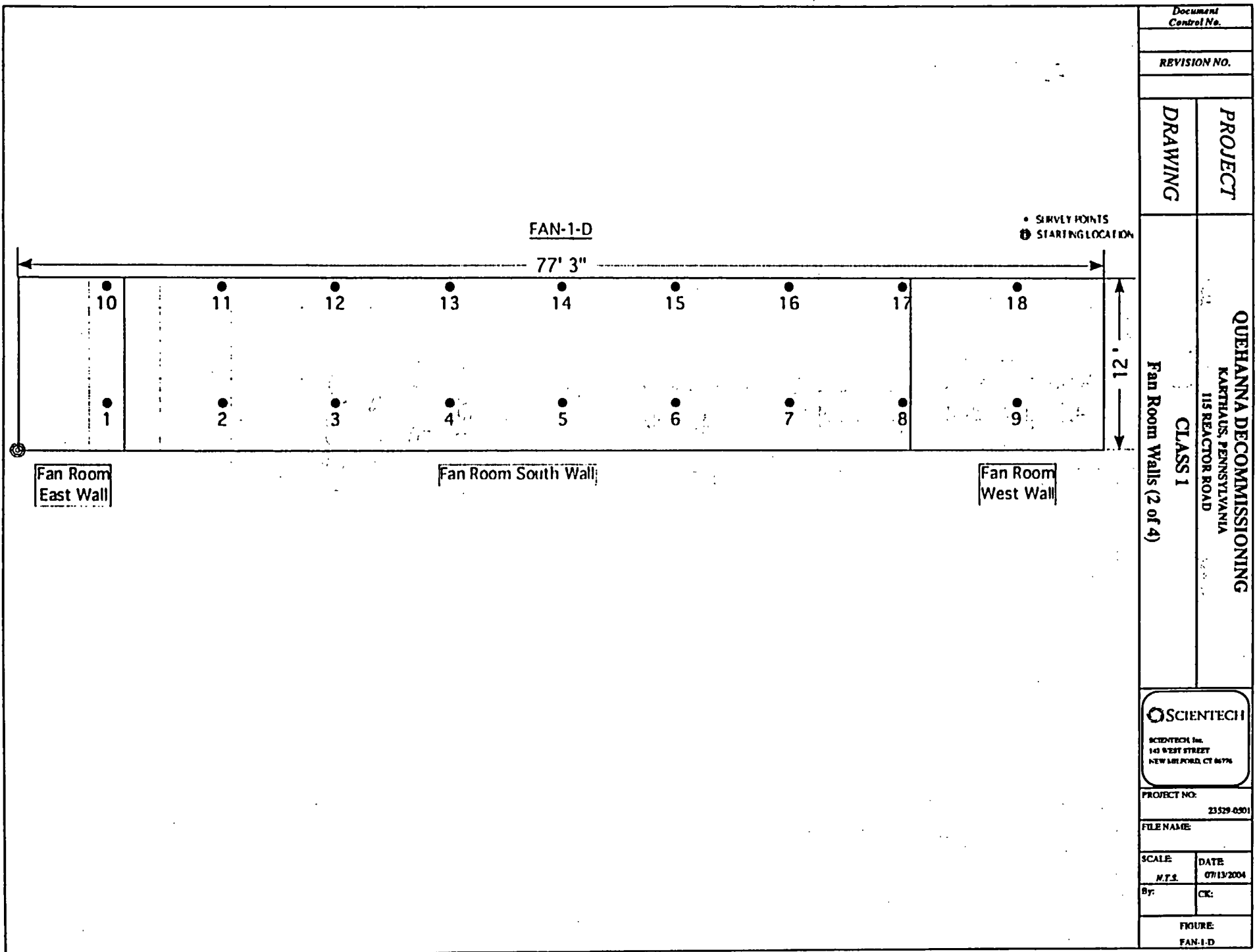
Date: 12-12-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

*Joe Trowbridge*  
Date: 12-12-04

**FAN-1-D    Fan Room**



Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING

KARTHAUS, PENNSYLVANIA

115 REACTOR ROAD

CLASS 1

Fan Room Walls (2 of 4)

SCIENTECH

SCIENTECH, Inc.  
143 WEST STREET  
NEW BRIDFORD, CT 06764

PROJECT NO:  
23529-0201

FILE NAME:

SCALE: DATE  
N.T.S. 07/13/2004

By: CR:

FIGURE:  
FAN-1-D

4360 202410  
FAN-I-D

(DIRECTS)  
START TIME 1255  
STOP 1335

Log #	Source
2300	0005
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	

X	Y
n/a	n/a
1 6.3	3.3
2 14.4	3.3
3 22.5	3.3
4 30.6	3.3
5 38.7	3.3
6 46.8	3.3
7 54.9	3.3
8 63.0	3.3
9 71.1	3.3
10 6.3	11.4
11 14.4	11.4
12 22.5	11.4
13 30.6	11.4
14 38.7	11.4
15 46.8	11.4
16 54.9	11.4
17 63.0	11.4
18 71.1	11.4

L (ft) = 8.1  
A (ft²) = 927

Fixed Points	Ave. (Scan)	Max. (Scan)
FIELD 810 243	n/a	n/a
* 4 ① 256	360	400
* 5 ② 305	340	380
* 6 ③ 333	360	440
* 7 ④ 188	300	360
* 8 ⑤ 164	220	400
* 9 ⑥ 202	200	420
* 10 ⑦ 202	260	320
* 11 ⑧ 312	260	440
* 12 ⑨ 122	200	380
* 13 ⑩ 191	240	380
* 14 ⑪ 174	220	460
* 15 ⑫ 190	200	340
* 16 ⑬ 185	240	320
* 17 ⑭ 157	190	360
* 18 ⑮ 146	200	300
* 19 ⑯ 267	340	406
* 20 ⑰ 133	220	380
* 21 ⑱ 144	260	400

\* - Sections receive light  
decan and were resurveyed  
(scanned) on 12/20/04  
See attached data sheet

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/8/2004  
Time: 4:46:46 PM

Header 1: Joe Trowbridge  
Header 2: Serial#202410  
Header 3: DetSer#PR208657  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FAN-1-D  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/08/2004  
Model 2360 Time: 14:53:44  
Sample Number: 0024

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
Ratmeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/08/04	13:51:06	000000	000196	S 001.0	Lab Background
0002	12/08/04	13:53:37	000000	036413	S 001.0	Lab Source
0003	12/08/04	13:54:55	000004	002808	S 001.0	Field Source
0004	12/08/04	13:57:50	000001	000243	S 001.0	Field Background
0005	12/08/04	14:02:05	000003	000256	S 001.0	FAN-1-D
0006	12/08/04	14:03:51	000001	000305	S 001.0	FAN-1-D
0007	12/08/04	14:08:55	000001	000333	S 001.0	FAN-1-D
0008	12/08/04	14:10:20	000001	000188	S 001.0	FAN-1-D
0009	12/08/04	14:12:07	000001	000164	S 001.0	FAN-1-D
0010	12/08/04	14:15:01	000001	000202	S 001.0	FAN-1-D
0011	12/08/04	14:16:35	000000	000202	S 001.0	FAN-1-D
0012	12/08/04	14:18:23	000001	000312	S 001.0	FAN-1-D
0013	12/08/04	14:19:46	000001	000122	S 001.0	FAN-1-D
0014	12/08/04	14:27:06	000001	000191	S 001.0	FAN-1-D
0015	12/08/04	14:29:06	000002	000174	S 001.0	FAN-1-D
0016	12/08/04	14:31:05	000001	000190	S 001.0	FAN-1-D
0017	12/08/04	14:33:11	000000	000185	S 001.0	FAN-1-D
0018	12/08/04	14:35:21	000002	000151	S 001.0	FAN-1-D
0019	12/08/04	14:37:42	000000	000146	S 001.0	FAN-1-D
0020	12/08/04	14:39:57	000000	000267	S 001.0	FAN-1-D
0021	12/08/04	14:42:03	000003	000133	S 001.0	FAN-1-D
0022	12/08/04	14:43:56	000001	000144	S 001.0	FAN-1-D
0023	12/08/04	14:46:50	000003	003114	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
P:C WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/08/04	14:30:07	FAN-1-D	Final Status Survey	12/08/04	14:30:07	1.000	1.00
2	Smear 2	12/08/04	14:28:47	FAN-1-D	Final Status Survey	12/08/04	14:28:47	1.000	1.00
3	Smear 3	12/08/04	14:27:27	FAN-1-D	Final Status Survey	12/08/04	14:27:27	1.000	1.00
4	Smear 4	12/08/04	14:26:07	FAN-1-D	Final Status Survey	12/08/04	14:26:07	1.000	1.00
5	Smear 5	12/08/04	14:24:47	FAN-1-D	Final Status Survey	12/08/04	14:24:47	1.000	1.00
6	Smear 6	12/08/04	14:23:27	FAN-1-D	Final Status Survey	12/08/04	14:23:27	1.000	1.00
7	Smear 7	12/08/04	14:22:07	FAN-1-D	Final Status Survey	12/08/04	14:22:07	1.000	1.00
8	Smear 8	12/08/04	14:20:47	FAN-1-D	Final Status Survey	12/08/04	14:20:47	1.000	1.00
9	Smear 9	12/08/04	14:19:27	FAN-1-D	Final Status Survey	12/08/04	14:19:27	1.000	1.00
10	Smear 10	12/08/04	14:18:07	FAN-1-D	Final Status Survey	12/08/04	14:18:07	1.000	1.00
11	Smear 11	12/08/04	14:16:47	FAN-1-D	Final Status Survey	12/08/04	14:16:47	1.000	1.00
12	Smear 12	12/08/04	14:15:27	FAN-1-D	Final Status Survey	12/08/04	14:15:27	1.000	1.00
13	Smear 13	12/08/04	14:14:07	FAN-1-D	Final Status Survey	12/08/04	14:14:07	1.000	1.00
14	Smear 14	12/08/04	14:12:47	FAN-1-D	Final Status Survey	12/08/04	14:12:47	1.000	1.00
15	Smear 15	12/08/04	14:11:27	FAN-1-D	Final Status Survey	12/08/04	14:11:27	1.000	1.00
16	Smear 16	12/08/04	14:10:07	FAN-1-D	Final Status Survey	12/08/04	14:10:07	1.000	1.00
17	Smear 17	12/08/04	14:08:47	FAN-1-D	Final Status Survey	12/08/04	14:08:47	1.000	1.00
18	Smear 18	12/08/04	14:07:27	FAN-1-D	Final Status Survey	12/08/04	14:07:27	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-08-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 12-08-04



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 24.63 LLD: 11.06 dpm				Bkg: 0.67 cpm %Eff: 44.64 LLD: 11.71 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/08/04	14:30:07	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
2	Smear 2	12/08/04	14:28:47	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
3	Smear 3	12/08/04	14:27:27	0.00	0.00	0.00	11.05	4.00	3.43	7.69	11.71
4	Smear 4	12/08/04	14:26:07	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
5	Smear 5	12/08/04	14:24:47	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
6	Smear 6	12/08/04	14:23:27	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
7	Smear 7	12/08/04	14:22:07	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
8	Smear 8	12/08/04	14:20:47	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
9	Smear 9	12/08/04	14:19:27	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
10	Smear 10	12/08/04	14:18:07	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
11	Smear 11	12/08/04	14:16:47	0.00	0.00	0.00	11.05	4.00	3.43	7.69	11.71
12	Smear 12	12/08/04	14:15:27	0.00	0.00	0.00	11.05	3.00	2.43	5.45	11.71
13	Smear 13	12/08/04	14:14:07	0.00	0.00	0.00	11.05	3.00	2.43	5.45	11.71
14	Smear 14	12/08/04	14:12:47	0.00	0.00	0.00	11.05	7.00	6.43	14.41	11.71
15	Smear 15	12/08/04	14:11:27	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
16	Smear 16	12/08/04	14:10:07	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
17	Smear 17	12/08/04	14:08:47	0.00	0.00	0.00	11.05	3.00	2.43	5.45	11.71
18	Smear 18	12/08/04	14:07:27	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-08-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 12-08-04

General Area	Survey Unit	Class	Part	Material	Size
Fan Room	FAN-1-D	1	Wall	Concrete	927 ft <sup>2</sup>
Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity Sigma
1	398	67	832.6	1000 300	-1.3 0.6
2	603	73	749.1	916	1 4.4
3	720	76	832.6	1167 320	7.7 8.8
4	114	57	582	833	-1.3 0.6
5	14	54	248	1000 360	-1.3 0.6
6	173	59	164.5	1083 380	-1.3 0.6
7	173	59	415	666	-1.3 0.6
8	632	74	415	1167 300	-1.3 0.6
9	-161	46	164.5	916	-1.3 0.6
10	127	58	331.5	582	-1.3 0.6
11	56	55	248	1250 280	7.7 8.8
12	123	58	164.5	749	5.5 7.6
13	102	57	331.5	666	5.5 7.6
14	-40	51	122.8	833	14.4 11.6
15	-61	51	164.5	582	1 4.4
16	444	68	749.1	1000 240	-1.3 0.6
17	-115	48	248	916	5.5 7.6
18	-69	50	415	1000 320	1 4.4
Average: 180					Average: 2
Maximum: 720					Maximum: 14.4
Minimum: -161					Minimum: -1.3
Survey Date 12/8/2004			Survey Date 12/8/2004		Survey Date 12/8/2004
Inst. Model M2360			Inst. Model M2360		Inst. Model WPC-9550
Probe Model M43-93			Probe Model M43-93		Ei 0.4464cpm/dpm
Probe Area 100 cm <sup>2</sup>			Probe Area 100 cm <sup>2</sup>		Background 0.57 cpm
Ei 0.479 cpm/cpm			Ei 0.479 cpm/cpm		Bkg σ 0.137 cpm
Es 0.5 cpm/dpm			Es 0.5 cpm/dpm		MDC 12 dpm/100 cm <sup>2</sup>
Background 160. cpm			Background 160.6 cpm		
Bkg σ 10 cpm			Bkg σ 10 cpm		
MDC 259 dpm/100 cm <sup>2</sup>			MDC 800 dpm/100 cm <sup>2</sup>		

Chris  
resurveying  
12/20  
Chandrasekhar

**FAN-1-E    Fan Room**

FAN-1-E

• SURVEY POINTS  
 Ⓢ STARTING LOCATION

56' 9"

11.21

9

10

11

12

13

14

15

16

1

2

3

4

5

6

7

8

Fan Room North Wall

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KATHAUS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Fan Room Walls (3 of 4)

SCIENTECH  
 SCIENTECH, Inc.  
 143 WEST STREET  
 NEW MILFORD, CT 06458

PROJECT NO:  
23529-0301

FILE NAME:

SCALE: DATE  
 N.T.S. 07/13/2004

BY: CK:

FIGURE:  
FAN-1-E

FAN-1-E

[illegible]

	X	Y
	n/a	n/a
1	3.6	3.3
2	10.6	3.3
3	17.6	3.3
4	24.6	3.3
5	31.6	3.3
6	38.6	3.3
7	45.6	3.3
8	52.6	3.3
9	3.6	10.3
10	10.6	10.3
11	17.6	10.3
12	24.6	10.3
13	31.6	10.3
14	38.6	10.3
15	45.6	10.3
16	52.6	10.3

$$\begin{aligned} L \text{ (ft)} &= 7.0 \\ A \text{ (ft}^2\text{)} &= 681 \end{aligned}$$

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
	200	260
	180	220
*	300	420
	180	300
	160	220
*	320	400
*	340	400
	300	380
*	240	400
	240	360
	200	260
	180	380
	220	380
	180	320
	180	260
	160	220

23-60  
202475#

START SCAN 0800

STOP SCAN 1130

LOG#

POINTS

LOG#

## Points

5 - ① <sup>172</sup>174 <sup>PT</sup> 11/2/05

13-9 106

6 - ② 144

150-156

7 - ② 222

62 (11) - 220

8- (4) 274

17-2-114

9- ⑤ 184

48-63-239

10 - (C) 136

19-(14)-119

11- 192

20-230

12 203

21-~~6~~-194

\* - light decon and  
rescan on 12/20  
see attached data sheet

Ludlum Measurements, Inc.  
Model 2360 Log Data

Date: 12/9/2004  
Time: 4:35:43 PM

Header 1: Joe Trowbridge  
Header 2: Serial#202410  
Header 3: DetSer#PR208657  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FAN-1-E  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/09/2004  
Model 2360 Time: 16:32:21  
Sample Number: 0023

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Rate - Count Time  
Rate - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/09/04	15:32:00	000000	000163	S 001.0	Lab Background
0002	12/09/04	15:33:15	000001	034896	S 001.0	Lab Source
0003	12/09/04	15:40:25	000006	001684	S 001.0	Field Source
0004	12/09/04	15:43:21	000000	000181	S 001.0	Field Background
0005	12/09/04	15:48:44	000000	000172	S 001.0	FAN-1-E
0006	12/09/04	15:50:55	000000	000144	S 001.0	FAN-1-E
0007	12/09/04	15:52:33	000000	000222	S 001.0	FAN-1-E
0008	12/09/04	15:54:06	000000	000274	S 001.0	FAN-1-E
0009	12/09/04	15:55:30	000000	000184	S 001.0	FAN-1-E
0010	12/09/04	15:57:01	000001	000136	S 001.0	FAN-1-E
0011	12/09/04	15:58:51	000000	000192	S 001.0	FAN-1-E
0012	12/09/04	16:02:50	000000	000203	S 001.0	FAN-1-E
0013	12/09/04	16:04:47	000000	000106	S 001.0	FAN-1-E
0014	12/09/04	16:07:07	000002	000590	S 001.0	Void
0015	12/09/04	16:08:25	000000	000156	S 001.0	FAN-1-E
0016	12/09/04	16:11:12	000000	000220	S 001.0	FAN-1-E
0017	12/09/04	16:14:18	000000	000114	S 001.0	FAN-1-E
0018	12/09/04	16:17:06	000000	000239	S 001.0	FAN-1-E
0019	12/09/04	16:19:16	000002	000119	S 001.0	FAN-1-E
0020	12/09/04	16:22:13	000000	000230	S 001.0	FAN-1-E
0021	12/09/04	16:24:51	000000	000194	S 001.0	FAN-1-E
0022	12/09/04	16:30:18	000000	037242	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/09/04	17:09:43	FAN-1-E	Final Status Survey	12/09/04	17:09:43	1.000	1.00
2	Smear 2	12/09/04	17:08:23	FAN-1-E	Final Status Survey	12/09/04	17:08:23	1.000	1.00
3	Smear 3	12/09/04	17:07:03	FAN-1-E	Final Status Survey	12/09/04	17:07:03	1.000	1.00
4	Smear 4	12/09/04	17:05:43	FAN-1-E	Final Status Survey	12/09/04	17:05:43	1.000	1.00
5	Smear 5	12/09/04	17:04:23	FAN-1-E	Final Status Survey	12/09/04	17:04:23	1.000	1.00
6	Smear 6	12/09/04	17:03:04	FAN-1-E	Final Status Survey	12/09/04	17:03:04	1.000	1.00
7	Smear 7	12/09/04	17:01:44	FAN-1-E	Final Status Survey	12/09/04	17:01:44	1.000	1.00
8	Smear 8	12/09/04	17:00:24	FAN-1-E	Final Status Survey	12/09/04	17:00:24	1.000	1.00
9	Smear 9	12/09/04	16:59:04	FAN-1-E	Final Status Survey	12/09/04	16:59:04	1.000	1.00
10	Smear 10	12/09/04	16:57:44	FAN-1-E	Final Status Survey	12/09/04	16:57:44	1.000	1.00
11	Smear 11	12/09/04	16:56:24	FAN-1-E	Final Status Survey	12/09/04	16:56:24	1.000	1.00
12	Smear 12	12/09/04	16:55:04	FAN-1-E	Final Status Survey	12/09/04	16:55:04	1.000	1.00
13	Smear 13	12/09/04	16:53:45	FAN-1-E	Final Status Survey	12/09/04	16:53:45	1.000	1.00
14	Smear 14	12/09/04	16:52:25	FAN-1-E	Final Status Survey	12/09/04	16:52:25	1.000	1.00
15	Smear 15	12/09/04	16:51:05	FAN-1-E	Final Status Survey	12/09/04	16:51:05	1.000	1.00
16	Smear 16	12/09/04	16:49:45	FAN-1-E	Final Status Survey	12/09/04	16:49:45	1.000	1.00
17	Smear 17	12/09/04	16:48:25	FAN-1-E	Final Status Survey	12/09/04	16:48:25	1.000	1.00
18	Smear 18	12/09/04	16:47:05	FAN-1-E	Final Status Survey	12/09/04	16:47:05	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date:

12-09-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 23.81 LLD: 18.01 dpm				Bkg: 0.6 cpm %Eff: 44.63 LLD: 11.37 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/09/04	17:09:43	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
2	Smear 2	12/09/04	17:08:23	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
3	Smear 3	12/09/04	17:07:03	0.00	-0.07	-0.28	15.01	2.00	1.50	3.38	11.37
4	Smear 4	12/09/04	17:05:43	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
5	Smear 5	12/09/04	17:04:23	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
6	Smear 6	12/09/04	17:03:04	0.00	-0.07	-0.28	15.01	2.00	1.50	3.38	11.37
7	Smear 7	12/09/04	17:01:44	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
8	Smear 8	12/09/04	17:00:24	0.00	-0.07	-0.28	15.01	29.00	28.50	63.86	11.37
9	Smear 9	12/09/04	16:59:04	0.00	-0.07	-0.28	15.01	4.00	3.50	7.84	11.37
10	Smear 10	12/09/04	16:57:44	0.00	-0.07	-0.28	15.01	6.00	5.50	12.32	11.37
11	Smear 11	12/09/04	16:56:24	0.00	-0.07	-0.28	15.01	7.00	6.50	14.56	11.37
12	Smear 12	12/09/04	16:55:04	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
13	Smear 13	12/09/04	16:53:45	0.00	-0.07	-0.28	15.01	4.00	3.50	7.84	11.37
14	Smear 14	12/09/04	16:52:25	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
15	Smear 15	12/09/04	16:51:05	0.00	-0.07	-0.28	15.01	4.00	3.50	7.84	11.37
16	Smear 16	12/09/04	16:49:45	0.00	-0.07	-0.28	15.01	5.00	4.50	10.08	11.37
17	Smear 17	12/09/04	16:48:25	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
18	Smear 18	12/09/04	16:47:05	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

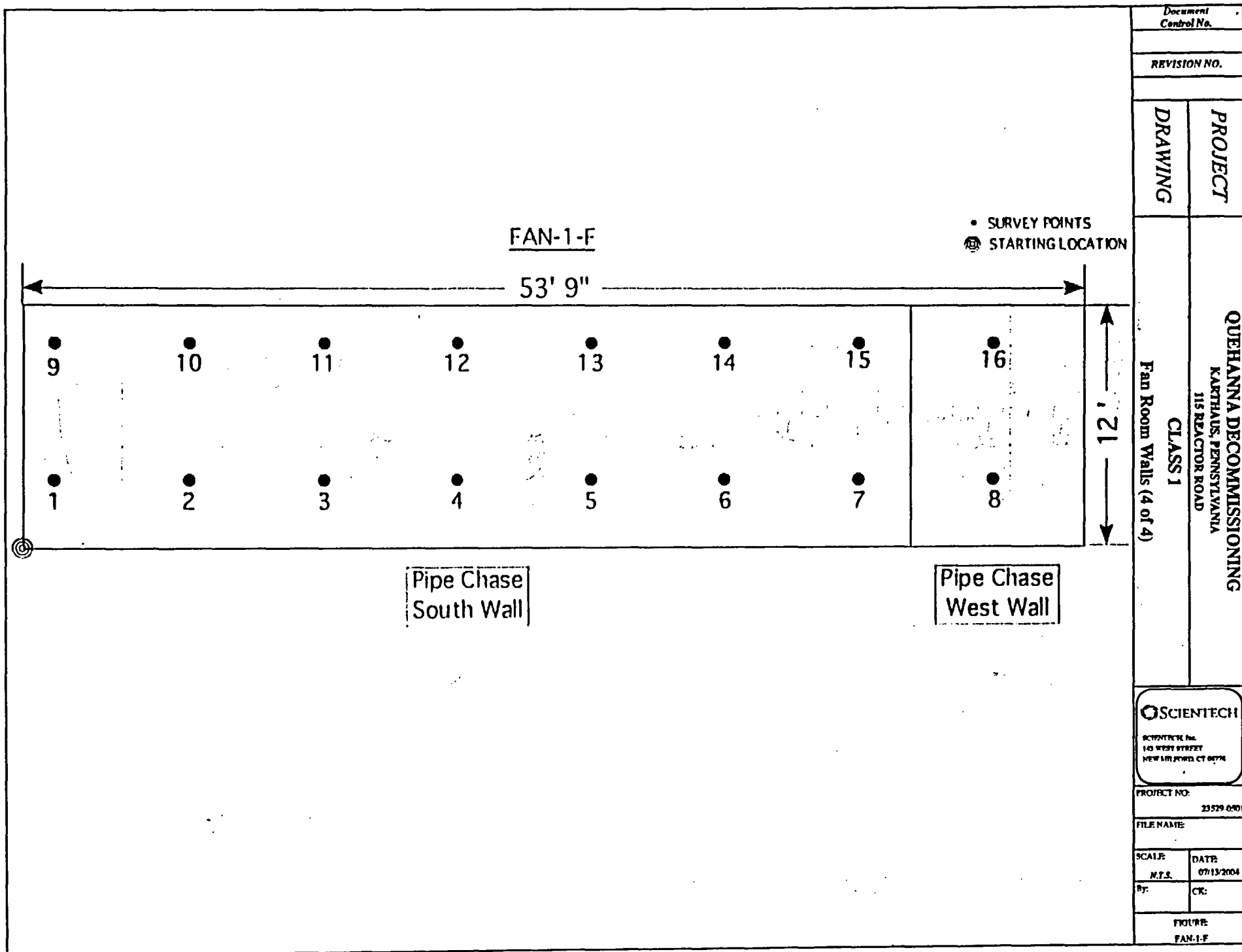
Date: 12-09-04



General Area	Survey Unit	Class	Part	Material	Size
Fan Room	FAN-1-E	1	Wall	Concrete	681 ft <sup>2</sup>
Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity Sigma
1	48	55	164.5	415	1.1 4.4
2	-69	50	81	248	-1.1 0.6
3	256	62	582	1083	3.4 6.2
4	473	69	81	582	-1.1 0.6
5	98	57	-2.5	248	-1.1 0.6
6	-103	49	665.6	1000	3.4 6.2
7	131	58	749.1	1000	5.6 7.6
8	177	60	582	916	63.9 23.7
9	-228	43	415	1000	7.8 8.8
10	-19	52	331.5	833	12.3 10.8
11	248	62	164.5	415	14.6 11.6
12	-195	45	81	916	-1.1 0.6
13	327	65	248	916	7.8 8.8
14	-174	46	81	666	5.6 7.6
15	290	63	81	415	7.8 8.8
16	139	58	-2.5	248	10.1 9.8
Average:	87				Average: 9
Maximum:	473				Maximum: 63.9
Minimum:	-228				Minimum: -1.1
Survey Date	12/9/2004		Survey Date	12/9/2004	Survey Date 12/9/2004
Inst. Model	M2360		Inst. Model	M2360	Inst. Model WPC-9550
Probe Model	M43-93		Probe Model	M43-93	Ei 0.4463 cpm/dpm
Probe Area	100 cm <sup>2</sup>		Probe Area	100 cm <sup>2</sup>	Background 0.5 cpm
Ei	0.479 cpm/cpm		Ei	0.479 cpm/cpm	Bkg σ 0.129 cpm
Es	0.5 cpm/dpm		Es	0.5 cpm/dpm	MDC 11 dpm/100 cm <sup>2</sup>
Background	160. cpm		Background	160.6 cpm	
Bkg σ	10 cpm		Bkg σ	10 cpm	
MDC	259 dpm/100 cm <sup>2</sup>		MDC	800 dpm/100 cm <sup>2</sup>	

Chris  
Resman  
12/20

**FAN-1-F    Fan Room**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Fan Room Walls (4 of 4)	
<b>SCIENTECH</b> SCIENTECH, Inc. 140 WEST STREET NEW HAVEN, CT 06510	
PROJECT NO: 23529-0001	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/19/2004
BY:	CK:
FIGURE: FAN-1-F	

## FAN-1-F

Log #
1537 Source
0005
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

	X	Y
	n/a	n/a
1	1.6	3.3
2	8.4	3.3
3	15.2	3.3
4	22.0	3.3
5	28.8	3.3
6	35.6	3.3
7	42.4	3.3
8	49.2	3.3
9	1.6	10.1
10	8.4	10.1
11	15.2	10.1
12	22.0	10.1
13	28.8	10.1
14	35.6	10.1
15	42.4	10.1
16	49.2	10.1

L (ft) = 6.8

A (ft<sup>2</sup>) = 645

Fixed Points	Ave. (Scan)	Max. (Scan)
n/a	n/a	n/a
* <del>304</del> 304	300	400
143	200	225
163. <del>200</del>	225	250
* 262	235	400
253	190	220
217	225	300
239	170	220
313	200	300
140	300	380
209	180	240
271	160	240
* 157	300	400
184	180	360
148	250	300
138	180	340
187	215	320

DIRECTS 23-60 - 202433

SCANS 23-60 - 202410

START - 1130

STOP - 1430

\* - areas received light  
decon. and were  
resurveyed on 12/20/04  
see attached data  
sheet

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

2/11/2004  
11:42:06 PM

Header 1: Joe Trowbridge

Header 2:

Header 3:

Header 4:

Header 5:

Header 6:

Location: Fan Room

Calibration Due Date:

Model 2360 Date:

Model 2360 Time:

Sample Number:

User PC Time:

Alpha Ratemeter Alarm:

Beta Ratemeter Alarm:

Alpha + Beta Ratemeter Alarm:

Alpha Scaler Alarm:

Beta Scaler Alarm:

Alpha + Beta Scaler Alarm:

CntTime - Count Time

R - Ratemeter

S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/11/04	08:19:37	000002	000202	S 001.0	Lab Background
0002	12/11/04	08:20:44	000002	034914	S 001.0	Lab Source
0003	12/11/04	12:32:00	000000	000139	S 001.0	Field Background
0004	12/11/04	12:34:22	000003	001537	S 001.0	Field Source
0005	12/11/04	12:36:43	000002	000304	S 001.0	FAN-1-F Location 1
0006	12/11/04	12:38:08	000000	000143	S 001.0	FAN-1-F Location 2
0007	12/11/04	12:39:42	000000	000163	S 001.0	FAN-1-F Location 3
0008	12/11/04	12:41:07	000000	000262	S 001.0	FAN-1-F Location 4
0009	12/11/04	12:43:08	000000	000253	S 001.0	FAN-1-F Location 5
0010	12/11/04	12:44:32	000002	000217	S 001.0	FAN-1-F Location 6
0011	12/11/04	12:48:31	000001	000239	S 001.0	FAN-1-F Location 7
0012	12/11/04	12:49:55	000001	000313	S 001.0	FAN-1-F Location 8
0013	12/11/04	12:51:18	000000	000140	S 001.0	FAN-1-F Location 9
0014	12/11/04	12:52:45	000002	000209	S 001.0	FAN-1-F Location 10
0015	12/11/04	13:04:29	000001	000271	S 001.0	FAN-1-F Location 11
0016	12/11/04	13:06:16	000001	000157	S 001.0	FAN-1-F Location 12
0017	12/11/04	13:09:24	000001	000184	S 001.0	FAN-1-F Location 13
0018	12/11/04	13:11:45	000000	000188	S 001.0	FAN-1-F Location 14
0019	12/11/04	13:13:49	000000	000138	S 001.0	FAN-1-F Location 15
0020	12/11/04	13:16:41	000002	000187	S 001.0	FAN-1-F Location 16

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
61	Smear 1	12/11/04	14:12:01	FAN-1-F	FSS	12/11/04	14:12:01	1.000	1.00
62	Smear 2	12/11/04	14:10:42	FAN-1-F	FSS	12/11/04	14:10:42	1.000	1.00
63	Smear 3	12/11/04	14:09:22	FAN-1-F	FSS	12/11/04	14:09:22	1.000	1.00
64	Smear 4	12/11/04	14:08:02	FAN-1-F	FSS	12/11/04	14:08:02	1.000	1.00
65	Smear 5	12/11/04	14:06:42	FAN-1-F	FSS	12/11/04	14:06:42	1.000	1.00
66	Smear 6	12/11/04	14:05:22	FAN-1-F	FSS	12/11/04	14:05:22	1.000	1.00
67	Smear 7	12/11/04	14:04:02	FAN-1-F	FSS	12/11/04	14:04:02	1.000	1.00
68	Smear 8	12/11/04	14:02:42	FAN-1-F	FSS	12/11/04	14:02:42	1.000	1.00
69	Smear 9	12/11/04	14:01:22	FAN-1-F	FSS	12/11/04	14:01:22	1.000	1.00
70	Smear 10	12/11/04	14:00:03	FAN-1-F	FSS	12/11/04	14:00:03	1.000	1.00
71	Smear 11	12/11/04	13:58:43	FAN-1-F	FSS	12/11/04	13:58:43	1.000	1.00
72	Smear 12	12/11/04	13:57:23	FAN-1-F	FSS	12/11/04	13:57:23	1.000	1.00
73	Smear 13	12/11/04	13:56:03	FAN-1-F	FSS	12/11/04	13:56:03	1.000	1.00
74	Smear 14	12/11/04	13:54:43	FAN-1-F	FSS	12/11/04	13:54:43	1.000	1.00
75	Smear 15	12/11/04	13:53:23	FAN-1-F	FSS	12/11/04	13:53:23	1.000	1.00
76	Smear 16	12/11/04	13:52:03	FAN-1-F	FSS	12/11/04	13:52:03	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): 

Date: 12/11/04

Reviewed By (print): Joe Towbridge

Reviewed By (sign): 

Date: 12-11-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %EF: 24.43 LLD: 13.59 dpm				Bkg: 0.37 cpm %EF: 45.85 LLD: 10.33 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
61	Smear 1	12/11/04	14:12:01	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
62	Smear 2	12/11/04	14:10:42	0.00	-0.03	-0.14	13.59	2.00	1.63	3.58	10.33
63	Smear 3	12/11/04	14:09:22	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
64	Smear 4	12/11/04	14:08:02	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
65	Smear 5	12/11/04	14:06:42	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
66	Smear 6	12/11/04	14:05:22	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
67	Smear 7	12/11/04	14:04:02	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
68	Smear 8	12/11/04	14:02:42	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
69	Smear 9	12/11/04	14:01:22	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
70	Smear 10	12/11/04	14:00:03	0.00	-0.03	-0.14	13.59	5.00	4.63	10.11	10.33
71	Smear 11	12/11/04	13:58:43	0.00	-0.03	-0.14	13.59	27.00	26.63	58.09	10.33
72	Smear 12	12/11/04	13:57:23	0.00	-0.03	-0.14	13.59	5.00	4.63	10.11	10.33
73	Smear 13	12/11/04	13:56:03	0.00	-0.03	-0.14	13.59	2.00	1.63	3.58	10.33
74	Smear 14	12/11/04	13:54:43	1.00	0.97	3.96	13.59	2.00	1.63	3.58	10.33
75	Smear 15	12/11/04	13:53:23	0.00	-0.03	-0.14	13.59	2.00	1.63	3.58	10.33
76	Smear 16	12/11/04	13:52:03	0.00	-0.03	-0.14	13.59	5.00	4.63	10.11	10.33

Technician (print): Chris Higgins

Technician (sign): 

Date: 12/11/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): 

Date: 12-11-04

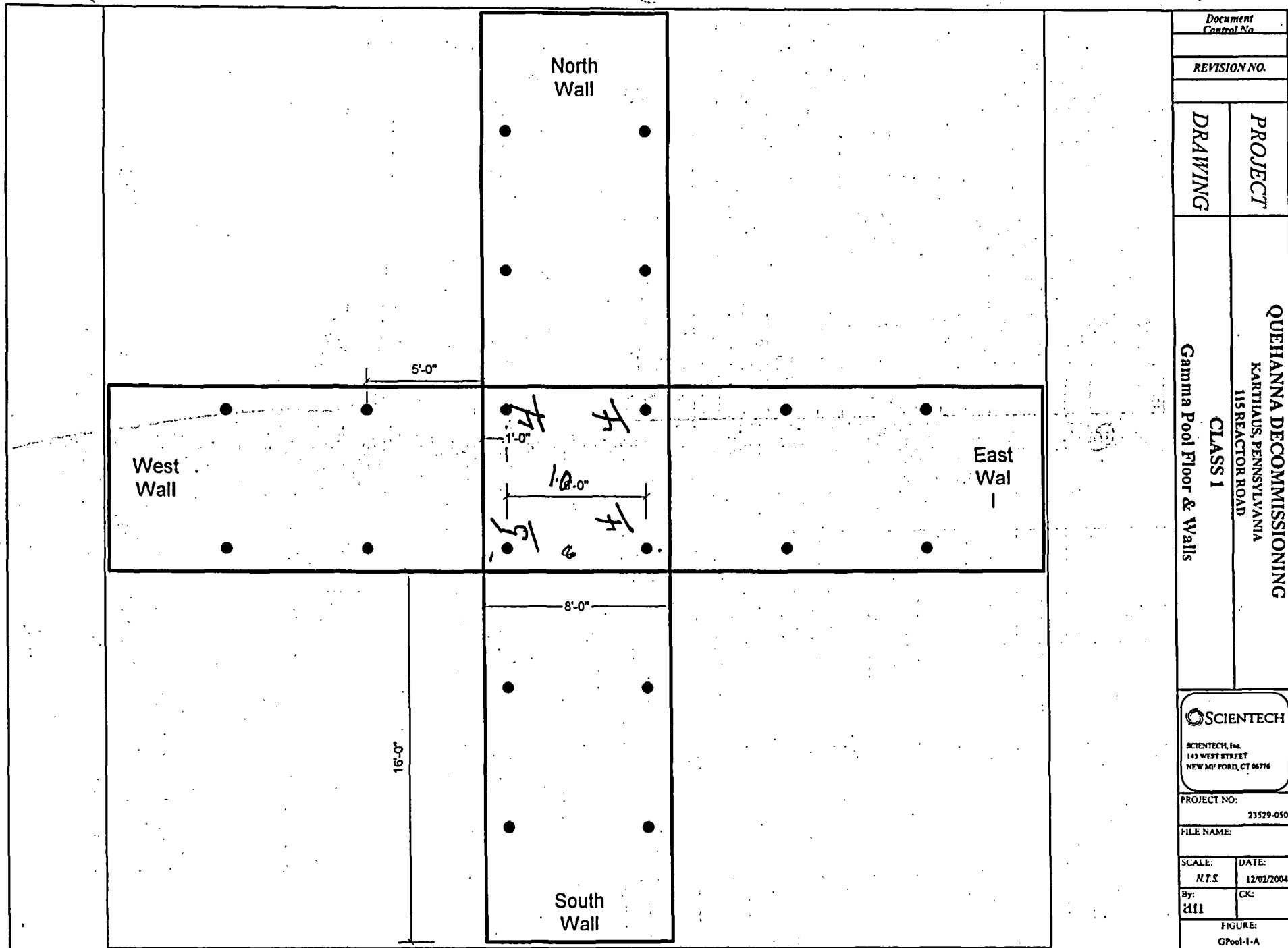
General Area	Survey Unit	Class	Part	Material	Size
Fan Room	FAN-1-F	1	Wall	Concrete	645 ft <sup>2</sup>
Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity Sigma
1	599	73	582	1000	1.4 4.3
2	-73	50	164.5	269	3.6 6.1
3	10	53	268.9	373	-0.8 0.5
4	423	68	310.6	1000	1.4 4.3
5	386	66	122.8	248	-0.8 0.5
6	235	62	268.9	582	-0.8 0.5
7	327	65	39.2	248	-0.8 0.5
8	636	74	164.5	582	1.4 4.3
9	-86	50	582	916	1.4 4.3
10	202	60	81	332	10.1 9.6
11	461	69	-2.5	332	58.1 22.2
12	-15	52	582	1000	10.1 9.6
13	98	57	81	833	3.6 6.1
14	114	57	373.3	582	3.6 6.1
15	-94	49	81	749	3.6 6.1
16	110	57	227.1	666	10.1 9.6
Average:	208				Average: 7
Maximum:	636				Maximum: 58.1
Minimum:	-94				Minimum: -0.8
Survey Date	12/11/2004		Survey Date	12/11/2004	Survey Date 12/11/2004
Inst. Model	M2360		Inst. Model	M2360	Inst. Model WPC-9550
Probe Model	M43-93		Probe Model	M43-93	Ei 0.4585cpm/dpm
Probe Area	100 cm <sup>2</sup>		Probe Area	100 cm <sup>2</sup>	Background 0.37 cpm
Ei	0.479 cpm/cpm		Ei	0.479 cpm/cpm	Bkg σ 0.111 cpm
Es	0.5 cpm/dpm		Es	0.5 cpm/dpm	MDC 10 dpm/100 cm <sup>2</sup>
Background	160. cpm		Background	160.6 cpm	
Bkg σ	10 cpm		Bkg σ	10 cpm	
MDC	259 dpm/100 cm <sup>2</sup>		MDC	800 dpm/100 cm <sup>2</sup>	

C. H. H. H.  
Resumen  
12/20

C. H. H. H.  
Resumen  
12/20/04  
C



**GPOOL-1-A Gamma Pool**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Gamma Pool Floor & Walls
<p>SCIENTECH, Inc. 143 WEST STREET NEW HAVEN, CT 06776</p>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: H11	CK:
FIGURE: GPool-1-A	

GPool-1-A

Log #	Source	X	Y
		n/a	n/a
	Floor-1	1	1
	(sw corner origin)	2	7
		3	1
		4	7
	North-5	1	5
	(Bottom Left origin)	6	7
		7	1
		8	7
	East-9	1	5
	(Bottom Left Origin)	10	7
		11	1
		12	7
	South-13	1	5
	(Bottom Left Origin)	14	7
		15	1
		16	7
	West-17	1	5
	(Bottom Left Origin)	18	7
		19	1
		20	7

L (ft)= 6

A (ft<sup>2</sup>)= 576

SCANS

START 1230

STOP 1600

DIRECTS

S/N #

202470

2360

(1) AREA 4+7 WERE RESCANNED  
by CHRIS HIGGINS ON 2/10/05,  
WITH THE NEW RESULTS SHOWN.  
MODEL 43/93 S/N 202475

*Handwritten signature*

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
312	160	500
189	140	200
145	180	400
177	220	800 2600
239	180	280
189	200	600
209	200	800 2600
167	160	220
172	120	200
149	140	180
124	160	280
166	180	220
174	220	300
140	120	180
137	160	200
173	200	260
178	220	300
257	140	180
154	200	280
187	300	380

⑤

MODEL 19 S/N #

209746

NOTE: #  
1  
4  
6  
7

SPOTS NO LARGER THAN  
100 cm<sup>2</sup>

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

12/14/2004  
13:30:29 PM

Header 1: Joe Trowbridge  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: GPOOL-1-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/14/2004  
Model 2360 Time: 13:28:42  
Sample Number: 0026

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Cr - Count Time  
R - meter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/14/04	07:57:15	000001	000176	S 001.0	Lab Background
0002	12/14/04	07:58:49	000001	033444	S 001.0	Lab Source
0003	12/14/04	09:00:23	000000	000154	S 001.0	Field Background
0004	12/14/04	09:40:24	000002	001587	S 001.0	Field Source
0005	12/14/04	09:44:17	000000	000312	S 001.0	GPOOL-1-A
0006	12/14/04	09:45:44	000002	000189	S 001.0	GPOOL-1-A
0007	12/14/04	09:47:14	000000	000165	S 001.0	GPOOL-1-A
0008	12/14/04	09:48:33	000000	000177	S 001.0	GPOOL-1-A
0009	12/14/04	09:50:02	000000	000239	S 001.0	GPOOL-1-A
0010	12/14/04	09:51:25	000000	000189	S 001.0	GPOOL-1-A
0011	12/14/04	09:53:58	000002	000209	S 001.0	GPOOL-1-A
0012	12/14/04	09:56:31	000001	000167	S 001.0	GPOOL-1-A
0013	12/14/04	10:01:12	000001	000142	S 001.0	GPOOL-1-A
0014	12/14/04	10:02:35	000001	000149	S 001.0	GPOOL-1-A
0015	12/14/04	10:11:50	000000	000126	S 001.0	GPOOL-1-A
0016	12/14/04	10:15:35	000001	000166	S 001.0	GPOOL-1-A
0017	12/14/04	10:17:13	000000	000174	S 001.0	GPOOL-1-A
0018	12/14/04	10:18:44	000001	000140	S 001.0	GPOOL-1-A
0019	12/14/04	10:21:05	000000	000137	S 001.0	GPOOL-1-A
0020	12/14/04	10:24:44	000000	000173	S 001.0	GPOOL-1-A
0021	12/14/04	10:26:25	000000	000178	S 001.0	GPOOL-1-A
0022	12/14/04	10:27:53	000002	000257	S 001.0	GPOOL-1-A
0023	12/14/04	10:29:30	000000	000154	S 001.0	GPOOL-1-A
0024	12/14/04	10:31:35	000002	000187	S 001.0	GPOOL-1-A
0025	12/14/04	10:36:11	000006	001777	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
13	Smear 1	12/14/04	14:12:57	GPOOL-1-A	Final Status Survey	12/14/04	14:12:57	1.000	1.00
14	Smear 2	12/14/04	14:11:37	GPOOL-1-A	Final Status Survey	12/14/04	14:11:37	1.000	1.00
15	Smear 3	12/14/04	14:10:17	GPOOL-1-A	Final Status Survey	12/14/04	14:10:17	1.000	1.00
16	Smear 4	12/14/04	14:08:57	GPOOL-1-A	Final Status Survey	12/14/04	14:08:57	1.000	1.00
17	Smear 5	12/14/04	14:07:37	GPOOL-1-A	Final Status Survey	12/14/04	14:07:37	1.000	1.00
18	Smear 6	12/14/04	14:06:18	GPOOL-1-A	Final Status Survey	12/14/04	14:06:18	1.000	1.00
19	Smear 7	12/14/04	14:04:58	GPOOL-1-A	Final Status Survey	12/14/04	14:04:58	1.000	1.00
20	Smear 8	12/14/04	14:03:38	GPOOL-1-A	Final Status Survey	12/14/04	14:03:38	1.000	1.00
21	Smear 9	12/14/04	14:02:19	GPOOL-1-A	Final Status Survey	12/14/04	14:02:19	1.000	1.00
22	Smear 10	12/14/04	14:00:59	GPOOL-1-A	Final Status Survey	12/14/04	14:00:59	1.000	1.00
23	Smear 11	12/14/04	13:59:39	GPOOL-1-A	Final Status Survey	12/14/04	13:59:39	1.000	1.00
24	Smear 12	12/14/04	13:58:19	GPOOL-1-A	Final Status Survey	12/14/04	13:58:19	1.000	1.00
25	Smear 13	12/14/04	13:56:59	GPOOL-1-A	Final Status Survey	12/14/04	13:56:59	1.000	1.00
26	Smear 14	12/14/04	13:55:39	GPOOL-1-A	Final Status Survey	12/14/04	13:55:39	1.000	1.00
27	Smear 15	12/14/04	13:54:19	GPOOL-1-A	Final Status Survey	12/14/04	13:54:19	1.000	1.00
28	Smear 16	12/14/04	13:52:59	GPOOL-1-A	Final Status Survey	12/14/04	13:52:59	1.000	1.00
29	Smear 17	12/14/04	13:51:39	GPOOL-1-A	Final Status Survey	12/14/04	13:51:39	1.000	1.00
30	Smear 18	12/14/04	13:50:19	GPOOL-1-A	Final Status Survey	12/14/04	13:50:19	1.000	1.00
31	Smear 19	12/14/04	13:48:59	GPOOL-1-A	Final Status Survey	12/14/04	13:48:59	1.000	1.00
32	Smear 20	12/14/04	13:47:39	GPOOL-1-A	Final Status Survey	12/14/04	13:47:39	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12 '04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 12-14-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 23.12 LLD: 11.72 dpm				Bkg: 0.63 cpm %Eff: 44.67 LLD: 12.06 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
13	Smear 1	12/14/04	14:12:57	0.00	0.00	0.00	11.72	2.00	1.37	3.07	12.05
14	Smear 2	12/14/04	14:11:37	1.00	1.00	4.33	11.72	3.00	2.37	5.31	12.05
15	Smear 3	12/14/04	14:10:17	0.00	0.00	0.00	11.72	3.00	2.37	5.31	12.05
16	Smear 4	12/14/04	14:08:57	0.00	0.00	0.00	11.72	1.00	0.37	0.82	12.05
17	Smear 5	12/14/04	14:07:37	0.00	0.00	0.00	11.72	5.00	4.37	9.80	12.05
18	Smear 6	12/14/04	14:06:18	0.00	0.00	0.00	11.72	3.00	2.37	5.31	12.05
19	Smear 7	12/14/04	14:04:58	0.00	0.00	0.00	11.72	25.00	24.37	54.67	12.05
20	Smear 8	12/14/04	14:03:38	0.00	0.00	0.00	11.72	6.00	5.37	12.04	12.05
21	Smear 9	12/14/04	14:02:19	0.00	0.00	0.00	11.72	2.00	1.37	3.07	12.05
22	Smear 10	12/14/04	14:00:59	0.00	0.00	0.00	11.72	0.00	-0.63	-1.42	12.05
23	Smear 11	12/14/04	13:59:39	0.00	0.00	0.00	11.72	2.00	1.37	3.07	12.05
24	Smear 12	12/14/04	13:58:19	0.00	0.00	0.00	11.72	5.00	4.37	9.80	12.05
25	Smear 13	12/14/04	13:56:59	0.00	0.00	0.00	11.72	3.00	2.37	5.31	12.05
26	Smear 14	12/14/04	13:55:39	0.00	0.00	0.00	11.72	1.00	0.37	0.82	12.05
27	Smear 15	12/14/04	13:54:19	0.00	0.00	0.00	11.72	3.00	2.37	5.31	12.05
28	Smear 16	12/14/04	13:52:59	0.00	0.00	0.00	11.72	5.00	4.37	9.80	12.05
29	Smear 17	12/14/04	13:51:39	0.00	0.00	0.00	11.72	4.00	3.37	7.55	12.05
30	Smear 18	12/14/04	13:50:19	0.00	0.00	0.00	11.72	5.00	4.37	9.80	12.05
31	Smear 19	12/14/04	13:48:59	0.00	0.00	0.00	11.72	1.00	0.37	0.82	12.05
32	Smear 20	12/14/04	13:47:39	0.00	0.00	0.00	11.72	4.00	3.37	7.55	12.05

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-14-04

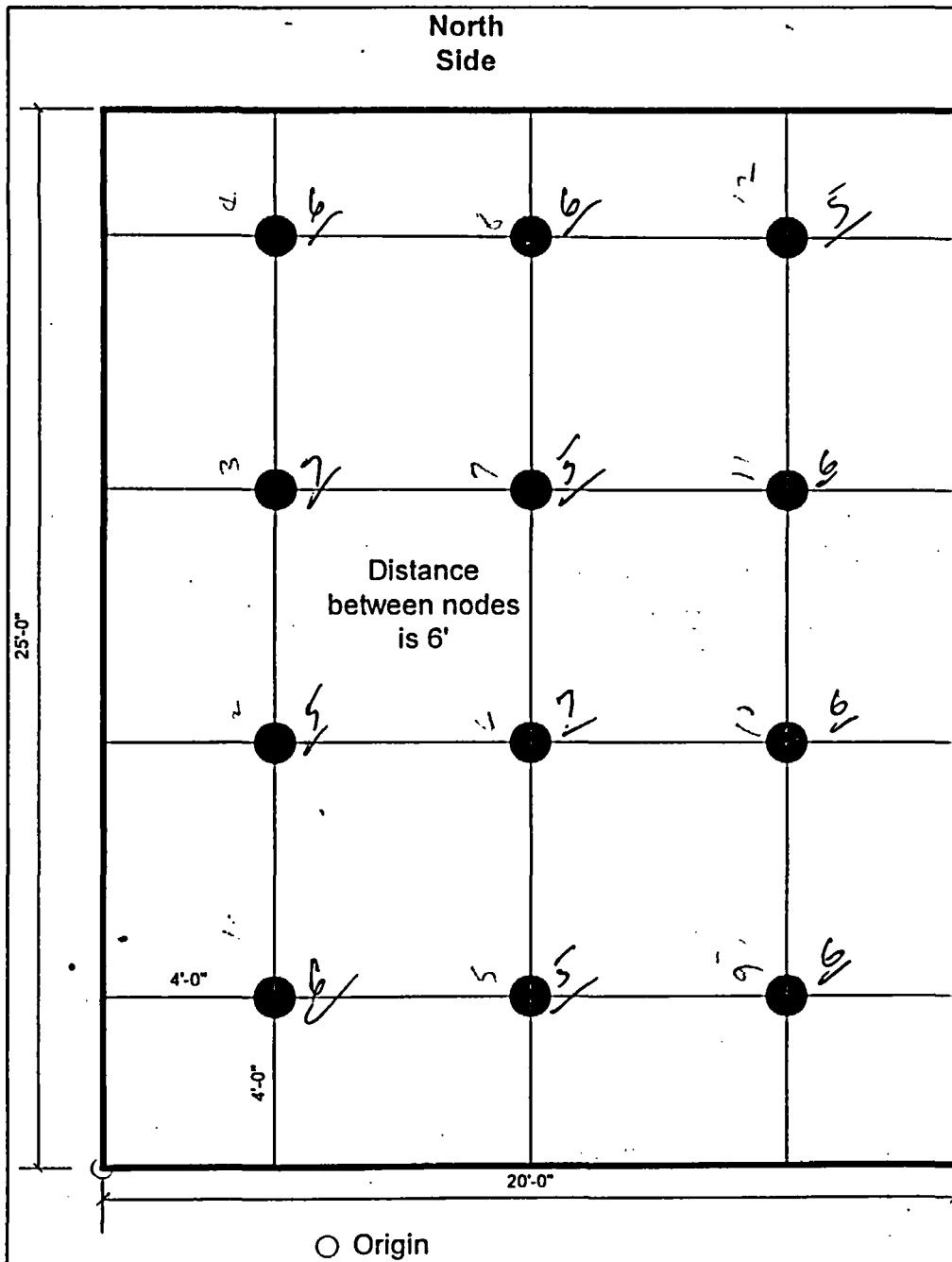
Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date:

12-14-04

**VEST-1-A Vestibule**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Vestibule Floors
 <small>SCIENTECH, Inc. 143 WEST STREET NEW HAVEN, CT 06514</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: ah	CK:
FIGURE: VEST-1-A	



# VEST-1-A

Log #
3 Source
5
6
7
8
9
10
11
12
13
14
15
16

	X	Y
	n/a	n/a
1	4	4
2	4	10
3	4	14
4	4	18
5	10	4
6	10	10
7	10	14
8	10	18
9	16	4
10	16	10
11	16	14
12	16	18

L (ft)=

A (ft<sup>2</sup>)=

Fixed Points	Ave. (Scan)	Max. (Scan)
1516	n/a	n/a
369	600	800
333	600	800
223	700	800
218	600	800
293	500	700
325	600	800
339	400	800
297	400	600
287	400	600
217	400	600
322	400	600
260	400	600

Start 21 DEC 04 0900 hrs

# 3 - 1516 Field Source

# 4 - 170 Field BKG

# 17 - 1518 Field Source

Stop 21 DEC 04 1000 hrs

Ludlum Measurements, Inc.  
Model 2360 Log Data

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at 12/21/2004  
m 0:01:19 AM

Header 1: Joe Kozyra  
Header 2: Serial#202442  
Header 3: DetSer#PR221482  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: VEST-1-A  
Calibration Due Date: 12/13/2005  
Model 2360 Date: 12/21/2004  
Model 2360 Time: 09:59:58  
Sample Number: 0018

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Cnt - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/21/04	08:24:58	000001	000176	S 001.0	Lab Background
0002	12/21/04	08:26:25	000000	034448	S 001.0	Lab Source
0003	12/21/04	08:32:24	000003	001516	S 001.0	Field Source
0004	12/21/04	08:36:48	000001	000170	S 001.0	Field Background
0005	12/21/04	09:38:27	000000	000369	S 001.0	VEST-1-A
0006	12/21/04	09:40:55	000003	000333	S 001.0	VEST-1-A
0007	12/21/04	09:42:21	000001	000223	S 001.0	VEST-1-A
0008	12/21/04	09:43:54	000000	000218	S 001.0	VEST-1-A
0009	12/21/04	09:45:34	000001	000293	S 001.0	VEST-1-A
0010	12/21/04	09:47:03	000004	000325	S 001.0	VEST-1-A
0011	12/21/04	09:48:28	000002	000339	S 001.0	VEST-1-A
0012	12/21/04	09:50:08	000000	000297	S 001.0	VEST-1-A
0013	12/21/04	09:51:44	000001	000287	S 001.0	VEST-1-A
0014	12/21/04	09:53:43	000001	000217	S 001.0	VEST-1-A
0015	12/21/04	09:55:01	000001	000322	S 001.0	VEST-1-A
0016	12/21/04	09:56:18	000002	000268	S 001.0	VEST-1-A
0017	12/21/04	09:58:55	000004	001568	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/21/04	9:15:30	VEST-1-A	Final Status Survey	12/21/04	9:15:30	1.000	1.00
2	Smear 2	12/21/04	9:14:10	VEST-1-A	Final Status Survey	12/21/04	9:14:10	1.000	1.00
3	Smear 3	12/21/04	9:12:50	VEST-1-A	Final Status Survey	12/21/04	9:12:50	1.000	1.00
4	Smear 4	12/21/04	9:11:30	VEST-1-A	Final Status Survey	12/21/04	9:11:30	1.000	1.00
5	Smear 5	12/21/04	9:10:10	VEST-1-A	Final Status Survey	12/21/04	9:10:10	1.000	1.00
6	Smear 6	12/21/04	9:08:50	VEST-1-A	Final Status Survey	12/21/04	9:08:50	1.000	1.00
7	Smear 7	12/21/04	9:07:30	VEST-1-A	Final Status Survey	12/21/04	9:07:30	1.000	1.00
8	Smear 8	12/21/04	9:06:10	VEST-1-A	Final Status Survey	12/21/04	9:06:10	1.000	1.00
9	Smear 9	12/21/04	9:04:50	VEST-1-A	Final Status Survey	12/21/04	9:04:50	1.000	1.00
10	Smear 10	12/21/04	9:03:31	VEST-1-A	Final Status Survey	12/21/04	9:03:31	1.000	1.00
11	Smear 11	12/21/04	9:02:11	VEST-1-A	Final Status Survey	12/21/04	9:02:11	1.000	1.00
12	Smear 12	12/21/04	9:00:51	VEST-1-A	Final Status Survey	12/21/04	9:00:51	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-21-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 26.83 LLD: 13.83 dpm				Bkg: 0.63 cpm %Eff: 44.86 LLD: 11.97 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/21/04	9:15:30	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97
2	Smear 2	12/21/04	9:14:10	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97
3	Smear 3	12/21/04	9:12:50	0.00	-0.07	-0.26	13.83	1.00	0.37	0.82	11.97
4	Smear 4	12/21/04	9:11:30	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97
5	Smear 5	12/21/04	9:10:10	0.00	-0.07	-0.26	13.83	1.00	0.37	0.82	11.97
6	Smear 6	12/21/04	9:08:50	2.00	1.93	7.48	13.83	1.00	0.37	0.82	11.97
7	Smear 7	12/21/04	9:07:30	0.00	-0.07	-0.26	13.83	4.00	3.37	7.50	11.97
8	Smear 8	12/21/04	9:06:10	0.00	-0.07	-0.26	13.83	3.00	2.37	5.28	11.97
9	Smear 9	12/21/04	9:04:50	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97
10	Smear 10	12/21/04	9:03:31	1.00	0.93	3.61	13.83	1.00	0.37	0.82	11.97
11	Smear 11	12/21/04	9:02:11	0.00	-0.07	-0.26	13.83	5.00	4.37	9.73	11.97
12	Smear 12	12/21/04	9:00:51	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

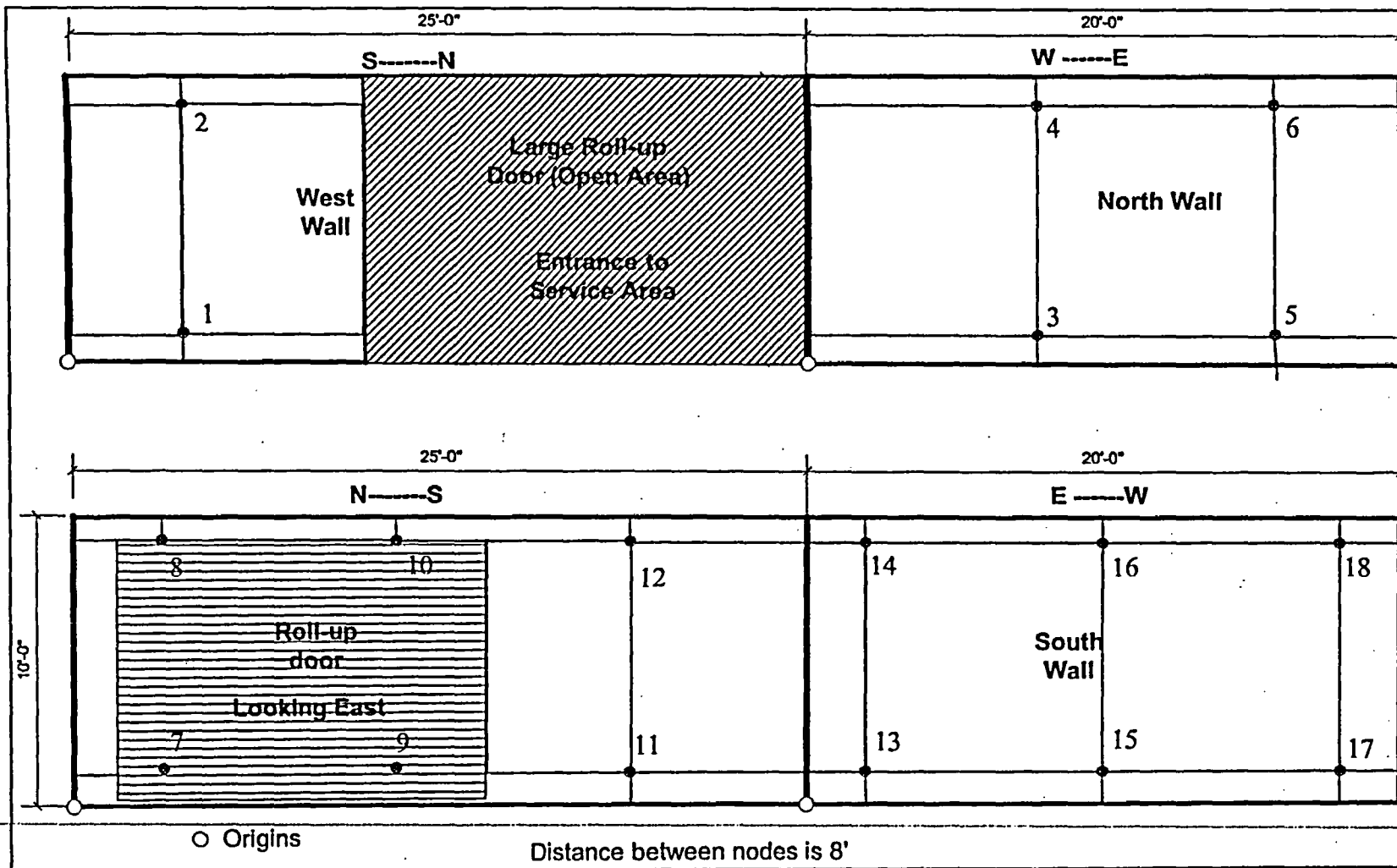
Date: 12-21-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**VEST-1-B Vestibule**



VEST-1-B

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING	
KARLAUS, PENNSYLVANIA	
115 REACTOR ROAD	
CLASS 1	
Vestibule Walls	
 <small>SCIENTECH, Inc. 141 WEST STREET NEW MILFORD, CT 06455</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: ah	CK:
FIGURE: VEST-1-B	

# VEST-1-B

Log #		X	Y
3 Source		n/a	n/a
5	West-1	4.0	1.0
6	2	4.0	9.0
7	North-3	8.0	1.0
8	4	8.0	9.0
9	5	16.0	1.0
10	6	16.0	9.0
11	East-7	3.0	1.0
12	8	3.0	9.0
13	9	11.0	1.0
14	10	11.0	9.0
15	11	19.0	1.0
16	12	19.0	9.0
17	South-13	2.0	1.0
18	14	2.0	9.0
19	15	10.0	1.0
20	16	10.0	9.0
21	17	18.0	1.0
22	18	18.0	9.0

A (ft)=

Fixed Points	Ave. (Scan)	Max. (Scan)
1829	n/a	n/a
140	120	150
158	130	160
146	120	150
151	120	140
151	120	150
140	130	150
123	120	140
161	120	140
122	120	140
149	120	140
140	120	140
146	120	140
135	130	150
141	120	140
142	120	140
120	120	140
114	120	140
124	120	140

START 19 DEC 04 0800

#3 - 1829 Field Source

#4 - 212 Field BKG

#24 - 1910 Field Source

STOP 19 DEC 04 1645 hrs

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

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Date: 12/19/2004  
Time: 10:52:05 AM

Header 1: Joe Kozyra  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: VEST-1-B  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/19/2004  
Model 2360 Time: 10:52:37  
Sample Number: 0025

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
F - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/19/04	08:15:15	000002	000205	S 001.0	Lab Background
0002	12/19/04	08:16:39	000002	034903	S 001.0	Lab Source
0003	12/19/04	08:19:25	000001	001829	S 001.0	Field Source
0004	12/19/04	08:21:53	000000	000212	S 001.0	Field Background
0005	12/19/04	08:26:45	000000	000140	S 001.0	VEST-1-B
0006	12/19/04	08:41:13	000000	000158	S 001.0	VEST-1-B
0007	12/19/04	08:44:43	000001	000146	S 001.0	VEST-1-B
0008	12/19/04	08:48:16	000001	000151	S 001.0	VEST-1-B
0009	12/19/04	08:50:56	000001	000151	S 001.0	VEST-1-B
0010	12/19/04	10:00:08	000001	000140	S 001.0	VEST-1-B
0011	12/19/04	10:01:51	000001	000123	S 001.0	VEST-1-B
0012	12/19/04	10:03:21	000000	000161	S 001.0	VEST-1-B
0013	12/19/04	10:04:32	000002	000122	S 001.0	VEST-1-B
0014	12/19/04	10:06:05	000001	000149	S 001.0	VEST-1-B
0015	12/19/04	10:07:36	000001	000140	S 001.0	VEST-1-B
0016	12/19/04	10:09:17	000000	000146	S 001.0	VEST-1-B
0017	12/19/04	10:10:27	000000	000135	S 001.0	VEST-1-B
0018	12/19/04	10:11:58	000001	000141	S 001.0	VEST-1-B
0019	12/19/04	10:13:35	000000	000142	S 001.0	VEST-1-B
0020	12/19/04	10:14:52	000001	000120	S 001.0	VEST-1-B
0021	12/19/04	10:16:19	000002	000114	S 001.0	VEST-1-B
0022	12/19/04	10:45:05	000001	000124	S 001.0	VEST-1-B
0023	12/19/04	10:47:38	000000	000511	S 001.0	Void
0024	12/19/04	10:48:56	000000	001910	S 001.0	Field Source

\$



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/20/04	9:09:09	VEST-1-B	Final Status Survey	12/20/04	9:09:09	1.000	1.00
2	Smear 2	12/20/04	9:07:49	VEST-1-B	Final Status Survey	12/20/04	9:07:49	1.000	1.00
3	Smear 3	12/20/04	9:06:29	VEST-1-B	Final Status Survey	12/20/04	9:06:29	1.000	1.00
4	Smear 4	12/20/04	9:05:08	VEST-1-B	Final Status Survey	12/20/04	9:05:08	1.000	1.00
5	Smear 5	12/20/04	9:03:48	VEST-1-B	Final Status Survey	12/20/04	9:03:48	1.000	1.00
6	Smear 6	12/20/04	9:02:28	VEST-1-B	Final Status Survey	12/20/04	9:02:28	1.000	1.00
7	Smear 7	12/20/04	9:01:07	VEST-1-B	Final Status Survey	12/20/04	9:01:07	1.000	1.00
8	Smear 8	12/20/04	8:59:47	VEST-1-B	Final Status Survey	12/20/04	8:59:47	1.000	1.00
9	Smear 9	12/20/04	8:58:26	VEST-1-B	Final Status Survey	12/20/04	8:58:26	1.000	1.00
10	Smear 10	12/20/04	8:57:06	VEST-1-B	Final Status Survey	12/20/04	8:57:06	1.000	1.00
11	Smear 11	12/20/04	8:55:46	VEST-1-B	Final Status Survey	12/20/04	8:55:46	1.000	1.00
12	Smear 12	12/20/04	8:54:25	VEST-1-B	Final Status Survey	12/20/04	8:54:25	1.000	1.00
13	Smear 13	12/20/04	8:53:05	VEST-1-B	Final Status Survey	12/20/04	8:53:05	1.000	1.00
14	Smear 14	12/20/04	8:51:45	VEST-1-B	Final Status Survey	12/20/04	8:51:45	1.000	1.00
15	Smear 15	12/20/04	8:50:24	VEST-1-B	Final Status Survey	12/20/04	8:50:24	1.000	1.00
16	Smear 16	12/20/04	8:49:04	VEST-1-B	Final Status Survey	12/20/04	8:49:04	1.000	1.00
17	Smear 17	12/20/04	8:47:44	VEST-1-B	Final Status Survey	12/20/04	8:47:44	1.000	1.00
18	Smear 18	12/20/04	8:46:24	VEST-1-B	Final Status Survey	12/20/04	8:46:24	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-20-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 26.8 LLD: 10.6 dpm				Bkg: 0.7 cpm %Eff: 44.81 LLD: 12.29 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/20/04	9:09:09	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
2	Smear 2	12/20/04	9:07:49	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
3	Smear 3	12/20/04	9:06:29	0.00	0.00	0.00	10.50	4.00	3.30	7.36	12.29
4	Smear 4	12/20/04	9:05:08	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
5	Smear 5	12/20/04	9:03:48	0.00	0.00	0.00	10.50	2.00	1.30	2.90	12.29
6	Smear 6	12/20/04	9:02:28	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
7	Smear 7	12/20/04	9:01:07	0.00	0.00	0.00	10.50	2.00	1.30	2.90	12.29
8	Smear 8	12/20/04	8:59:47	0.00	0.00	0.00	10.50	1.00	0.30	0.87	12.29
9	Smear 9	12/20/04	8:58:26	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
10	Smear 10	12/20/04	8:57:06	0.00	0.00	0.00	10.50	3.00	2.30	5.13	12.29
11	Smear 11	12/20/04	8:55:46	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
12	Smear 12	12/20/04	8:54:25	0.00	0.00	0.00	10.50	2.00	1.30	2.90	12.29
13	Smear 13	12/20/04	8:53:05	0.00	0.00	0.00	10.50	1.00	0.30	0.87	12.29
14	Smear 14	12/20/04	8:51:45	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
15	Smear 15	12/20/04	8:50:24	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
16	Smear 16	12/20/04	8:49:04	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
17	Smear 17	12/20/04	8:47:44	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29
18	Smear 18	12/20/04	8:46:24	0.00	0.00	0.00	10.50	0.00	-0.70	-1.56	12.29

Technician (print): Rob Ellison

Technician (sign):

*Rob Ellison*


Date: 12-20-04

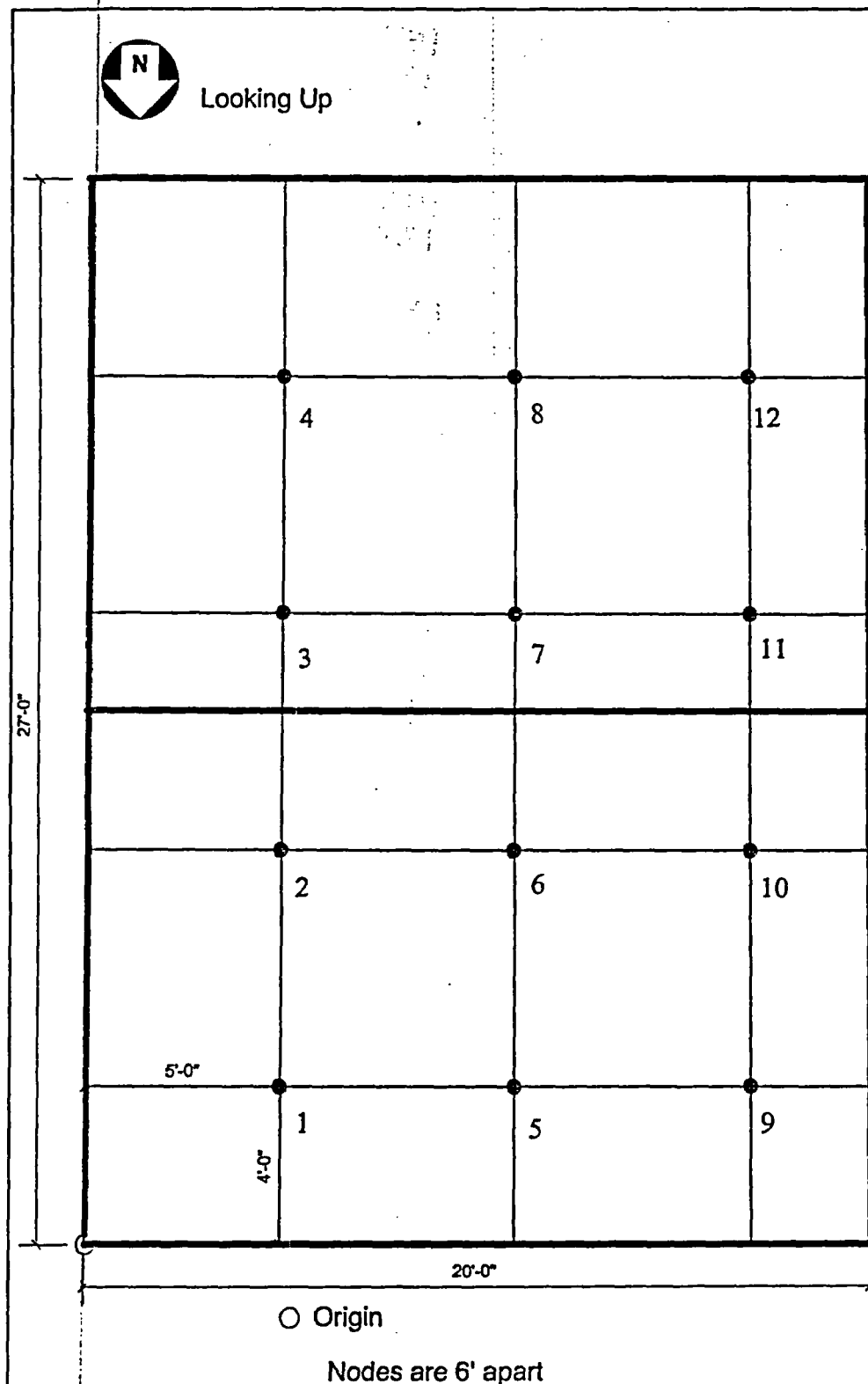
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**VEST-1-C Vestibule**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENTECH, INC. 10 WEST STREET NEW HAVEN, CT 06510	PROJECT NO: 21379.0301	FILE NAME:	DATE:	12/02/2004	By:	CHK:	FIGURE:	VEST-1-C
		DRAWING	CLASS 1 Vestibule Ceiling				SCALE:	NTS				



VEST-1-C

VEST-1-C

# VEST-1-C

Log #	Source
3	4
4	4
5	4
6	4
7	9
8	10
9	10
10	12
11	13
12	14
13	15
14	16
15	17
16	18

X	Y
n/a	n/a
1 5.0	4.0
2 5.0	10.0
3 5.0	16.0
4 5.0	22.0
5 11.0	4.0
6 11.0	10.0
7 11.0	16.0
8 11.0	22.0
9 17.0	4.0
10 17.0	10.0
11 17.0	16.0
12 17.0	22.0

A (ft)=

Fixed Points	Ave. (Scan)	Max. (Scan)
n/a	n/a	n/a
151	210/152	200/160
132	132	140
	159	160
	151	160
	170	160
149	150	160
130	133	140
	155	160
134	135	140
	143	140
	182	140
	180	180

2 BCKD

7 BCKD

8 Lab Source

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/22/2004  
Time: 9:33:45 AM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: VEST-1-C  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/22/2004  
Model 2360 Time: 09:13:12  
Sample Number: 0019

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

C - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/21/04	14:45:15	000001	033791	S	001.0 Lab Source
0002	12/21/04	17:04:35	000001	000126	S	001.0 Field Background
0003	12/21/04	17:06:41	000001	001636	S	001.0 Field Source
0004	12/21/04	17:08:42	000001	000152	S	001.0 VEST-1-C
0005	12/21/04	17:11:24	000001	000132	S	001.0 VEST-1-C
0006	12/21/04	17:13:48	000000	000159	S	001.0 VEST-1-C
0007	12/22/04	07:34:36	000000	000166	S	001.0 Lab Background
0008	12/22/04	07:35:47	000001	033827	S	001.0 Lab Source
0009	12/22/04	08:27:08	000000	000151	S	001.0 VEST-1-C
0010	12/22/04	08:28:18	000000	000170	S	001.0 VEST-1-C
0011	12/22/04	08:31:41	000001	000149	S	001.0 VEST-1-C
0012	12/22/04	08:32:55	000003	000130	S	001.0 VEST-1-C
0013	12/22/04	08:34:11	000000	000155	S	001.0 VEST-1-C
0014	12/22/04	09:02:05	000001	000134	S	001.0 VEST-1-C
0015	12/22/04	09:03:27	000000	000143	S	001.0 VEST-1-C
0016	12/22/04	09:04:43	000000	000182	S	001.0 VEST-1-C
0017	12/22/04	09:06:52	000000	000180	S	001.0 VEST-1-C
0018	12/22/04	09:09:24	000009	033740	S	001.0 Field Source

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/21/04	13:57:57	VEST-1-C	Final Status Survey	12/21/04	13:57:57	1.000	1.00
2	Smear 2	12/21/04	13:56:37	VEST-1-C	Final Status Survey	12/21/04	13:56:37	1.000	1.00
3	Smear 3	12/21/04	13:55:17	VEST-1-C	Final Status Survey	12/21/04	13:55:17	1.000	1.00
4	Smear 4	12/21/04	13:53:57	VEST-1-C	Final Status Survey	12/21/04	13:53:57	1.000	1.00
5	Smear 5	12/21/04	13:52:37	VEST-1-C	Final Status Survey	12/21/04	13:52:37	1.000	1.00
6	Smear 6	12/21/04	13:51:17	VEST-1-C	Final Status Survey	12/21/04	13:51:17	1.000	1.00
7	Smear 7	12/21/04	13:49:58	VEST-1-C	Final Status Survey	12/21/04	13:49:58	1.000	1.00
8	Smear 8	12/21/04	13:48:38	VEST-1-C	Final Status Survey	12/21/04	13:48:38	1.000	1.00
9	Smear 9	12/21/04	13:47:18	VEST-1-C	Final Status Survey	12/21/04	13:47:18	1.000	1.00
10	Smear 10	12/21/04	13:45:58	VEST-1-C	Final Status Survey	12/21/04	13:45:58	1.000	1.00
11	Smear 11	12/21/04	13:44:39	VEST-1-C	Final Status Survey	12/21/04	13:44:39	1.000	1.00
12	Smear 12	12/21/04	13:43:19	VEST-1-C	Final Status Survey	12/21/04	13:43:19	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12/21/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 25.83 LLD: 13.83 dpm				Bkg: 0.63 cpm %Eff: 44.86 LLD: 11.97 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/21/04	13:57:57	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97
2	Smear 2	12/21/04	13:56:37	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97
3	Smear 3	12/21/04	13:55:17	0.00	-0.07	-0.26	13.83	1.00	0.37	0.82	11.97
4	Smear 4	12/21/04	13:53:57	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97
5	Smear 5	12/21/04	13:52:37	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97
6	Smear 6	12/21/04	13:51:17	0.00	-0.07	-0.26	13.83	1.00	0.37	0.82	11.97
7	Smear 7	12/21/04	13:49:58	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97
8	Smear 8	12/21/04	13:48:38	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97
9	Smear 9	12/21/04	13:47:18	0.00	-0.07	-0.26	13.83	1.00	0.37	0.82	11.97
10	Smear 10	12/21/04	13:45:58	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97
11	Smear 11	12/21/04	13:44:39	0.00	-0.07	-0.26	13.83	1.00	0.37	0.82	11.97
12	Smear 12	12/21/04	13:43:19	0.00	-0.07	-0.26	13.83	0.00	-0.63	-1.41	11.97

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-21-04

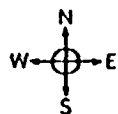
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

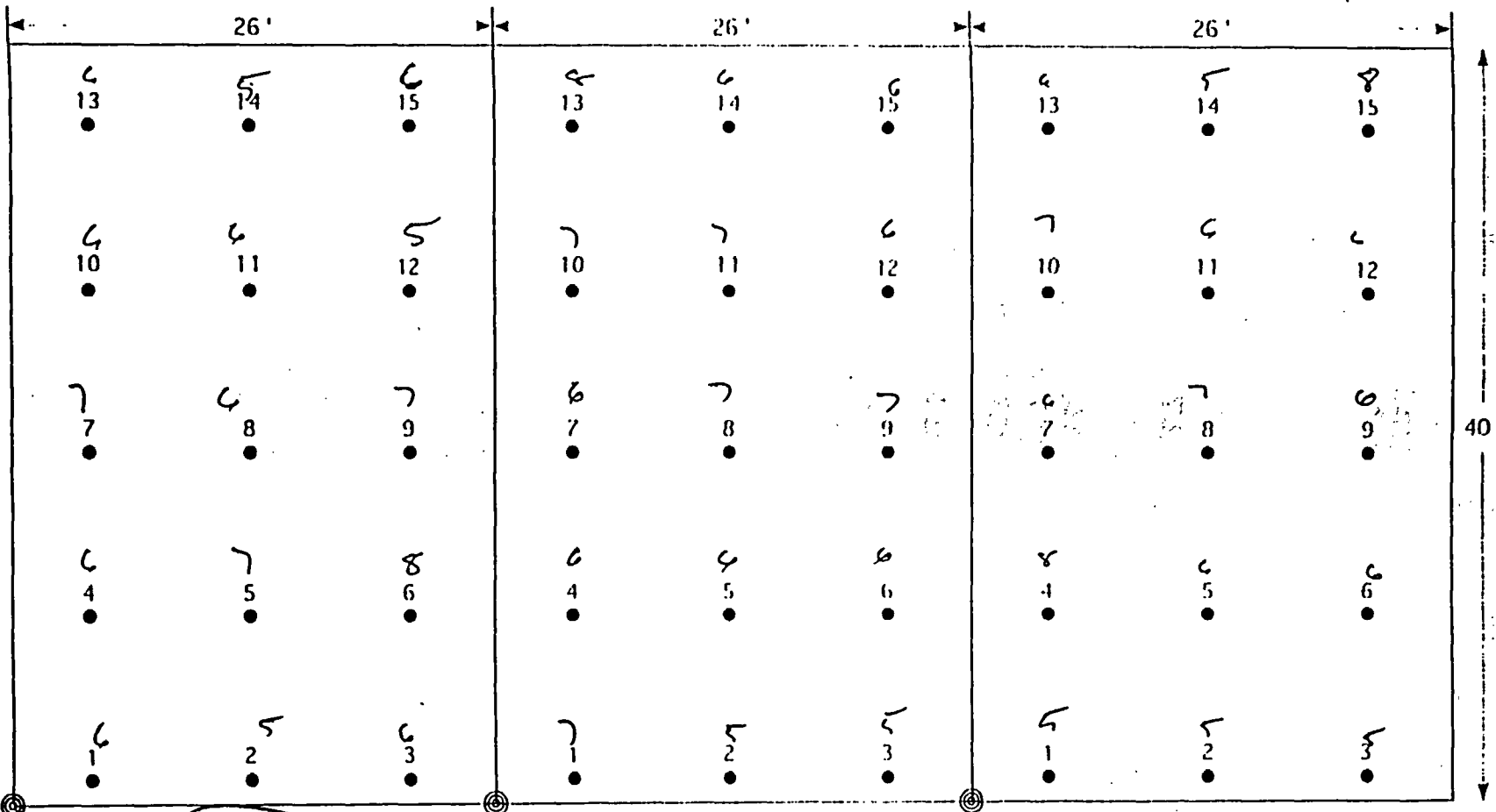
Date:



**FA-1-A      Finishing Area**



• SURVEY POINTS  
 ◎ STARTING LOCATION



FA-1-A

FA-1-B

FA-1-C

VR

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
 KARTHANS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Finishing Area Floor (1 of 5)

SCIENTECH  
 SCIENTECH Inc.  
 110 WEST STREET  
 NEW HAVEN, CT 06511

PROJECT NO.

21129-0301

FILE NAME

SCALE

N.T.S.

BY

DATE

07/06/2004

CK

FIGURE

FA-1-A,B,C

FA-1-A

Log #
4 Source
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

	X	Y
	n/a	n/a
1	4.2	1.3
2	12.8	1.3
3	21.4	1.3
4	4.2	9.9
5	12.8	9.9
6	21.4	9.9
7	4.2	18.5
8	12.8	18.5
9	21.4	18.5
10	4.2	27.1
11	12.8	27.1
12	21.4	27.1
13	4.2	35.7
14	12.8	35.7
15	21.4	35.7

L (ft)= 8.6

A (ft<sup>2</sup>)= 1040

	Fixed Points	Ave. (Scan)	Max. (Scan)
		n/a	n/a
223	<del>233</del>	240	280
223	<del>224</del>	220	260
	323	320	340
	240	240	280
	199	200	240
	285	280	320
	243	240	280
270	<del>277</del>	280	320
	260	260	300
	140	200	240
263	<del>264</del>	260	300
229	<del>237</del>	220	260
229	<del>230</del>	220	260
	245	240	280
236	<del>238</del>	240	280

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/15/2004  
Time: 04:48 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FA-1-A - L  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/15/2004  
Model 2360 Time: 13:53:13  
Sample Number: 0141

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Count - Count Time  
Ratmeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/15/04	07:22:18	000000	000169	S 001.0	Lab Background
0002	12/15/04	07:24:47	000002	034127	S 001.0	Lab Source
0003	12/15/04	09:24:19	000000	000231	S 001.0	Field Background
0004	12/15/04	09:25:57	000000	001660	S 001.0	Field Source
0005	12/15/04	09:28:03	000000	000223	S 001.0	FA-1-A
0006	12/15/04	09:29:25	000001	000223	S 001.0	FA-1-A
0007	12/15/04	09:30:37	000000	000323	S 001.0	FA-1-A
0008	12/15/04	09:31:58	000000	000240	S 001.0	FA-1-A
0009	12/15/04	09:33:21	000000	000199	S 001.0	FA-1-A
0010	12/15/04	09:34:35	000000	000285	S 001.0	FA-1-A
0011	12/15/04	09:35:49	000000	000243	S 001.0	FA-1-A
0012	12/15/04	09:37:06	000001	000270	S 001.0	FA-1-A
0013	12/15/04	09:38:37	000000	000260	S 001.0	FA-1-A
0014	12/15/04	09:40:00	000000	000190	S 001.0	FA-1-A
0015	12/15/04	09:41:24	000001	000263	S 001.0	FA-1-A
0016	12/15/04	09:42:48	000002	000229	S 001.0	FA-1-A
0017	12/15/04	09:44:08	000001	000229	S 001.0	FA-1-A
0018	12/15/04	09:45:19	000000	000245	S 001.0	FA-1-A
0019	12/15/04	09:46:46	000002	000236	S 001.0	FA-1-A
0020	12/15/04	09:50:07	000000	001818	S 001.0	Field Source
0021	12/15/04	09:51:25	000000	000232	S 001.0	Field Background
0022	12/15/04	09:52:30	000003	000248	S 001.0	FA-1-B
0023	12/15/04	09:53:37	000002	000249	S 001.0	FA-1-B
0024	12/15/04	09:55:03	000000	000275	S 001.0	FA-1-B
0025	12/15/04	09:58:18	000006	000331	S 001.0	FA-1-B
0026	12/15/04	09:59:40	000001	000257	S 001.0	FA-1-B
0027	12/15/04	10:02:17	000003	000223	S 001.0	FA-1-B
0028	12/15/04	10:12:26	000001	000352	S 001.0	FA-1-B
0029	12/15/04	10:13:52	000001	000307	S 001.0	FA-1-B
0030	12/15/04	10:15:39	000002	000291	S 001.0	FA-1-B
0031	12/15/04	10:17:23	000001	000255	S 001.0	FA-1-B
0032	12/15/04	10:19:32	000001	000248	S 001.0	FA-1-B
0033	12/15/04	10:21:05	000000	000266	S 001.0	FA-1-B
0034	12/15/04	10:23:37	000000	000236	S 001.0	FA-1-B

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/15/04	16:32:06	FA-1-A	FSS	12/15/04	16:32:06	1.000	1.00
2	Smear 2	12/15/04	16:30:46	FA-1-A	FSS	12/15/04	16:30:46	1.000	1.00
3	Smear 3	12/15/04	16:29:26	FA-1-A	FSS	12/15/04	16:29:26	1.000	1.00
4	Smear 4	12/15/04	16:28:06	FA-1-A	FSS	12/15/04	16:28:06	1.000	1.00
5	Smear 5	12/15/04	16:26:46	FA-1-A	FSS	12/15/04	16:26:46	1.000	1.00
6	Smear 6	12/15/04	16:25:25	FA-1-A	FSS	12/15/04	16:25:25	1.000	1.00
7	Smear 7	12/15/04	16:24:05	FA-1-A	FSS	12/15/04	16:24:05	1.000	1.00
8	Smear 8	12/15/04	16:22:45	FA-1-A	FSS	12/15/04	16:22:45	1.000	1.00
9	Smear 9	12/15/04	16:21:25	FA-1-A	FSS	12/15/04	16:21:25	1.000	1.00
10	Smear 10	12/15/04	16:20:05	FA-1-A	FSS	12/15/04	16:20:05	1.000	1.00
11	Smear 11	12/15/04	16:18:45	FA-1-A	FSS	12/15/04	16:18:45	1.000	1.00
12	Smear 12	12/15/04	16:17:25	FA-1-A	FSS	12/15/04	16:17:25	1.000	1.00
13	Smear 13	12/15/04	16:16:05	FA-1-A	FSS	12/15/04	16:16:05	1.000	1.00
14	Smear 14	12/15/04	16:14:45	FA-1-A	FSS	12/15/04	16:14:45	1.000	1.00
15	Smear 15	12/15/04	16:13:25	FA-1-A	FSS	12/15/04	16:13:25	1.000	1.00
16	Smear 1	12/15/04	16:12:05	FA-1-B	FSS	12/15/04	16:12:05	1.000	1.00
17	Smear 2	12/15/04	16:10:45	FA-1-B	FSS	12/15/04	16:10:45	1.000	1.00
18	Smear 3	12/15/04	16:09:25	FA-1-B	FSS	12/15/04	16:09:25	1.000	1.00
19	Smear 4	12/15/04	16:08:05	FA-1-B	FSS	12/15/04	16:08:05	1.000	1.00
20	Smear 5	12/15/04	16:06:45	FA-1-B	FSS	12/15/04	16:06:45	1.000	1.00
21	Smear 6	12/15/04	16:05:25	FA-1-B	FSS	12/15/04	16:05:25	1.000	1.00
22	Smear 7	12/15/04	16:04:05	FA-1-B	FSS	12/15/04	16:04:05	1.000	1.00
23	Smear 8	12/15/04	16:02:45	FA-1-B	FSS	12/15/04	16:02:45	1.000	1.00
24	Smear 9	12/15/04	16:01:25	FA-1-B	FSS	12/15/04	16:01:25	1.000	1.00
25	Smear 10	12/15/04	16:00:05	FA-1-B	FSS	12/15/04	16:00:05	1.000	1.00
26	Smear 11	12/15/04	15:58:45	FA-1-B	FSS	12/15/04	15:58:45	1.000	1.00
27	Smear 12	12/15/04	15:57:25	FA-1-B	FSS	12/15/04	15:57:25	1.000	1.00
28	Smear 13	12/15/04	15:56:05	FA-1-B	FSS	12/15/04	15:56:05	1.000	1.00
29	Smear 14	12/15/04	15:54:45	FA-1-B	FSS	12/15/04	15:54:45	1.000	1.00
30	Smear 15	12/15/04	15:53:25	FA-1-B	FSS	12/15/04	15:53:25	1.000	1.00
31	Smear 1	12/15/04	15:52:05	FA-1-C	FSS	12/15/04	15:52:05	1.000	1.00
32	Smear 2	12/15/04	15:50:45	FA-1-C	FSS	12/15/04	15:50:45	1.000	1.00
33	Smear 3	12/15/04	15:49:25	FA-1-C	FSS	12/15/04	15:49:25	1.000	1.00
34	Smear 4	12/15/04	15:48:05	FA-1-C	FSS	12/15/04	15:48:05	1.000	1.00
35	Smear 5	12/15/04	15:46:45	FA-1-C	FSS	12/15/04	15:46:45	1.000	1.00
36	Smear 6	12/15/04	15:45:25	FA-1-C	FSS	12/15/04	15:45:25	1.000	1.00
37	Smear 7	12/15/04	15:44:05	FA-1-C	FSS	12/15/04	15:44:05	1.000	1.00
38	Smear 8	12/15/04	15:42:45	FA-1-C	FSS	12/15/04	15:42:45	1.000	1.00
39	Smear 9	12/15/04	15:41:25	FA-1-C	FSS	12/15/04	15:41:25	1.000	1.00
40	Smear 10	12/15/04	15:40:05	FA-1-C	FSS	12/15/04	15:40:05	1.000	1.00
41	Smear 11	12/15/04	15:38:45	FA-1-C	FSS	12/15/04	15:38:45	1.000	1.00
42	Smear 12	12/15/04	15:37:25	FA-1-C	FSS	12/15/04	15:37:25	1.000	1.00
43	Smear 13	12/15/04	15:36:05	FA-1-C	FSS	12/15/04	15:36:05	1.000	1.00
44	Smear 14	12/15/04	15:34:46	FA-1-C	FSS	12/15/04	15:34:46	1.000	1.00
45	Smear 15	12/15/04	15:33:26	FA-1-C	FSS	12/15/04	15:33:26	1.000	1.00
46	Smear 1	12/15/04	15:32:06	FA-1-D	FSS	12/15/04	15:32:06	1.000	1.00
47	Smear 2	12/15/04	15:30:46	FA-1-D	FSS	12/15/04	15:30:46	1.000	1.00
48	Smear 3	12/15/04	15:29:26	FA-1-D	FSS	12/15/04	15:29:26	1.000	1.00
49	Smear 4	12/15/04	15:28:06	FA-1-D	FSS	12/15/04	15:28:06	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): *CH*

Date: 12-16-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %EN: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %EN: 44.8 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/15/04	16:32:08	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
2	Smear 2	12/15/04	16:30:48	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
3	Smear 3	12/15/04	16:29:28	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
4	Smear 4	12/15/04	16:28:08	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
5	Smear 5	12/15/04	16:26:48	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
6	Smear 6	12/15/04	16:25:28	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
7	Smear 7	12/15/04	16:24:08	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
8	Smear 8	12/15/04	16:22:48	0.00	-0.03	-0.14	13.87	9.00	8.57	19.21	11.01
9	Smear 9	12/15/04	16:21:28	0.00	-0.03	-0.14	13.87	5.00	4.57	10.24	11.01
10	Smear 10	12/15/04	16:20:08	0.00	-0.03	-0.14	13.87	7.00	6.57	14.72	11.01
11	Smear 11	12/15/04	16:18:48	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
12	Smear 12	12/15/04	16:17:28	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
13	Smear 13	12/15/04	16:16:08	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
14	Smear 14	12/15/04	16:14:48	0.00	-0.03	-0.14	13.87	6.00	5.57	12.48	11.01
15	Smear 15	12/15/04	16:13:28	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
16	Smear 1	12/15/04	16:12:08	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
17	Smear 2	12/15/04	16:10:48	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
18	Smear 3	12/15/04	16:09:28	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
19	Smear 4	12/15/04	16:08:08	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
20	Smear 5	12/15/04	16:06:48	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
21	Smear 6	12/15/04	16:05:28	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
22	Smear 7	12/15/04	16:04:08	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
23	Smear 8	12/15/04	16:02:48	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
24	Smear 9	12/15/04	16:01:28	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
25	Smear 10	12/15/04	16:00:08	0.00	-0.03	-0.14	13.87	6.00	5.57	12.48	11.01
26	Smear 11	12/15/04	15:58:48	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
27	Smear 12	12/15/04	15:57:28	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
28	Smear 13	12/15/04	15:56:08	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
29	Smear 14	12/15/04	15:54:48	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
30	Smear 15	12/15/04	15:53:28	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
31	Smear 1	12/15/04	15:52:08	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
32	Smear 2	12/15/04	15:50:48	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
33	Smear 3	12/15/04	15:49:28	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
34	Smear 4	12/15/04	15:48:08	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
35	Smear 5	12/15/04	15:46:48	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
36	Smear 6	12/15/04	15:45:28	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
37	Smear 7	12/15/04	15:44:08	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
38	Smear 8	12/15/04	15:42:48	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
39	Smear 9	12/15/04	15:41:28	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
40	Smear 10	12/15/04	15:40:08	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
41	Smear 11	12/15/04	15:38:48	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
42	Smear 12	12/15/04	15:37:28	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
43	Smear 13	12/15/04	15:36:08	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
44	Smear 14	12/15/04	15:34:48	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
45	Smear 15	12/15/04	15:33:28	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
46	Smear 1	12/15/04	15:32:08	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
47	Smear 2	12/15/04	15:30:48	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
48	Smear 3	12/15/04	15:29:28	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
49	Smear 4	12/15/04	15:28:08	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01

Technician (print): Chris Higgins

Technician (sign):

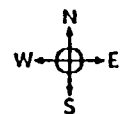
Date: 12-16-04

Reviewed By (print): Joe Trowbridge

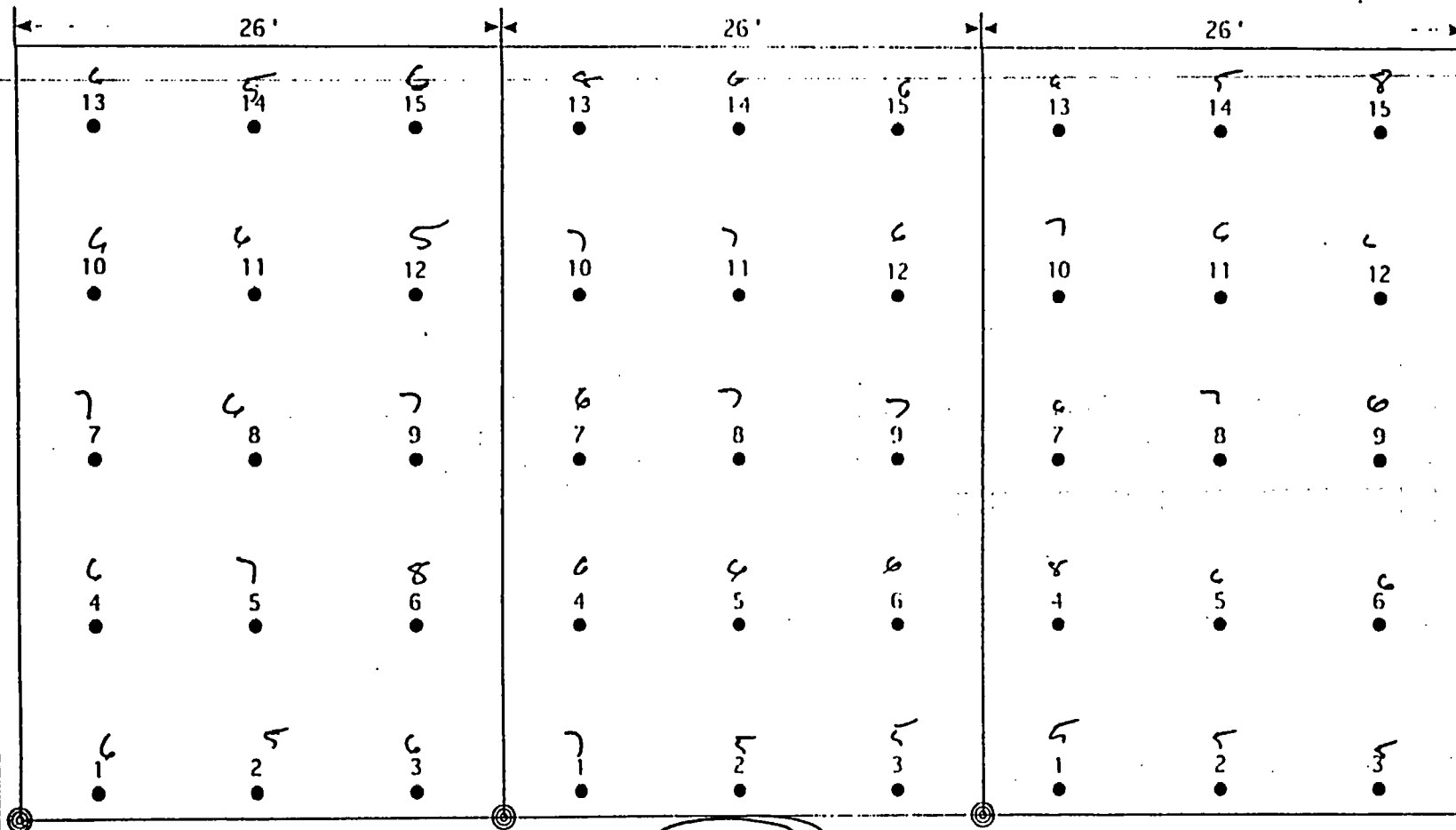
Reviewed By (sign):

Date:

**FA-1-B      Finishing Area**



• SURVEY POINTS  
 (C) STARTING LOCATION



FA-1-A

FA-1-B

FA-1-C

UR

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING

KATHAUS, PENNSYLVANIA  
115 REACTOR ROAD

CLASS 1  
Finishing Area Floor (1 of 5)

SCIENTECH

SCIENTECH, Inc.  
110 WEST STREET  
NEW MILFORD CT 06454

PROJECT NO.

23529-0301

FILE NAME:

SCALE

DATE

N.T.S.

07/06/2004

By:

CK:

FIGURE

FA-1-A RC



FA-1-B

$\alpha + \beta$   
↓

Log #	Source
20	22
	23
	27
	25
	24
	27
	29
	24
	30
	31
	32
	33
	34
	35
	36

	X	Y
	n/a	n/a
1	4.2	1.3
2	12.8	1.3
3	21.4	1.3
4	4.2	9.9
5	12.8	9.9
6	21.4	9.9
7	4.2	18.5
8	12.8	18.5
9	21.4	18.5
10	4.2	27.1
11	12.8	27.1
12	21.4	27.1
13	4.2	35.7
14	12.8	35.7
15	21.4	35.7

L (ft) = 8.6  
A (ft<sup>2</sup>) = 1040

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
251	260	300
251	260	300
275	280	320
337	340	380
256	260	300
226	220	260
353	340	380
308	300	340
293	300	340
254	260	280
249	240	280
266	260	300
276	240	280
290	300	320
242	240	280

BKGD-21

# Ludlum Measurements, Inc.

## Model 2360 Log Data

3: 12/15/2004

Time: 2:04:48 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FA-1-A - L  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/15/2004  
Model 2360 Time: 13:53:13  
Sample Number: 0141

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Time - Count Time  
Ratemeter  
S- Scaler

### Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/15/04	07:22:18	000000	000169	S	001.0 Lab Background
0002	12/15/04	07:24:47	000002	034127	S	001.0 Lab Source
0003	12/15/04	09:24:19	000000	000231	S	001.0 Field Background
0004	12/15/04	09:25:57	000000	001660	S	001.0 Field Source
0005	12/15/04	09:28:03	000000	000223	S	001.0 FA-1-A
0006	12/15/04	09:29:25	000001	000223	S	001.0 FA-1-A
0007	12/15/04	09:30:37	000000	000323	S	001.0 FA-1-A
0008	12/15/04	09:31:58	000000	000240	S	001.0 FA-1-A
0009	12/15/04	09:33:21	000000	000199	S	001.0 FA-1-A
0010	12/15/04	09:34:35	000000	000285	S	001.0 FA-1-A
0011	12/15/04	09:35:49	000000	000243	S	001.0 FA-1-A
0012	12/15/04	09:37:06	000001	000270	S	001.0 FA-1-A
0013	12/15/04	09:38:37	000000	000260	S	001.0 FA-1-A
0014	12/15/04	09:40:00	000000	000190	S	001.0 FA-1-A
0015	12/15/04	09:41:24	000001	000263	S	001.0 FA-1-A
0016	12/15/04	09:42:48	000002	000229	S	001.0 FA-1-A
0017	12/15/04	09:44:08	000001	000229	S	001.0 FA-1-A
0018	12/15/04	09:45:19	000000	000245	S	001.0 FA-1-A
0019	12/15/04	09:46:46	000002	000236	S	001.0 FA-1-A
0020	12/15/04	09:50:07	000000	001818	S	001.0 Field Source
0021	12/15/04	09:51:25	000000	000232	S	001.0 Field Background
0022	12/15/04	09:52:30	000003	000248	S	001.0 FA-1-B
0023	12/15/04	09:53:37	000002	000249	S	001.0 FA-1-B
0024	12/15/04	09:55:03	000000	000275	S	001.0 FA-1-B
0025	12/15/04	09:58:18	000006	000331	S	001.0 FA-1-B
0026	12/15/04	09:59:40	000001	000257	S	001.0 FA-1-B
0027	12/15/04	10:02:17	000003	000223	S	001.0 FA-1-B
0028	12/15/04	10:12:26	000001	000352	S	001.0 FA-1-B
0029	12/15/04	10:13:52	000001	000307	S	001.0 FA-1-B
0030	12/15/04	10:15:39	000002	000291	S	001.0 FA-1-B
0031	12/15/04	10:17:23	000001	000255	S	001.0 FA-1-B
0032	12/15/04	10:19:32	000001	000248	S	001.0 FA-1-B
0033	12/15/04	10:21:05	000000	000286	S	001.0 FA-1-B
0034	12/15/04	10:23:37	000000	000236	S	001.0 FA-1-B

0035 12/15/04 10:24:51 000001 000289 S 001.0 FA-1-B  
0036 12/15/04 10:26:21 000002 000240 S 001.0 FA-1-B  
0037 12/15/04 10:28:25 000001 000213 S 001.0 Field Background  
0038 12/15/04 10:30:01 000000 001104 S 001.0 Field Source  
0039 12/15/04 10:31:23 000000 000109 S 001.0 FA-1-C  
0040 12/15/04 10:32:36 000000 000153 S 001.0 FA-1-C  
0041 12/15/04 10:33:57 000000 000182 S 001.0 FA-1-C  
0042 12/15/04 10:35:18 000000 000269 S 001.0 FA-1-C  
0043 12/15/04 10:36:49 000002 000242 S 001.0 FA-1-C  
0044 12/15/04 10:38:12 000002 000259 S 001.0 FA-1-C  
0045 12/15/04 10:39:27 000001 000195 S 001.0 FA-1-C  
0046 12/15/04 10:40:50 000000 000229 S 001.0 FA-1-C  
0047 12/15/04 10:42:04 000000 000199 S 001.0 FA-1-C  
0048 12/15/04 10:43:26 000002 000193 S 001.0 FA-1-C  
0049 12/15/04 10:44:48 000000 000254 S 001.0 FA-1-C  
0050 12/15/04 10:46:27 000000 000318 S 001.0 FA-1-C  
0051 12/15/04 10:47:48 000001 000289 S 001.0 FA-1-C  
0052 12/15/04 10:49:03 000000 000330 S 001.0 FA-1-C  
0053 12/15/04 10:50:31 000001 000295 S 001.0 FA-1-C  
0054 12/15/04 10:52:39 000001 000224 S 001.0 Field Background  
0055 12/15/04 10:54:05 000002 002021 S 001.0 Field Source  
0056 12/15/04 10:56:31 000000 000154 S 001.0 FA-1-D  
0057 12/15/04 10:58:02 000000 000223 S 001.0 FA-1-D  
0058 12/15/04 10:59:18 000001 000252 S 001.0 FA-1-D  
0059 12/15/04 11:00:43 000002 000246 S 001.0 FA-1-D  
0060 12/15/04 11:02:02 000002 000237 S 001.0 FA-1-D  
0061 12/15/04 11:03:21 000001 000239 S 001.0 FA-1-D  
0062 12/15/04 11:05:19 000001 000231 S 001.0 FA-1-D  
0063 12/15/04 11:06:40 000002 000212 S 001.0 FA-1-D  
0064 12/15/04 11:08:00 000000 000225 S 001.0 FA-1-D  
0065 12/15/04 11:09:17 000001 000218 S 001.0 FA-1-D  
0066 12/15/04 11:10:30 000001 000195 S 001.0 FA-1-D  
0067 12/15/04 11:11:47 000000 000218 S 001.0 FA-1-D  
0068 12/15/04 11:13:15 000001 000242 S 001.0 FA-1-D  
0069 12/15/04 11:14:58 000000 000253 S 001.0 FA-1-D  
0070 12/15/04 11:16:07 000001 000256 S 001.0 FA-1-D  
0071 12/15/04 11:59:41 000000 000214 S 001.0 Field Background  
0072 12/15/04 12:01:20 000001 001828 S 001.0 Field Source  
0073 12/15/04 12:02:43 000001 000213 S 001.0 FA-1-G  
0074 12/15/04 12:04:02 000000 000235 S 001.0 FA-1-G  
0075 12/15/04 12:05:07 000000 000226 S 001.0 FA-1-G  
0076 12/15/04 12:06:13 000000 000213 S 001.0 FA-1-G  
0077 12/15/04 12:08:02 000001 000202 S 001.0 FA-1-G  
0078 12/15/04 12:09:25 000000 000247 S 001.0 FA-1-G  
0079 12/15/04 12:10:55 000001 000240 S 001.0 FA-1-G  
0080 12/15/04 12:12:08 000001 000244 S 001.0 FA-1-G  
0081 12/15/04 12:13:22 000001 000252 S 001.0 FA-1-G  
0082 12/15/04 12:14:48 000002 000274 S 001.0 FA-1-G  
0083 12/15/04 12:16:00 000002 000245 S 001.0 FA-1-G  
0084 12/15/04 12:17:08 000000 000251 S 001.0 FA-1-G  
0085 12/15/04 12:18:42 000001 000281 S 001.0 FA-1-G  
0086 12/15/04 12:19:48 000001 000310 S 001.0 FA-1-G  
0087 12/15/04 12:23:24 000002 000335 S 001.0 FA-1-G  
0088 12/15/04 12:25:26 000001 001984 S 001.0 Field Source  
0089 12/15/04 12:29:52 000000 000293 S 001.0 Field Background  
0090 12/15/04 12:31:44 000004 000272 S 001.0 FA-1-H  
0091 12/15/04 12:33:17 000001 000317 S 001.0 FA-1-H  
0092 12/15/04 12:34:36 000000 000289 S 001.0 FA-1-H  
0093 12/15/04 12:35:58 000000 000287 S 001.0 FA-1-H  
0094 12/15/04 12:37:21 000001 000258 S 001.0 FA-1-H  
0095 12/15/04 12:38:36 000003 000243 S 001.0 FA-1-H  
0096 12/15/04 12:39:57 000002 000228 S 001.0 FA-1-H  
0097 12/15/04 12:41:14 000000 000250 S 001.0 FA-1-H  
0098 12/15/04 12:43:02 000002 000240 S 001.0 FA-1-H  
0099 12/15/04 12:44:24 000001 000278 S 001.0 FA-1-H  
0100 12/15/04 12:45:43 000000 000296 S 001.0 FA-1-H  
0101 12/15/04 12:47:42 000001 000308 S 001.0 FA-1-H  
0102 12/15/04 12:49:30 000002 000161 S 001.0 FA-1-H  
0103 12/15/04 12:51:01 000001 000158 S 001.0 FA-1-H  
0104 12/15/04 12:52:07 000000 000141 S 001.0 FA-1-H  
0105 12/15/04 12:53:15 000000 000135 S 001.0 FA-1-H  
0106 12/15/04 12:55:42 000000 001615 S 001.0 Field Source  
0107 12/15/04 12:57:27 000001 000284 S 001.0 Field Background  
0108 12/15/04 12:58:36 000001 000314 S 001.0 FA-1-I  
0109 12/15/04 13:02:20 000000 000270 S 001.0 FA-1-I  
0110 12/15/04 13:03:35 000000 000313 S 001.0 FA-1-I  
0111 12/15/04 13:04:59 000000 000349 S 001.0 FA-1-I  
0112 12/15/04 13:06:37 000000 000282 S 001.0 FA-1-I  
0113 12/15/04 13:08:29 000000 000272 S 001.0 FA-1-I  
0114 12/15/04 13:09:36 000001 000321 S 001.0 FA-1-I  
0115 12/15/04 13:10:45 000000 000280 S 001.0 FA-1-I  
0116 12/15/04 13:11:52 000000 000318 S 001.0 FA-1-I  
0117 12/15/04 13:13:03 000000 000282 S 001.0 FA-1-I  
0118 12/15/04 13:14:17 000000 000301 S 001.0 FA-1-I  
0119 12/15/04 13:15:35 000001 000301 S 001.0 FA-1-I

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/15/04	16:32:06	FA-1-A	FSS	12/15/04	16:32:06	1.000	1.00
2	Smear 2	12/15/04	16:30:46	FA-1-A	FSS	12/15/04	16:30:46	1.000	1.00
3	Smear 3	12/15/04	16:29:26	FA-1-A	FSS	12/15/04	16:29:26	1.000	1.00
4	Smear 4	12/15/04	16:28:06	FA-1-A	FSS	12/15/04	16:28:06	1.000	1.00
5	Smear 5	12/15/04	16:26:46	FA-1-A	FSS	12/15/04	16:26:46	1.000	1.00
6	Smear 6	12/15/04	16:25:25	FA-1-A	FSS	12/15/04	16:25:25	1.000	1.00
7	Smear 7	12/15/04	16:24:05	FA-1-A	FSS	12/15/04	16:24:05	1.000	1.00
8	Smear 8	12/15/04	16:22:45	FA-1-A	FSS	12/15/04	16:22:45	1.000	1.00
9	Smear 9	12/15/04	16:21:25	FA-1-A	FSS	12/15/04	16:21:25	1.000	1.00
10	Smear 10	12/15/04	16:20:05	FA-1-A	FSS	12/15/04	16:20:05	1.000	1.00
11	Smear 11	12/15/04	16:18:45	FA-1-A	FSS	12/15/04	16:18:45	1.000	1.00
12	Smear 12	12/15/04	16:17:25	FA-1-A	FSS	12/15/04	16:17:25	1.000	1.00
13	Smear 13	12/15/04	16:16:05	FA-1-A	FSS	12/15/04	16:16:05	1.000	1.00
14	Smear 14	12/15/04	16:14:45	FA-1-A	FSS	12/15/04	16:14:45	1.000	1.00
15	Smear 15	12/15/04	16:13:25	FA-1-A	FSS	12/15/04	16:13:25	1.000	1.00
16	Smear 1	12/15/04	16:12:05	FA-1-B	FSS	12/15/04	16:12:05	1.000	1.00
17	Smear 2	12/15/04	16:10:45	FA-1-B	FSS	12/15/04	16:10:45	1.000	1.00
18	Smear 3	12/15/04	16:09:25	FA-1-B	FSS	12/15/04	16:09:25	1.000	1.00
19	Smear 4	12/15/04	16:08:05	FA-1-B	FSS	12/15/04	16:08:05	1.000	1.00
20	Smear 5	12/15/04	16:06:45	FA-1-B	FSS	12/15/04	16:06:45	1.000	1.00
21	Smear 6	12/15/04	16:05:25	FA-1-B	FSS	12/15/04	16:05:25	1.000	1.00
22	Smear 7	12/15/04	16:04:05	FA-1-B	FSS	12/15/04	16:04:05	1.000	1.00
23	Smear 8	12/15/04	16:02:45	FA-1-B	FSS	12/15/04	16:02:45	1.000	1.00
24	Smear 9	12/15/04	16:01:25	FA-1-B	FSS	12/15/04	16:01:25	1.000	1.00
25	Smear 10	12/15/04	16:00:05	FA-1-B	FSS	12/15/04	16:00:05	1.000	1.00
26	Smear 11	12/15/04	15:58:45	FA-1-B	FSS	12/15/04	15:58:45	1.000	1.00
27	Smear 12	12/15/04	15:57:25	FA-1-B	FSS	12/15/04	15:57:25	1.000	1.00
28	Smear 13	12/15/04	15:56:05	FA-1-B	FSS	12/15/04	15:56:05	1.000	1.00
29	Smear 14	12/15/04	15:54:45	FA-1-B	FSS	12/15/04	15:54:45	1.000	1.00
30	Smear 15	12/15/04	15:53:25	FA-1-B	FSS	12/15/04	15:53:25	1.000	1.00
31	Smear 1	12/15/04	15:52:05	FA-1-C	FSS	12/15/04	15:52:05	1.000	1.00
32	Smear 2	12/15/04	15:50:45	FA-1-C	FSS	12/15/04	15:50:45	1.000	1.00
33	Smear 3	12/15/04	15:49:25	FA-1-C	FSS	12/15/04	15:49:25	1.000	1.00
34	Smear 4	12/15/04	15:48:05	FA-1-C	FSS	12/15/04	15:48:05	1.000	1.00
35	Smear 5	12/15/04	15:46:45	FA-1-C	FSS	12/15/04	15:46:45	1.000	1.00
36	Smear 6	12/15/04	15:45:25	FA-1-C	FSS	12/15/04	15:45:25	1.000	1.00
37	Smear 7	12/15/04	15:44:05	FA-1-C	FSS	12/15/04	15:44:05	1.000	1.00
38	Smear 8	12/15/04	15:42:45	FA-1-C	FSS	12/15/04	15:42:45	1.000	1.00
39	Smear 9	12/15/04	15:41:25	FA-1-C	FSS	12/15/04	15:41:25	1.000	1.00
40	Smear 10	12/15/04	15:40:05	FA-1-C	FSS	12/15/04	15:40:05	1.000	1.00
41	Smear 11	12/15/04	15:38:45	FA-1-C	FSS	12/15/04	15:38:45	1.000	1.00
42	Smear 12	12/15/04	15:37:25	FA-1-C	FSS	12/15/04	15:37:25	1.000	1.00
43	Smear 13	12/15/04	15:36:05	FA-1-C	FSS	12/15/04	15:36:05	1.000	1.00
44	Smear 14	12/15/04	15:34:46	FA-1-C	FSS	12/15/04	15:34:46	1.000	1.00
45	Smear 15	12/15/04	15:33:26	FA-1-C	FSS	12/15/04	15:33:26	1.000	1.00
46	Smear 1	12/15/04	15:32:06	FA-1-D	FSS	12/15/04	15:32:06	1.000	1.00
47	Smear 2	12/15/04	15:30:46	FA-1-D	FSS	12/15/04	15:30:46	1.000	1.00
48	Smear 3	12/15/04	15:29:26	FA-1-D	FSS	12/15/04	15:29:26	1.000	1.00
49	Smear 4	12/15/04	15:28:06	FA-1-D	FSS	12/15/04	15:28:06	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): 

Date:

12-16-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %Eff: 44.6 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/15/04	16:32:08	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
2	Smear 2	12/15/04	16:30:48	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
3	Smear 3	12/15/04	16:29:26	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
4	Smear 4	12/15/04	16:28:08	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
5	Smear 5	12/15/04	16:26:46	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
6	Smear 6	12/15/04	16:25:25	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
7	Smear 7	12/15/04	16:24:05	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
8	Smear 8	12/15/04	16:22:45	0.00	-0.03	-0.14	13.87	9.00	8.57	19.21	11.01
9	Smear 9	12/15/04	16:21:25	0.00	-0.03	-0.14	13.87	5.00	4.57	10.24	11.01
10	Smear 10	12/15/04	16:20:05	0.00	-0.03	-0.14	13.87	7.00	6.57	14.72	11.01
11	Smear 11	12/15/04	16:18:45	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
12	Smear 12	12/15/04	16:17:25	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
13	Smear 13	12/15/04	16:16:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
14	Smear 14	12/15/04	16:14:45	0.00	-0.03	-0.14	13.87	6.00	5.57	12.48	11.01
15	Smear 15	12/15/04	16:13:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
16	Smear 1	12/15/04	16:12:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
17	Smear 2	12/15/04	16:10:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
18	Smear 3	12/15/04	16:09:25	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
19	Smear 4	12/15/04	16:08:05	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
20	Smear 5	12/15/04	16:06:45	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
21	Smear 6	12/15/04	16:05:25	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
22	Smear 7	12/15/04	16:04:05	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
23	Smear 8	12/15/04	16:02:45	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
24	Smear 9	12/15/04	16:01:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
25	Smear 10	12/15/04	16:00:05	0.00	-0.03	-0.14	13.87	6.00	5.57	12.48	11.01
26	Smear 11	12/15/04	15:58:45	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
27	Smear 12	12/15/04	15:57:25	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
28	Smear 13	12/15/04	15:56:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
29	Smear 14	12/15/04	15:54:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
30	Smear 15	12/15/04	15:53:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
31	Smear 1	12/15/04	15:52:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
32	Smear 2	12/15/04	15:50:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
33	Smear 3	12/15/04	15:49:25	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
34	Smear 4	12/15/04	15:48:05	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
35	Smear 5	12/15/04	15:46:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
36	Smear 6	12/15/04	15:45:25	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
37	Smear 7	12/15/04	15:44:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
38	Smear 8	12/15/04	15:42:45	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
39	Smear 9	12/15/04	15:41:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
40	Smear 10	12/15/04	15:40:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
41	Smear 11	12/15/04	15:38:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
42	Smear 12	12/15/04	15:37:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
43	Smear 13	12/15/04	15:36:05	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
44	Smear 14	12/15/04	15:34:46	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
45	Smear 15	12/15/04	15:33:26	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
46	Smear 1	12/15/04	15:32:06	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
47	Smear 2	12/15/04	15:30:46	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
48	Smear 3	12/15/04	15:29:26	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
49	Smear 4	12/15/04	15:28:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01

Technician (print): Chris Higgins

Technician (sign):

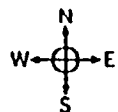
Date: 12-16-04

Reviewed By (print): Joe Trowbridge

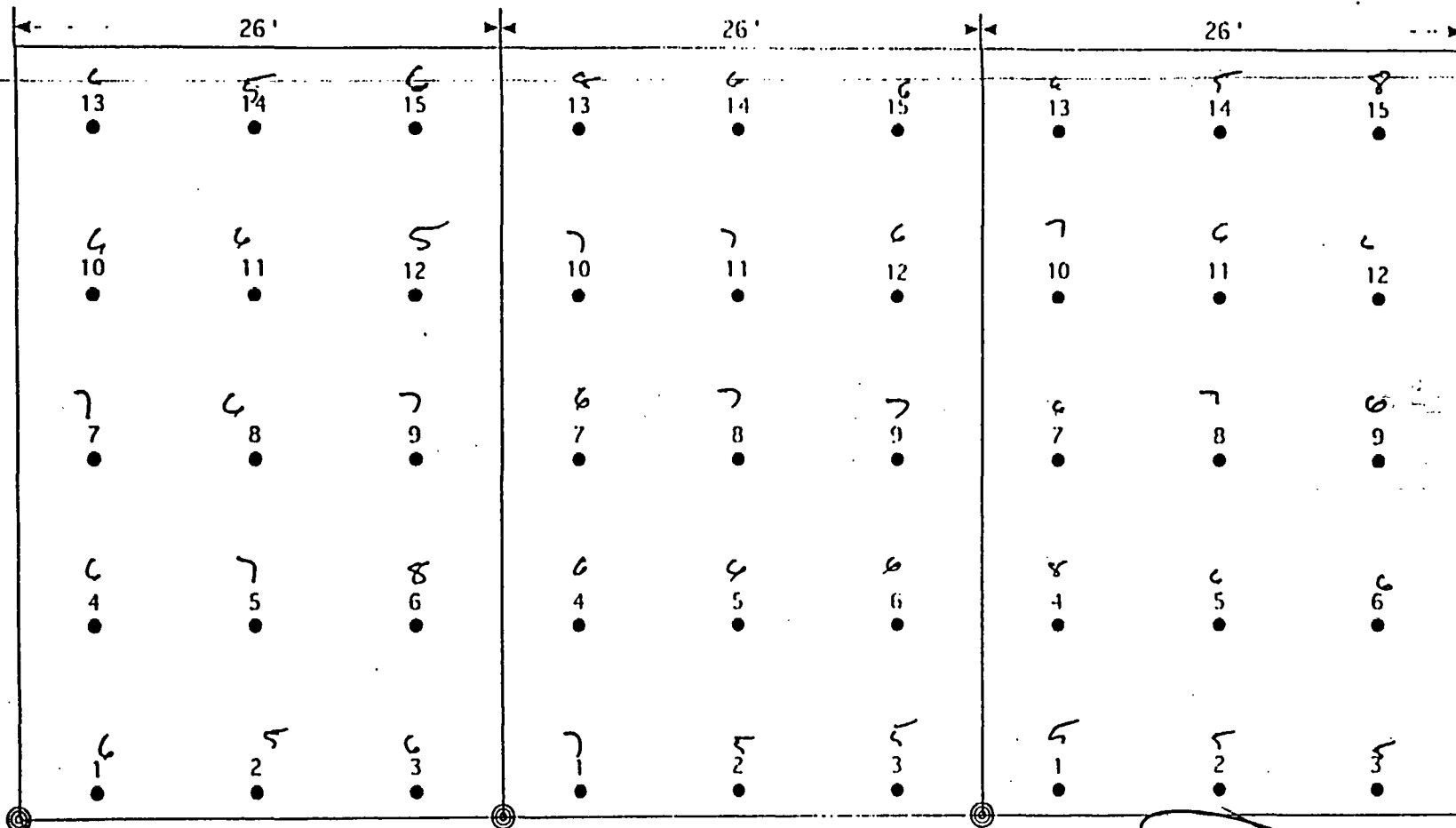
Reviewed By (sign):

Date:

**FA-1-C      Finishing Area**



• SURVEY POINTS  
 (C) STARTING LOCATION



FA-1-A

FA-1-B

FA-1-C

VR

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
 KARTHUS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Finishing Area Floor (1 of 5)

SCIENTECH

SCIENTECH Inc.  
 110 WEST STREET  
 NEW MILFORD, CT 06454

PROJECT NO.: 23579-0201

FILE NAME:

SCALE: DATE: 07/05/2004  
 N.T.S.

BY: CK:

FIGURE  
 1-1-A-C

FA-1-C

Log #
38 Source
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53

	X	Y
	n/a	n/a
1	4.2	1.3
2	12.8	1.3
3	21.4	1.3
4	4.2	9.9
5	12.8	9.9
6	21.4	9.9
7	4.2	18.5
8	12.8	18.5
9	21.4	18.5
10	4.2	27.1
11	12.8	27.1
12	21.4	27.1
13	4.2	35.7
14	12.8	35.7
15	21.4	35.7

L (ft) = 8.6  
A (ft<sup>2</sup>) = 1040

$\alpha + \beta$   
↓

Actual  
Metal

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
109	100	120
153	140	160
182	180	200
269	260	300
244	240	280
261	260	300
194	200	220
229	220	240
199	200	240
195	200	240
254	260	300
318	320	340
290	280	340
330	320	340
296	300	320

BKGD - 37





0035 12/15/04 10:24:51 000001 000289 S 001.0 FA-1-B  
0036 12/15/04 10:26:21 000002 000240 S 001.0 FA-1-B  
0037 12/15/04 10:28:25 000001 000213 S 001.0 Field Background  
0038 12/15/04 10:30:01 000000 001104 S 001.0 Field Source  
0039 12/15/04 10:31:23 000000 000109 S 001.0 FA-1-C  
0040 12/15/04 10:32:36 000000 000153 S 001.0 FA-1-C  
0041 12/15/04 10:33:57 000000 000182 S 001.0 FA-1-C  
0042 12/15/04 10:35:18 000000 000269 S 001.0 FA-1-C  
0043 12/15/04 10:36:49 000002 000242 S 001.0 FA-1-C  
0044 12/15/04 10:38:12 000002 000259 S 001.0 FA-1-C  
0045 12/15/04 10:39:27 000001 000195 S 001.0 FA-1-C  
0046 12/15/04 10:40:50 000000 000229 S 001.0 FA-1-C  
0047 12/15/04 10:42:04 000000 000199 S 001.0 FA-1-C  
0048 12/15/04 10:43:26 000002 000193 S 001.0 FA-1-C  
0049 12/15/04 10:44:48 000000 000254 S 001.0 FA-1-C  
0050 12/15/04 10:46:27 000000 000318 S 001.0 FA-1-C  
0051 12/15/04 10:47:48 000001 000289 S 001.0 FA-1-C  
0052 12/15/04 10:49:03 000000 000330 S 001.0 FA-1-C  
0053 12/15/04 10:50:31 000001 000295 S 001.0 FA-1-C  
0054 12/15/04 10:52:39 000001 000224 S 001.0 Field Background  
0055 12/15/04 10:54:05 000002 000201 S 001.0 Field Source  
0056 12/15/04 10:56:31 000000 000154 S 001.0 FA-1-D  
0057 12/15/04 10:58:02 000000 000223 S 001.0 FA-1-D  
0058 12/15/04 10:59:18 000001 000252 S 001.0 FA-1-D  
0059 12/15/04 11:00:43 000002 000246 S 001.0 FA-1-D  
0060 12/15/04 11:02:02 000002 000237 S 001.0 FA-1-D  
0061 12/15/04 11:03:21 000001 000239 S 001.0 FA-1-D  
0062 12/15/04 11:05:19 000001 000231 S 001.0 FA-1-D  
0063 12/15/04 11:06:40 000002 000212 S 001.0 FA-1-D  
0064 12/15/04 11:08:00 000000 000225 S 001.0 FA-1-D  
0065 12/15/04 11:09:17 000001 000218 S 001.0 FA-1-D  
0066 12/15/04 11:10:30 000001 000195 S 001.0 FA-1-D  
0067 12/15/04 11:11:47 000000 000218 S 001.0 FA-1-D  
0068 12/15/04 11:13:15 000001 000242 S 001.0 FA-1-D  
0069 12/15/04 11:14:58 000000 000253 S 001.0 FA-1-D  
0070 12/15/04 11:16:07 000001 000256 S 001.0 FA-1-D  
0071 12/15/04 11:59:41 000000 000214 S 001.0 Field Background  
0072 12/15/04 12:01:20 000001 001828 S 001.0 Field Source  
0073 12/15/04 12:02:43 000001 000213 S 001.0 FA-1-G  
0074 12/15/04 12:04:02 000000 000235 S 001.0 FA-1-G  
0075 12/15/04 12:05:07 000000 000226 S 001.0 FA-1-G  
0076 12/15/04 12:06:13 000000 000213 S 001.0 FA-1-G  
0077 12/15/04 12:08:02 000001 000202 S 001.0 FA-1-G  
0078 12/15/04 12:09:25 000000 000247 S 001.0 FA-1-G  
0079 12/15/04 12:10:55 000001 000240 S 001.0 FA-1-G  
0080 12/15/04 12:12:08 000001 000244 S 001.0 FA-1-G  
0081 12/15/04 12:13:22 000001 000252 S 001.0 FA-1-G  
0082 12/15/04 12:14:48 000002 000274 S 001.0 FA-1-G  
0083 12/15/04 12:16:00 000002 000245 S 001.0 FA-1-G  
0084 12/15/04 12:17:08 000000 000251 S 001.0 FA-1-G  
0085 12/15/04 12:18:42 000001 000281 S 001.0 FA-1-G  
0086 12/15/04 12:19:48 000001 000310 S 001.0 FA-1-G  
0087 12/15/04 12:23:24 000002 000335 S 001.0 FA-1-G  
0088 12/15/04 12:25:26 000001 001984 S 001.0 Field Source  
0089 12/15/04 12:29:52 000000 000293 S 001.0 Field Background  
0090 12/15/04 12:31:44 000004 000272 S 001.0 FA-1-H  
0091 12/15/04 12:33:17 000001 000317 S 001.0 FA-1-H  
0092 12/15/04 12:34:36 000000 000289 S 001.0 FA-1-H  
0093 12/15/04 12:35:58 000000 000287 S 001.0 FA-1-H  
0094 12/15/04 12:37:21 000001 000258 S 001.0 FA-1-H  
0095 12/15/04 12:38:36 000003 000243 S 001.0 FA-1-H  
0096 12/15/04 12:39:57 000002 000228 S 001.0 FA-1-H  
0097 12/15/04 12:41:14 000000 000250 S 001.0 FA-1-H  
0098 12/15/04 12:43:02 000002 000240 S 001.0 FA-1-H  
0099 12/15/04 12:44:24 000001 000278 S 001.0 FA-1-H  
0100 12/15/04 12:45:43 000000 000296 S 001.0 FA-1-H  
0101 12/15/04 12:47:42 000001 000308 S 001.0 FA-1-H  
0102 12/15/04 12:49:30 000002 000161 S 001.0 FA-1-H  
0103 12/15/04 12:51:01 000001 000158 S 001.0 FA-1-H  
0104 12/15/04 12:52:07 000000 000141 S 001.0 FA-1-H  
0105 12/15/04 12:53:15 000000 000135 S 001.0 FA-1-H  
0106 12/15/04 12:55:42 000000 001615 S 001.0 Field Source  
0107 12/15/04 12:57:27 000001 000284 S 001.0 Field Background  
0108 12/15/04 12:58:36 000001 000314 S 001.0 FA-1-I  
0109 12/15/04 13:02:20 000000 000270 S 001.0 FA-1-I  
0110 12/15/04 13:03:35 000000 000313 S 001.0 FA-1-I  
0111 12/15/04 13:04:59 000000 000349 S 001.0 FA-1-I  
0112 12/15/04 13:06:37 000000 000282 S 001.0 FA-1-I  
0113 12/15/04 13:08:29 000000 000272 S 001.0 FA-1-I  
0114 12/15/04 13:09:36 000001 000321 S 001.0 FA-1-I  
0115 12/15/04 13:10:45 000000 000280 S 001.0 FA-1-I  
0116 12/15/04 13:11:52 000000 000318 S 001.0 FA-1-I  
0117 12/15/04 13:13:03 000000 000282 S 001.0 FA-1-I  
0118 12/15/04 13:14:17 000000 000301 S 001.0 FA-1-I  
0119 12/15/04 13:15:35 000001 000301 S 001.0 FA-1-I

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/15/04	16:32:06	FA-1-A	FSS	12/15/04	16:32:06	1.000	1.00
2	Smear 2	12/15/04	16:30:46	FA-1-A	FSS	12/15/04	16:30:46	1.000	1.00
3	Smear 3	12/15/04	16:29:26	FA-1-A	FSS	12/15/04	16:29:26	1.000	1.00
4	Smear 4	12/15/04	16:28:06	FA-1-A	FSS	12/15/04	16:28:06	1.000	1.00
5	Smear 5	12/15/04	16:26:46	FA-1-A	FSS	12/15/04	16:26:46	1.000	1.00
6	Smear 6	12/15/04	16:25:25	FA-1-A	FSS	12/15/04	16:25:25	1.000	1.00
7	Smear 7	12/15/04	16:24:05	FA-1-A	FSS	12/15/04	16:24:05	1.000	1.00
8	Smear 8	12/15/04	16:22:45	FA-1-A	FSS	12/15/04	16:22:45	1.000	1.00
9	Smear 9	12/15/04	16:21:25	FA-1-A	FSS	12/15/04	16:21:25	1.000	1.00
10	Smear 10	12/15/04	16:20:05	FA-1-A	FSS	12/15/04	16:20:05	1.000	1.00
11	Smear 11	12/15/04	16:18:45	FA-1-A	FSS	12/15/04	16:18:45	1.000	1.00
12	Smear 12	12/15/04	16:17:25	FA-1-A	FSS	12/15/04	16:17:25	1.000	1.00
13	Smear 13	12/15/04	16:16:05	FA-1-A	FSS	12/15/04	16:16:05	1.000	1.00
14	Smear 14	12/15/04	16:14:45	FA-1-A	FSS	12/15/04	16:14:45	1.000	1.00
15	Smear 15	12/15/04	16:13:25	FA-1-A	FSS	12/15/04	16:13:25	1.000	1.00
16	Smear 1	12/15/04	16:12:05	FA-1-B	FSS	12/15/04	16:12:05	1.000	1.00
17	Smear 2	12/15/04	16:10:45	FA-1-B	FSS	12/15/04	16:10:45	1.000	1.00
18	Smear 3	12/15/04	16:09:25	FA-1-B	FSS	12/15/04	16:09:25	1.000	1.00
19	Smear 4	12/15/04	16:08:05	FA-1-B	FSS	12/15/04	16:08:05	1.000	1.00
20	Smear 5	12/15/04	16:06:45	FA-1-B	FSS	12/15/04	16:06:45	1.000	1.00
21	Smear 6	12/15/04	16:05:25	FA-1-B	FSS	12/15/04	16:05:25	1.000	1.00
22	Smear 7	12/15/04	16:04:05	FA-1-B	FSS	12/15/04	16:04:05	1.000	1.00
23	Smear 8	12/15/04	16:02:45	FA-1-B	FSS	12/15/04	16:02:45	1.000	1.00
24	Smear 9	12/15/04	16:01:25	FA-1-B	FSS	12/15/04	16:01:25	1.000	1.00
25	Smear 10	12/15/04	16:00:05	FA-1-B	FSS	12/15/04	16:00:05	1.000	1.00
26	Smear 11	12/15/04	15:58:45	FA-1-B	FSS	12/15/04	15:58:45	1.000	1.00
27	Smear 12	12/15/04	15:57:25	FA-1-B	FSS	12/15/04	15:57:25	1.000	1.00
28	Smear 13	12/15/04	15:56:05	FA-1-B	FSS	12/15/04	15:56:05	1.000	1.00
29	Smear 14	12/15/04	15:54:45	FA-1-B	FSS	12/15/04	15:54:45	1.000	1.00
30	Smear 15	12/15/04	15:53:25	FA-1-B	FSS	12/15/04	15:53:25	1.000	1.00
31	Smear 1	12/15/04	15:52:05	FA-1-C	FSS	12/15/04	15:52:05	1.000	1.00
32	Smear 2	12/15/04	15:50:45	FA-1-C	FSS	12/15/04	15:50:45	1.000	1.00
33	Smear 3	12/15/04	15:49:25	FA-1-C	FSS	12/15/04	15:49:25	1.000	1.00
34	Smear 4	12/15/04	15:48:05	FA-1-C	FSS	12/15/04	15:48:05	1.000	1.00
35	Smear 5	12/15/04	15:46:45	FA-1-C	FSS	12/15/04	15:46:45	1.000	1.00
36	Smear 6	12/15/04	15:45:25	FA-1-C	FSS	12/15/04	15:45:25	1.000	1.00
37	Smear 7	12/15/04	15:44:05	FA-1-C	FSS	12/15/04	15:44:05	1.000	1.00
38	Smear 8	12/15/04	15:42:45	FA-1-C	FSS	12/15/04	15:42:45	1.000	1.00
39	Smear 9	12/15/04	15:41:25	FA-1-C	FSS	12/15/04	15:41:25	1.000	1.00
40	Smear 10	12/15/04	15:40:05	FA-1-C	FSS	12/15/04	15:40:05	1.000	1.00
41	Smear 11	12/15/04	15:38:45	FA-1-C	FSS	12/15/04	15:38:45	1.000	1.00
42	Smear 12	12/15/04	15:37:25	FA-1-C	FSS	12/15/04	15:37:25	1.000	1.00
43	Smear 13	12/15/04	15:36:05	FA-1-C	FSS	12/15/04	15:36:05	1.000	1.00
44	Smear 14	12/15/04	15:34:46	FA-1-C	FSS	12/15/04	15:34:46	1.000	1.00
45	Smear 15	12/15/04	15:33:26	FA-1-C	FSS	12/15/04	15:33:26	1.000	1.00
46	Smear 1	12/15/04	15:32:06	FA-1-D	FSS	12/15/04	15:32:06	1.000	1.00
47	Smear 2	12/15/04	15:30:46	FA-1-D	FSS	12/15/04	15:30:46	1.000	1.00
48	Smear 3	12/15/04	15:29:26	FA-1-D	FSS	12/15/04	15:29:26	1.000	1.00
49	Smear 4	12/15/04	15:28:06	FA-1-D	FSS	12/15/04	15:28:06	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): *CH*

Date:

12-16-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %Eff: 44.6 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/15/04	16:32:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
2	Smear 2	12/15/04	16:30:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
3	Smear 3	12/15/04	16:29:26	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
4	Smear 4	12/15/04	16:28:06	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
5	Smear 5	12/15/04	16:26:46	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
6	Smear 6	12/15/04	16:25:25	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
7	Smear 7	12/15/04	16:24:05	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
8	Smear 8	12/15/04	16:22:45	0.00	-0.03	-0.14	13.87	9.00	8.57	19.21	11.01
9	Smear 9	12/15/04	16:21:25	0.00	-0.03	-0.14	13.87	5.00	4.57	10.24	11.01
10	Smear 10	12/15/04	16:20:05	0.00	-0.03	-0.14	13.87	7.00	6.57	14.72	11.01
11	Smear 11	12/15/04	16:18:45	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
12	Smear 12	12/15/04	16:17:25	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
13	Smear 13	12/15/04	16:16:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
14	Smear 14	12/15/04	16:14:45	0.00	-0.03	-0.14	13.87	6.00	5.57	12.48	11.01
15	Smear 15	12/15/04	16:13:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
16	Smear 1	12/15/04	16:12:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
17	Smear 2	12/15/04	16:10:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
18	Smear 3	12/15/04	16:09:25	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
19	Smear 4	12/15/04	16:08:05	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
20	Smear 5	12/15/04	16:06:45	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
21	Smear 6	12/15/04	16:05:25	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
22	Smear 7	12/15/04	16:04:05	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
23	Smear 8	12/15/04	16:02:45	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
24	Smear 9	12/15/04	16:01:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
25	Smear 10	12/15/04	16:00:05	0.00	-0.03	-0.14	13.87	6.00	5.57	12.48	11.01
26	Smear 11	12/15/04	15:58:45	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
27	Smear 12	12/15/04	15:57:25	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
28	Smear 13	12/15/04	15:56:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
29	Smear 14	12/15/04	15:54:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
30	Smear 15	12/15/04	15:53:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
31	Smear 1	12/15/04	15:52:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
32	Smear 2	12/15/04	15:50:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
33	Smear 3	12/15/04	15:49:25	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
34	Smear 4	12/15/04	15:48:05	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
35	Smear 5	12/15/04	15:46:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
36	Smear 6	12/15/04	15:45:25	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
37	Smear 7	12/15/04	15:44:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
38	Smear 8	12/15/04	15:42:45	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
39	Smear 9	12/15/04	15:41:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
40	Smear 10	12/15/04	15:40:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
41	Smear 11	12/15/04	15:38:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
42	Smear 12	12/15/04	15:37:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
43	Smear 13	12/15/04	15:36:05	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
44	Smear 14	12/15/04	15:34:46	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
45	Smear 15	12/15/04	15:33:26	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
46	Smear 1	12/15/04	15:32:06	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
47	Smear 2	12/15/04	15:30:46	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
48	Smear 3	12/15/04	15:29:26	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
49	Smear 4	12/15/04	15:28:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01

Technician (print): CKR Wiggins

Reviewed By (print): Joe Trowbridge

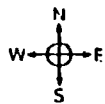
Technician (sign):

Reviewed By (sign):

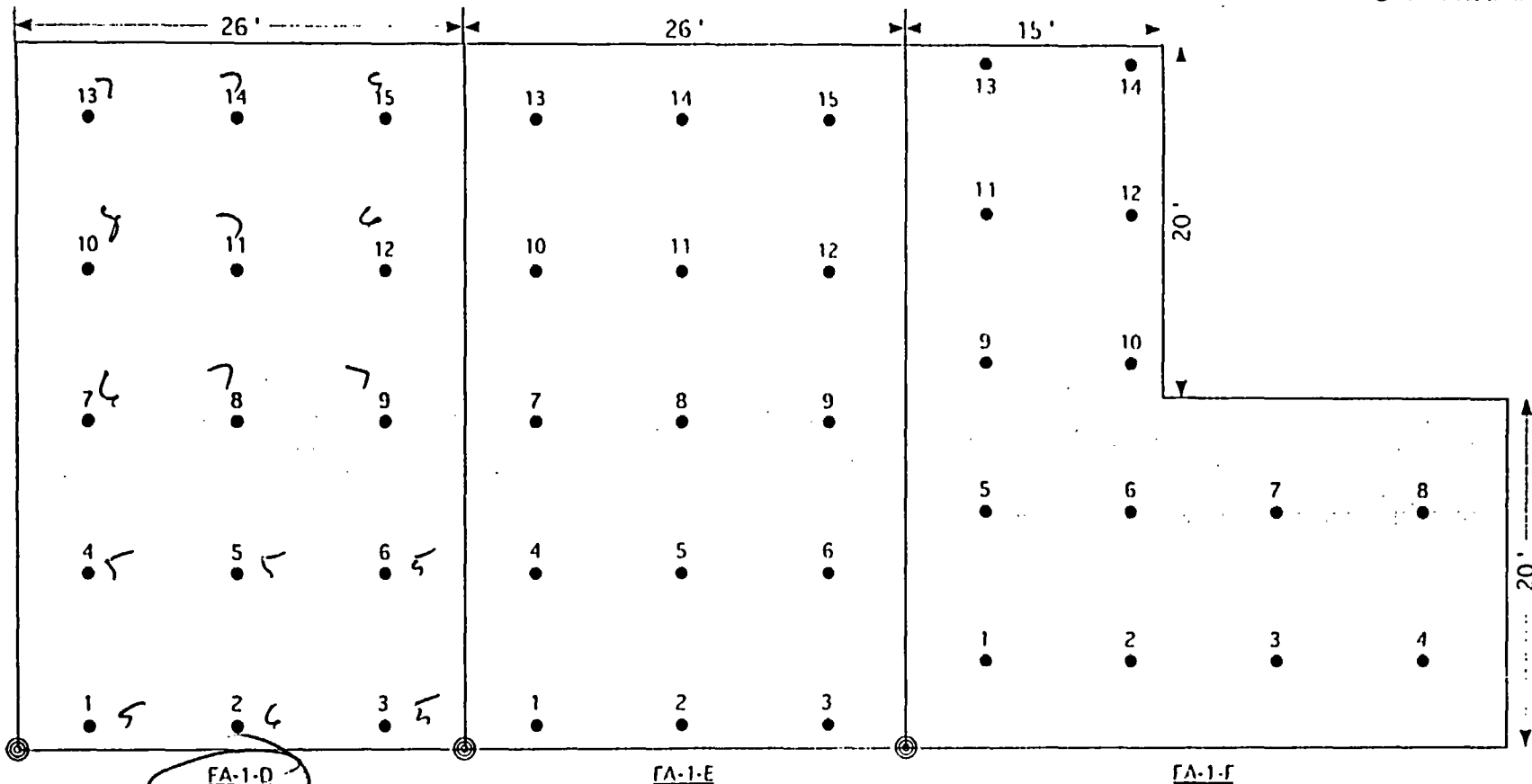
Date: 12-16-04

Date:

**FA-1-D      Finishing Area**



• SURVEY POINTS  
 (C) STARTING POINT



Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
 KATHAS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Finishing Area Floor (2 of 5)

SCIENTECH  
 SCIENTECH Inc.  
 141 WEST STREET  
 NEW MILFORD CT 06456

PROJECT NO:  
23529-0501

FILE NAME:

SCALE: N.T.S. DATE: 07/06/2004

By: CK:

FIGURE:  
FA-1 D,E,F

FA-1-D

Log #
55 Source
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70

	X	Y
	n/a	n/a
1	4.2	1.3
2	12.8	1.3
3	21.4	1.3
4	4.2	9.9
5	12.8	9.9
6	21.4	9.9
7	4.2	18.5
8	12.8	18.5
9	21.4	18.5
10	4.2	27.1
11	12.8	27.1
12	21.4	27.1
13	4.2	35.7
14	12.8	35.7
15	21.4	35.7

L (ft) = 8.6  
A (ft<sup>2</sup>) = 1040

$\alpha + \beta$

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
→ 154	200	240
223	220	260
253	240	280
248	240	280
239	240	280
240	240	280
232	240	280
214	200	220
225	220	260
219	220	260
196	200	240
218	220	260
245	240	280
253	260	300
257	260	300

BKGD-54

0035 12/15/04 10:24:51 000001 000289 S 001.0 FA-1-B  
0036 12/15/04 10:26:21 000002 000240 S 001.0 FA-1-B  
0037 12/15/04 10:28:25 000001 000213 S 001.0 Field Background  
0038 12/15/04 10:30:01 000000 001104 S 001.0 Field Source  
0039 12/15/04 10:31:23 000000 000109 S 001.0 FA-1-C  
0040 12/15/04 10:32:36 000000 000153 S 001.0 FA-1-C  
0041 12/15/04 10:33:57 000000 000182 S 001.0 FA-1-C  
0042 12/15/04 10:35:18 000000 000269 S 001.0 FA-1-C  
0043 12/15/04 10:36:49 000002 000242 S 001.0 FA-1-C  
0044 12/15/04 10:38:12 000002 000259 S 001.0 FA-1-C  
0045 12/15/04 10:39:27 000001 000195 S 001.0 FA-1-C  
0046 12/15/04 10:40:50 000000 000229 S 001.0 FA-1-C  
0047 12/15/04 10:42:04 000000 000199 S 001.0 FA-1-C  
0048 12/15/04 10:43:26 000002 000193 S 001.0 FA-1-C  
0049 12/15/04 10:44:48 000000 000254 S 001.0 FA-1-C  
0050 12/15/04 10:46:27 000000 000318 S 001.0 FA-1-C  
0051 12/15/04 10:47:48 000001 000289 S 001.0 FA-1-C  
0052 12/15/04 10:49:03 000000 000330 S 001.0 FA-1-C  
0053 12/15/04 10:50:31 000001 000295 S 001.0 FA-1-C  
0054 12/15/04 10:52:39 000001 000224 S 001.0 Field Background  
0055 12/15/04 10:54:05 000002 002021 S 001.0 Field Source  
0056 12/15/04 10:56:31 000000 000154 S 001.0 FA-1-D  
0057 12/15/04 10:58:02 000000 000223 S 001.0 FA-1-D  
0058 12/15/04 10:59:18 000001 000252 S 001.0 FA-1-D  
0059 12/15/04 11:00:43 000002 000246 S 001.0 FA-1-D  
0060 12/15/04 11:02:02 000002 000237 S 001.0 FA-1-D  
0061 12/15/04 11:03:21 000001 000239 S 001.0 FA-1-D  
0062 12/15/04 11:05:19 000001 000231 S 001.0 FA-1-D  
0063 12/15/04 11:06:40 000002 000212 S 001.0 FA-1-D  
0064 12/15/04 11:08:00 000000 000225 S 001.0 FA-1-D  
0065 12/15/04 11:09:17 000001 000218 S 001.0 FA-1-D  
0066 12/15/04 11:10:30 000001 000195 S 001.0 FA-1-D  
0067 12/15/04 11:11:47 000000 000218 S 001.0 FA-1-D  
0068 12/15/04 11:13:15 000001 000242 S 001.0 FA-1-D  
0069 12/15/04 11:14:58 000000 000253 S 001.0 FA-1-D  
0070 12/15/04 11:16:07 000001 000256 S 001.0 FA-1-D  
0071 12/15/04 11:59:41 000000 000214 S 001.0 Field Background  
0072 12/15/04 12:01:20 000001 001828 S 001.0 Field Source  
0073 12/15/04 12:02:43 000001 000213 S 001.0 FA-1-G  
0074 12/15/04 12:04:02 000000 000235 S 001.0 FA-1-G  
0075 12/15/04 12:05:07 000000 000226 S 001.0 FA-1-G  
0076 12/15/04 12:06:13 000000 000213 S 001.0 FA-1-G  
0077 12/15/04 12:08:02 000001 000202 S 001.0 FA-1-G  
0078 12/15/04 12:09:25 000000 000247 S 001.0 FA-1-G  
0079 12/15/04 12:10:55 000001 000240 S 001.0 FA-1-G  
0080 12/15/04 12:12:08 000001 000244 S 001.0 FA-1-G  
0081 12/15/04 12:13:22 000001 000252 S 001.0 FA-1-G  
0082 12/15/04 12:14:48 000002 000274 S 001.0 FA-1-G  
0083 12/15/04 12:16:00 000002 000245 S 001.0 FA-1-G  
0084 12/15/04 12:17:08 000000 000251 S 001.0 FA-1-G  
0085 12/15/04 12:18:42 000001 000281 S 001.0 FA-1-G  
0086 12/15/04 12:19:48 000001 000310 S 001.0 FA-1-G  
0087 12/15/04 12:23:24 000002 000335 S 001.0 FA-1-G  
0088 12/15/04 12:25:26 000001 001984 S 001.0 Field Source  
0089 12/15/04 12:29:52 000000 000293 S 001.0 Field Background  
0090 12/15/04 12:31:44 000004 000272 S 001.0 FA-1-H  
0091 12/15/04 12:33:17 000001 000317 S 001.0 FA-1-H  
0092 12/15/04 12:34:36 000000 000289 S 001.0 FA-1-H  
0093 12/15/04 12:35:58 000000 000287 S 001.0 FA-1-H  
0094 12/15/04 12:37:21 000001 000258 S 001.0 FA-1-H  
0095 12/15/04 12:38:36 000003 000243 S 001.0 FA-1-H  
0096 12/15/04 12:39:57 000002 000228 S 001.0 FA-1-H  
0097 12/15/04 12:41:14 000000 000250 S 001.0 FA-1-H  
0098 12/15/04 12:43:02 000002 000240 S 001.0 FA-1-H  
0099 12/15/04 12:44:24 000001 000278 S 001.0 FA-1-H  
0100 12/15/04 12:45:43 000000 000296 S 001.0 FA-1-H  
0101 12/15/04 12:47:42 000001 000308 S 001.0 FA-1-H  
0102 12/15/04 12:49:30 000002 000161 S 001.0 FA-1-H  
0103 12/15/04 12:51:01 000001 000158 S 001.0 FA-1-H  
0104 12/15/04 12:52:07 000000 000141 S 001.0 FA-1-H  
0105 12/15/04 12:53:15 000000 000135 S 001.0 FA-1-H  
0106 12/15/04 12:55:42 000000 001615 S 001.0 Field Source  
0107 12/15/04 12:57:27 000001 000284 S 001.0 Field Background  
0108 12/15/04 12:58:36 000001 000314 S 001.0 FA-1-I  
0109 12/15/04 13:02:20 000000 000270 S 001.0 FA-1-I  
0110 12/15/04 13:03:35 000000 000313 S 001.0 FA-1-I  
0111 12/15/04 13:04:59 000000 000349 S 001.0 FA-1-I  
0112 12/15/04 13:06:37 000000 000282 S 001.0 FA-1-I  
0113 12/15/04 13:08:29 000000 000272 S 001.0 FA-1-I  
0114 12/15/04 13:09:36 000001 000321 S 001.0 FA-1-I  
0115 12/15/04 13:10:45 000000 000280 S 001.0 FA-1-I  
0116 12/15/04 13:11:52 000000 000318 S 001.0 FA-1-I  
0117 12/15/04 13:13:03 000000 000282 S 001.0 FA-1-I  
0118 12/15/04 13:14:17 000000 000301 S 001.0 FA-1-I  
0119 12/15/04 13:15:35 000001 000301 S 001.0 FA-1-I



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/15/04	16:32:06	FA-1-A	FSS	12/15/04	16:32:06	1.000	1.00
2	Smear 2	12/15/04	16:30:46	FA-1-A	FSS	12/15/04	16:30:46	1.000	1.00
3	Smear 3	12/15/04	16:29:26	FA-1-A	FSS	12/15/04	16:29:26	1.000	1.00
4	Smear 4	12/15/04	16:28:06	FA-1-A	FSS	12/15/04	16:28:06	1.000	1.00
5	Smear 5	12/15/04	16:26:46	FA-1-A	FSS	12/15/04	16:26:46	1.000	1.00
6	Smear 6	12/15/04	16:25:25	FA-1-A	FSS	12/15/04	16:25:25	1.000	1.00
7	Smear 7	12/15/04	16:24:05	FA-1-A	FSS	12/15/04	16:24:05	1.000	1.00
8	Smear 8	12/15/04	16:22:45	FA-1-A	FSS	12/15/04	16:22:45	1.000	1.00
9	Smear 9	12/15/04	16:21:25	FA-1-A	FSS	12/15/04	16:21:25	1.000	1.00
10	Smear 10	12/15/04	16:20:05	FA-1-A	FSS	12/15/04	16:20:05	1.000	1.00
11	Smear 11	12/15/04	16:18:45	FA-1-A	FSS	12/15/04	16:18:45	1.000	1.00
12	Smear 12	12/15/04	16:17:25	FA-1-A	FSS	12/15/04	16:17:25	1.000	1.00
13	Smear 13	12/15/04	16:16:05	FA-1-A	FSS	12/15/04	16:16:05	1.000	1.00
14	Smear 14	12/15/04	16:14:45	FA-1-A	FSS	12/15/04	16:14:45	1.000	1.00
15	Smear 15	12/15/04	16:13:25	FA-1-A	FSS	12/15/04	16:13:25	1.000	1.00
16	Smear 1	12/15/04	16:12:05	FA-1-B	FSS	12/15/04	16:12:05	1.000	1.00
17	Smear 2	12/15/04	16:10:45	FA-1-B	FSS	12/15/04	16:10:45	1.000	1.00
18	Smear 3	12/15/04	16:09:25	FA-1-B	FSS	12/15/04	16:09:25	1.000	1.00
19	Smear 4	12/15/04	16:08:05	FA-1-B	FSS	12/15/04	16:08:05	1.000	1.00
20	Smear 5	12/15/04	16:06:45	FA-1-B	FSS	12/15/04	16:06:45	1.000	1.00
21	Smear 6	12/15/04	16:05:25	FA-1-B	FSS	12/15/04	16:05:25	1.000	1.00
22	Smear 7	12/15/04	16:04:05	FA-1-B	FSS	12/15/04	16:04:05	1.000	1.00
23	Smear 8	12/15/04	16:02:45	FA-1-B	FSS	12/15/04	16:02:45	1.000	1.00
24	Smear 9	12/15/04	16:01:25	FA-1-B	FSS	12/15/04	16:01:25	1.000	1.00
25	Smear 10	12/15/04	16:00:05	FA-1-B	FSS	12/15/04	16:00:05	1.000	1.00
26	Smear 11	12/15/04	15:58:45	FA-1-B	FSS	12/15/04	15:58:45	1.000	1.00
27	Smear 12	12/15/04	15:57:25	FA-1-B	FSS	12/15/04	15:57:25	1.000	1.00
28	Smear 13	12/15/04	15:56:05	FA-1-B	FSS	12/15/04	15:56:05	1.000	1.00
29	Smear 14	12/15/04	15:54:45	FA-1-B	FSS	12/15/04	15:54:45	1.000	1.00
30	Smear 15	12/15/04	15:53:25	FA-1-B	FSS	12/15/04	15:53:25	1.000	1.00
31	Smear 1	12/15/04	15:52:05	FA-1-C	FSS	12/15/04	15:52:05	1.000	1.00
32	Smear 2	12/15/04	15:50:45	FA-1-C	FSS	12/15/04	15:50:45	1.000	1.00
33	Smear 3	12/15/04	15:49:25	FA-1-C	FSS	12/15/04	15:49:25	1.000	1.00
34	Smear 4	12/15/04	15:48:05	FA-1-C	FSS	12/15/04	15:48:05	1.000	1.00
35	Smear 5	12/15/04	15:46:45	FA-1-C	FSS	12/15/04	15:46:45	1.000	1.00
36	Smear 6	12/15/04	15:45:25	FA-1-C	FSS	12/15/04	15:45:25	1.000	1.00
37	Smear 7	12/15/04	15:44:05	FA-1-C	FSS	12/15/04	15:44:05	1.000	1.00
38	Smear 8	12/15/04	15:42:45	FA-1-C	FSS	12/15/04	15:42:45	1.000	1.00
39	Smear 9	12/15/04	15:41:25	FA-1-C	FSS	12/15/04	15:41:25	1.000	1.00
40	Smear 10	12/15/04	15:40:05	FA-1-C	FSS	12/15/04	15:40:05	1.000	1.00
41	Smear 11	12/15/04	15:38:45	FA-1-C	FSS	12/15/04	15:38:45	1.000	1.00
42	Smear 12	12/15/04	15:37:25	FA-1-C	FSS	12/15/04	15:37:25	1.000	1.00
43	Smear 13	12/15/04	15:36:05	FA-1-C	FSS	12/15/04	15:36:05	1.000	1.00
44	Smear 14	12/15/04	15:34:46	FA-1-C	FSS	12/15/04	15:34:46	1.000	1.00
45	Smear 15	12/15/04	15:33:26	FA-1-C	FSS	12/15/04	15:33:26	1.000	1.00
46	Smear 1	12/15/04	15:32:06	FA-1-D	FSS	12/15/04	15:32:06	1.000	1.00
47	Smear 2	12/15/04	15:30:46	FA-1-D	FSS	12/15/04	15:30:46	1.000	1.00
48	Smear 3	12/15/04	15:29:26	FA-1-D	FSS	12/15/04	15:29:26	1.000	1.00
49	Smear 4	12/15/04	15:28:06	FA-1-D	FSS	12/15/04	15:28:06	1.000	1.00

Technician (print): Chris Higgins

Reviewed By (print): Joe Trowbridge

Technician (sign): 

Reviewed By (sign):

Date: 16-04

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %Eff: 44.6 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/15/04	16:32:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
2	Smear 2	12/15/04	16:30:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
3	Smear 3	12/15/04	16:29:26	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
4	Smear 4	12/15/04	16:28:06	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
5	Smear 5	12/15/04	16:26:46	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
6	Smear 6	12/15/04	16:25:25	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
7	Smear 7	12/15/04	16:24:05	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
8	Smear 8	12/15/04	16:22:45	0.00	-0.03	-0.14	13.87	9.00	8.57	19.21	11.01
9	Smear 9	12/15/04	16:21:25	0.00	-0.03	-0.14	13.87	5.00	4.57	10.24	11.01
10	Smear 10	12/15/04	16:20:05	0.00	-0.03	-0.14	13.87	7.00	6.57	14.72	11.01
11	Smear 11	12/15/04	16:18:45	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
12	Smear 12	12/15/04	16:17:25	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
13	Smear 13	12/15/04	16:16:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
14	Smear 14	12/15/04	16:14:45	0.00	-0.03	-0.14	13.87	6.00	5.57	12.48	11.01
15	Smear 15	12/15/04	16:13:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
16	Smear 1	12/15/04	16:12:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
17	Smear 2	12/15/04	16:10:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
18	Smear 3	12/15/04	16:09:25	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
19	Smear 4	12/15/04	16:08:05	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
20	Smear 5	12/15/04	16:06:45	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
21	Smear 6	12/15/04	16:05:25	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
22	Smear 7	12/15/04	16:04:05	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
23	Smear 8	12/15/04	16:02:45	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
24	Smear 9	12/15/04	16:01:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
25	Smear 10	12/15/04	16:00:05	0.00	-0.03	-0.14	13.87	6.00	5.57	12.48	11.01
26	Smear 11	12/15/04	15:58:45	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
27	Smear 12	12/15/04	15:57:25	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
28	Smear 13	12/15/04	15:56:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
29	Smear 14	12/15/04	15:54:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
30	Smear 15	12/15/04	15:53:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
31	Smear 1	12/15/04	15:52:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
32	Smear 2	12/15/04	15:50:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
33	Smear 3	12/15/04	15:49:25	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
34	Smear 4	12/15/04	15:48:05	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
35	Smear 5	12/15/04	15:46:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
36	Smear 6	12/15/04	15:45:25	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
37	Smear 7	12/15/04	15:44:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
38	Smear 8	12/15/04	15:42:45	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
39	Smear 9	12/15/04	15:41:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
40	Smear 10	12/15/04	15:40:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
41	Smear 11	12/15/04	15:38:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
42	Smear 12	12/15/04	15:37:25	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
43	Smear 13	12/15/04	15:36:05	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
44	Smear 14	12/15/04	15:34:46	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
45	Smear 15	12/15/04	15:33:26	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
46	Smear 1	12/15/04	15:32:06	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
47	Smear 2	12/15/04	15:30:46	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
48	Smear 3	12/15/04	15:29:26	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
49	Smear 4	12/15/04	15:28:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01

Technician (print): Chris Higgins

Technician (sign):

Date: 12-14-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

FA-1-D

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
50	Smear 5	12/15/04	15:26:46	FA-1-D	FSS	12/15/04	15:26:46	1.000	1.00
51	Smear 6	12/15/04	15:25:26	FA-1-D	FSS	12/15/04	15:25:26	1.000	1.00
52	Smear 7	12/15/04	15:24:06	FA-1-D	FSS	12/15/04	15:24:06	1.000	1.00
53	Smear 8	12/15/04	15:22:46	FA-1-D	FSS	12/15/04	15:22:46	1.000	1.00
54	Smear 9	12/15/04	15:21:26	FA-1-D	FSS	12/15/04	15:21:26	1.000	1.00
55	Smear 10	12/15/04	15:20:06	FA-1-D	FSS	12/15/04	15:20:06	1.000	1.00
56	Smear 11	12/15/04	15:18:46	FA-1-D	FSS	12/15/04	15:18:46	1.000	1.00
57	Smear 12	12/15/04	15:17:26	FA-1-D	FSS	12/15/04	15:17:26	1.000	1.00
58	Smear 13	12/15/04	15:16:06	FA-1-D	FSS	12/15/04	15:16:06	1.000	1.00
59	Smear 14	12/15/04	15:14:46	FA-1-D	FSS	12/15/04	15:14:46	1.000	1.00
60	Smear 15	12/15/04	15:13:26	FA-1-D	FSS	12/15/04	15:13:26	1.000	1.00
61	Smear 1	12/15/04	15:12:06	FA-1-G	FSS	12/15/04	15:12:06	1.000	1.00
62	Smear 2	12/15/04	15:10:46	FA-1-G	FSS	12/15/04	15:10:46	1.000	1.00
63	Smear 3	12/15/04	15:09:26	FA-1-G	FSS	12/15/04	15:09:26	1.000	1.00
64	Smear 4	12/15/04	15:08:06	FA-1-G	FSS	12/15/04	15:08:06	1.000	1.00
65	Smear 5	12/15/04	15:06:45	FA-1-G	FSS	12/15/04	15:06:45	1.000	1.00
66	Smear 6	12/15/04	15:05:25	FA-1-G	FSS	12/15/04	15:05:25	1.000	1.00
67	Smear 7	12/15/04	15:04:05	FA-1-G	FSS	12/15/04	15:04:05	1.000	1.00
68	Smear 8	12/15/04	15:02:45	FA-1-G	FSS	12/15/04	15:02:45	1.000	1.00
69	Smear 9	12/15/04	15:01:25	FA-1-G	FSS	12/15/04	15:01:25	1.000	1.00
70	Smear 10	12/15/04	15:00:05	FA-1-G	FSS	12/15/04	15:00:05	1.000	1.00
71	Smear 11	12/15/04	14:58:45	FA-1-G	FSS	12/15/04	14:58:45	1.000	1.00
72	Smear 12	12/15/04	14:57:25	FA-1-G	FSS	12/15/04	14:57:25	1.000	1.00
73	Smear 13	12/15/04	14:56:06	FA-1-G	FSS	12/15/04	14:56:06	1.000	1.00
74	Smear 14	12/15/04	14:54:46	FA-1-G	FSS	12/15/04	14:54:46	1.000	1.00
75	Smear 15	12/15/04	14:53:26	FA-1-G	FSS	12/15/04	14:53:26	1.000	1.00
76	Smear 1	12/15/04	14:52:06	FA-1-H	FSS	12/15/04	14:52:06	1.000	1.00
77	Smear 2	12/15/04	14:50:46	FA-1-H	FSS	12/15/04	14:50:46	1.000	1.00
78	Smear 3	12/15/04	14:49:26	FA-1-H	FSS	12/15/04	14:49:26	1.000	1.00
79	Smear 4	12/15/04	14:48:06	FA-1-H	FSS	12/15/04	14:48:06	1.000	1.00
80	Smear 5	12/15/04	14:46:46	FA-1-H	FSS	12/15/04	14:46:46	1.000	1.00
81	Smear 6	12/15/04	14:45:26	FA-1-H	FSS	12/15/04	14:45:26	1.000	1.00
82	Smear 7	12/15/04	14:44:06	FA-1-H	FSS	12/15/04	14:44:06	1.000	1.00
83	Smear 8	12/15/04	14:42:46	FA-1-H	FSS	12/15/04	14:42:46	1.000	1.00
84	Smear 9	12/15/04	14:41:26	FA-1-H	FSS	12/15/04	14:41:26	1.000	1.00
85	Smear 10	12/15/04	14:40:06	FA-1-H	FSS	12/15/04	14:40:06	1.000	1.00
86	Smear 11	12/15/04	14:38:46	FA-1-H	FSS	12/15/04	14:38:46	1.000	1.00
87	Smear 12	12/15/04	14:37:26	FA-1-H	FSS	12/15/04	14:37:26	1.000	1.00
88	Smear 13	12/15/04	14:36:06	FA-1-H	FSS	12/15/04	14:36:06	1.000	1.00
89	Smear 14	12/15/04	14:34:47	FA-1-H	FSS	12/15/04	14:34:47	1.000	1.00
90	Smear 15	12/15/04	14:33:27	FA-1-H	FSS	12/15/04	14:33:27	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): 

Date: 12-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %Eff: 44.6 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
50	Smear 5	12/15/04	15:26:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
51	Smear 6	12/15/04	15:25:26	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
52	Smear 7	12/15/04	15:24:06	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
53	Smear 8	12/15/04	15:22:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
54	Smear 9	12/15/04	15:21:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
55	Smear 10	12/15/04	15:20:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
56	Smear 11	12/15/04	15:18:46	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
57	Smear 12	12/15/04	15:17:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
58	Smear 13	12/15/04	15:16:06	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
59	Smear 14	12/15/04	15:14:46	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
60	Smear 15	12/15/04	15:13:26	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
61	Smear 1	12/15/04	15:12:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
62	Smear 2	12/15/04	15:10:46	1.00	0.97	4.04	13.87	1.00	0.57	1.27	11.01
63	Smear 3	12/15/04	15:09:26	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
64	Smear 4	12/15/04	15:08:06	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
65	Smear 5	12/15/04	15:06:46	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
66	Smear 6	12/15/04	15:05:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
67	Smear 7	12/15/04	15:04:06	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
68	Smear 8	12/15/04	15:02:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
69	Smear 9	12/15/04	15:01:26	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
70	Smear 10	12/15/04	15:00:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
71	Smear 11	12/15/04	14:58:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
72	Smear 12	12/15/04	14:57:26	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
73	Smear 13	12/15/04	14:56:06	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
74	Smear 14	12/15/04	14:54:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
75	Smear 15	12/15/04	14:53:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
76	Smear 1	12/15/04	14:52:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
77	Smear 2	12/15/04	14:50:46	0.00	-0.03	-0.14	13.87	5.00	4.57	10.24	11.01
78	Smear 3	12/15/04	14:49:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
79	Smear 4	12/15/04	14:48:06	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
80	Smear 5	12/15/04	14:46:46	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
81	Smear 6	12/15/04	14:45:26	0.00	-0.03	-0.14	13.87	7.00	6.57	14.72	11.01
82	Smear 7	12/15/04	14:44:06	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
83	Smear 8	12/15/04	14:42:46	1.00	0.97	4.04	13.87	3.00	2.57	5.75	11.01
84	Smear 9	12/15/04	14:41:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
85	Smear 10	12/15/04	14:40:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
86	Smear 11	12/15/04	14:38:46	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
87	Smear 12	12/15/04	14:37:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
88	Smear 13	12/15/04	14:36:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
89	Smear 14	12/15/04	14:34:47	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
90	Smear 15	12/15/04	14:33:27	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01

Technician (print): Chris Higgins

Technician (sign): *CH*

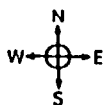
Date: 12-16-04

Reviewed By (print): Joe Trowbridge

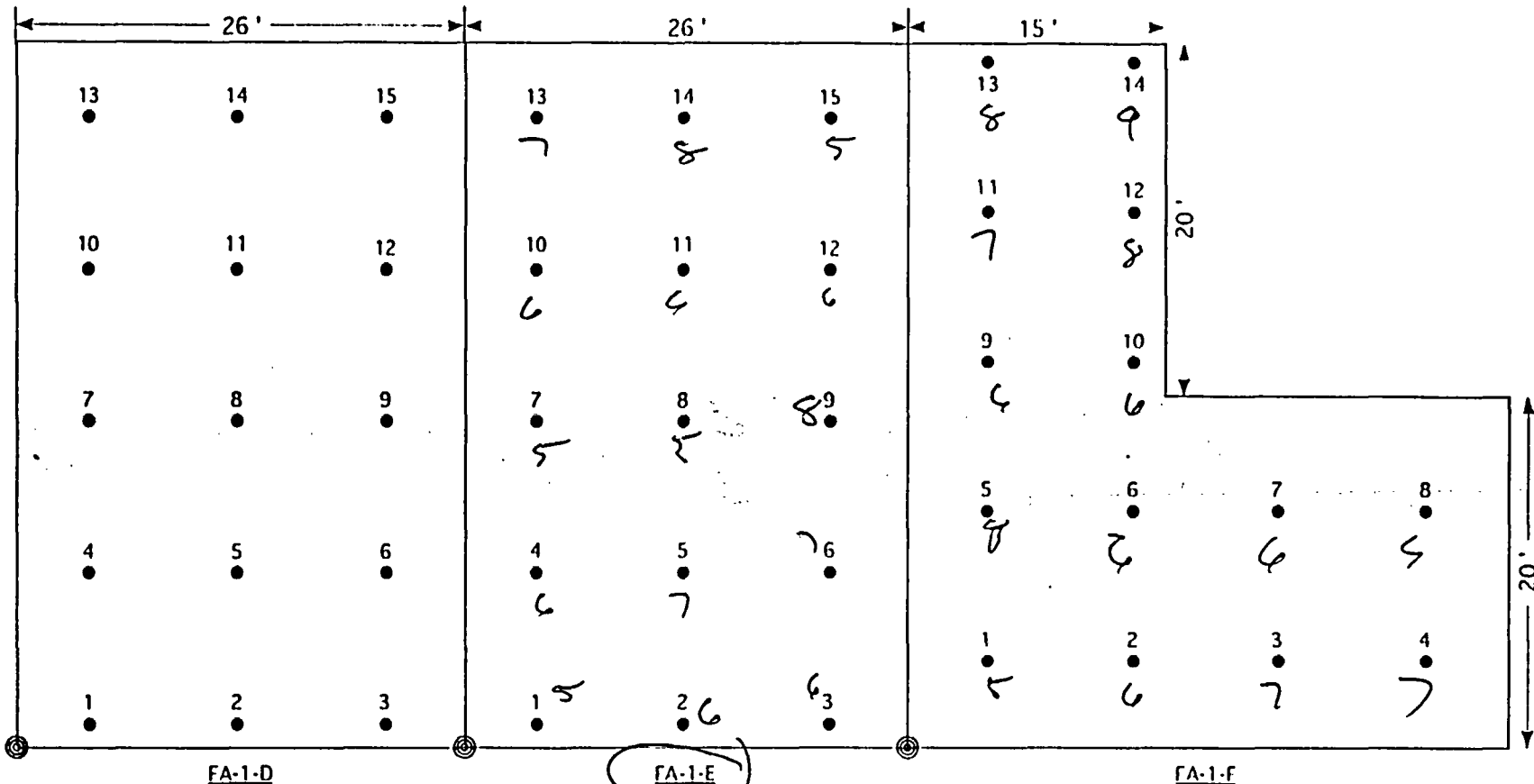
Reviewed By (sign):

Date:

**FA-1-E      Finishing Area**



• SURVEY POINTS  
• STARTING LOCATION



Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARTHIAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Finishing Area Floor (2 of 5)

SCIENTECH

SCIENTECH Inc.  
143 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO.

23529-0501

FILE NAME:

SCALE

N.T.S.

DATE

07.06/2004

By:

CK:

FIGURE:

FA-1-D-E-F

## FA-I-E

Log #	Source
7	6
8	7
9	8
10	9
11	10
12	11
13	12
14	13
15	14
16	15
17	16
18	17
19	18
20	19
21	20

	X	Y
	n/a	n/a
1	4.2	1.3
2	12.8	1.3
3	21.4	1.3
4	4.2	9.9
5	12.8	9.9
6	21.4	9.9
7	4.2	18.5
8	12.8	18.5
9	21.4	18.5
10	4.2	27.1
11	12.8	27.1
12	21.4	27.1
13	4.2	35.7
14	12.8	35.7
15	21.4	35.7

L (ft)= 8.6

A (ft<sup>2</sup>)= 1040

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
337	340	360
291	300	340
326	320	360
298	300	360
297	280	340
319	320	360
357	340	280
254	240	280
266	300	360
290	300	320
291	300	320
306	300	360
235	220	<del>280</del> 280
241	240	280
257	260	300

# 5 Void - I hit the Button

# 6 BK GD

# 22 Source

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/9/2004  
Time: 1:54:40 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location:  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/09/2004  
Model 2360 Time: 16:48:22  
Sample Number: 0073

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

IntTime - Count Time  
Ratmeter

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
001	12/09/04	07:12:21	000001	000196	S 001.0	Lab Background
002	12/09/04	07:14:39	000002	034295	S 001.0	Lab Source
003	12/09/04	07:16:44	000005	001821	S 001.0	Field Source
004	12/09/04	14:44:27	000001	001611	S 001.0	Field Source
005	12/09/04	14:47:00	000001	000331	S 001.0	Void
006	12/09/04	14:48:44	000000	000208	S 001.0	Field Background
007	12/09/04	14:50:57	000000	000338	S 001.0	FA-1-E
008	12/09/04	14:53:15	000000	000291	S 001.0	FA-1-E
009	12/09/04	14:54:37	000001	000326	S 001.0	FA-1-E
010	12/09/04	14:55:55	000002	000298	S 001.0	FA-1-E
011	12/09/04	14:57:15	000002	000287	S 001.0	FA-1-E
012	12/09/04	14:59:03	000002	000319	S 001.0	FA-1-E
013	12/09/04	15:00:33	000001	000351	S 001.0	FA-1-E
014	12/09/04	15:03:26	000001	000254	S 001.0	FA-1-E
015	12/09/04	15:04:43	000001	000266	S 001.0	FA-1-E
016	12/09/04	15:05:52	000000	000290	S 001.0	FA-1-E
017	12/09/04	15:07:04	000002	000291	S 001.0	FA-1-E
018	12/09/04	15:08:16	000004	000306	S 001.0	FA-1-E
019	12/09/04	15:23:56	000001	000235	S 001.0	FA-1-E
020	12/09/04	15:25:42	000004	000241	S 001.0	FA-1-E
021	12/09/04	15:27:01	000000	000257	S 001.0	FA-1-E
022	12/09/04	15:28:32	000004	001596	S 001.0	Field Source
023	12/09/04	15:30:29	000000	000234	S 001.0	Field Background
024	12/09/04	15:31:50	000000	000302	S 001.0	FA-1-F
025	12/09/04	15:37:30	000000	000272	S 001.0	FA-1-F
026	12/09/04	15:38:39	000000	000246	S 001.0	FA-1-F
027	12/09/04	15:40:05	000000	000340	S 001.0	FA-1-F
028	12/09/04	15:43:07	000001	000238	S 001.0	FA-1-F
029	12/09/04	15:44:32	000001	000278	S 001.0	FA-1-F
030	12/09/04	15:45:51	000002	000300	S 001.0	FA-1-F
031	12/09/04	15:47:09	000002	000298	S 001.0	FA-1-F
032	12/09/04	15:48:20	000000	000290	S 001.0	FA-1-F
033	12/09/04	15:49:30	000000	000359	S 001.0	FA-1-F
034	12/09/04	15:50:57	000001	000283	S 001.0	FA-1-F



035 12/09/04 15:52:07 000002 000313 S 001.0 FA-1-F  
036 12/09/04 15:53:15 000001 000359 S 001.0 FA-1-F  
037 12/09/04 15:54:32 000000 000259 S 001.0 FA-1-F  
038 12/09/04 15:56:49 000001 001749 S 001.0 Field Source  
039 12/09/04 15:58:34 000000 000223 S 001.0 Field Background  
040 12/09/04 15:59:49 000000 000253 S 001.0 FA-1-J  
041 12/09/04 16:01:09 000003 000252 S 001.0 FA-1-J  
042 12/09/04 16:02:16 000001 000227 S 001.0 FA-1-J  
043 12/09/04 16:05:21 000002 000303 S 001.0 FA-1-J  
044 12/09/04 16:06:40 000001 000302 S 001.0 FA-1-J  
045 12/09/04 16:09:32 000000 000302 S 001.0 FA-1-J  
046 12/09/04 16:11:22 000002 000263 S 001.0 FA-1-J  
047 12/09/04 16:12:35 000001 000271 S 001.0 FA-1-J  
048 12/09/04 16:14:04 000002 000266 S 001.0 FA-1-J  
049 12/09/04 16:15:33 000001 000321 S 001.0 FA-1-J  
050 12/09/04 16:16:54 000003 000305 S 001.0 FA-1-J  
051 12/09/04 16:18:20 000002 000325 S 001.0 FA-1-J  
052 12/09/04 16:20:22 000005 000321 S 001.0 FA-1-J  
053 12/09/04 16:21:49 000001 000335 S 001.0 FA-1-J  
054 12/09/04 16:23:18 000003 000211 S 001.0 FA-1-J  
055 12/09/04 16:25:08 000002 001695 S 001.0 Field Source  
056 12/09/04 16:26:50 000003 000218 S 001.0 Field Background  
057 12/09/04 16:28:21 000002 000209 S 001.0 FA-1-K  
058 12/09/04 16:29:40 000000 000255 S 001.0 FA-1-K  
059 12/09/04 16:30:56 000000 000234 S 001.0 FA-1-K  
060 12/09/04 16:32:01 000000 000237 S 001.0 FA-1-K  
061 12/09/04 16:33:06 000000 000240 S 001.0 FA-1-K  
062 12/09/04 16:34:14 000001 000236 S 001.0 FA-1-K  
063 12/09/04 16:35:40 000002 000233 S 001.0 FA-1-K  
064 12/09/04 16:36:48 000000 000248 S 001.0 FA-1-K  
065 12/09/04 16:37:55 000001 000248 S 001.0 FA-1-K  
066 12/09/04 16:39:08 000001 000253 S 001.0 FA-1-K  
067 12/09/04 16:40:23 000000 000218 S 001.0 FA-1-K  
068 12/09/04 16:41:36 000002 000229 S 001.0 FA-1-K  
069 12/09/04 16:42:41 000000 000224 S 001.0 FA-1-K  
070 12/09/04 16:43:55 000003 000237 S 001.0 FA-1-K  
071 12/09/04 16:45:02 000001 000251 S 001.0 FA-1-K  
072 12/09/04 16:47:06 000001 001633 S 001.0 Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/09/04	11:40:42	FA-1-E	Final Status Survey	12/09/04	11:40:42	1.000	1.00
2	Smear 2	12/09/04	11:39:22	FA-1-E	Final Status Survey	12/09/04	11:39:22	1.000	1.00
3	Smear 3	12/09/04	11:38:02	FA-1-E	Final Status Survey	12/09/04	11:38:02	1.000	1.00
4	Smear 4	12/09/04	11:36:42	FA-1-E	Final Status Survey	12/09/04	11:36:42	1.000	1.00
5	Smear 5	12/09/04	11:35:22	FA-1-E	Final Status Survey	12/09/04	11:35:22	1.000	1.00
6	Smear 6	12/09/04	11:34:02	FA-1-E	Final Status Survey	12/09/04	11:34:02	1.000	1.00
7	Smear 7	12/09/04	11:32:42	FA-1-E	Final Status Survey	12/09/04	11:32:42	1.000	1.00
8	Smear 8	12/09/04	11:31:22	FA-1-E	Final Status Survey	12/09/04	11:31:22	1.000	1.00
9	Smear 9	12/09/04	11:30:03	FA-1-E	Final Status Survey	12/09/04	11:30:03	1.000	1.00
10	Smear 10	12/09/04	11:28:43	FA-1-E	Final Status Survey	12/09/04	11:28:43	1.000	1.00
11	Smear 11	12/09/04	11:27:23	FA-1-E	Final Status Survey	12/09/04	11:27:23	1.000	1.00
12	Smear 12	12/09/04	11:26:03	FA-1-E	Final Status Survey	12/09/04	11:26:03	1.000	1.00
13	Smear 13	12/09/04	11:24:43	FA-1-E	Final Status Survey	12/09/04	11:24:43	1.000	1.00
14	Smear 14	12/09/04	11:23:23	FA-1-E	Final Status Survey	12/09/04	11:23:23	1.000	1.00
15	Smear 15	12/09/04	11:22:04	FA-1-E	Final Status Survey	12/09/04	11:22:04	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears.		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 23.81 LLD: 16.01 dpm				Bkg: 0.6 cpm %Eff: 44.63 LLD: 11.37 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/09/04	11:40:42	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
2	Smear 2	12/09/04	11:39:22	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
3	Smear 3	12/09/04	11:38:02	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
4	Smear 4	12/09/04	11:38:42	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
5	Smear 5	12/09/04	11:35:22	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
6	Smear 6	12/09/04	11:34:02	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
7	Smear 7	12/09/04	11:32:42	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
8	Smear 8	12/09/04	11:31:22	0.00	-0.07	-0.28	15.01	4.00	3.50	7.84	11.37
9	Smear 9	12/09/04	11:30:03	0.00	-0.07	-0.28	15.01	12.00	11.50	25.77	11.37
10	Smear 10	12/09/04	11:28:43	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
11	Smear 11	12/09/04	11:27:23	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
12	Smear 12	12/09/04	11:26:03	0.00	-0.07	-0.28	15.01	6.00	5.50	12.32	11.37
13	Smear 13	12/09/04	11:24:43	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
14	Smear 14	12/09/04	11:23:23	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
15	Smear 15	12/09/04	11:22:04	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

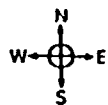
Date: 12-09-04

Reviewed By (print): Joe Trowbridge

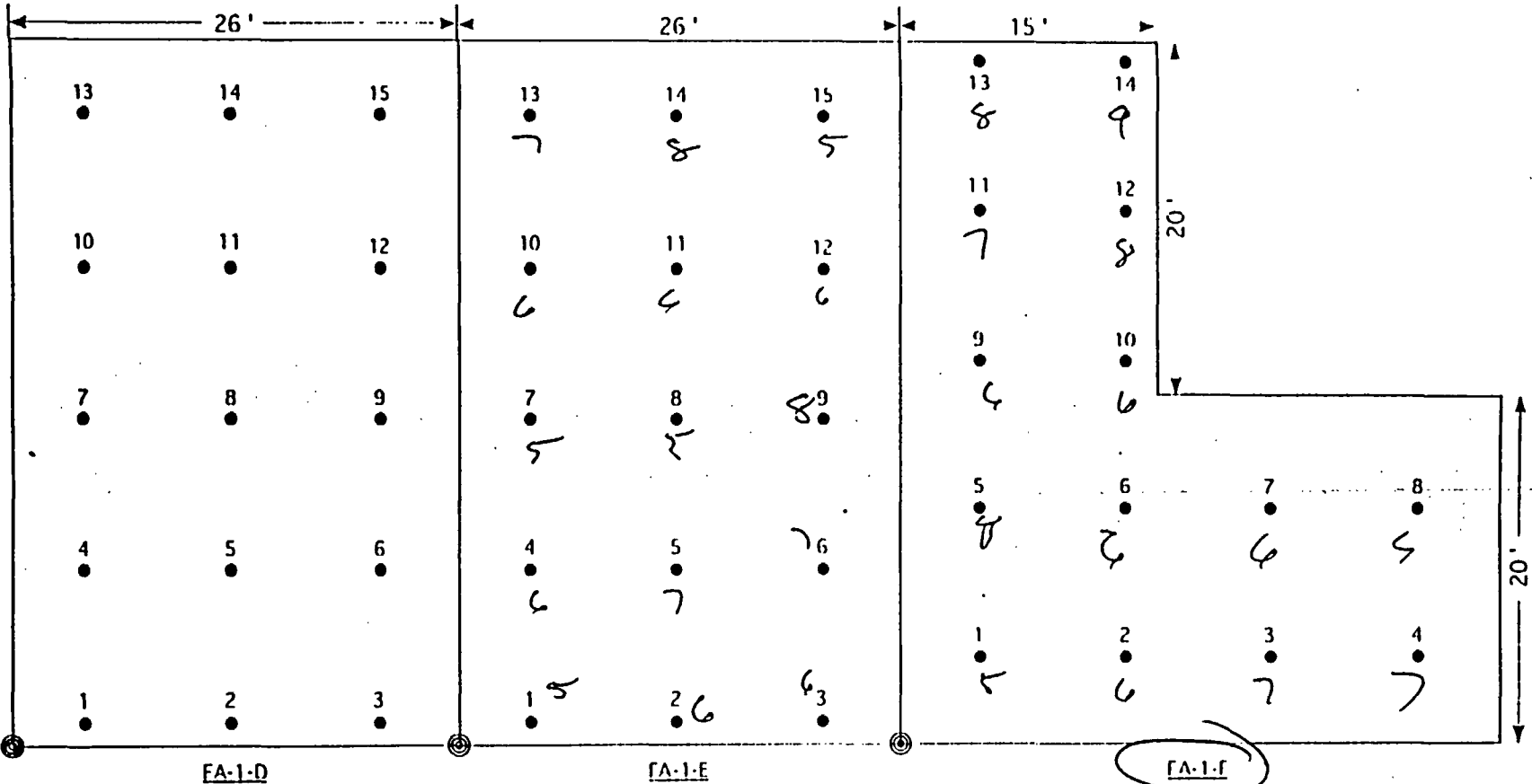
Reviewed By (sign):

Date:

**FA-1-F      Finishing Area**



• SURVEY POINTS  
 ◎ STARTING LOCATION



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Finishing Area Floor (2 of 5)	
SCIENSTECH SCIENSTECH Inc. 143 WEST STREET NEW MILFORD, CT 06455	
PROJECT NO. 21529-0501	
FILE NAME:	
SCALE N.T.S.	DATE 07.06.2004
By:	CK:
FIGURE FA-1 D E F	

FA-1-F

Log #
Source
24
25
26
27
29
29
30
31
32
33
34
35
36
37

	X	Y
	n/a	n/a
1	4.7	4.9
2	13.2	4.9
3	21.7	4.9
4	30.2	4.9
5	4.7	13.4
6	13.2	13.4
7	21.7	13.4
8	30.2	13.4
9	4.7	21.9
10	13.2	21.9
11	4.7	30.4
12	13.2	30.4
13	4.7	38.9
14	13.2	38.9

L (ft) = 8.5  
A (ft²) = 1000

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
239302	240 300	380
302272	300	360
246	240	300
340	340	360
238	240	300
278	280	320
300	300	300
298	300	320
290	280	360
359	340	380
283	300	320
313	300	360
359	360	380
259	260	300

#23 BCKD  
#38 Source

Ludlum Measurements, Inc.  
Model 2360 Log Data

Date: 12/9/2004  
Time: 4:54:40 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location:  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/09/2004  
Model 2360 Time: 16:48:22  
Sample Number: 0073

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/09/04	07:12:21	000001	000196	S 001.0	Lab Background
0002	12/09/04	07:14:39	000002	034295	S 001.0	Lab Source
0003	12/09/04	07:16:44	000005	001821	S 001.0	Field Source
0004	12/09/04	14:44:27	000001	001611	S 001.0	Field Source
0005	12/09/04	14:47:00	000001	000331	S 001.0	Void
0006	12/09/04	14:48:44	000000	000208	S 001.0	Field Background
0007	12/09/04	14:50:57	000000	000338	S 001.0	FA-1-E
0008	12/09/04	14:53:15	000000	000291	S 001.0	FA-1-E
0009	12/09/04	14:54:37	000001	000326	S 001.0	FA-1-E
0010	12/09/04	14:55:55	000002	000298	S 001.0	FA-1-E
0011	12/09/04	14:57:15	000002	000287	S 001.0	FA-1-E
0012	12/09/04	14:59:03	000002	000319	S 001.0	FA-1-E
0013	12/09/04	15:00:33	000001	000351	S 001.0	FA-1-E
0014	12/09/04	15:03:26	000001	000254	S 001.0	FA-1-E
0015	12/09/04	15:04:43	000001	000266	S 001.0	FA-1-E
0016	12/09/04	15:05:52	000000	000290	S 001.0	FA-1-E
0017	12/09/04	15:07:04	000002	000291	S 001.0	FA-1-E
0018	12/09/04	15:08:16	000004	000306	S 001.0	FA-1-E
0019	12/09/04	15:23:56	000001	000235	S 001.0	FA-1-E
0020	12/09/04	15:25:42	000004	000241	S 001.0	FA-1-E
0021	12/09/04	15:27:01	000000	000257	S 001.0	FA-1-E
0022	12/09/04	15:28:32	000004	001596	S 001.0	Field Source
0023	12/09/04	15:30:29	000000	000234	S 001.0	Field Background
0024	12/09/04	15:31:50	000000	000302	S 001.0	FA-1-F
0025	12/09/04	15:37:30	000000	000272	S 001.0	FA-1-F
0026	12/09/04	15:38:39	000000	000246	S 001.0	FA-1-F
0027	12/09/04	15:40:05	000000	000340	S 001.0	FA-1-F
0028	12/09/04	15:43:07	000001	000238	S 001.0	FA-1-F
0029	12/09/04	15:44:32	000001	000278	S 001.0	FA-1-F
0030	12/09/04	15:45:51	000002	000300	S 001.0	FA-1-F
0031	12/09/04	15:47:09	000002	000298	S 001.0	FA-1-F
0032	12/09/04	15:48:20	000000	000290	S 001.0	FA-1-F
0033	12/09/04	15:49:30	000000	000359	S 001.0	FA-1-F
0034	12/09/04	15:50:57	000001	000283	S 001.0	FA-1-F

0035 12/09/04 15:52:07 000002 000313 S 001.0 FA-1-F  
0036 12/09/04 15:53:15 000001 000359 S 001.0 FA-1-F  
0037 12/09/04 15:54:32 000000 000259 S 001.0 FA-1-F  
0038 12/09/04 15:56:49 000001 001749 S 001.0 Field Source  
0039 12/09/04 15:58:34 000000 000223 S 001.0 Field Background  
0040 12/09/04 15:59:49 000000 000253 S 001.0 FA-1-J  
0041 12/09/04 16:01:09 000003 000252 S 001.0 FA-1-J  
0042 12/09/04 16:02:16 000001 000227 S 001.0 FA-1-J  
0043 12/09/04 16:05:21 000002 000303 S 001.0 FA-1-J  
0044 12/09/04 16:06:40 000001 000302 S 001.0 FA-1-J  
0045 12/09/04 16:09:32 000000 000302 S 001.0 FA-1-J  
0046 12/09/04 16:11:22 000002 000263 S 001.0 FA-1-J  
0047 12/09/04 16:12:35 000001 000271 S 001.0 FA-1-J  
0048 12/09/04 16:14:04 000002 000266 S 001.0 FA-1-J  
0049 12/09/04 16:15:33 000001 000321 S 001.0 FA-1-J  
0050 12/09/04 16:16:54 000003 000305 S 001.0 FA-1-J  
0051 12/09/04 16:18:27 000002 000325 S 001.0 FA-1-J  
0052 12/09/04 16:20:22 000005 000321 S 001.0 FA-1-J  
0053 12/09/04 16:21:49 000001 000335 S 001.0 FA-1-J  
0054 12/09/04 16:23:18 000003 000211 S 001.0 FA-1-J  
0055 12/09/04 16:25:08 000002 001695 S 001.0 Field Source  
0056 12/09/04 16:26:50 000003 000218 S 001.0 Field Background  
0057 12/09/04 16:28:21 000002 000209 S 001.0 FA-1-K  
0058 12/09/04 16:29:40 000000 000255 S 001.0 FA-1-K  
0059 12/09/04 16:30:56 000000 000234 S 001.0 FA-1-K  
0060 12/09/04 16:32:01 000000 000237 S 001.0 FA-1-K  
0061 12/09/04 16:33:06 000000 000240 S 001.0 FA-1-K  
0062 12/09/04 16:34:14 000001 000236 S 001.0 FA-1-K  
0063 12/09/04 16:35:40 000002 000233 S 001.0 FA-1-K  
0064 12/09/04 16:36:48 000000 000248 S 001.0 FA-1-K  
0065 12/09/04 16:37:55 000001 000248 S 001.0 FA-1-K  
0066 12/09/04 16:39:08 000001 000253 S 001.0 FA-1-K  
0067 12/09/04 16:40:23 000000 000218 S 001.0 FA-1-K  
0068 12/09/04 16:41:36 000002 000229 S 001.0 FA-1-K  
0069 12/09/04 16:42:41 000000 000224 S 001.0 FA-1-K  
0070 12/09/04 16:43:55 000003 000237 S 001.0 FA-1-K  
0071 12/09/04 16:45:02 000001 000251 S 001.0 FA-1-K  
0072 12/09/04 16:47:06 000001 001633 S 001.0 Field Source  
S



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/09/04	12:18:34	FA-1-F	Final Status Survey	12/09/04	12:18:34	1.000	1.00
2	Smear 2	12/09/04	12:17:15	FA-1-F	Final Status Survey	12/09/04	12:17:15	1.000	1.00
3	Smear 3	12/09/04	12:15:55	FA-1-F	Final Status Survey	12/09/04	12:15:55	1.000	1.00
4	Smear 4	12/09/04	12:14:35	FA-1-F	Final Status Survey	12/09/04	12:14:35	1.000	1.00
5	Smear 5	12/09/04	12:13:15	FA-1-F	Final Status Survey	12/09/04	12:13:15	1.000	1.00
6	Smear 6	12/09/04	12:11:55	FA-1-F	Final Status Survey	12/09/04	12:11:55	1.000	1.00
7	Smear 7	12/09/04	12:10:35	FA-1-F	Final Status Survey	12/09/04	12:10:35	1.000	1.00
8	Smear 8	12/09/04	12:09:15	FA-1-F	Final Status Survey	12/09/04	12:09:15	1.000	1.00
9	Smear 9	12/09/04	12:07:56	FA-1-F	Final Status Survey	12/09/04	12:07:56	1.000	1.00
10	Smear 10	12/09/04	12:06:36	FA-1-F	Final Status Survey	12/09/04	12:06:36	1.000	1.00
11	Smear 11	12/09/04	12:05:16	FA-1-F	Final Status Survey	12/09/04	12:05:16	1.000	1.00
12	Smear 12	12/09/04	12:03:56	FA-1-F	Final Status Survey	12/09/04	12:03:56	1.000	1.00
13	Smear 13	12/09/04	12:02:36	FA-1-F	Final Status Survey	12/09/04	12:02:36	1.000	1.00
14	Smear 14	12/09/04	12:01:16	FA-1-F	Final Status Survey	12/09/04	12:01:16	1.000	1.00

Technician (print): Rob Ellison

Technician (sign):

*Rob Ellison*

Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 23.81 LLD: 16.01 dpm				Bkg: 0.6 cpm %Eff: 44.63 LLD: 11.37 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/09/04	12:18:34	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
2	Smear 2	12/09/04	12:17:15	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
3	Smear 3	12/09/04	12:15:55	1.00	0.93	3.92	15.01	1.00	0.50	1.12	11.37
4	Smear 4	12/09/04	12:14:35	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
5	Smear 5	12/09/04	12:13:15	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
6	Smear 6	12/09/04	12:11:55	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
7	Smear 7	12/09/04	12:10:35	0.00	-0.07	-0.28	15.01	4.00	3.50	7.84	11.37
8	Smear 8	12/09/04	12:09:15	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
9	Smear 9	12/09/04	12:07:56	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
10	Smear 10	12/09/04	12:06:36	1.00	0.93	3.92	15.01	16.00	15.50	34.73	11.37
11	Smear 11	12/09/04	12:05:16	0.00	-0.07	-0.28	15.01	9.00	8.50	19.04	11.37
12	Smear 12	12/09/04	12:03:56	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
13	Smear 13	12/09/04	12:02:36	0.00	-0.07	-0.28	15.01	5.00	4.50	10.08	11.37
14	Smear 14	12/09/04	12:01:16	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

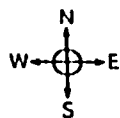
Date: 12-29-04

Reviewed By (print): Joe Trowbridge

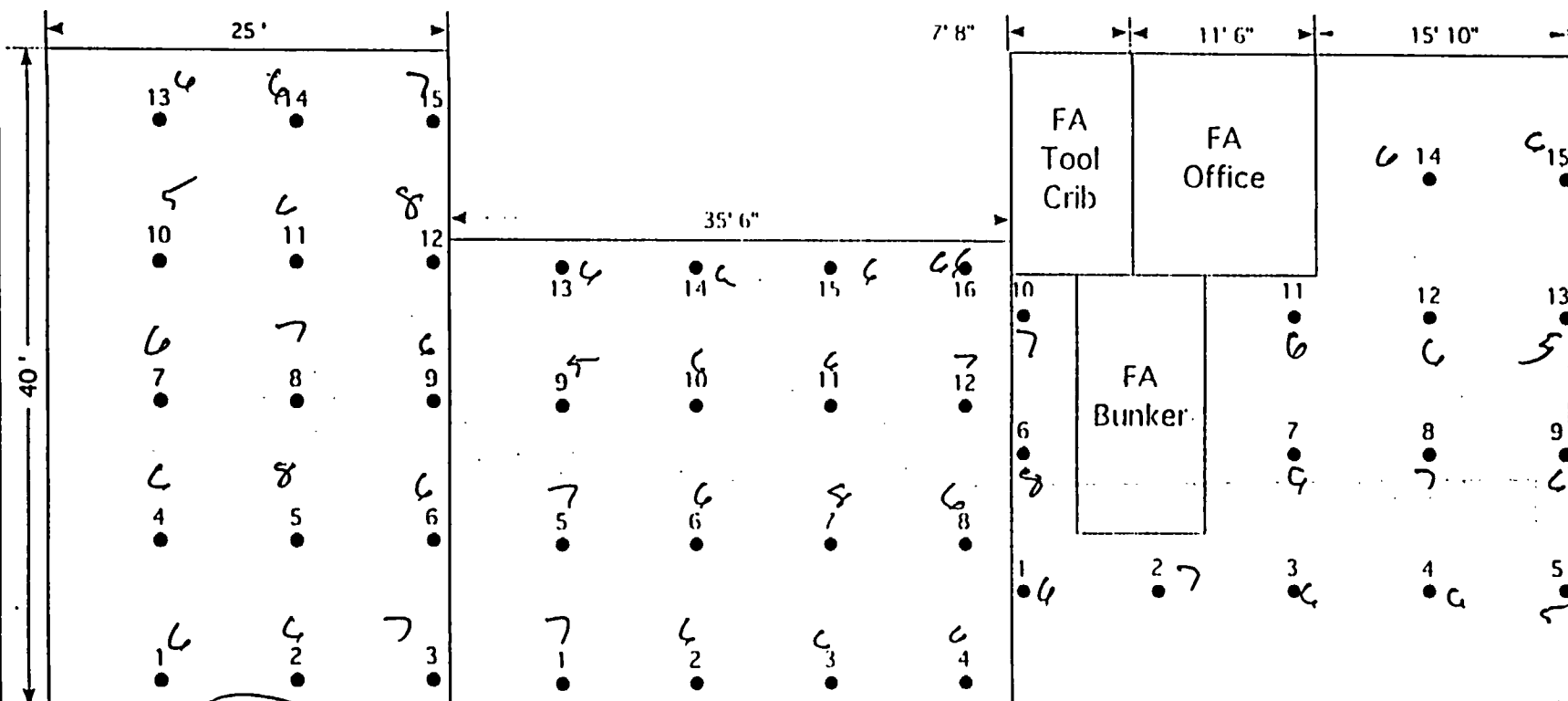
Reviewed By (sign):

Date:

**FA-1-G      Finishing Area**



• SURVEY POINTS  
 ◎ STARTING LOCATION



FA-1-G

FA-1-II

FA-1-I

1/5  
 117/32/37

10  
 2  
 4  
 24 = 2

Document  
 Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
 KARTHANS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Finishing Area Floor (3 of 5)

SCIENTECH  
 SCIENTECH Inc.  
 141 WEST STREET  
 NEW HAVEN, CT 06511

PROJECT NO:  
 23229-0501

FILE NAME:

SCALE  
 N.T.S.

DATE  
 07.06.2004

By: CK:

FIGURE  
 FA-1-G.MJ

FA-I-G

Log #
<del>72</del> Source 72
73
74
75
76
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79
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81
82
83
84
85
86
87

	X	Y
	n/a	n/a
1	7.0	1.6
2	15.5	1.6
3	24.0	1.6
4	7.0	10.1
5	15.5	10.1
6	24.0	10.1
7	7.0	18.6
8	15.5	18.6
9	24.0	18.6
10	7.0	27.1
11	15.5	27.1
12	24.0	27.1
13	7.0	35.6
14	15.5	35.6
15	24.0	35.6

L (ft) = 8.5

A (ft<sup>2</sup>) = 1000

$\alpha + \beta$

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
214	220	240
235	240	260
224	220	260
213	200	240
203	200	240
247	240	280
241	240	280
245	240	280
253	260	300
276	280	320
277	260 240	300
251	240	300
292	280	340
311	300	340
337	340	360

~~72~~ BK 60-71

Ludlum Measurements, Inc.  
Model 2360 Log Data

12/15/2004  
2:04:48 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FA-1-A - L  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/15/2004  
Model 2360 Time: 13:53:13  
Sample Number: 0141

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Count Time - Count Time  
Ratemeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/15/04	07:22:18	000000	000169	S 001.0	Lab Background
0002	12/15/04	07:24:47	000002	034127	S 001.0	Lab Source
0003	12/15/04	09:24:19	000000	000231	S 001.0	Field Background
0004	12/15/04	09:25:57	000000	001660	S 001.0	Field Source
0005	12/15/04	09:28:03	000000	000223	S 001.0	FA-1-A
0006	12/15/04	09:29:25	000001	000223	S 001.0	FA-1-A
0007	12/15/04	09:30:37	000000	000323	S 001.0	FA-1-A
0008	12/15/04	09:31:58	000000	000240	S 001.0	FA-1-A
0009	12/15/04	09:33:21	000000	000199	S 001.0	FA-1-A
0010	12/15/04	09:34:35	000000	000285	S 001.0	FA-1-A
0011	12/15/04	09:35:49	000000	000243	S 001.0	FA-1-A
0012	12/15/04	09:37:06	000001	000270	S 001.0	FA-1-A
0013	12/15/04	09:38:37	000000	000260	S 001.0	FA-1-A
0014	12/15/04	09:40:00	000000	000190	S 001.0	FA-1-A
0015	12/15/04	09:41:24	000001	000263	S 001.0	FA-1-A
0016	12/15/04	09:42:48	000002	000229	S 001.0	FA-1-A
0017	12/15/04	09:44:08	000001	000229	S 001.0	FA-1-A
0018	12/15/04	09:45:19	000000	000245	S 001.0	FA-1-A
0019	12/15/04	09:46:46	000002	000236	S 001.0	FA-1-A
0020	12/15/04	09:50:07	000000	001818	S 001.0	Field Source
0021	12/15/04	09:51:25	000000	000232	S 001.0	Field Background
0022	12/15/04	09:52:30	000003	000248	S 001.0	FA-1-B
0023	12/15/04	09:53:37	000002	000249	S 001.0	FA-1-B
0024	12/15/04	09:55:03	000000	000275	S 001.0	FA-1-B
0025	12/15/04	09:58:18	000006	000331	S 001.0	FA-1-B
0026	12/15/04	09:59:40	000001	000257	S 001.0	FA-1-B
0027	12/15/04	10:02:17	000003	000223	S 001.0	FA-1-B
0028	12/15/04	10:12:26	000001	000352	S 001.0	FA-1-B
0029	12/15/04	10:13:52	000001	000307	S 001.0	FA-1-B
0030	12/15/04	10:15:39	000002	000291	S 001.0	FA-1-B
0031	12/15/04	10:17:23	000001	000255	S 001.0	FA-1-B
0032	12/15/04	10:19:32	000001	000248	S 001.0	FA-1-B
0033	12/15/04	10:21:05	000000	000266	S 001.0	FA-1-B
0034	12/15/04	10:23:37	000000	000266	S 001.0	FA-1-B

1035 12/15/04 10:24:51 000001 000289 S 001.0 FA-1-B  
1036 12/15/04 10:26:21 000002 000240 S 001.0 FA-1-B  
1037 12/15/04 10:28:25 000001 000213 S 001.0 Field Background  
1038 12/15/04 10:30:01 000000 001104 S 001.0 Field Source  
1039 12/15/04 10:31:23 000000 000109 S 001.0 FA-1-C  
1040 12/15/04 10:32:36 000000 000153 S 001.0 FA-1-C  
1041 12/15/04 10:33:57 000000 000182 S 001.0 FA-1-C  
1042 12/15/04 10:35:18 000000 000269 S 001.0 FA-1-C  
1043 12/15/04 10:36:49 000002 000242 S 001.0 FA-1-C  
1044 12/15/04 10:38:12 000002 000259 S 001.0 FA-1-C  
1045 12/15/04 10:39:27 000001 000195 S 001.0 FA-1-C  
1046 12/15/04 10:40:50 000000 000229 S 001.0 FA-1-C  
1047 12/15/04 10:42:04 000000 000199 S 001.0 FA-1-C  
1048 12/15/04 10:43:26 000002 000193 S 001.0 FA-1-C  
1049 12/15/04 10:44:48 000000 000254 S 001.0 FA-1-C  
1050 12/15/04 10:46:27 000000 000318 S 001.0 FA-1-C  
1051 12/15/04 10:47:48 000001 000289 S 001.0 FA-1-C  
1052 12/15/04 10:49:03 000000 000330 S 001.0 FA-1-C  
1053 12/15/04 10:50:31 000001 000295 S 001.0 FA-1-C  
1054 12/15/04 10:52:39 000001 000224 S 001.0 Field Background  
1055 12/15/04 10:54:05 000002 002021 S 001.0 Field Source  
1056 12/15/04 10:56:31 000000 000154 S 001.0 FA-1-D  
1057 12/15/04 10:58:02 000000 000223 S 001.0 FA-1-D  
1058 12/15/04 10:59:18 000001 000252 S 001.0 FA-1-D  
1059 12/15/04 11:00:43 000002 000246 S 001.0 FA-1-D  
1060 12/15/04 11:02:02 000002 000237 S 001.0 FA-1-D  
1061 12/15/04 11:03:21 000001 000239 S 001.0 FA-1-D  
1062 12/15/04 11:05:19 000001 000231 S 001.0 FA-1-D  
1063 12/15/04 11:06:40 000002 000212 S 001.0 FA-1-D  
1064 12/15/04 11:08:00 000000 000225 S 001.0 FA-1-D  
1065 12/15/04 11:09:17 000001 000218 S 001.0 FA-1-D  
1066 12/15/04 11:10:30 000001 000195 S 001.0 FA-1-D  
1067 12/15/04 11:11:47 000000 000218 S 001.0 FA-1-D  
1068 12/15/04 11:13:15 000001 000242 S 001.0 FA-1-D  
1069 12/15/04 11:14:58 000000 000253 S 001.0 FA-1-D  
1070 12/15/04 11:16:07 000001 000256 S 001.0 FA-1-D  
1071 12/15/04 11:59:41 000000 000214 S 001.0 Field Background  
1072 12/15/04 12:01:20 000001 001828 S 001.0 Field Source  
1073 12/15/04 12:02:43 000001 000213 S 001.0 FA-1-G  
1074 12/15/04 12:04:02 000000 000235 S 001.0 FA-1-G  
1075 12/15/04 12:05:07 000000 000226 S 001.0 FA-1-G  
1076 12/15/04 12:06:13 000000 000213 S 001.0 FA-1-G  
1077 12/15/04 12:08:02 000001 000202 S 001.0 FA-1-G  
1078 12/15/04 12:09:25 000000 000247 S 001.0 FA-1-G  
1079 12/15/04 12:10:55 000001 000240 S 001.0 FA-1-G  
1080 12/15/04 12:12:08 000001 000244 S 001.0 FA-1-G  
1081 12/15/04 12:13:22 000001 000252 S 001.0 FA-1-G  
1082 12/15/04 12:14:48 000002 000274 S 001.0 FA-1-G  
1083 12/15/04 12:16:00 000002 000245 S 001.0 FA-1-G  
1084 12/15/04 12:17:08 000000 000251 S 001.0 FA-1-G  
1085 12/15/04 12:18:42 000001 000281 S 001.0 FA-1-G  
1086 12/15/04 12:19:48 000001 000310 S 001.0 FA-1-G  
1087 12/15/04 12:23:24 000002 000335 S 001.0 FA-1-G  
1088 12/15/04 12:25:26 000001 001984 S 001.0 Field Source  
1089 12/15/04 12:29:52 000000 000293 S 001.0 Field Background  
1090 12/15/04 12:31:44 000004 000272 S 001.0 FA-1-H  
1091 12/15/04 12:33:17 000001 000317 S 001.0 FA-1-H  
1092 12/15/04 12:34:36 000000 000289 S 001.0 FA-1-H  
1093 12/15/04 12:35:58 000000 000287 S 001.0 FA-1-H  
1094 12/15/04 12:37:21 000001 000258 S 001.0 FA-1-H  
1095 12/15/04 12:38:36 000003 000243 S 001.0 FA-1-H  
1096 12/15/04 12:39:57 000002 000228 S 001.0 FA-1-H  
1097 12/15/04 12:41:14 000000 000250 S 001.0 FA-1-H  
1098 12/15/04 12:43:02 000002 000240 S 001.0 FA-1-H  
1099 12/15/04 12:44:24 000001 000278 S 001.0 FA-1-H  
1100 12/15/04 12:45:43 000000 000296 S 001.0 FA-1-H  
1101 12/15/04 12:47:42 000001 000308 S 001.0 FA-1-H  
1102 12/15/04 12:49:30 000002 000161 S 001.0 FA-1-H  
1103 12/15/04 12:51:01 000001 000158 S 001.0 FA-1-H  
1104 12/15/04 12:52:07 000000 000141 S 001.0 FA-1-H  
1105 12/15/04 12:53:15 000000 000135 S 001.0 FA-1-H  
1106 12/15/04 12:55:42 000000 001615 S 001.0 Field Source  
1107 12/15/04 12:57:27 000001 000284 S 001.0 Field Background  
1108 12/15/04 12:58:36 000001 000314 S 001.0 FA-1-I  
1109 12/15/04 13:02:20 000000 000270 S 001.0 FA-1-I  
1110 12/15/04 13:03:35 000000 000313 S 001.0 FA-1-I  
1111 12/15/04 13:04:59 000000 000349 S 001.0 FA-1-I  
1112 12/15/04 13:06:37 000000 000282 S 001.0 FA-1-I  
1113 12/15/04 13:08:29 000000 000272 S 001.0 FA-1-I  
1114 12/15/04 13:09:36 000001 000321 S 001.0 FA-1-I  
1115 12/15/04 13:10:45 000000 000280 S 001.0 FA-1-I  
1116 12/15/04 13:11:52 000000 000318 S 001.0 FA-1-I  
1117 12/15/04 13:13:03 000000 000282 S 001.0 FA-1-I  
1118 12/15/04 13:14:17 000000 000301 S 001.0 FA-1-I  
1119 12/15/04 13:15:35 000001 000301 S 001.0 FA-1-I

FA-1-G

120 12/15/04 13:16:43 000003 000299 S 001.0 FA-1-I  
121 12/15/04 13:18:17 000000 000309 S 001.0 FA-1-I  
122 12/15/04 13:19:33 000001 000295 S 001.0 FA-1-I  
123 12/15/04 13:21:36 000000 001795 S 001.0 Field Source  
124 12/15/04 13:23:29 000000 000284 S 001.0 Field Background  
125 12/15/04 13:24:34 000001 000308 S 001.0 FA-1-L  
126 12/15/04 13:25:51 000000 000313 S 001.0 FA-1-L  
127 12/15/04 13:27:13 000002 000288 S 001.0 FA-1-L  
128 12/15/04 13:29:35 000000 000275 S 001.0 FA-1-L  
129 12/15/04 13:31:33 000001 000314 S 001.0 FA-1-L  
130 12/15/04 13:32:47 000002 000278 S 001.0 FA-1-L  
131 12/15/04 13:35:11 000001 000289 S 001.0 FA-1-L  
132 12/15/04 13:36:58 000001 000288 S 001.0 FA-1-L  
133 12/15/04 13:38:17 000002 000314 S 001.0 FA-1-L  
134 12/15/04 13:39:54 000001 000277 S 001.0 FA-1-L  
135 12/15/04 13:41:01 000001 000261 S 001.0 FA-1-L  
136 12/15/04 13:42:27 000000 000254 S 001.0 FA-1-L  
137 12/15/04 13:44:15 000000 000238 S 001.0 FA-1-L  
138 12/15/04 13:45:56 000002 000278 S 001.0 FA-1-L  
139 12/15/04 13:47:09 000000 000216 S 001.0 FA-1-L  
140 12/15/04 13:48:40 000000 001877 S 001.0 Field Source



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
50	Smear 5	12/15/04	15:26:46	FA-1-D	FSS	12/15/04	15:26:46	1.000	1.00
51	Smear 6	12/15/04	15:25:26	FA-1-D	FSS	12/15/04	15:25:26	1.000	1.00
52	Smear 7	12/15/04	15:24:06	FA-1-D	FSS	12/15/04	15:24:06	1.000	1.00
53	Smear 8	12/15/04	15:22:46	FA-1-D	FSS	12/15/04	15:22:46	1.000	1.00
54	Smear 9	12/15/04	15:21:26	FA-1-D	FSS	12/15/04	15:21:26	1.000	1.00
55	Smear 10	12/15/04	15:20:06	FA-1-D	FSS	12/15/04	15:20:06	1.000	1.00
56	Smear 11	12/15/04	15:18:46	FA-1-D	FSS	12/15/04	15:18:46	1.000	1.00
57	Smear 12	12/15/04	15:17:26	FA-1-D	FSS	12/15/04	15:17:26	1.000	1.00
58	Smear 13	12/15/04	15:16:06	FA-1-D	FSS	12/15/04	15:16:06	1.000	1.00
59	Smear 14	12/15/04	15:14:46	FA-1-D	FSS	12/15/04	15:14:46	1.000	1.00
60	Smear 15	12/15/04	15:13:26	FA-1-D	FSS	12/15/04	15:13:26	1.000	1.00
61	Smear 1	12/15/04	15:12:06	FA-1-G	FSS	12/15/04	15:12:06	1.000	1.00
62	Smear 2	12/15/04	15:10:46	FA-1-G	FSS	12/15/04	15:10:46	1.000	1.00
63	Smear 3	12/15/04	15:09:26	FA-1-G	FSS	12/15/04	15:09:26	1.000	1.00
64	Smear 4	12/15/04	15:08:06	FA-1-G	FSS	12/15/04	15:08:06	1.000	1.00
65	Smear 5	12/15/04	15:06:45	FA-1-G	FSS	12/15/04	15:06:45	1.000	1.00
66	Smear 6	12/15/04	15:05:25	FA-1-G	FSS	12/15/04	15:05:25	1.000	1.00
67	Smear 7	12/15/04	15:04:05	FA-1-G	FSS	12/15/04	15:04:05	1.000	1.00
68	Smear 8	12/15/04	15:02:45	FA-1-G	FSS	12/15/04	15:02:45	1.000	1.00
69	Smear 9	12/15/04	15:01:25	FA-1-G	FSS	12/15/04	15:01:25	1.000	1.00
70	Smear 10	12/15/04	15:00:05	FA-1-G	FSS	12/15/04	15:00:05	1.000	1.00
71	Smear 11	12/15/04	14:58:45	FA-1-G	FSS	12/15/04	14:58:45	1.000	1.00
72	Smear 12	12/15/04	14:57:25	FA-1-G	FSS	12/15/04	14:57:25	1.000	1.00
73	Smear 13	12/15/04	14:56:06	FA-1-G	FSS	12/15/04	14:56:06	1.000	1.00
74	Smear 14	12/15/04	14:54:46	FA-1-G	FSS	12/15/04	14:54:46	1.000	1.00
75	Smear 15	12/15/04	14:53:26	FA-1-G	FSS	12/15/04	14:53:26	1.000	1.00
76	Smear 1	12/15/04	14:52:06	FA-1-H	FSS	12/15/04	14:52:06	1.000	1.00
77	Smear 2	12/15/04	14:50:46	FA-1-H	FSS	12/15/04	14:50:46	1.000	1.00
78	Smear 3	12/15/04	14:49:26	FA-1-H	FSS	12/15/04	14:49:26	1.000	1.00
79	Smear 4	12/15/04	14:48:06	FA-1-H	FSS	12/15/04	14:48:06	1.000	1.00
80	Smear 5	12/15/04	14:46:46	FA-1-H	FSS	12/15/04	14:46:46	1.000	1.00
81	Smear 6	12/15/04	14:45:26	FA-1-H	FSS	12/15/04	14:45:26	1.000	1.00
82	Smear 7	12/15/04	14:44:06	FA-1-H	FSS	12/15/04	14:44:06	1.000	1.00
83	Smear 8	12/15/04	14:42:46	FA-1-H	FSS	12/15/04	14:42:46	1.000	1.00
84	Smear 9	12/15/04	14:41:26	FA-1-H	FSS	12/15/04	14:41:26	1.000	1.00
85	Smear 10	12/15/04	14:40:06	FA-1-H	FSS	12/15/04	14:40:06	1.000	1.00
86	Smear 11	12/15/04	14:38:46	FA-1-H	FSS	12/15/04	14:38:46	1.000	1.00
87	Smear 12	12/15/04	14:37:26	FA-1-H	FSS	12/15/04	14:37:26	1.000	1.00
88	Smear 13	12/15/04	14:36:06	FA-1-H	FSS	12/15/04	14:36:06	1.000	1.00
89	Smear 14	12/15/04	14:34:47	FA-1-H	FSS	12/15/04	14:34:47	1.000	1.00
90	Smear 15	12/15/04	14:33:27	FA-1-H	FSS	12/15/04	14:33:27	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): 

Date: 12-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %Eff: 44.8 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
50	Smear 5	12/15/04	15:26:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
51	Smear 6	12/15/04	15:25:26	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
52	Smear 7	12/15/04	15:24:06	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
53	Smear 8	12/15/04	15:22:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
54	Smear 9	12/15/04	15:21:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
55	Smear 10	12/15/04	15:20:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
56	Smear 11	12/15/04	15:18:46	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
57	Smear 12	12/15/04	15:17:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
58	Smear 13	12/15/04	15:16:06	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
59	Smear 14	12/15/04	15:14:46	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
60	Smear 15	12/15/04	15:13:26	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
61	Smear 1	12/15/04	15:12:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
62	Smear 2	12/15/04	15:10:46	1.00	0.97	4.04	13.87	1.00	0.57	1.27	11.01
63	Smear 3	12/15/04	15:09:26	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
64	Smear 4	12/15/04	15:08:06	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
65	Smear 5	12/15/04	15:06:45	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
66	Smear 6	12/15/04	15:05:25	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
67	Smear 7	12/15/04	15:04:05	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
68	Smear 8	12/15/04	15:02:45	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
69	Smear 9	12/15/04	15:01:25	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
70	Smear 10	12/15/04	15:00:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
71	Smear 11	12/15/04	14:58:45	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
72	Smear 12	12/15/04	14:57:25	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
73	Smear 13	12/15/04	14:56:06	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
74	Smear 14	12/15/04	14:54:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
75	Smear 15	12/15/04	14:53:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
76	Smear 1	12/15/04	14:52:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
77	Smear 2	12/15/04	14:50:46	0.00	-0.03	-0.14	13.87	5.00	4.57	10.24	11.01
78	Smear 3	12/15/04	14:49:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
79	Smear 4	12/15/04	14:48:06	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
80	Smear 5	12/15/04	14:46:46	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
81	Smear 6	12/15/04	14:45:26	0.00	-0.03	-0.14	13.87	7.00	6.57	14.72	11.01
82	Smear 7	12/15/04	14:44:06	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
83	Smear 8	12/15/04	14:42:46	1.00	0.97	4.04	13.87	3.00	2.57	5.75	11.01
84	Smear 9	12/15/04	14:41:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
85	Smear 10	12/15/04	14:40:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
86	Smear 11	12/15/04	14:38:46	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
87	Smear 12	12/15/04	14:37:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
88	Smear 13	12/15/04	14:36:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
89	Smear 14	12/15/04	14:34:47	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
90	Smear 15	12/15/04	14:33:27	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01

Technician (print): Chris Higgins

Technician (sign): *CH*

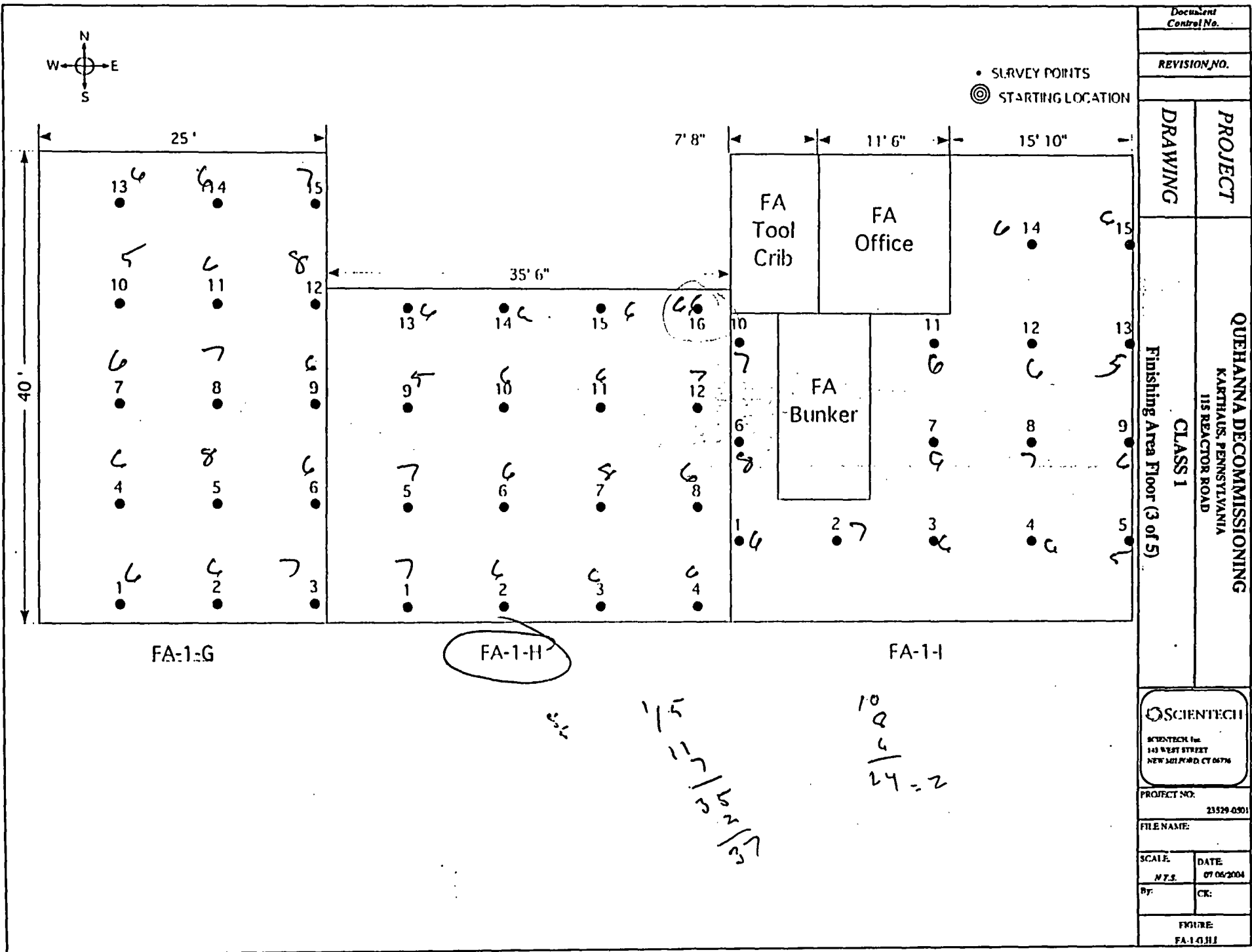
Date: 12-16-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**FA-1-H      Finishing Area**



FA-1-H

Log #
89 Source
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105

	X	Y
	n/a	n/a
1	7.1	1.3
2	15.6	1.3
3	24.1	1.3
4	32.6	1.3
5	7.1	9.8
6	15.6	9.8
7	24.1	9.8
8	32.6	9.8
9	7.1	18.3
10	15.6	18.3
11	24.1	18.3
12	32.6	18.3
13	7.1	26.8
14	15.6	26.8
15	24.1	26.8
16	32.6	26.8

L (ft)= 8.5

A (ft²)= 1012

$\alpha + \beta$

	Fixed Points	Ave. (Scan)	Max. (Scan)
		n/a	n/a
32.1	276	280	320
40.6	318	320	340
49.1	289	280	320
57.6	287	280	320
32.1	259	260	300
40.6	244	240	280
49.1	230	240	280
57.6	250	240	280
32.1	242	240	280
40.6	279	280	320
49.1	294	300	340
57.6	309	300	340
Metal 32.1	163	160	180
Metal 40.6	159	160	186
Metal 49.1	141	140	160
Metal 57.6	175	140	160

89-BKGD

Ludlum Measurements, Inc.  
Model 2360 Log Data

12/15/2004  
2:04:48 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FA-1-A - L  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/15/2004  
Model 2360 Time: 13:53:13  
Sample Number: 0141

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Count Time - Count Time  
Ratemeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/15/04	07:22:18	000000	000169	S 001.0	Lab Background
0002	12/15/04	07:24:47	000002	034127	S 001.0	Lab Source
0003	12/15/04	09:24:19	000000	000231	S 001.0	Field Background
0004	12/15/04	09:25:57	000000	001660	S 001.0	Field Source
0005	12/15/04	09:28:03	000000	000223	S 001.0	FA-1-A
0006	12/15/04	09:29:25	000001	000223	S 001.0	FA-1-A
0007	12/15/04	09:30:37	000000	000323	S 001.0	FA-1-A
0008	12/15/04	09:31:58	000000	000240	S 001.0	FA-1-A
0009	12/15/04	09:33:21	000000	000199	S 001.0	FA-1-A
0010	12/15/04	09:34:35	000000	000285	S 001.0	FA-1-A
0011	12/15/04	09:35:49	000000	000243	S 001.0	FA-1-A
0012	12/15/04	09:37:06	000001	000270	S 001.0	FA-1-A
0013	12/15/04	09:38:37	000000	000260	S 001.0	FA-1-A
0014	12/15/04	09:40:00	000000	000190	S 001.0	FA-1-A
0015	12/15/04	09:41:24	000001	000263	S 001.0	FA-1-A
0016	12/15/04	09:42:48	000002	000229	S 001.0	FA-1-A
0017	12/15/04	09:44:08	000001	000229	S 001.0	FA-1-A
0018	12/15/04	09:45:19	000000	000245	S 001.0	FA-1-A
0019	12/15/04	09:46:46	000002	000236	S 001.0	FA-1-A
0020	12/15/04	09:50:07	000000	001818	S 001.0	Field Source
0021	12/15/04	09:51:25	000000	000232	S 001.0	Field Background
0022	12/15/04	09:52:30	000003	000248	S 001.0	FA-1-B
0023	12/15/04	09:53:37	000002	000249	S 001.0	FA-1-B
0024	12/15/04	09:55:03	000000	000275	S 001.0	FA-1-B
0025	12/15/04	09:58:18	000006	000331	S 001.0	FA-1-B
0026	12/15/04	09:59:40	000001	000257	S 001.0	FA-1-B
0027	12/15/04	10:02:17	000003	000223	S 001.0	FA-1-B
0028	12/15/04	10:12:26	000001	000352	S 001.0	FA-1-B
0029	12/15/04	10:13:52	000001	000307	S 001.0	FA-1-B
0030	12/15/04	10:15:39	000002	000291	S 001.0	FA-1-B
0031	12/15/04	10:17:23	000001	000255	S 001.0	FA-1-B
0032	12/15/04	10:19:32	000001	000248	S 001.0	FA-1-B
0033	12/15/04	10:21:05	000000	000256	S 001.0	FA-1-B
0034	12/15/04	10:23:37	000000	000286	S 001.0	FA-1-B

0035 12/15/04 10:24:51 000001 000289 S 001.0 FA-1-B  
0036 12/15/04 10:26:21 000002 000240 S 001.0 FA-1-B  
0037 12/15/04 10:28:25 000001 000213 S 001.0 Field Background  
0038 12/15/04 10:30:01 000000 001104 S 001.0 Field Source  
0039 12/15/04 10:31:23 000000 000109 S 001.0 FA-1-C  
0040 12/15/04 10:32:36 000000 000153 S 001.0 FA-1-C  
0041 12/15/04 10:33:57 000000 000182 S 001.0 FA-1-C  
0042 12/15/04 10:35:18 000000 000269 S 001.0 FA-1-C  
0043 12/15/04 10:36:49 000002 000242 S 001.0 FA-1-C  
0044 12/15/04 10:38:12 000002 000259 S 001.0 FA-1-C  
0045 12/15/04 10:39:27 000001 000195 S 001.0 FA-1-C  
0046 12/15/04 10:40:50 000000 000229 S 001.0 FA-1-C  
0047 12/15/04 10:42:04 000000 000199 S 001.0 FA-1-C  
0048 12/15/04 10:43:26 000002 000193 S 001.0 FA-1-C  
0049 12/15/04 10:44:48 000000 000254 S 001.0 FA-1-C  
0050 12/15/04 10:46:27 000000 000318 S 001.0 FA-1-C  
0051 12/15/04 10:47:48 000001 000289 S 001.0 FA-1-C  
0052 12/15/04 10:49:03 000000 000330 S 001.0 FA-1-C  
0053 12/15/04 10:50:31 000001 000295 S 001.0 FA-1-C  
0054 12/15/04 10:52:39 000001 000224 S 001.0 Field Background  
0055 12/15/04 10:54:05 000002 002021 S 001.0 Field Source  
0056 12/15/04 10:56:31 000000 000154 S 001.0 FA-1-D  
0057 12/15/04 10:58:02 000000 000223 S 001.0 FA-1-D  
0058 12/15/04 10:59:18 000001 000252 S 001.0 FA-1-D  
0059 12/15/04 11:00:43 000002 000246 S 001.0 FA-1-D  
0060 12/15/04 11:02:02 000002 000237 S 001.0 FA-1-D  
0061 12/15/04 11:03:21 000001 000239 S 001.0 FA-1-D  
0062 12/15/04 11:05:19 000001 000231 S 001.0 FA-1-D  
0063 12/15/04 11:06:40 000002 000212 S 001.0 FA-1-D  
0064 12/15/04 11:08:00 000000 000225 S 001.0 FA-1-D  
0065 12/15/04 11:09:17 000001 000218 S 001.0 FA-1-D  
0066 12/15/04 11:10:30 000001 000195 S 001.0 FA-1-D  
0067 12/15/04 11:11:47 000000 000218 S 001.0 FA-1-D  
0068 12/15/04 11:13:15 000001 000242 S 001.0 FA-1-D  
0069 12/15/04 11:14:58 000000 000253 S 001.0 FA-1-D  
0070 12/15/04 11:16:07 000001 000256 S 001.0 FA-1-D  
0071 12/15/04 11:59:41 000000 000214 S 001.0 Field Background  
0072 12/15/04 12:01:20 000001 001828 S 001.0 Field Source  
0073 12/15/04 12:02:43 000001 000213 S 001.0 FA-1-G  
0074 12/15/04 12:04:02 000000 000235 S 001.0 FA-1-G  
0075 12/15/04 12:05:07 000000 000226 S 001.0 FA-1-G  
0076 12/15/04 12:06:13 000000 000213 S 001.0 FA-1-G  
0077 12/15/04 12:08:02 000001 000202 S 001.0 FA-1-G  
0078 12/15/04 12:09:25 000000 000247 S 001.0 FA-1-G  
0079 12/15/04 12:10:55 000001 000240 S 001.0 FA-1-G  
0080 12/15/04 12:12:08 000001 000244 S 001.0 FA-1-G  
0081 12/15/04 12:13:22 000001 000252 S 001.0 FA-1-G  
0082 12/15/04 12:14:48 000002 000274 S 001.0 FA-1-G  
0083 12/15/04 12:16:00 000002 000245 S 001.0 FA-1-G  
0084 12/15/04 12:17:08 000000 000251 S 001.0 FA-1-G  
0085 12/15/04 12:18:42 000001 000281 S 001.0 FA-1-G  
0086 12/15/04 12:19:48 000001 000310 S 001.0 FA-1-G  
0087 12/15/04 12:23:24 000002 000335 S 001.0 FA-1-G  
0088 12/15/04 12:25:26 000001 001984 S 001.0 Field Source  
0089 12/15/04 12:29:52 000000 000293 S 001.0 Field Background  
0090 12/15/04 12:31:44 000004 000272 S 001.0 FA-1-H  
0091 12/15/04 12:33:17 000001 000317 S 001.0 FA-1-H  
0092 12/15/04 12:34:36 000000 000289 S 001.0 FA-1-H  
0093 12/15/04 12:35:58 000000 000287 S 001.0 FA-1-H  
0094 12/15/04 12:37:21 000001 000258 S 001.0 FA-1-H  
0095 12/15/04 12:38:36 000003 000243 S 001.0 FA-1-H  
0096 12/15/04 12:39:57 000002 000228 S 001.0 FA-1-H  
0097 12/15/04 12:41:14 000000 000250 S 001.0 FA-1-H  
0098 12/15/04 12:43:02 000002 000240 S 001.0 FA-1-H  
0099 12/15/04 12:44:24 000001 000278 S 001.0 FA-1-H  
0100 12/15/04 12:45:43 000000 000296 S 001.0 FA-1-H  
0101 12/15/04 12:47:42 000001 000308 S 001.0 FA-1-H  
0102 12/15/04 12:49:30 000002 000161 S 001.0 FA-1-H  
0103 12/15/04 12:51:01 000001 000158 S 001.0 FA-1-H  
0104 12/15/04 12:52:07 000000 000141 S 001.0 FA-1-H  
0105 12/15/04 12:53:15 000000 000135 S 001.0 FA-1-H  
0106 12/15/04 12:55:42 000000 001615 S 001.0 Field Source  
0107 12/15/04 12:57:27 000001 000284 S 001.0 Field Background  
0108 12/15/04 12:58:36 000001 000314 S 001.0 FA-1-I  
0109 12/15/04 13:02:20 000000 000270 S 001.0 FA-1-I  
0110 12/15/04 13:03:35 000000 000313 S 001.0 FA-1-I  
0111 12/15/04 13:04:59 000000 000349 S 001.0 FA-1-I  
0112 12/15/04 13:06:37 000000 000282 S 001.0 FA-1-I  
0113 12/15/04 13:08:29 000000 000272 S 001.0 FA-1-I  
0114 12/15/04 13:09:36 000001 000321 S 001.0 FA-1-I  
0115 12/15/04 13:10:45 000000 000280 S 001.0 FA-1-I  
0116 12/15/04 13:11:52 000000 000318 S 001.0 FA-1-I  
0117 12/15/04 13:13:03 000000 000282 S 001.0 FA-1-I  
0118 12/15/04 13:14:17 000000 000301 S 001.0 FA-1-I  
0119 12/15/04 13:15:35 000001 000301 S 001.0 FA-1-I

FA-1-H

0120 12/15/04 13:16:43 000003 000299 S 001.0 FA-1-I  
0121 12/15/04 13:18:17 000000 000309 S 001.0 FA-1-I  
0122 12/15/04 13:19:33 000001 000295 S 001.0 FA-1-I  
0123 12/15/04 13:21:36 000000 001795 S 001.0 Field Source  
0124 12/15/04 13:23:29 000000 000284 S 001.0 Field Background  
0125 12/15/04 13:24:34 000001 000308 S 001.0 FA-1-L  
0126 12/15/04 13:25:51 000000 000313 S 001.0 FA-1-L  
0127 12/15/04 13:27:13 000002 000288 S 001.0 FA-1-L  
0128 12/15/04 13:29:35 000000 000275 S 001.0 FA-1-L  
0129 12/15/04 13:31:33 000001 000314 S 001.0 FA-1-L  
0130 12/15/04 13:32:47 000002 000278 S 001.0 FA-1-L  
0131 12/15/04 13:35:11 000001 000289 S 001.0 FA-1-L  
0132 12/15/04 13:36:58 000001 000288 S 001.0 FA-1-L  
0133 12/15/04 13:38:17 000002 000314 S 001.0 FA-1-L  
0134 12/15/04 13:39:54 000001 000277 S 001.0 FA-1-L  
0135 12/15/04 13:41:01 000001 000261 S 001.0 FA-1-L  
0136 12/15/04 13:42:27 000000 000254 S 001.0 FA-1-L  
0137 12/15/04 13:44:15 000000 000238 S 001.0 FA-1-L  
0138 12/15/04 13:45:56 000002 000278 S 001.0 FA-1-L  
0139 12/15/04 13:47:09 000000 000216 S 001.0 FA-1-L  
0140 12/15/04 13:48:40 000000 001877 S 001.0 Field Source  
S



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
50	Smear 5	12/15/04	15:26:46	FA-1-D	FSS	12/15/04	15:26:46	1.000	1.00
51	Smear 6	12/15/04	15:25:26	FA-1-D	FSS	12/15/04	15:25:26	1.000	1.00
52	Smear 7	12/15/04	15:24:06	FA-1-D	FSS	12/15/04	15:24:06	1.000	1.00
53	Smear 8	12/15/04	15:22:46	FA-1-D	FSS	12/15/04	15:22:46	1.000	1.00
54	Smear 9	12/15/04	15:21:26	FA-1-D	FSS	12/15/04	15:21:26	1.000	1.00
55	Smear 10	12/15/04	15:20:06	FA-1-D	FSS	12/15/04	15:20:06	1.000	1.00
56	Smear 11	12/15/04	15:18:46	FA-1-D	FSS	12/15/04	15:18:46	1.000	1.00
57	Smear 12	12/15/04	15:17:26	FA-1-D	FSS	12/15/04	15:17:26	1.000	1.00
58	Smear 13	12/15/04	15:16:06	FA-1-D	FSS	12/15/04	15:16:06	1.000	1.00
59	Smear 14	12/15/04	15:14:46	FA-1-D	FSS	12/15/04	15:14:46	1.000	1.00
60	Smear 15	12/15/04	15:13:26	FA-1-D	FSS	12/15/04	15:13:26	1.000	1.00
61	Smear 1	12/15/04	15:12:06	FA-1-G	FSS	12/15/04	15:12:06	1.000	1.00
62	Smear 2	12/15/04	15:10:46	FA-1-G	FSS	12/15/04	15:10:46	1.000	1.00
63	Smear 3	12/15/04	15:09:26	FA-1-G	FSS	12/15/04	15:09:26	1.000	1.00
64	Smear 4	12/15/04	15:08:06	FA-1-G	FSS	12/15/04	15:08:06	1.000	1.00
65	Smear 5	12/15/04	15:06:45	FA-1-G	FSS	12/15/04	15:06:45	1.000	1.00
66	Smear 6	12/15/04	15:05:25	FA-1-G	FSS	12/15/04	15:05:25	1.000	1.00
67	Smear 7	12/15/04	15:04:05	FA-1-G	FSS	12/15/04	15:04:05	1.000	1.00
68	Smear 8	12/15/04	15:02:45	FA-1-G	FSS	12/15/04	15:02:45	1.000	1.00
69	Smear 9	12/15/04	15:01:25	FA-1-G	FSS	12/15/04	15:01:25	1.000	1.00
70	Smear 10	12/15/04	15:00:05	FA-1-G	FSS	12/15/04	15:00:05	1.000	1.00
71	Smear 11	12/15/04	14:58:45	FA-1-G	FSS	12/15/04	14:58:45	1.000	1.00
72	Smear 12	12/15/04	14:57:25	FA-1-G	FSS	12/15/04	14:57:25	1.000	1.00
73	Smear 13	12/15/04	14:56:06	FA-1-G	FSS	12/15/04	14:56:06	1.000	1.00
74	Smear 14	12/15/04	14:54:46	FA-1-G	FSS	12/15/04	14:54:46	1.000	1.00
75	Smear 15	12/15/04	14:53:26	FA-1-G	FSS	12/15/04	14:53:26	1.000	1.00
76	Smear 1	12/15/04	14:52:06	FA-1-H	FSS	12/15/04	14:52:06	1.000	1.00
77	Smear 2	12/15/04	14:50:46	FA-1-H	FSS	12/15/04	14:50:46	1.000	1.00
78	Smear 3	12/15/04	14:49:26	FA-1-H	FSS	12/15/04	14:49:26	1.000	1.00
79	Smear 4	12/15/04	14:48:06	FA-1-H	FSS	12/15/04	14:48:06	1.000	1.00
80	Smear 5	12/15/04	14:46:46	FA-1-H	FSS	12/15/04	14:46:46	1.000	1.00
81	Smear 6	12/15/04	14:45:26	FA-1-H	FSS	12/15/04	14:45:26	1.000	1.00
82	Smear 7	12/15/04	14:44:06	FA-1-H	FSS	12/15/04	14:44:06	1.000	1.00
83	Smear 8	12/15/04	14:42:46	FA-1-H	FSS	12/15/04	14:42:46	1.000	1.00
84	Smear 9	12/15/04	14:41:26	FA-1-H	FSS	12/15/04	14:41:26	1.000	1.00
85	Smear 10	12/15/04	14:40:06	FA-1-H	FSS	12/15/04	14:40:06	1.000	1.00
86	Smear 11	12/15/04	14:38:46	FA-1-H	FSS	12/15/04	14:38:46	1.000	1.00
87	Smear 12	12/15/04	14:37:26	FA-1-H	FSS	12/15/04	14:37:26	1.000	1.00
88	Smear 13	12/15/04	14:36:06	FA-1-H	FSS	12/15/04	14:36:06	1.000	1.00
89	Smear 14	12/15/04	14:34:47	FA-1-H	FSS	12/15/04	14:34:47	1.000	1.00
90	Smear 15	12/15/04	14:33:27	FA-1-H	FSS	12/15/04	14:33:27	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): 

Date: 12-15-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): 

Date: 

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %Eff: 44.6 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
50	Smear 5	12/15/04	15:26:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
51	Smear 6	12/15/04	15:25:26	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
52	Smear 7	12/15/04	15:24:06	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
53	Smear 8	12/15/04	15:22:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
54	Smear 9	12/15/04	15:21:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
55	Smear 10	12/15/04	15:20:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
56	Smear 11	12/15/04	15:18:46	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
57	Smear 12	12/15/04	15:17:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
58	Smear 13	12/15/04	15:16:06	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
59	Smear 14	12/15/04	15:14:46	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
60	Smear 15	12/15/04	15:13:26	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
61	Smear 1	12/15/04	15:12:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
62	Smear 2	12/15/04	15:10:46	1.00	0.97	4.04	13.87	1.00	0.57	1.27	11.01
63	Smear 3	12/15/04	15:09:26	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
64	Smear 4	12/15/04	15:08:06	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
65	Smear 5	12/15/04	15:06:46	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
66	Smear 6	12/15/04	15:05:25	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
67	Smear 7	12/15/04	15:04:05	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
68	Smear 8	12/15/04	15:02:45	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
69	Smear 9	12/15/04	15:01:25	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
70	Smear 10	12/15/04	15:00:05	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
71	Smear 11	12/15/04	14:58:45	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
72	Smear 12	12/15/04	14:57:25	0.00	-0.03	-0.14	13.87	4.00	3.57	8.00	11.01
73	Smear 13	12/15/04	14:56:06	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
74	Smear 14	12/15/04	14:54:46	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
75	Smear 15	12/15/04	14:53:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
76	Smear 1	12/15/04	14:52:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
77	Smear 2	12/15/04	14:50:46	0.00	-0.03	-0.14	13.87	5.00	4.57	10.24	11.01
78	Smear 3	12/15/04	14:49:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
79	Smear 4	12/15/04	14:48:06	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
80	Smear 5	12/15/04	14:46:46	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
81	Smear 6	12/15/04	14:45:26	0.00	-0.03	-0.14	13.87	7.00	6.57	14.72	11.01
82	Smear 7	12/15/04	14:44:06	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
83	Smear 8	12/15/04	14:42:46	1.00	0.97	4.04	13.87	3.00	2.57	5.75	11.01
84	Smear 9	12/15/04	14:41:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
85	Smear 10	12/15/04	14:40:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
86	Smear 11	12/15/04	14:38:46	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
87	Smear 12	12/15/04	14:37:26	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
88	Smear 13	12/15/04	14:36:06	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
89	Smear 14	12/15/04	14:34:47	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
90	Smear 15	12/15/04	14:33:27	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01

Technician (print): Chris Higgins

Technician (sign): *CH*

Date: 12-16-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**FA-1-I      Finishing Area**



FA-1-I

$\alpha + \beta$

$\gamma$

Log #
106 Source
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122

	X	Y
	n/a	n/a
1	0.8	6.9
2	9.3	6.9
3	17.8	6.9
4	26.3	6.9
5	34.8	6.9
6	0.8	15.4
7	17.8	15.4
8	26.3	15.4
9	34.8	15.4
10	0.8	23.9
11	17.8	23.9
12	26.3	23.9
13	34.8	23.9
14	26.3	32.4
15	34.8	32.4

L (ft) = 8.5

A (ft<sup>2</sup>) = 1013

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
315	320	340
270	260	280
312	320	340
349	340	360
282	280	320
272	280	320
322	320	360
280	<del>300</del> 280	320
318	320	360
292	280	320
301	300	320
<del>303</del>	300	320
302	300	320
309	300	320
294	300	320

302

107-B KG D

17  
9  
3  
17

15  
20

137  
117

143  
117  
134

122  
117  
9

Ludlum Measurements, Inc.  
Model 2360 Log Data

12/15/2004  
12:04:48 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FA-1-A - L  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/15/2004  
Model 2360 Time: 13:53:13  
Sample Number: 0141

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
F meter  
S ler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/15/04	07:22:18	000000	000169	S 001.0	Lab Background
0002	12/15/04	07:24:47	000002	034127	S 001.0	Lab Source
0003	12/15/04	09:24:19	000000	000231	S 001.0	Field Background
0004	12/15/04	09:25:57	000000	001660	S 001.0	Field Source
0005	12/15/04	09:28:03	000000	000223	S 001.0	FA-1-A
0006	12/15/04	09:29:25	000001	000223	S 001.0	FA-1-A
0007	12/15/04	09:30:37	000000	000323	S 001.0	FA-1-A
0008	12/15/04	09:31:58	000000	000240	S 001.0	FA-1-A
0009	12/15/04	09:33:21	000000	000199	S 001.0	FA-1-A
0010	12/15/04	09:34:35	000000	000285	S 001.0	FA-1-A
0011	12/15/04	09:35:49	000000	000243	S 001.0	FA-1-A
0012	12/15/04	09:37:06	000001	000270	S 001.0	FA-1-A
0013	12/15/04	09:38:37	000000	000260	S 001.0	FA-1-A
0014	12/15/04	09:40:00	000000	000190	S 001.0	FA-1-A
0015	12/15/04	09:41:24	000001	000263	S 001.0	FA-1-A
0016	12/15/04	09:42:48	000002	000229	S 001.0	FA-1-A
0017	12/15/04	09:44:08	000001	000229	S 001.0	FA-1-A
0018	12/15/04	09:45:19	000000	000245	S 001.0	FA-1-A
0019	12/15/04	09:46:46	000002	000236	S 001.0	FA-1-A
0020	12/15/04	09:50:07	000000	001818	S 001.0	Field Source
0021	12/15/04	09:51:25	000000	000232	S 001.0	Field Background
0022	12/15/04	09:52:30	000003	000248	S 001.0	FA-1-B
0023	12/15/04	09:53:37	000002	000249	S 001.0	FA-1-B
0024	12/15/04	09:55:03	000000	000275	S 001.0	FA-1-B
0025	12/15/04	09:58:18	000006	000331	S 001.0	FA-1-B
0026	12/15/04	09:59:40	000001	000257	S 001.0	FA-1-B
0027	12/15/04	10:02:17	000003	000223	S 001.0	FA-1-B
0028	12/15/04	10:12:26	000001	000352	S 001.0	FA-1-B
0029	12/15/04	10:13:52	000001	000307	S 001.0	FA-1-B
0030	12/15/04	10:15:39	000002	000291	S 001.0	FA-1-B
0031	12/15/04	10:17:23	000001	000255	S 001.0	FA-1-B
0032	12/15/04	10:19:32	000001	000248	S 001.0	FA-1-B
0033	12/15/04	10:21:05	000000	000256	S 001.0	FA-1-B
0034	12/15/04	10:23:37	000000	000256	S 001.0	FA-1-B

0035 12/15/04 10:24:51 000001 000289 S 001.0 FA-1-B  
0036 12/15/04 10:26:21 000002 000240 S 001.0 FA-1-B  
0037 12/15/04 10:28:25 000001 000213 S 001.0 Field Background  
0038 12/15/04 10:30:01 000000 001104 S 001.0 Field Source  
0039 12/15/04 10:31:23 000000 000109 S 001.0 FA-1-C  
0040 12/15/04 10:32:36 000000 000153 S 001.0 FA-1-C  
0041 12/15/04 10:33:57 000000 000182 S 001.0 FA-1-C  
0042 12/15/04 10:35:18 000000 000269 S 001.0 FA-1-C  
0043 12/15/04 10:36:49 000002 000242 S 001.0 FA-1-C  
0044 12/15/04 10:38:12 000002 000259 S 001.0 FA-1-C  
0045 12/15/04 10:39:27 000001 000195 S 001.0 FA-1-C  
0046 12/15/04 10:40:50 000000 000229 S 001.0 FA-1-C  
0047 12/15/04 10:42:04 000000 000199 S 001.0 FA-1-C  
0048 12/15/04 10:43:26 000002 000193 S 001.0 FA-1-C  
0049 12/15/04 10:44:48 000000 000254 S 001.0 FA-1-C  
0050 12/15/04 10:46:27 000000 000318 S 001.0 FA-1-C  
0051 12/15/04 10:47:48 000001 000289 S 001.0 FA-1-C  
0052 12/15/04 10:49:03 000000 000330 S 001.0 FA-1-C  
0053 12/15/04 10:50:31 000001 000295 S 001.0 FA-1-C  
0054 12/15/04 10:52:39 000001 000224 S 001.0 Field Background  
0055 12/15/04 10:54:05 000002 000201 S 001.0 Field Source  
0056 12/15/04 10:56:31 000000 000154 S 001.0 FA-1-D  
0057 12/15/04 10:58:02 000000 000223 S 001.0 FA-1-D  
0058 12/15/04 10:59:18 000001 000252 S 001.0 FA-1-D  
0059 12/15/04 11:00:43 000002 000246 S 001.0 FA-1-D  
0060 12/15/04 11:02:02 000002 000237 S 001.0 FA-1-D  
0061 12/15/04 11:03:21 000001 000239 S 001.0 FA-1-D  
0062 12/15/04 11:05:19 000001 000231 S 001.0 FA-1-D  
0063 12/15/04 11:06:40 000002 000212 S 001.0 FA-1-D  
0064 12/15/04 11:08:00 000000 000225 S 001.0 FA-1-D  
0065 12/15/04 11:09:17 000001 000218 S 001.0 FA-1-D  
0066 12/15/04 11:10:30 000001 000195 S 001.0 FA-1-D  
0067 12/15/04 11:11:47 000000 000218 S 001.0 FA-1-D  
0068 12/15/04 11:13:15 000001 000242 S 001.0 FA-1-D  
0069 12/15/04 11:14:58 000000 000253 S 001.0 FA-1-D  
0070 12/15/04 11:16:07 000001 000256 S 001.0 FA-1-D  
0071 12/15/04 11:59:41 000000 000214 S 001.0 Field Background  
0072 12/15/04 12:01:20 000001 001828 S 001.0 Field Source  
0073 12/15/04 12:02:43 000001 000213 S 001.0 FA-1-G  
0074 12/15/04 12:04:02 000000 000235 S 001.0 FA-1-G  
0075 12/15/04 12:05:07 000000 000226 S 001.0 FA-1-G  
0076 12/15/04 12:06:13 000000 000213 S 001.0 FA-1-G  
0077 12/15/04 12:08:02 000001 000202 S 001.0 FA-1-G  
0078 12/15/04 12:09:25 000000 000247 S 001.0 FA-1-G  
0079 12/15/04 12:10:55 000001 000240 S 001.0 FA-1-G  
0080 12/15/04 12:12:08 000001 000244 S 001.0 FA-1-G  
0081 12/15/04 12:13:22 000001 000252 S 001.0 FA-1-G  
0082 12/15/04 12:14:48 000002 000274 S 001.0 FA-1-G  
0083 12/15/04 12:16:00 000002 000245 S 001.0 FA-1-G  
0084 12/15/04 12:17:08 000000 000251 S 001.0 FA-1-G  
0085 12/15/04 12:18:42 000001 000281 S 001.0 FA-1-G  
0086 12/15/04 12:19:48 000001 000310 S 001.0 FA-1-G  
0087 12/15/04 12:23:24 000002 000335 S 001.0 FA-1-G  
0088 12/15/04 12:25:26 000001 001984 S 001.0 Field Source  
0089 12/15/04 12:29:52 000000 000293 S 001.0 Field Background  
0090 12/15/04 12:31:44 000004 000272 S 001.0 FA-1-H  
0091 12/15/04 12:33:17 000001 000317 S 001.0 FA-1-H  
0092 12/15/04 12:34:36 000000 000289 S 001.0 FA-1-H  
0093 12/15/04 12:35:58 000000 000287 S 001.0 FA-1-H  
0094 12/15/04 12:37:21 000001 000258 S 001.0 FA-1-H  
0095 12/15/04 12:38:36 000003 000243 S 001.0 FA-1-H  
0096 12/15/04 12:39:57 000002 000228 S 001.0 FA-1-H  
0097 12/15/04 12:41:14 000000 000250 S 001.0 FA-1-H  
0098 12/15/04 12:43:02 000002 000240 S 001.0 FA-1-H  
0099 12/15/04 12:44:24 000001 000278 S 001.0 FA-1-H  
0100 12/15/04 12:45:43 000000 000296 S 001.0 FA-1-H  
0101 12/15/04 12:47:42 000001 000308 S 001.0 FA-1-H  
0102 12/15/04 12:49:30 000002 000161 S 001.0 FA-1-H  
0103 12/15/04 12:51:01 000001 000158 S 001.0 FA-1-H  
0104 12/15/04 12:52:07 000000 000141 S 001.0 FA-1-H  
0105 12/15/04 12:53:15 000000 000135 S 001.0 FA-1-H  
0106 12/15/04 12:55:42 000000 001615 S 001.0 Field Source  
0107 12/15/04 12:57:27 000001 000284 S 001.0 Field Background  
0108 12/15/04 12:58:36 000001 000314 S 001.0 FA-1-I  
0109 12/15/04 13:02:20 000000 000270 S 001.0 FA-1-I  
0110 12/15/04 13:03:35 000000 000313 S 001.0 FA-1-I  
0111 12/15/04 13:04:59 000000 000349 S 001.0 FA-1-I  
0112 12/15/04 13:06:37 000000 000282 S 001.0 FA-1-I  
0113 12/15/04 13:08:29 000000 000272 S 001.0 FA-1-I  
0114 12/15/04 13:09:36 000001 000321 S 001.0 FA-1-I  
0115 12/15/04 13:10:45 000000 000280 S 001.0 FA-1-I  
0116 12/15/04 13:11:52 000000 000318 S 001.0 FA-1-I  
0117 12/15/04 13:13:03 000000 000282 S 001.0 FA-1-I  
0118 12/15/04 13:14:17 000000 000301 S 001.0 FA-1-I  
0119 12/15/04 13:15:35 000001 000301 S 001.0 FA-1-I

0120 12/15/04 13:16:43 000003 000299 S 001.0 FA-1-I  
0121 12/15/04 13:18:17 000000 000309 S 001.0 FA-1-I  
0122 12/15/04 13:19:33 000001 000295 S 001.0 FA-1-I  
0123 12/15/04 13:21:36 000000 001795 S 001.0 Field Source  
0124 12/15/04 13:23:29 000000 000284 S 001.0 Field Background  
0125 12/15/04 13:24:34 000001 000308 S 001.0 FA-1-L  
0126 12/15/04 13:25:51 000000 000313 S 001.0 FA-1-L  
0127 12/15/04 13:27:13 000002 000288 S 001.0 FA-1-L  
0128 12/15/04 13:29:35 000000 000275 S 001.0 FA-1-L  
0129 12/15/04 13:31:33 000001 000314 S 001.0 FA-1-L  
0130 12/15/04 13:32:47 000002 000278 S 001.0 FA-1-L  
0131 12/15/04 13:35:11 000001 000289 S 001.0 FA-1-L  
0132 12/15/04 13:36:58 000001 000288 S 001.0 FA-1-L  
0133 12/15/04 13:38:17 000002 000314 S 001.0 FA-1-L  
0134 12/15/04 13:39:54 000001 000277 S 001.0 FA-1-L  
0135 12/15/04 13:41:01 000001 000261 S 001.0 FA-1-L  
0136 12/15/04 13:42:27 000000 000254 S 001.0 FA-1-L  
0137 12/15/04 13:44:15 000000 000238 S 001.0 FA-1-L  
0138 12/15/04 13:45:56 000002 000278 S 001.0 FA-1-L  
0139 12/15/04 13:47:09 000000 000216 S 001.0 FA-1-L  
0140 12/15/04 13:48:40 000000 001877 S 001.0 Field Source  
S



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/16/04	9:14:31	FA-1-I	Final Staus Survey	12/16/04	9:14:31	1.000	1.00
2	Smear 2	12/16/04	9:13:11	FA-1-I	Final Staus Survey	12/16/04	9:13:11	1.000	1.00
3	Smear 3	12/16/04	9:11:50	FA-1-I	Final Staus Survey	12/16/04	9:11:50	1.000	1.00
4	Smear 4	12/16/04	9:10:30	FA-1-I	Final Staus Survey	12/16/04	9:10:30	1.000	1.00
5	Smear 5	12/16/04	9:09:10	FA-1-I	Final Staus Survey	12/16/04	9:09:10	1.000	1.00
6	Smear 6	12/16/04	9:07:50	FA-1-I	Final Staus Survey	12/16/04	9:07:50	1.000	1.00
7	Smear 7	12/16/04	9:06:30	FA-1-I	Final Staus Survey	12/16/04	9:06:30	1.000	1.00
8	Smear 8	12/16/04	9:05:10	FA-1-I	Final Staus Survey	12/16/04	9:05:10	1.000	1.00
9	Smear 9	12/16/04	9:03:50	FA-1-I	Final Staus Survey	12/16/04	9:03:50	1.000	1.00
10	Smear 10	12/16/04	9:02:30	FA-1-I	Final Staus Survey	12/16/04	9:02:30	1.000	1.00
11	Smear 11	12/16/04	9:01:10	FA-1-I	Final Staus Survey	12/16/04	9:01:10	1.000	1.00
12	Smear 12	12/16/04	8:59:50	FA-1-I	Final Staus Survey	12/16/04	8:59:50	1.000	1.00
13	Smear 13	12/16/04	8:58:30	FA-1-I	Final Staus Survey	12/16/04	8:58:30	1.000	1.00
14	Smear 14	12/16/04	8:57:10	FA-1-I	Final Staus Survey	12/16/04	8:57:10	1.000	1.00
15	Smear 15	12/16/04	8:55:50	FA-1-I	Final Staus Survey	12/16/04	8:55:50	1.000	1.00
16	Smear 1	12/16/04	8:54:30	FA-1-L	Final Staus Survey	12/16/04	8:54:30	1.000	1.00
17	Smear 2	12/16/04	8:53:10	FA-1-L	Final Staus Survey	12/16/04	8:53:10	1.000	1.00
18	Smear 3	12/16/04	8:51:50	FA-1-L	Final Staus Survey	12/16/04	8:51:50	1.000	1.00
19	Smear 4	12/16/04	8:50:30	FA-1-L	Final Staus Survey	12/16/04	8:50:30	1.000	1.00
20	Smear 5	12/16/04	8:49:10	FA-1-L	Final Staus Survey	12/16/04	8:49:10	1.000	1.00
21	Smear 6	12/16/04	8:47:50	FA-1-L	Final Staus Survey	12/16/04	8:47:50	1.000	1.00
22	Smear 7	12/16/04	8:46:30	FA-1-L	Final Staus Survey	12/16/04	8:46:30	1.000	1.00
23	Smear 8	12/16/04	8:45:10	FA-1-L	Final Staus Survey	12/16/04	8:45:10	1.000	1.00
24	Smear 9	12/16/04	8:43:50	FA-1-L	Final Staus Survey	12/16/04	8:43:50	1.000	1.00
25	Smear 10	12/16/04	8:42:30	FA-1-L	Final Staus Survey	12/16/04	8:42:30	1.000	1.00
26	Smear 11	12/16/04	8:41:10	FA-1-L	Final Staus Survey	12/16/04	8:41:10	1.000	1.00
27	Smear 12	12/16/04	8:39:50	FA-1-L	Final Staus Survey	12/16/04	8:39:50	1.000	1.00
28	Smear 13	12/16/04	8:38:30	FA-1-L	Final Staus Survey	12/16/04	8:38:30	1.000	1.00
29	Smear 14	12/16/04	8:37:10	FA-1-L	Final Staus Survey	12/16/04	8:37:10	1.000	1.00
30	Smear 15	12/16/04	8:35:50	FA-1-L	Final Staus Survey	12/16/04	8:35:50	1.000	1.00

FA-1-I

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Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12 '04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %Eff: 44.8 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/16/04	9:14:31	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
2	Smear 2	12/16/04	9:13:11	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
3	Smear 3	12/16/04	9:11:50	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
4	Smear 4	12/16/04	9:10:30	0.00	-0.03	-0.14	13.87	5.00	4.57	10.24	11.01
5	Smear 5	12/16/04	9:09:10	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
6	Smear 6	12/16/04	9:07:50	0.00	-0.03	-0.14	13.87	6.00	5.57	12.48	11.01
7	Smear 7	12/16/04	9:06:30	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
8	Smear 8	12/16/04	9:05:10	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
9	Smear 9	12/16/04	9:03:50	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
10	Smear 10	12/16/04	9:02:30	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
11	Smear 11	12/16/04	9:01:10	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
12	Smear 12	12/16/04	8:59:50	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
13	Smear 13	12/16/04	8:58:30	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
14	Smear 14	12/16/04	8:57:10	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
15	Smear 15	12/16/04	8:55:50	0.00	-0.03	-0.14	13.87	7.00	6.57	14.72	11.01
16	Smear 1	12/16/04	8:54:30	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
17	Smear 2	12/16/04	8:53:10	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
18	Smear 3	12/16/04	8:51:50	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
19	Smear 4	12/16/04	8:50:30	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
20	Smear 5	12/16/04	8:49:10	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
21	Smear 6	12/16/04	8:47:50	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
22	Smear 7	12/16/04	8:46:30	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
23	Smear 8	12/16/04	8:45:10	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
24	Smear 9	12/16/04	8:43:50	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
25	Smear 10	12/16/04	8:42:30	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
26	Smear 11	12/16/04	8:41:10	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
27	Smear 12	12/16/04	8:39:50	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
28	Smear 13	12/16/04	8:38:30	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
29	Smear 14	12/16/04	8:37:10	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
30	Smear 15	12/16/04	8:35:50	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-16-04

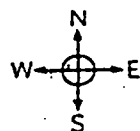
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

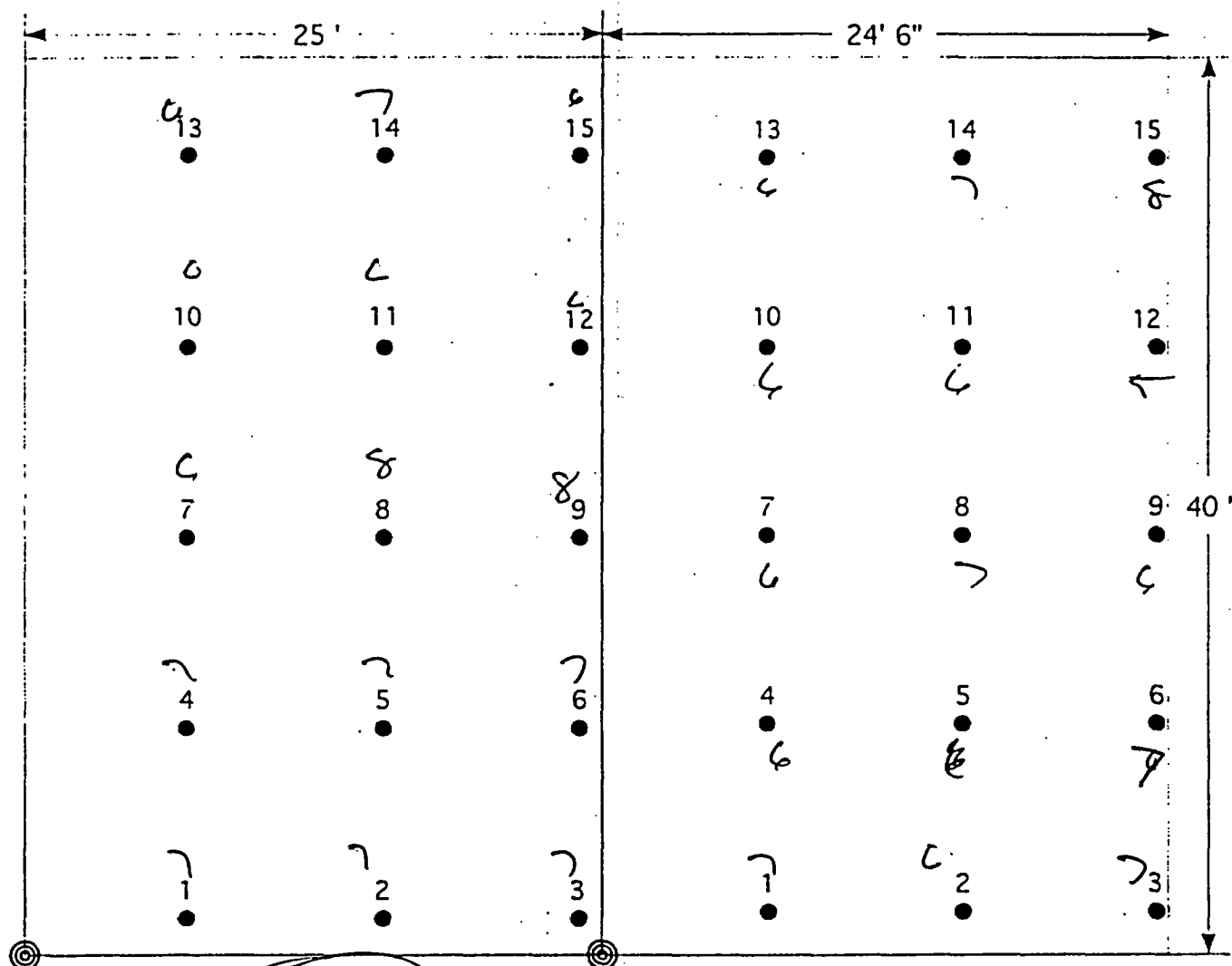
Date:

**FA-1-J      Finishing Area**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD		 OSCIENTECH, Inc. 143 WEST STREET NEW HAVEN, CT 06511	PROJECT NO. 23595-0301	FILE NAME	DATE	BY	CHK	FIGURE FA-1-JK
		DRAWING	CLASS 1 Finishing Area Floor (4 of 5)					SCALE	DATE	07/06/2004	



• SURVEY POINTS  
 STARTING LOCATION



FA-1-J

FA-1-K

## FA-1-J

Log #
Source
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54

	X	Y
	n/a	n/a
1	7.0	1.6
2	15.5	1.6
3	24.0	1.6
4	7.0	10.1
5	15.5	10.1
6	24.0	10.1
7	7.0	18.6
8	15.5	18.6
9	24.0	18.6
10	7.0	27.1
11	15.5	27.1
12	24.0	27.1
13	7.0	35.6
14	15.5	35.6
15	24.0	35.6

L (ft)= 8.5

A (ft<sup>2</sup>)= 1000

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
252	240	260
252	240	260
227	220	260
303	300	320
302	300	320
302	300	320
243	200	300
271	260	300
266	260	300
321	320	360
305	300	340
325	320	360
321	320	360
325	340	360
211	200	220

#39 BKGD

#55 Source

Ludlum Measurements, Inc.  
Model 2360 Log Data

Date: 12/9/2004  
Time: 4:54:40 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location:  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/09/2004  
Model 2360 Time: 16:48:22  
Sample Number: 0073

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
Ratmeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/09/04	07:12:21	000001	000196	S 001.0	Lab Background
0002	12/09/04	07:14:39	000002	034295	S 001.0	Lab Source
0003	12/09/04	07:16:44	000005	001821	S 001.0	Field Source
0004	12/09/04	14:44:27	000001	001611	S 001.0	Field Source
0005	12/09/04	14:47:00	000001	000331	S 001.0	Void
0006	12/09/04	14:48:44	000000	000208	S 001.0	Field Background
0007	12/09/04	14:50:57	000000	000338	S 001.0	FA-1-E
0008	12/09/04	14:53:15	000000	000291	S 001.0	FA-1-E
0009	12/09/04	14:54:37	000001	000326	S 001.0	FA-1-E
0010	12/09/04	14:55:55	000002	000298	S 001.0	FA-1-E
0011	12/09/04	14:57:15	000002	000287	S 001.0	FA-1-E
0012	12/09/04	14:59:03	000002	000319	S 001.0	FA-1-E
0013	12/09/04	15:00:33	000001	000351	S 001.0	FA-1-E
0014	12/09/04	15:03:26	000001	000254	S 001.0	FA-1-E
0015	12/09/04	15:04:43	000001	000266	S 001.0	FA-1-E
0016	12/09/04	15:05:52	000000	000290	S 001.0	FA-1-E
0017	12/09/04	15:07:04	000002	000291	S 001.0	FA-1-E
0018	12/09/04	15:08:16	000004	000306	S 001.0	FA-1-E
0019	12/09/04	15:23:56	000001	000235	S 001.0	FA-1-E
0020	12/09/04	15:25:42	000004	000241	S 001.0	FA-1-E
0021	12/09/04	15:27:01	000000	000257	S 001.0	FA-1-E
0022	12/09/04	15:28:32	000004	001596	S 001.0	Field Source
0023	12/09/04	15:30:29	000000	000234	S 001.0	Field Background
0024	12/09/04	15:31:50	000000	000302	S 001.0	FA-1-F
0025	12/09/04	15:37:30	000000	000272	S 001.0	FA-1-F
0026	12/09/04	15:38:39	000000	000246	S 001.0	FA-1-F
0027	12/09/04	15:40:05	000000	000340	S 001.0	FA-1-F
0028	12/09/04	15:43:07	000001	000238	S 001.0	FA-1-F
0029	12/09/04	15:44:32	000001	000278	S 001.0	FA-1-F
0030	12/09/04	15:45:51	000002	000300	S 001.0	FA-1-F
0031	12/09/04	15:47:09	000002	000298	S 001.0	FA-1-F
0032	12/09/04	15:48:20	000000	000290	S 001.0	FA-1-F
0033	12/09/04	15:49:30	000000	000359	S 001.0	FA-1-F
0034	12/09/04	15:50:57	000001	000283	S 001.0	FA-1-F

0037 12/09/04 15:53:15 000001 000359 S 001.0 FA-1-F  
0037 12/09/04 15:54:32 000000 000259 S 001.0 FA-1-F  
0038 12/09/04 15:56:49 000001 001749 S 001.0 Field Source  
0039 12/09/04 15:58:34 000000 000223 S 001.0 Field Background  
0040 12/09/04 15:59:49 000000 000253 S 001.0 FA-1-J  
0041 12/09/04 16:01:09 000003 000252 S 001.0 FA-1-J  
0042 12/09/04 16:02:16 000001 000227 S 001.0 FA-1-J  
0043 12/09/04 16:05:21 000002 000303 S 001.0 FA-1-J  
0044 12/09/04 16:06:40 000001 000302 S 001.0 FA-1-J  
0045 12/09/04 16:09:32 000000 000302 S 001.0 FA-1-J  
0046 12/09/04 16:11:22 000002 000263 S 001.0 FA-1-J  
0047 12/09/04 16:12:35 000001 000271 S 001.0 FA-1-J  
0048 12/09/04 16:14:04 000002 000266 S 001.0 FA-1-J  
0049 12/09/04 16:15:33 000001 000321 S 001.0 FA-1-J  
0050 12/09/04 16:16:54 000003 000305 S 001.0 FA-1-J  
0051 12/09/04 16:18:20 000002 000325 S 001.0 FA-1-J  
0052 12/09/04 16:20:22 000005 000321 S 001.0 FA-1-J  
0053 12/09/04 16:21:49 000001 000335 S 001.0 FA-1-J  
0054 12/09/04 16:23:18 000003 000211 S 001.0 FA-1-J  
0055 12/09/04 16:25:08 000002 001695 S 001.0 Field Source  
0056 12/09/04 16:26:50 000003 000218 S 001.0 Field Background  
0057 12/09/04 16:28:21 000002 000209 S 001.0 FA-1-K  
0058 12/09/04 16:29:40 000000 000255 S 001.0 FA-1-K  
0059 12/09/04 16:30:56 000000 000234 S 001.0 FA-1-K  
0060 12/09/04 16:32:01 000000 000237 S 001.0 FA-1-K  
0061 12/09/04 16:33:06 000000 000240 S 001.0 FA-1-K  
0062 12/09/04 16:34:14 000001 000236 S 001.0 FA-1-K  
0063 12/09/04 16:35:40 000002 000233 S 001.0 FA-1-K  
0064 12/09/04 16:36:48 000000 000248 S 001.0 FA-1-K  
0065 12/09/04 16:37:55 000001 000248 S 001.0 FA-1-K  
0066 12/09/04 16:39:08 000001 000253 S 001.0 FA-1-K  
0067 12/09/04 16:40:23 000000 000218 S 001.0 FA-1-K  
0068 12/09/04 16:41:36 000002 000229 S 001.0 FA-1-K  
0069 12/09/04 16:42:41 000000 000224 S 001.0 FA-1-K  
0070 12/09/04 16:43:55 000003 000237 S 001.0 FA-1-K  
0071 12/09/04 16:45:02 000001 000251 S 001.0 FA-1-K  
0072 12/09/04 16:47:06 000001 001633 S 001.0 Field Source

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/09/04	12:47:34	FA-1-J	Final Status Survey	12/09/04	12:47:34	1.000	1.00
2	Smear 2	12/09/04	12:46:14	FA-1-J	Final Status Survey	12/09/04	12:46:14	1.000	1.00
3	Smear 3	12/09/04	12:44:54	FA-1-J	Final Status Survey	12/09/04	12:44:54	1.000	1.00
4	Smear 4	12/09/04	12:43:34	FA-1-J	Final Status Survey	12/09/04	12:43:34	1.000	1.00
5	Smear 5	12/09/04	12:42:14	FA-1-J	Final Status Survey	12/09/04	12:42:14	1.000	1.00
6	Smear 6	12/09/04	12:40:54	FA-1-J	Final Status Survey	12/09/04	12:40:54	1.000	1.00
7	Smear 7	12/09/04	12:39:34	FA-1-J	Final Status Survey	12/09/04	12:39:34	1.000	1.00
8	Smear 8	12/09/04	12:38:15	FA-1-J	Final Status Survey	12/09/04	12:38:15	1.000	1.00
9	Smear 9	12/09/04	12:36:55	FA-1-J	Final Status Survey	12/09/04	12:36:55	1.000	1.00
10	Smear 10	12/09/04	12:35:35	FA-1-J	Final Status Survey	12/09/04	12:35:35	1.000	1.00
11	Smear 11	12/09/04	12:34:15	FA-1-J	Final Status Survey	12/09/04	12:34:15	1.000	1.00
12	Smear 12	12/09/04	12:32:55	FA-1-J	Final Status Survey	12/09/04	12:32:55	1.000	1.00
13	Smear 13	12/09/04	12:31:36	FA-1-J	Final Status Survey	12/09/04	12:31:36	1.000	1.00
14	Smear 14	12/09/04	12:30:16	FA-1-J	Final Status Survey	12/09/04	12:30:16	1.000	1.00
15	Smear 15	12/09/04	12:28:56	FA-1-J	Final Status Survey	12/09/04	12:28:56	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 23.81 LLD: 15.01 dpm				Bkg: 0.5 cpm %Eff: 44.63 LLD: 11.37 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/09/04	12:47:34	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
2	Smear 2	12/09/04	12:46:14	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
3	Smear 3	12/09/04	12:44:54	0.00	-0.07	-0.28	15.01	7.00	6.50	14.56	11.37
4	Smear 4	12/09/04	12:43:34	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
5	Smear 5	12/09/04	12:42:14	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
6	Smear 6	12/09/04	12:40:54	0.00	-0.07	-0.28	15.01	4.00	3.50	7.84	11.37
7	Smear 7	12/09/04	12:39:34	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
8	Smear 8	12/09/04	12:38:15	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
9	Smear 9	12/09/04	12:36:55	0.00	-0.07	-0.28	15.01	4.00	3.50	7.84	11.37
10	Smear 10	12/09/04	12:35:35	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
11	Smear 11	12/09/04	12:34:15	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
12	Smear 12	12/09/04	12:32:55	0.00	-0.07	-0.28	15.01	5.00	4.50	10.08	11.37
13	Smear 13	12/09/04	12:31:36	0.00	-0.07	-0.28	15.01	4.00	3.50	7.84	11.37
14	Smear 14	12/09/04	12:30:16	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
15	Smear 15	12/09/04	12:28:56	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-09-04

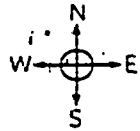
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

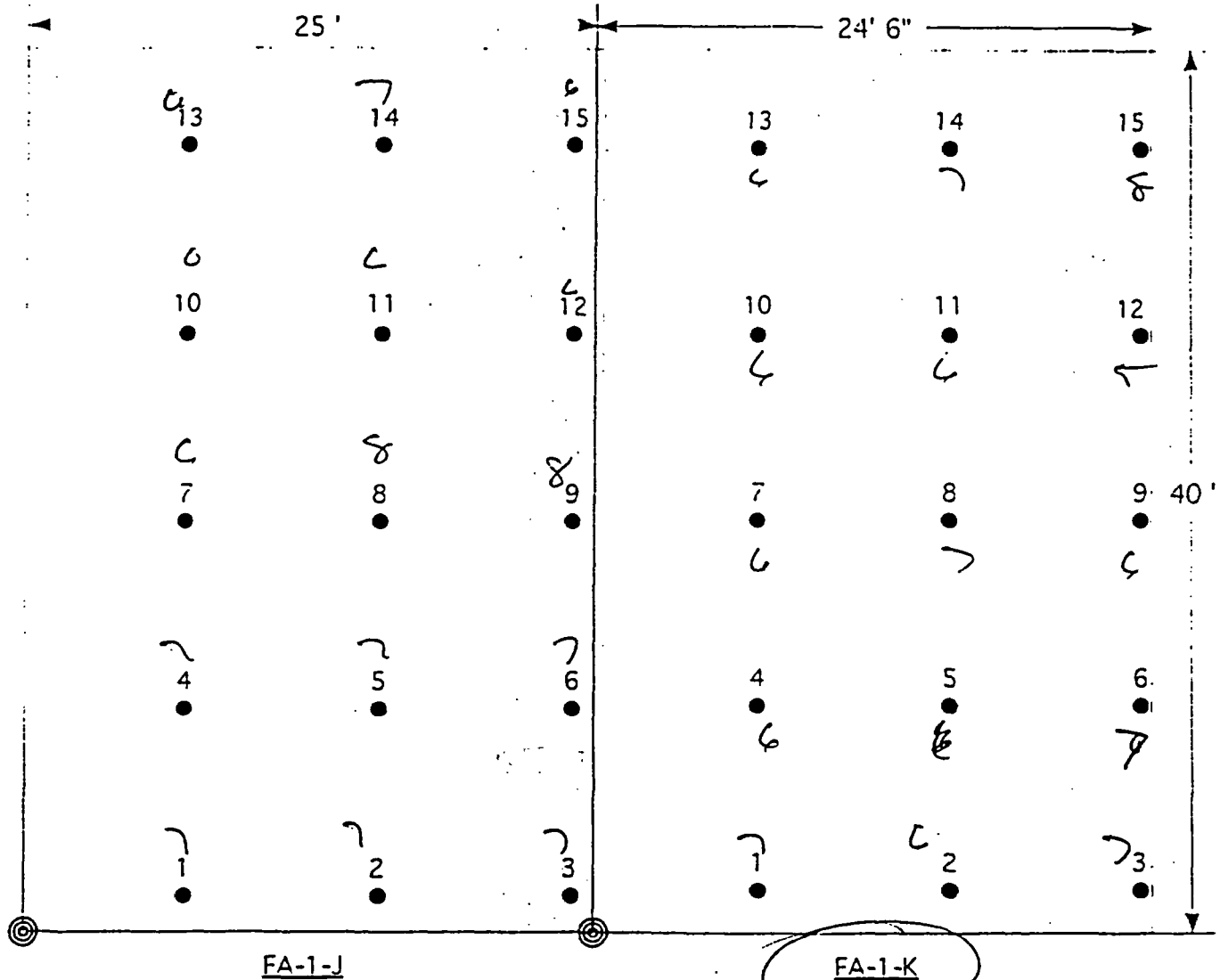
Date:

**FA-1-K      Finishing Area**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD		 SCIENTECH, LLC 110 WEST STREET NEW HAVEN, CT 06510	PROJECT NO. 21339-0001	FILE NAME	DATE	DATE	FOUR FA-1-J-K
		DRAWING	CLASS 1 Finishing Area Floor (4 of 5)					DATE 07/06/2004	DATE	



• SURVEY POINTS  
 STARTING LOCATION



FA-1-K

Log #
Source
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71

	X	Y
	n/a	n/a
1	7.2	1.9
2	15.6	1.9
3	24.0	1.9
4	7.2	10.3
5	15.6	10.3
6	24.0	10.3
7	7.2	18.7
8	15.6	18.7
9	24.0	18.7
10	7.2	27.1
11	15.6	27.1
12	24.0	27.1
13	7.2	35.5
14	15.6	35.5
15	24.0	35.5

L (ft)= 8.4

A (ft²)= 980

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
209	200	240
255	260	280
237	240	280
237	240	280
260	240	280
234	240	280
233	240	280
248	240	280
248	240	280
251	240	280
218	220	260
229	220	260
227	220	260
237	240	280
251	240	280

#56 B K C D

#72 Source

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/9/2004  
Time: 4:54:40 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location:  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/09/2004  
Model 2360 Time: 16:48:22  
Sample Number: 0073

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/09/04	07:12:21	000001	000196	S 001.0	Lab Background
0002	12/09/04	07:14:39	000002	034295	S 001.0	Lab Source
0003	12/09/04	07:16:44	000005	001821	S 001.0	Field Source
0004	12/09/04	14:44:27	000001	001611	S 001.0	Field Source
0005	12/09/04	14:47:00	000001	000331	S 001.0	Void
0006	12/09/04	14:48:44	000000	000208	S 001.0	Field Background
0007	12/09/04	14:50:57	000000	000338	S 001.0	FA-1-E
0008	12/09/04	14:53:15	000000	000291	S 001.0	FA-1-E
0009	12/09/04	14:54:37	000001	000326	S 001.0	FA-1-E
0010	12/09/04	14:55:55	000002	000298	S 001.0	FA-1-E
0011	12/09/04	14:57:15	000002	000287	S 001.0	FA-1-E
0012	12/09/04	14:59:03	000002	000319	S 001.0	FA-1-E
0013	12/09/04	15:00:33	000001	000351	S 001.0	FA-1-E
0014	12/09/04	15:03:26	000001	000254	S 001.0	FA-1-E
0015	12/09/04	15:04:43	000001	000266	S 001.0	FA-1-E
0016	12/09/04	15:05:52	000000	000290	S 001.0	FA-1-E
0017	12/09/04	15:07:04	000002	000291	S 001.0	FA-1-E
0018	12/09/04	15:08:16	000004	000306	S 001.0	FA-1-E
0019	12/09/04	15:23:56	000001	000235	S 001.0	FA-1-E
0020	12/09/04	15:25:42	000004	000241	S 001.0	FA-1-E
0021	12/09/04	15:27:01	000000	000257	S 001.0	FA-1-E
0022	12/09/04	15:28:32	000004	001596	S 001.0	Field Source
0023	12/09/04	15:30:29	000000	000234	S 001.0	Field Background
0024	12/09/04	15:31:50	000000	000302	S 001.0	FA-1-F
0025	12/09/04	15:37:30	000000	000272	S 001.0	FA-1-F
0026	12/09/04	15:38:39	000000	000246	S 001.0	FA-1-F
0027	12/09/04	15:40:05	000000	000340	S 001.0	FA-1-F
0028	12/09/04	15:43:07	000001	000238	S 001.0	FA-1-F
0029	12/09/04	15:44:32	000001	000278	S 001.0	FA-1-F
0030	12/09/04	15:45:51	000002	000300	S 001.0	FA-1-F
0031	12/09/04	15:47:09	000002	000298	S 001.0	FA-1-F
0032	12/09/04	15:48:20	000000	000290	S 001.0	FA-1-F
0033	12/09/04	15:49:30	000000	000359	S 001.0	FA-1-F
0034	12/09/04	15:50:57	000001	000283	S 001.0	FA-1-F

0035 12/09/04 15:52:07 000002 000313 S 001.0 FA-1-F  
0036 12/09/04 15:53:15 000001 000359 S 001.0 FA-1-F  
0037 12/09/04 15:54:32 000000 000259 S 001.0 FA-1-F  
0038 12/09/04 15:56:49 000001 001749 S 001.0 Field Source  
0039 12/09/04 15:58:34 000000 000223 S 001.0 Field Background  
0040 12/09/04 15:59:49 000000 000253 S 001.0 FA-1-J  
0041 12/09/04 16:01:09 000003 000252 S 001.0 FA-1-J  
0042 12/09/04 16:02:16 000001 000227 S 001.0 FA-1-J  
0043 12/09/04 16:05:21 000002 000303 S 001.0 FA-1-J  
0044 12/09/04 16:06:40 000001 000302 S 001.0 FA-1-J  
0045 12/09/04 16:09:32 000000 000302 S 001.0 FA-1-J  
0046 12/09/04 16:11:22 000002 000263 S 001.0 FA-1-J  
0047 12/09/04 16:12:35 000001 000271 S 001.0 FA-1-J  
0048 12/09/04 16:14:04 000002 000266 S 001.0 FA-1-J  
0049 12/09/04 16:15:33 000001 000321 S 001.0 FA-1-J  
0050 12/09/04 16:16:54 000003 000305 S 001.0 FA-1-J  
0051 12/09/04 16:18:20 000002 000325 S 001.0 FA-1-J  
0052 12/09/04 16:20:22 000005 000321 S 001.0 FA-1-J  
0053 12/09/04 16:21:49 000001 000335 S 001.0 FA-1-J  
0054 12/09/04 16:23:18 000003 000211 S 001.0 FA-1-J  
0055 12/09/04 16:25:08 000002 001695 S 001.0 Field Source  
0056 12/09/04 16:26:50 000003 000218 S 001.0 Field Background  
0057 12/09/04 16:28:21 000002 000209 S 001.0 FA-1-K  
0058 12/09/04 16:29:40 000000 000255 S 001.0 FA-1-K  
0059 12/09/04 16:30:56 000000 000234 S 001.0 FA-1-K  
0060 12/09/04 16:32:01 000000 000237 S 001.0 FA-1-K  
0061 12/09/04 16:33:06 000000 000240 S 001.0 FA-1-K  
0062 12/09/04 16:34:14 000001 000236 S 001.0 FA-1-K  
0063 12/09/04 16:35:40 000002 000233 S 001.0 FA-1-K  
0064 12/09/04 16:36:48 000000 000248 S 001.0 FA-1-K  
0065 12/09/04 16:37:55 000001 000248 S 001.0 FA-1-K  
0066 12/09/04 16:39:08 000001 000253 S 001.0 FA-1-K  
0067 12/09/04 16:40:23 000000 000218 S 001.0 FA-1-K  
0068 12/09/04 16:41:36 000002 000229 S 001.0 FA-1-K  
0069 12/09/04 16:42:41 000000 000224 S 001.0 FA-1-K  
0070 12/09/04 16:43:55 000003 000237 S 001.0 FA-1-K  
0071 12/09/04 16:45:02 000001 000251 S 001.0 FA-1-K  
0072 12/09/04 16:47:06 000001 001633 S 001.0 Field Source  
\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/09/04	13:23:02	FA-1-K	Final Status Survey	12/09/04	13:23:02	1.000	1.00
2	Smear 2	12/09/04	13:21:42	FA-1-K	Final Status Survey	12/09/04	13:21:42	1.000	1.00
3	Smear 3	12/09/04	13:20:22	FA-1-K	Final Status Survey	12/09/04	13:20:22	1.000	1.00
4	Smear 4	12/09/04	13:19:02	FA-1-K	Final Status Survey	12/09/04	13:19:02	1.000	1.00
5	Smear 5	12/09/04	13:17:42	FA-1-K	Final Status Survey	12/09/04	13:17:42	1.000	1.00
6	Smear 6	12/09/04	13:16:22	FA-1-K	Final Status Survey	12/09/04	13:16:22	1.000	1.00
7	Smear 7	12/09/04	13:15:02	FA-1-K	Final Status Survey	12/09/04	13:15:02	1.000	1.00
8	Smear 8	12/09/04	13:13:42	FA-1-K	Final Status Survey	12/09/04	13:13:42	1.000	1.00
9	Smear 9	12/09/04	13:12:22	FA-1-K	Final Status Survey	12/09/04	13:12:22	1.000	1.00
10	Smear 10	12/09/04	13:11:02	FA-1-K	Final Status Survey	12/09/04	13:11:02	1.000	1.00
11	Smear 11	12/09/04	13:09:43	FA-1-K	Final Status Survey	12/09/04	13:09:43	1.000	1.00
12	Smear 12	12/09/04	13:08:23	FA-1-K	Final Status Survey	12/09/04	13:08:23	1.000	1.00
13	Smear 13	12/09/04	13:07:03	FA-1-K	Final Status Survey	12/09/04	13:07:03	1.000	1.00
14	Smear 14	12/09/04	13:05:43	FA-1-K	Final Status Survey	12/09/04	13:05:43	1.000	1.00
15	Smear 15	12/09/04	13:04:23	FA-1-K	Final Status Survey	12/09/04	13:04:23	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 23.81 LLD: 16.01 dpm				Bkg: 0.6 cpm %Eff: 44.63 LLD: 11.37 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/09/04	13:23:02	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
2	Smear 2	12/09/04	13:21:42	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
3	Smear 3	12/09/04	13:20:22	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
4	Smear 4	12/09/04	13:19:02	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
5	Smear 5	12/09/04	13:17:42	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
6	Smear 6	12/09/04	13:16:22	0.00	-0.07	-0.28	15.01	7.00	6.50	14.56	11.37
7	Smear 7	12/09/04	13:15:02	0.00	-0.07	-0.28	15.01	6.00	5.50	12.32	11.37
8	Smear 8	12/09/04	13:13:42	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
9	Smear 9	12/09/04	13:12:22	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
10	Smear 10	12/09/04	13:11:02	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
11	Smear 11	12/09/04	13:09:43	1.00	0.93	3.92	15.01	0.00	-0.50	-1.12	11.37
12	Smear 12	12/09/04	13:08:23	1.00	0.93	3.92	15.01	0.00	-0.50	-1.12	11.37
13	Smear 13	12/09/04	13:07:03	0.00	-0.07	-0.28	15.01	5.00	4.50	10.08	11.37
14	Smear 14	12/09/04	13:05:43	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
15	Smear 15	12/09/04	13:04:23	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

Technician (sign):

*Rob Ellison*

Reviewed By (sign):

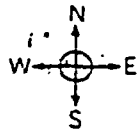
Date: 12-29-04

Date:

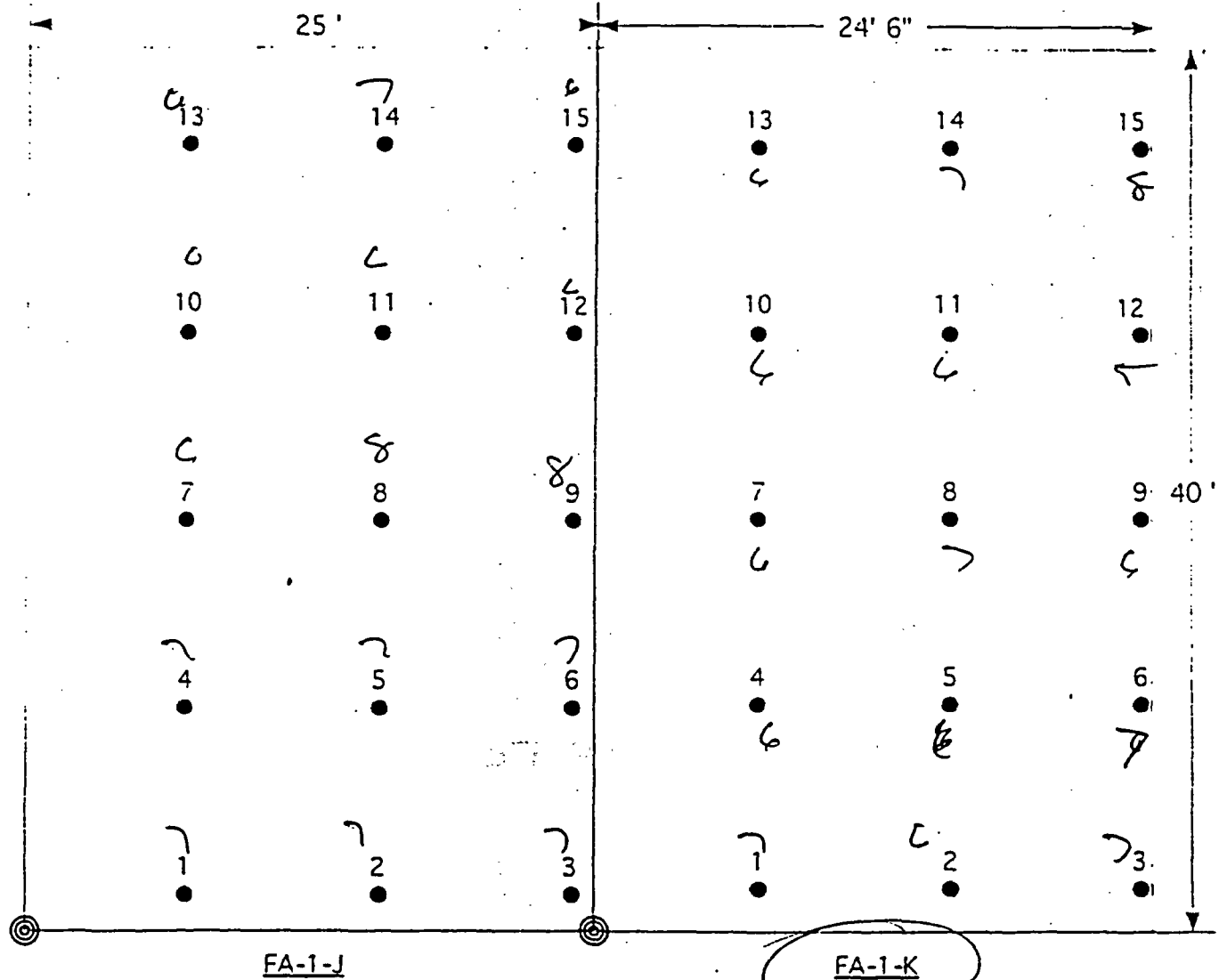


**FA-1-K      Finishing Area**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENTECH LLC 141 WEST STREET NEW HAVEN, CT 06511	PROJECT NO. 21258-0201	FILE NAME	DATE	07/06/2004	SCALE	NTS	BY	CHK	FOUR	FA-1-K
		DRAWING	CLASS 1 Finishing Area Floor (4 of 5)											



• SURVEY POINTS  
 STARTING LOCATION



FA-1-K

Log #
Source
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71

	X	Y
	n/a	n/a
1	7.2	1.9
2	15.6	1.9
3	24.0	1.9
4	7.2	10.3
5	15.6	10.3
6	24.0	10.3
7	7.2	18.7
8	15.6	18.7
9	24.0	18.7
10	7.2	27.1
11	15.6	27.1
12	24.0	27.1
13	7.2	35.5
14	15.6	35.5
15	24.0	35.5

L (ft)= 8.4

A (ft²)= 980

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
209	200	240
255	260	280
234	240	280
237	240	280
2610	240	280
234	240	220
233	240	280
248	240	280
248	240	280
251	240	280
218	220	260
229	220	260
227	220	260
237	240	280
251	240	280

#56 BKG

#72 Source

Ludlum Measurements, Inc.  
Model 2360 Log Data

Date: 12/9/2004  
4:54:40 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location:  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/09/2004  
Model 2360 Time: 16:48:22  
Sample Number: 0073

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time

R  
S

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/09/04	07:12:21	000001	000196	S 001.0	Lab Background
0002	12/09/04	07:14:39	000002	034295	S 001.0	Lab Source
0003	12/09/04	07:16:44	000005	001821	S 001.0	Field Source
0004	12/09/04	14:44:27	000001	001611	S 001.0	Field Source
0005	12/09/04	14:47:00	000001	000331	S 001.0	Void
0006	12/09/04	14:48:44	000000	000208	S 001.0	Field Background
0007	12/09/04	14:50:57	000000	000338	S 001.0	FA-1-E
0008	12/09/04	14:53:15	000000	000291	S 001.0	FA-1-E
0009	12/09/04	14:54:37	000001	000326	S 001.0	FA-1-E
0010	12/09/04	14:55:55	000002	000298	S 001.0	FA-1-E
0011	12/09/04	14:57:15	000002	000287	S 001.0	FA-1-E
0012	12/09/04	14:59:03	000002	000319	S 001.0	FA-1-E
0013	12/09/04	15:00:33	000001	000351	S 001.0	FA-1-E
0014	12/09/04	15:03:26	000001	000254	S 001.0	FA-1-E
0015	12/09/04	15:04:43	000001	000266	S 001.0	FA-1-E
0016	12/09/04	15:05:52	000000	000290	S 001.0	FA-1-E
0017	12/09/04	15:07:04	000002	000291	S 001.0	FA-1-E
0018	12/09/04	15:08:16	000004	000306	S 001.0	FA-1-E
0019	12/09/04	15:23:56	000001	000235	S 001.0	FA-1-E
0020	12/09/04	15:25:42	000004	000241	S 001.0	FA-1-E
0021	12/09/04	15:27:01	000000	000257	S 001.0	FA-1-E
0022	12/09/04	15:28:32	000004	001596	S 001.0	Field Source
0023	12/09/04	15:30:29	000000	000234	S 001.0	Field Background
0024	12/09/04	15:31:50	000000	000302	S 001.0	FA-1-F
0025	12/09/04	15:37:30	000000	000272	S 001.0	FA-1-F
0026	12/09/04	15:38:39	000000	000246	S 001.0	FA-1-F
0027	12/09/04	15:40:05	000000	000340	S 001.0	FA-1-F
0028	12/09/04	15:43:07	000001	000238	S 001.0	FA-1-F
0029	12/09/04	15:44:32	000001	000278	S 001.0	FA-1-F
0030	12/09/04	15:45:51	000002	000300	S 001.0	FA-1-F
0031	12/09/04	15:47:09	000002	000298	S 001.0	FA-1-F
0032	12/09/04	15:48:20	000000	000290	S 001.0	FA-1-F
0033	12/09/04	15:49:30	000000	000359	S 001.0	FA-1-F
0034	12/09/04	15:50:57	000001	000283	S 001.0	FA-1-F

0035 12/09/04 15:52:07 000002 000313 S 001.0 FA-1-F  
0036 12/09/04 15:53:15 000001 000359 S 001.0 FA-1-F  
0037 12/09/04 15:54:32 000000 000259 S 001.0 FA-1-F  
0038 12/09/04 15:56:49 000001 001749 S 001.0 Field Source  
0039 12/09/04 15:58:34 000000 000223 S 001.0 Field Background  
0040 12/09/04 15:59:49 000000 000253 S 001.0 FA-1-J  
0041 12/09/04 16:01:09 000003 000252 S 001.0 FA-1-J  
0042 12/09/04 16:02:16 000001 000227 S 001.0 FA-1-J  
0043 12/09/04 16:05:21 000002 000303 S 001.0 FA-1-J  
0044 12/09/04 16:06:40 000001 000302 S 001.0 FA-1-J  
0045 12/09/04 16:09:32 000000 000302 S 001.0 FA-1-J  
0046 12/09/04 16:11:22 000002 000263 S 001.0 FA-1-J  
0047 12/09/04 16:12:35 000001 000271 S 001.0 FA-1-J  
0048 12/09/04 16:14:04 000002 000266 S 001.0 FA-1-J  
0049 12/09/04 16:15:33 000001 000321 S 001.0 FA-1-J  
0050 12/09/04 16:16:54 000003 000305 S 001.0 FA-1-J  
0051 12/09/04 16:18:20 000002 000325 S 001.0 FA-1-J  
0052 12/09/04 16:20:22 000005 000321 S 001.0 FA-1-J  
0053 12/09/04 16:21:49 000001 000335 S 001.0 FA-1-J  
0054 12/09/04 16:23:18 000003 000211 S 001.0 FA-1-J  
0055 12/09/04 16:25:08 000002 001695 S 001.0 Field Source  
0056 12/09/04 16:26:50 000003 000218 S 001.0 Field Background  
0057 12/09/04 16:28:21 000002 000209 S 001.0 FA-1-K  
0058 12/09/04 16:29:40 000000 000255 S 001.0 FA-1-K  
0059 12/09/04 16:30:56 000000 000234 S 001.0 FA-1-K  
0060 12/09/04 16:32:01 000000 000237 S 001.0 FA-1-K  
0061 12/09/04 16:33:06 000000 000240 S 001.0 FA-1-K  
0062 12/09/04 16:34:14 000001 000236 S 001.0 FA-1-K  
0063 12/09/04 16:35:40 000002 000233 S 001.0 FA-1-K  
0064 12/09/04 16:36:48 000000 000248 S 001.0 FA-1-K  
0065 12/09/04 16:37:55 000001 000248 S 001.0 FA-1-K  
0066 12/09/04 16:39:08 000001 000253 S 001.0 FA-1-K  
0067 12/09/04 16:40:23 000000 000218 S 001.0 FA-1-K  
0068 12/09/04 16:41:36 000002 000229 S 001.0 FA-1-K  
0069 12/09/04 16:42:41 000000 000224 S 001.0 FA-1-K  
0070 12/09/04 16:43:55 000003 000237 S 001.0 FA-1-K  
0071 12/09/04 16:45:02 000001 000251 S 001.0 FA-1-K  
0072 12/09/04 16:47:06 000001 001633 S 001.0 Field Source  
\$

Smears		Count Mins: 1						
PIC WPC-9550 Instr No 1		Count Started					Sample Collected	
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF
								Fraction of Sample
1	Smear 1	12/09/04	13:23:02	FA-1-K	Final Status Survey	12/09/04	13:23:02	1.000
2	Smear 2	12/09/04	13:21:42	FA-1-K	Final Status Survey	12/09/04	13:21:42	1.000
3	Smear 3	12/09/04	13:20:22	FA-1-K	Final Status Survey	12/09/04	13:20:22	1.000
4	Smear 4	12/09/04	13:19:02	FA-1-K	Final Status Survey	12/09/04	13:19:02	1.000
5	Smear 5	12/09/04	13:17:42	FA-1-K	Final Status Survey	12/09/04	13:17:42	1.000
6	Smear 6	12/09/04	13:16:22	FA-1-K	Final Status Survey	12/09/04	13:16:22	1.000
7	Smear 7	12/09/04	13:15:02	FA-1-K	Final Status Survey	12/09/04	13:15:02	1.000
8	Smear 8	12/09/04	13:13:42	FA-1-K	Final Status Survey	12/09/04	13:13:42	1.000
9	Smear 9	12/09/04	13:12:22	FA-1-K	Final Status Survey	12/09/04	13:12:22	1.000
10	Smear 10	12/09/04	13:11:02	FA-1-K	Final Status Survey	12/09/04	13:11:02	1.000
11	Smear 11	12/09/04	13:09:43	FA-1-K	Final Status Survey	12/09/04	13:09:43	1.000
12	Smear 12	12/09/04	13:08:23	FA-1-K	Final Status Survey	12/09/04	13:08:23	1.000
13	Smear 13	12/09/04	13:07:03	FA-1-K	Final Status Survey	12/09/04	13:07:03	1.000
14	Smear 14	12/09/04	13:05:43	FA-1-K	Final Status Survey	12/09/04	13:05:43	1.000
15	Smear 15	12/09/04	13:04:23	FA-1-K	Final Status Survey	12/09/04	13:04:23	1.000

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 23.81 LLD: 15.01 dpm				Bkg: 0.6 cpm %Eff: 44.63 LLD: 11.37 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/09/04	13:23:02	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
2	Smear 2	12/09/04	13:21:42	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
3	Smear 3	12/09/04	13:20:22	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
4	Smear 4	12/09/04	13:19:02	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
5	Smear 5	12/09/04	13:17:42	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
6	Smear 6	12/09/04	13:16:22	0.00	-0.07	-0.28	15.01	7.00	6.50	14.56	11.37
7	Smear 7	12/09/04	13:15:02	0.00	-0.07	-0.28	15.01	6.00	5.50	12.32	11.37
8	Smear 8	12/09/04	13:13:42	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
9	Smear 9	12/09/04	13:12:22	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
10	Smear 10	12/09/04	13:11:02	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
11	Smear 11	12/09/04	13:09:43	1.00	0.93	3.92	15.01	0.00	-0.50	-1.12	11.37
12	Smear 12	12/09/04	13:08:23	1.00	0.93	3.92	15.01	0.00	-0.50	-1.12	11.37
13	Smear 13	12/09/04	13:07:03	0.00	-0.07	-0.28	15.01	5.00	4.50	10.08	11.37
14	Smear 14	12/09/04	13:05:43	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
15	Smear 15	12/09/04	13:04:23	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-29-04

Reviewed By (print): Joe Trowbridge

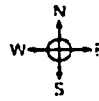
Reviewed By (sign):

Date:

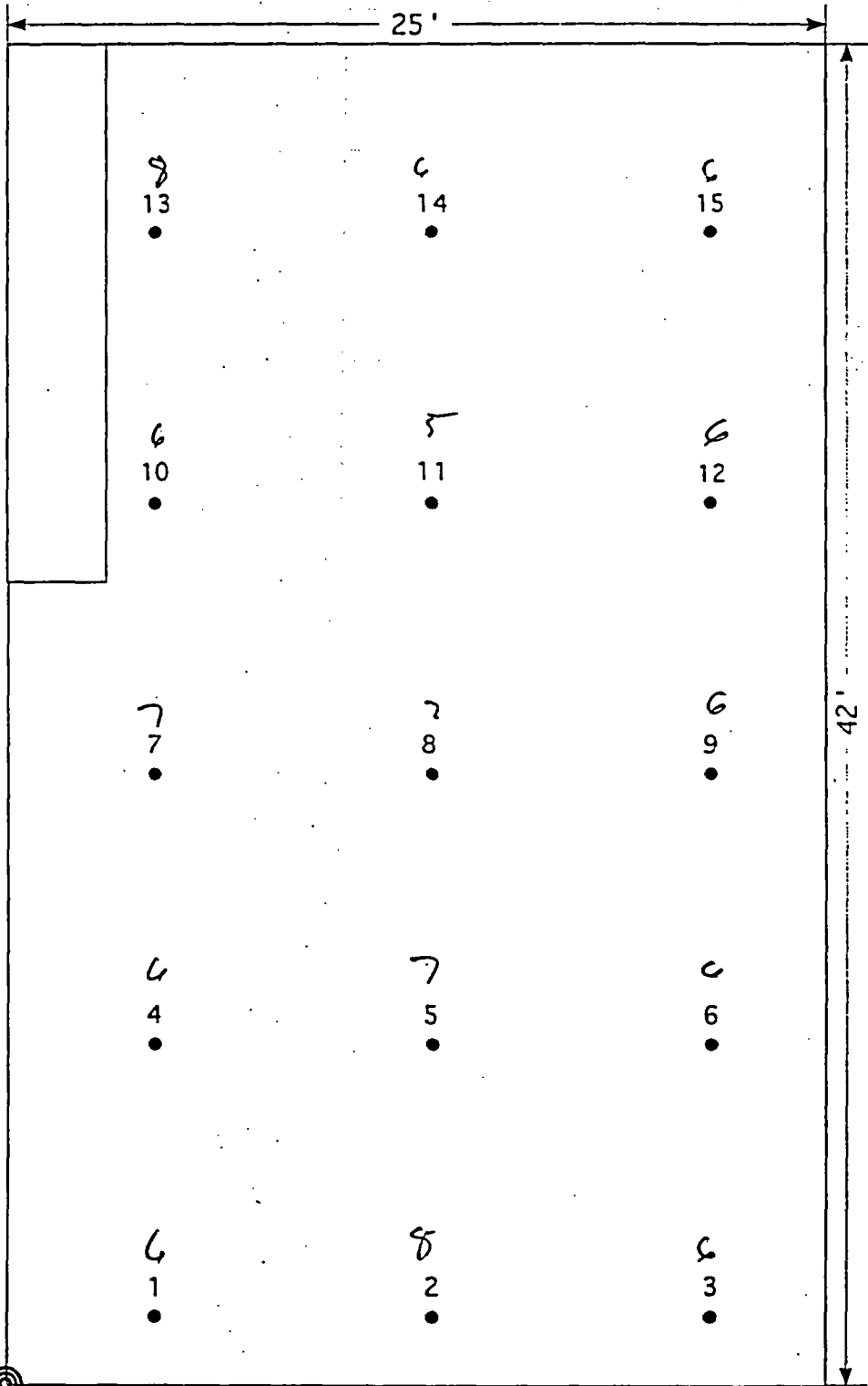
**FA-1-L      Finishing Area**



Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 OSCIENTECH, INC. 10 WEST STREET NEW HAVEN, CT 06511	PROJECT NO: 2339 0301	FILE NAME	DATE	07/06/2004	By:	CK:	FIGURE	FA-1-L
		DRAWING	CLASS 1 Finishing Area Floor (5 of 5)				SCALE	MTS				



• SURVEY POINTS  
 STARTING LOCATION



FA-1-L

FA-1-L

120

Log #
<del>140</del> Source
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139

	X	Y
	n/a	n/a
1	4.5	2.1
2	13.0	2.1
3	21.5	2.1
4	4.5	10.6
5	13.0	10.6
6	21.5	10.6
7	4.5	19.1
8	13.0	19.1
9	21.5	19.1
10	4.5	27.6
11	13.0	27.6
12	21.5	27.6
13	4.5	36.1
14	13.0	36.1
15	21.5	36.1

L (ft)= 8.5

A (ft²)= 1000

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
309	300	340
313	320	340
290	300	340
275	280	320
315	320	340
280	280	320
290	280	320
289	280	320
314	320	340
278	280	320
262	260	300
254	260	280
238	270	280
280	280	320
216	220	240

127-BKGD

140 - Source

Ludlum Measurements, Inc.  
Model 2360 Log Data

2/15/2004  
2:04:48 PM

Header 1: Chris Higgins  
Header 2: Serial#202438  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FA-1-A - L  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/15/2004  
Model 2360 Time: 13:53:13  
Sample Number: 0141

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Count - Count Time  
Ratometer  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/15/04	07:22:18	000000	000169	S 001.0	Lab Background
0002	12/15/04	07:24:47	000002	034127	S 001.0	Lab Source
0003	12/15/04	09:24:19	000000	000231	S 001.0	Field Background
0004	12/15/04	09:25:57	000000	001660	S 001.0	Field Source
0005	12/15/04	09:28:03	000000	000223	S 001.0	FA-1-A
0006	12/15/04	09:29:25	000001	000223	S 001.0	FA-1-A
0007	12/15/04	09:30:37	000000	000323	S 001.0	FA-1-A
0008	12/15/04	09:31:58	000000	000240	S 001.0	FA-1-A
0009	12/15/04	09:33:21	000000	000199	S 001.0	FA-1-A
0010	12/15/04	09:34:35	000000	000285	S 001.0	FA-1-A
0011	12/15/04	09:35:49	000000	000243	S 001.0	FA-1-A
0012	12/15/04	09:37:06	000001	000270	S 001.0	FA-1-A
0013	12/15/04	09:38:37	000000	000260	S 001.0	FA-1-A
0014	12/15/04	09:40:00	000000	000190	S 001.0	FA-1-A
0015	12/15/04	09:41:24	000001	000263	S 001.0	FA-1-A
0016	12/15/04	09:42:48	000002	000229	S 001.0	FA-1-A
0017	12/15/04	09:44:08	000001	000229	S 001.0	FA-1-A
0018	12/15/04	09:45:19	000000	000245	S 001.0	FA-1-A
0019	12/15/04	09:46:46	000002	000236	S 001.0	FA-1-A
0020	12/15/04	09:50:07	000000	001818	S 001.0	Field Source
0021	12/15/04	09:51:25	000000	000232	S 001.0	Field Background
0022	12/15/04	09:52:30	000003	000248	S 001.0	FA-1-B
0023	12/15/04	09:53:37	000002	000249	S 001.0	FA-1-B
0024	12/15/04	09:55:03	000000	000275	S 001.0	FA-1-B
0025	12/15/04	09:58:18	000006	000331	S 001.0	FA-1-B
0026	12/15/04	09:59:40	000001	000257	S 001.0	FA-1-B
0027	12/15/04	10:02:17	000003	000223	S 001.0	FA-1-B
0028	12/15/04	10:12:26	000001	000352	S 001.0	FA-1-B
0029	12/15/04	10:13:52	000001	000307	S 001.0	FA-1-B
0030	12/15/04	10:15:39	000002	000291	S 001.0	FA-1-B
0031	12/15/04	10:17:23	000001	000255	S 001.0	FA-1-B
0032	12/15/04	10:19:32	000001	000248	S 001.0	FA-1-B
0033	12/15/04	10:21:05	000000	000256	S 001.0	FA-1-B
0034	12/15/04	10:23:37	000000	000256	S 001.0	FA-1-B

0035 12/15/04 10:24:51 000001 000249 S 001.0 FA-1-B  
0036 12/15/04 10:26:21 000002 000240 S 001.0 FA-1-B  
0037 12/15/04 10:28:25 000001 000213 S 001.0 Field Background  
0038 12/15/04 10:30:01 000000 001104 S 001.0 Field Source  
0039 12/15/04 10:31:23 000000 000109 S 001.0 FA-1-C  
0040 12/15/04 10:32:36 000000 000153 S 001.0 FA-1-C  
0041 12/15/04 10:33:57 000000 000182 S 001.0 FA-1-C  
0042 12/15/04 10:35:18 000000 000269 S 001.0 FA-1-C  
0043 12/15/04 10:36:49 000002 000242 S 001.0 FA-1-C  
0044 12/15/04 10:38:12 000002 000259 S 001.0 FA-1-C  
0045 12/15/04 10:39:27 000001 000195 S 001.0 FA-1-C  
0046 12/15/04 10:40:50 000000 000229 S 001.0 FA-1-C  
0047 12/15/04 10:42:04 000000 000199 S 001.0 FA-1-C  
0048 12/15/04 10:43:26 000002 000193 S 001.0 FA-1-C  
0049 12/15/04 10:44:48 000000 000254 S 001.0 FA-1-C  
0050 12/15/04 10:46:27 000000 000318 S 001.0 FA-1-C  
0051 12/15/04 10:47:48 000001 000289 S 001.0 FA-1-C  
0052 12/15/04 10:49:03 000000 000330 S 001.0 FA-1-C  
0053 12/15/04 10:50:31 000001 000295 S 001.0 FA-1-C  
0054 12/15/04 10:52:39 000001 000224 S 001.0 Field Background  
0055 12/15/04 10:54:05 000002 002021 S 001.0 Field Source  
0056 12/15/04 10:56:31 000000 000154 S 001.0 FA-1-D  
0057 12/15/04 10:58:02 000000 000223 S 001.0 FA-1-D  
0058 12/15/04 10:59:18 000001 000252 S 001.0 FA-1-D  
0059 12/15/04 11:00:43 000002 000246 S 001.0 FA-1-D  
0060 12/15/04 11:02:02 000002 000237 S 001.0 FA-1-D  
0061 12/15/04 11:03:21 000001 000259 S 001.0 FA-1-D  
0062 12/15/04 11:05:19 000001 000231 S 001.0 FA-1-D  
0063 12/15/04 11:06:40 000002 000212 S 001.0 FA-1-D  
0064 12/15/04 11:08:00 000000 000225 S 001.0 FA-1-D  
0065 12/15/04 11:09:17 000001 000218 S 001.0 FA-1-D  
0066 12/15/04 11:10:30 000001 000195 S 001.0 FA-1-D  
0067 12/15/04 11:11:47 000000 000218 S 001.0 FA-1-D  
0068 12/15/04 11:13:15 000001 000242 S 001.0 FA-1-D  
0069 12/15/04 11:14:58 000000 000253 S 001.0 FA-1-D  
0070 12/15/04 11:16:07 000001 000256 S 001.0 FA-1-D  
0071 12/15/04 11:59:41 000000 000214 S 001.0 Field Background  
0072 12/15/04 12:01:20 000001 001828 S 001.0 Field Source  
0073 12/15/04 12:02:43 000001 000213 S 001.0 FA-1-G  
0074 12/15/04 12:04:02 000000 000235 S 001.0 FA-1-G  
0075 12/15/04 12:05:07 000000 000226 S 001.0 FA-1-G  
0076 12/15/04 12:06:13 000000 000213 S 001.0 FA-1-G  
0077 12/15/04 12:08:02 000001 000202 S 001.0 FA-1-G  
0078 12/15/04 12:09:25 000000 000247 S 001.0 FA-1-G  
0079 12/15/04 12:10:55 000001 000240 S 001.0 FA-1-G  
0080 12/15/04 12:12:08 000001 000244 S 001.0 FA-1-G  
0081 12/15/04 12:13:22 000001 000252 S 001.0 FA-1-G  
0082 12/15/04 12:14:48 000002 000274 S 001.0 FA-1-G  
0083 12/15/04 12:16:00 000002 000245 S 001.0 FA-1-G  
0084 12/15/04 12:17:08 000000 000251 S 001.0 FA-1-G  
0085 12/15/04 12:18:42 000001 000231 S 001.0 FA-1-G  
0086 12/15/04 12:19:48 000001 000310 S 001.0 FA-1-G  
0087 12/15/04 12:23:24 000002 000335 S 001.0 FA-1-G  
0088 12/15/04 12:25:26 000001 001984 S 001.0 Field Source  
0089 12/15/04 12:29:52 000000 000293 S 001.0 Field Background  
0090 12/15/04 12:31:44 000004 000272 S 001.0 FA-1-H  
0091 12/15/04 12:33:17 000001 000317 S 001.0 FA-1-H  
0092 12/15/04 12:34:36 000000 000289 S 001.0 FA-1-H  
0093 12/15/04 12:35:58 000000 000287 S 001.0 FA-1-H  
0094 12/15/04 12:37:21 000001 000258 S 001.0 FA-1-H  
0095 12/15/04 12:38:36 000003 000243 S 001.0 FA-1-H  
0096 12/15/04 12:39:57 000002 000228 S 001.0 FA-1-H  
0097 12/15/04 12:41:14 000000 000250 S 001.0 FA-1-H  
0098 12/15/04 12:43:02 000002 000240 S 001.0 FA-1-H  
0099 12/15/04 12:44:24 000001 000278 S 001.0 FA-1-H  
0100 12/15/04 12:45:43 000000 000296 S 001.0 FA-1-H  
0101 12/15/04 12:47:42 000001 000308 S 001.0 FA-1-H  
0102 12/15/04 12:49:30 000002 000161 S 001.0 FA-1-H  
0103 12/15/04 12:51:01 000001 000158 S 001.0 FA-1-H  
0104 12/15/04 12:52:07 000000 000141 S 001.0 FA-1-H  
0105 12/15/04 12:53:15 000000 000135 S 001.0 FA-1-H  
0106 12/15/04 12:55:42 000000 001615 S 001.0 Field Source  
0107 12/15/04 12:57:27 000001 000284 S 001.0 Field Background  
0108 12/15/04 12:58:36 000001 000314 S 001.0 FA-1-I  
0109 12/15/04 13:02:20 000000 000270 S 001.0 FA-1-I  
0110 12/15/04 13:03:35 000000 000313 S 001.0 FA-1-I  
0111 12/15/04 13:04:59 000000 000349 S 001.0 FA-1-I  
0112 12/15/04 13:06:37 000000 000282 S 001.0 FA-1-I  
0113 12/15/04 13:08:29 000000 000272 S 001.0 FA-1-I  
0114 12/15/04 13:09:36 000001 000321 S 001.0 FA-1-I  
0115 12/15/04 13:10:45 000000 000280 S 001.0 FA-1-I  
0116 12/15/04 13:11:52 000000 000318 S 001.0 FA-1-I  
0117 12/15/04 13:13:03 000000 000282 S 001.0 FA-1-I  
0118 12/15/04 13:14:17 000000 000301 S 001.0 FA-1-I  
0119 12/15/04 13:15:35 000001 000301 S 001.0 FA-1-I

0120 12/15/04 13:16:43 000003 000299 S 001.0 FA-1-I  
0121 12/15/04 13:18:17 000000 000309 S 001.0 FA-1-I  
0122 12/15/04 13:19:33 000001 000295 S 001.0 FA-1-I  
0123 12/15/04 13:21:36 000000 001795 S 001.0 Field Source  
0124 12/15/04 13:23:29 000000 000284 S 001.0 Field Background  
0125 12/15/04 13:24:34 000001 000308 S 001.0 FA-1-L  
0126 12/15/04 13:25:51 000000 000313 S 001.0 FA-1-L  
12/15/04 13:27:13 000002 000288 S 001.0 FA-1-L  
12/15/04 13:29:35 000000 000275 S 001.0 FA-1-L  
0129 12/15/04 13:31:33 000001 000314 S 001.0 FA-1-L  
0130 12/15/04 13:32:47 000002 000278 S 001.0 FA-1-L  
0131 12/15/04 13:35:11 000001 000289 S 001.0 FA-1-L  
0132 12/15/04 13:36:58 000001 000288 S 001.0 FA-1-L  
0133 12/15/04 13:38:17 000002 000314 S 001.0 FA-1-L  
0134 12/15/04 13:39:54 000001 000277 S 001.0 FA-1-L  
0135 12/15/04 13:41:01 000001 000261 S 001.0 FA-1-L  
0136 12/15/04 13:42:27 000000 000254 S 001.0 FA-1-L  
0137 12/15/04 13:44:15 000000 000238 S 001.0 FA-1-L  
0138 12/15/04 13:45:56 000002 000278 S 001.0 FA-1-L  
0139 12/15/04 13:47:09 000000 000216 S 001.0 FA-1-L  
0140 12/15/04 13:48:40 000000 001877 S 001.0 Field Source  
S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/16/04	9:14:31	FA-1-I	Final Staus Survey	12/16/04	9:14:31	1.000	1.00
2	Smear 2	12/16/04	9:13:11	FA-1-I	Final Staus Survey	12/16/04	9:13:11	1.000	1.00
3	Smear 3	12/16/04	9:11:50	FA-1-I	Final Staus Survey	12/16/04	9:11:50	1.000	1.00
4	Smear 4	12/16/04	9:10:30	FA-1-I	Final Staus Survey	12/16/04	9:10:30	1.000	1.00
5	Smear 5	12/16/04	9:09:10	FA-1-I	Final Staus Survey	12/16/04	9:09:10	1.000	1.00
6	Smear 6	12/16/04	9:07:50	FA-1-I	Final Staus Survey	12/16/04	9:07:50	1.000	1.00
7	Smear 7	12/16/04	9:06:30	FA-1-I	Final Staus Survey	12/16/04	9:06:30	1.000	1.00
8	Smear 8	12/16/04	9:05:10	FA-1-I	Final Staus Survey	12/16/04	9:05:10	1.000	1.00
9	Smear 9	12/16/04	9:03:50	FA-1-I	Final Staus Survey	12/16/04	9:03:50	1.000	1.00
10	Smear 10	12/16/04	9:02:30	FA-1-I	Final Staus Survey	12/16/04	9:02:30	1.000	1.00
11	Smear 11	12/16/04	9:01:10	FA-1-I	Final Staus Survey	12/16/04	9:01:10	1.000	1.00
12	Smear 12	12/16/04	8:59:50	FA-1-I	Final Staus Survey	12/16/04	8:59:50	1.000	1.00
13	Smear 13	12/16/04	8:58:30	FA-1-I	Final Staus Survey	12/16/04	8:58:30	1.000	1.00
14	Smear 14	12/16/04	8:57:10	FA-1-I	Final Staus Survey	12/16/04	8:57:10	1.000	1.00
15	Smear 15	12/16/04	8:55:50	FA-1-I	Final Staus Survey	12/16/04	8:55:50	1.000	1.00
16	Smear 1	12/16/04	8:54:30	FA-1-L	Final Staus Survey	12/16/04	8:54:30	1.000	1.00
17	Smear 2	12/16/04	8:53:10	FA-1-L	Final Staus Survey	12/16/04	8:53:10	1.000	1.00
18	Smear 3	12/16/04	8:51:50	FA-1-L	Final Staus Survey	12/16/04	8:51:50	1.000	1.00
19	Smear 4	12/16/04	8:50:30	FA-1-L	Final Staus Survey	12/16/04	8:50:30	1.000	1.00
20	Smear 5	12/16/04	8:49:10	FA-1-L	Final Staus Survey	12/16/04	8:49:10	1.000	1.00
21	Smear 6	12/16/04	8:47:50	FA-1-L	Final Staus Survey	12/16/04	8:47:50	1.000	1.00
22	Smear 7	12/16/04	8:46:30	FA-1-L	Final Staus Survey	12/16/04	8:46:30	1.000	1.00
23	Smear 8	12/16/04	8:45:10	FA-1-L	Final Staus Survey	12/16/04	8:45:10	1.000	1.00
24	Smear 9	12/16/04	8:43:50	FA-1-L	Final Staus Survey	12/16/04	8:43:50	1.000	1.00
25	Smear 10	12/16/04	8:42:30	FA-1-L	Final Staus Survey	12/16/04	8:42:30	1.000	1.00
26	Smear 11	12/16/04	8:41:10	FA-1-L	Final Staus Survey	12/16/04	8:41:10	1.000	1.00
27	Smear 12	12/16/04	8:39:50	FA-1-L	Final Staus Survey	12/16/04	8:39:50	1.000	1.00
28	Smear 13	12/16/04	8:38:30	FA-1-L	Final Staus Survey	12/16/04	8:38:30	1.000	1.00
29	Smear 14	12/16/04	8:37:10	FA-1-L	Final Staus Survey	12/16/04	8:37:10	1.000	1.00
30	Smear 15	12/16/04	8:35:50	FA-1-L	Final Staus Survey	12/16/04	8:35:50	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12/16/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %Eff: 44.8 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/16/04	9:14:31	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
2	Smear 2	12/16/04	9:13:11	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
3	Smear 3	12/16/04	9:11:50	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
4	Smear 4	12/16/04	9:10:30	0.00	-0.03	-0.14	13.87	5.00	4.57	10.24	11.01
5	Smear 5	12/16/04	9:09:10	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
6	Smear 6	12/16/04	9:07:50	0.00	-0.03	-0.14	13.87	6.00	5.57	12.48	11.01
7	Smear 7	12/16/04	9:06:30	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
8	Smear 8	12/16/04	9:05:10	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
9	Smear 9	12/16/04	9:03:50	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
10	Smear 10	12/16/04	9:02:30	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
11	Smear 11	12/16/04	9:01:10	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
12	Smear 12	12/16/04	8:59:50	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
13	Smear 13	12/16/04	8:58:30	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
14	Smear 14	12/16/04	8:57:10	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
15	Smear 15	12/16/04	8:55:50	0.00	-0.03	-0.14	13.87	7.00	6.57	14.72	11.01
16	Smear 1	12/16/04	8:54:30	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
17	Smear 2	12/16/04	8:53:10	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
18	Smear 3	12/16/04	8:51:50	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
19	Smear 4	12/16/04	8:50:30	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
20	Smear 5	12/16/04	8:49:10	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
21	Smear 6	12/16/04	8:47:50	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
22	Smear 7	12/16/04	8:46:30	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
23	Smear 8	12/16/04	8:45:10	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
24	Smear 9	12/16/04	8:43:50	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
25	Smear 10	12/16/04	8:42:30	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
26	Smear 11	12/16/04	8:41:10	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
27	Smear 12	12/16/04	8:39:50	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
28	Smear 13	12/16/04	8:38:30	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
29	Smear 14	12/16/04	8:37:10	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
30	Smear 15	12/16/04	8:35:50	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-16-04

Reviewed By (print): Joe Trowbridge

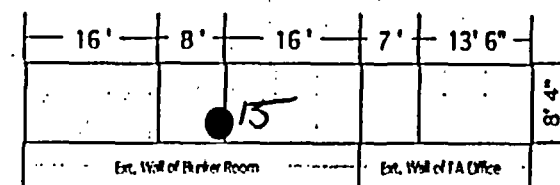
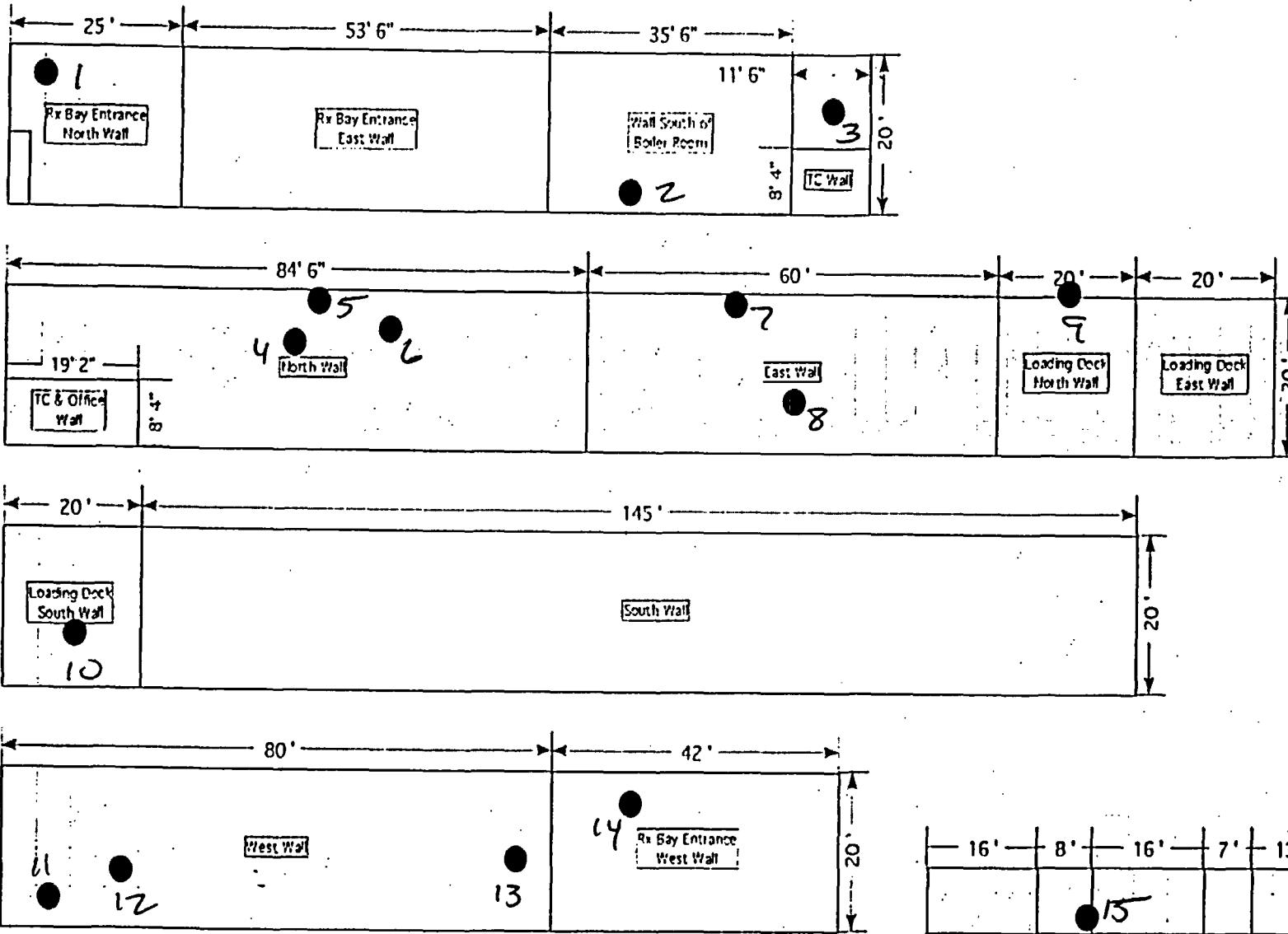
Reviewed By (sign):

Date:

**FA-3-A      Finishing Area**



FA-3-A



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Finishing Area Walls	
 SCIENTECH, Inc. 141 WEST STREET NEW HAVEN, CT 06510	
PROJECT NO: 23129-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
BY: JLL	CK:
FIGURE: FA-3-A	

FA-3-A

Log #		X	Y	Fixed Points
Source		n/a	n/a	
5	Rx Bay Entrance North Wall	2	16	177
6	Wall South of Boiler Room	13	2	149
7	TC Wall	4	8	169
8	North Wall	41	13	142
9	North Wall	43	19	135
10	North Wall	53	15	145
11	East Wall	24	19	124
12	East Wall	34	7	151
13	Loading Dock North Wall	10	20	124
14	Loading Dock South Wall	12	9	145
15	West Wall	6	2	121
16	West Wall	19	7	137
17	West Wall	70	8	107
18	Rx Bay Entrance West Wall	12	15	143
19	Ext. Wall of Bunker Room	7	2	173

(Origin is bottom Left Corner)

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

12/11/2004  
7:23:29 AM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FA Walls  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/11/2004  
Model 2360 Time: 07:19:37  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 999999  
Alpha + Beta Ratemeter Alarm: 999999  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 999999  
Alpha + Beta Scaler Alarm: 999999

Count - Count Time  
Ratemeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/10/04	15:07:40	000000	000213	S 001.0	Lab Background
0002	12/10/04	15:10:53	000002	034587	S 001.0	Lab Source
0003	12/10/04	16:14:38	000001	001555	S 001.0	Field Source
0004	12/10/04	16:22:20	000000	000150	S 001.0	Field Background
0005	12/10/04	16:24:12	000000	000177	S 001.0	FA-3-A Location 1
0006	12/10/04	16:27:41	000002	000149	S 001.0	FA-3-A Location 2
0007	12/10/04	16:29:01	000000	000169	S 001.0	FA-3-A Location 3
0008	12/10/04	16:32:20	000001	000142	S 001.0	FA-3-A Location 4
0009	12/10/04	16:34:01	000000	000135	S 001.0	FA-3-A Location 5
0010	12/10/04	16:37:55	000000	000165	S 001.0	FA-3-A Location 6
0011	12/10/04	16:42:05	000001	000126	S 001.0	FA-3-A Location 7
0012	12/10/04	16:44:31	000000	000151	S 001.0	FA-3-A Location 8
0013	12/10/04	16:46:50	000002	000124	S 001.0	FA-3-A Location 9
0014	12/10/04	16:48:56	000000	000145	S 001.0	FA-3-A Location 10
0015	12/10/04	16:53:18	000000	000121	S 001.0	FA-3-A Location 11
0016	12/10/04	16:54:56	000001	000137	S 001.0	FA-3-A Location 12
0017	12/10/04	16:56:52	000000	000107	S 001.0	FA-3-A Location 13
0018	12/10/04	16:59:30	000003	000143	S 001.0	FA-3-A Location 14
0019	12/10/04	17:01:31	000000	000173	S 001.0	FA-3-A Location 15
0020	12/10/04	17:04:50	000001	001707	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
30	Smear 1	12/11/04	9:17:18	FA-3-A	FSS	12/11/04	9:17:18	1.000	1.00
31	Smear 2	12/11/04	9:15:58	FA-3-A	FSS	12/11/04	9:15:58	1.000	1.00
32	Smear 3	12/11/04	9:14:38	FA-3-A	FSS	12/11/04	9:14:38	1.000	1.00
33	Smear 4	12/11/04	9:13:19	FA-3-A	FSS	12/11/04	9:13:19	1.000	1.00
34	Smear 5	12/11/04	9:11:59	FA-3-A	FSS	12/11/04	9:11:59	1.000	1.00
35	Smear 6	12/11/04	9:10:39	FA-3-A	FSS	12/11/04	9:10:39	1.000	1.00
36	Smear 7	12/11/04	9:09:19	FA-3-A	FSS	12/11/04	9:09:19	1.000	1.00
37	Smear 8	12/11/04	9:07:59	FA-3-A	FSS	12/11/04	9:07:59	1.000	1.00
38	Smear 9	12/11/04	9:06:39	FA-3-A	FSS	12/11/04	9:06:39	1.000	1.00
39	Smear 10	12/11/04	9:05:19	FA-3-A	FSS	12/11/04	9:05:19	1.000	1.00
40	Smear 11	12/11/04	9:04:00	FA-3-A	FSS	12/11/04	9:04:00	1.000	1.00
41	Smear 12	12/11/04	9:02:40	FA-3-A	FSS	12/11/04	9:02:40	1.000	1.00
42	Smear 13	12/11/04	9:01:20	FA-3-A	FSS	12/11/04	9:01:20	1.000	1.00
43	Smear 14	12/11/04	9:00:00	FA-3-A	FSS	12/11/04	9:00:00	1.000	1.00
44	Smear 15	12/11/04	8:58:41	FA-3-A	FSS	12/11/04	8:58:41	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): 

Date: ( -11-04 )

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date: 

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.43 LLD: 13.69 dpm				Bkg: 0.37 cpm %Eff: 46.86 LLD: 10.33 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
30	Smear 1	12/11/04	9:17:18	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
31	Smear 2	12/11/04	9:15:58	0.00	-0.03	-0.14	13.59	4.00	3.63	7.92	10.33
32	Smear 3	12/11/04	9:14:38	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
33	Smear 4	12/11/04	9:13:19	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
34	Smear 5	12/11/04	9:11:59	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
35	Smear 6	12/11/04	9:10:39	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
36	Smear 7	12/11/04	9:09:19	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
37	Smear 8	12/11/04	9:07:59	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
38	Smear 9	12/11/04	9:06:39	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
39	Smear 10	12/11/04	9:05:19	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
40	Smear 11	12/11/04	9:04:00	0.00	-0.03	-0.14	13.59	4.00	3.63	7.92	10.33
41	Smear 12	12/11/04	9:02:40	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
42	Smear 13	12/11/04	9:01:20	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
43	Smear 14	12/11/04	9:00:00	0.00	-0.03	-0.14	13.59	2.00	1.63	3.56	10.33
44	Smear 15	12/11/04	8:58:41	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33

Technician (print): Chris Higgins

Technician (sign): 

Date: 12-11-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

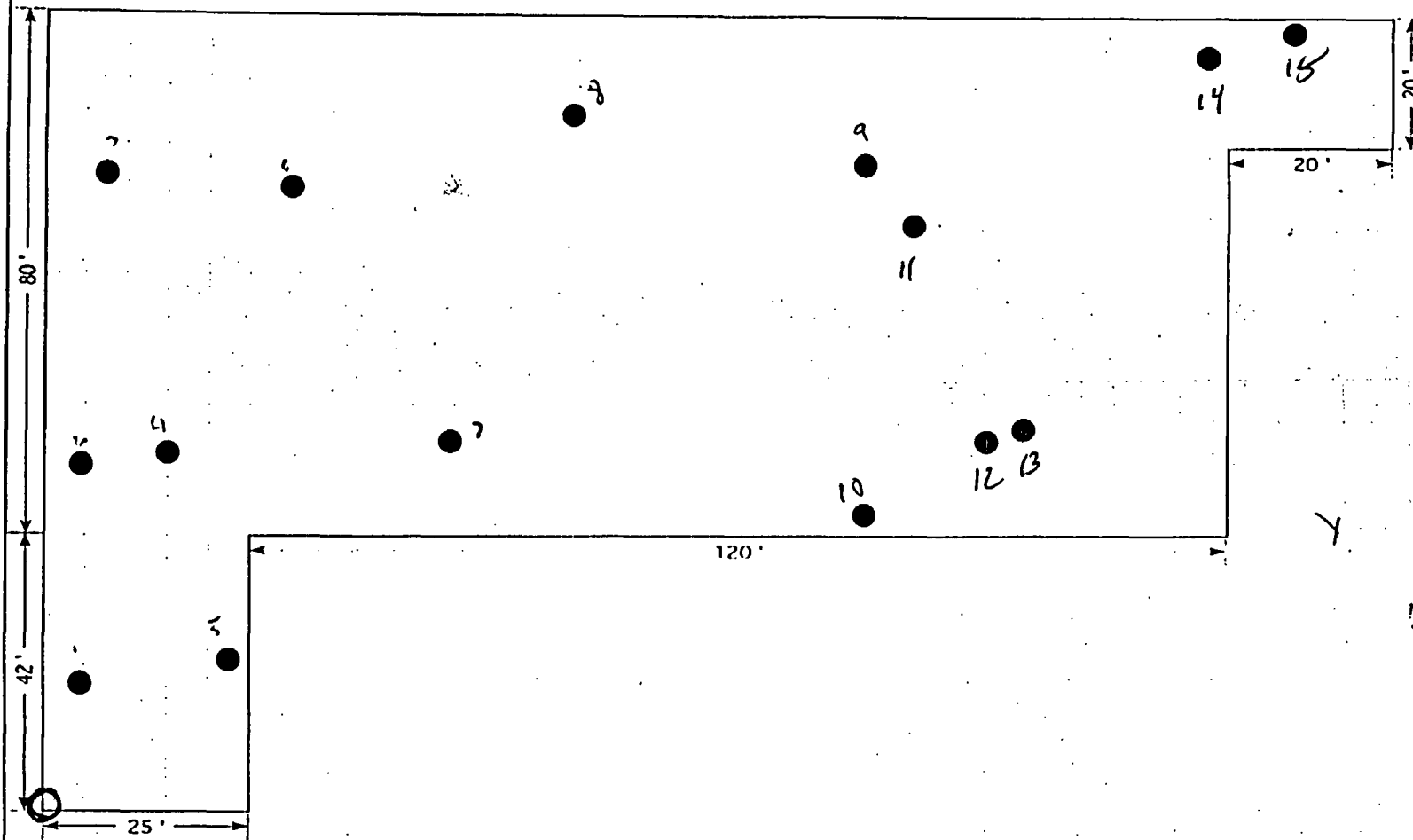
Random Location Generator for X,Y  
Finishing area walls

Enter X range			N		X		X	Y
0 to 658			1	A	2		2	16
			2	C	13		91	2
Enter Y range 0 to 20			3	D	4		118	8
			4	E	41		166	13
			5	E	43		168	19
			6	E	53		178	15
			7	F	24		234	19
			8	F	34		244	7
			9	G	10		280	20
			10	I	12		322	9
			11	K	6		481	2
			12	K	19		494	7
			13	K	70		545	8
			14	L	12		567	15
			15	N	7		620	2
A	25	25						
B	53.5	78.5						
C	35.5	114						
D	11.5	125.5						
E	84.5	210						
F	60	270						
G	20	290						
H	20	310						
I	20	330						
J	145	475						
K	80	555						
L	42	597						
M	16	613						
N	8	621						
O	16	637						
P	7	644						
Q	13.5	657.5						

**FA-3-B      Finishing Area**



FA-3-B



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Finishing Area Ceiling
 SCIENTECH, Inc. 111 WEST STREET NEW MILFORD, CT 06470	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
By: an	CK:
FIGURE: FA-3-B	



FA-3-B

Log #	Source
0004	18
05	14
06	15
07	16
08	17
09	13
10	12
11	11
12	8
13	6
14	7
15	4
16	5
17	9
18	10

	X	Y
	n/a	n/a
1	2	25
2	6	52
3	10	93
4	16	46
5	24	21
6	30	93
7	51	52
8	60	98
9	96	85
10	97	43
11	100	73
12	108	55
13	115	60
14	142	110
15	148	115

A (ft<sup>2</sup>)= 13050

Fixed Points
<del>202</del>
202
174
159
199
204
210
197
162
200
319
145
128
126
133
152

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/10/2004  
Time: 3:02:17 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FA-3-B  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/10/2004  
Model 2360 Time: 15:01:13  
Sample Number: 0020

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 999999  
Alpha + Beta Ratemeter Alarm: 999999  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 999999  
Alpha + Beta Scaler Alarm: 999999

CntTime - Count Time  
Rat  
meter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/10/04	13:03:11	000001	000175	S 001.0	Lab Background
0002	12/10/04	13:05:58	000000	034450	S 001.0	Lab Source
0003	12/10/04	14:05:16	000000	000151	S 001.0	Field Background
0004	12/10/04	14:06:59	000000	000202	S 001.0	FA-3-B Location 18
0005	12/10/04	14:08:09	000001	000174	S 001.0	FA-3-B Location 14
0006	12/10/04	14:12:09	000001	000159	S 001.0	FA-3-B Location 15
0007	12/10/04	14:15:53	000000	000199	S 001.0	FA-3-B Location 16
0008	12/10/04	14:19:06	000001	000204	S 001.0	FA-3-B Location 17
0009	12/10/04	14:22:24	000000	000210	S 001.0	FA-3-B Location 13
0010	12/10/04	14:23:29	000000	000197	S 001.0	FA-3-B Location 12
0011	12/10/04	14:28:19	000000	000162	S 001.0	FA-3-B Location 11
0012	12/10/04	14:34:06	000000	000200	S 001.0	FA-3-B Location 8
0013	12/10/04	14:37:23	000001	000319	S 001.0	FA-3-B Location 6
0014	12/10/04	14:41:37	000001	000145	S 001.0	FA-3-B Location 7
0015	12/10/04	14:42:41	000003	000128	S 001.0	FA-3-B Location 4
0016	12/10/04	14:43:46	000000	000126	S 001.0	FA-3-B Location 5
0017	12/10/04	14:46:52	000000	000133	S 001.0	FA-3-B Location 9
0018	12/10/04	14:49:22	000001	000152	S 001.0	FA-3-B Location 10
0019	12/10/04	15:00:38	000003	001512	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/10/04	16:19:22	FA-3-B	Final Status Survey	12/10/04	16:19:22	1.000	1.00
2	Smear 2	12/10/04	16:18:02	FA-3-B	Final Status Survey	12/10/04	16:18:02	1.000	1.00
3	Smear 3	12/10/04	16:16:42	FA-3-B	Final Status Survey	12/10/04	16:16:42	1.000	1.00
4	Smear 4	12/10/04	16:15:22	FA-3-B	Final Status Survey	12/10/04	16:15:22	1.000	1.00
5	Smear 5	12/10/04	16:14:02	FA-3-B	Final Status Survey	12/10/04	16:14:02	1.000	1.00
6	Smear 6	12/10/04	16:12:42	FA-3-B	Final Status Survey	12/10/04	16:12:42	1.000	1.00
7	Smear 7	12/10/04	16:11:22	FA-3-B	Final Status Survey	12/10/04	16:11:22	1.000	1.00
8	Smear 8	12/10/04	16:10:02	FA-3-B	Final Status Survey	12/10/04	16:10:02	1.000	1.00
9	Smear 9	12/10/04	16:08:42	FA-3-B	Final Status Survey	12/10/04	16:08:42	1.000	1.00
10	Smear 10	12/10/04	16:07:22	FA-3-B	Final Status Survey	12/10/04	16:07:22	1.000	1.00
11	Smear 11	12/10/04	16:06:02	FA-3-B	Final Status Survey	12/10/04	16:06:02	1.000	1.00
12	Smear 12	12/10/04	16:04:42	FA-3-B	Final Status Survey	12/10/04	16:04:42	1.000	1.00
13	Smear 13	12/10/04	16:03:22	FA-3-B	Final Status Survey	12/10/04	16:03:22	1.000	1.00
14	Smear 14	12/10/04	16:02:02	FA-3-B	Final Status Survey	12/10/04	16:02:02	1.000	1.00
15	Smear 15	12/10/04	16:00:42	FA-3-B	Final Status Survey	12/10/04	16:00:42	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12/10/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.17 cpm %Eff: 23.99 LLD: 16.99 dpm				Bkg: 0.6 cpm %Eff: 46.01 LLD: 11.78 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/10/04	16:19:22	0.00	-0.17	-0.69	16.99	0.00	-0.60	-1.33	11.78
2	Smear 2	12/10/04	16:18:02	1.00	0.83	3.47	16.99	2.00	1.40	3.11	11.78
3	Smear 3	12/10/04	16:16:42	1.00	0.83	3.47	16.99	0.00	-0.60	-1.33	11.78
4	Smear 4	12/10/04	16:15:22	0.00	-0.17	-0.69	16.99	0.00	-0.60	-1.33	11.78
5	Smear 5	12/10/04	16:14:02	0.00	-0.17	-0.69	16.99	0.00	-0.60	-1.33	11.78
6	Smear 6	12/10/04	16:12:42	1.00	0.83	3.47	16.99	0.00	-0.60	-1.33	11.78
7	Smear 7	12/10/04	16:11:22	0.00	-0.17	-0.69	16.99	0.00	-0.60	-1.33	11.78
8	Smear 8	12/10/04	16:10:02	0.00	-0.17	-0.69	16.99	3.00	2.40	5.33	11.78
9	Smear 9	12/10/04	16:08:42	0.00	-0.17	-0.69	16.99	0.00	-0.60	-1.33	11.78
10	Smear 10	12/10/04	16:07:22	0.00	-0.17	-0.69	16.99	2.00	1.40	3.11	11.78
11	Smear 11	12/10/04	16:06:02	0.00	-0.17	-0.69	16.99	1.00	0.40	0.89	11.78
12	Smear 12	12/10/04	16:04:42	0.00	-0.17	-0.69	16.99	0.00	-0.60	-1.33	11.78
13	Smear 13	12/10/04	16:03:22	0.00	-0.17	-0.69	16.99	0.00	-0.60	-1.33	11.78
14	Smear 14	12/10/04	16:02:02	0.00	-0.17	-0.69	16.99	0.00	-0.60	-1.33	11.78
15	Smear 15	12/10/04	16:00:42	0.00	-0.17	-0.69	16.99	2.00	1.40	3.11	11.78

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-10-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Enter X range 0 to 165

Enter Y range 0 to 80

N

1

2

3

4

5

6

7

8

9

10

11

12

13

14

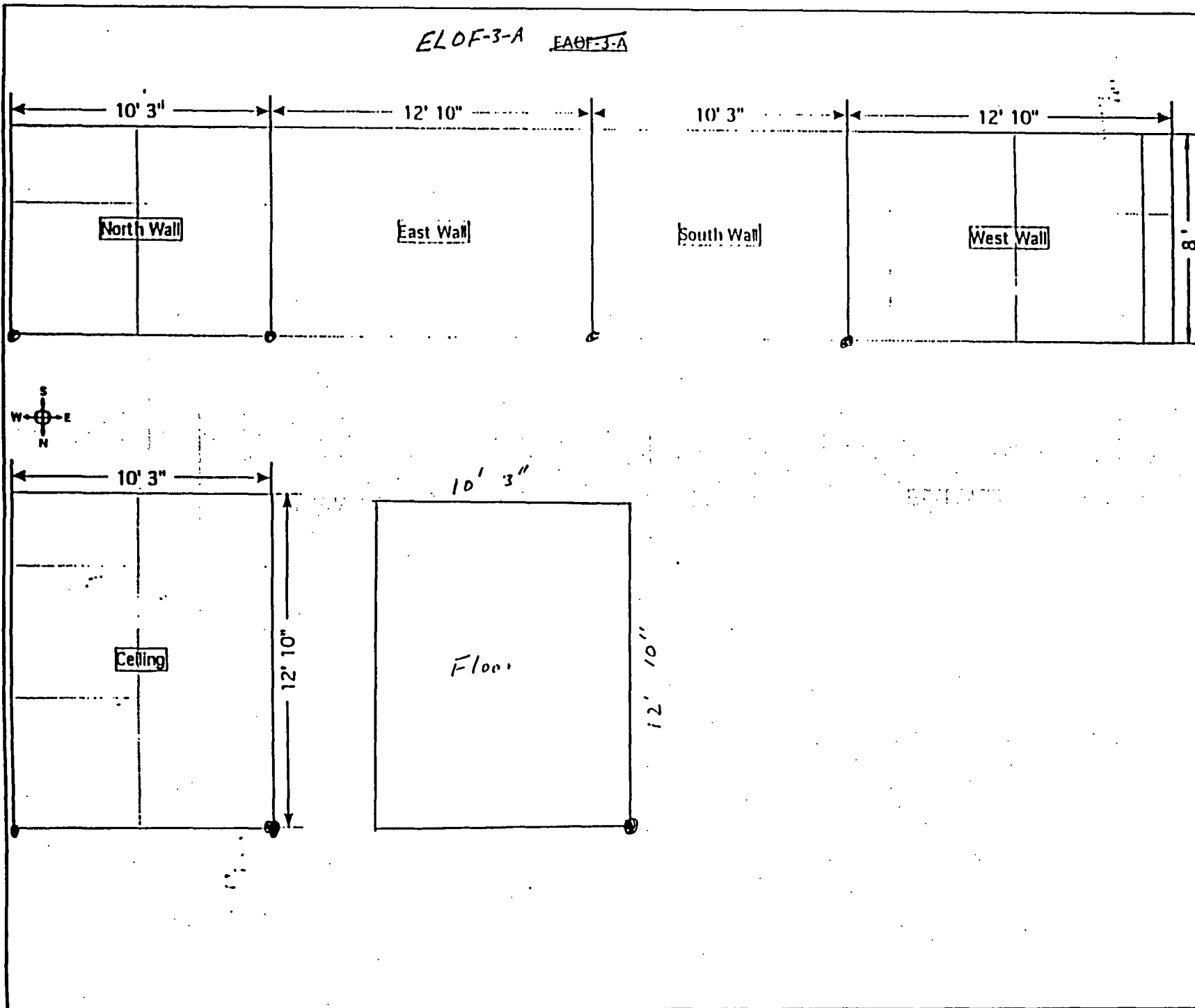
15

X

Y

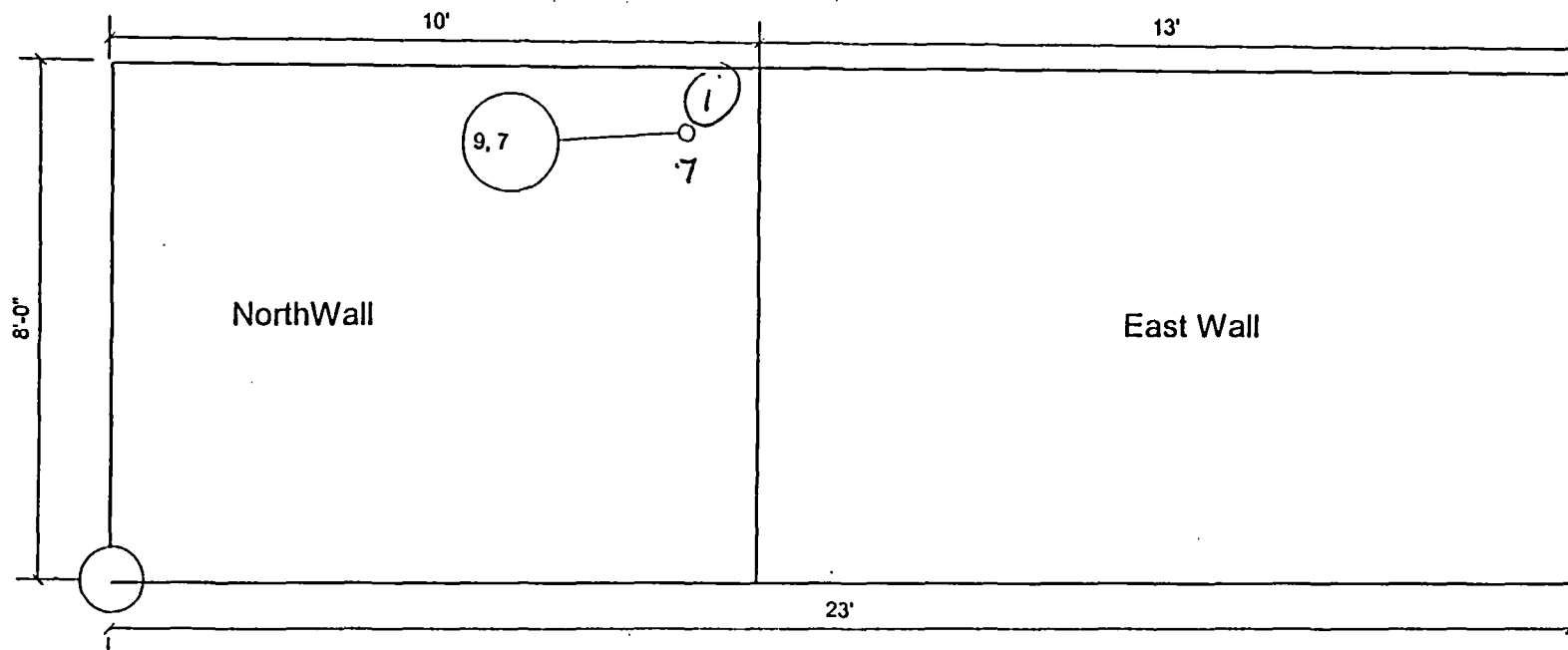
2	25
6	52
10	93
16	46
24	21
30	93
51	52
60	98
96	85
97	43
100	73
108	55
115	60
142	110
148	115

**ELOF-3-A    Electrical Office**



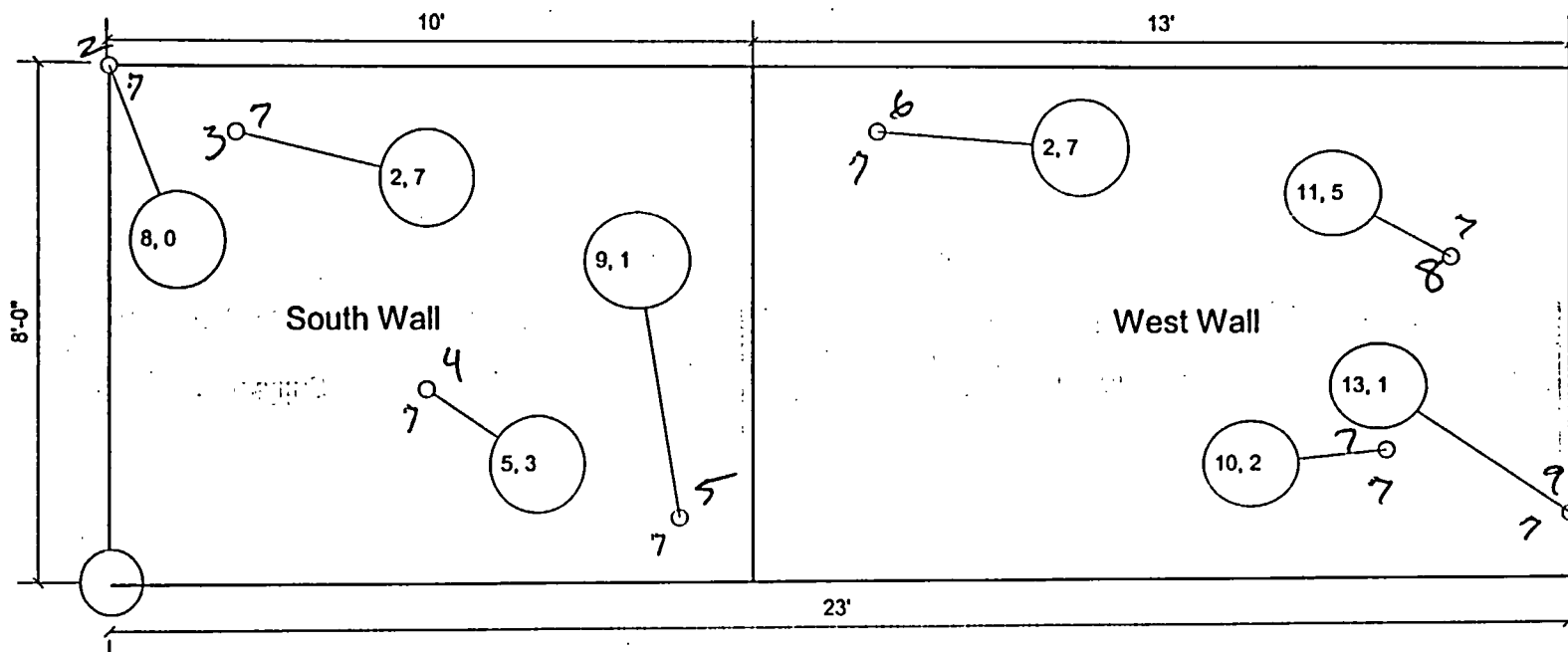
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REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARLAUS, PENNSYLVANIA 111 REACTOR ROAD
DRAWING	CLASS 3 Electrician Finishing Area Office Walls & Ceiling
 OSCIENTECH, Inc. 140 WEST STREET NEW MILFORD, CT 06455	
PROJECT NO. 21229-0001	
FILE NAME 7/23/14	
SCALE N.T.S.	DATE 4/23/2014
BY LW	CHK
FIGURE PAGE 3-A	

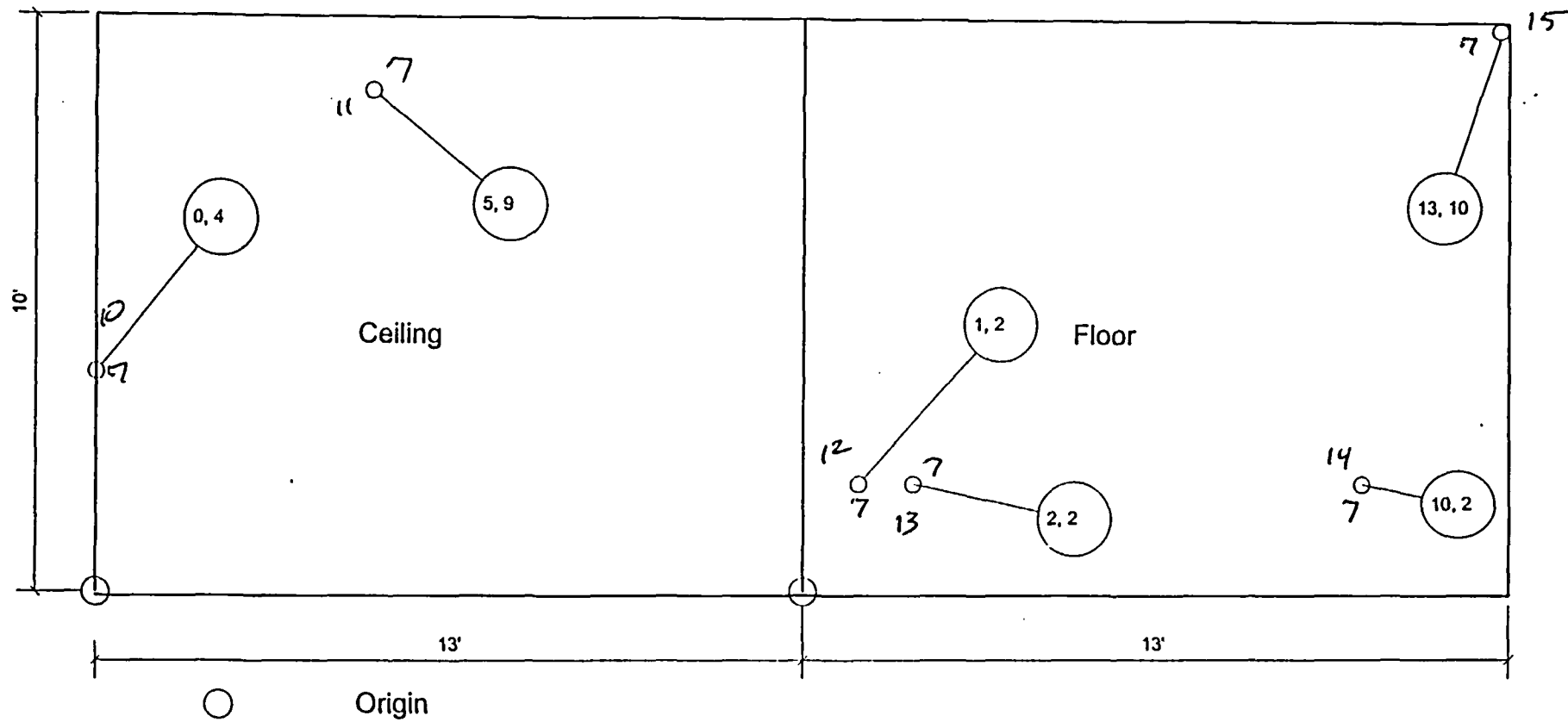
*ELOF-3-A*



○ Origin







ELOF-3-A

202 433

Log #
48
56
67
78
84
910
1011
1112
1213
1314
1415
1516
1617
1718
1819

	X	Y
1	9	7
2	8	0
3	2	7
4	5	3
5	9	1
6	2	7
7	10	2
8	11	5
9	13	1
10	0	4
11	5	9
12	1	2
13	2	2
14	10	2
15	13	10

A (ft<sup>2</sup>) = 520

Fixed Points	Ave. (Scan)	Max. (Scan)
227	220	250
223	200	260
250	220	260
235	220	240
266	220	250
243	220	250
241	220	250
243	200	250
232	200	250
226	220	250
152	220	260
209	230	240
228	220	260
267	200	260
229	220	260

all pts @ 7 hr/h  
 per C. Higgins. 12/1/04  
 Claude Wilbur, 12/1/04

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 11/30/2004  
Time: 12:06:44 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: ELOF-3-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/30/2004  
Model 2360 Time: 12:03:14  
Sample Number: 0020

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000364  
Beta Ratemeter Alarm: 000364  
Alpha + Beta Ratemeter Alarm: 000364  
Alpha Scaler Alarm: 000364  
Beta Scaler Alarm: 000364  
Alpha + Beta Scaler Alarm: 000364

CntTime - Count Time  
R- Ratemeter  
S- Scaler

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

---

001	11/30/04	11:35:17	000001	035166	S 001.0	Lab Source
002	11/30/04	11:36:39	000000	000193	S 001.0	Lab Background
003	11/30/04	11:40:00	000002	001714	S 001.0	Field Source
004	11/30/04	11:41:52	000000	000227	S 001.0	ELOF-3-A
005	11/30/04	11:43:00	000000	000223	S 001.0	ELOF-3-A
006	11/30/04	11:44:12	000000	000254	S 001.0	ELOF-3-A
007	11/30/04	11:45:30	000001	000235	S 001.0	ELOF-3-A
008	11/30/04	11:46:36	000003	000266	S 001.0	ELOF-3-A
009	11/30/04	11:47:47	000002	000243	S 001.0	ELOF-3-A
010	11/30/04	11:48:55	000002	000241	S 001.0	ELOF-3-A
011	11/30/04	11:50:02	000001	000243	S 001.0	ELOF-3-A
012	11/30/04	11:51:10	000001	000232	S 001.0	ELOF-3-A
013	11/30/04	11:52:27	000001	000226	S 001.0	ELOF-3-A
014	11/30/04	11:53:35	000000	000152	S 001.0	ELOF-3-A
015	11/30/04	11:54:46	000003	000209	S 001.0	ELOF-3-A
016	11/30/04	11:55:53	000002	000228	S 001.0	ELOF-3-A
017	11/30/04	11:57:01	000001	000267	S 001.0	ELOF-3-A
018	11/30/04	11:58:07	000001	000229	S 001.0	ELOF-3-A
019	11/30/04	12:00:30	000003	001591	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	11/30/04	12:34:14	ELOF-3-A	Final Status Survey	11/30/04	12:34:14	1.000	1.00
2	Smear 2	11/30/04	12:32:54	ELOF-3-A	Final Status Survey	11/30/04	12:32:54	1.000	1.00
3	Smear 3	11/30/04	12:31:34	ELOF-3-A	Final Status Survey	11/30/04	12:31:34	1.000	1.00
4	Smear 4	11/30/04	12:30:14	ELOF-3-A	Final Status Survey	11/30/04	12:30:14	1.000	1.00
5	Smear 5	11/30/04	12:28:54	ELOF-3-A	Final Status Survey	11/30/04	12:28:54	1.000	1.00
6	Smear 6	11/30/04	12:27:34	ELOF-3-A	Final Status Survey	11/30/04	12:27:34	1.000	1.00
7	Smear 7	11/30/04	12:26:14	ELOF-3-A	Final Status Survey	11/30/04	12:26:14	1.000	1.00
8	Smear 8	11/30/04	12:24:54	ELOF-3-A	Final Status Survey	11/30/04	12:24:54	1.000	1.00
9	Smear 9	11/30/04	12:23:34	ELOF-3-A	Final Status Survey	11/30/04	12:23:34	1.000	1.00
10	Smear 10	11/30/04	12:22:14	ELOF-3-A	Final Status Survey	11/30/04	12:22:14	1.000	1.00
11	Smear 11	11/30/04	12:20:54	ELOF-3-A	Final Status Survey	11/30/04	12:20:54	1.000	1.00
12	Smear 12	11/30/04	12:19:34	ELOF-3-A	Final Status Survey	11/30/04	12:19:34	1.000	1.00
13	Smear 13	11/30/04	12:18:14	ELOF-3-A	Final Status Survey	11/30/04	12:18:14	1.000	1.00
14	Smear 14	11/30/04	12:16:54	ELOF-3-A	Final Status Survey	11/30/04	12:16:54	1.000	1.00
15	Smear 15	11/30/04	12:15:34	ELOF-3-A	Final Status Survey	11/30/04	12:15:34	1.000	1.00

Technician (print): Rob Ellison

Technician (sign):

*Rob Ellison*

Date: 11-30-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 24.17 LLD: 11.21 dpm				Bkg: 0.83 cpm %Eff: 44.73 LLD: 12.88 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	11/30/04	12:34:14	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88
2	Smear 2	11/30/04	12:32:54	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88
3	Smear 3	11/30/04	12:31:34	0.00	0.00	0.00	11.21	2.00	1.17	2.61	12.88
4	Smear 4	11/30/04	12:30:14	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88
5	Smear 5	11/30/04	12:28:54	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88
6	Smear 6	11/30/04	12:27:34	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88
7	Smear 7	11/30/04	12:26:14	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88
8	Smear 8	11/30/04	12:24:54	1.00	1.00	4.14	11.21	1.00	0.17	0.37	12.88
9	Smear 9	11/30/04	12:23:34	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88
10	Smear 10	11/30/04	12:22:14	0.00	0.00	0.00	11.21	1.00	0.17	0.37	12.88
11	Smear 11	11/30/04	12:20:54	0.00	0.00	0.00	11.21	2.00	1.17	2.61	12.88
12	Smear 12	11/30/04	12:19:34	0.00	0.00	0.00	11.21	3.00	2.17	4.84	12.88
13	Smear 13	11/30/04	12:18:14	0.00	0.00	0.00	11.21	1.00	0.17	0.37	12.88
14	Smear 14	11/30/04	12:16:54	0.00	0.00	0.00	11.21	1.00	0.17	0.37	12.88
15	Smear 15	11/30/04	12:15:34	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88

Technician (print): Rob Ellison

Technician (sign):

*Rob Ellison*

Date:

12-04

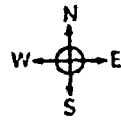
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

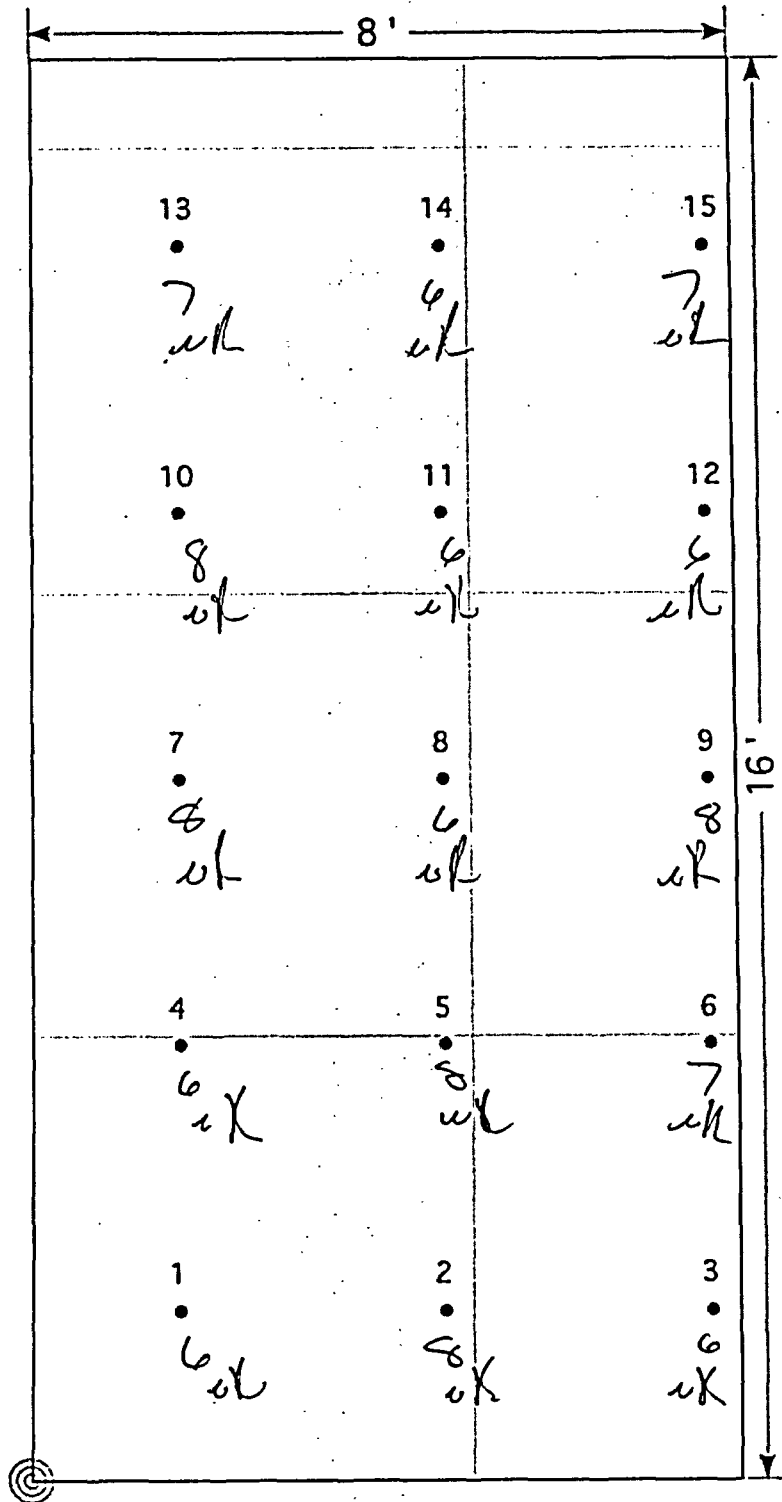
Date:

**FABU-2-A    Finishing Area – Bunker**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 OSCIENTECH, INC. 143 WEST STREET NEW HAVEN, CT 06510	PROJECT NO.: 23379-0501	FILE NAME:	DATE:	07/12/2004	FIGURE: FABU-2-A
		DRAWING	CLASS 2 Finishing Area Bunker Floor				SCALE:	N.T.S.	



- SURVEY POINTS
- ◎ STARTING LOCATION



FABU-2-A



FABU-2-A

Log #
7
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16
17
18
19
20
21

	X	Y
1	1.7	1.9
2	4.7	1.9
3	7.7	1.9
4	1.7	4.9
5	4.7	4.9
6	7.7	4.9
7	1.7	7.9
8	4.7	7.9
9	7.7	7.9
10	1.7	10.9
11	4.7	10.9
12	7.7	10.9
13	1.7	13.9
14	4.7	13.9
15	7.7	13.9

L (ft) = 3.0  
A (ft<sup>2</sup>) = 128

Fixed Points	Ave. (Scan)	Max. (Scan)
288	280	320
277	280	320
228	240	280
643	270	280
258	260	300
246	260	300
219	220	260
199	240	300
202	200	260
236	240	280
227	240	280
233	270	280
217	200	240
229	240	280
194	200	260

~~287~~  
~~288~~  
~~289~~  
~~290~~  
~~291~~

22-VOID

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/9/2004  
Time: 10:03:27 AM

Header 1: Chris Higgins  
Header 2: Serial#202475  
Header 3: DetSer#PR208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: HYDRO-1-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/08/2004  
Model 2360 Time: 18:26:02  
Sample Number: 0001

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time

Rat  
meter

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
001	11/07/04	09:23:24	000000	000177	S 001.0	Lab Background
002	11/07/04	09:24:42	000000	032053	S 001.0	Lab Source
003	11/08/04	07:24:37	000000	000214	S 001.0	Lab Background
004	11/08/04	07:27:22	000000	032461	S 001.0	Lab Source
005	11/08/04	17:14:59	000003	001585	S 001.0	Field Source
006	11/08/04	17:17:50	000000	000219	S 001.0	Field Background
007	11/08/04	17:23:49	000001	000288	S 001.0	FABU-2-A
008	11/08/04	17:24:57	000002	000277	S 001.0	FABU-2-A
009	11/08/04	17:26:03	000001	000228	S 001.0	FABU-2-A
010	11/08/04	17:27:10	000000	000243	S 001.0	FABU-2-A
011	11/08/04	17:28:16	000000	000258	S 001.0	FABU-2-A
012	11/08/04	17:29:26	000001	000246	S 001.0	FABU-2-A
013	11/08/04	17:31:09	000002	000219	S 001.0	FABU-2-A
014	11/08/04	17:32:54	000001	000199	S 001.0	FABU-2-A
015	11/08/04	17:34:48	000001	000202	S 001.0	FABU-2-A
016	11/08/04	17:36:07	000001	000236	S 001.0	FABU-2-A
017	11/08/04	17:37:23	000001	000227	S 001.0	FABU-2-A
018	11/08/04	17:38:41	000000	000233	S 001.0	FABU-2-A
019	11/08/04	17:39:47	000000	000217	S 001.0	FABU-2-A
020	11/08/04	17:40:59	000000	000228	S 001.0	FABU-2-A
021	11/08/04	17:42:11	000002	000194	S 001.0	FABU-2-A
022	11/08/04	17:51:39	000001	000165	S 001.0	Void
023	11/08/04	17:55:23	000001	001544	S 001.0	Field Source
024	11/08/04	17:57:57	000001	000150	S 001.0	Field Background
025	11/08/04	17:59:28	000000	000167	S 001.0	HYDRO-1-A
026	11/08/04	18:00:42	000000	000180	S 001.0	HYDRO-1-A
027	11/08/04	18:02:09	000000	000179	S 001.0	HYDRO-1-A
028	11/08/04	18:03:19	000002	000196	S 001.0	HYDRO-1-A
029	11/08/04	18:04:41	000001	000171	S 001.0	HYDRO-1-A
030	11/08/04	18:06:30	000000	000220	S 001.0	HYDRO-1-A
031	11/08/04	18:07:36	000001	000261	S 001.0	HYDRO-1-A
032	11/08/04	18:08:56	000000	000255	S 001.0	HYDRO-1-A
033	11/08/04	18:10:16	000000	000254	S 001.0	HYDRO-1-A
034	11/08/04	18:11:29	000001	000245	S 001.0	HYDRO-1-A

0035 11/08/04 18:13:45 000001 000229 S 001.0 HYDRO-1-A  
0036 11/08/04 18:14:54 000000 000239 S 001.0 HYDRO-1-A  
0037 11/08/04 18:16:16 000000 000201 S 001.0 HYDRO-1-A  
0038 11/08/04 18:17:33 000000 000215 S 001.0 HYDRO-1-A  
0039 11/08/04 18:18:40 000000 000223 S 001.0 HYDRO-1-A  
0040 11/08/04 18:19:47 000000 000218 S 001.0 HYDRO-1-A  
0041 11/08/04 18:25:06 000003 001554 S 001.0 Field Source  
§

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/09/04	10:11:45	FABU-2-A	Final Status Survey	12/09/04	10:11:45	1.000	1.00
2	Smear 2	12/09/04	10:10:26	FABU-2-A	Final Status Survey	12/09/04	10:10:26	1.000	1.00
3	Smear 3	12/09/04	10:09:06	FABU-2-A	Final Status Survey	12/09/04	10:09:06	1.000	1.00
4	Smear 4	12/09/04	10:07:46	FABU-2-A	Final Status Survey	12/09/04	10:07:46	1.000	1.00
5	Smear 5	12/09/04	10:06:26	FABU-2-A	Final Status Survey	12/09/04	10:06:26	1.000	1.00
6	Smear 6	12/09/04	10:05:06	FABU-2-A	Final Status Survey	12/09/04	10:05:06	1.000	1.00
7	Smear 7	12/09/04	10:03:46	FABU-2-A	Final Status Survey	12/09/04	10:03:46	1.000	1.00
8	Smear 8	12/09/04	10:02:26	FABU-2-A	Final Status Survey	12/09/04	10:02:26	1.000	1.00
9	Smear 9	12/09/04	10:01:06	FABU-2-A	Final Status Survey	12/09/04	10:01:06	1.000	1.00
10	Smear 10	12/09/04	9:59:46	FABU-2-A	Final Status Survey	12/09/04	9:59:46	1.000	1.00
11	Smear 11	12/09/04	9:58:26	FABU-2-A	Final Status Survey	12/09/04	9:58:26	1.000	1.00
12	Smear 12	12/09/04	9:57:06	FABU-2-A	Final Status Survey	12/09/04	9:57:06	1.000	1.00
13	Smear 13	12/09/04	9:55:46	FABU-2-A	Final Status Survey	12/09/04	9:55:46	1.000	1.00
14	Smear 14	12/09/04	9:54:26	FABU-2-A	Final Status Survey	12/09/04	9:54:26	1.000	1.00
15	Smear 15	12/09/04	9:53:06	FABU-2-A	Final Status Survey	12/09/04	9:53:06	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 23.81 LLD: 15.01 dpm				Bkg: 0.6 cpm %Eff: 44.63 LLD: 11.37 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/09/04	10:11:45	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
2	Smear 2	12/09/04	10:10:28	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
3	Smear 3	12/09/04	10:09:06	0.00	-0.07	-0.28	15.01	4.00	3.50	7.84	11.37
4	Smear 4	12/09/04	10:07:46	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
5	Smear 5	12/09/04	10:06:26	1.00	0.93	3.92	15.01	1.00	0.50	1.12	11.37
6	Smear 6	12/09/04	10:05:06	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
7	Smear 7	12/09/04	10:03:48	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
8	Smear 8	12/09/04	10:02:28	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
9	Smear 9	12/09/04	10:01:08	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
10	Smear 10	12/09/04	9:59:48	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
11	Smear 11	12/09/04	9:58:28	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
12	Smear 12	12/09/04	9:57:06	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
13	Smear 13	12/09/04	9:55:46	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
14	Smear 14	12/09/04	9:54:26	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
15	Smear 15	12/09/04	9:53:06	0.00	-0.07	-0.28	15.01	4.00	3.50	7.84	11.37

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

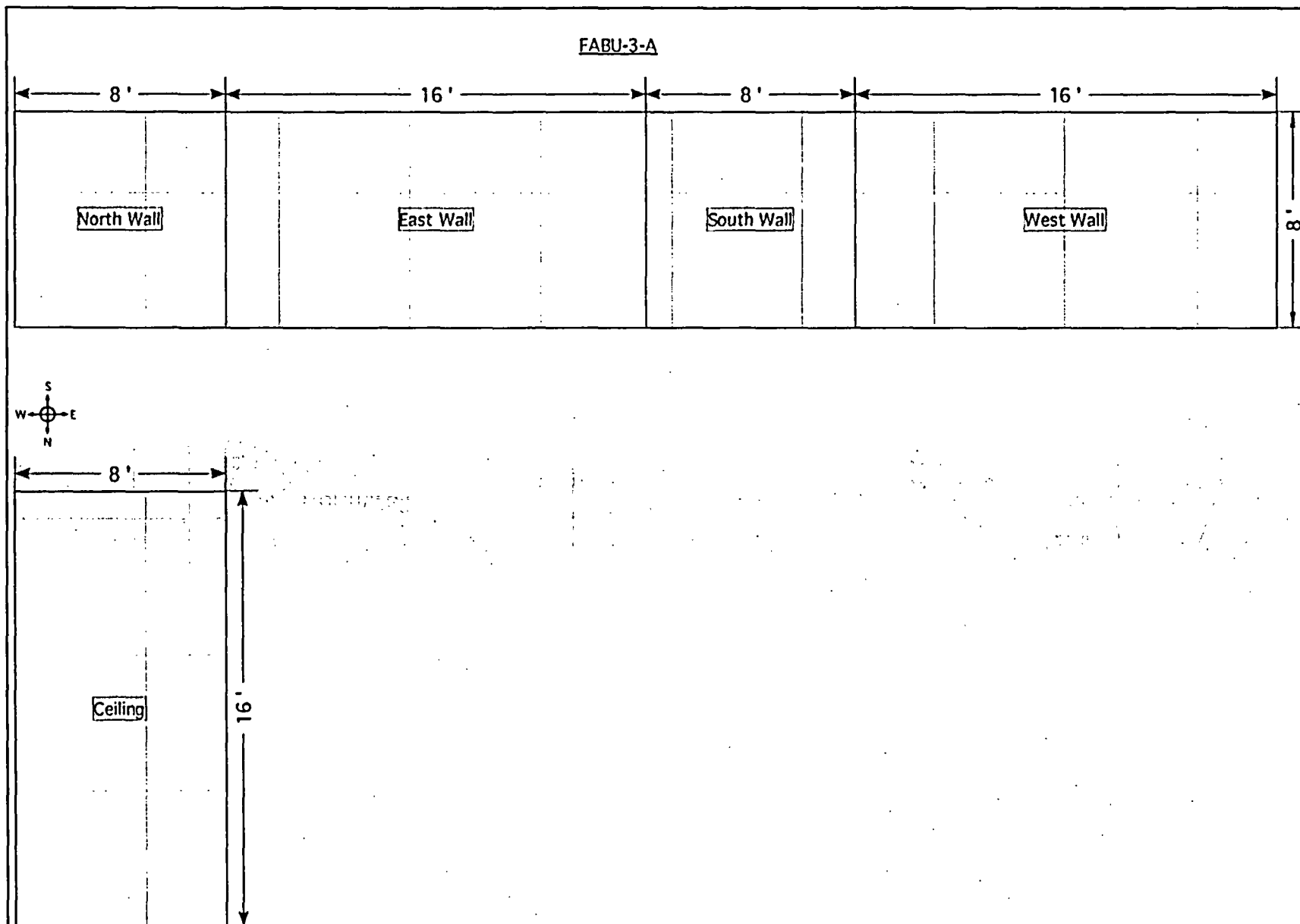
Date: 12-29-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**FABU-3-A    Finishing Area – Bunker**



Document  
Control No.

REVISION NO.

DRAWING

PROJECT

**QUEHANNA DECOMMISSIONING**  
KARTHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
**CLASS 3**  
Finishing Area Bunker Walls & Ceiling

**SCIENTECH**

SCIENTECH, Inc.  
143 WEST STREET  
NEW MILFORD, CT 06756

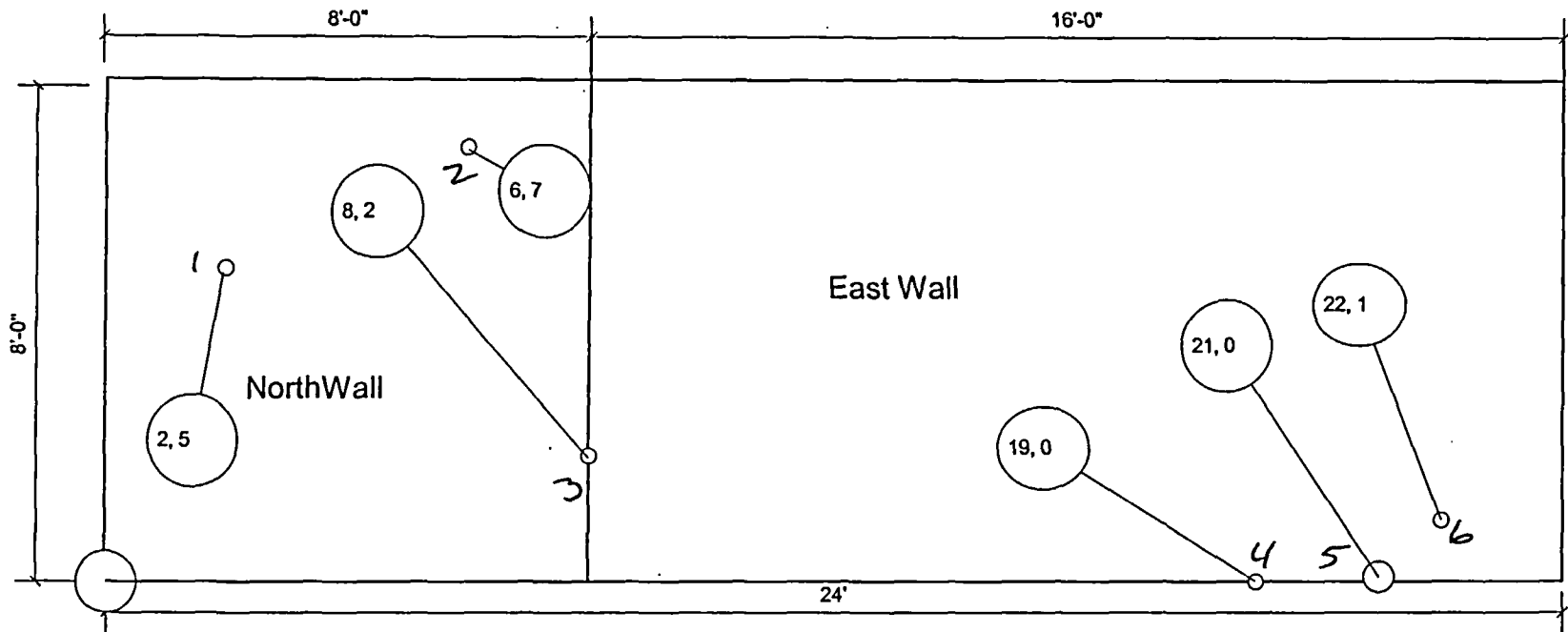
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23529-0301

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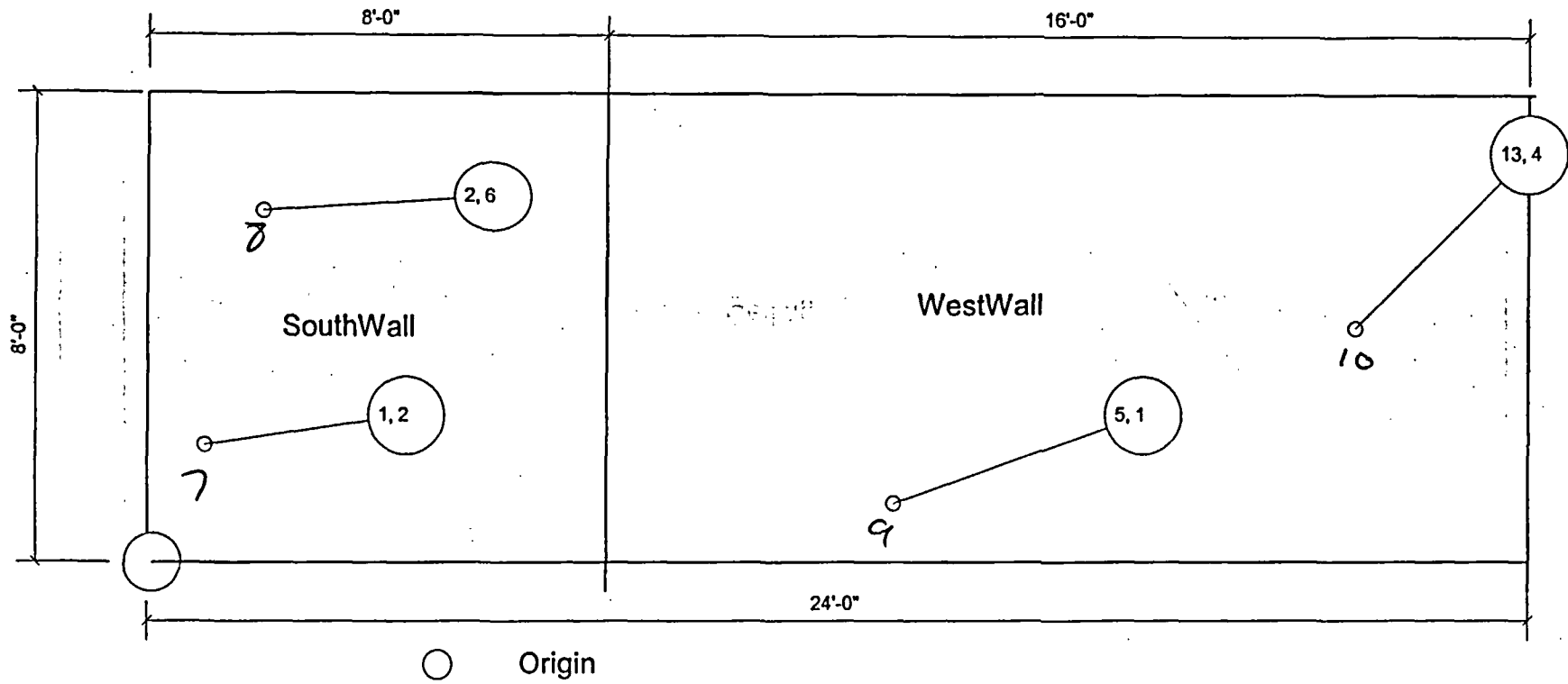
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N.T.S. 07/12/2004

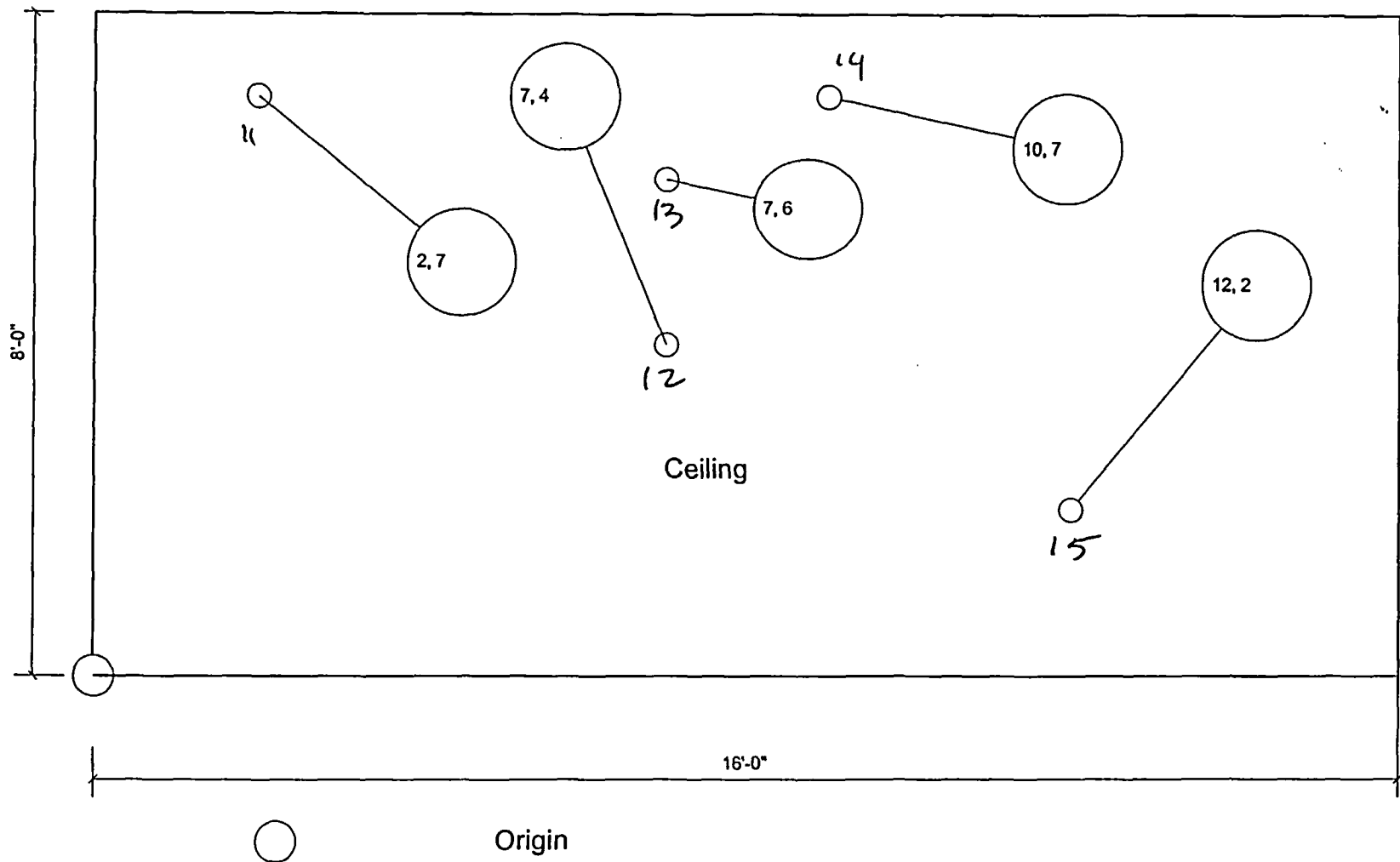
BY: CK:

FOUR:  
FABU-3-A









**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/6/2004  
Time: 3:31:51 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FABU-3-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/06/2004  
Model 2360 Time: 15:30:46  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Count - Count Time  
F. imeter  
S. aler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/06/04	14:30:52	000001	000202	S 001.0	Lab Background
0002	12/06/04	14:32:20	000004	034697	S 001.0	Lab Source
0003	12/06/04	14:34:36	000004	001688	S 001.0	Field Source
0004	12/06/04	14:46:44	000001	000281	S 001.0	Field Background
0005	12/06/04	14:47:54	000002	000297	S 001.0	FABU-3-A
0006	12/06/04	14:49:04	000000	000298	S 001.0	FABU-3-A
0007	12/06/04	14:50:09	000002	000284	S 001.0	FABU-3-A
0008	12/06/04	14:51:17	000003	000294	S 001.0	FABU-3-A
0009	12/06/04	14:52:25	000001	000284	S 001.0	FABU-3-A
0010	12/06/04	14:53:56	000003	000258	S 001.0	FABU-3-A
0011	12/06/04	14:55:21	000000	000275	S 001.0	FABU-3-A
0012	12/06/04	14:57:07	000001	000254	S 001.0	FABU-3-A
0013	12/06/04	14:58:50	000000	000267	S 001.0	FABU-3-A
0014	12/06/04	15:00:06	000002	000284	S 001.0	FABU-3-A
0015	12/06/04	15:01:12	000000	000279	S 001.0	FABU-3-A
0016	12/06/04	15:14:48	000002	000287	S 001.0	FABU-3-A
0017	12/06/04	15:16:22	000000	000292	S 001.0	FABU-3-A
0018	12/06/04	15:18:10	000003	000290	S 001.0	FABU-3-A
0019	12/06/04	15:19:16	000001	000282	S 001.0	FABU-3-A
0020	12/06/04	15:23:53	000000	001662	S 001.0	Field Source

\$

FABU-3-A

Log #
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	X	Y
1	2	5
2	6	7
3	8	2
4	19	0
5	21	0
6	21	1
7	1	2
8	2	6
9	5	1
10	13	4
11	7	7
12	7	4
13	7	6
14	10	7
A (ft <sup>2</sup> )=		512
15	12	2

Fixed Points	Ave. (Scan)	Max. (Scan)
297	240	340
298	280	349
284	300	340
294	280	320
284	250	300
258	280	340
275	280	340
254	260	300
247	250	300
284	250	320
274	300	320
287	300	320
292	240	340
240	240	320
242	240	300

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/06/04	15:48:42	FABU-3-A	Final Status Survey	12/06/04	15:48:42	1.000	1.00
2	Smear 2	12/06/04	15:47:23	FABU-3-A	Final Status Survey	12/06/04	15:47:23	1.000	1.00
3	Smear 3	12/06/04	15:48:03	FABU-3-A	Final Status Survey	12/06/04	15:48:03	1.000	1.00
4	Smear 4	12/06/04	15:44:44	FABU-3-A	Final Status Survey	12/06/04	15:44:44	1.000	1.00
5	Smear 5	12/06/04	15:43:24	FABU-3-A	Final Status Survey	12/06/04	15:43:24	1.000	1.00
6	Smear 6	12/06/04	15:42:04	FABU-3-A	Final Status Survey	12/06/04	15:42:04	1.000	1.00
7	Smear 7	12/06/04	15:40:44	FABU-3-A	Final Status Survey	12/06/04	15:40:44	1.000	1.00
8	Smear 8	12/06/04	15:39:25	FABU-3-A	Final Status Survey	12/06/04	15:39:25	1.000	1.00
9	Smear 9	12/06/04	15:38:05	FABU-3-A	Final Status Survey	12/06/04	15:38:05	1.000	1.00
10	Smear 10	12/06/04	15:36:48	FABU-3-A	Final Status Survey	12/06/04	15:36:48	1.000	1.00
11	Smear 11	12/06/04	15:35:26	FABU-3-A	Final Status Survey	12/06/04	15:35:26	1.000	1.00
12	Smear 12	12/06/04	15:34:07	FABU-3-A	Final Status Survey	12/06/04	15:34:07	1.000	1.00
13	Smear 13	12/06/04	15:32:47	FABU-3-A	Final Status Survey	12/06/04	15:32:47	1.000	1.00
14	Smear 14	12/06/04	15:31:27	FABU-3-A	Final Status Survey	12/06/04	15:31:27	1.000	1.00
15	Smear 15	12/06/04	15:30:07	FABU-3-A	Final Status Survey	12/06/04	15:30:07	1.000	1.00

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

Technician (sign): *Rob Ellison*

Reviewed By (sign):

Date: 12-06-04

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.83 LLD: 13.93 dpm				Bkg: 0.63 cpm %Eff: 44.46 LLD: 11.69 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/06/04	15:48:42	1.00	0.97	4.06	13.93	3.00	2.47	5.55	11.59
2	Smear 2	12/06/04	15:47:23	0.00	-0.03	-0.14	13.93	2.00	1.47	3.30	11.59
3	Smear 3	12/06/04	15:46:03	0.00	-0.03	-0.14	13.93	3.00	2.47	5.55	11.59
4	Smear 4	12/06/04	15:44:44	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
5	Smear 5	12/06/04	15:43:24	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
6	Smear 6	12/06/04	15:42:04	0.00	-0.03	-0.14	13.93	4.00	3.47	7.80	11.59
7	Smear 7	12/06/04	15:40:44	0.00	-0.03	-0.14	13.93	2.00	1.47	3.30	11.59
8	Smear 8	12/06/04	15:39:25	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
9	Smear 9	12/06/04	15:38:05	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
10	Smear 10	12/06/04	15:36:46	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
11	Smear 11	12/06/04	15:35:26	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
12	Smear 12	12/06/04	15:34:07	0.00	-0.03	-0.14	13.93	2.00	1.47	3.30	11.59
13	Smear 13	12/06/04	15:32:47	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
14	Smear 14	12/06/04	15:31:27	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
15	Smear 15	12/06/04	15:30:07	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

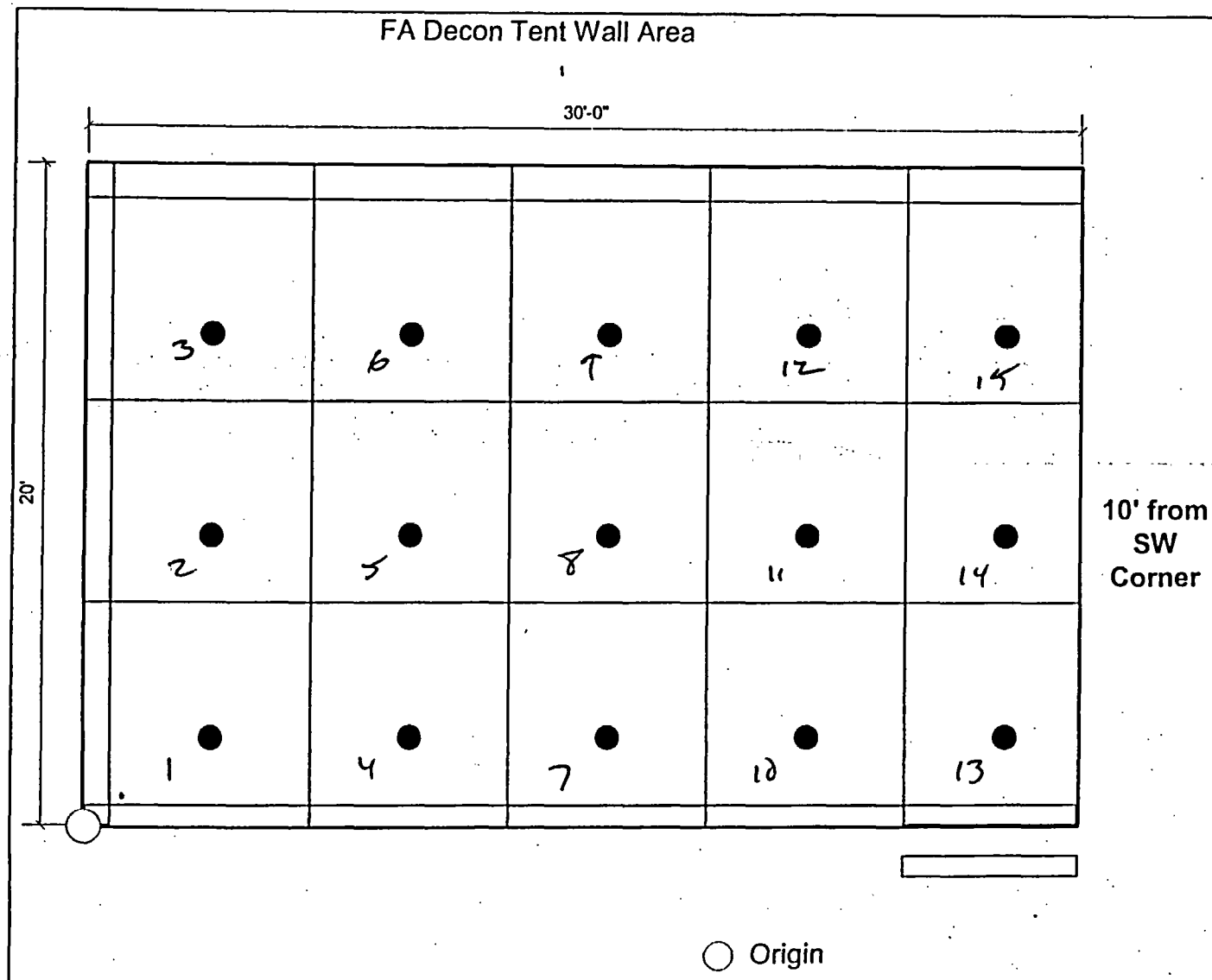
Date: 12-26-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**DECON-2-A Decontamination Area in Finishing Area**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 15 REACTOR ROAD CLASS 2 Decon Tent Wall Area	
SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06455	
PROJECT NO. 23529-0501	
FILE NAME:	
SCALE: NTS	DATE: 12/02/2004
By: d11	CK:
FIGURE: DECON-2-A	



# DECON-2-A

Log #
4 Source
5
6
7
8
9
10
11
12
13
14
15
16

	X	Y
	n/a	n/a
1	4.0	3.0
2	4.0	9.0
3	4.0	15.0
4	10.0	3.0
5	10.0	9.0
6	10.0	15.0
7	16.0	3.0
8	16.0	9.0
9	16.0	15.0
10	22.0	3.0
11	22.0	9.0
12	22.0	15.0

L (ft) = 6

A (ft<sup>2</sup>) = 600

17
18
19

13	29	3.0
14	29	9.0
15	28	15.0

$\alpha + \beta$   
↓

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
147	140	160
<del>147</del> 139	140	160
139	140	160
158	140	180
120	120	140
145	140	160
148	140	160
142	140	160
136	140	160
122	120	140
146	140	160
157	160	180

158	160	180
153	160	140
132	140	180

3-BKG

20-Source

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

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Date: 12/15/2004  
Time: 3:00:16 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: DECON-2-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/15/2004  
Model 2360 Time: 14:59:20  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

IntTime - Count Time  
t - F meter

Log Data:

um	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

001	12/15/04	14:26:19	000000	000186	S 001.0	Lab Background
002	12/15/04	14:28:39	000002	034043	S 001.0	Lab Source
003	12/15/04	14:38:30	000000	000156	S 001.0	Field Background
004	12/15/04	14:39:46	000001	002046	S 001.0	Field Source
005	12/15/04	14:40:51	000001	000146	S 001.0	DECON-2-A
006	12/15/04	14:42:30	000000	000139	S 001.0	DECON-2-A
007	12/15/04	14:43:36	000000	000139	S 001.0	DECON-2-A
008	12/15/04	14:44:41	000000	000158	S 001.0	DECON-2-A
009	12/15/04	14:45:48	000000	000123	S 001.0	DECON-2-A
010	12/15/04	14:46:54	000001	000144	S 001.0	DECON-2-A
011	12/15/04	14:48:02	000000	000148	S 001.0	DECON-2-A
012	12/15/04	14:49:14	000000	000142	S 001.0	DECON-2-A
013	12/15/04	14:50:19	000000	000136	S 001.0	DECON-2-A
014	12/15/04	14:51:24	000000	000122	S 001.0	DECON-2-A
015	12/15/04	14:52:29	000000	000146	S 001.0	DECON-2-A
016	12/15/04	14:53:34	000001	000156	S 001.0	DECON-2-A
017	12/15/04	14:54:39	000000	000158	S 001.0	DECON-2-A
018	12/15/04	14:55:44	000000	000153	S 001.0	DECON-2-A
019	12/15/04	14:56:49	000000	000132	S 001.0	DECON-2-A
020	12/15/04	14:58:18	000001	002031	S 001.0	Field Source

Smears		Count Mins: 1							
PIC WPC-9550 Instr No 1		Count Started						Sample Collected	
								Fraction	
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
41	Smear 1	12/16/04	11:53:21	DECON-2-A	Final Status Survey	12/16/04	11:53:21	1.000	1.00
42	Smear 2	12/16/04	11:52:01	DECON-2-A	Final Status Survey	12/16/04	11:52:01	1.000	1.00
43	Smear 3	12/16/04	11:50:41	DECON-2-A	Final Status Survey	12/16/04	11:50:41	1.000	1.00
44	Smear 4	12/16/04	11:49:21	DECON-2-A	Final Status Survey	12/16/04	11:49:21	1.000	1.00
45	Smear 5	12/16/04	11:48:01	DECON-2-A	Final Status Survey	12/16/04	11:48:01	1.000	1.00
46	Smear 6	12/16/04	11:46:41	DECON-2-A	Final Status Survey	12/16/04	11:46:41	1.000	1.00
47	Smear 7	12/16/04	11:45:21	DECON-2-A	Final Status Survey	12/16/04	11:45:21	1.000	1.00
48	Smear 8	12/16/04	11:44:02	DECON-2-A	Final Status Survey	12/16/04	11:44:02	1.000	1.00
49	Smear 9	12/16/04	11:42:42	DECON-2-A	Final Status Survey	12/16/04	11:42:42	1.000	1.00
50	Smear 10	12/16/04	11:41:22	DECON-2-A	Final Status Survey	12/16/04	11:41:22	1.000	1.00
51	Smear 11	12/16/04	11:40:02	DECON-2-A	Final Status Survey	12/16/04	11:40:02	1.000	1.00
52	Smear 12	12/16/04	11:38:43	DECON-2-A	Final Status Survey	12/16/04	11:38:43	1.000	1.00
53	Smear 13	12/16/04	11:37:23	DECON-2-A	Final Status Survey	12/16/04	11:37:23	1.000	1.00
54	Smear 14	12/16/04	11:36:03	DECON-2-A	Final Status Survey	12/16/04	11:36:03	1.000	1.00
55	Smear 15	12/16/04	11:34:44	DECON-2-A	Final Status Survey	12/16/04	11:34:44	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 6-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %Eff: 44.6 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
41	Smear 1	12/16/04	11:53:21	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
42	Smear 2	12/16/04	11:52:01	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
43	Smear 3	12/16/04	11:50:41	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
44	Smear 4	12/16/04	11:49:21	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
45	Smear 5	12/16/04	11:48:01	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
46	Smear 6	12/16/04	11:46:41	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
47	Smear 7	12/16/04	11:45:21	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
48	Smear 8	12/16/04	11:44:02	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
49	Smear 9	12/16/04	11:42:42	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
50	Smear 10	12/16/04	11:41:22	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
51	Smear 11	12/16/04	11:40:02	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
52	Smear 12	12/16/04	11:38:43	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
53	Smear 13	12/16/04	11:37:23	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
54	Smear 14	12/16/04	11:36:03	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
55	Smear 15	12/16/04	11:34:44	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

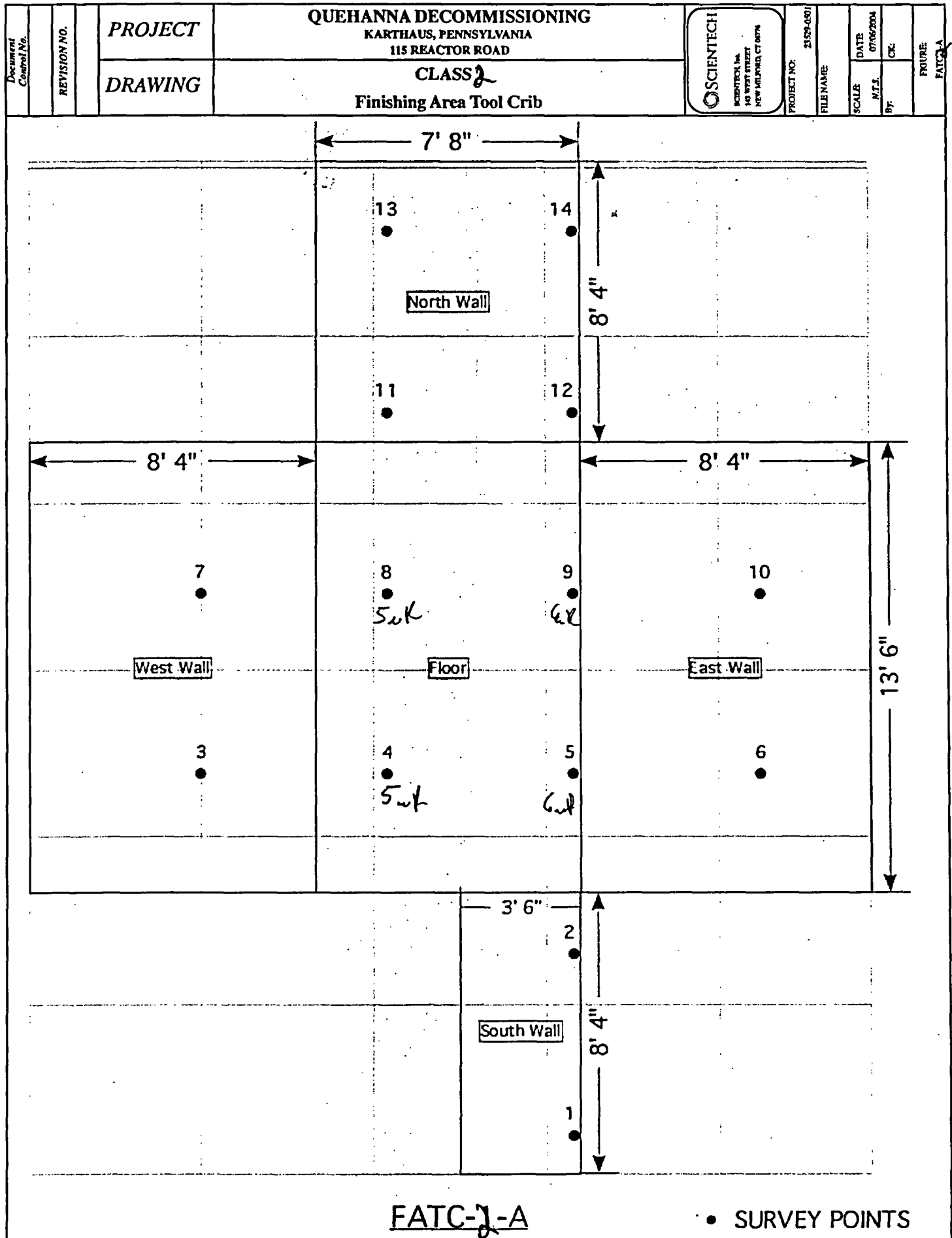
Date: 12-16-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**FATC-2-A    Finishing Area - Tool Crib**



FATC-2-A

Log #
5
6
7
8
9
10
11
12
13
14
15
16
17
18

	X	Y
1	15.8	1.1
2	15.8	6.5
3	5.0	11.9
4	10.4	11.9
5	15.8	11.9
6	21.2	11.9
7	5.0	17.3
8	10.4	17.3
9	15.8	17.3
10	21.2	17.3
11	10.4	22.7
12	15.8	22.7
13	10.4	28.1
14	15.8	28.1

L (ft)= 5.4

A (ft²)= 405

Fixed Points	Ave. (Scan)	Max. (Scan)
197	200	240
113	200	220
192	180	200
203	160	200
103	100	160
194	200	240
204	200	220
109	100	160
207	200	240
218	220	260
222	220	260
205	200	220
200	200	220
190	180	220

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

at 12/7/2004  
ir 12:48 PM

Header 1: Chris Higgins  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FATC-2-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/07/2004  
Model 2360 Time: 18:19:27  
Sample Number: 0020

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Count - Count Time  
Ratmeter  
Scaler

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/07/04	08:37:04	000000	000177	S 001.0	Lab Background
0002	12/07/04	08:38:26	000004	033586	S 001.0	Lab Source
0003	12/07/04	16:42:01	000001	001448	S 001.0	Field Source
0004	12/07/04	17:01:07	000000	000187	S 001.0	Field Background
0005	12/07/04	17:44:33	000000	000197	S 001.0	FATC-2-A
0006	12/07/04	17:45:39	000005	000193	S 001.0	FATC-2-A
0007	12/07/04	17:48:32	000000	000192	S 001.0	FATC-2-A
0008	12/07/04	17:49:38	000000	000203	S 001.0	FATC-2-A
0009	12/07/04	17:50:57	000000	000103	S 001.0	FATC-2-A
0010	12/07/04	17:52:11	000002	000199	S 001.0	FATC-2-A
0011	12/07/04	17:54:46	000000	000206	S 001.0	FATC-2-A
0012	12/07/04	17:57:06	000000	000109	S 001.0	FATC-2-A
0013	12/07/04	17:58:21	000000	000207	S 001.0	FATC-2-A
0014	12/07/04	17:59:31	000001	000218	S 001.0	FATC-2-A
0015	12/07/04	18:00:37	000002	000222	S 001.0	FATC-2-A
0016	12/07/04	18:02:01	000000	000205	S 001.0	FATC-2-A
0017	12/07/04	18:03:07	000000	000200	S 001.0	FATC-2-A
0018	12/07/04	18:11:24	000002	000190	S 001.0	FATC-2-A
0019	12/07/04	18:14:57	000003	001365	S 001.0	Field Source

\$



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
7	Smear 1	12/07/04	17:38:08	FATC-2-A	Final Status Survey	12/07/04	17:38:08	1.000	1.00
8	Smear 2	12/07/04	17:38:48	FATC-2-A	Final Status Survey	12/07/04	17:38:48	1.000	1.00
9	Smear 3	12/07/04	17:35:29	FATC-2-A	Final Status Survey	12/07/04	17:35:29	1.000	1.00
10	Smear 4	12/07/04	17:34:09	FATC-2-A	Final Status Survey	12/07/04	17:34:09	1.000	1.00
11	Smear 5	12/07/04	17:32:50	FATC-2-A	Final Status Survey	12/07/04	17:32:50	1.000	1.00
12	Smear 6	12/07/04	17:31:30	FATC-2-A	Final Status Survey	12/07/04	17:31:30	1.000	1.00
13	Smear 7	12/07/04	17:30:11	FATC-2-A	Final Status Survey	12/07/04	17:30:11	1.000	1.00
14	Smear 8	12/07/04	17:28:51	FATC-2-A	Final Status Survey	12/07/04	17:28:51	1.000	1.00
15	Smear 9	12/07/04	17:27:32	FATC-2-A	Final Status Survey	12/07/04	17:27:32	1.000	1.00
16	Smear 10	12/07/04	17:26:12	FATC-2-A	Final Status Survey	12/07/04	17:26:12	1.000	1.00
17	Smear 11	12/07/04	17:24:53	FATC-2-A	Final Status Survey	12/07/04	17:24:53	1.000	1.00
18	Smear 12	12/07/04	17:23:33	FATC-2-A	Final Status Survey	12/07/04	17:23:33	1.000	1.00
19	Smear 13	12/07/04	17:22:13	FATC-2-A	Final Status Survey	12/07/04	17:22:13	1.000	1.00
20	Smear 14	12/07/04	17:20:53	FATC-2-A	Final Status Survey	12/07/04	17:20:53	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-17-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 24.91 LLD: 14.35 dpm				Bkg: 0.4 cpm %Eff: 44.93 LLD: 10.74 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
7	Smear 1	12/07/04	17:38:08	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
8	Smear 2	12/07/04	17:38:48	0.00	-0.07	-0.27	14.35	2.00	1.60	3.56	10.74
9	Smear 3	12/07/04	17:35:29	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
10	Smear 4	12/07/04	17:34:09	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
11	Smear 5	12/07/04	17:32:50	0.00	-0.07	-0.27	14.35	3.00	2.60	5.79	10.74
12	Smear 6	12/07/04	17:31:30	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
13	Smear 7	12/07/04	17:30:11	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
14	Smear 8	12/07/04	17:28:51	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
15	Smear 9	12/07/04	17:27:32	0.00	-0.07	-0.27	14.35	3.00	2.60	5.79	10.74
16	Smear 10	12/07/04	17:26:12	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
17	Smear 11	12/07/04	17:24:53	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
18	Smear 12	12/07/04	17:23:33	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
19	Smear 13	12/07/04	17:22:13	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
20	Smear 14	12/07/04	17:20:53	0.00	-0.07	-0.27	14.35	2.00	1.60	3.56	10.74

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

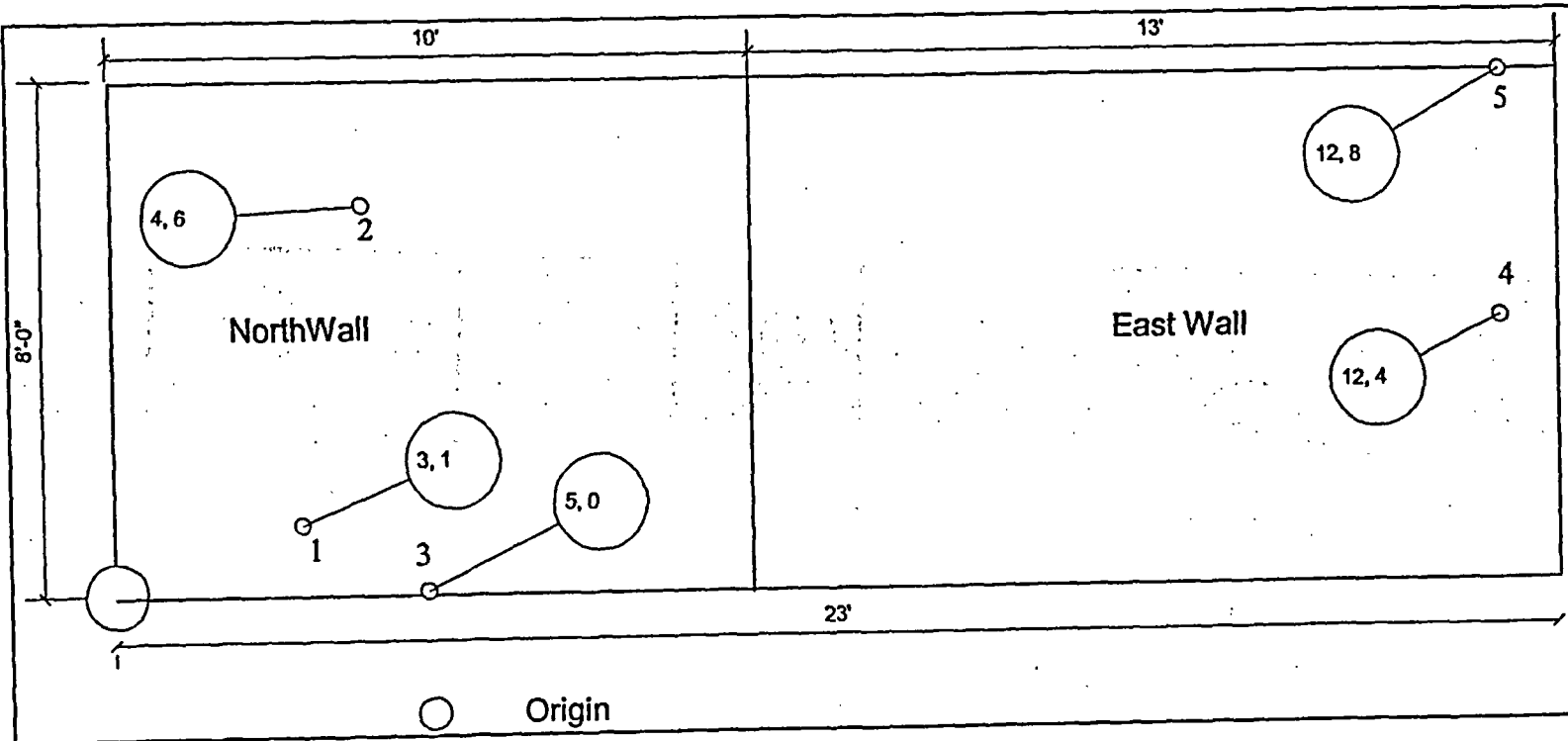
Date: 12-07-04

Reviewed By (print): Joe Trowbridge

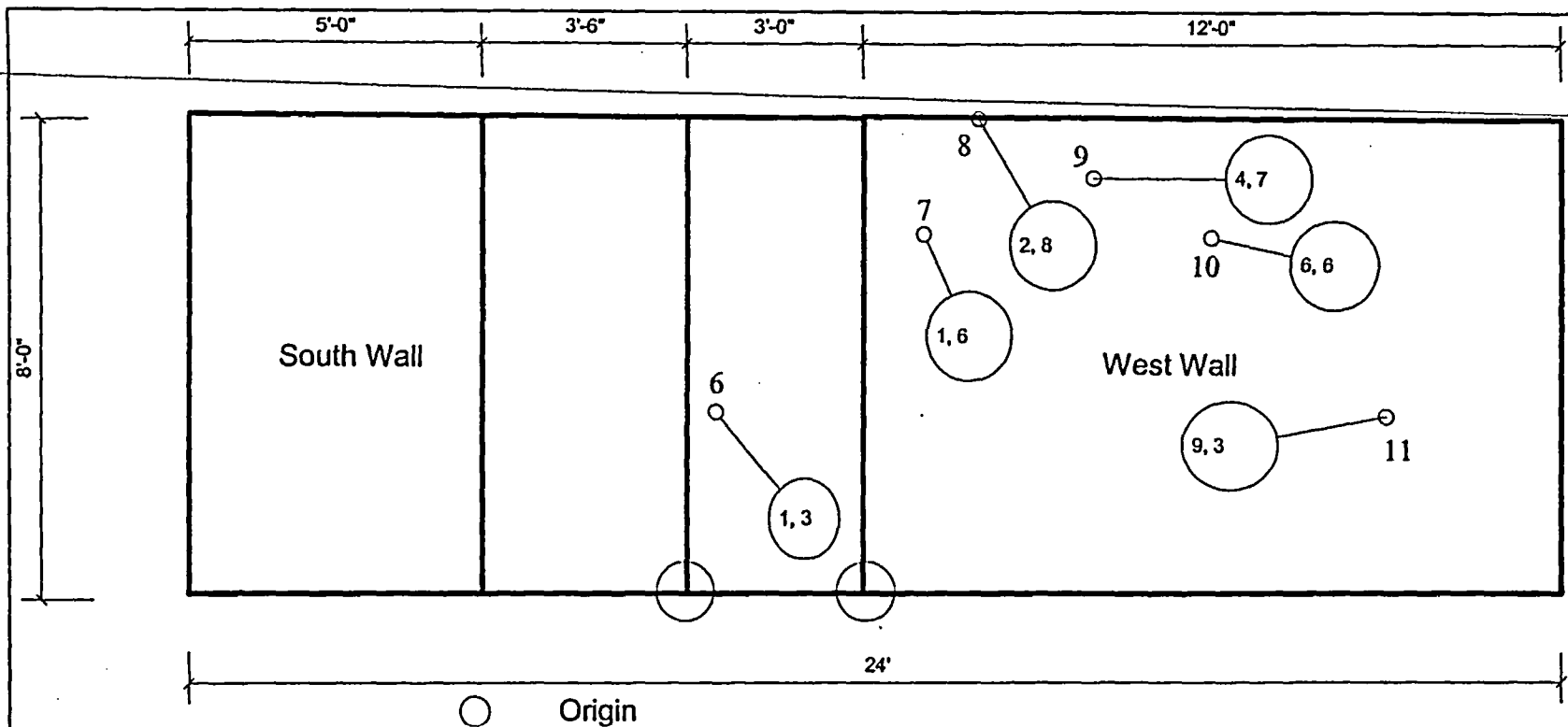
Reviewed By (sign):

Date:

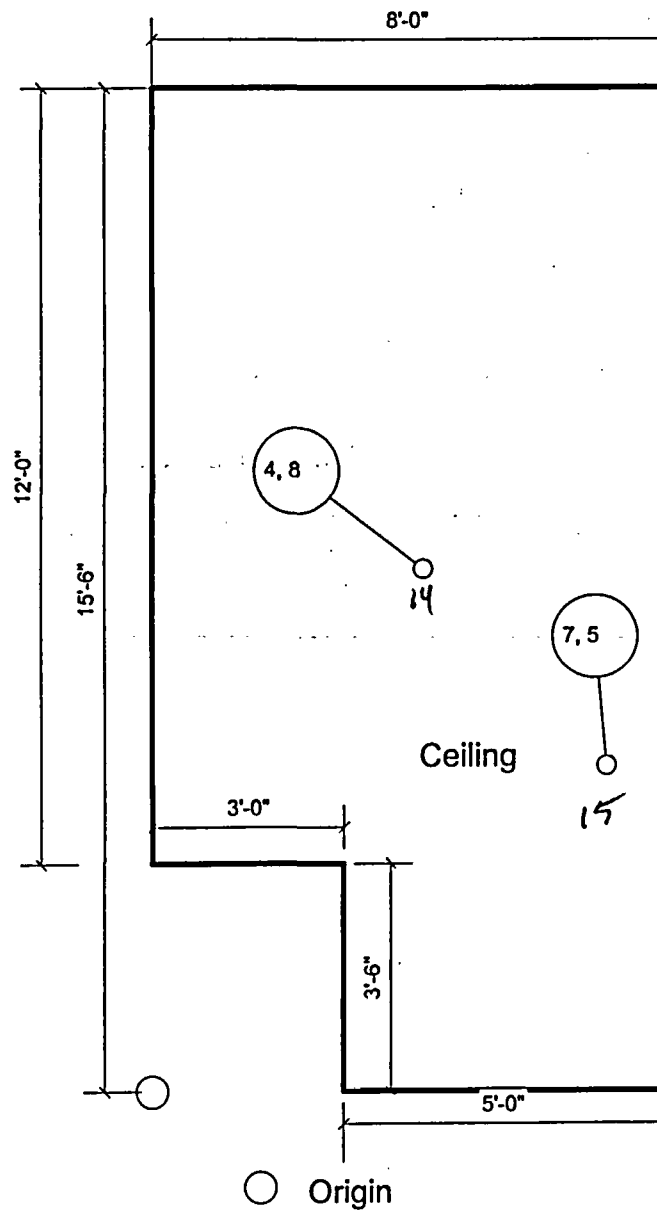
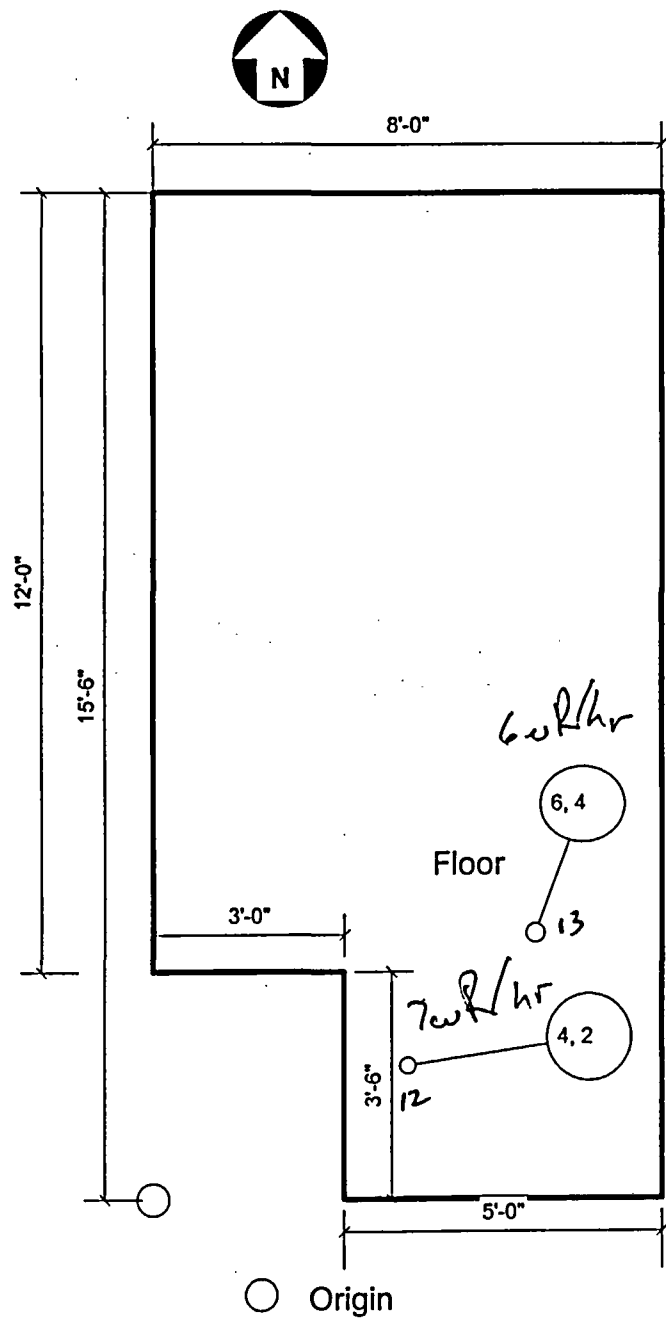
**FAOF-3-A    Finishing Area – Office**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Finishing Area Office North & East Wall
<p>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756</p>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/02/2004
BY: J11	CK:
FIGURE: FA08-3-A NE	



Document Control No.	
REVISION NO.	
1	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING	
KARTHANS, PENNSYLVANIA	
115 REACTOR ROAD	
CLASS 3	
Finishing Area Office South & West Wall	
SCIENTECH Inc. 143 WEST STREET NEW MILFORD, CT 06457	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 12/04/2004
By: JLL	CK:
FIGURE: FAOF-3-A SW	



FAOF-3-A

Log #		X	Y
5	North-1	3.0	1.0
6	2	4.0	6.0
7	3	5.0	0.0
8	East-4	12.0	4.0
9	5	12.0	8.0
10	South-6	1.0	3.0
11	West-7	1.0	6.0
12	8	2.0	8.0
13	9	4.0	7.0
14	10	6.0	6.0
15	11	9.0	3.0
16	Ceiling-12	7.0	5.0
17	13	4.0	8.0
18	Floor-14	4.0	2.0
19	15	6.0	4.0

Fixed Points	Ave. (Scan)	Max. (Scan)
<del>179</del> 195	180	220
180	180	220
185	160	200
173	160	180
188	160	200
205	180	240
172	160	200
188	160	220
179	180	240
177	180	280
206	<del>180</del> 200	240
164	160	200
143	180	200
183	180	200
185	180	240

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/7/2004  
Time: 11:37:30 AM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: FAOF-3-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/07/2004  
Model 2360 Time: 11:37:04  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Count - Count Time  
Ratmeter  
Scaler

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/07/04	10:35:49	000000	000202	S 001.0	Lab Background
0002	12/07/04	10:37:11	000003	035211	S 001.0	Lab Source
0003	12/07/04	10:38:35	000002	001728	S 001.0	Field Source
0004	12/07/04	10:43:24	000002	000174	S 001.0	Field Background
0005	12/07/04	10:44:36	000001	000195	S 001.0	FAOF-3-A
0006	12/07/04	10:45:57	000000	000180	S 001.0	FAOF-3-A
0007	12/07/04	10:47:06	000000	000185	S 001.0	FAOF-3-A
0008	12/07/04	10:49:33	000003	000173	S 001.0	FAOF-3-A
0009	12/07/04	10:50:40	000001	000188	S 001.0	FAOF-3-A
0010	12/07/04	10:51:47	000002	000205	S 001.0	FAOF-3-A
0011	12/07/04	10:52:57	000001	000172	S 001.0	FAOF-3-A
0012	12/07/04	10:54:03	000001	000188	S 001.0	FAOF-3-A
0013	12/07/04	10:55:10	000002	000178	S 001.0	FAOF-3-A
0014	12/07/04	10:56:21	000000	000177	S 001.0	FAOF-3-A
0015	12/07/04	10:57:28	000000	000206	S 001.0	FAOF-3-A
0016	12/07/04	10:58:40	000000	000164	S 001.0	FAOF-3-A
0017	12/07/04	10:59:48	000000	000163	S 001.0	FAOF-3-A
0018	12/07/04	11:02:11	000000	000183	S 001.0	FAOF-3-A
0019	12/07/04	11:03:20	000000	000184	S 001.0	FAOF-3-A
0020	12/07/04	11:07:44	000002	001760	S 001.0	Field Source



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/07/04	11:51:44	FAOF-3-A	Final Status Survey	12/07/04	11:51:44	1.000	1.00
2	Smear 2	12/07/04	11:50:24	FAOF-3-A	Final Status Survey	12/07/04	11:50:24	1.000	1.00
3	Smear 3	12/07/04	11:49:04	FAOF-3-A	Final Status Survey	12/07/04	11:49:04	1.000	1.00
4	Smear 4	12/07/04	11:47:44	FAOF-3-A	Final Status Survey	12/07/04	11:47:44	1.000	1.00
5	Smear 5	12/07/04	11:46:24	FAOF-3-A	Final Status Survey	12/07/04	11:46:24	1.000	1.00
6	Smear 6	12/07/04	11:45:04	FAOF-3-A	Final Status Survey	12/07/04	11:45:04	1.000	1.00
7	Smear 7	12/07/04	11:43:45	FAOF-3-A	Final Status Survey	12/07/04	11:43:45	1.000	1.00
8	Smear 8	12/07/04	11:42:25	FAOF-3-A	Final Status Survey	12/07/04	11:42:25	1.000	1.00
9	Smear 9	12/07/04	11:41:05	FAOF-3-A	Final Status Survey	12/07/04	11:41:05	1.000	1.00
10	Smear 10	12/07/04	11:39:46	FAOF-3-A	Final Status Survey	12/07/04	11:39:46	1.000	1.00
11	Smear 11	12/07/04	11:38:26	FAOF-3-A	Final Status Survey	12/07/04	11:38:26	1.000	1.00
12	Smear 12	12/07/04	11:37:06	FAOF-3-A	Final Status Survey	12/07/04	11:37:06	1.000	1.00
13	Smear 13	12/07/04	11:35:47	FAOF-3-A	Final Status Survey	12/07/04	11:35:47	1.000	1.00
14	Smear 14	12/07/04	11:34:27	FAOF-3-A	Final Status Survey	12/07/04	11:34:27	1.000	1.00
15	Smear 15	12/07/04	11:33:08	FAOF-3-A	Final Status Survey	12/07/04	11:33:08	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-07-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 24.91 LLD: 14.35 dpm				Bkg: 0.4 cpm %Eff: 44.93 LLD: 10.74 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/07/04	11:51:44	0.00	-0.07	-0.27	14.35	3.00	2.60	5.79	10.74
2	Smear 2	12/07/04	11:50:24	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
3	Smear 3	12/07/04	11:49:04	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
4	Smear 4	12/07/04	11:47:44	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
5	Smear 5	12/07/04	11:46:24	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
6	Smear 6	12/07/04	11:45:04	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
7	Smear 7	12/07/04	11:43:45	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
8	Smear 8	12/07/04	11:42:25	0.00	-0.07	-0.27	14.35	7.00	6.60	14.89	10.74
9	Smear 9	12/07/04	11:41:05	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
10	Smear 10	12/07/04	11:39:46	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
11	Smear 11	12/07/04	11:38:26	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
12	Smear 12	12/07/04	11:37:06	0.00	-0.07	-0.27	14.35	3.00	2.60	5.79	10.74
13	Smear 13	12/07/04	11:35:47	0.00	-0.07	-0.27	14.35	11.00	10.60	23.59	10.74
14	Smear 14	12/07/04	11:34:27	1.00	0.93	3.75	14.35	6.00	5.60	12.46	10.74
15	Smear 15	12/07/04	11:33:08	0.00	-0.07	-0.27	14.35	5.00	4.60	10.24	10.74

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-07-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**BR-1-A      Boiler Room**



12-10

	X	Y
	n/a	n/a
1	4.5	0.0
2	13.2	0.0
3	4.5	7.6
4	13.2	7.6
5	4.5	16.3
6	13.2	16.3
7	4.5	25.0
8	13.2	25.0
9	4.5	33.7
10	13.2	33.7
11	4.5	42.4
12	13.2	42.4
13	4.5	51.1
14	13.2	51.1

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
212	200	320
186	180	300
178	180	380
129	260	340
206	180	340
233	200	400
227	200	400
246	300	700
173	280	600
195	250	440
185	180	300
190	150	193
236	200	300
219	260	600

M# 2360  
S# 475

Ludlum Measurements, Inc.  
Model 2360 Log Data

D: 12/11/2004  
Ti: 8:14:00 AM

Header 1: LeRoy Cuneo  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Boiler Rm  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/11/2004  
Model 2360 Time: 08:11:10  
Sample Number: 0020

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 999999  
Alpha + Beta Ratemeter Alarm: 999999  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 999999  
Alpha + Beta Scaler Alarm: 999999

C: Time - Count Time  
I: Ratemeter  
S: Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/11/04	07:28:47	000000	000205	S 001.0	Lab Background
0002	12/11/04	07:30:00	000000	034410	S 001.0	Lab Source
0003	12/11/04	07:32:04	000000	001531	S 001.0	Field Source
0004	12/11/04	07:38:17	000001	000212	S 001.0	BR-1-A Location 1
0005	12/11/04	07:40:41	000003	000186	S 001.0	BR-1-A Location 2
0006	12/11/04	07:42:29	000000	000129	S 001.0	BR-1-A Location 3
0007	12/11/04	07:44:13	000000	000178	S 001.0	BR-1-A Location 4
0008	12/11/04	07:45:50	000002	000206	S 001.0	BR-1-A Location 5
0009	12/11/04	07:47:17	000000	000233	S 001.0	BR-1-A Location 6
0010	12/11/04	07:48:49	000003	000227	S 001.0	BR-1-A Location 7
0011	12/11/04	07:50:21	000001	000246	S 001.0	BR-1-A Location 8
0012	12/11/04	07:52:03	000004	000173	S 001.0	BR-1-A Location 9
0013	12/11/04	07:53:34	000000	000195	S 001.0	BR-1-A Location 10
0014	12/11/04	07:55:06	000001	000185	S 001.0	BR-1-A Location 11
0015	12/11/04	07:56:44	000000	000190	S 001.0	BR-1-A Location 12
0016	12/11/04	07:58:49	000002	000236	S 001.0	BR-1-A Location 13
0017	12/11/04	08:00:40	000005	000219	S 001.0	BR-1-A Location 14
0018	12/11/04	08:05:24	000003	001620	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
45	Smear 1	12/11/04	10:20:52	BR-1-A	FSS	12/11/04	10:20:52	1.000	1.00
46	Smear 2	12/11/04	10:19:32	BR-1-A	FSS	12/11/04	10:19:32	1.000	1.00
47	Smear 3	12/11/04	10:18:12	BR-1-A	FSS	12/11/04	10:18:12	1.000	1.00
48	Smear 4	12/11/04	10:16:51	BR-1-A	FSS	12/11/04	10:16:51	1.000	1.00
49	Smear 5	12/11/04	10:15:31	BR-1-A	FSS	12/11/04	10:15:31	1.000	1.00
50	Smear 6	12/11/04	10:14:11	BR-1-A	FSS	12/11/04	10:14:11	1.000	1.00
51	Smear 7	12/11/04	10:12:51	BR-1-A	FSS	12/11/04	10:12:51	1.000	1.00
52	Smear 8	12/11/04	10:11:31	BR-1-A	FSS	12/11/04	10:11:31	1.000	1.00
53	Smear 9	12/11/04	10:10:11	BR-1-A	FSS	12/11/04	10:10:11	1.000	1.00
54	Smear 10	12/11/04	10:08:51	BR-1-A	FSS	12/11/04	10:08:51	1.000	1.00
55	Smear 11	12/11/04	10:07:31	BR-1-A	FSS	12/11/04	10:07:31	1.000	1.00
56	Smear 12	12/11/04	10:06:11	BR-1-A	FSS	12/11/04	10:06:11	1.000	1.00
57	Smear 13	12/11/04	10:04:51	BR-1-A	FSS	12/11/04	10:04:51	1.000	1.00
58	Smear 14	12/11/04	10:03:31	BR-1-A	FSS	12/11/04	10:03:31	1.000	1.00
59	Smear 1	12/11/04	10:02:10	BR-1-B	FSS	12/11/04	10:02:10	1.000	1.00
60	Smear 2	12/11/04	10:00:50	BR-1-B	FSS	12/11/04	10:00:50	1.000	1.00
61	Smear 3	12/11/04	9:59:30	BR-1-B	FSS	12/11/04	9:59:30	1.000	1.00
62	Smear 4	12/11/04	9:58:10	BR-1-B	FSS	12/11/04	9:58:10	1.000	1.00
63	Smear 5	12/11/04	9:56:50	BR-1-B	FSS	12/11/04	9:56:50	1.000	1.00
64	Smear 6	12/11/04	9:55:30	BR-1-B	FSS	12/11/04	9:55:30	1.000	1.00
65	Smear 7	12/11/04	9:54:10	BR-1-B	FSS	12/11/04	9:54:10	1.000	1.00
66	Smear 8	12/11/04	9:52:50	BR-1-B	FSS	12/11/04	9:52:50	1.000	1.00
67	Smear 9	12/11/04	9:51:30	BR-1-B	FSS	12/11/04	9:51:30	1.000	1.00
68	Smear 10	12/11/04	9:50:10	BR-1-B	FSS	12/11/04	9:50:10	1.000	1.00
69	Smear 11	12/11/04	9:48:50	BR-1-B	FSS	12/11/04	9:48:50	1.000	1.00
70	Smear 12	12/11/04	9:47:30	BR-1-B	FSS	12/11/04	9:47:30	1.000	1.00
71	Smear 13	12/11/04	9:46:10	BR-1-B	FSS	12/11/04	9:46:10	1.000	1.00
72	Smear 14	12/11/04	9:44:50	BR-1-B	FSS	12/11/04	9:44:50	1.000	1.00
73	Smear 15	12/11/04	9:43:30	BR-1-B	FSS	12/11/04	9:43:30	1.000	1.00

BR-1-A

Technician (print): Chris Higgins

Technician (sign):

Date: 11-01

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.43 LLD: 13.63 dpm				Bkg: 0.37 cpm %Eff: 46.66 LLD: 10.33 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
45	Smear 1	12/11/04	10:20:52	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
46	Smear 2	12/11/04	10:19:32	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33
47	Smear 3	12/11/04	10:18:12	0.00	-0.03	-0.14	13.59	6.00	5.63	12.29	10.33
48	Smear 4	12/11/04	10:16:51	0.00	-0.03	-0.14	13.59	2.00	1.63	3.56	10.33
49	Smear 5	12/11/04	10:15:31	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
50	Smear 6	12/11/04	10:14:11	0.00	-0.03	-0.14	13.59	2.00	1.63	3.56	10.33
51	Smear 7	12/11/04	10:12:51	0.00	-0.03	-0.14	13.59	2.00	1.63	3.56	10.33
52	Smear 8	12/11/04	10:11:31	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33
53	Smear 9	12/11/04	10:10:11	0.00	-0.03	-0.14	13.59	2.00	1.63	3.56	10.33
54	Smear 10	12/11/04	10:08:51	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
55	Smear 11	12/11/04	10:07:31	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33
56	Smear 12	12/11/04	10:06:11	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
57	Smear 13	12/11/04	10:04:51	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
58	Smear 14	12/11/04	10:03:31	0.00	-0.03	-0.14	13.59	2.00	1.63	3.56	10.33
59	Smear 1	12/11/04	10:02:10	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33
60	Smear 2	12/11/04	10:00:50	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
61	Smear 3	12/11/04	9:59:30	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
62	Smear 4	12/11/04	9:58:10	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
63	Smear 5	12/11/04	9:56:50	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
64	Smear 6	12/11/04	9:55:30	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
65	Smear 7	12/11/04	9:54:10	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33
66	Smear 8	12/11/04	9:52:50	0.00	-0.03	-0.14	13.59	2.00	1.63	3.56	10.33
67	Smear 9	12/11/04	9:51:30	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
68	Smear 10	12/11/04	9:50:10	0.00	-0.03	-0.14	13.59	2.00	1.63	3.56	10.33
69	Smear 11	12/11/04	9:48:50	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
70	Smear 12	12/11/04	9:47:30	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
71	Smear 13	12/11/04	9:46:10	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33
72	Smear 14	12/11/04	9:44:50	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
73	Smear 15	12/11/04	9:43:30	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33

Technician (print): Chris Higgins

Technician (sign):

Date: 12-11-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

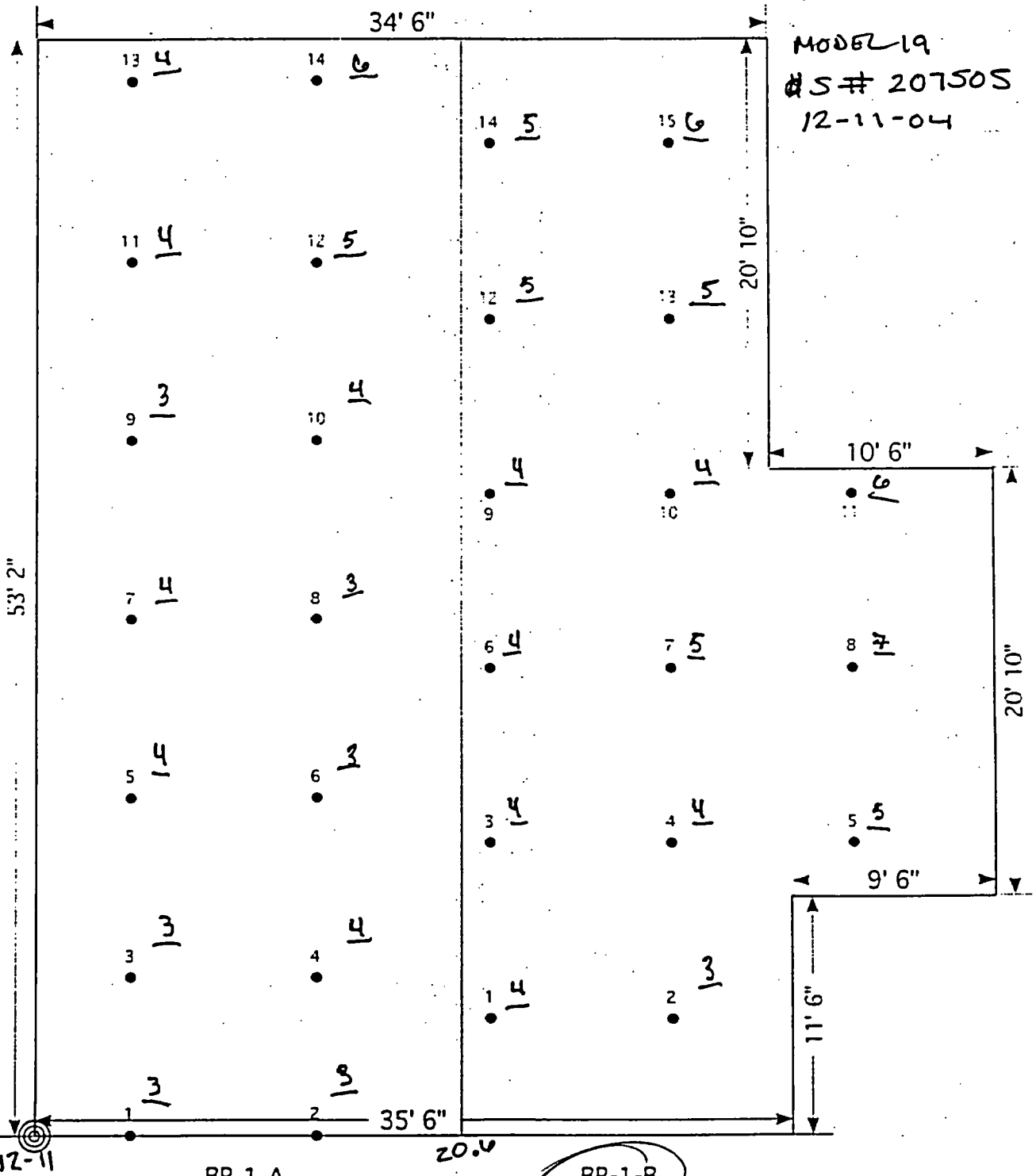


**BR-1-B      Boiler Room**

Document Control No.	REVISION NO.	PROJECT	<b>QUEHANNA DECOMMISSIONING</b> KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD <b>CLASS 1</b> Boiler Room Floor	 SCIENCETECH INC. 14 WEST STREET NEW HAVEN, CT 06511	PROJECT NO.	FILE NAME	SCALE	DATE	BY	CHECK	FIGURE
		DRAWING			21579-0001		1" = 20'	07/06/2004			



- SURVEY POINTS
- STARTING LOCATION



MODEL 19  
 #5 # 207505  
 12-11-04

BR-1-A

BR-1-B

7:38  
 8:05

SCAN 12-10 8:00 1430  
 11:30 1600

Direct

12-11  
 12-11

Log #
34640 Source
0007
↓
0021

	X	Y
	n/a	n/a
1	1.4	5.6
2	9.9	5.6
3	1.4	14.1
4	9.9	14.1
5	18.4	14.1
6	1.4	22.6
7	9.9	22.6
8	18.4	22.6
9	1.4	31.1
10	9.9	31.1
11	18.4	31.1
12	1.4	39.6
13	9.9	39.6
14	1.4	48.1
15	9.9	48.1

$$\begin{aligned} L \text{ (ft)} &= 8.5 \\ A \text{ (ft}^2\text{)} &= 1001 \end{aligned}$$

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
171	100	250
187	300	500
157	250	400
<del>175</del> 202	150	250
181	150	250
205	300	500
199	200	350
205	200	400
236	250	400
188	200	450
245	300	450
203	300	500
191	250	350
222	200	350
225	200	300

FM 177 883

M# 2360  
S# 202475

① ←  
on concrete  
ledge tank  
sits on, spot  
under water

$$\begin{array}{r} 12 \\ 58.2 \\ 39.6 \\ \hline 13.6 \end{array}$$

5.

Ludlum Measurements, Inc.  
Model 2360 Log Data

Date: 12/11/2004  
Time: 12:45:46 PM

Header 1: Harry Myers  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Boiler Rm  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/11/2004  
Model 2360 Time: 12:39:06  
Sample Number: 0022

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Cr - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	11/10/04	07:27:15	000000	032158	S 001.0	Lab Source
0002	11/10/04	07:28:35	000000	000164	S 001.0	Void
0003	11/10/04	10:40:24	000000	000193	S 001.0	Void
0004	11/10/04	13:53:00	000002	000137	S 001.0	Void
0005	11/11/04	07:12:50	000002	034640	S 001.0	Lab Source
0006	11/11/04	07:15:59	000000	000166	S 001.0	Field Background
0007	11/11/04	11:06:16	000001	000171	S 001.0	BR-1-B Location 1
0008	11/11/04	11:07:37	000001	000187	S 001.0	BR-1-B Location 2
0009	11/11/04	11:09:00	000000	000202	S 001.0	BR-1-B Location 3
0010	11/11/04	11:11:24	000000	000157	S 001.0	BR-1-B Location 4
0011	11/11/04	11:13:51	000001	000181	S 001.0	BR-1-B Location 5
0012	11/11/04	11:15:20	000000	000205	S 001.0	BR-1-B Location 6
0013	11/11/04	11:16:45	000001	000199	S 001.0	BR-1-B Location 7
0014	11/11/04	11:18:04	000000	000205	S 001.0	BR-1-B Location 8
0015	11/11/04	11:19:28	000001	000236	S 001.0	BR-1-B Location 9
0016	11/11/04	11:20:57	000001	000188	S 001.0	BR-1-B Location 10
0017	11/11/04	11:22:15	000001	000245	S 001.0	BR-1-B Location 11
0018	11/11/04	11:24:08	000001	000203	S 001.0	BR-1-B Location 12
0019	11/11/04	11:25:29	000002	000191	S 001.0	BR-1-B Location 13
0020	11/11/04	11:26:48	000001	000222	S 001.0	BR-1-B Location 14
0021	11/11/04	11:28:03	000001	000225	S 001.0	BR-1-B Location 15

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
45	Smear 1	12/11/04	10:20:52	BR-1-A	FSS	12/11/04	10:20:52	1.000	1.00
46	Smear 2	12/11/04	10:19:32	BR-1-A	FSS	12/11/04	10:19:32	1.000	1.00
47	Smear 3	12/11/04	10:18:12	BR-1-A	FSS	12/11/04	10:18:12	1.000	1.00
48	Smear 4	12/11/04	10:16:51	BR-1-A	FSS	12/11/04	10:16:51	1.000	1.00
49	Smear 5	12/11/04	10:15:31	BR-1-A	FSS	12/11/04	10:15:31	1.000	1.00
50	Smear 6	12/11/04	10:14:11	BR-1-A	FSS	12/11/04	10:14:11	1.000	1.00
51	Smear 7	12/11/04	10:12:51	BR-1-A	FSS	12/11/04	10:12:51	1.000	1.00
52	Smear 8	12/11/04	10:11:31	BR-1-A	FSS	12/11/04	10:11:31	1.000	1.00
53	Smear 9	12/11/04	10:10:11	BR-1-A	FSS	12/11/04	10:10:11	1.000	1.00
54	Smear 10	12/11/04	10:08:51	BR-1-A	FSS	12/11/04	10:08:51	1.000	1.00
55	Smear 11	12/11/04	10:07:31	BR-1-A	FSS	12/11/04	10:07:31	1.000	1.00
56	Smear 12	12/11/04	10:06:11	BR-1-A	FSS	12/11/04	10:06:11	1.000	1.00
57	Smear 13	12/11/04	10:04:51	BR-1-A	FSS	12/11/04	10:04:51	1.000	1.00
58	Smear 14	12/11/04	10:03:31	BR-1-A	FSS	12/11/04	10:03:31	1.000	1.00
59	Smear 1	12/11/04	10:02:10	BR-1-B	FSS	12/11/04	10:02:10	1.000	1.00
60	Smear 2	12/11/04	10:00:50	BR-1-B	FSS	12/11/04	10:00:50	1.000	1.00
61	Smear 3	12/11/04	9:59:30	BR-1-B	FSS	12/11/04	9:59:30	1.000	1.00
62	Smear 4	12/11/04	9:58:10	BR-1-B	FSS	12/11/04	9:58:10	1.000	1.00
63	Smear 5	12/11/04	9:56:50	BR-1-B	FSS	12/11/04	9:56:50	1.000	1.00
64	Smear 6	12/11/04	9:55:30	BR-1-B	FSS	12/11/04	9:55:30	1.000	1.00
65	Smear 7	12/11/04	9:54:10	BR-1-B	FSS	12/11/04	9:54:10	1.000	1.00
66	Smear 8	12/11/04	9:52:50	BR-1-B	FSS	12/11/04	9:52:50	1.000	1.00
67	Smear 9	12/11/04	9:51:30	BR-1-B	FSS	12/11/04	9:51:30	1.000	1.00
68	Smear 10	12/11/04	9:50:10	BR-1-B	FSS	12/11/04	9:50:10	1.000	1.00
69	Smear 11	12/11/04	9:48:50	BR-1-B	FSS	12/11/04	9:48:50	1.000	1.00
70	Smear 12	12/11/04	9:47:30	BR-1-B	FSS	12/11/04	9:47:30	1.000	1.00
71	Smear 13	12/11/04	9:46:10	BR-1-B	FSS	12/11/04	9:46:10	1.000	1.00
72	Smear 14	12/11/04	9:44:50	BR-1-B	FSS	12/11/04	9:44:50	1.000	1.00
73	Smear 15	12/11/04	9:43:30	BR-1-B	FSS	12/11/04	9:43:30	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): *[Signature]*

Date: 11-01

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %EF: 24.43 LLD: 13.69 dpm				Bkg: 0.37 cpm %EF: 46.86 LLD: 10.33 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
45	Smear 1	12/11/04	10:20:52	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
46	Smear 2	12/11/04	10:19:32	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33
47	Smear 3	12/11/04	10:18:12	0.00	-0.03	-0.14	13.59	6.00	5.63	12.29	10.33
48	Smear 4	12/11/04	10:16:51	0.00	-0.03	-0.14	13.59	2.00	1.63	3.58	10.33
49	Smear 5	12/11/04	10:15:31	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
50	Smear 6	12/11/04	10:14:11	0.00	-0.03	-0.14	13.59	2.00	1.63	3.58	10.33
51	Smear 7	12/11/04	10:12:51	0.00	-0.03	-0.14	13.59	2.00	1.63	3.58	10.33
52	Smear 8	12/11/04	10:11:31	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33
53	Smear 9	12/11/04	10:10:11	0.00	-0.03	-0.14	13.59	2.00	1.63	3.58	10.33
54	Smear 10	12/11/04	10:08:51	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
55	Smear 11	12/11/04	10:07:31	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33
56	Smear 12	12/11/04	10:06:11	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
57	Smear 13	12/11/04	10:04:51	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
58	Smear 14	12/11/04	10:03:31	0.00	-0.03	-0.14	13.59	2.00	1.63	3.58	10.33
59	Smear 1	12/11/04	10:02:10	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33
60	Smear 2	12/11/04	10:00:50	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
61	Smear 3	12/11/04	9:59:30	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
62	Smear 4	12/11/04	9:58:10	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
63	Smear 5	12/11/04	9:56:50	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
64	Smear 6	12/11/04	9:55:30	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
65	Smear 7	12/11/04	9:54:10	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33
66	Smear 8	12/11/04	9:52:50	0.00	-0.03	-0.14	13.59	2.00	1.63	3.58	10.33
67	Smear 9	12/11/04	9:51:30	0.00	-0.03	-0.14	13.59	1.00	0.63	1.38	10.33
68	Smear 10	12/11/04	9:50:10	0.00	-0.03	-0.14	13.59	2.00	1.63	3.58	10.33
69	Smear 11	12/11/04	9:48:50	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
70	Smear 12	12/11/04	9:47:30	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
71	Smear 13	12/11/04	9:46:10	0.00	-0.03	-0.14	13.59	3.00	2.63	5.74	10.33
72	Smear 14	12/11/04	9:44:50	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33
73	Smear 15	12/11/04	9:43:30	0.00	-0.03	-0.14	13.59	0.00	-0.37	-0.80	10.33

Technician (print): Chris Higgins

Technician (sign):

Date: 12-11-07

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

SCIENTECH Inc.

82A8008 ATTACHMENT A

Survey No. 4625

4629

⑥

## Survey Cover Sheet

Surveyor: LeRoy Cuneo  
 Print  
 Reviewer: Joe Trowbridge  
 Print

*LeRoy Cuneo*  
 Sign  
*Joe Trowbridge*  
 Sign

12/1/2004

Date

12/1/2004

Date

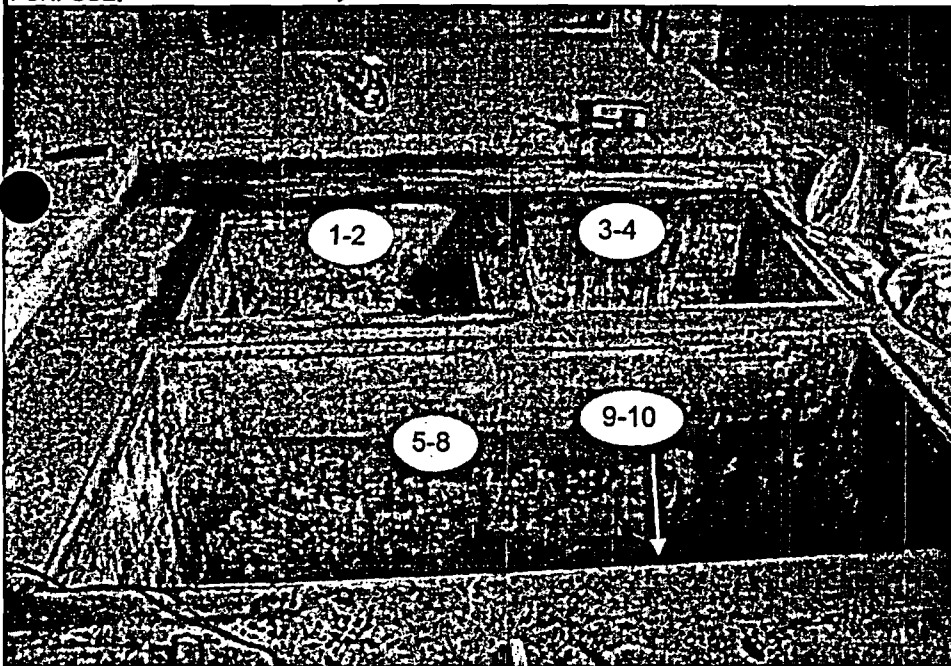
## Survey Meters

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 24%  
 Type  $\alpha, \beta \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.1 cpm  
 MDA 16 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 45%  
 Type  $\alpha, \beta \gamma$   $\beta \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.8 cpm  
 MDA 13 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # 5  
 Meter / Probe Serial # 201695  
 Cal Due 9/2/2005  
 Efficiency 100%  
 Type  $\alpha, \beta \gamma$   $\beta \gamma$   
 Sample Time N/A  
 Background Time N/A  
 BKG .02 mR/hr  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Boiler Room  
 PURPOSE: Free Release Survey



Smears 9 and 10 taken from within drain line  
 out of view

Frisked 100% with no detectable activity above background.

Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA
9	<MDA	<MDA
10	<MDA	<MDA

$$MDA = \frac{\frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}}{\left( \text{eff} \times \frac{\text{probe area}}{100 \text{ cm}^2} \right)}$$

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100 \text{ cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate

$T_b$  = background counting time

$T_s$  = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
21 Smear 1		12/01/04	13:58:28	Boiler Room Sumps	West Sump	12/01/04	13:58:28	1.000	1.00
22 Smear 2		12/01/04	13:57:06	Boiler Room Sumps	West Sump	12/01/04	13:57:06	1.000	1.00
23 Smear 3		12/01/04	13:55:46	Boiler Room Sumps	East Sump	12/01/04	13:55:46	1.000	1.00
24 Smear 4		12/01/04	13:54:26	Boiler Room Sumps	East Sump	12/01/04	13:54:26	1.000	1.00
25 Smear 5		12/01/04	13:53:06	Boiler Room Sumps	South Sump	12/01/04	13:53:06	1.000	1.00
26 Smear 6		12/01/04	13:51:46	Boiler Room Sumps	South Sump	12/01/04	13:51:46	1.000	1.00
27 Smear 7		12/01/04	13:50:26	Boiler Room Sumps	South Sump	12/01/04	13:50:26	1.000	1.00
28 Smear 8		12/01/04	13:49:06	Boiler Room Sumps	South Sump	12/01/04	13:49:06	1.000	1.00
29 Smear 9		12/01/04	13:47:46	Boiler Room Sumps	Pipe	12/01/04	13:47:46	1.000	1.00
30 Smear 10		12/01/04	13:46:26	Boiler Room Sumps	Pipe	12/01/04	13:46:26	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): 

Date: 12-1-04

Reviewed By (print): Joe Towbridge

Reviewed By (sign): 

Date: 12-01-04



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %Eff: 23.7 LLD: 16.9 dpm				Bkg: 0.77 cpm %Eff: 44.59 LLD: 12.64 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
21	Smear 1	12/01/04	13:58:26	0.00	-0.10	-0.42	15.90	3.00	2.23	5.01	12.64
22	Smear 2	12/01/04	13:57:06	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
23	Smear 3	12/01/04	13:55:48	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
24	Smear 4	12/01/04	13:54:28	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
25	Smear 5	12/01/04	13:53:08	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
26	Smear 6	12/01/04	13:51:48	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
27	Smear 7	12/01/04	13:50:28	0.00	-0.10	-0.42	15.90	2.00	1.23	2.77	12.64
28	Smear 8	12/01/04	13:49:08	0.00	-0.10	-0.42	15.90	1.00	0.23	0.52	12.64
29	Smear 9	12/01/04	13:47:48	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64
30	Smear 10	12/01/04	13:46:28	0.00	-0.10	-0.42	15.90	0.00	-0.77	-1.72	12.64

Technician (print): Chris Higgins

Technician (sign): 

Date: 12-01-04

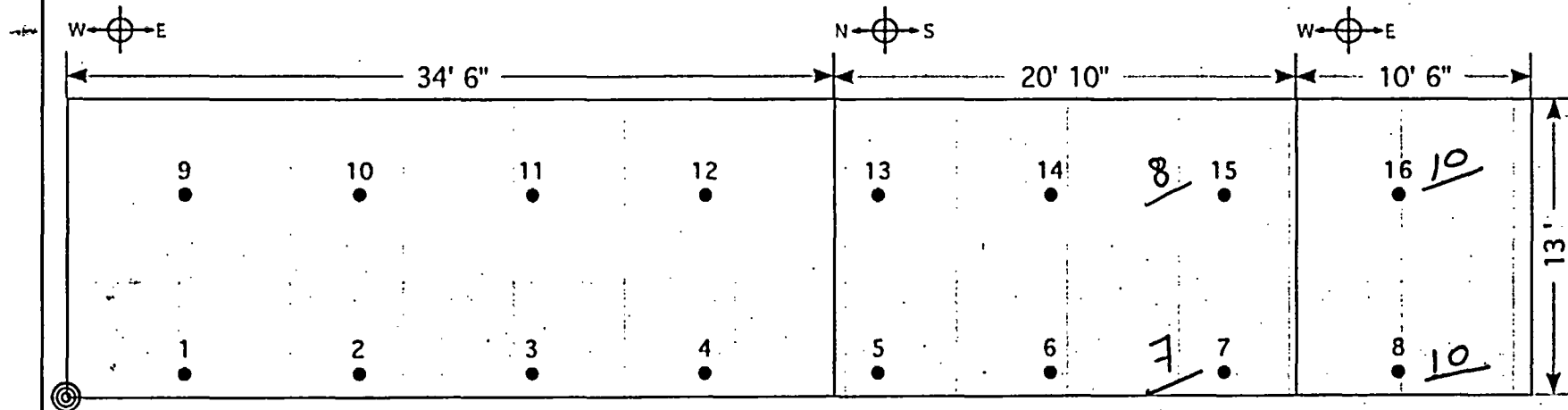
Reviewed By (print): Joe Trowbridge

Reviewed By (sign): 

Date: 12-01-04

**BR-1-C      Boiler Room**

12-13-04



BR-1-C

• SURVEY POINTS  
 (Symbol) STARTING LOCATION

Document  
Control No.

REVISION NO.

DRAWING  
PROJECT

QUEHANNA DECOMMISSIONING  
 KARTHAUS, PENNSYLVANIA  
 115 REACTOR ROAD  
 CLASS 1  
 Boiler Room North and East Walls

SCIENTECH  
 SCIENTECH, Inc.  
 140 WEST STREET  
 NEW MILFORD, CT 06756

PROJECT NO:  
23529-0001

FILE NAME:

SCALE: N.T.S. DATE: 07/06/2004

By: CK:

FIGURE  
BR-1-C

Scan Survey  
 12-13-04 M-19  
 10:00 S# 207505

BR-1-C

[illegible]

05 2033.0019

↓  
Source

	X	Y
	n/a	n/a
1	5.3	1.0
2	13.1	1.0
3	20.9	1.0
4	28.7	1.0
5	36.5	1.0
6	44.3	1.0
7	52.1	1.0
8	59.9	1.0
9	5.3	8.8
10	13.1	8.8
11	20.9	8.8
12	28.7	8.8
13	36.5	8.8
14	44.3	8.8
15	52.1	8.8
16	59.9	8.8

$$L \text{ (ft)} = 7.8$$
$$A \text{ (ft}^2\text{)} = 856$$

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
237	140	340
254	200	300
221	200	320
226	180	300
230	240	340
251	260	340
251	240	340
290	220	360
268	230	300
235	240	340
245	240	300
253	260	340
265	260	320
249	200	320
249	220	300
265	250	300

SCAN 2360  
S# 410

FIXED 2360  
S# 410

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

at 12/13/2004  
ir 06:19 AM

Header 1: Leroy Cuneo  
Header 2: Serial#202410  
Header 3: DetSer#PR208657  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: BR-1-C  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/13/2004  
Model 2360 Time: 09:05:03  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
R. meter  
S. er

**Log Data:**

Run Date	Time	Alpha	Beta	UsrTime	Location
				CntTime	

001	12/13/04 07:33:10	000000	000182	S 001.0	Lab Background
002	12/13/04 07:34:18	000000	034789	S 001.0	Lab Source
003	12/13/04 08:03:57	000002	001736	S 001.0	Field Source
004	12/13/04 08:10:06	000002	000237	S 001.0	BR-1-C
005	12/13/04 08:11:52	000005	000254	S 001.0	BR-1-C
006	12/13/04 08:14:16	000002	000221	S 001.0	BR-1-C
007	12/13/04 08:17:52	000001	000226	S 001.0	BR-1-C
008	12/13/04 08:20:51	000002	000230	S 001.0	BR-1-C
009	12/13/04 08:22:33	000001	000251	S 001.0	BR-1-C
010	12/13/04 08:28:13	000001	000251	S 001.0	BR-1-C
011	12/13/04 08:29:45	000002	000290	S 001.0	BR-1-C
012	12/13/04 08:32:11	000001	000268	S 001.0	BR-1-C
013	12/13/04 08:33:26	000002	000235	S 001.0	BR-1-C
014	12/13/04 08:35:06	000001	000245	S 001.0	BR-1-C
015	12/13/04 08:36:57	000003	000253	S 001.0	BR-1-C
016	12/13/04 08:40:08	000001	000265	S 001.0	BR-1-C
017	12/13/04 08:49:30	000001	000249	S 001.0	BR-1-C
018	12/13/04 08:56:10	000001	000249	S 001.0	BR-1-C
019	12/13/04 08:57:42	000000	000265	S 001.0	BR-1-C
020	12/13/04 09:02:32	000002	002033	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/13/04	10:25:46	BR-1-C	Final Status Survey	12/13/04	10:25:46	1.000	1.00
2	Smear 2	12/13/04	10:24:26	BR-1-C	Final Status Survey	12/13/04	10:24:26	1.000	1.00
3	Smear 3	12/13/04	10:23:06	BR-1-C	Final Status Survey	12/13/04	10:23:06	1.000	1.00
4	Smear 4	12/13/04	10:21:46	BR-1-C	Final Status Survey	12/13/04	10:21:46	1.000	1.00
5	Smear 5	12/13/04	10:20:26	BR-1-C	Final Status Survey	12/13/04	10:20:26	1.000	1.00
6	Smear 6	12/13/04	10:19:06	BR-1-C	Final Status Survey	12/13/04	10:19:06	1.000	1.00
7	Smear 7	12/13/04	10:17:46	BR-1-C	Final Status Survey	12/13/04	10:17:46	1.000	1.00
8	Smear 8	12/13/04	10:16:26	BR-1-C	Final Status Survey	12/13/04	10:16:26	1.000	1.00
9	Smear 9	12/13/04	10:15:06	BR-1-C	Final Status Survey	12/13/04	10:15:06	1.000	1.00
10	Smear 10	12/13/04	10:13:46	BR-1-C	Final Status Survey	12/13/04	10:13:46	1.000	1.00
11	Smear 11	12/13/04	10:12:26	BR-1-C	Final Status Survey	12/13/04	10:12:26	1.000	1.00
12	Smear 12	12/13/04	10:11:06	BR-1-C	Final Status Survey	12/13/04	10:11:06	1.000	1.00
13	Smear 13	12/13/04	10:09:47	BR-1-C	Final Status Survey	12/13/04	10:09:47	1.000	1.00
14	Smear 14	12/13/04	10:08:27	BR-1-C	Final Status Survey	12/13/04	10:08:27	1.000	1.00
15	Smear 15	12/13/04	10:07:07	BR-1-C	Final Status Survey	12/13/04	10:07:07	1.000	1.00
16	Smear 16	12/13/04	10:05:47	BR-1-C	Final Status Survey	12/13/04	10:05:47	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: *12-13-04*

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.62 LLD: 13.54 dpm				Bkg: 0.47 cpm %Eff: 44.83 LLD: 11.14 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/13/04	10:25:46	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
2	Smear 2	12/13/04	10:24:28	1.00	0.97	3.94	13.54	0.00	-0.47	-1.04	11.14
3	Smear 3	12/13/04	10:23:06	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
4	Smear 4	12/13/04	10:21:46	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
5	Smear 5	12/13/04	10:20:28	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
6	Smear 6	12/13/04	10:19:06	0.00	-0.03	-0.14	13.54	1.00	0.53	1.19	11.14
7	Smear 7	12/13/04	10:17:46	0.00	-0.03	-0.14	13.54	1.00	0.53	1.19	11.14
8	Smear 8	12/13/04	10:16:26	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
9	Smear 9	12/13/04	10:15:06	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
10	Smear 10	12/13/04	10:13:46	0.00	-0.03	-0.14	13.54	1.00	0.53	1.19	11.14
11	Smear 11	12/13/04	10:12:26	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
12	Smear 12	12/13/04	10:11:06	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
13	Smear 13	12/13/04	10:09:47	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
14	Smear 14	12/13/04	10:08:27	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
15	Smear 15	12/13/04	10:07:07	0.00	-0.03	-0.14	13.54	1.00	0.53	1.19	11.14
16	Smear 16	12/13/04	10:05:47	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-13-04

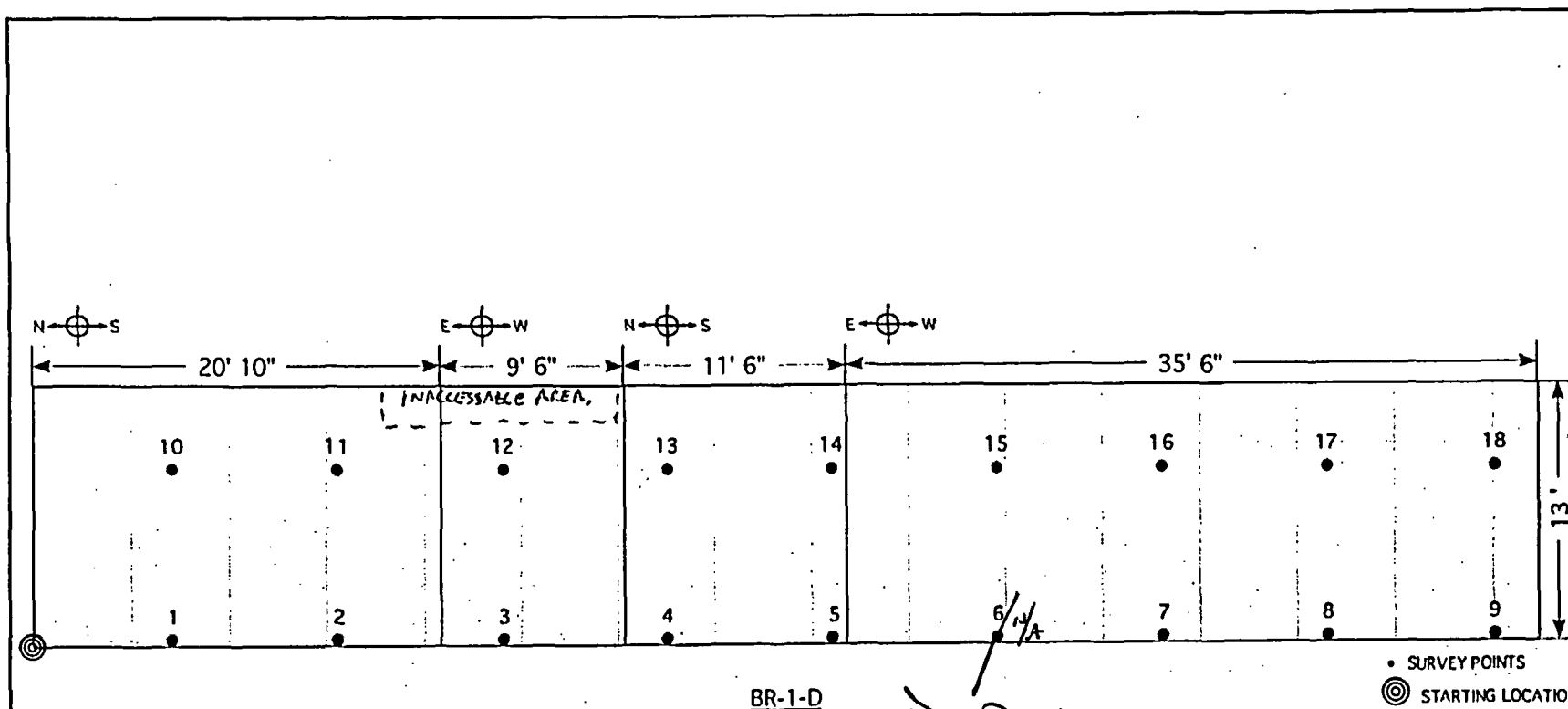
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**BR-1-D      Boiler Room**





BR-1-D

DOORWAY

FSS Start 1050  
Stop 1140  
12-15-04

SCAN - 0840 12-14-04 Start  
1040 12-15-04 Stop

Inaccessible area above point 12 is due to air compressor tanks and associated piping.  
JR  
12-15-04

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

Boiler Room East and South Walls

CLASS 1

QUEHANNA DECOMMISSIONING  
KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD

SCIENTECH

SCIENTECH, Inc.  
140 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO:

23529-0001

FILE NAME

SCALE

N.T.S.

By:

DATE

07/06/2004

CK:

FIGURE

BR-1-D

## BR-1-D

Log #
4 Source
7
8
9
10
11
N/A
12
13
14
15
16
17
18
19
20
21
22
23

	X	Y
	n/a	n/a
1	7.1	0.3
2	15.6	0.3
3	24.1	0.3
4	32.6	0.3
5	41.1	0.3
6	49.6	0.3
7	58.1	0.3
8	66.6	0.3
9	75.1	0.3
10	7.1	8.8
11	15.6	8.8
12	24.1	8.8
13	32.6	8.8
14	41.1	8.8
15	49.6	8.8
16	58.1	8.8
17	66.6	8.8
18	75.1	8.8

L (ft) = 8.5

A (ft<sup>2</sup>) = 1005

Fixed Points	Ave. (Scan)	Max. (Scan)
1505	n/a	n/a
245	180	300
229	180	320
132	140	200
144	170	180
160	140	180
N/A - in driveway		
141	140	180
134	130	160
134	130	160
232	180	300
227	180	300
147	120	160
143	130	160
149	120	160
159	120	160
135	120	160
133	120	160
155	120	160

2360 # 202476

w/ 208667

C.D. 4-13-05

Log # 3 - Field bkgd - 125 cpm

Log # 5+6 - VOID

Log # 24 Field Source  
end of unit - 1629 cpm

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

12/15/2004  
12:47:19 PM

Header 1: James Lavender  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: BR-1-D  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/15/2004  
Model 2360 Time: 12:46:09  
Sample Number: 0025

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Count - Count Time  
Ratmeter  
Scaler

Log Data:

um	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

001	12/15/04	07:20:21	000000	000147	S 001.0	Lab Background
002	12/15/04	07:21:51	000001	033002	S 001.0	Lab Source
003	12/15/04	10:54:09	000002	000125	S 001.0	Field Background
004	12/15/04	10:57:02	000002	001505	S 001.0	Field Source
005	12/15/04	11:00:26	000001	000226	S 001.0	Void
006	12/15/04	11:01:57	000001	000221	S 001.0	Void
007	12/15/04	11:04:42	000001	000245	S 001.0	BR-1-D
008	12/15/04	11:06:05	000000	000229	S 001.0	BR-1-D
009	12/15/04	11:07:41	000000	000132	S 001.0	BR-1-D
010	12/15/04	11:09:04	000000	000144	S 001.0	BR-1-D
011	12/15/04	11:10:20	000000	000160	S 001.0	BR-1-D
012	12/15/04	11:11:46	000000	000141	S 001.0	BR-1-D
013	12/15/04	11:13:16	000001	000134	S 001.0	BR-1-D
014	12/15/04	11:14:52	000000	000134	S 001.0	BR-1-D
015	12/15/04	11:18:47	000000	000232	S 001.0	BR-1-D
016	12/15/04	11:20:30	000002	000227	S 001.0	BR-1-D
017	12/15/04	11:22:14	000000	000147	S 001.0	BR-1-D
018	12/15/04	11:24:52	000001	000143	S 001.0	BR-1-D
019	12/15/04	11:26:52	000002	000149	S 001.0	BR-1-D
020	12/15/04	11:28:43	000000	000159	S 001.0	BR-1-D
021	12/15/04	11:30:50	000002	000135	S 001.0	BR-1-D
022	12/15/04	11:32:58	000002	000133	S 001.0	BR-1-D
023	12/15/04	11:34:43	000001	000155	S 001.0	BR-1-D
024	12/15/04	11:37:36	000003	001629	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/15/04	11:29:03	BR-1-D	Final Status Survey	12/15/04	11:29:03	1.000	1.00
2	Smear 2	12/15/04	11:27:43	BR-1-D	Final Status Survey	12/15/04	11:27:43	1.000	1.00
3	Smear 3	12/15/04	11:26:23	BR-1-D	Final Status Survey	12/15/04	11:26:23	1.000	1.00
4	Smear 4	12/15/04	11:25:03	BR-1-D	Final Status Survey	12/15/04	11:25:03	1.000	1.00
5	Smear 5	12/15/04	11:23:43	BR-1-D	Final Status Survey	12/15/04	11:23:43	1.000	1.00
6	Smear 6	12/15/04	11:22:23	BR-1-D	Final Status Survey	12/15/04	11:22:23	1.000	1.00
7	Smear 7	12/15/04	11:21:03	BR-1-D	Final Status Survey	12/15/04	11:21:03	1.000	1.00
8	Smear 8	12/15/04	11:19:43	BR-1-D	Final Status Survey	12/15/04	11:19:43	1.000	1.00
9	Smear 9	12/15/04	11:18:24	BR-1-D	Final Status Survey	12/15/04	11:18:24	1.000	1.00
10	Smear 10	12/15/04	11:17:04	BR-1-D	Final Status Survey	12/15/04	11:17:04	1.000	1.00
11	Smear 11	12/15/04	11:15:44	BR-1-D	Final Status Survey	12/15/04	11:15:44	1.000	1.00
12	Smear 12	12/15/04	11:14:24	BR-1-D	Final Status Survey	12/15/04	11:14:24	1.000	1.00
13	Smear 13	12/15/04	11:13:04	BR-1-D	Final Status Survey	12/15/04	11:13:04	1.000	1.00
14	Smear 14	12/15/04	11:11:44	BR-1-D	Final Status Survey	12/15/04	11:11:44	1.000	1.00
15	Smear 15	12/15/04	11:10:24	BR-1-D	Final Status Survey	12/15/04	11:10:24	1.000	1.00
16	Smear 16	12/15/04	11:09:04	BR-1-D	Final Status Survey	12/15/04	11:09:04	1.000	1.00
17	Smear 17	12/15/04	11:07:44	BR-1-D	Final Status Survey	12/15/04	11:07:44	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-15-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %Eff: 44.6 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/15/04	11:29:03	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
2	Smear 2	12/15/04	11:27:43	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
3	Smear 3	12/15/04	11:26:23	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
4	Smear 4	12/15/04	11:25:03	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
5	Smear 5	12/15/04	11:23:43	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
6	Smear 6	12/15/04	11:22:23	1.00	0.97	4.04	13.87	0.00	-0.43	-0.97	11.01
7	Smear 7	12/15/04	11:21:03	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
8	Smear 8	12/15/04	11:19:43	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
9	Smear 9	12/15/04	11:18:24	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
10	Smear 10	12/15/04	11:17:04	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
11	Smear 11	12/15/04	11:15:44	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
12	Smear 12	12/15/04	11:14:24	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
13	Smear 13	12/15/04	11:13:04	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
14	Smear 14	12/15/04	11:11:44	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
15	Smear 15	12/15/04	11:10:24	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
16	Smear 16	12/15/04	11:09:04	1.00	0.97	4.04	13.87	2.00	1.57	3.51	11.01
17	Smear 17	12/15/04	11:07:44	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-15-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

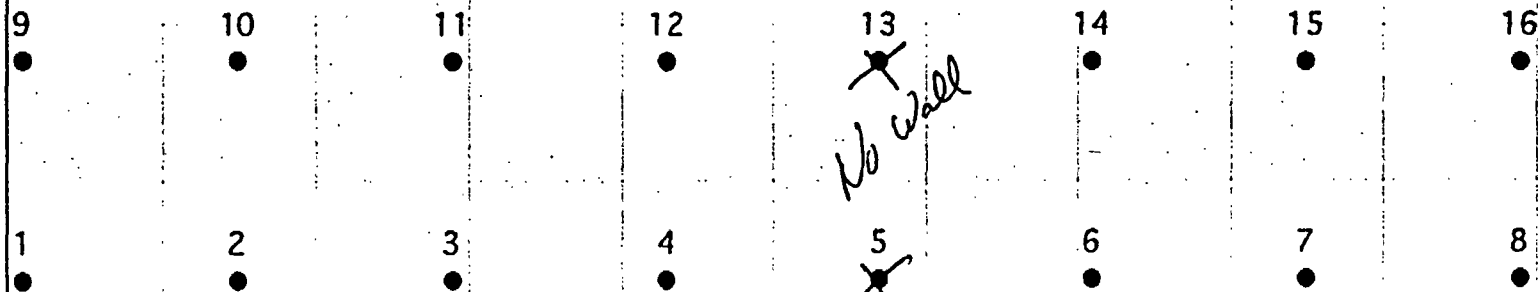
**BR-1-E      Boiler Room**

LeRoy Cuneo 12-13-04



53' 2"

31'



BR-1-E

• SURVEY POINTS

◎ STARTING LOCATION

Document  
Control No.

REVISION NO.

DRAWING

PROJECT

QUEHANNA DECOMMISSIONING  
KARTHANS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 1  
Boiler Room West Wall

SCIENTECH

SCIENTECH, Inc.  
140 WEST STREET  
NEW MILFORD, CT 06756

PROJECT NO:  
23529-0501

FILE NAME:

SCALE: N.T.S. DATE: 07/06/2004

By: CK:

FIGURE  
BR-1-E

Ludlum Measurements, Inc.  
Model 2360 Log Data

---

Date: 12/13/2004  
Time: 1:45:55 PM

Header 1: Leroy Cuneo  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: BR-1-E  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/13/2004  
Model 2360 Time: 13:45:21  
Sample Number: 0020

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

IntTime - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

001	12/13/04	07:27:56	000000	000155	S	001.0 Lab Background
002	12/13/04	07:29:59	000002	034602	S	001.0 Lab Source
003	12/13/04	10:09:44	000001	001504	S	001.0 Field Source
004	12/13/04	10:14:53	000001	000149	S	001.0 Field Background
005	12/13/04	13:14:04	000000	000175	S	001.0 BR-1-E
006	12/13/04	13:15:41	000000	000147	S	001.0 BR-1-E
007	12/13/04	13:17:44	000000	000179	S	001.0 BR-1-E
008	12/13/04	13:20:02	000001	000108	S	001.0 BR-1-E
009	12/13/04	13:22:29	000001	000180	S	001.0 BR-1-E
010	12/13/04	13:25:30	000001	000212	S	001.0 BR-1-E
011	12/13/04	13:27:32	000001	000192	S	001.0 BR-1-E
012	12/13/04	13:30:36	000002	000162	S	001.0 BR-1-E
013	12/13/04	13:31:51	000001	000163	S	001.0 BR-1-E
014	12/13/04	13:33:40	000002	000176	S	001.0 BR-1-E
015	12/13/04	13:35:18	000000	000154	S	001.0 BR-1-E
016	12/13/04	13:36:42	000003	000174	S	001.0 BR-1-E
017	12/13/04	13:40:02	000002	000257	S	001.0 BR-1-E
018	12/13/04	13:41:24	000002	000187	S	001.0 BR-1-E
019	12/13/04	13:44:43	000001	001586	S	001.0 Field Source



## Leroy Cuneo

[illegible]

KG

	X	Y
	n/a	n/a
1	0.5	1.8
2	7.5	1.8
3	14.5	1.8
4	21.5	1.8
5	28.5	1.8
6	35.5	1.8
7	42.5	1.8
8	49.5	1.8
9	0.5	8.8
10	7.5	8.8
11	14.5	8.8
12	21.5	8.8
13	28.5	8.8
14	35.5	8.8
15	42.5	8.8
16	49.5	8.8

NOWAII

NO WAIT

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
175	200	260
147	120	260
179	140	200
108	120	280
DOORWAY		
180	180	240
212	200	320
192	220	320
162	180	280
143	170	260
176	140	220
154	140	280
DOORWAY		
174	180	340
257	200	320
187	240	280

$$\begin{aligned} L \text{ (ft)} &= 7 \\ A \text{ (ft}^2\text{)} &= 691 \end{aligned}$$

12-13-04

BKG - 149

$\eta = 2360$

3# 433

START 13-14-04  
FINISH 13-44-43

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No. 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/13/04	14:18:38	BR-1-E	Final Status Survey	12/13/04	14:18:38	1.000	1.00
2	Smear 2	12/13/04	14:17:18	BR-1-E	Final Status Survey	12/13/04	14:17:18	1.000	1.00
3	Smear 3	12/13/04	14:15:58	BR-1-E	Final Status Survey	12/13/04	14:15:58	1.000	1.00
4	Smear 4	12/13/04	14:14:38	BR-1-E	Final Status Survey	12/13/04	14:14:38	1.000	1.00
5	Smear 5	12/13/04	14:13:18	BR-1-E	Final Status Survey	12/13/04	14:13:18	1.000	1.00
6	Smear 6	12/13/04	14:11:58	BR-1-E	Final Status Survey	12/13/04	14:11:58	1.000	1.00
7	Smear 7	12/13/04	14:10:38	BR-1-E	Final Status Survey	12/13/04	14:10:38	1.000	1.00
8	Smear 8	12/13/04	14:09:19	BR-1-E	Final Status Survey	12/13/04	14:09:19	1.000	1.00
9	Smear 9	12/13/04	14:07:59	BR-1-E	Final Status Survey	12/13/04	14:07:59	1.000	1.00
10	Smear 10	12/13/04	14:06:39	BR-1-E	Final Status Survey	12/13/04	14:06:39	1.000	1.00
11	Smear 11	12/13/04	14:05:19	BR-1-E	Final Status Survey	12/13/04	14:05:19	1.000	1.00
12	Smear 12	12/13/04	14:03:59	BR-1-E	Final Status Survey	12/13/04	14:03:59	1.000	1.00
13	Smear 13	12/13/04	14:02:39	BR-1-E	Final Status Survey	12/13/04	14:02:39	1.000	1.00
14	Smear 14	12/13/04	14:01:19	BR-1-E	Final Status Survey	12/13/04	14:01:19	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-13-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.62 LLD: 13.54 dpm				Bkg: 0.47 cpm %Eff: 44.83 LLD: 11.14 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/13/04	14:18:38	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
2	Smear 2	12/13/04	14:17:18	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
3	Smear 3	12/13/04	14:15:58	0.00	-0.03	-0.14	13.54	2.00	1.53	3.42	11.14
4	Smear 4	12/13/04	14:14:38	0.00	-0.03	-0.14	13.54	1.00	0.53	1.19	11.14
5	Smear 5	12/13/04	14:13:18	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
6	Smear 6	12/13/04	14:11:58	0.00	-0.03	-0.14	13.54	1.00	0.53	1.19	11.14
7	Smear 7	12/13/04	14:10:38	0.00	-0.03	-0.14	13.54	1.00	0.53	1.19	11.14
8	Smear 8	12/13/04	14:09:19	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
9	Smear 9	12/13/04	14:07:59	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
10	Smear 10	12/13/04	14:06:39	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
11	Smear 11	12/13/04	14:05:19	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
12	Smear 12	12/13/04	14:03:59	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
13	Smear 13	12/13/04	14:02:39	0.00	-0.03	-0.14	13.54	3.00	2.53	5.65	11.14
14	Smear 14	12/13/04	14:01:19	0.00	-0.03	-0.14	13.54	3.00	2.53	5.65	11.14

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-13-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

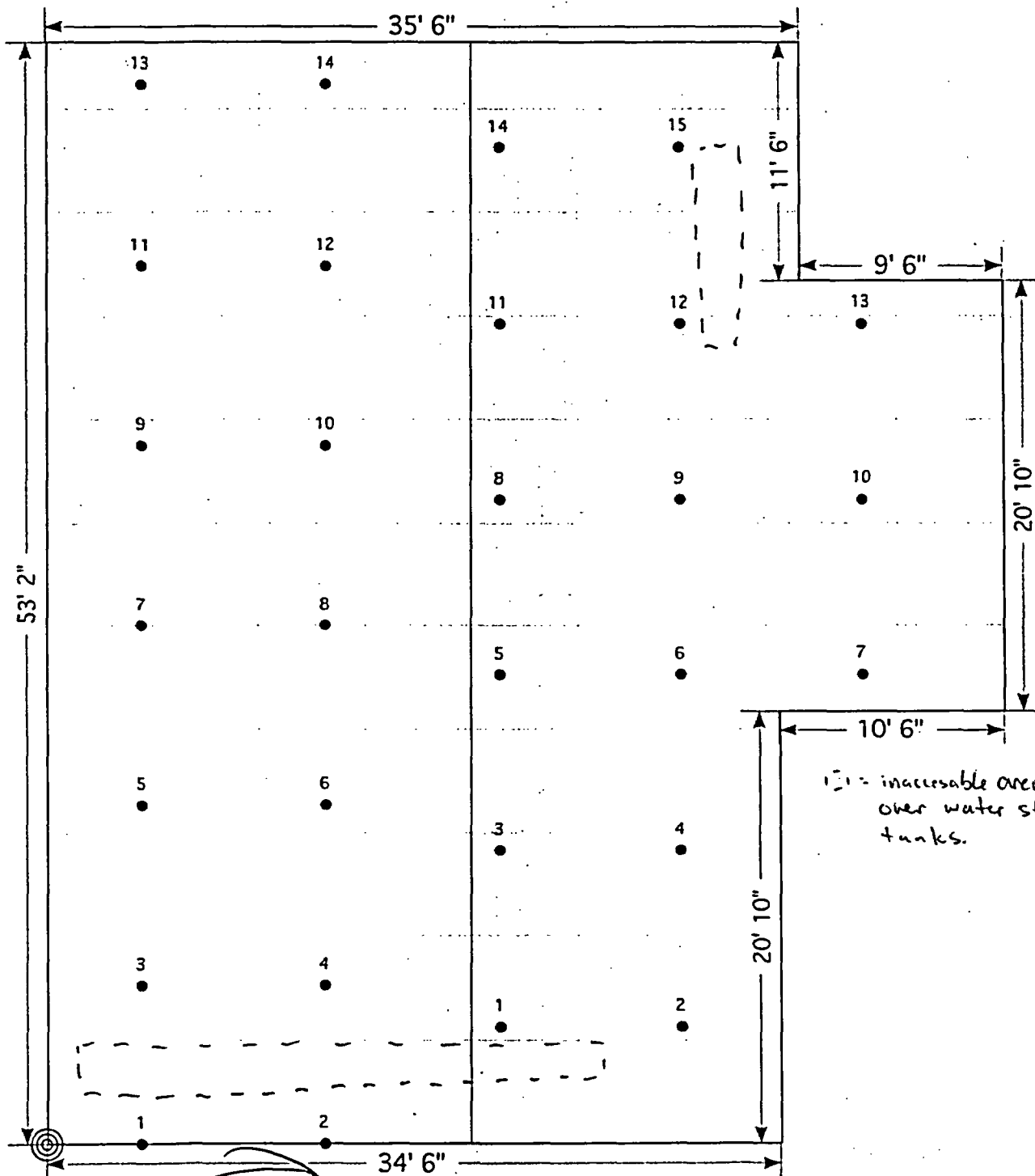
Date:

**BR-1-F      Boiler Room**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENTECH, Inc. 143 WEST STREET NEW HAVEN, CT 06510	PROJECT NO.: 21559-0500	FILE NAME:	DATE	07/06/2004	BY:	CHK:	FIGURE	BR-1-F
	DRAWING	CLASS 1 Boiler Room Ceiling	SCALE				N.T.S.					



- SURVEY POINTS
- ◎ STARTING LOCATION



13, 14, 15 - inaccessible areas directly over water storage tanks.

Scan started  
 12-13-04 07410  
 12-15-04 1100

BR-1-F

FSS Start 0945  
 Stop 1100 12-14-04

BR-1-G

## BR-1-F

Log #	Source
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

	X	Y
	n/a	n/a
1	4.5	0.0
2	13.2	0.0
3	4.5	7.6
4	13.2	7.6
5	4.5	16.3
6	13.2	16.3
7	4.5	25.0
8	13.2	25.0
9	4.5	33.7
10	13.2	33.7
11	4.5	42.4
12	13.2	42.4
13	4.5	51.1
14	13.2	51.1

L (ft) = 8.7

A (ft<sup>2</sup>) = 1063

Log #5 Field bkgd 251 cpm  
 Log #21 Field source  
 end of unit - 1671 cpm

Fixed Points	Ave. (Scan)	Max. (Scan)
1625	n/a	n/a
131	140	220
142	140	220
215	140	220
187	140	220
264	140	220
149	140	220
149	140	200
146	130	200
243	140	200
138	140	200
260	140	220
137	120	180
144	140	200
165	130	180

2360 202475  
 wi 200001

scans done 12-13 0140  
 12-18 1100  
 FSS start 0945 12/14/04  
 Finish 1100 2

# Ludlum Measurements, Inc.

## Model 2360 Log Data

Dr 12/14/2004  
Fil 11:19:49 AM

Header 1: James Lavender  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: BR-1-F  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/14/2004  
Model 2360 Time: 11:20:13  
Sample Number: 0022

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

C - Count Time  
R - meter  
S - Scaler

### Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	11/13/04	07:26:44	000001	000227	S 001.0	Lab Background
0002	11/13/04	07:28:28	000000	032418	S 001.0	Lab Source
0003	11/14/04	07:26:43	000000	000175	S 001.0	Lab Background
0004	11/14/04	07:30:53	000000	033134	S 001.0	Lab Source
0005	11/14/04	10:15:23	000000	000251	S 001.0	Field Background
0006	11/14/04	10:17:16	000001	001625	S 001.0	Field Source
0007	11/14/04	10:28:55	000000	000131	S 001.0	BR-1-F
0008	11/14/04	10:30:34	000001	000142	S 001.0	BR-1-F
0009	11/14/04	10:32:46	000000	000215	S 001.0	BR-1-F
0010	11/14/04	10:34:33	000000	000187	S 001.0	BR-1-F
0011	11/14/04	10:37:51	000000	000264	S 001.0	BR-1-F
0012	11/14/04	10:40:48	000001	000149	S 001.0	BR-1-F
0013	11/14/04	10:42:51	000001	000149	S 001.0	BR-1-F
0014	11/14/04	10:47:31	000000	000146	S 001.0	BR-1-F
0015	11/14/04	10:49:24	000003	000243	S 001.0	BR-1-F
0016	11/14/04	10:51:05	000001	000138	S 001.0	BR-1-F
0017	11/14/04	10:52:40	000000	000260	S 001.0	BR-1-F
0018	11/14/04	10:55:37	000000	000137	S 001.0	BR-1-F
0019	11/14/04	10:58:18	000000	000194	S 001.0	BR-1-F
0020	11/14/04	10:59:59	000000	000165	S 001.0	BR-1-F
0021	11/14/04	11:19:04	000003	001671	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/14/04	11:36:57	BR-1-F	Final Status Survey	12/14/04	11:36:57	1.000	1.00
2	Smear 2	12/14/04	11:35:37	BR-1-F	Final Status Survey	12/14/04	11:35:37	1.000	1.00
3	Smear 3	12/14/04	11:34:17	BR-1-F	Final Status Survey	12/14/04	11:34:17	1.000	1.00
4	Smear 4	12/14/04	11:32:57	BR-1-F	Final Status Survey	12/14/04	11:32:57	1.000	1.00
5	Smear 5	12/14/04	11:31:37	BR-1-F	Final Status Survey	12/14/04	11:31:37	1.000	1.00
6	Smear 6	12/14/04	11:30:18	BR-1-F	Final Status Survey	12/14/04	11:30:18	1.000	1.00
7	Smear 7	12/14/04	11:28:58	BR-1-F	Final Status Survey	12/14/04	11:28:58	1.000	1.00
8	Smear 8	12/14/04	11:27:38	BR-1-F	Final Status Survey	12/14/04	11:27:38	1.000	1.00
9	Smear 9	12/14/04	11:26:18	BR-1-F	Final Status Survey	12/14/04	11:26:18	1.000	1.00
10	Smear 10	12/14/04	11:24:58	BR-1-F	Final Status Survey	12/14/04	11:24:58	1.000	1.00
11	Smear 11	12/14/04	11:23:38	BR-1-F	Final Status Survey	12/14/04	11:23:38	1.000	1.00
12	Smear 12	12/14/04	11:22:18	BR-1-F	Final Status Survey	12/14/04	11:22:18	1.000	1.00
13	Smear 13	12/14/04	11:20:58	BR-1-F	Final Status Survey	12/14/04	11:20:58	1.000	1.00
14	Smear 14	12/14/04	11:19:38	BR-1-F	Final Status Survey	12/14/04	11:19:38	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-14-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 23.12 LLD: 11.72 dpm				Bkg: 0.63 cpm %Eff: 44.67 LLD: 12.06 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/14/04	11:36:57	0.00	0.00	0.00	11.72	0.00	-0.63	-1.42	12.05
2	Smear 2	12/14/04	11:35:37	0.00	0.00	0.00	11.72	0.00	-0.63	-1.42	12.05
3	Smear 3	12/14/04	11:34:17	1.00	1.00	4.33	11.72	0.00	-0.63	-1.42	12.05
4	Smear 4	12/14/04	11:32:57	0.00	0.00	0.00	11.72	1.00	0.37	0.82	12.05
5	Smear 5	12/14/04	11:31:37	0.00	0.00	0.00	11.72	3.00	2.37	5.31	12.05
6	Smear 6	12/14/04	11:30:18	0.00	0.00	0.00	11.72	1.00	0.37	0.82	12.05
7	Smear 7	12/14/04	11:28:58	0.00	0.00	0.00	11.72	0.00	-0.63	-1.42	12.05
8	Smear 8	12/14/04	11:27:38	0.00	0.00	0.00	11.72	0.00	-0.63	-1.42	12.05
9	Smear 9	12/14/04	11:26:18	0.00	0.00	0.00	11.72	1.00	0.37	0.82	12.05
10	Smear 10	12/14/04	11:24:58	0.00	0.00	0.00	11.72	1.00	0.37	0.82	12.05
11	Smear 11	12/14/04	11:23:38	0.00	0.00	0.00	11.72	0.00	-0.63	-1.42	12.05
12	Smear 12	12/14/04	11:22:18	0.00	0.00	0.00	11.72	0.00	-0.63	-1.42	12.05
13	Smear 13	12/14/04	11:20:58	0.00	0.00	0.00	11.72	0.00	-0.63	-1.42	12.05
14	Smear 14	12/14/04	11:19:38	0.00	0.00	0.00	11.72	0.00	-0.63	-1.42	12.05

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

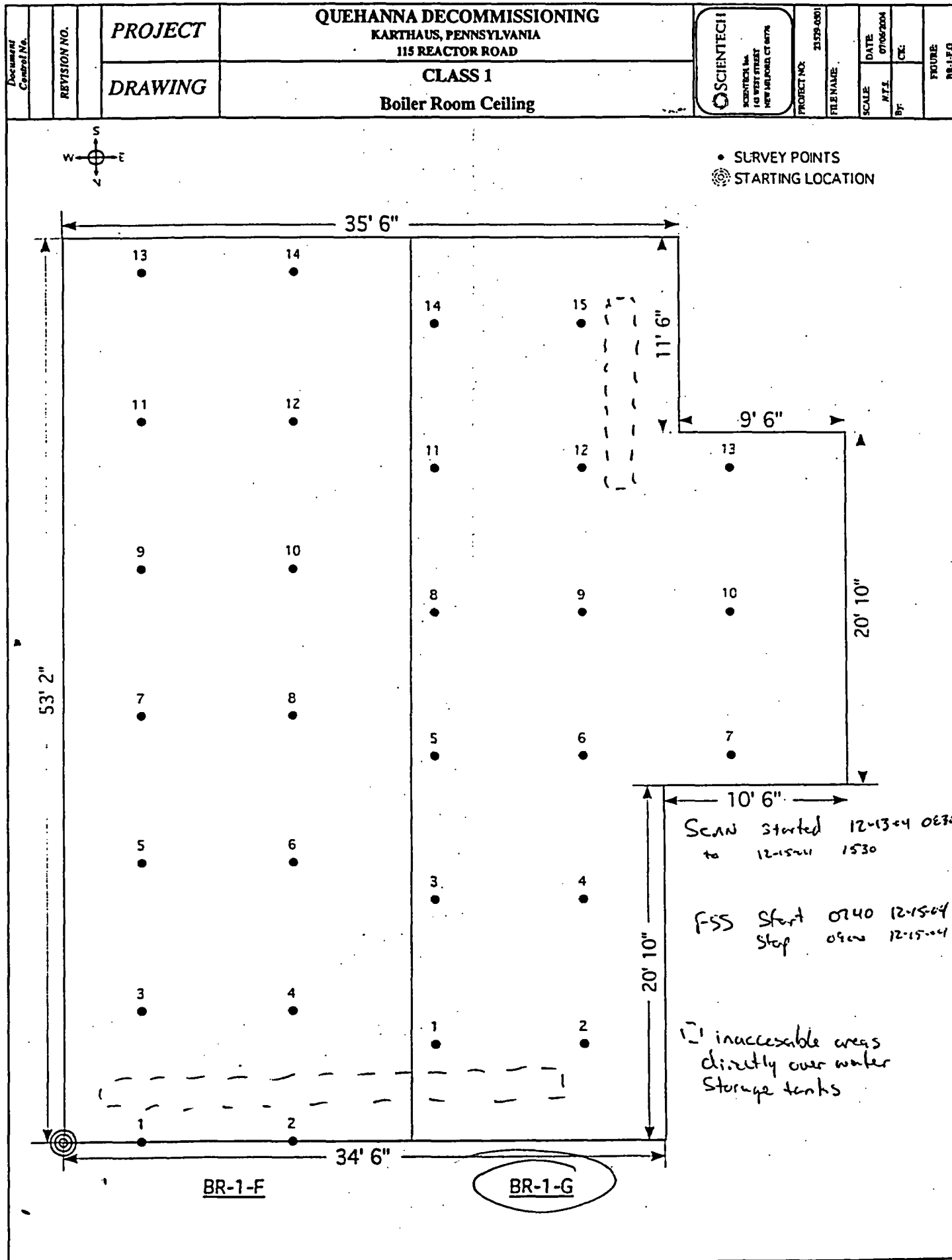
Date: 12-14-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**BR-1-G      Boiler Room**



## BR-1-G

Log #
4 Source
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

	X	Y
	n/a	n/a
1	1.4	5.6
2	9.9	5.6
3	1.4	14.1
4	9.9	14.1
5	1.4	22.6
6	9.9	22.6
7	18.4	22.6
8	1.4	31.1
9	9.9	31.1
10	18.4	31.1
11	1.4	39.6
12	9.9	39.6
13	18.4	39.6
14	1.4	48.1
15	9.9	48.1

L (ft) = 8.5

A (ft<sup>2</sup>) = 1001

Log # 3 - Field bkgd - 135 cpm

Log # 20 Field source - 1665 cpm  
end of unit

Fixed Points	Ave. (Scan)	Max. (Scan)
1584	n/a	n/a
141	130	180
132	130	160
104	120	150
166	130	160
139	130	170
144	130	160
107	120	160
141	120	160
158	130	170
142	120	160
173	130	170
117	120	150
126	120	140
137	120	150
147	120	160

12-15-04

FSS Started 0740  
Stopped 0900Scans started 12-15-04 0840  
stopped 12-15-04 1530

2360 # 202475

w/ 208661

C.D. 4/13/05

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

12/2/15/2004  
in 8:54:19 AM

Header 1: James Lavender  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: BR-1-G  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/15/2004  
Model 2360 Time: 08:54:54  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

C - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	11/15/04	07:23:14	000000	000166	S 001.0	Lab Background
0002	11/15/04	07:26:31	000002	032365	S 001.0	Lab Source
0003	11/15/04	07:44:37	000000	000135	S 001.0	Field Background
0004	11/15/04	07:46:11	000003	001584	S 001.0	Field Source
0005	11/15/04	08:03:06	000000	000141	S 001.0	BR-1-G
0006	11/15/04	08:05:15	000001	000132	S 001.0	BR-1-G
0007	11/15/04	08:07:36	000000	000104	S 001.0	BR-1-G
0008	11/15/04	08:09:52	000000	000166	S 001.0	BR-1-G
0009	11/15/04	08:12:21	000001	000139	S 001.0	BR-1-G
0010	11/15/04	08:14:42	000000	000144	S 001.0	BR-1-G
0011	11/15/04	08:19:04	000000	000107	S 001.0	BR-1-G
0012	11/15/04	08:21:50	000001	000141	S 001.0	BR-1-G
0013	11/15/04	08:25:42	000000	000158	S 001.0	BR-1-G
0014	11/15/04	08:29:29	000001	000142	S 001.0	BR-1-G
0015	11/15/04	08:32:50	000000	000173	S 001.0	BR-1-G
0016	11/15/04	08:38:01	000000	000117	S 001.0	BR-1-G
0017	11/15/04	08:40:42	000000	000126	S 001.0	BR-1-G
0018	11/15/04	08:43:44	000001	000137	S 001.0	BR-1-G
0019	11/15/04	08:47:08	000000	000147	S 001.0	BR-1-G
0020	11/15/04	08:54:29	000004	001665	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/15/04	9:22:39	BR-1-G	Final Status Survey	12/15/04	9:22:39	1.000	1.00
2	Smear 2	12/15/04	9:21:19	BR-1-G	Final Status Survey	12/15/04	9:21:19	1.000	1.00
3	Smear 3	12/15/04	9:19:59	BR-1-G	Final Status Survey	12/15/04	9:19:59	1.000	1.00
4	Smear 4	12/15/04	9:18:39	BR-1-G	Final Status Survey	12/15/04	9:18:39	1.000	1.00
5	Smear 5	12/15/04	9:17:19	BR-1-G	Final Status Survey	12/15/04	9:17:19	1.000	1.00
6	Smear 6	12/15/04	9:15:59	BR-1-G	Final Status Survey	12/15/04	9:15:59	1.000	1.00
7	Smear 7	12/15/04	9:14:39	BR-1-G	Final Status Survey	12/15/04	9:14:39	1.000	1.00
8	Smear 8	12/15/04	9:13:19	BR-1-G	Final Status Survey	12/15/04	9:13:19	1.000	1.00
9	Smear 9	12/15/04	9:11:59	BR-1-G	Final Status Survey	12/15/04	9:11:59	1.000	1.00
10	Smear 10	12/15/04	9:10:39	BR-1-G	Final Status Survey	12/15/04	9:10:39	1.000	1.00
11	Smear 11	12/15/04	9:09:20	BR-1-G	Final Status Survey	12/15/04	9:09:20	1.000	1.00
12	Smear 12	12/15/04	9:08:00	BR-1-G	Final Status Survey	12/15/04	9:08:00	1.000	1.00
13	Smear 13	12/15/04	9:06:40	BR-1-G	Final Status Survey	12/15/04	9:06:40	1.000	1.00
14	Smear 14	12/15/04	9:05:20	BR-1-G	Final Status Survey	12/15/04	9:05:20	1.000	1.00
15	Smear 15	12/15/04	9:04:00	BR-1-G	Final Status Survey	12/15/04	9:04:00	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-15-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %Eff: 44.6 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/15/04	9:22:39	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
2	Smear 2	12/15/04	9:21:19	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
3	Smear 3	12/15/04	9:19:59	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
4	Smear 4	12/15/04	9:18:39	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
5	Smear 5	12/15/04	9:17:19	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
6	Smear 6	12/15/04	9:15:59	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
7	Smear 7	12/15/04	9:14:39	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
8	Smear 8	12/15/04	9:13:19	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
9	Smear 9	12/15/04	9:11:59	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
10	Smear 10	12/15/04	9:10:39	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
11	Smear 11	12/15/04	9:09:20	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
12	Smear 12	12/15/04	9:08:00	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
13	Smear 13	12/15/04	9:06:40	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
14	Smear 14	12/15/04	9:05:20	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
15	Smear 15	12/15/04	9:04:00	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-15-04


Reviewed By (print): Joe Trowbridge

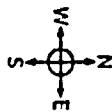
Reviewed By (sign):

Date:

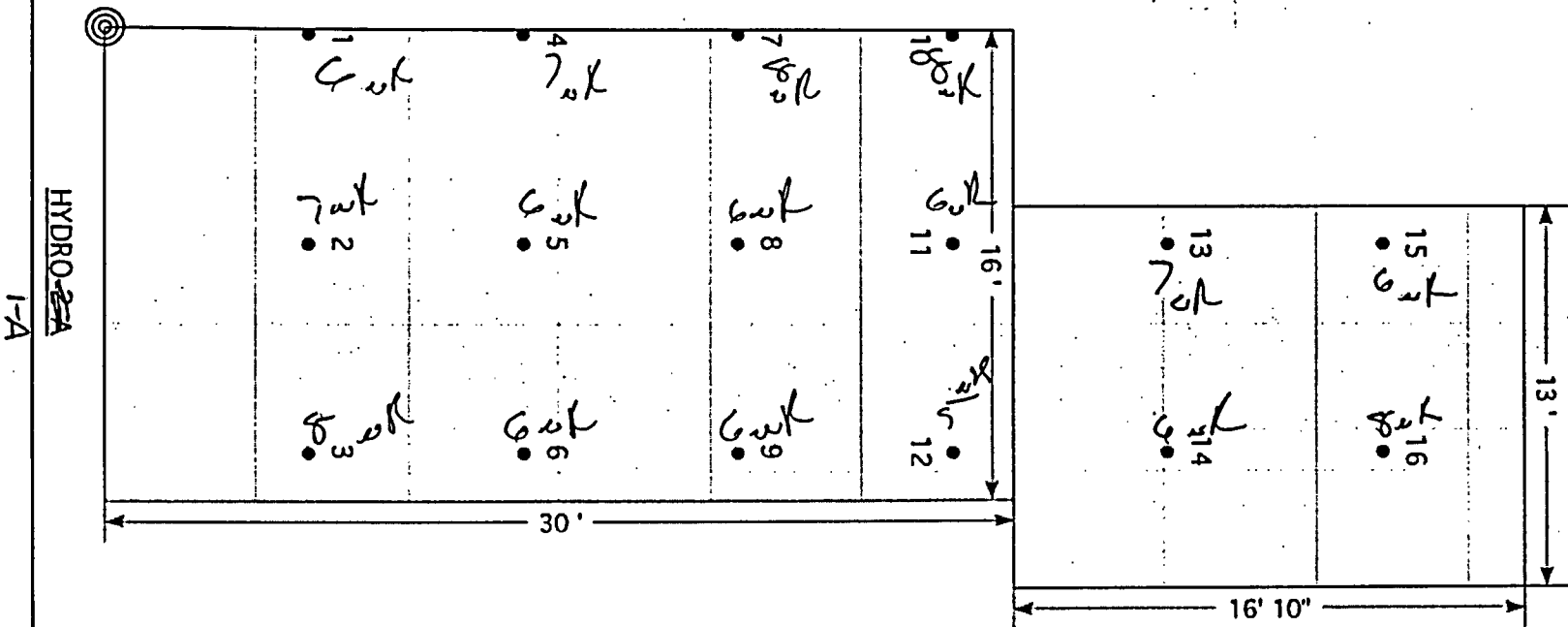
**HYDRO-1-A Hydroblast Room**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Hydro Blast Room Floor
 <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06474</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/30/04
By:	CK:
FIGURE: HYDRO-1-A	



• SURVEY POINTS  
• STARTING LOCATION



HYDRO-2A

1-A

## HYDRO-1-A

Log #
Source
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

	X	Y
	n/a	n/a
1	0.2	6.7
2	7.3	6.7
3	14.4	6.7
4	0.2	13.8
5	7.3	13.8
6	14.4	13.8
7	0.2	20.9
8	7.3	20.9
9	14.4	20.9
10	0.2	28.0
11	7.3	28.0
12	14.4	28.0
13	7.3	35.1
14	14.4	35.1
15	7.3	42.2
16	14.4	42.2

L (ft)= 7.1

A (ft<sup>2</sup>)= 699

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
147	160	200
180	180	240
179	180	240
196	200	240
171	160	190
220	220	280
261	260	300
255	260	300
257	260	300
245	240	280
229	220	260
239	240	280
201	200	280
215	200	280
223	220	240
218	220	240

23 Source  
27 BKGD

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Printed: 12/8/2004  
Time: 3:29:34 PM

Header 1: Chris Higgins  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location:  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/08/2004  
Model 2360 Time: 18:25:58  
Sample Number: 0042

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Count - Count Time  
Rate - Rate  
Source - Source

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location	CntTime
001	11/07/04	09:23:24	000000	000177	S 001.0	Lab Background	
002	11/07/04	09:24:42	000000	032053	S 001.0	Lab Source	
003	11/08/04	07:24:37	000000	000214	S 001.0	Lab Background	
004	11/08/04	07:27:22	000000	032461	S 001.0	Lab Source	
005	11/08/04	17:14:59	000003	001585	S 001.0	Field Source	
006	11/08/04	17:17:50	000000	000219	S 001.0	Field Background	
007	11/08/04	17:23:49	000001	000288	S 001.0	FABU-2-A	
008	11/08/04	17:24:57	000002	000277	S 001.0	FABU-2-A	
009	11/08/04	17:26:03	000001	000228	S 001.0	FABU-2-A	
010	11/08/04	17:27:10	000000	000243	S 001.0	FABU-2-A	
011	11/08/04	17:28:16	000000	000258	S 001.0	FABU-2-A	
012	11/08/04	17:29:26	000001	000246	S 001.0	FABU-2-A	
013	11/08/04	17:31:09	000002	000219	S 001.0	FABU-2-A	
014	11/08/04	17:32:54	000001	000199	S 001.0	FABU-2-A	
015	11/08/04	17:34:48	000001	000202	S 001.0	FABU-2-A	
016	11/08/04	17:36:07	000001	000236	S 001.0	FABU-2-A	
017	11/08/04	17:37:23	000001	000227	S 001.0	FABU-2-A	
018	11/08/04	17:38:41	000000	000233	S 001.0	FABU-2-A	
019	11/08/04	17:39:47	000000	000217	S 001.0	FABU-2-A	
020	11/08/04	17:40:59	000000	000228	S 001.0	FABU-2-A	
021	11/08/04	17:42:11	000002	000194	S 001.0	FABU-2-A	
022	11/08/04	17:51:39	000001	000165	S 001.0	Void	
023	11/08/04	17:55:23	000001	001544	S 001.0	Field Source	
024	11/08/04	17:57:57	000001	000150	S 001.0	Field Background	
025	11/08/04	17:59:28	000000	000167	S 001.0	HYDRO-1-A	
026	11/08/04	18:00:42	000000	000180	S 001.0	HYDRO-1-A	
027	11/08/04	18:02:09	000000	000179	S 001.0	HYDRO-1-A	
028	11/08/04	18:03:19	000002	000196	S 001.0	HYDRO-1-A	
029	11/08/04	18:04:41	000001	000171	S 001.0	HYDRO-1-A	
030	11/08/04	18:06:30	000000	000220	S 001.0	HYDRO-1-A	
031	11/08/04	18:07:36	000001	000261	S 001.0	HYDRO-1-A	
032	11/08/04	18:08:56	000000	000255	S 001.0	HYDRO-1-A	
033	11/08/04	18:10:16	000000	000254	S 001.0	HYDRO-1-A	
034	11/08/04	18:11:29	000001	000245	S 001.0	HYDRO-1-A	

035 11/08/04 18:13:45 000001 000229 S 001.0 HYDRO-1-A  
036 11/08/04 18:14:54 000000 000239 S 001.0 HYDRO-1-A  
037 11/08/04 18:16:16 000000 000201 S 001.0 HYDRO-1-A  
038 11/08/04 18:17:33 000000 000215 S 001.0 HYDRO-1-A  
039 11/08/04 18:18:40 000000 000223 S 001.0 HYDRO-1-A  
040 11/08/04 18:19:47 000000 000218 S 001.0 HYDRO-1-A  
041 11/08/04 18:25:06 000003 001554 S 001.0 Field Source  
;

Smear's		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1 Smear 1		12/09/04	9:00:14	HYDRO-1-A	Final Status Survey	12/09/04	9:00:14	1.000	1.00
2 Smear 2		12/09/04	8:58:53	HYDRO-1-A	Final Status Survey	12/09/04	8:58:53	1.000	1.00
3 Smear 3		12/09/04	8:57:33	HYDRO-1-A	Final Status Survey	12/09/04	8:57:33	1.000	1.00
4 Smear 4		12/09/04	8:56:13	HYDRO-1-A	Final Status Survey	12/09/04	8:56:13	1.000	1.00
5 Smear 5		12/09/04	8:54:53	HYDRO-1-A	Final Status Survey	12/09/04	8:54:53	1.000	1.00
6 Smear 6		12/09/04	8:53:33	HYDRO-1-A	Final Status Survey	12/09/04	8:53:33	1.000	1.00
7 Smear 7		12/09/04	8:52:13	HYDRO-1-A	Final Status Survey	12/09/04	8:52:13	1.000	1.00
8 Smear 8		12/09/04	8:50:53	HYDRO-1-A	Final Status Survey	12/09/04	8:50:53	1.000	1.00
9 Smear 9		12/09/04	8:49:32	HYDRO-1-A	Final Status Survey	12/09/04	8:49:32	1.000	1.00
10 Smear 10		12/09/04	8:48:12	HYDRO-1-A	Final Status Survey	12/09/04	8:48:12	1.000	1.00
11 Smear 11		12/09/04	8:46:52	HYDRO-1-A	Final Status Survey	12/09/04	8:46:52	1.000	1.00
12 Smear 12		12/09/04	8:45:32	HYDRO-1-A	Final Status Survey	12/09/04	8:45:32	1.000	1.00
13 Smear 13		12/09/04	8:44:12	HYDRO-1-A	Final Status Survey	12/09/04	8:44:12	1.000	1.00
14 Smear 14		12/09/04	8:42:52	HYDRO-1-A	Final Status Survey	12/09/04	8:42:52	1.000	1.00
15 Smear 15		12/09/04	8:41:32	HYDRO-1-A	Final Status Survey	12/09/04	8:41:32	1.000	1.00
16 Smear 16		12/09/04	8:40:12	HYDRO-1-A	Final Status Survey	12/09/04	8:40:12	1.000	1.00

Technician (print): Rob Ellison

Technician (sign):

*Rob Ellison*

Date: 12-09-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 23.81 LLD: 15.01 dpm				Bkg: 0.6 cpm %Eff: 44.63 LLD: 11.37 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/09/04	9:00:14	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
2	Smear 2	12/09/04	8:58:53	1.00	0.93	3.92	15.01	1.00	0.50	1.12	11.37
3	Smear 3	12/09/04	8:57:33	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
4	Smear 4	12/09/04	8:56:13	1.00	0.93	3.92	15.01	1.00	0.50	1.12	11.37
5	Smear 5	12/09/04	8:54:53	0.00	-0.07	-0.28	15.01	3.00	2.50	5.60	11.37
6	Smear 6	12/09/04	8:53:33	0.00	-0.07	-0.28	15.01	4.00	3.50	7.84	11.37
7	Smear 7	12/09/04	8:52:13	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
8	Smear 8	12/09/04	8:50:53	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
9	Smear 9	12/09/04	8:49:32	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
10	Smear 10	12/09/04	8:48:12	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
11	Smear 11	12/09/04	8:46:52	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
12	Smear 12	12/09/04	8:45:32	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37
13	Smear 13	12/09/04	8:44:12	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
14	Smear 14	12/09/04	8:42:52	0.00	-0.07	-0.28	15.01	2.00	1.50	3.36	11.37
15	Smear 15	12/09/04	8:41:32	0.00	-0.07	-0.28	15.01	0.00	-0.50	-1.12	11.37
16	Smear 16	12/09/04	8:40:12	0.00	-0.07	-0.28	15.01	1.00	0.50	1.12	11.37

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

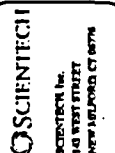
Date: 7-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

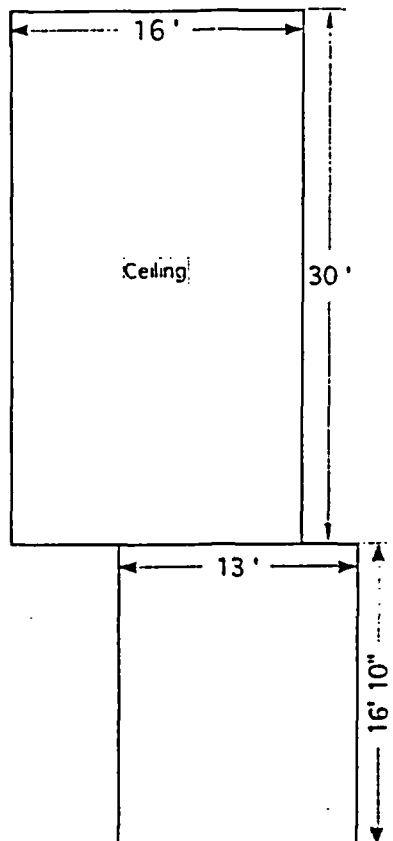
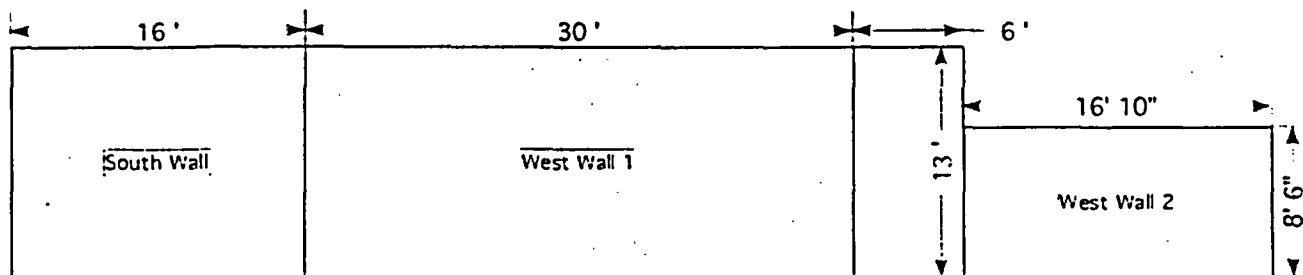
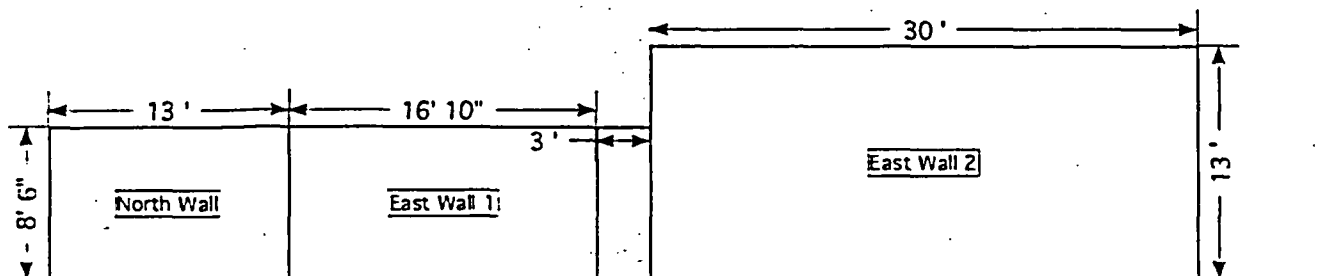
Date:

**HYDRO-3-A Hydroblast Room**

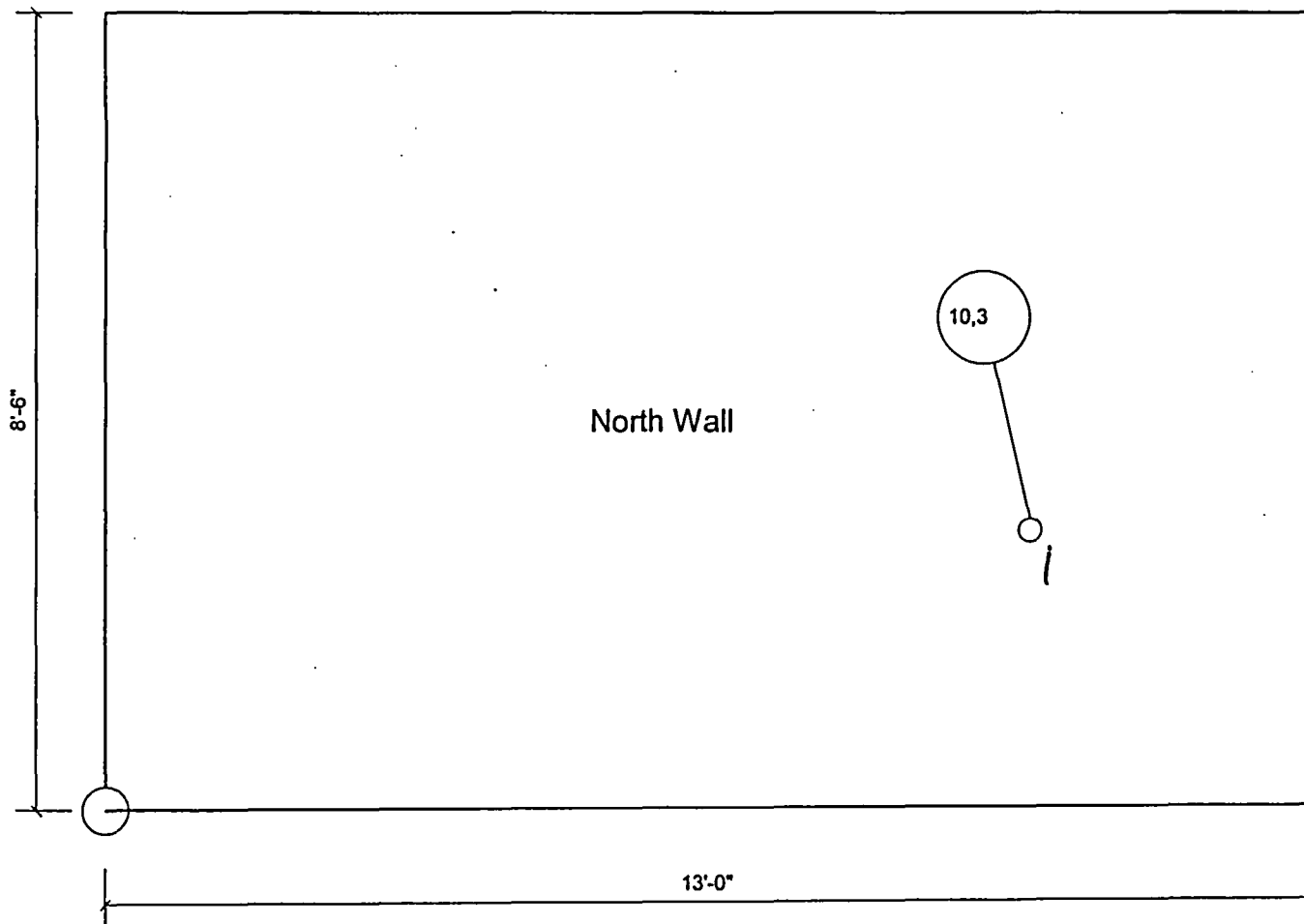
Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 OSCIEN TECH Inc. 140 WEST STREET NEW HAVEN, CT 06511	PROJECT NO. 21379-0001	FILE NAME	DATE	07/06/2004	BY	CR	FIGURE HYDRO-3-A
		DRAWING	CLASS 3 Hydro Blast Room Walls and Ceiling				SCALE	N.T.S.			

# HYDRO-3-A

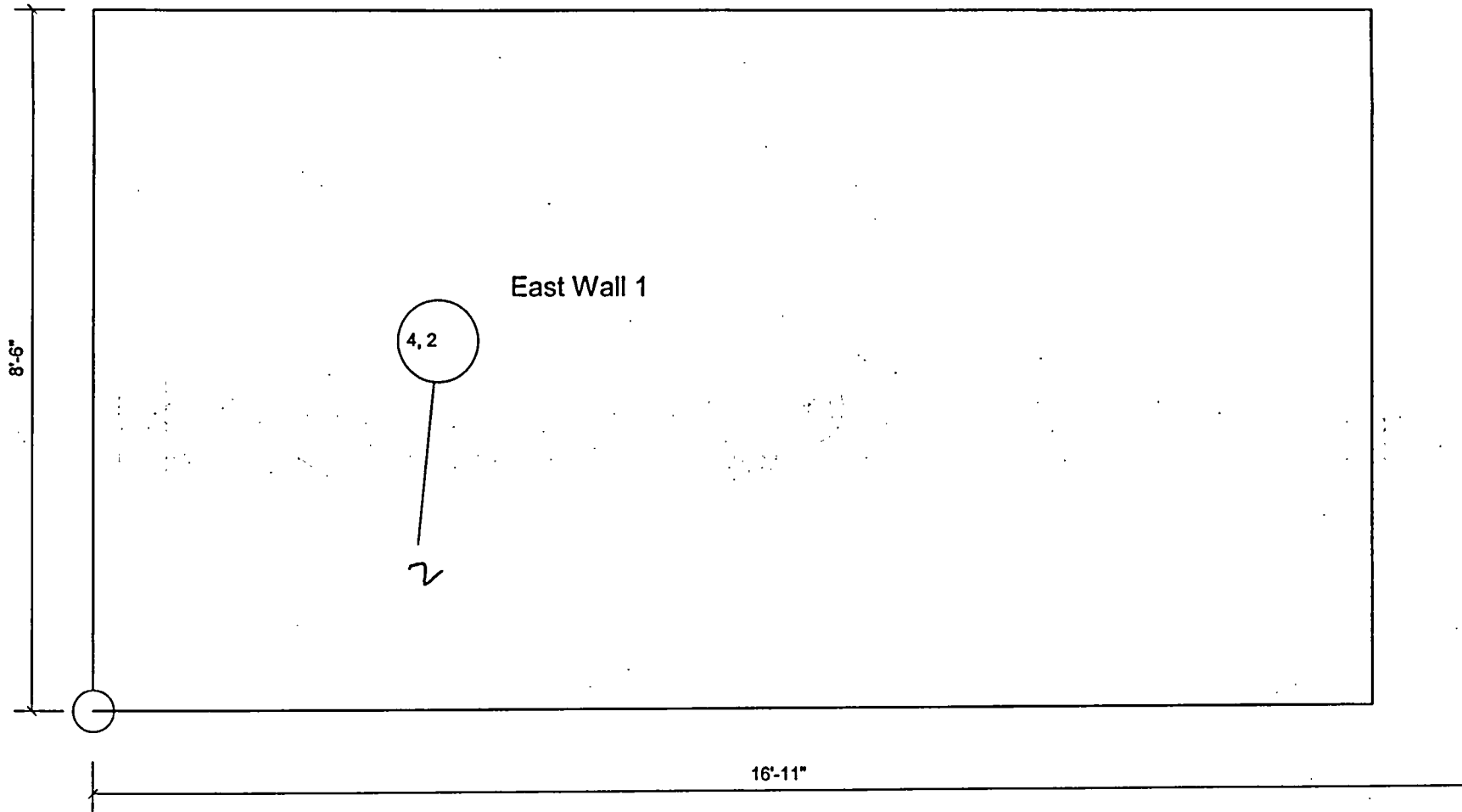
203433  
208664

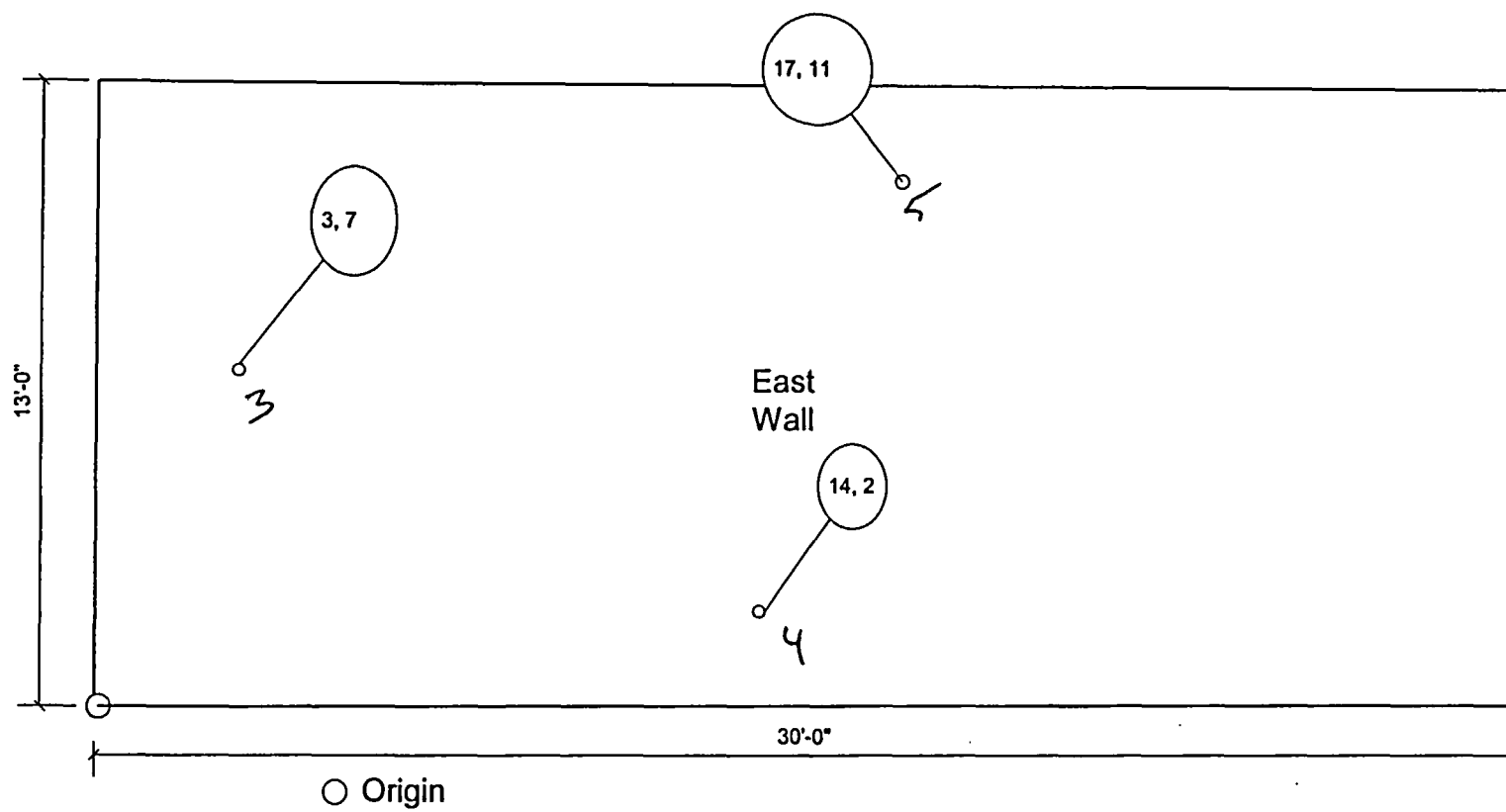


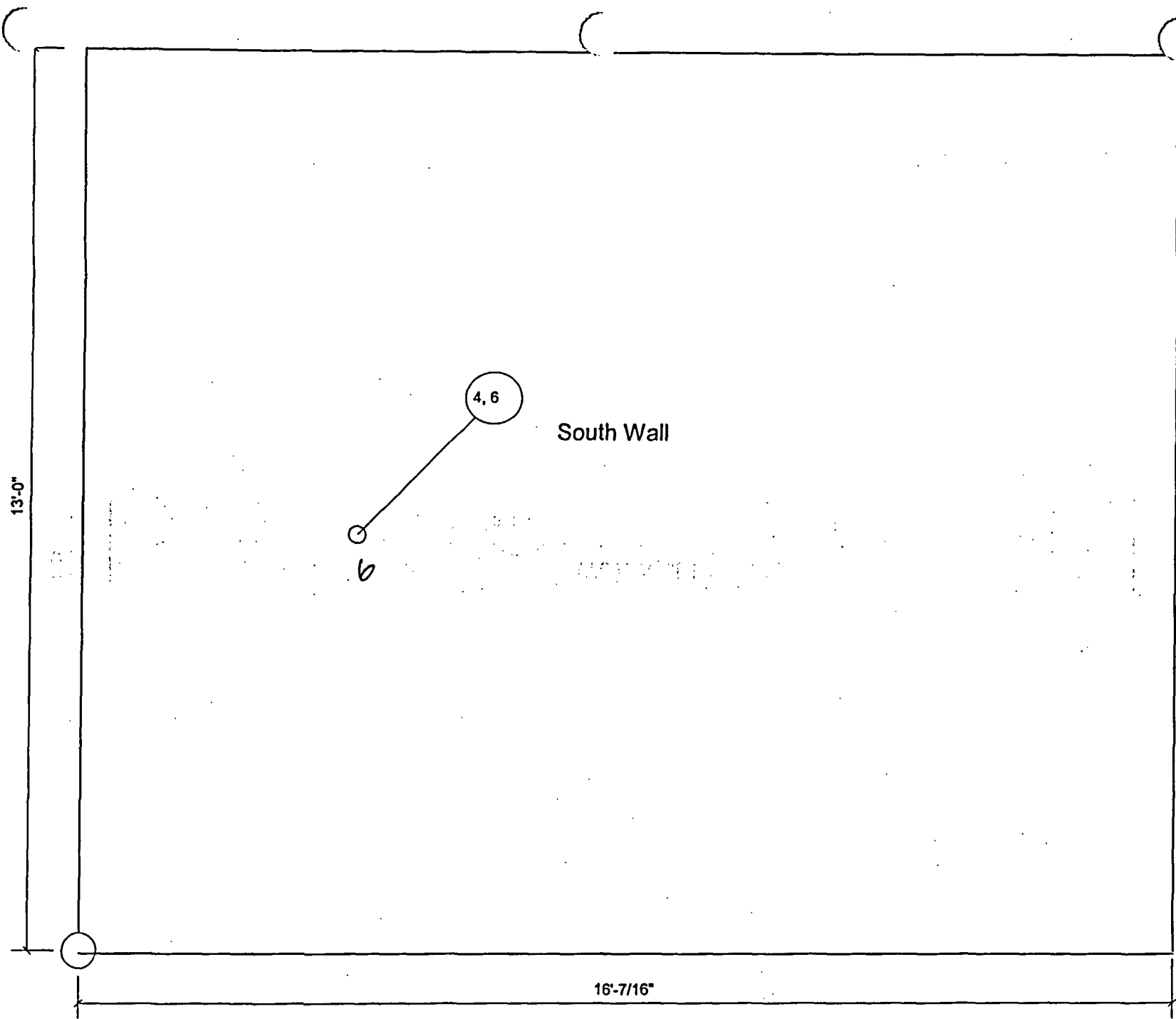


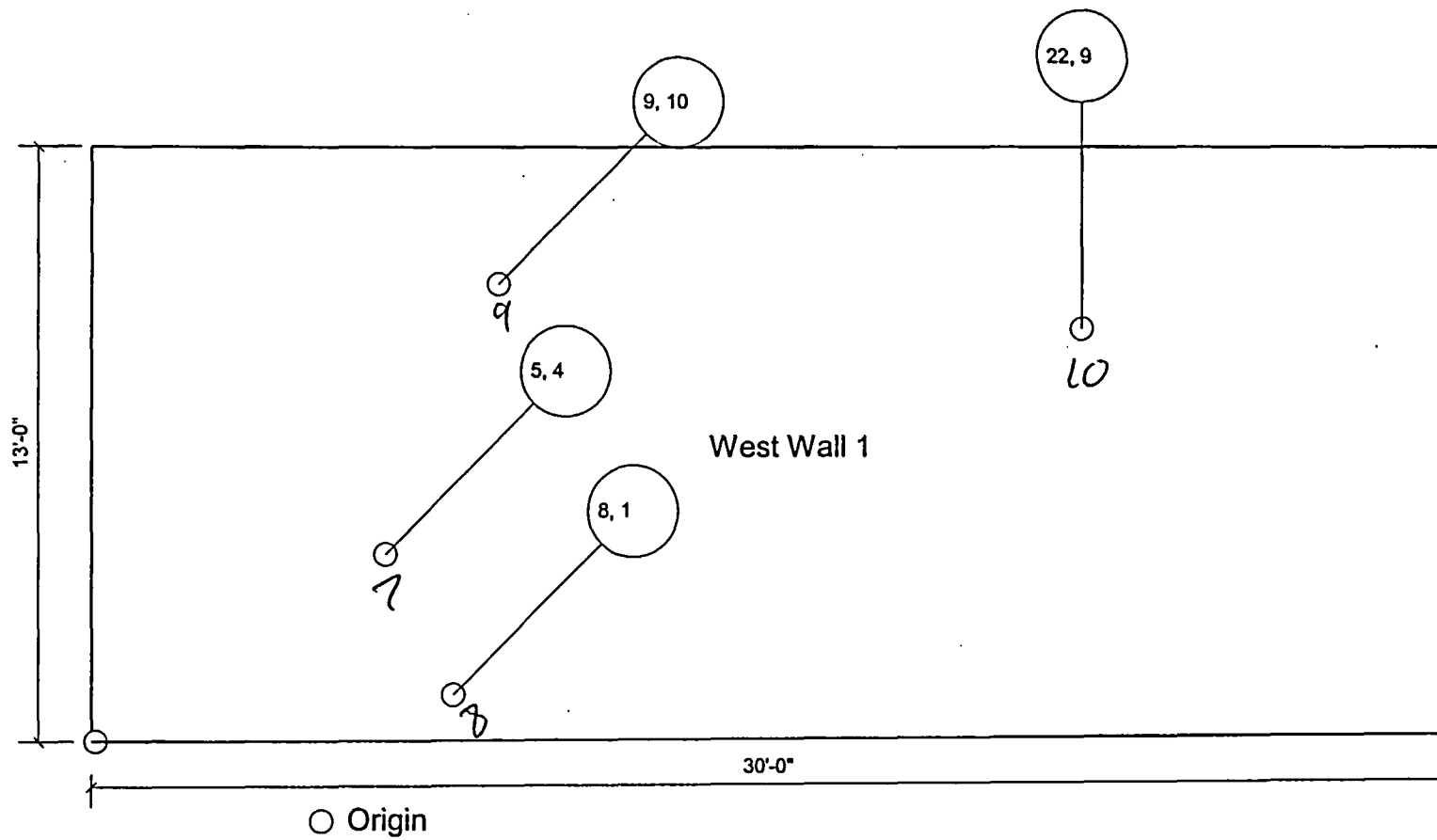


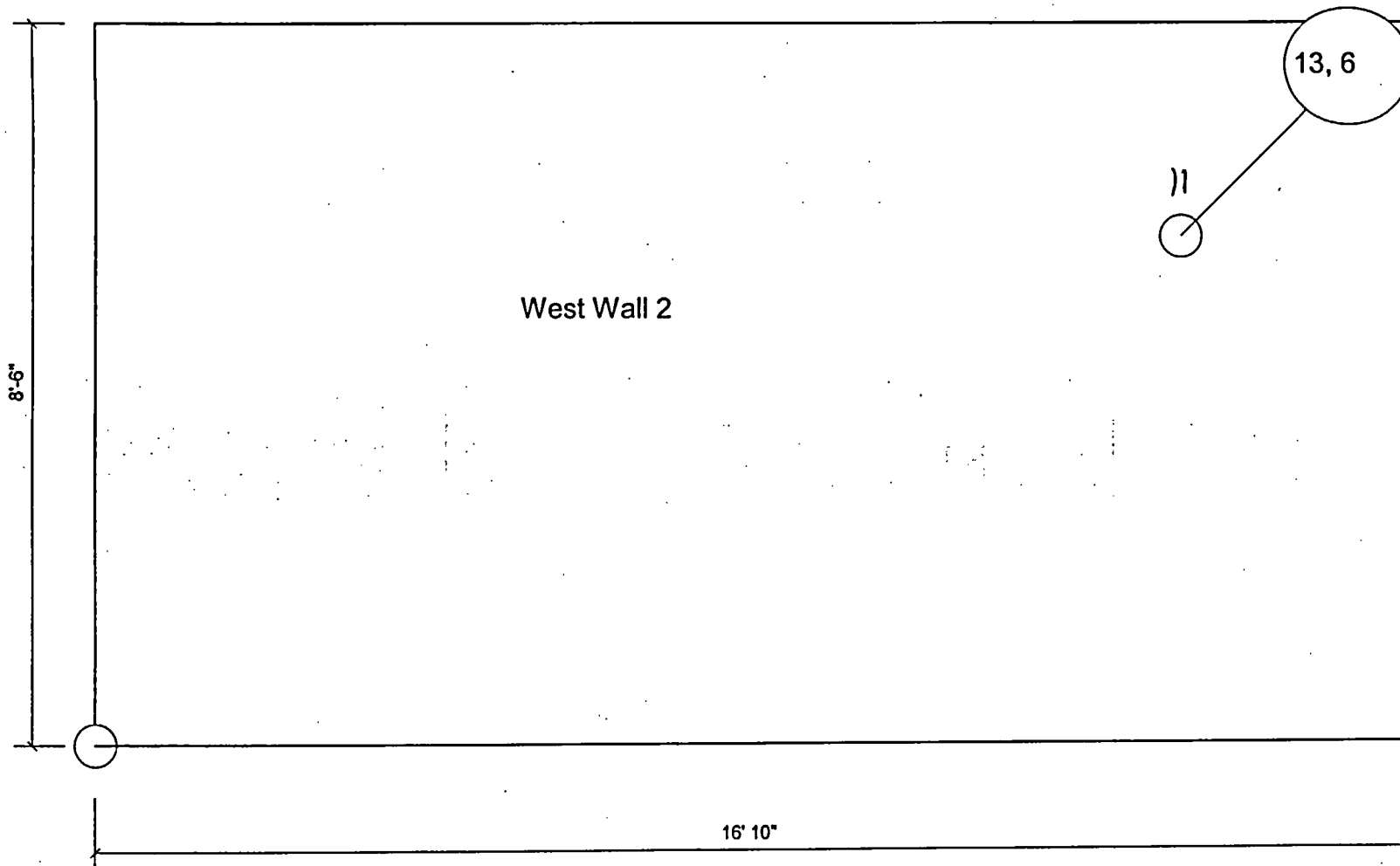
○ Origin



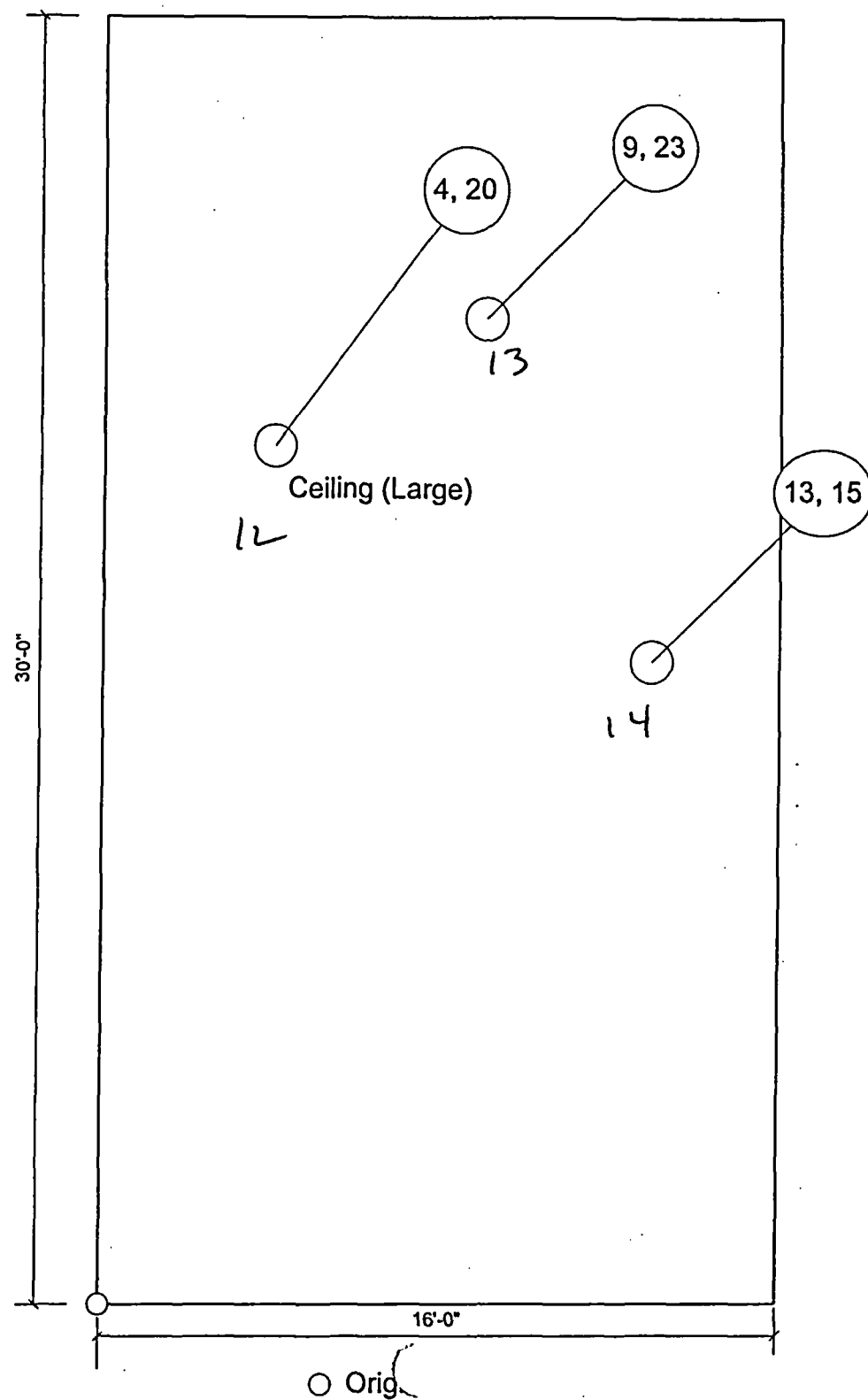


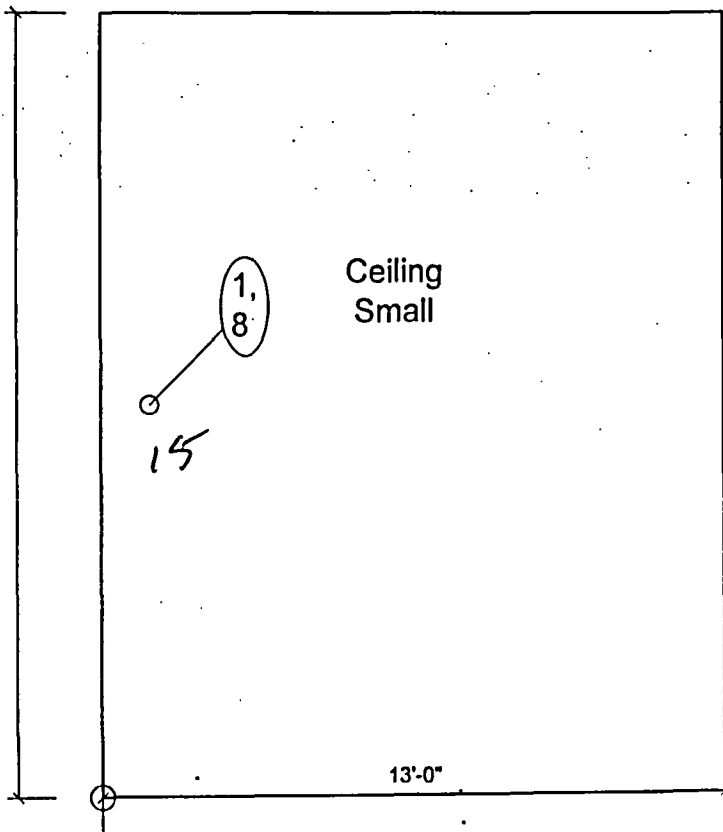






○ Origin





○ Origin



## HYDRO-3-A

Log #
Source
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

	X	Y
	n/a	n/a
1	10	3
2	4	2
3	3	7
4	14	2
5	17	11
6	4	6
7	5	4
8	8	1
9	9	10
10	22	9
11	13	6
12	4	20
13	9	23
14	13	15
15	1	8

$$A \text{ (ft}^2\text{)} = 2187$$

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
120	120	180
126	120	200
130	140	140
138	140	180
128	140	160
112	100	180
107	140	200
129	140	160
134	140	200
140	120	200
145	140	180
128	120	160
149	140	200
148	140	200
122	120	160

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

12/8/2004  
Time: 8:37:28 AM

Header 1: Chris Higgins  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: HYDRO-3-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/08/2004  
Model 2360 Time: 09:42:56  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

ne - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

---

0001	12/08/04	08:31:13	000001	000282	S 001.0	Lab Background
0002	12/08/04	08:32:30	000001	033511	S 001.0	Lab Source
0003	12/08/04	08:36:23	000003	001798	S 001.0	Field Source
0004	12/08/04	09:06:55	000002	000137	S 001.0	Field Background
0005	12/08/04	09:08:06	000000	000120	S 001.0	HYDRO-3-A
0006	12/08/04	09:09:57	000001	000126	S 001.0	HYDRO-3-A
0007	12/08/04	09:19:56	000006	000130	S 001.0	HYDRO-3-A
0008	12/08/04	09:21:35	000001	000138	S 001.0	HYDRO-3-A
0009	12/08/04	09:22:41	000001	000128	S 001.0	HYDRO-3-A
0010	12/08/04	09:24:31	000003	000112	S 001.0	HYDRO-3-A
0011	12/08/04	09:26:42	000000	000139	S 001.0	HYDRO-3-A
0012	12/08/04	09:27:50	000002	000129	S 001.0	HYDRO-3-A
0013	12/08/04	09:28:59	000000	000134	S 001.0	HYDRO-3-A
0014	12/08/04	09:30:07	000001	000140	S 001.0	HYDRO-3-A
0015	12/08/04	09:32:17	000000	000145	S 001.0	HYDRO-3-A
0016	12/08/04	09:34:19	000000	000128	S 001.0	HYDRO-3-A
0017	12/08/04	09:35:25	000002	000149	S 001.0	HYDRO-3-A
0018	12/08/04	09:36:35	000000	000148	S 001.0	HYDRO-3-A
0019	12/08/04	09:38:09	000001	000122	S 001.0	HYDRO-3-A
0020	12/08/04	09:42:08	000000	001635	S 001.0	Field Source

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/08/04	9:04:10	HYDRO-3-A	Final Status Survey	12/08/04	9:04:10	1.000	1.00
2	Smear 2	12/08/04	9:02:50	HYDRO-3-A	Final Status Survey	12/08/04	9:02:50	1.000	1.00
3	Smear 3	12/08/04	9:01:30	HYDRO-3-A	Final Status Survey	12/08/04	9:01:30	1.000	1.00
4	Smear 4	12/08/04	9:00:11	HYDRO-3-A	Final Status Survey	12/08/04	9:00:11	1.000	1.00
5	Smear 5	12/08/04	8:58:51	HYDRO-3-A	Final Status Survey	12/08/04	8:58:51	1.000	1.00
6	Smear 6	12/08/04	8:57:31	HYDRO-3-A	Final Status Survey	12/08/04	8:57:31	1.000	1.00
7	Smear 7	12/08/04	8:56:12	HYDRO-3-A	Final Status Survey	12/08/04	8:56:12	1.000	1.00
8	Smear 8	12/08/04	8:54:52	HYDRO-3-A	Final Status Survey	12/08/04	8:54:52	1.000	1.00
9	Smear 9	12/08/04	8:53:32	HYDRO-3-A	Final Status Survey	12/08/04	8:53:32	1.000	1.00
10	Smear 10	12/08/04	8:52:12	HYDRO-3-A	Final Status Survey	12/08/04	8:52:12	1.000	1.00
11	Smear 11	12/08/04	8:50:53	HYDRO-3-A	Final Status Survey	12/08/04	8:50:53	1.000	1.00
12	Smear 12	12/08/04	8:49:33	HYDRO-3-A	Final Status Survey	12/08/04	8:49:33	1.000	1.00
13	Smear 13	12/08/04	8:48:14	HYDRO-3-A	Final Status Survey	12/08/04	8:48:14	1.000	1.00
14	Smear 14	12/08/04	8:46:54	HYDRO-3-A	Final Status Survey	12/08/04	8:46:54	1.000	1.00
15	Smear 15	12/08/04	8:45:34	HYDRO-3-A	Final Status Survey	12/08/04	8:45:34	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-8-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 24.63 LLD: 11.06 dpm				Bkg: 0.67 cpm %Eff: 44.64 LLD: 11.71 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/08/04	9:04:10	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
2	Smear 2	12/08/04	9:02:50	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
3	Smear 3	12/08/04	9:01:30	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
4	Smear 4	12/08/04	9:00:11	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
5	Smear 5	12/08/04	8:58:51	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
6	Smear 6	12/08/04	8:57:31	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
7	Smear 7	12/08/04	8:56:12	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
8	Smear 8	12/08/04	8:54:52	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
9	Smear 9	12/08/04	8:53:32	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
10	Smear 10	12/08/04	8:52:12	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
11	Smear 11	12/08/04	8:50:53	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
12	Smear 12	12/08/04	8:49:33	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
13	Smear 13	12/08/04	8:48:14	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
14	Smear 14	12/08/04	8:46:54	0.00	0.00	0.00	11.05	3.00	2.43	5.45	11.71
15	Smear 15	12/08/04	8:45:34	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-08-04

Reviewed By (print): Joe Trowbridge

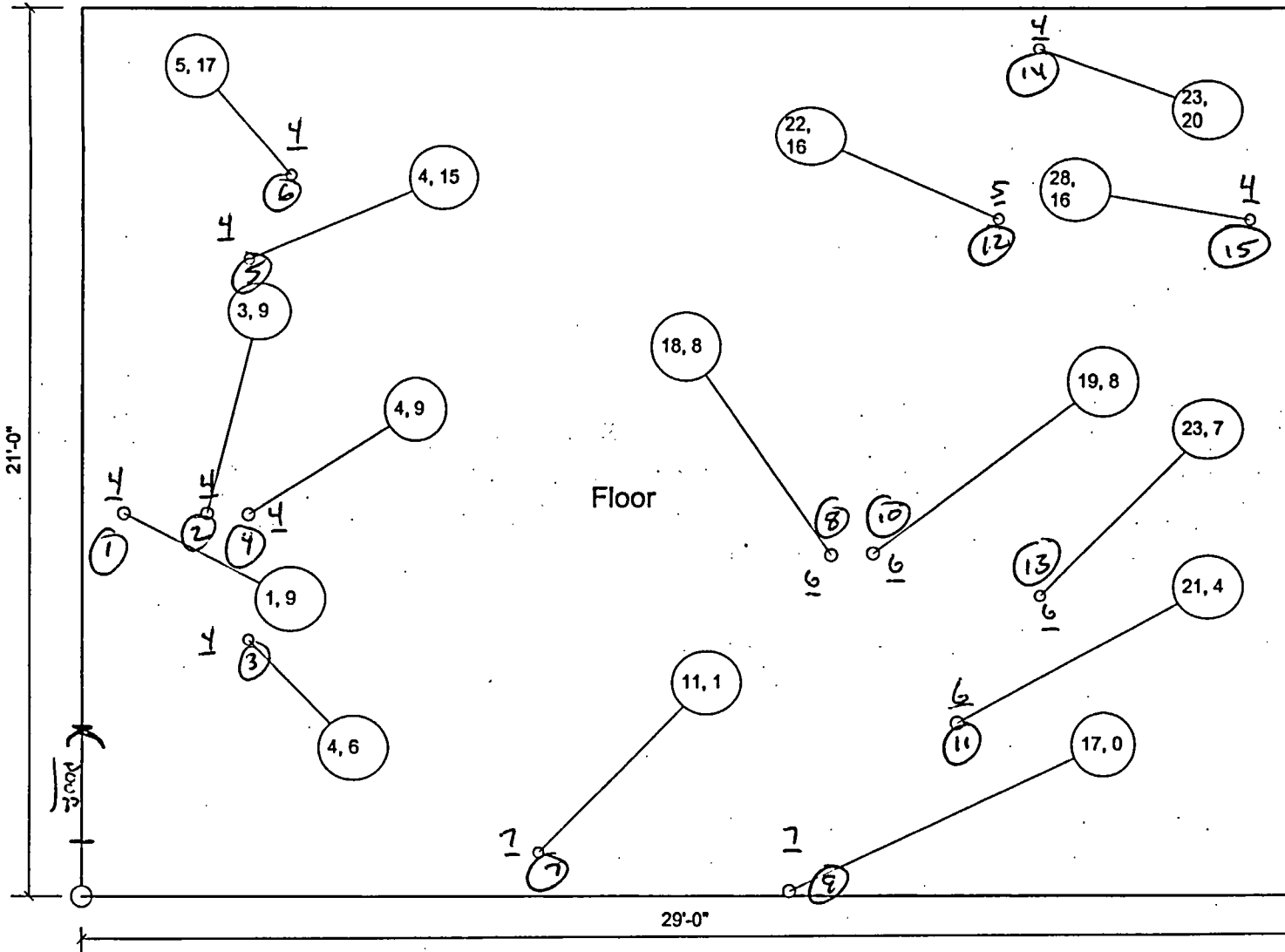
Reviewed By (sign):

Date:

**ER-3-A      Electrical Room**

Dose rates in  $\mu\text{R/hr}$   
 M-19 207585  
 C.D. 9-20-05

E2-3-A



○ Origin  
 FSS  
 Start 12-4-04 1330  
 Stop 12-4-04 1400

SCAN  $\approx 1 \text{ m}^2$  around each data point  
 Start 12-4-04 0800  
 Stop 12-4-04 1200

ER-2-A

Log #
4 Source
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

	X	Y
	n/a	n/a
1	0.4 1	1.8 9
2	7.0 3	1.8 9
3	13.6 4	1.8 6
4	20.2 4	1.8 9
5	26.8 4	1.8 15
6	0.4 5	8.4 17
7	7.0 11	8.4 1
8	13.6 18	8.4 8
9	20.2 17	8.4 0
10	26.8 18	8.4 8
11	7.0 19	15.0 8
12	13.6 21	15.0 4
13	20.2 22	15.0 16
14	26.8 23	15.0 7
15	7.0 23	15.0 20

$L(H) = 6.6 / 28 - 16$   
 $A(H^2) = 609 (15)$

Fixed Points	Ave. (Scan)	Max. (Scan)
1468	n/a	n/a
193	140	180
185	140	180
130	120	160
162	130	160
168	120	150
180	130	180
197	130	170
156	120	160
210	130	180
173	120	160
168	120	160
177	130	160
165	130	160
156	130	160
185	130	160

Log #3 Field bkgd - 141 gpm

Log # 7 Is on generator

Log # 12 Is on top of panel

Log # Field Source  
end of unit - 1588 gpm

2360 - 202475

C.D. 4/13/05

Dot # 208661

#15 is at 28' + 16'

#10 is a dup. of #8

IL 12/4/04

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

2/5/2004  
Time: 9:44:42 AM

Header 1: James Lavender  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: ER-3-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/05/2004  
Model 2360 Time: 09:42:32  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

C - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	11/04/04	13:27:11	000000	000225	S 001.0	Lab Background
0002	11/04/04	13:29:44	000000	031942	S 001.0	Lab Source
0003	11/04/04	13:33:14	000001	000141	S 001.0	Field Background
0004	11/04/04	13:34:33	000003	001468	S 001.0	Field Source
0005	11/04/04	13:36:09	000001	000193	S 001.0	ER-3-A
0006	11/04/04	13:37:27	000001	000185	S 001.0	ER-3-A
0007	11/04/04	13:38:45	000000	000130	S 001.0	ER-3-A
0008	11/04/04	13:40:02	000001	000162	S 001.0	ER-3-A
0009	11/04/04	13:41:14	000000	000168	S 001.0	ER-3-A
0010	11/04/04	13:42:25	000001	000180	S 001.0	ER-3-A
0011	11/04/04	13:44:24	000001	000197	S 001.0	ER-3-A
0012	11/04/04	13:45:48	000001	000156	S 001.0	ER-3-A
0013	11/04/04	13:47:15	000000	000210	S 001.0	ER-3-A
0014	11/04/04	13:48:32	000000	000173	S 001.0	ER-3-A
0015	11/04/04	13:49:54	000000	000168	S 001.0	ER-3-A
0016	11/04/04	13:51:04	000002	000177	S 001.0	ER-3-A
0017	11/04/04	13:52:18	000002	000165	S 001.0	ER-3-A
0018	11/04/04	13:53:34	000000	000158	S 001.0	ER-3-A
0019	11/04/04	13:55:41	000000	000185	S 001.0	ER-3-A
0020	11/04/04	13:57:23	000002	001588	S 001.0	Field Source

\$



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/04/04	14:38:50	ER-3-A	Final Status Survey	12/04/04	14:38:50	1.000	1.00
2	Smear 2	12/04/04	14:37:30	ER-3-A	Final Status Survey	12/04/04	14:37:30	1.000	1.00
3	Smear 3	12/04/04	14:36:10	ER-3-A	Final Status Survey	12/04/04	14:36:10	1.000	1.00
4	Smear 4	12/04/04	14:34:50	ER-3-A	Final Status Survey	12/04/04	14:34:50	1.000	1.00
5	Smear 5	12/04/04	14:33:29	ER-3-A	Final Status Survey	12/04/04	14:33:29	1.000	1.00
6	Smear 6	12/04/04	14:32:09	ER-3-A	Final Status Survey	12/04/04	14:32:09	1.000	1.00
7	Smear 7	12/04/04	14:30:49	ER-3-A	Final Status Survey	12/04/04	14:30:49	1.000	1.00
8	Smear 8	12/04/04	14:29:29	ER-3-A	Final Status Survey	12/04/04	14:29:29	1.000	1.00
9	Smear 9	12/04/04	14:28:09	ER-3-A	Final Status Survey	12/04/04	14:28:09	1.000	1.00
10	Smear 10	12/04/04	14:26:49	ER-3-A	Final Status Survey	12/04/04	14:26:49	1.000	1.00
11	Smear 11	12/04/04	14:25:29	ER-3-A	Final Status Survey	12/04/04	14:25:29	1.000	1.00
12	Smear 12	12/04/04	14:24:08	ER-3-A	Final Status Survey	12/04/04	14:24:08	1.000	1.00
13	Smear 13	12/04/04	14:22:48	ER-3-A	Final Status Survey	12/04/04	14:22:48	1.000	1.00
14	Smear 14	12/04/04	14:21:28	ER-3-A	Final Status Survey	12/04/04	14:21:28	1.000	1.00
15	Smear 15	12/04/04	14:20:08	ER-3-A	Final Status Survey	12/04/04	14:20:08	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-24-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %EF: 25.28 LLD: 10.72 dpm				Bkg: 0.7 cpm %EF: 44.67 LLD: 12.36 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/04/04	14:38:50	0.00	0.00	0.00	10.72	2.00	1.30	2.92	12.36
2	Smear 2	12/04/04	14:37:30	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
3	Smear 3	12/04/04	14:36:10	1.00	1.00	3.96	10.72	0.00	-0.70	-1.57	12.36
4	Smear 4	12/04/04	14:34:50	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
5	Smear 5	12/04/04	14:33:29	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
6	Smear 6	12/04/04	14:32:09	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
7	Smear 7	12/04/04	14:30:49	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
8	Smear 8	12/04/04	14:29:29	0.00	0.00	0.00	10.72	3.00	2.30	5.16	12.36
9	Smear 9	12/04/04	14:28:09	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
10	Smear 10	12/04/04	14:26:49	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
11	Smear 11	12/04/04	14:25:29	0.00	0.00	0.00	10.72	2.00	1.30	2.92	12.36
12	Smear 12	12/04/04	14:24:08	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
13	Smear 13	12/04/04	14:22:48	0.00	0.00	0.00	10.72	2.00	1.30	2.92	12.36
14	Smear 14	12/04/04	14:21:28	0.00	0.00	0.00	10.72	3.00	2.30	5.16	12.36
15	Smear 15	12/04/04	14:20:08	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-04-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

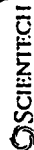
Date:



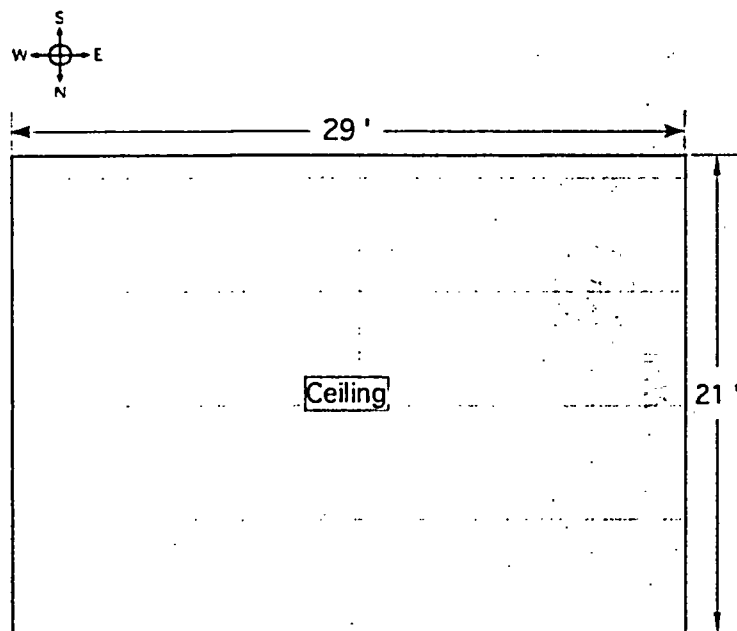
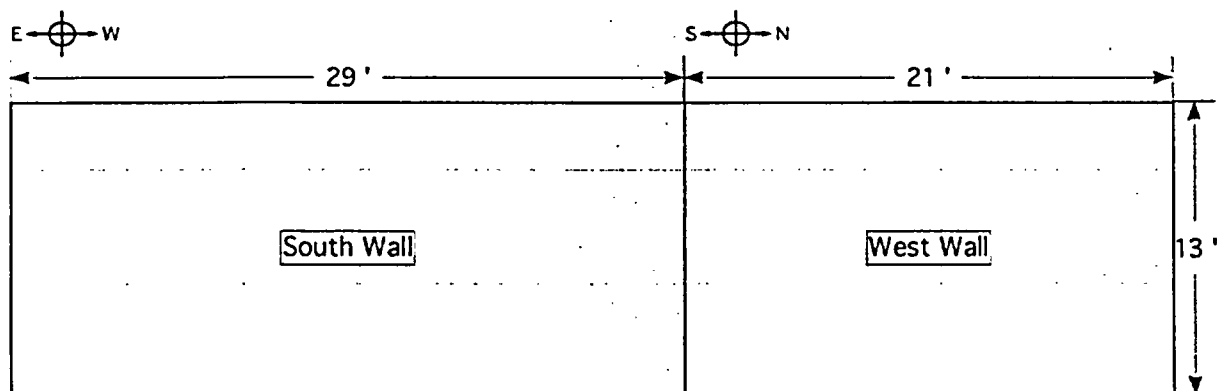
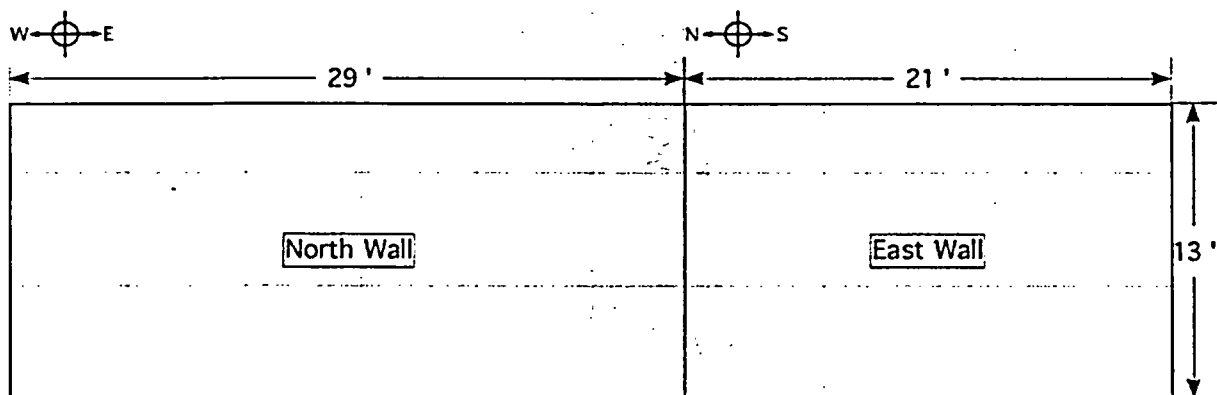
## FSS QC REVIEW

Survey Area:	Electrical Room	
Survey Unit:	ER-3-A	
Classification:	3	
Requirements:		
Number of Soil Samples:	N/A	
Number of Directs:	15	
Number of Smears:	15	
% Scan:	Judgemental	
Survey Data:	Yes	No
Correct header info.	X	
Daily instrument and background check recorded.	X	
Any points not collected noted on the survey map.	N/A	
Surface activity measurements (total and removable) equal requirements.	X	
Date and start time indicated on the survey map.	X	
Check source logged at start of this survey unit.	X	
Fixed-point measurements logged in the same numerical order as provided on the survey map.	X	
All erroneous (void) measurements identified on the survey map.	N/A	
Check source logged to indicate the completion of the survey unit.	X	
Stop time marked on the survey map.	X	
Smears collected at each sample location.	X	
Record of smear analysis in package?	X	
Logged data file downloaded to computer and printed; attached to map.	X	
Scanning survey data and map attached	X	
Electronic avg and max measurements (gross cpm) recorded for each scanning section.	X	
Results of soil samples included. Match requirements.	N/A	
COMMENTS		
Scanned approx 1 m <sup>2</sup> around each data point		
Reviewed by:		
Date:		

**ER-3-B      Electrical Room**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD		 SCIENTECH, Inc. 140 WEST STREET NEW MILFORD, CT 06756	PROJECT NO: 23559-0001	FILE NAME:	DATE	CHK:	FOUR:
		DRAWING	CLASS 3 Electrical Room Walls and Ceiling					SCALE		

**ER-3-A**



E--W

S--N

29'-0"

21'-0"

South  
Wall

West  
Wall

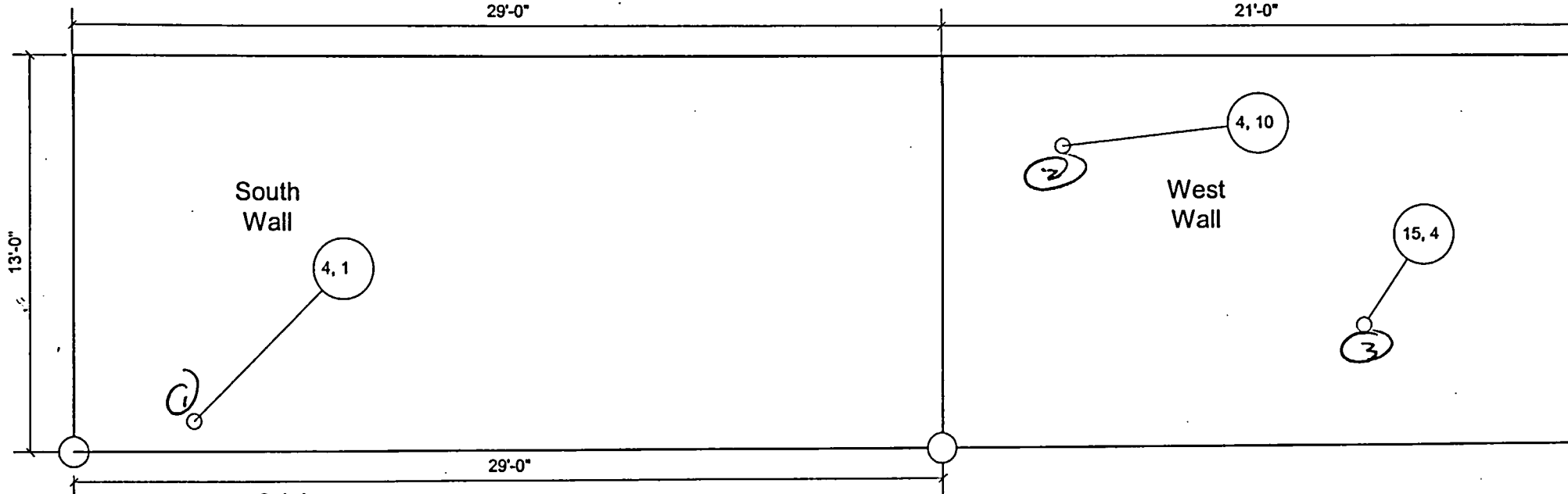
4, 1

4, 10

15, 4

○ Origin

EP-3-13



W — E

N — S

29'-0"

21'-0"

North  
Wall

East  
Wall

○ Origin

29'-0"

13'-0"

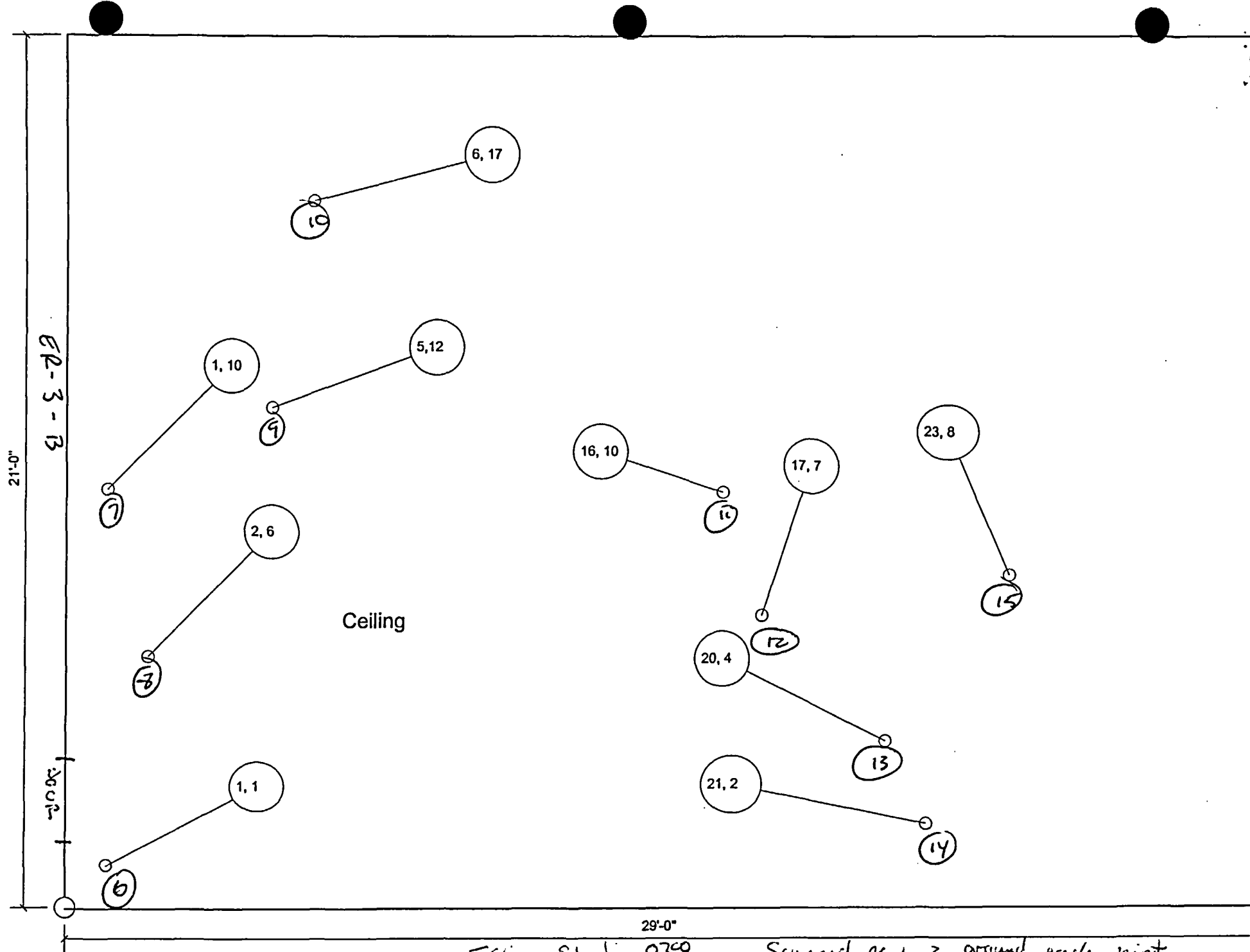
4

5, 12

19, 1

5

E R-3.13





ER-3-B

Log #		X	Y
4	Source	n/a	n/a
5	South Wall	4	1
6	West Wall	4	10
7		15	4
8	East Wall	5	12
9		19	1
10	Ceiling	1	1
11		1	10
12		2	6
13		5	12
14		6	17
15		16	10
16		17	7
17		20	4
18		21	2
19		23	8

A (ft<sup>2</sup>) = 1909

Fixed Points	Ave. (Scan)	Max. (Scan)
1570	n/a	n/a
161	130	180
234	130	200
254	140	200
197	130	180
197	130	160
136	120	160
145	120	160
164	120	160
214	130	160
152	120	180
176	120	180
165	120	160
120	120	160
140	120	160
166	120	160

2360

202475

C.D. 4/13/05

Log 3 Field logd - 146 cpm

Log 20 Field source - 1580 cpm  
end of unit

Scanned approx 1m<sup>2</sup> around each data point

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/6/2004  
Time: 11:38:21 AM

Header 1: James Lavender  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: ER-3-B  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/06/2004  
Model 2360 Time: 11:38:21  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
R- Ratemeter  
S- Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	11/06/04	07:13:47	000000	000189	S 001.0	Lab Background
0002	11/06/04	07:15:15	000002	032045	S 001.0	Lab Source
0003	11/06/04	09:52:44	000000	000146	S 001.0	Field Background
0004	11/06/04	09:54:13	000002	001570	S 001.0	Field Source
0005	11/06/04	09:55:59	000000	000161	S 001.0	ER-3-B
0006	11/06/04	09:58:01	000000	000234	S 001.0	ER-3-B
0007	11/06/04	09:59:37	000001	000254	S 001.0	ER-3-B
0008	11/06/04	10:01:53	000001	000197	S 001.0	ER-3-B
0009	11/06/04	10:03:22	000000	000147	S 001.0	ER-3-B
0010	11/06/04	10:07:51	000000	000136	S 001.0	ER-3-B
0011	11/06/04	10:10:03	000000	000145	S 001.0	ER-3-B
0012	11/06/04	10:12:58	000000	000164	S 001.0	ER-3-B
0013	11/06/04	10:15:30	000002	000214	S 001.0	ER-3-B
0014	11/06/04	10:17:42	000000	000152	S 001.0	ER-3-B
0015	11/06/04	10:26:53	000000	000176	S 001.0	ER-3-B
0016	11/06/04	10:33:54	000000	000165	S 001.0	ER-3-B
0017	11/06/04	10:42:03	000000	000120	S 001.0	ER-3-B
0018	11/06/04	10:49:38	000001	000140	S 001.0	ER-3-B
0019	11/06/04	10:53:33	000000	000166	S 001.0	ER-3-B
0020	11/06/04	11:07:01	000001	001580	S 001.0	Field Source

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/06/04	12:04:22	ER-3-B	Final Status Survey	12/06/04	12:04:22	1.000	1.00
2	Smear 2	12/06/04	12:03:02	ER-3-B	Final Status Survey	12/06/04	12:03:02	1.000	1.00
3	Smear 3	12/06/04	12:01:42	ER-3-B	Final Status Survey	12/06/04	12:01:42	1.000	1.00
4	Smear 4	12/06/04	12:00:22	ER-3-B	Final Status Survey	12/06/04	12:00:22	1.000	1.00
5	Smear 5	12/06/04	11:59:02	ER-3-B	Final Status Survey	12/06/04	11:59:02	1.000	1.00
6	Smear 6	12/06/04	11:57:42	ER-3-B	Final Status Survey	12/06/04	11:57:42	1.000	1.00
7	Smear 7	12/06/04	11:56:22	ER-3-B	Final Status Survey	12/06/04	11:56:22	1.000	1.00
8	Smear 8	12/06/04	11:55:02	ER-3-B	Final Status Survey	12/06/04	11:55:02	1.000	1.00
9	Smear 9	12/06/04	11:53:42	ER-3-B	Final Status Survey	12/06/04	11:53:42	1.000	1.00
10	Smear 10	12/06/04	11:52:23	ER-3-B	Final Status Survey	12/06/04	11:52:23	1.000	1.00
11	Smear 11	12/06/04	11:51:03	ER-3-B	Final Status Survey	12/06/04	11:51:03	1.000	1.00
12	Smear 12	12/06/04	11:49:43	ER-3-B	Final Status Survey	12/06/04	11:49:43	1.000	1.00
13	Smear 13	12/06/04	11:48:23	ER-3-B	Final Status Survey	12/06/04	11:48:23	1.000	1.00
14	Smear 14	12/06/04	11:47:03	ER-3-B	Final Status Survey	12/06/04	11:47:03	1.000	1.00
15	Smear 15	12/06/04	11:45:43	ER-3-B	Final Status Survey	12/06/04	11:45:43	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-06-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.83 LLD: 13.93 dpm				Bkg: 0.63 cpm %Eff: 44.46 LLD: 11.69 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/06/04	12:04:22	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
2	Smear 2	12/06/04	12:03:02	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
3	Smear 3	12/06/04	12:01:42	1.00	0.97	4.06	13.93	1.00	0.47	1.05	11.59
4	Smear 4	12/06/04	12:00:22	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
5	Smear 5	12/06/04	11:59:02	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
6	Smear 6	12/06/04	11:57:42	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
7	Smear 7	12/06/04	11:56:22	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
8	Smear 8	12/06/04	11:55:02	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
9	Smear 9	12/06/04	11:53:42	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
10	Smear 10	12/06/04	11:52:23	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
11	Smear 11	12/06/04	11:51:03	0.00	-0.03	-0.14	13.93	4.00	3.47	7.80	11.59
12	Smear 12	12/06/04	11:49:43	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
13	Smear 13	12/06/04	11:48:23	0.00	-0.03	-0.14	13.93	1.00	0.47	1.05	11.59
14	Smear 14	12/06/04	11:47:03	0.00	-0.03	-0.14	13.93	0.00	-0.53	-1.20	11.59
15	Smear 15	12/06/04	11:45:43	0.00	-0.03	-0.14	13.93	3.00	2.47	5.55	11.59

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11/6-04

Reviewed By (print): Joe Trowbridge

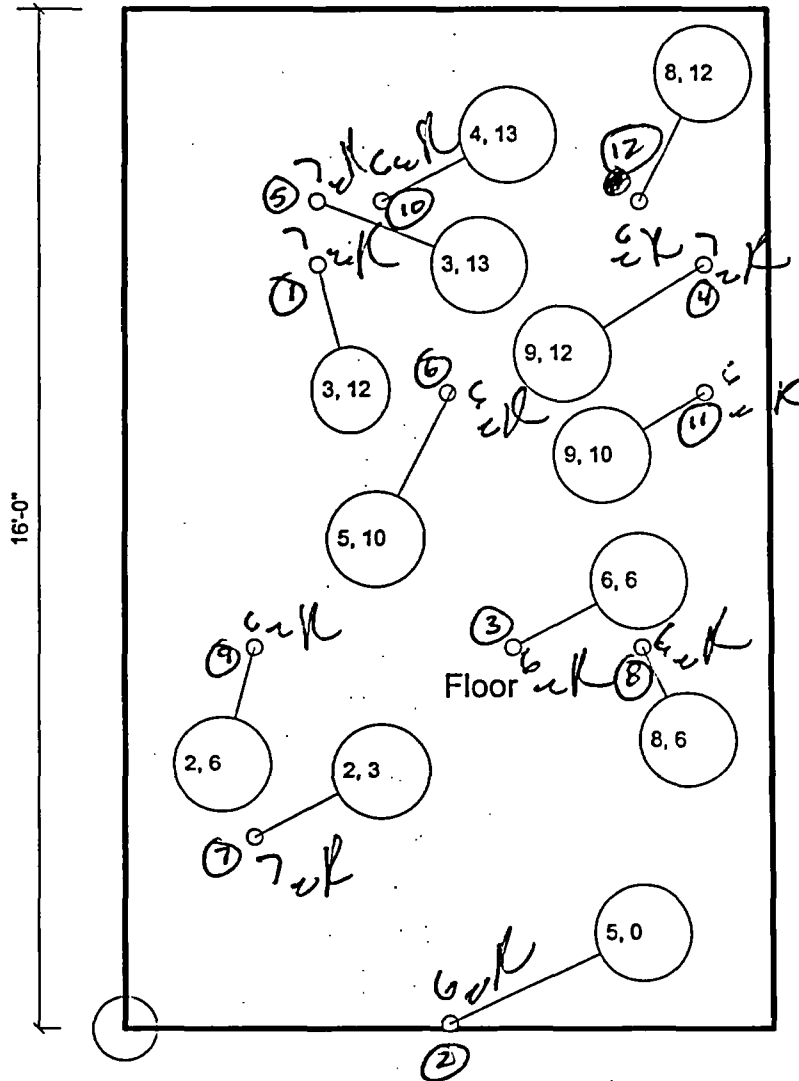
Reviewed By (sign):

Date:

**ER-3-C      Electrical Room**



10'-0"



Origin

ER-3-C

ER-3-C

Log #
Source
5
6
7
8
9
10
11
12
13
14
15
16

	X	Y
	n/a	n/a
1	3.0	12.0
2	5.0	0.0
3	6.0	6.0
4	9.0	12.0
5	3.0	13.0
6	5.0	10.0
7	2.0	3.0
8	8.0	6.0
9	2.0	6.0
10	4.0	13.0
11	9.0	10.0
12	8.0	12.0

L (ft)= n/a

A (ft')= 160

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
164	160	180
166	190	200
153	190	180
177	180	200
167	180	200
160	160	180
178	160	280
158	140	160
191	180	240
176	180	240
153	160	180
191	180	240

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

12/7/2004  
Time: 6:22:14 PM

Header 1: Chris Higgins  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: ER-3-C  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/07/2004  
Model 2360 Time: 19:29:19  
Sample Number: 0018

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

1e - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/07/04	18:24:03	000001	000155	S 001.0	Lab Background
0002	12/07/04	18:25:16	000001	033104	S 001.0	Lab Source
0003	12/07/04	18:45:14	000003	001566	S 001.0	Field Source
0004	12/07/04	18:53:07	000001	000178	S 001.0	Field Background
0005	12/07/04	18:54:13	000000	000164	S 001.0	ER-3-C
0006	12/07/04	18:55:18	000000	000166	S 001.0	ER-3-C
0007	12/07/04	18:56:24	000000	000153	S 001.0	ER-3-C
0008	12/07/04	18:57:33	000001	000177	S 001.0	ER-3-C
0009	12/07/04	18:58:38	000000	000167	S 001.0	ER-3-C
0010	12/07/04	18:59:43	000001	000160	S 001.0	ER-3-C
0011	12/07/04	19:00:49	000000	000178	S 001.0	ER-3-C
0012	12/07/04	19:01:55	000000	000159	S 001.0	ER-3-C
0013	12/07/04	19:03:01	000001	000181	S 001.0	ER-3-C
0014	12/07/04	19:04:07	000000	000176	S 001.0	ER-3-C
0015	12/07/04	19:05:12	000001	000153	S 001.0	ER-3-C
0016	12/07/04	19:06:18	000000	000181	S 001.0	ER-3-C
0017	12/07/04	19:10:00	000000	001500	S 001.0	Field Source

\$



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/07/04	18:41:31	ER-3-C	Final Status Survey	12/07/04	18:41:31	1.000	1.00
2	Smear 2	12/07/04	18:40:11	ER-3-C	Final Status Survey	12/07/04	18:40:11	1.000	1.00
3	Smear 3	12/07/04	18:38:51	ER-3-C	Final Status Survey	12/07/04	18:38:51	1.000	1.00
4	Smear 4	12/07/04	18:37:31	ER-3-C	Final Status Survey	12/07/04	18:37:31	1.000	1.00
5	Smear 5	12/07/04	18:36:12	ER-3-C	Final Status Survey	12/07/04	18:36:12	1.000	1.00
6	Smear 6	12/07/04	18:34:52	ER-3-C	Final Status Survey	12/07/04	18:34:52	1.000	1.00
7	Smear 7	12/07/04	18:33:32	ER-3-C	Final Status Survey	12/07/04	18:33:32	1.000	1.00
8	Smear 8	12/07/04	18:32:13	ER-3-C	Final Status Survey	12/07/04	18:32:13	1.000	1.00
9	Smear 9	12/07/04	18:30:53	ER-3-C	Final Status Survey	12/07/04	18:30:53	1.000	1.00
10	Smear 10	12/07/04	18:29:33	ER-3-C	Final Status Survey	12/07/04	18:29:33	1.000	1.00
11	Smear 11	12/07/04	18:28:13	ER-3-C	Final Status Survey	12/07/04	18:28:13	1.000	1.00
12	Smear 12	12/07/04	18:26:53	ER-3-C	Final Status Survey	12/07/04	18:26:53	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 24.91 LLD: 14.35 dpm				Bkg: 0.4 cpm %Eff: 44.93 LLD: 10.74 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/07/04	18:41:31	0.00	-0.07	-0.27	14.35	7.00	6.60	14.69	10.74
2	Smear 2	12/07/04	18:40:11	0.00	-0.07	-0.27	14.35	11.00	10.60	23.59	10.74
3	Smear 3	12/07/04	18:38:51	0.00	-0.07	-0.27	14.35	7.00	6.60	14.69	10.74
4	Smear 4	12/07/04	18:37:31	0.00	-0.07	-0.27	14.35	9.00	8.60	19.14	10.74
5	Smear 5	12/07/04	18:36:12	0.00	-0.07	-0.27	14.35	3.00	2.60	5.79	10.74
6	Smear 6	12/07/04	18:34:52	0.00	-0.07	-0.27	14.35	9.00	8.60	19.14	10.74
7	Smear 7	12/07/04	18:33:32	0.00	-0.07	-0.27	14.35	5.00	4.60	10.24	10.74
8	Smear 8	12/07/04	18:32:13	0.00	-0.07	-0.27	14.35	7.00	6.60	14.69	10.74
9	Smear 9	12/07/04	18:30:53	0.00	-0.07	-0.27	14.35	11.00	10.60	23.59	10.74
10	Smear 10	12/07/04	18:29:33	0.00	-0.07	-0.27	14.35	8.00	7.60	18.91	10.74
11	Smear 11	12/07/04	18:28:13	0.00	-0.07	-0.27	14.35	13.00	12.60	28.04	10.74
12	Smear 12	12/07/04	18:26:53	0.00	-0.07	-0.27	14.35	12.00	11.60	25.82	10.74

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

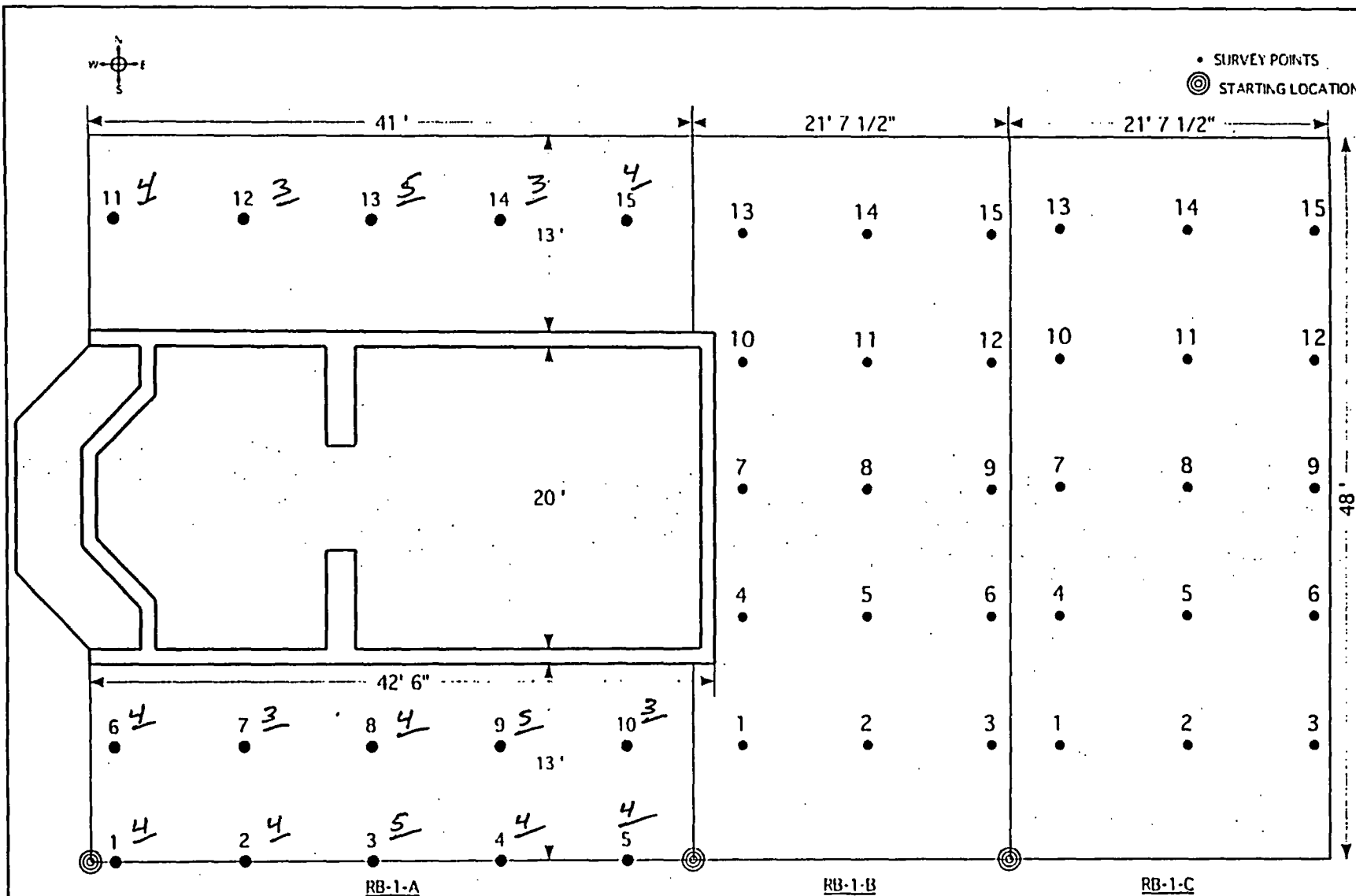
Date: 12-07-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**RB-1-A      Reactor Bay**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Reactor Bay Floor	
SCIENTECH SCIENTECH, INC. 140 WEST STREET NEW MILFORD, CT 06455	
PROJECT NO: 23529-0201	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: RB-1-A,B,C	

Dec 17, 2004

## RB-1-A

Log #	X	Y
3 Source	n/a	n/a
5	1.7	0
6	10.4	0
7	19.1	0
8	27.8	0
9	36.5	0
10	1.7	7.6
16	10.4	7.6
17	19.1	7.6
18	27.8	7.6
19	36.5	7.6
20	1.7	42.4
21	10.4	42.4
22	19.1	42.4
23	27.8	42.4
24	36.5	42.4

L (ft) = 8.7

A (ft<sup>2</sup>) = 1066

Fixed Points	Ave. (Scan)	Max. (Scan)
1776	n/a	n/a
208	200	320
206	200	280
217	180	260
198	200	286
251	160	240
196	180	260
193	160	280
196	260	360
173	200	300
231	206	300
212	240	300
224	240	300
252	240	300
145	240	360
246	180	260

Start 11 DEC 04 0730 hrs  
 #3 - 1779 cpm Field Source  
 #4 - 144 cpm Field BKG  
 #11 - 1802 cpm Source Out  
 Stop 16 DEC 04 1630 hrs

Start 17 DEC 04 0730 hrs  
 #14 - 1839 Field Source  
 #15 - 180 Field BKG  
 #16 - 193  
 #17 - 196  
 #18 - 173  
 #19 - 231  
 #20 - 212  
 #21 - 224  
 #22 - 252  
 #23 - 145  
 #24 - 246  
 #25 - 1676 Field Source

Stop 17 DEC 04 1130 hrs.

Ludlum Measurements, Inc.  
Model 2360 Log Data

2/17/2004  
11:31:21 AM

Header 1: Joe Kozyra  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: RB-1-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/17/2004  
Model 2360 Time: 11:31:36  
Sample Number: 0026

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

C - Count Time  
I - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/16/04	07:21:13	000000	000239	S 001.0	Lab Background
0002	12/16/04	07:23:54	000003	034054	S 001.0	Lab Source
0003	12/16/04	07:26:09	000003	001776	S 001.0	Field Source
0004	12/16/04	07:42:17	000000	000144	S 001.0	Field Background
0005	12/16/04	10:20:12	000000	000208	S 001.0	RB-1-A
0006	12/16/04	10:27:56	000001	000206	S 001.0	RB-1-A
0007	12/16/04	10:33:15	000002	000217	S 001.0	RB-1-A
0008	12/16/04	10:42:49	000001	000198	S 001.0	RB-1-A
0009	12/16/04	10:51:12	000002	000251	S 001.0	RB-1-A
0010	12/16/04	11:09:31	000002	000196	S 001.0	RB-1-A
0011	12/16/04	16:32:47	000000	001802	S 001.0	Field Source
0012	12/17/04	07:18:47	000000	000164	S 001.0	Lab Background
0013	12/17/04	07:20:31	000001	034374	S 001.0	Lab Source
0014	12/17/04	07:23:56	000002	001839	S 001.0	Field Source
0015	12/17/04	08:52:39	000000	000188	S 001.0	Field Background
0016	12/17/04	11:00:32	000001	000193	S 001.0	RB-1-A
0017	12/17/04	11:01:56	000001	000196	S 001.0	RB-1-A
0018	12/17/04	11:03:25	000000	000173	S 001.0	RB-1-A
0019	12/17/04	11:04:59	000001	000231	S 001.0	RB-1-A
0020	12/17/04	11:07:42	000001	000212	S 001.0	RB-1-A
0021	12/17/04	11:09:03	000000	000229	S 001.0	RB-1-A
0022	12/17/04	11:10:37	000001	000252	S 001.0	RB-1-A
0023	12/17/04	11:12:08	000002	000195	S 001.0	RB-1-A
0024	12/17/04	11:16:26	000002	000246	S 001.0	RB-1-A
	12/17/04	11:30:46	000006	001676	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/17/04	11:57:55	RB-1-A	Final Status Survey	12/17/04	11:57:55	1.000	1.00
2	Smear 2	12/17/04	11:56:35	RB-1-A	Final Status Survey	12/17/04	11:56:35	1.000	1.00
3	Smear 3	12/17/04	11:55:15	RB-1-A	Final Status Survey	12/17/04	11:55:15	1.000	1.00
4	Smear 4	12/17/04	11:53:56	RB-1-A	Final Status Survey	12/17/04	11:53:56	1.000	1.00
5	Smear 5	12/17/04	11:52:38	RB-1-A	Final Status Survey	12/17/04	11:52:38	1.000	1.00
6	Smear 6	12/17/04	11:51:16	RB-1-A	Final Status Survey	12/17/04	11:51:16	1.000	1.00
7	Smear 7	12/17/04	11:49:56	RB-1-A	Final Status Survey	12/17/04	11:49:56	1.000	1.00
8	Smear 8	12/17/04	11:48:36	RB-1-A	Final Status Survey	12/17/04	11:48:36	1.000	1.00
9	Smear 9	12/17/04	11:47:16	RB-1-A	Final Status Survey	12/17/04	11:47:16	1.000	1.00
10	Smear 10	12/17/04	11:45:56	RB-1-A	Final Status Survey	12/17/04	11:45:56	1.000	1.00
11	Smear 11	12/17/04	11:44:37	RB-1-A	Final Status Survey	12/17/04	11:44:37	1.000	1.00
12	Smear 12	12/17/04	11:43:17	RB-1-A	Final Status Survey	12/17/04	11:43:17	1.000	1.00
13	Smear 13	12/17/04	11:41:57	RB-1-A	Final Status Survey	12/17/04	11:41:57	1.000	1.00
14	Smear 14	12/17/04	11:40:37	RB-1-A	Final Status Survey	12/17/04	11:40:37	1.000	1.00
15	Smear 15	12/17/04	11:39:17	RB-1-A	Final Status Survey	12/17/04	11:39:17	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-17-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %EF: 24.16 LLD: 11.22 dpm				Bkg: 0.43 cpm %EF: 44.72 LLD: 10.98 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/17/04	11:57:55	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
2	Smear 2	12/17/04	11:56:35	1.00	1.00	4.14	11.22	4.00	3.57	7.98	10.98
3	Smear 3	12/17/04	11:55:15	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
4	Smear 4	12/17/04	11:53:56	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
5	Smear 5	12/17/04	11:52:36	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
6	Smear 6	12/17/04	11:51:16	1.00	1.00	4.14	11.22	3.00	2.57	5.74	10.98
7	Smear 7	12/17/04	11:49:56	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
8	Smear 8	12/17/04	11:48:36	0.00	0.00	0.00	11.22	4.00	3.57	7.98	10.98
9	Smear 9	12/17/04	11:47:16	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
10	Smear 10	12/17/04	11:45:56	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
11	Smear 11	12/17/04	11:44:37	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
12	Smear 12	12/17/04	11:43:17	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
13	Smear 13	12/17/04	11:41:57	0.00	0.00	0.00	11.22	3.00	2.57	5.74	10.98
14	Smear 14	12/17/04	11:40:37	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
15	Smear 15	12/17/04	11:39:17	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-17-04

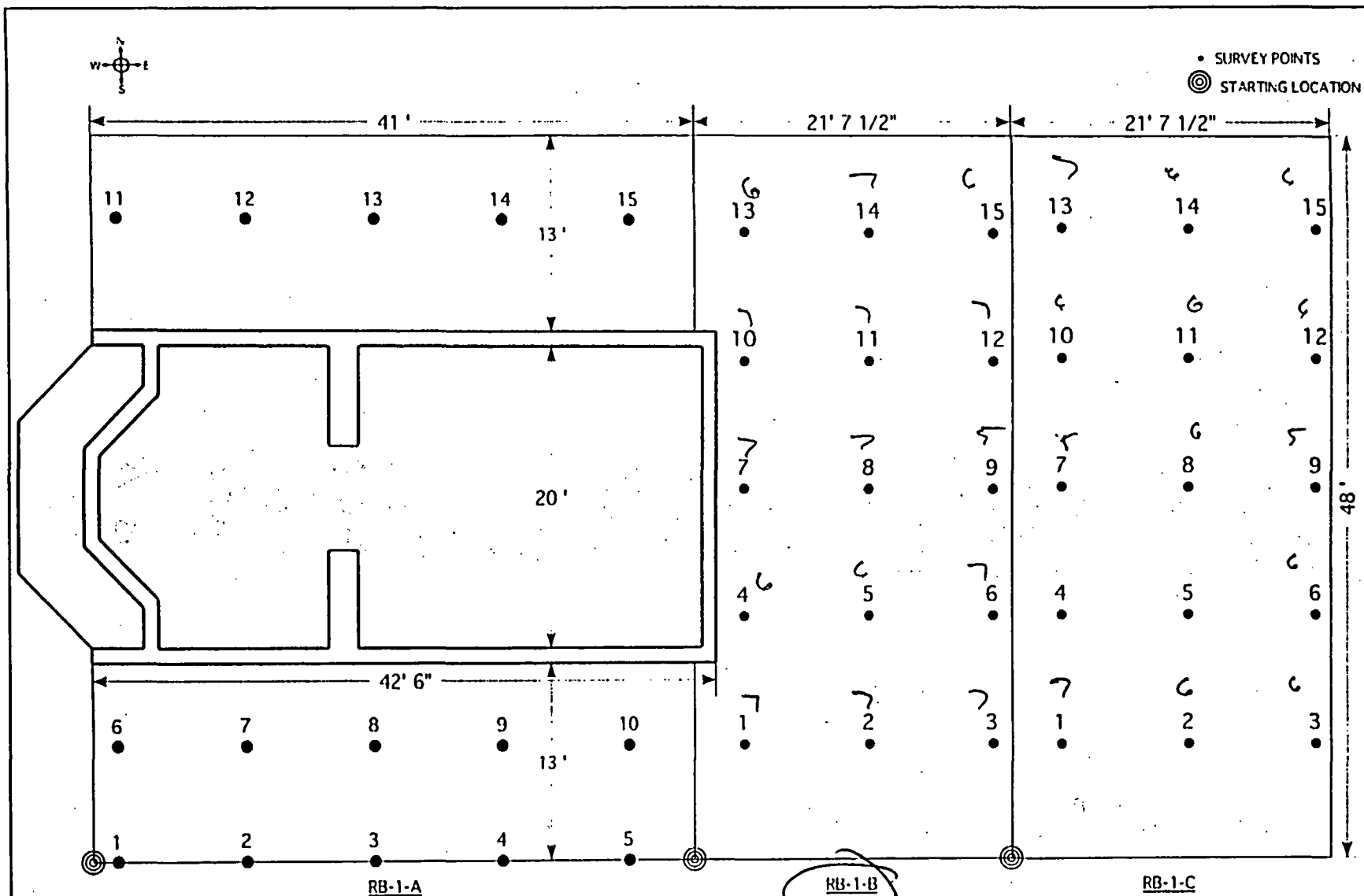
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



**RB-1-B      Reactor Bay**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Reactor Bay Floor	
 SCIENTECH Inc. 140 WEST STREET NEW MILFORD, CT 06458	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE N.T.S.	DATE 07/06/2004
By:	CK:
FIGURE: RB-1-A,B,C	

RB-1-B

Log #
4 Source
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

	X	Y
	n/a	n/a
1	3.4	7.6
2	11.9	7.6
3	20.4	7.6
4	3.4	16.1
5	11.9	16.1
6	20.4	16.1
7	3.4	24.6
8	11.9	24.6
9	20.4	24.6
10	3.4	33.1
11	11.9	33.1
12	20.4	33.1
13	3.4	41.6
14	11.9	41.6
15	20.4	41.6

L (ft) = 8.5  
A (ft<sup>2</sup>) = 1005

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
311	300	320
331	320	340
321	320	340
331	320	340
342	340	360
268	260	280
383	360	380
311	300	320
373	360	380
315	320	340
262	260	280
355	360	380
355	360	380
382	380	380
330	340	360

3-BKGD

Note: High BKGD

Even after spots are <sup>Scabbled</sup> cleaned down to  
1/8 in BKGD Does Not change.

Ludlum Measurements, Inc.  
Model 2360 Log Data

2/17/2004  
10:38:54 AM

Header 1: Chris Higgins  
Header 2: Serial#178162  
Header 3: DetSer#200135  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: RB-1-B  
Calibration Due Date: 10/11/2005  
Model 2360 Date: 12/17/2004  
Model 2360 Time: 10:38:34  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

C - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/17/04	07:25:29	000005	000303	S 001.0	Lab Background
0002	12/17/04	07:28:34	000017	036238	S 001.0	Lab Source
0003	12/17/04	09:52:44	000006	000328	S 001.0	Field Background
0004	12/17/04	09:56:15	000002	002131	S 001.0	Field Source
0005	12/17/04	09:58:05	000006	000311	S 001.0	RB-1-B
0006	12/17/04	09:59:35	000003	000331	S 001.0	RB-1-B
0007	12/17/04	10:01:01	000004	000321	S 001.0	RB-1-B
0008	12/17/04	10:02:34	000002	000331	S 001.0	RB-1-B
0009	12/17/04	10:04:04	000007	000342	S 001.0	RB-1-B
0010	12/17/04	10:05:31	000004	000268	S 001.0	RB-1-B
0011	12/17/04	10:07:30	000007	000383	S 001.0	RB-1-B
0012	12/17/04	10:10:28	000004	000311	S 001.0	RB-1-B
0013	12/17/04	10:11:55	000005	000373	S 001.0	RB-1-B
0014	12/17/04	10:13:44	000007	000315	S 001.0	RB-1-B
0015	12/17/04	10:15:32	000011	000262	S 001.0	RB-1-B
0016	12/17/04	10:23:15	000006	000355	S 001.0	RB-1-B
0017	12/17/04	10:25:03	000013	000355	S 001.0	RB-1-B
0018	12/17/04	10:27:15	000004	000382	S 001.0	RB-1-B
0019	12/17/04	10:29:41	000007	000330	S 001.0	RB-1-B
0020	12/17/04	10:37:27	000005	002262	S 001.0	Field Source

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/17/04	11:12:42	RB-1-B	Final Status Survey	12/17/04	11:12:42	1.000	1.00
2	Smear 2	12/17/04	11:11:22	RB-1-B	Final Status Survey	12/17/04	11:11:22	1.000	1.00
3	Smear 3	12/17/04	11:10:02	RB-1-B	Final Status Survey	12/17/04	11:10:02	1.000	1.00
4	Smear 4	12/17/04	11:08:42	RB-1-B	Final Status Survey	12/17/04	11:08:42	1.000	1.00
5	Smear 5	12/17/04	11:07:22	RB-1-B	Final Status Survey	12/17/04	11:07:22	1.000	1.00
6	Smear 6	12/17/04	11:06:03	RB-1-B	Final Status Survey	12/17/04	11:06:03	1.000	1.00
7	Smear 7	12/17/04	11:04:43	RB-1-B	Final Status Survey	12/17/04	11:04:43	1.000	1.00
8	Smear 8	12/17/04	11:03:23	RB-1-B	Final Status Survey	12/17/04	11:03:23	1.000	1.00
9	Smear 9	12/17/04	11:02:03	RB-1-B	Final Status Survey	12/17/04	11:02:03	1.000	1.00
10	Smear 10	12/17/04	11:00:43	RB-1-B	Final Status Survey	12/17/04	11:00:43	1.000	1.00
11	Smear 11	12/17/04	10:59:23	RB-1-B	Final Status Survey	12/17/04	10:59:23	1.000	1.00
12	Smear 12	12/17/04	10:58:03	RB-1-B	Final Status Survey	12/17/04	10:58:03	1.000	1.00
13	Smear 13	12/17/04	10:56:43	RB-1-B	Final Status Survey	12/17/04	10:56:43	1.000	1.00
14	Smear 14	12/17/04	10:55:23	RB-1-B	Final Status Survey	12/17/04	10:55:23	1.000	1.00
15	Smear 15	12/17/04	10:54:03	RB-1-B	Final Status Survey	12/17/04	10:54:03	1.000	1.00
16	Smear 16	12/17/04	10:52:44	RB-1-B	Final Status Survey	12/17/04	10:52:44	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-17-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 24.16 LLD: 11.22 dpm				Bkg: 0.43 cpm %Eff: 44.72 LLD: 10.98 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/17/04	11:12:42	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
2	Smear 2	12/17/04	11:11:22	0.00	0.00	0.00	11.22	5.00	4.57	10.21	10.98
3	Smear 3	12/17/04	11:10:02	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
4	Smear 4	12/17/04	11:08:42	0.00	0.00	0.00	11.22	5.00	4.57	10.21	10.98
5	Smear 5	12/17/04	11:07:22	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
6	Smear 6	12/17/04	11:06:03	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
7	Smear 7	12/17/04	11:04:43	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
8	Smear 8	12/17/04	11:03:23	0.00	0.00	0.00	11.22	3.00	2.57	5.74	10.98
9	Smear 9	12/17/04	11:02:03	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
10	Smear 10	12/17/04	11:00:43	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
11	Smear 11	12/17/04	10:59:23	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
12	Smear 12	12/17/04	10:58:03	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
13	Smear 13	12/17/04	10:56:43	1.00	1.00	4.14	11.22	0.00	-0.43	-0.97	10.98
14	Smear 14	12/17/04	10:55:23	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
15	Smear 15	12/17/04	10:54:03	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
16	Smear 16	12/17/04	10:52:44	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

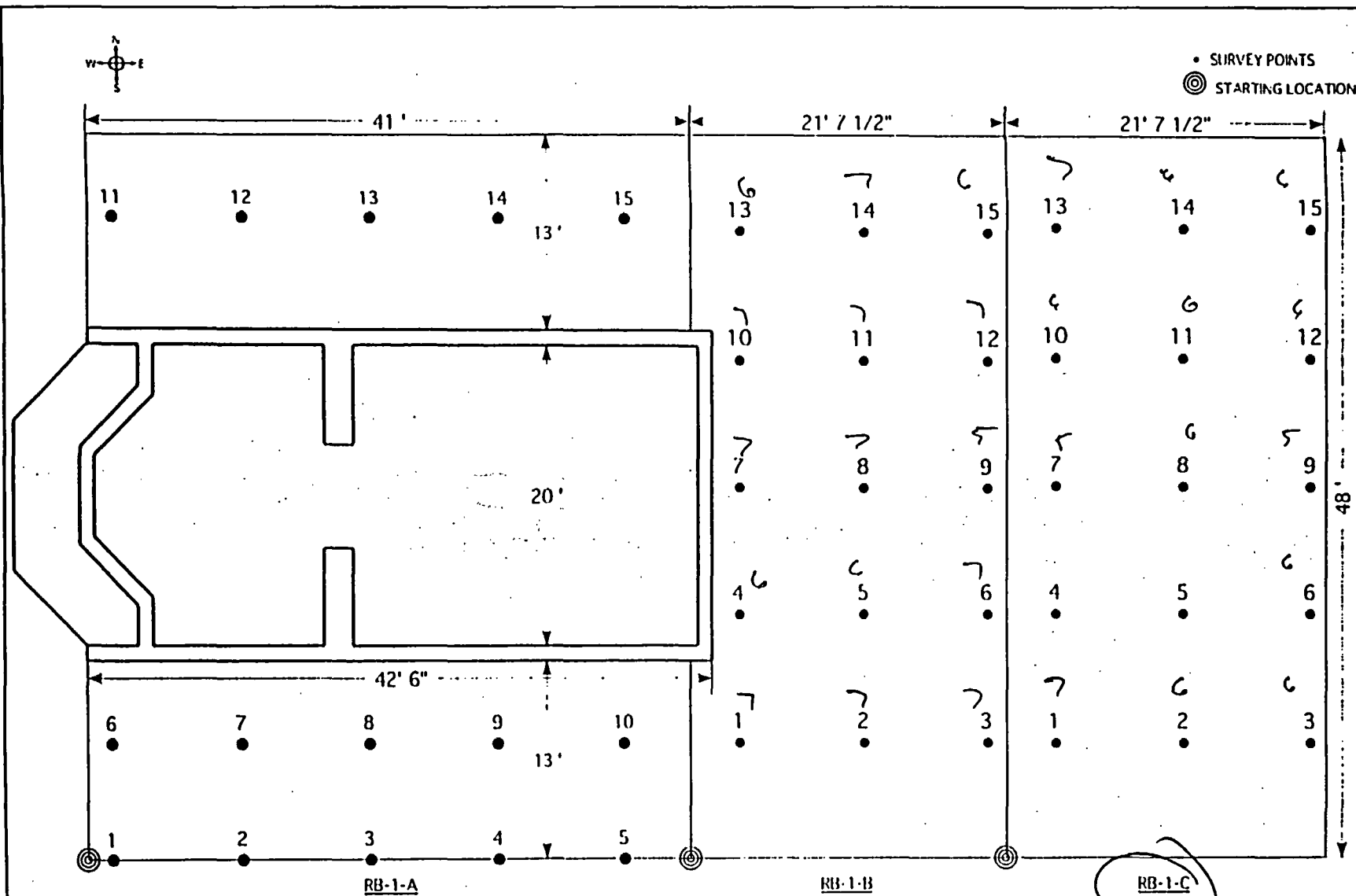
Date: 12-17-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**RB-1-C      Reactor Bay**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Reactor Bay Floor	
SCIENTECH SCIENTECH Inc. 140 WEST STREET NEW MILFORD, CT 06455	
PROJECT NO. 23529-0501	
FILE NAME:	
SCALE N.T.S.	DATE 07.06/2004
By:	CK:
FIGURE: RB-1-A-B-C	



RB-1-C

Log #
Source
5
6
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14
15
16
17
18
19

	X	Y
	n/a	n/a
1	3.4	7.6
2	12.0	7.6
3	20.6	7.6
4	3.4	16.2
5	12.0	16.2
6	20.6	16.2
7	3.4	24.8
8	12.0	24.8
9	20.6	24.8
10	3.4	33.4
11	12.0	33.4
12	20.6	33.4
13	3.4	42.0
14	12.0	42.0
15	20.6	42.0

L (ft)= 8.6  
A (ft²)= 1038

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
309	300	320
261	260	300
341	360	380
282	280	300
285	280	300
300	300	320
252	240	300
390	380	390
353	360	380
364	360	380
384	360	380
324	320	340
333	320	360
242	240	260
309	300	320

3-BCKGD

Note: Bckd is <sup>High!</sup> Scabbled down 1/8 in w/no Change!

Ludlum Measurements, Inc.  
Model 2360 Log Data

---

Date: 12/17/2004  
Time: 11:59:02 AM

Header 1: Chris Higgins  
Header 2: Serial#178162  
Header 3: DetSer#200135  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: RB-1-C  
Calibration Due Date: 10/11/2005  
Model 2360 Date: 12/17/2004  
Model 2360 Time: 11:58:12  
Sample Number: 0020

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

R - Ratemeter  
S - Scaler  
C - Count Time

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	12/17/04	10:42:42	000004	000256	S 001.0	Lab Background
0002	12/17/04	10:43:50	000004	036910	S 001.0	Lab Source
0003	12/17/04	10:51:50	000004	000314	S 001.0	Field Background
0004	12/17/04	10:54:36	000005	000309	S 001.0	RB-1-C
0005	12/17/04	10:56:58	000006	000261	S 001.0	RB-1-C
0006	12/17/04	10:58:35	000004	000361	S 001.0	RB-1-C
0007	12/17/04	11:00:26	000008	000282	S 001.0	RB-1-C
0008	12/17/04	11:05:37	000006	000285	S 001.0	RB-1-C
0009	12/17/04	11:08:39	000007	000300	S 001.0	RB-1-C
0010	12/17/04	11:10:10	000005	000252	S 001.0	RB-1-C
0011	12/17/04	11:12:02	000007	000390	S 001.0	RB-1-C
0012	12/17/04	11:14:04	000010	000353	S 001.0	RB-1-C
0013	12/17/04	11:15:50	000006	000364	S 001.0	RB-1-C
0014	12/17/04	11:17:17	000010	000384	S 001.0	RB-1-C
0015	12/17/04	11:18:38	000004	000324	S 001.0	RB-1-C
0016	12/17/04	11:20:09	000007	000333	S 001.0	RB-1-C
0017	12/17/04	11:24:16	000002	000242	S 001.0	RB-1-C
0018	12/17/04	11:26:01	000003	000309	S 001.0	RB-1-C
0019	12/17/04	11:57:56	000003	001962	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started				Date	Time	DF	of Sample
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/17/04	12:28:07	RB-1-C	Final Status Survey	12/17/04	12:28:07	1.000	1.00
2	Smear 2	12/17/04	12:26:47	RB-1-C	Final Status Survey	12/17/04	12:26:47	1.000	1.00
3	Smear 3	12/17/04	12:25:27	RB-1-C	Final Status Survey	12/17/04	12:25:27	1.000	1.00
4	Smear 4	12/17/04	12:24:07	RB-1-C	Final Status Survey	12/17/04	12:24:07	1.000	1.00
5	Smear 5	12/17/04	12:22:48	RB-1-C	Final Status Survey	12/17/04	12:22:48	1.000	1.00
6	Smear 6	12/17/04	12:21:28	RB-1-C	Final Status Survey	12/17/04	12:21:28	1.000	1.00
7	Smear 7	12/17/04	12:20:08	RB-1-C	Final Status Survey	12/17/04	12:20:08	1.000	1.00
8	Smear 8	12/17/04	12:18:48	RB-1-C	Final Status Survey	12/17/04	12:18:48	1.000	1.00
9	Smear 9	12/17/04	12:17:28	RB-1-C	Final Status Survey	12/17/04	12:17:28	1.000	1.00
10	Smear 10	12/17/04	12:16:08	RB-1-C	Final Status Survey	12/17/04	12:16:08	1.000	1.00
11	Smear 11	12/17/04	12:14:48	RB-1-C	Final Status Survey	12/17/04	12:14:48	1.000	1.00
12	Smear 12	12/17/04	12:13:29	RB-1-C	Final Status Survey	12/17/04	12:13:29	1.000	1.00
13	Smear 13	12/17/04	12:12:09	RB-1-C	Final Status Survey	12/17/04	12:12:09	1.000	1.00
14	Smear 14	12/17/04	12:10:49	RB-1-C	Final Status Survey	12/17/04	12:10:49	1.000	1.00
15	Smear 15	12/17/04	12:09:29	RB-1-C	Final Status Survey	12/17/04	12:09:29	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 1-24

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 24.16 LLD: 11.22 dpm				Bkg: 0.43 cpm %Eff: 44.72 LLD: 10.98 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/17/04	12:28:07	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
2	Smear 2	12/17/04	12:28:47	0.00	0.00	0.00	11.22	4.00	3.57	7.98	10.98
3	Smear 3	12/17/04	12:25:27	0.00	0.00	0.00	11.22	5.00	4.57	10.21	10.98
4	Smear 4	12/17/04	12:24:07	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
5	Smear 5	12/17/04	12:22:48	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
6	Smear 6	12/17/04	12:21:28	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
7	Smear 7	12/17/04	12:20:08	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
8	Smear 8	12/17/04	12:18:48	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
9	Smear 9	12/17/04	12:17:28	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
10	Smear 10	12/17/04	12:16:08	0.00	0.00	0.00	11.22	0.00	-0.43	-0.97	10.98
11	Smear 11	12/17/04	12:14:48	0.00	0.00	0.00	11.22	2.00	1.57	3.50	10.98
12	Smear 12	12/17/04	12:13:29	0.00	0.00	0.00	11.22	1.00	0.57	1.27	10.98
13	Smear 13	12/17/04	12:12:09	0.00	0.00	0.00	11.22	3.00	2.57	5.74	10.98
14	Smear 14	12/17/04	12:10:49	0.00	0.00	0.00	11.22	4.00	3.57	7.98	10.98
15	Smear 15	12/17/04	12:09:29	1.00	1.00	4.14	11.22	3.00	2.57	5.74	10.98

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-17-04

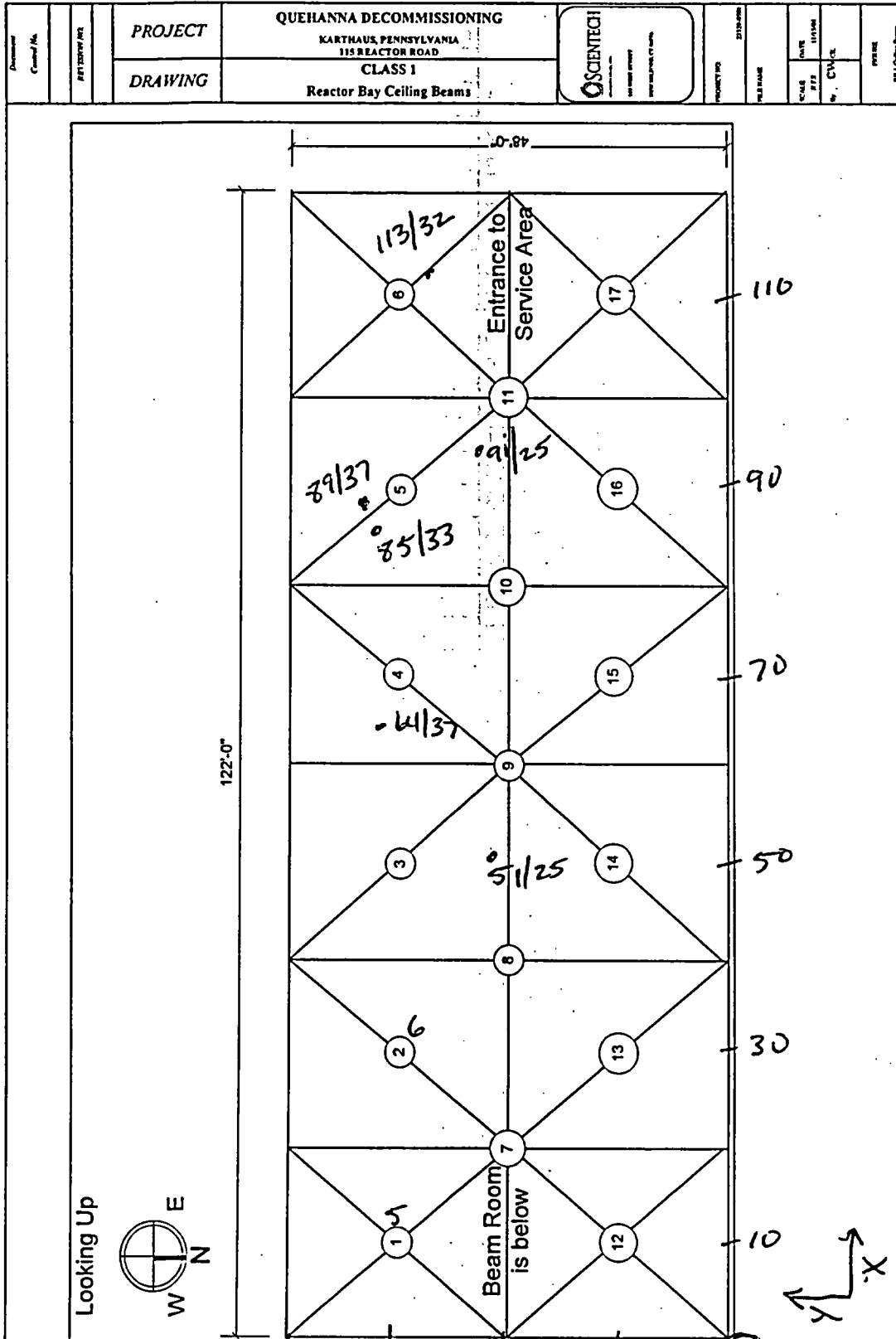
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**RB-1-D      Reactor Bay**

RB-1-D



Inst 20475

Starting Point

RB-1-D Beams

Log #
Source
5
6
8
16
17
27
34
46
45
44
43
55
53
47
37
35
28

	X	Y
	n/a	n/a
1	10	36
2	30	↓
3	50	
4	70	
5	90	
6	110	
7	20	24
8	40	↓
9	60	
10	80	
11	100	↓
12	10	12
13	30	↓
14	50	
15	70	
16	90	
17	110	

	Fixed Point	Ave. (Scan)	Max. (Scan)
		n/a	n/a
1	124	140	200
2	125	140	200
3	158	180	2200
4	143	160	200
5	158	180	260
6	148	140	240
7	139	140	220
8	179	200	280
9	189	180	220
10	212	160	240
11	186	140	240
12	140	140	200
13	159	160	240
14	161	160	260
15	146	160	280
16	145	180	260
17	166	180	260

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

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la 2/3/2004  
in 52:41 PM

Header 1: Joe Kozyra  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: RB-1-D  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/03/2004  
Model 2360 Time: 15:39:19  
Sample Number: 0063

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Dr - Count Time  
R - Ratemeter  
S - Scaler

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	10/22/04	11:30:47	000001	000155	S 001.0	Lab Background
0002	10/22/04	11:32:08	000002	032991	S 001.0	Lab Source
0003	10/22/04	12:35:41	000003	001689	S 001.0	Field Source
0004	10/22/04	12:43:55	000001	000112	S 001.0	Field Background
0005	10/22/04	13:04:27	000002	000124	S 001.0	RB-1-D Point 1
0006	10/22/04	13:13:29	000001	000125	S 001.0	RB-1-D Point 2
0007	10/22/04	13:59:54	000000	000164	S 001.0	Void
0008	10/22/04	16:51:58	000000	000158	S 001.0	RB-1-D Point 3
0009	10/22/04	17:45:43	000001	000126	S 001.0	Void
0010	10/22/04	18:18:12	000002	000114	S 001.0	Field Background
0011	10/22/04	18:25:46	000000	001695	S 001.0	Field Source
0012	10/24/04	07:38:12	000000	000197	S 001.0	Lab Background
0013	10/24/04	07:39:25	000000	032767	S 001.0	Lab Source
0014	10/24/04	09:06:03	000000	001601	S 001.0	Field Source
0015	10/24/04	09:07:19	000000	000181	S 001.0	Field Background
0016	10/24/04	10:32:37	000000	000143	S 001.0	RB-1-D Point 4
0017	10/24/04	14:44:07	000000	000158	S 001.0	RB-1-D Point 5
0018	10/24/04	17:09:45	000002	001496	S 001.0	Field Source
0019	10/26/04	07:19:14	000000	000171	S 001.0	Lab Background
0020	10/26/04	07:32:29	000003	032671	S 001.0	Lab Source
0021	10/26/04	08:09:27	000004	001700	S 001.0	Field Source
0022	10/27/04	07:35:59	000000	000159	S 001.0	Field Background
0023	10/27/04	07:37:19	000002	032284	S 001.0	Lab Source
0024	10/29/04	07:57:38	000000	000168	S 001.0	Lab Background
0025	10/29/04	07:59:02	000002	032796	S 001.0	Lab Source
0026	10/29/04	08:01:11	000000	002054	S 001.0	Field Source
0027	10/29/04	11:16:33	000000	000148	S 001.0	RB-1-D Point 6
0028	10/29/04	17:24:51	000000	000171	S 001.0	Void
0029	10/29/04	17:34:59	000000	000166	S 001.0	RB-1-D Point 17
0030	10/29/04	18:21:31	000001	000211	S 001.0	Field Background
0031	10/29/04	18:27:36	000002	001576	S 001.0	Field Source
0032	10/30/04	07:16:12	000001	032225	S 001.0	Lab Source
0033	10/30/04	07:20:44	000001	001658	S 001.0	Field Source
0034	10/30/04	07:29:47	000000	000165	S 001.0	Field Background



135 10/30/04 11:48:33 000001 000145 S 001.0 RB-1-D Point 16  
136 10/30/04 12:06:41 000000 000176 S 001.0 Void  
137 10/30/04 15:27:13 000000 000146 S 001.0 RB-1-D Point 15-  
138 10/30/04 17:51:50 000002 001652 S 001.0 Field Source  
139 10/30/04 17:53:57 000000 001605 S 001.0 Field Source  
140 10/31/04 06:46:30 000001 032598 S 001.0 Lab Source  
141 10/31/04 07:21:27 000001 001681 S 001.0 Field Source  
142 10/31/04 07:31:47 000003 000175 S 001.0 Field Background  
143 10/31/04 07:54:26 000004 000182 S 001.0 RB-1-D Point 11  
144 10/31/04 08:02:20 000002 000210 S 001.0 RB-1-D Point 10  
145 10/31/04 08:10:42 000001 000188 S 001.0 RB-1-D Point 9  
146 10/31/04 10:36:22 000001 000178 S 001.0 RB-1-D Point 8  
147 10/31/04 14:21:38 000000 000161 S 001.0 RB-1-D Point 14  
148 10/31/04 18:28:03 000001 001570 S 001.0 Field Source  
149 11/01/04 07:18:12 000002 000180 S 001.0 Lab Background  
150 11/01/04 07:23:58 000001 032032 S 001.0 Lab Source  
151 11/01/04 07:32:06 000002 001641 S 001.0 Field Source  
152 11/01/04 07:51:20 000001 000120 S 001.0 Field Background  
153 11/01/04 08:01:23 000000 000159 S 001.0 RB-1-D Point 13  
154 11/01/04 08:09:43 000000 000139 S 001.0 RB-1-D Point 7  
155 11/01/04 11:05:26 000001 000139 S 001.0 RB-1-D Point 12  
156 11/01/04 17:35:40 000002 001603 S 001.0 Field Source  
157 11/02/04 07:28:05 000000 000190 S 001.0 Lab Background  
158 11/02/04 07:29:47 000001 032628 S 001.0 Lab Source  
159 11/02/04 07:45:34 000001 002060 S 001.0 Field Source  
160 11/02/04 07:55:54 000000 000117 S 001.0 Field Background  
161 11/02/04 11:01:31 000001 000185 S 001.0 Void  
162 11/02/04 15:22:38 000002 001627 S 001.0 Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
61	Smear 1	12/03/04	16:22:43	RB-1-D	Final Status Survey	12/03/04	16:22:43	1.000	1.00
62	Smear 2	12/03/04	16:21:24	RB-1-D	Final Status Survey	12/03/04	16:21:24	1.000	1.00
63	Smear 3	12/03/04	16:20:04	RB-1-D	Final Status Survey	12/03/04	16:20:04	1.000	1.00
64	Smear 4	12/03/04	16:18:44	RB-1-D	Final Status Survey	12/03/04	16:18:44	1.000	1.00
65	Smear 5	12/03/04	16:17:24	RB-1-D	Final Status Survey	12/03/04	16:17:24	1.000	1.00
66	Smear 6	12/03/04	16:16:05	RB-1-D	Final Status Survey	12/03/04	16:16:05	1.000	1.00
67	Smear 7	12/03/04	16:14:45	RB-1-D	Final Status Survey	12/03/04	16:14:45	1.000	1.00
68	Smear 8	12/03/04	16:13:25	RB-1-D	Final Status Survey	12/03/04	16:13:25	1.000	1.00
69	Smear 9	12/03/04	16:12:05	RB-1-D	Final Status Survey	12/03/04	16:12:05	1.000	1.00
70	Smear 10	12/03/04	16:10:45	RB-1-D	Final Status Survey	12/03/04	16:10:45	1.000	1.00
71	Smear 11	12/03/04	16:09:25	RB-1-D	Final Status Survey	12/03/04	16:09:25	1.000	1.00
72	Smear 12	12/03/04	16:08:06	RB-1-D	Final Status Survey	12/03/04	16:08:06	1.000	1.00
73	Smear 13	12/03/04	16:06:46	RB-1-D	Final Status Survey	12/03/04	16:06:46	1.000	1.00
74	Smear 14	12/03/04	16:05:26	RB-1-D	Final Status Survey	12/03/04	16:05:26	1.000	1.00
75	Smear 15	12/03/04	16:04:06	RB-1-D	Final Status Survey	12/03/04	16:04:06	1.000	1.00
76	Smear 16	12/03/04	16:02:46	RB-1-D	Final Status Survey	12/03/04	16:02:46	1.000	1.00
77	Smear 17	12/03/04	16:01:26	RB-1-D	Final Status Survey	12/03/04	16:01:26	1.000	1.00

Technician (print): Rob Ellison

Technician (sign):

Date: 12-03-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %Eff: 25.88 LLD: 14.66 dpm				Bkg: 0.73 cpm %Eff: 44.63 LLD: 12.62 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
61	Smear 1	12/03/04	16:22:43	0.00	-0.10	-0.39	14.56	1.00	0.27	0.60	12.52
62	Smear 2	12/03/04	16:21:24	0.00	-0.10	-0.39	14.56	2.00	1.27	2.84	12.52
63	Smear 3	12/03/04	16:20:04	0.00	-0.10	-0.39	14.56	0.00	-0.73	-1.65	12.52
64	Smear 4	12/03/04	16:18:44	0.00	-0.10	-0.39	14.56	1.00	0.27	0.60	12.52
65	Smear 5	12/03/04	16:17:24	0.00	-0.10	-0.39	14.56	0.00	-0.73	-1.65	12.52
66	Smear 6	12/03/04	16:16:05	0.00	-0.10	-0.39	14.56	2.00	1.27	2.84	12.52
67	Smear 7	12/03/04	16:14:45	0.00	-0.10	-0.39	14.56	2.00	1.27	2.84	12.52
68	Smear 8	12/03/04	16:13:25	0.00	-0.10	-0.39	14.56	1.00	0.27	0.60	12.52
69	Smear 9	12/03/04	16:12:05	0.00	-0.10	-0.39	14.56	2.00	1.27	2.84	12.52
70	Smear 10	12/03/04	16:10:45	0.00	-0.10	-0.39	14.56	1.00	0.27	0.60	12.52
71	Smear 11	12/03/04	16:09:25	0.00	-0.10	-0.39	14.56	0.00	-0.73	-1.65	12.52
72	Smear 12	12/03/04	16:08:06	0.00	-0.10	-0.39	14.56	0.00	-0.73	-1.65	12.52
73	Smear 13	12/03/04	16:06:46	0.00	-0.10	-0.39	14.56	0.00	-0.73	-1.65	12.52
74	Smear 14	12/03/04	16:05:26	0.00	-0.10	-0.39	14.56	0.00	-0.73	-1.65	12.52
75	Smear 15	12/03/04	16:04:06	0.00	-0.10	-0.39	14.56	0.00	-0.73	-1.65	12.52
76	Smear 16	12/03/04	16:02:46	0.00	-0.10	-0.39	14.56	2.00	1.27	2.84	12.52
77	Smear 17	12/03/04	16:01:26	0.00	-0.10	-0.39	14.56	5.00	4.27	9.58	12.52

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

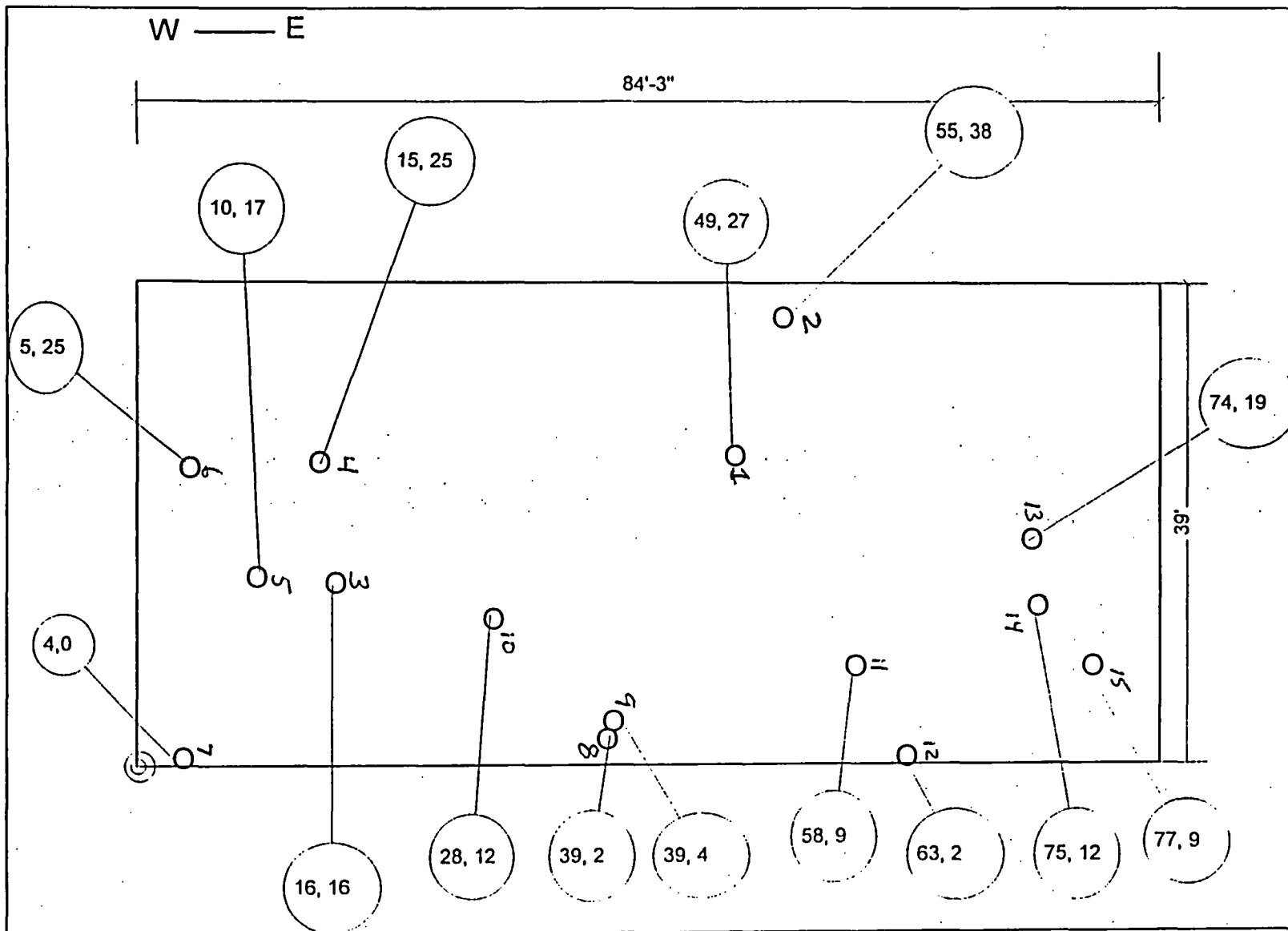
Date: 12-03-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**RB-3-A      Reactor Bay**



RB-3-A

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING
DRAWING	KARTHUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Reactor Bay North Wall
<p>SCIENTECH Inc. 113 WEST STREET NEW MILFORD, CT 06476</p>	
PROJECT NO. 23529-0501	
FILE NAME:	
SCALE: NTS	DATE: 11/16/04
By: CW	CK:
FIGURE: RB-3-A	

RB-3-A

Log #
3 Source
5
6
7
8
9
10
11
17
18
19
20
21
22
23
24

	X	Y
	n/a	n/a
1	49	27
2	55	38
3	16	16
4	15	28
5	10	17
6	5	25
7	4	0
8	39	2
9	39	4
10	28	12
11	58	9
12	63	2
13	74	19
14	75	12
15	77	9

Fixed Points
1567
172
168
174
155
178
180
154
138
149
111
128
132
161
143
126

START 7 DEC 04 1235 HRS  
 STOP 8 DEC 04 1805 HRS

Ludlum Measurements, Inc.  
Model 2360 Log Data

C 12/8/2004  
T 6:09:13 PM

Header 1: Joe Kozyra  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: RB-3-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/08/2004  
Model 2360 Time: 18:06:34  
Sample Number: 0026

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

Time - Count Time  
Ratemeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/07/04	11:51:23	000000	000191	S 001.0	Lab Background
0002	12/07/04	11:53:17	000005	034644	S 001.0	Lab Source
0003	12/07/04	12:37:03	000001	001567	S 001.0	Field Source
0004	12/07/04	12:53:54	000000	000155	S 001.0	Field Background
0005	12/07/04	15:52:24	000000	000172	S 001.0	RB-3-A
0006	12/07/04	16:39:34	000001	000168	S 001.0	RB-3-A
0007	12/07/04	17:27:01	000001	000174	S 001.0	RB-3-A
0008	12/07/04	17:30:55	000002	000155	S 001.0	RB-3-A
0009	12/07/04	17:39:55	000000	000178	S 001.0	RB-3-A
0010	12/07/04	17:45:03	000001	000180	S 001.0	RB-3-A
0011	12/07/04	18:08:39	000002	000154	S 001.0	RB-3-A
0012	12/07/04	18:16:49	000003	001827	S 001.0	Field Source
0013	12/08/04	07:29:31	000000	000163	S 001.0	Lab Background
0014	12/08/04	07:30:39	000006	034691	S 001.0	Lab Source
0015	12/08/04	07:32:40	000002	001924	S 001.0	Field Source
0016	12/08/04	07:45:38	000000	000159	S 001.0	Field Background
0017	12/08/04	11:22:23	000002	000138	S 001.0	RB-3-A
0018	12/08/04	11:25:48	000000	000149	S 001.0	RB-3-A
0019	12/08/04	12:47:49	000000	000111	S 001.0	RB-3-A
0020	12/08/04	17:04:16	000000	000128	S 001.0	RB-3-A
0021	12/08/04	17:33:19	000000	000132	S 001.0	RB-3-A
0022	12/08/04	17:42:44	000000	000161	S 001.0	RB-3-A
0023	12/08/04	17:49:18	000002	000143	S 001.0	RB-3-A
0024	12/08/04	17:57:29	000000	000126	S 001.0	RB-3-A
	12/08/04	18:05:51	000000	001643	S 001.0	Field Source

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/08/04	18:35:00	RB-3-A	Final Status Survey	12/08/04	18:35:00	1.000	1.00
2	Smear 2	12/08/04	18:33:40	RB-3-A	Final Status Survey	12/08/04	18:33:40	1.000	1.00
3	Smear 3	12/08/04	18:32:20	RB-3-A	Final Status Survey	12/08/04	18:32:20	1.000	1.00
4	Smear 4	12/08/04	18:31:00	RB-3-A	Final Status Survey	12/08/04	18:31:00	1.000	1.00
5	Smear 5	12/08/04	18:29:40	RB-3-A	Final Status Survey	12/08/04	18:29:40	1.000	1.00
6	Smear 6	12/08/04	18:28:20	RB-3-A	Final Status Survey	12/08/04	18:28:20	1.000	1.00
7	Smear 7	12/08/04	18:27:00	RB-3-A	Final Status Survey	12/08/04	18:27:00	1.000	1.00
8	Smear 8	12/08/04	18:25:40	RB-3-A	Final Status Survey	12/08/04	18:25:40	1.000	1.00
9	Smear 9	12/08/04	18:24:20	RB-3-A	Final Status Survey	12/08/04	18:24:20	1.000	1.00
10	Smear 10	12/08/04	18:23:00	RB-3-A	Final Status Survey	12/08/04	18:23:00	1.000	1.00
11	Smear 11	12/08/04	18:21:40	RB-3-A	Final Status Survey	12/08/04	18:21:40	1.000	1.00
12	Smear 12	12/08/04	18:20:20	RB-3-A	Final Status Survey	12/08/04	18:20:20	1.000	1.00
13	Smear 13	12/08/04	18:19:00	RB-3-A	Final Status Survey	12/08/04	18:19:00	1.000	1.00
14	Smear 14	12/08/04	18:17:40	RB-3-A	Final Status Survey	12/08/04	18:17:40	1.000	1.00
15	Smear 15	12/08/04	18:16:20	RB-3-A	Final Status Survey	12/08/04	18:16:20	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-8-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 24.63 LLD: 11.05 dpm				Bkg: 0.67 cpm %Eff: 44.64 LLD: 11.71 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/08/04	18:35:00	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
2	Smear 2	12/08/04	18:33:40	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
3	Smear 3	12/08/04	18:32:20	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
4	Smear 4	12/08/04	18:31:00	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
5	Smear 5	12/08/04	18:29:40	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
6	Smear 6	12/08/04	18:28:20	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
7	Smear 7	12/08/04	18:27:00	0.00	0.00	0.00	11.05	3.00	2.43	5.45	11.71
8	Smear 8	12/08/04	18:25:40	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
9	Smear 9	12/08/04	18:24:20	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
10	Smear 10	12/08/04	18:23:00	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
11	Smear 11	12/08/04	18:21:40	0.00	0.00	0.00	11.05	0.00	-0.57	-1.27	11.71
12	Smear 12	12/08/04	18:20:20	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
13	Smear 13	12/08/04	18:19:00	0.00	0.00	0.00	11.05	4.00	3.43	7.69	11.71
14	Smear 14	12/08/04	18:17:40	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71
15	Smear 15	12/08/04	18:16:20	0.00	0.00	0.00	11.05	1.00	0.43	0.97	11.71

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-08-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

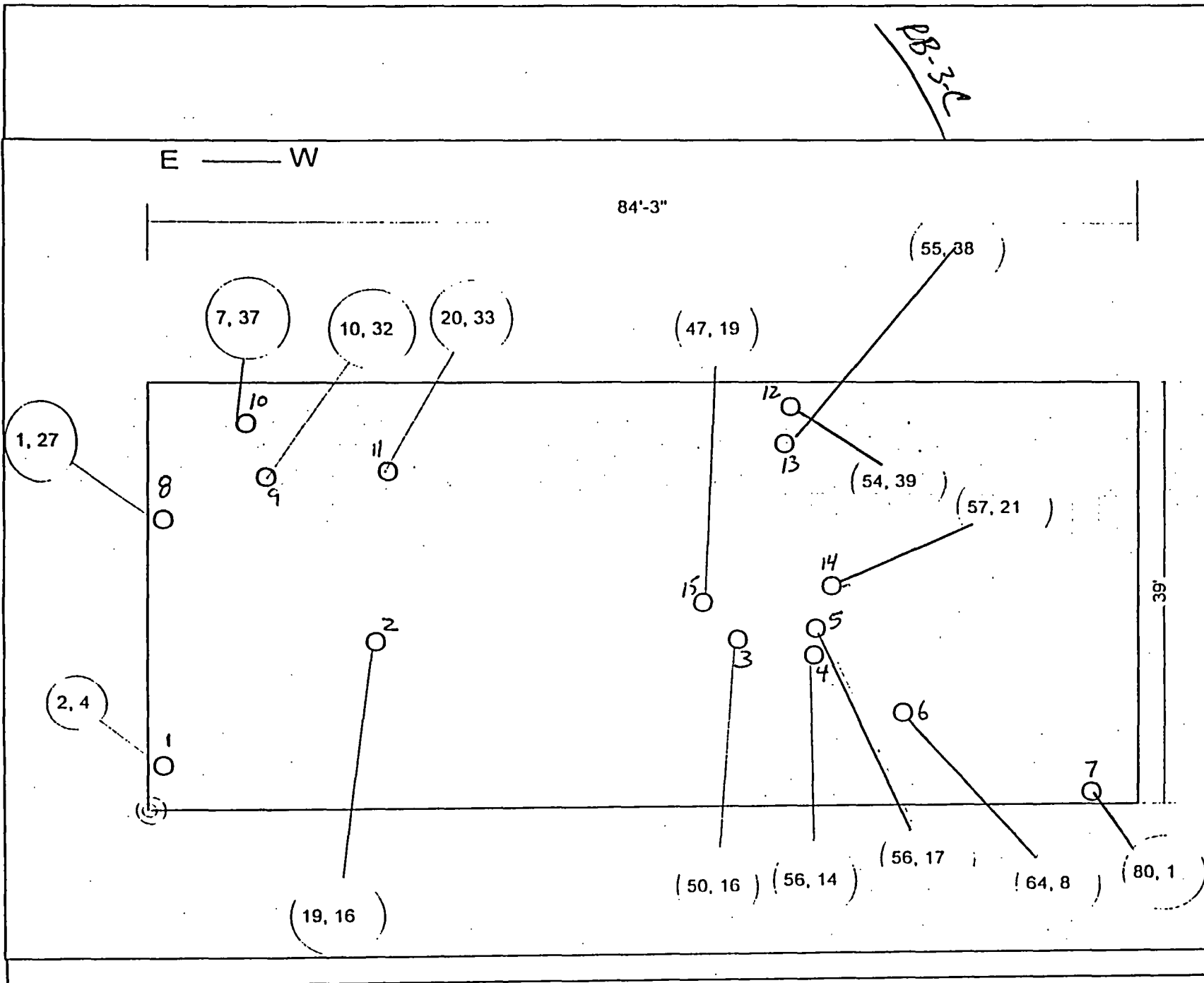
Date:

RB-3-A

NEED 15 POINTS ON MAP

Enter X range			N	X		Y	
Enter Y range							
0	to	84.25	1	3.8	0.3		
			2	14.8	24.9		
			3	48.8	26.5		
			4	63.1	2.1		
			5	28.4	11.9		
			6	77.3	9.0		
			7	10.2	16.5		
			8	75.2	11.8		
			9	39.4	4.4		
			10	54.7	38.0		
			11	58.4	8.9		
			12	73.9	19.0		
			13	15.5	15.8		
			14	38.6	1.7		
			15	5.2	25.4		
			16	71.3	24.3		
			17	48.3	21.6		
			18	60.0	9.0		
			19	42.4	32.4		
			20	45.2	7.5		

**RB-3-C      Reactor Bay**



Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KAITIUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Reactor Bay South Wall	
SCIENTECH 101 WEST STREET NEW BRUNSWICK, NJ 07102	
PROJECT NO. 23529 0501	
FILE NAME	
SCALE: NTS	DATE: 11/16/04
By: CW	CK:
FIGURE: RB-3-C	

## RB-3-C

Log #
4 Source
5
6
7
8
9
10
11
17
18
19
20
31
32
33
34

	X	Y
	n/a	n/a
1	1	4
2	19	16
3	50	16
4	56	14
5	56	17
6	64	6
7	80	27
8	1	7
9	10	32
10	7	37
11	20	33
12	55	38
13	54	39
14	57	21
15	47	19

Fixed Points
1644
90
130
174
155
166
118
97
126
143
99
140
131
153
135
146

START 10 DEC 04 0730 HRS

STOP 13 DEC 04 1500 HRS .

Ludlum Measurements, Inc.  
Model 2360 Log Data

12/13/2004  
3:31:09 PM

Header 1: Joe Kozyra  
Header 2: Serial#202476  
Header 3: DetSer#PR208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: RB-3-C  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/13/2004  
Model 2360 Time: 14:34:14  
Sample Number: 0036

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000364  
Alpha + Beta Ratemeter Alarm: 000364  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000364  
Alpha + Beta Scaler Alarm: 000364

Count Time - Count Time  
Ratmeter  
Scaler

Log Data:

Run	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
001	12/09/04	08:30:45	000000	000147	S 001.0	Lab Background
002	12/09/04	08:32:23	000001	032724	S 001.0	Lab Source
003	12/09/04	09:28:22	000001	000142	S 001.0	Field Background
004	12/09/04	09:29:57	000003	001644	S 001.0	Field Source
005	12/09/04	09:37:01	000000	000090	S 001.0	RB-3-C
006	12/09/04	09:41:12	000000	000130	S 001.0	RB-3-C
007	12/09/04	09:54:35	000000	000174	S 001.0	RB-3-C
008	12/09/04	10:00:47	000002	000155	S 001.0	RB-3-C
009	12/09/04	10:03:35	000000	000166	S 001.0	RB-3-C
010	12/09/04	10:07:42	000002	000118	S 001.0	RB-3-C
011	12/09/04	10:10:44	000001	000097	S 001.0	RB-3-C
012	12/09/04	19:22:06	000002	001556	S 001.0	Field Source
013	12/10/04	08:18:18	000000	000274	S 001.0	Lab Background
014	12/10/04	08:22:01	000003	033168	S 001.0	Lab Source
015	12/10/04	08:24:17	000002	001907	S 001.0	Field Source
016	12/10/04	08:28:30	000000	000154	S 001.0	Field Background
017	12/10/04	08:32:10	000001	000126	S 001.0	RB-3-C
018	12/10/04	09:12:08	000000	000143	S 001.0	RB-3-C
019	12/10/04	10:17:53	000002	000099	S 001.0	RB-3-C
020	12/10/04	11:36:35	000000	000140	S 001.0	RB-3-C
021	12/10/04	12:38:05	000000	000122	S 001.0	Field Background
022	12/10/04	18:01:24	000002	001374	S 001.0	Field Source
023	12/11/04	08:20:57	000002	035625	S 001.0	Lab Source
024	12/11/04	08:22:33	000001	000159	S 001.0	Lab Background
025	12/11/04	08:27:07	000002	001816	S 001.0	Field Source
026	12/11/04	08:31:43	000000	000143	S 001.0	Field Background
027	12/12/04	09:23:36	000001	032085	S 001.0	Lab Source
028	12/13/04	09:03:32	000001	000175	S 001.0	Lab Background
029	12/13/04	09:04:45	000001	032658	S 001.0	Lab Source
030	12/13/04	10:07:54	000000	001599	S 001.0	Field Source
031	12/13/04	11:04:54	000000	000131	S 001.0	RB-3-C
032	12/13/04	11:08:09	000000	000153	S 001.0	RB-3-C
033	12/13/04	14:00:47	000000	000135	S 001.0	RB-3-C
034	12/13/04	14:12:52	000000	000146	S 001.0	RB-3-C



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/13/04	13:40:08	RB-3-C	Final Staus Survey	12/13/04	13:40:08	1.000	1.00
2	Smear 2	12/13/04	13:38:48	RB-3-C	Final Staus Survey	12/13/04	13:38:48	1.000	1.00
3	Smear 3	12/13/04	13:37:28	RB-3-C	Final Staus Survey	12/13/04	13:37:28	1.000	1.00
4	Smear 4	12/13/04	13:36:08	RB-3-C	Final Staus Survey	12/13/04	13:36:08	1.000	1.00
5	Smear 5	12/13/04	13:34:48	RB-3-C	Final Staus Survey	12/13/04	13:34:48	1.000	1.00
6	Smear 6	12/13/04	13:33:28	RB-3-C	Final Staus Survey	12/13/04	13:33:28	1.000	1.00
7	Smear 7	12/13/04	13:32:08	RB-3-C	Final Staus Survey	12/13/04	13:32:08	1.000	1.00
8	Smear 8	12/13/04	13:30:48	RB-3-C	Final Staus Survey	12/13/04	13:30:48	1.000	1.00
9	Smear 9	12/13/04	13:29:28	RB-3-C	Final Staus Survey	12/13/04	13:29:28	1.000	1.00
10	Smear 10	12/13/04	13:28:08	RB-3-C	Final Staus Survey	12/13/04	13:28:08	1.000	1.00
11	Smear 11	12/13/04	13:26:48	RB-3-C	Final Staus Survey	12/13/04	13:26:48	1.000	1.00
12	Smear 12	12/13/04	13:25:28	RB-3-C	Final Staus Survey	12/13/04	13:25:28	1.000	1.00
13	Smear 13	12/13/04	13:24:08	RB-3-C	Final Staus Survey	12/13/04	13:24:08	1.000	1.00
14	Smear 14	12/13/04	13:22:48	RB-3-C	Final Staus Survey	12/13/04	13:22:48	1.000	1.00
15	Smear 15	12/13/04	13:21:28	RB-3-C	Final Staus Survey	12/13/04	13:21:28	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-13-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 24.62 LLD: 13.64 dpm				Bkg: 0.47 cpm %Eff: 44.83 LLD: 11.14 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/13/04	13:40:08	0.00	-0.03	-0.14	13.54	2.00	1.53	3.42	11.14
2	Smear 2	12/13/04	13:38:48	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
3	Smear 3	12/13/04	13:37:28	0.00	-0.03	-0.14	13.54	1.00	0.53	1.19	11.14
4	Smear 4	12/13/04	13:36:08	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
5	Smear 5	12/13/04	13:34:48	1.00	0.97	3.94	13.54	0.00	-0.47	-1.04	11.14
6	Smear 6	12/13/04	13:33:28	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
7	Smear 7	12/13/04	13:32:08	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
8	Smear 8	12/13/04	13:30:48	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
9	Smear 9	12/13/04	13:29:28	0.00	-0.03	-0.14	13.54	2.00	1.53	3.42	11.14
10	Smear 10	12/13/04	13:28:08	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
11	Smear 11	12/13/04	13:26:48	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
12	Smear 12	12/13/04	13:25:28	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
13	Smear 13	12/13/04	13:24:08	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14
14	Smear 14	12/13/04	13:22:48	0.00	-0.03	-0.14	13.54	1.00	0.53	1.19	11.14
15	Smear 15	12/13/04	13:21:28	0.00	-0.03	-0.14	13.54	0.00	-0.47	-1.04	11.14

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-13-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

RB-3-C

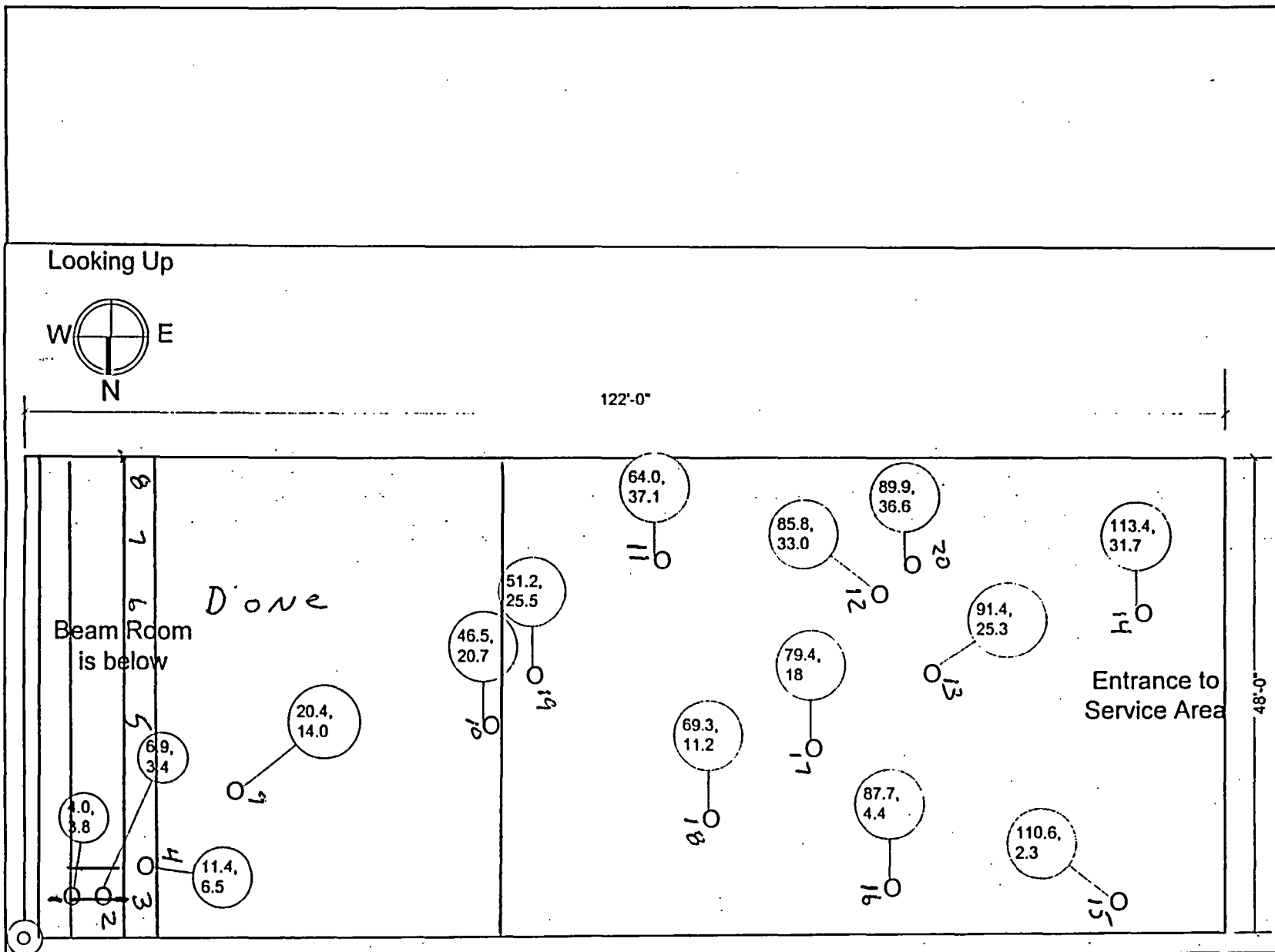
NEED 15 POINTS ON MAP

Enter X range:  to

Enter Y range:  to

N	X	Y
1	47.4	19.3
2	63.9	7.6
3	0.6	27.4
4	54.2	38.8
5	1.6	4.0
6	9.7	32.0
7	56.2	17.2
8	50.3	16.2
9	19.5	32.8
10	56.2	13.5
11	79.9	1.1
12	19.4	16.7
13	7.2	37.0
14	56.9	21.3
15	39.1	3.1
16	26.4	8.5
17	49.4	1.9
18	27.5	10.8
19	53.8	35.1
20	55.2	24.4

**RB-3-D      Reactor Bay**



RB-3-D

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 3 Reactor Bay Ceiling
 SCIENCETECH, Inc. 143 WEST STREET NEW BRIDGE, CT 06778	
PROJECT NO. 21529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 11/03/04
By:	CK:
FIGURE: RB-1-N.O.P.Q.R.S	

## RB-3-D

Log #
1504 Source
11
12
13
14
15
16
17
18
19
39

	X	Y
	n/a	n/a
1	4.0	3.8
2	6.9	3.4
3	Crane	
4	11.4	6.5
5	Crane	
6	Crane	
7	Crane	
8	Crane	
9	20.4	14.0
10	46.5	20.7

	Fixed Points
1	93
2	170
3	78
4	151
5	115
6	95
7	117
8	105
9	131
10	134

Inst # 202476

Start 20 NOV 04 1400 hrs

37 - 31784 Lab source

40 - VOID

43 - 32009 Lab source

44 - 170 Lab bkg

45 - 1720 Source field

46 - 142 Field BKG

47 - 11465 Source

Stop 20 NOV 1410 hrs

#5

Start time 0735 hrs 20 NOV

#50 - 1765 Source field

#51 145 F. BKG

#52 141 F. BKG VOID

#53 1025 Source out 1045 hrs 20 NOV 04

sto

RB-3-D

Log # 56
1715 Source
58
59
72
74
81
82
83
84
97
102

	X	Y
	n/a	n/a
11	64	37.1
12	85.8	33
13	90	25
14	113	32
15	110	2.5
16	88	4
17	85	18
18	70	11
19	51	25
20	90	36

	Fixed Points
11	136
12	135
13	143
14	133
15	121
16	130
17	143
18	144
19	171
20	141

Inst # 202476

Ludlum Measurements, Inc.  
Model 2360 Log Data

Date: 12/7/2004  
Time: 9:17:35 AM

Header 1: Joe Kozyra  
Header 2: Serial#202476  
Header 3: DetSer#208667  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: RB-3-D  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/07/2004  
Model 2360 Time: 08:40:36  
Sample Number: 0011

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
R- Ratemeter  
S- Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	11/03/04	08:50:33	000000	000177	S 001.0	Lab Background
0002	11/03/04	08:53:16	000002	033337	S 001.0	Lab Source
0003	11/03/04	09:09:04	000002	001555	S 001.0	Field Source
0004	11/03/04	09:10:39	000000	000173	S 001.0	Field Background
0005	11/03/04	11:58:46	000000	000134	S 001.0	Void
0006	11/03/04	16:16:58	000002	001577	S 001.0	Field Source
0007	11/04/04	09:53:16	000000	000164	S 001.0	Lab Background
0008	11/04/04	09:54:27	000004	033863	S 001.0	Lab Source
0009	11/04/04	12:23:05	000002	001504	S 001.0	Field Source
0010	11/04/04	12:25:12	000000	000173	S 001.0	Field Background
0011	11/04/04	14:03:31	000000	000093	S 001.0	RB-3-D
0012	11/04/04	14:05:38	000002	000170	S 001.0	RB-3-D
0013	11/04/04	14:09:09	000002	000078	S 001.0	RB-3-D
0014	11/04/04	14:16:00	000000	000151	S 001.0	RB-3-D
0015	11/04/04	14:18:23	000003	000115	S 001.0	RB-3-D
0016	11/04/04	14:20:28	000001	000095	S 001.0	RB-3-D
0017	11/04/04	14:22:27	000002	000117	S 001.0	RB-3-D
0018	11/04/04	14:25:26	000000	000105	S 001.0	RB-3-D
0019	11/04/04	16:28:40	000000	000131	S 001.0	RB-3-D
0020	11/04/04	17:43:43	000002	001596	S 001.0	Field Source
0021	11/08/04	08:17:37	000000	000156	S 001.0	Lab Background
0022	11/08/04	08:20:20	000002	033458	S 001.0	Lab Source
0023	11/08/04	08:31:47	000000	001657	S 001.0	Field Source
0024	11/08/04	08:34:34	000000	000187	S 001.0	Field Background
0025	11/09/04	08:19:54	000000	000198	S 001.0	Lab Background
0026	11/09/04	08:21:08	000001	033339	S 001.0	Lab Source
0027	11/09/04	08:54:08	000002	001529	S 001.0	Field Source
0028	11/09/04	08:57:15	000000	000151	S 001.0	Field Background
0029	11/09/04	10:52:43	000000	001526	S 001.0	Field Source
0030	11/09/04	14:18:38	000001	000123	S 001.0	Field Background
0031	11/09/04	14:20:59	000002	001575	S 001.0	Field Source
0032	11/09/04	17:51:04	000000	000112	S 001.0	Field Background
0033	11/09/04	17:52:44	000002	001633	S 001.0	Field Source
0034	11/10/04	08:28:09	000000	000213	S 001.0	Lab Background

J35 11/10/04 08:31:10 000001 033604 S 001.0 Lab Source  
J36 11/10/04 08:36:42 000003 001628 S 001.0 Field Source  
J37 11/10/04 08:47:34 000001 000153 S 001.0 Field Background  
J38 11/10/04 11:51:23 000002 000184 S 001.0 Void  
J39 11/10/04 14:17:31 000000 000134 S 001.0 RB-3-D  
J40 11/10/04 17:35:34 000000 000192 S 001.0 Field Background  
J41 11/10/04 17:40:28 000003 001647 S 001.0 Field Source  
J42 11/20/04 14:10:16 000002 011928 S 001.0 Void  
J43 11/20/04 14:12:05 000004 032009 S 001.0 Lab Source  
J44 11/20/04 14:14:14 000000 000170 S 001.0 Lab Background  
J45 11/20/04 14:15:54 000002 001728 S 001.0 Field Source  
J46 11/20/04 14:24:13 000000 000142 S 001.0 Field Background  
J47 11/20/04 15:14:45 000000 001465 S 001.0 Field Source  
J48 11/22/04 08:40:48 000002 000149 S 001.0 Lab Background  
J49 11/22/04 08:42:19 000002 033774 S 001.0 Lab Source  
J50 11/22/04 08:45:05 000002 001765 S 001.0 Field Source  
J51 11/22/04 09:15:17 000001 000145 S 001.0 Field Background  
J52 11/22/04 19:26:49 000001 000141 S 001.0 Void  
J53 11/22/04 19:34:21 000003 001825 S 001.0 Field Source  
J54 11/24/04 08:45:17 000001 000204 S 001.0 Lab Background  
J55 11/24/04 08:47:42 000003 033638 S 001.0 Lab Source  
J56 11/24/04 10:04:30 000000 001715 S 001.0 Field Source  
J57 11/24/04 10:09:51 000000 000126 S 001.0 Field Background  
J58 11/24/04 11:12:28 000001 000136 S 001.0 RB-3-D  
J59 11/24/04 17:20:12 000000 000135 S 001.0 RB-3-D  
J60 11/24/04 18:18:26 000001 001736 S 001.0 Field Source  
J61 11/25/04 10:37:13 000001 004309 S 001.0 Void  
J62 11/25/04 10:39:58 000002 010806 S 001.0 Void  
J63 11/25/04 10:41:58 000006 032447 S 001.0 Field Source  
J64 11/26/04 08:26:09 000000 000210 S 001.0 Lab Background  
J65 11/26/04 08:38:02 000001 033484 S 001.0 Lab Source  
J66 11/26/04 09:09:31 000000 002016 S 001.0 Field Source  
J67 11/27/04 08:42:31 000000 000156 S 001.0 Field Background  
J68 11/29/04 09:04:28 000000 000154 S 001.0 Lab Background  
J69 11/29/04 09:07:03 000003 033437 S 001.0 Lab Source  
J70 11/29/04 09:10:28 000003 001695 S 001.0 Field Source  
J71 11/29/04 09:56:24 000001 000178 S 001.0 Field Background  
J72 11/29/04 09:58:06 000002 000143 S 001.0 RB-3-D  
J73 11/29/04 11:27:13 000000 000198 S 001.0 Void  
J74 11/29/04 15:49:23 000001 000133 S 001.0 RB-3-D  
J75 11/29/04 19:26:42 000001 000183 S 001.0 Field Background  
J76 11/29/04 19:35:55 000003 001558 S 001.0 Field Source  
J77 11/30/04 08:24:23 000004 032770 S 001.0 Lab Source  
J78 11/30/04 08:29:27 000003 001763 S 001.0 Field Source  
J79 11/30/04 08:34:52 000002 000693 S 001.0 Void  
J80 11/30/04 08:38:07 000002 000175 S 001.0 Field Background  
J81 11/30/04 11:12:02 000000 000121 S 001.0 RB-3-D  
J82 11/30/04 12:24:27 000000 000130 S 001.0 RB-3-D  
J83 11/30/04 15:09:35 000000 000143 S 001.0 RB-3-D  
J84 11/30/04 16:28:33 000000 000144 S 001.0 RB-3-D  
J85 11/30/04 18:52:37 000001 000165 S 001.0 Field Background  
J86 11/30/04 18:57:03 000001 001436 S 001.0 Field Source  
J87 12/01/04 07:50:21 000002 033391 S 001.0 Lab Source  
J88 12/04/04 08:21:59 000000 000179 S 001.0 Lab Background  
J89 12/04/04 08:29:43 000004 034785 S 001.0 Lab Source  
J90 12/04/04 08:32:02 000007 001687 S 001.0 Field Source  
J91 12/04/04 08:37:11 000004 000129 S 001.0 Field Background  
J92 12/04/04 15:35:06 000003 001730 S 001.0 Field Source  
J93 11/06/04 11:47:10 000001 000192 S 001.0 Lab Background  
J94 11/06/04 11:51:40 000001 032526 S 001.0 Lab Source  
J95 11/06/04 15:10:19 000000 001635 S 001.0 Field Source  
J96 11/06/04 15:17:47 000000 000112 S 001.0 Field Background  
J97 11/06/04 16:18:36 000009 000171 S 001.0 RB-3-D  
J98 11/06/04 16:32:49 000000 001647 S 001.0 Field Source  
J99 11/07/04 07:30:15 000000 002049 S 001.0 Field Source  
J100 11/07/04 07:37:43 000000 000143 S 001.0 Field Background  
J101 11/07/04 08:06:55 000000 000141 S 001.0 RB-3-D  
J102 11/07/04 08:34:26 000001 001606 S 001.0 Field Source

S



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
7	Smear 1	12/07/04	10:42:08	RB-3-D	Final Status Survey	12/07/04	10:42:08	1.000	1.00
8	Smear 2	12/07/04	10:40:49	RB-3-D	Final Status Survey	12/07/04	10:40:49	1.000	1.00
9	Smear 3	12/07/04	10:39:29	RB-3-D	Final Status Survey	12/07/04	10:39:29	1.000	1.00
10	Smear 4	12/07/04	10:38:09	RB-3-D	Final Status Survey	12/07/04	10:38:09	1.000	1.00
11	Smear 5	12/07/04	10:36:49	RB-3-D	Final Status Survey	12/07/04	10:36:49	1.000	1.00
12	Smear 6	12/07/04	10:35:29	RB-3-D	Final Status Survey	12/07/04	10:35:29	1.000	1.00
13	Smear 7	12/07/04	10:34:10	RB-3-D	Final Status Survey	12/07/04	10:34:10	1.000	1.00
14	Smear 8	12/07/04	10:32:50	RB-3-D	Final Status Survey	12/07/04	10:32:50	1.000	1.00
15	Smear 9	12/07/04	10:31:30	RB-3-D	Final Status Survey	12/07/04	10:31:30	1.000	1.00
16	Smear 10	12/07/04	10:30:11	RB-3-D	Final Status Survey	12/07/04	10:30:11	1.000	1.00
17	Smear 11	12/07/04	10:28:51	RB-3-D	Final Status Survey	12/07/04	10:28:51	1.000	1.00
18	Smear 12	12/07/04	10:27:31	RB-3-D	Final Status Survey	12/07/04	10:27:31	1.000	1.00
19	Smear 13	12/07/04	10:26:12	RB-3-D	Final Status Survey	12/07/04	10:26:12	1.000	1.00
20	Smear 14	12/07/04	10:24:52	RB-3-D	Final Status Survey	12/07/04	10:24:52	1.000	1.00
21	Smear 15	12/07/04	10:23:32	RB-3-D	Final Status Survey	12/07/04	10:23:32	1.000	1.00
22	Smear 16	12/07/04	10:22:13	RB-3-D	Final Status Survey	12/07/04	10:22:13	1.000	1.00
23	Smear 17	12/07/04	10:20:53	RB-3-D	Final Status Survey	12/07/04	10:20:53	1.000	1.00
24	Smear 18	12/07/04	10:19:34	RB-3-D	Final Status Survey	12/07/04	10:19:34	1.000	1.00
25	Smear 19	12/07/04	10:18:14	RB-3-D	Final Status Survey	12/07/04	10:18:14	1.000	1.00
26	Smear 20	12/07/04	10:16:55	RB-3-D	Final Status Survey	12/07/04	10:16:55	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-07-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 24.91 LLD: 14.35 dpm				Bkg: 0.4 cpm %Eff: 44.93 LLD: 10.74 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
7	Smear 1	12/07/04	10:42:08	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
8	Smear 2	12/07/04	10:40:49	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
9	Smear 3	12/07/04	10:39:29	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
10	Smear 4	12/07/04	10:38:09	0.00	-0.07	-0.27	14.35	3.00	2.60	5.79	10.74
11	Smear 5	12/07/04	10:36:49	0.00	-0.07	-0.27	14.35	3.00	2.60	5.79	10.74
12	Smear 6	12/07/04	10:35:29	0.00	-0.07	-0.27	14.35	4.00	3.60	8.01	10.74
13	Smear 7	12/07/04	10:34:10	0.00	-0.07	-0.27	14.35	2.00	1.60	3.56	10.74
14	Smear 8	12/07/04	10:32:50	0.00	-0.07	-0.27	14.35	5.00	4.60	10.24	10.74
15	Smear 9	12/07/04	10:31:30	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
16	Smear 10	12/07/04	10:30:11	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
17	Smear 11	12/07/04	10:28:51	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
18	Smear 12	12/07/04	10:27:31	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
19	Smear 13	12/07/04	10:26:12	0.00	-0.07	-0.27	14.35	1.00	0.60	1.34	10.74
20	Smear 14	12/07/04	10:24:52	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
21	Smear 15	12/07/04	10:23:32	1.00	0.93	3.75	14.35	0.00	-0.40	-0.89	10.74
22	Smear 16	12/07/04	10:22:13	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
23	Smear 17	12/07/04	10:20:53	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
24	Smear 18	12/07/04	10:19:34	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
25	Smear 19	12/07/04	10:18:14	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74
26	Smear 20	12/07/04	10:16:55	0.00	-0.07	-0.27	14.35	0.00	-0.40	-0.89	10.74

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

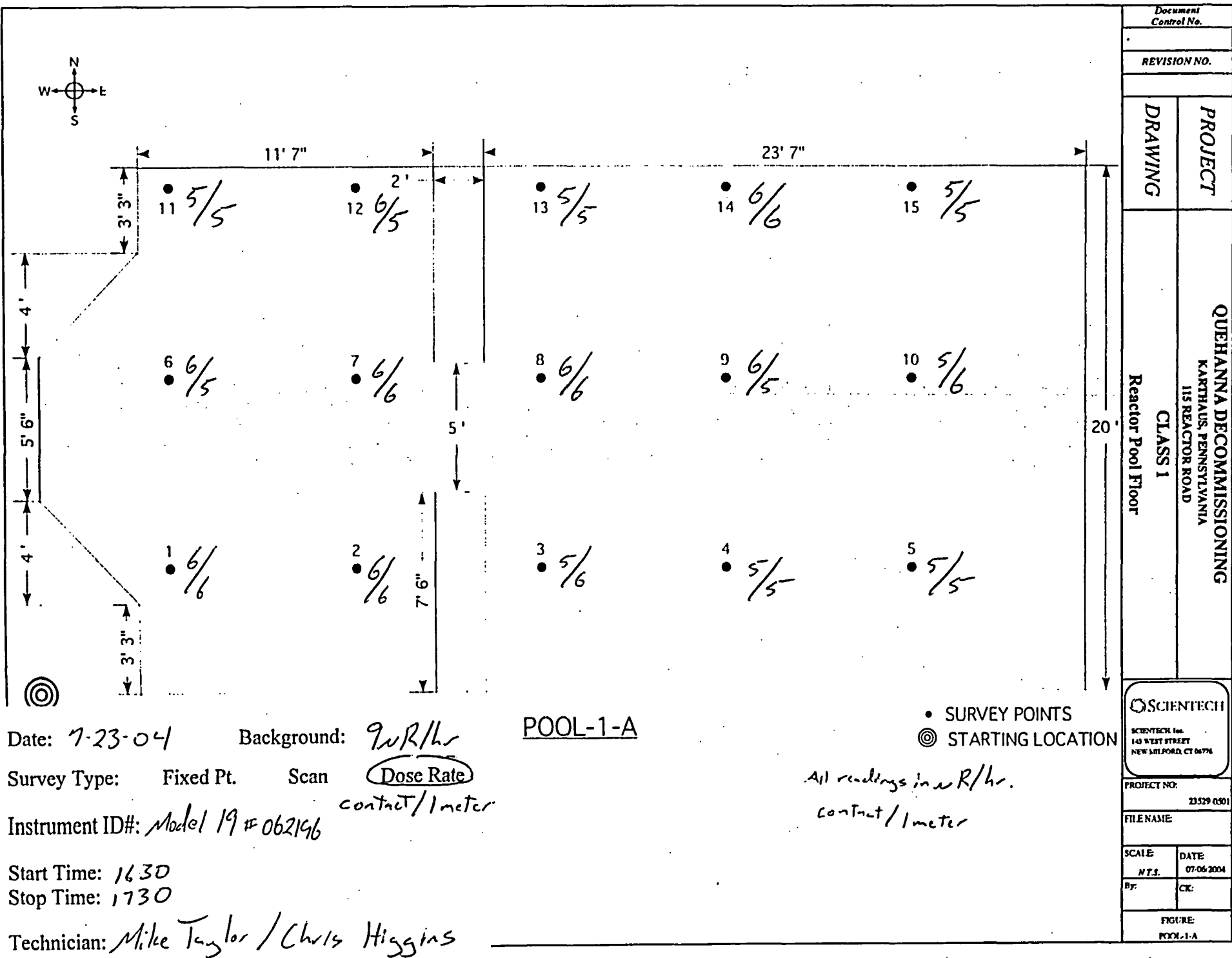
Date: 12-07-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**POOL-1-A Reactor Pool**



POOL-1-A Beta/Gamma Results

Log #
86 Source
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101

	X	Y
	n/a	n/a
1	5.1	4.6
2	12.4	4.6
3	19.7	4.6
4	27.0	4.6
5	34.3	4.6
6	5.1	11.9
7	12.4	11.9
8	19.7	11.9
9	27.0	11.9
10	34.3	11.9
11	5.1	19.2
12	12.4	19.2
13	19.7	19.2
14	27.0	19.2
15	34.3	19.2

L (ft)= 7.3

A (ft<sup>2</sup>)= 736

Fixed Points	Ave. (Scan)	Max. (Scan)
35329	n/a	n/a
135	140	200
95	80	140
129	120	200
158	160	220
150	140	220
121	120	180
138	140	220
146	140	200
140	140	200
157	140	220
112	100	160
114	100	180
122	120	180
129	120	200
138	120	200

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

C 7/24/2004  
Ti. 10:19:10 AM

Header 1: Chris Higgins  
Header 2: Serial#202475  
Header 3: DetSer#PR208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Rx Pool  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 07/24/2004  
Model 2360 Time: 09:52:50  
Sample Number: 0102

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 050000  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 050000  
Alpha + Beta Scaler Alarm: 050000

Count Time  
Ratemeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

---

0001	07/23/04	10:19:32	000000	035167	S 001.0	Source Check
0002	07/23/04	11:31:54	000000	000091	S 001.0	Pool 1-B
0003	07/23/04	11:35:24	000001	000105	S 001.0	Pool 1-B
0004	07/23/04	11:37:24	000018	000125	S 001.0	Pool 1-B
0005	07/23/04	11:40:40	000000	000086	S 001.0	Pool 1-B
0006	07/23/04	11:50:44	000001	000095	S 001.0	Pool 1-B
0007	07/23/04	11:53:26	000000	000100	S 001.0	Pool 1-B
0008	07/23/04	11:56:01	000001	000111	S 001.0	Pool 1-B
0009	07/23/04	12:00:49	000001	000100	S 001.0	Pool 1-B
0010	07/23/04	12:02:42	000001	000098	S 001.0	Pool 1-B
0011	07/23/04	12:05:25	000003	000106	S 001.0	Pool 1-B
0012	07/23/04	12:08:12	000001	000132	S 001.0	Pool 1-B
0013	07/23/04	12:11:58	000002	000151	S 001.0	Pool 1-B
0014	07/23/04	12:13:42	000000	000139	S 001.0	Pool 1-B
0015	07/23/04	12:16:40	000001	000133	S 001.0	Pool 1-B
0016	07/23/04	12:19:23	000000	000115	S 001.0	Pool 1-B
0017	07/23/04	12:22:09	000000	000099	S 001.0	Pool 1-B
0018	07/23/04	12:26:02	000002	034396	S 001.0	Source Check
0019	07/23/04	12:28:52	000000	000086	S 001.0	Pool 1-C
0020	07/23/04	12:31:04	000001	000094	S 001.0	Pool 1-C
0021	07/23/04	12:33:14	000000	000090	S 001.0	Pool 1-C
0022	07/23/04	12:35:31	000000	000090	S 001.0	Pool 1-C
0023	07/23/04	12:40:11	000003	000115	S 001.0	Pool 1-C
0024	07/23/04	12:42:37	000001	000120	S 001.0	Pool 1-C
0025	07/23/04	12:45:05	000000	000128	S 001.0	Pool 1-C
0026	07/23/04	12:48:06	000000	000126	S 001.0	Pool 1-C
0027	07/23/04	12:50:24	000000	000114	S 001.0	Pool 1-C
0028	07/23/04	12:52:52	000002	000100	S 001.0	Pool 1-C
0029	07/23/04	12:57:03	000002	000104	S 001.0	Pool 1-C
0030	07/23/04	13:00:21	000005	000118	S 001.0	Pool 1-C
0031	07/23/04	13:02:43	000001	000127	S 001.0	Pool 1-C
0032	07/23/04	13:07:00	000003	000132	S 001.0	Pool 1-C
0033	07/23/04	13:10:47	000001	000109	S 001.0	Pool 1-C
0034	07/23/04	13:14:08	000001	000102	S 001.0	Pool 1-C

035 07/23/04 13:17:52 000000 034111 S 001.0 Source Check  
036 07/23/04 13:20:20 000000 000104 S 001.0 Pool 1-D  
037 07/23/04 13:22:44 000001 000080 S 001.0 Pool 1-D  
038 07/23/04 13:25:21 000001 000109 S 001.0 Pool 1-D  
039 07/23/04 13:27:44 000001 000091 S 001.0 Pool 1-D  
040 07/23/04 13:34:14 000001 000071 S 001.0 Pool 1-D  
041 07/23/04 13:38:11 000001 000093 S 001.0 Pool 1-D  
042 07/23/04 13:41:45 000000 000123 S 001.0 Pool 1-D  
043 07/23/04 13:47:31 000001 000114 S 001.0 Pool 1-D  
044 07/23/04 13:52:10 000000 000102 S 001.0 Pool 1-D  
045 07/23/04 13:56:19 000002 000117 S 001.0 Pool 1-D  
046 07/23/04 14:01:15 000000 000112 S 001.0 Pool 1-D  
047 07/23/04 14:05:36 000000 000118 S 001.0 Pool 1-D  
048 07/23/04 14:09:38 000001 000101 S 001.0 Pool 1-D  
049 07/23/04 14:14:31 000001 000099 S 001.0 Pool 1-D  
050 07/23/04 14:18:17 000000 000110 S 001.0 Pool 1-D  
051 07/23/04 14:21:21 000001 000111 S 001.0 Pool 1-D  
052 07/23/04 14:30:48 000000 033953 S 001.0 Source Check  
053 07/23/04 14:34:35 000000 000097 S 001.0 Pool 1-E  
054 07/23/04 14:37:59 000001 000118 S 001.0 Pool 1-E  
055 07/23/04 14:42:03 000000 000110 S 001.0 Pool 1-E  
056 07/23/04 14:45:58 000001 000107 S 001.0 Pool 1-E  
057 07/23/04 14:49:21 000000 000088 S 001.0 Pool 1-E  
058 07/23/04 14:51:50 000000 000124 S 001.0 Pool 1-E  
059 07/23/04 14:56:19 000003 000106 S 001.0 Pool 1-E  
060 07/23/04 14:58:29 000001 000133 S 001.0 Pool 1-E  
061 07/23/04 15:03:36 000000 000140 S 001.0 Pool 1-E  
062 07/23/04 15:06:16 000001 000128 S 001.0 Pool 1-E  
063 07/23/04 15:11:18 000001 000113 S 001.0 Pool 1-E  
064 07/23/04 15:14:26 000000 000110 S 001.0 Pool 1-E  
065 07/23/04 15:18:58 000004 000105 S 001.0 Pool 1-E  
066 07/23/04 15:25:04 000001 000114 S 001.0 Pool 1-E  
067 07/23/04 15:27:04 000001 000106 S 001.0 Pool 1-E  
068 07/23/04 15:31:43 000001 000121 S 001.0 Pool 1-E  
069 07/23/04 15:34:45 000000 035271 S 001.0 Source Check  
070 07/23/04 15:39:44 000002 000081 S 001.0 Pool 1-F  
071 07/23/04 15:41:45 000001 000101 S 001.0 Pool 1-F  
072 07/23/04 15:47:45 000000 000089 S 001.0 Pool 1-F  
073 07/23/04 15:52:38 000001 000089 S 001.0 Pool 1-F  
074 07/23/04 15:57:58 000001 000099 S 001.0 Pool 1-F  
075 07/23/04 16:01:12 000001 000113 S 001.0 Pool 1-F  
076 07/23/04 16:04:00 000000 000145 S 001.0 Pool 1-F  
077 07/23/04 16:07:49 000000 000126 S 001.0 Pool 1-F  
078 07/23/04 16:10:34 000002 000122 S 001.0 Pool 1-F  
079 07/23/04 16:14:13 000002 000097 S 001.0 Pool 1-F  
080 07/23/04 16:17:11 000001 000098 S 001.0 Pool 1-F  
081 07/23/04 16:20:40 000001 000105 S 001.0 Pool 1-F  
082 07/23/04 16:23:01 000000 000140 S 001.0 Pool 1-F  
083 07/23/04 16:26:03 000001 000124 S 001.0 Pool 1-F  
084 07/23/04 16:29:44 000001 000095 S 001.0 Pool 1-F  
085 07/23/04 16:33:31 000001 000087 S 001.0 Pool 1-F  
086 07/23/04 16:35:07 000000 035329 S 001.0 Source Check  
087 07/23/04 16:39:33 000001 000135 S 001.0 Pool 1-A  
088 07/23/04 16:42:11 000000 000095 S 001.0 Pool 1-A  
089 07/23/04 16:45:08 000000 000129 S 001.0 Pool 1-A  
090 07/23/04 16:49:37 000001 000158 S 001.0 Pool 1-A  
091 07/23/04 16:52:03 000002 000150 S 001.0 Pool 1-A  
092 07/23/04 16:55:06 000001 000121 S 001.0 Pool 1-A  
093 07/23/04 16:57:18 000000 000138 S 001.0 Pool 1-A  
094 07/23/04 16:59:40 000001 000146 S 001.0 Pool 1-A  
095 07/23/04 17:01:58 000000 000140 S 001.0 Pool 1-A  
096 07/23/04 17:04:41 000001 000157 S 001.0 Pool 1-A  
097 07/23/04 17:07:47 000001 000112 S 001.0 Pool 1-A  
098 07/23/04 17:11:17 000000 000114 S 001.0 Pool 1-A  
099 07/23/04 17:13:12 000000 000122 S 001.0 Pool 1-A  
100 07/23/04 17:15:22 000000 000129 S 001.0 Pool 1-A  
101 07/23/04 17:18:39 000002 000138 S 001.0 Pool 1-A

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	07/24/04	11:58:08	Rx Pool-1-A	Final Status Survey	07/24/04	11:58:08	1.000	1.00
2	Smear 2	07/24/04	11:56:47	Rx Pool-1-A	Final Status Survey	07/24/04	11:56:47	1.000	1.00
3	Smear 3	07/24/04	11:55:26	Rx Pool-1-A	Final Status Survey	07/24/04	11:55:26	1.000	1.00
4	Smear 4	07/24/04	11:54:05	Rx Pool-1-A	Final Status Survey	07/24/04	11:54:05	1.000	1.00
5	Smear 5	07/24/04	11:52:44	Rx Pool-1-A	Final Status Survey	07/24/04	11:52:44	1.000	1.00
6	Smear 6	07/24/04	11:51:23	Rx Pool-1-A	Final Status Survey	07/24/04	11:51:23	1.000	1.00
7	Smear 7	07/24/04	11:50:02	Rx Pool-1-A	Final Status Survey	07/24/04	11:50:02	1.000	1.00
8	Smear 8	07/24/04	11:48:42	Rx Pool-1-A	Final Status Survey	07/24/04	11:48:42	1.000	1.00
9	Smear 9	07/24/04	11:47:21	Rx Pool-1-A	Final Status Survey	07/24/04	11:47:21	1.000	1.00
10	Smear 10	07/24/04	11:46:00	Rx Pool-1-A	Final Status Survey	07/24/04	11:46:00	1.000	1.00
11	Smear 11	07/24/04	11:44:39	Rx Pool-1-A	Final Status Survey	07/24/04	11:44:39	1.000	1.00
12	Smear 12	07/24/04	11:43:18	Rx Pool-1-A	Final Status Survey	07/24/04	11:43:18	1.000	1.00
13	Smear 13	07/24/04	11:41:57	Rx Pool-1-A	Final Status Survey	07/24/04	11:41:57	1.000	1.00
14	Smear 14	07/24/04	11:40:37	Rx Pool-1-A	Final Status Survey	07/24/04	11:40:37	1.000	1.00
15	Smear 15	07/24/04	11:39:16	Rx Pool-1-A	Final Status Survey	07/24/04	11:39:16	1.000	1.00
16	Smear 1	07/24/04	11:37:55	Rx Pool-1-B	Final Status Survey	07/24/04	11:37:55	1.000	1.00
17	Smear 2	07/24/04	11:36:34	Rx Pool-1-B	Final Status Survey	07/24/04	11:36:34	1.000	1.00
18	Smear 3	07/24/04	11:35:14	Rx Pool-1-B	Final Status Survey	07/24/04	11:35:14	1.000	1.00
19	Smear 4	07/24/04	11:33:53	Rx Pool-1-B	Final Status Survey	07/24/04	11:33:53	1.000	1.00
20	Smear 5	07/24/04	11:32:32	Rx Pool-1-B	Final Status Survey	07/24/04	11:32:32	1.000	1.00
21	Smear 6	07/24/04	11:31:11	Rx Pool-1-B	Final Status Survey	07/24/04	11:31:11	1.000	1.00
22	Smear 7	07/24/04	11:29:50	Rx Pool-1-B	Final Status Survey	07/24/04	11:29:50	1.000	1.00
23	Smear 8	07/24/04	11:28:30	Rx Pool-1-B	Final Status Survey	07/24/04	11:28:30	1.000	1.00
24	Smear 9	07/24/04	11:27:09	Rx Pool-1-B	Final Status Survey	07/24/04	11:27:09	1.000	1.00
25	Smear 10	07/24/04	11:25:49	Rx Pool-1-B	Final Status Survey	07/24/04	11:25:49	1.000	1.00
26	Smear 11	07/24/04	11:24:28	Rx Pool-1-B	Final Status Survey	07/24/04	11:24:28	1.000	1.00
27	Smear 12	07/24/04	11:23:07	Rx Pool-1-B	Final Status Survey	07/24/04	11:23:07	1.000	1.00
28	Smear 13	07/24/04	11:21:46	Rx Pool-1-B	Final Status Survey	07/24/04	11:21:46	1.000	1.00
29	Smear 14	07/24/04	11:20:25	Rx Pool-1-B	Final Status Survey	07/24/04	11:20:25	1.000	1.00
30	Smear 15	07/24/04	11:19:05	Rx Pool-1-B	Final Status Survey	07/24/04	11:19:05	1.000	1.00
31	Smear 16	07/24/04	11:17:44	Rx Pool-1-B	Final Status Survey	07/24/04	11:17:44	1.000	1.00
32	Smear 1	07/24/04	11:16:23	Rx Pool-1-C	Final Status Survey	07/24/04	11:16:23	1.000	1.00
33	Smear 2	07/24/04	11:15:03	Rx Pool-1-C	Final Status Survey	07/24/04	11:15:03	1.000	1.00
34	Smear 3	07/24/04	11:13:42	Rx Pool-1-C	Final Status Survey	07/24/04	11:13:42	1.000	1.00
35	Smear 4	07/24/04	11:12:21	Rx Pool-1-C	Final Status Survey	07/24/04	11:12:21	1.000	1.00
36	Smear 5	07/24/04	11:11:01	Rx Pool-1-C	Final Status Survey	07/24/04	11:11:01	1.000	1.00
37	Smear 6	07/24/04	11:09:40	Rx Pool-1-C	Final Status Survey	07/24/04	11:09:40	1.000	1.00
38	Smear 7	07/24/04	11:08:19	Rx Pool-1-C	Final Status Survey	07/24/04	11:08:19	1.000	1.00
39	Smear 8	07/24/04	11:06:59	Rx Pool-1-C	Final Status Survey	07/24/04	11:06:59	1.000	1.00
40	Smear 9	07/24/04	11:05:38	Rx Pool-1-C	Final Status Survey	07/24/04	11:05:38	1.000	1.00
41	Smear 10	07/24/04	11:04:18	Rx Pool-1-C	Final Status Survey	07/24/04	11:04:18	1.000	1.00
42	Smear 11	07/24/04	11:02:57	Rx Pool-1-C	Final Status Survey	07/24/04	11:02:57	1.000	1.00
43	Smear 12	07/24/04	11:01:36	Rx Pool-1-C	Final Status Survey	07/24/04	11:01:36	1.000	1.00
44	Smear 13	07/24/04	11:00:16	Rx Pool-1-C	Final Status Survey	07/24/04	11:00:16	1.000	1.00
45	Smear 14	07/24/04	10:58:55	Rx Pool-1-C	Final Status Survey	07/24/04	10:58:55	1.000	1.00
46	Smear 15	07/24/04	10:57:35	Rx Pool-1-C	Final Status Survey	07/24/04	10:57:35	1.000	1.00
47	Smear 16	07/24/04	10:56:14	Rx Pool-1-C	Final Status Survey	07/24/04	10:56:14	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): 

Date: 7-24-04

Reviewed By (print): Mike Taylor

Reviewed By (sign): 

Date: 7-24-04



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 27.91 LLD: 12.8 dpm				Bkg: 0.4 cpm %Eff: 44.19 LLD: 10.92 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	07/24/04	11:58:08	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
2	Smear 2	07/24/04	11:56:47	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
3	Smear 3	07/24/04	11:55:26	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
4	Smear 4	07/24/04	11:54:05	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
5	Smear 5	07/24/04	11:52:44	0.00	-0.07	-0.24	12.80	12.00	11.60	26.25	10.92
6	Smear 6	07/24/04	11:51:23	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
7	Smear 7	07/24/04	11:50:02	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
8	Smear 8	07/24/04	11:48:42	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
9	Smear 9	07/24/04	11:47:21	0.00	-0.07	-0.24	12.80	5.00	4.60	10.41	10.92
10	Smear 10	07/24/04	11:46:00	0.00	-0.07	-0.24	12.80	4.00	3.60	8.15	10.92
11	Smear 11	07/24/04	11:44:39	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
12	Smear 12	07/24/04	11:43:18	0.00	-0.07	-0.24	12.80	4.00	3.60	8.15	10.92
13	Smear 13	07/24/04	11:41:57	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
14	Smear 14	07/24/04	11:40:37	0.00	-0.07	-0.24	12.80	5.00	4.60	10.41	10.92
15	Smear 15	07/24/04	11:39:16	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
16	Smear 1	07/24/04	11:37:55	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
17	Smear 2	07/24/04	11:36:34	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
18	Smear 3	07/24/04	11:35:14	2.00	1.93	6.93	12.80	0.00	-0.40	-0.91	10.92
19	Smear 4	07/24/04	11:33:53	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
20	Smear 5	07/24/04	11:32:32	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
21	Smear 6	07/24/04	11:31:11	0.00	-0.07	-0.24	12.80	8.00	7.60	17.20	10.92
22	Smear 7	07/24/04	11:29:50	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
23	Smear 8	07/24/04	11:28:30	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
24	Smear 9	07/24/04	11:27:09	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
25	Smear 10	07/24/04	11:25:49	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
26	Smear 11	07/24/04	11:24:28	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
27	Smear 12	07/24/04	11:23:07	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
28	Smear 13	07/24/04	11:21:46	0.00	-0.07	-0.24	12.80	4.00	3.60	8.15	10.92
29	Smear 14	07/24/04	11:20:25	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
30	Smear 15	07/24/04	11:19:05	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
31	Smear 16	07/24/04	11:17:44	0.00	-0.07	-0.24	12.80	4.00	3.60	8.15	10.92
32	Smear 1	07/24/04	11:16:23	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
33	Smear 2	07/24/04	11:15:03	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
34	Smear 3	07/24/04	11:13:42	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
35	Smear 4	07/24/04	11:12:21	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
36	Smear 5	07/24/04	11:11:01	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
37	Smear 6	07/24/04	11:09:40	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
38	Smear 7	07/24/04	11:08:19	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
39	Smear 8	07/24/04	11:06:59	1.00	0.93	3.34	12.80	0.00	-0.40	-0.91	10.92
40	Smear 9	07/24/04	11:05:38	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
41	Smear 10	07/24/04	11:04:18	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
42	Smear 11	07/24/04	11:02:57	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
43	Smear 12	07/24/04	11:01:36	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
44	Smear 13	07/24/04	11:00:16	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
45	Smear 14	07/24/04	10:58:55	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
46	Smear 15	07/24/04	10:57:35	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
47	Smear 16	07/24/04	10:56:14	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92

Technician (print): Chris Higgins

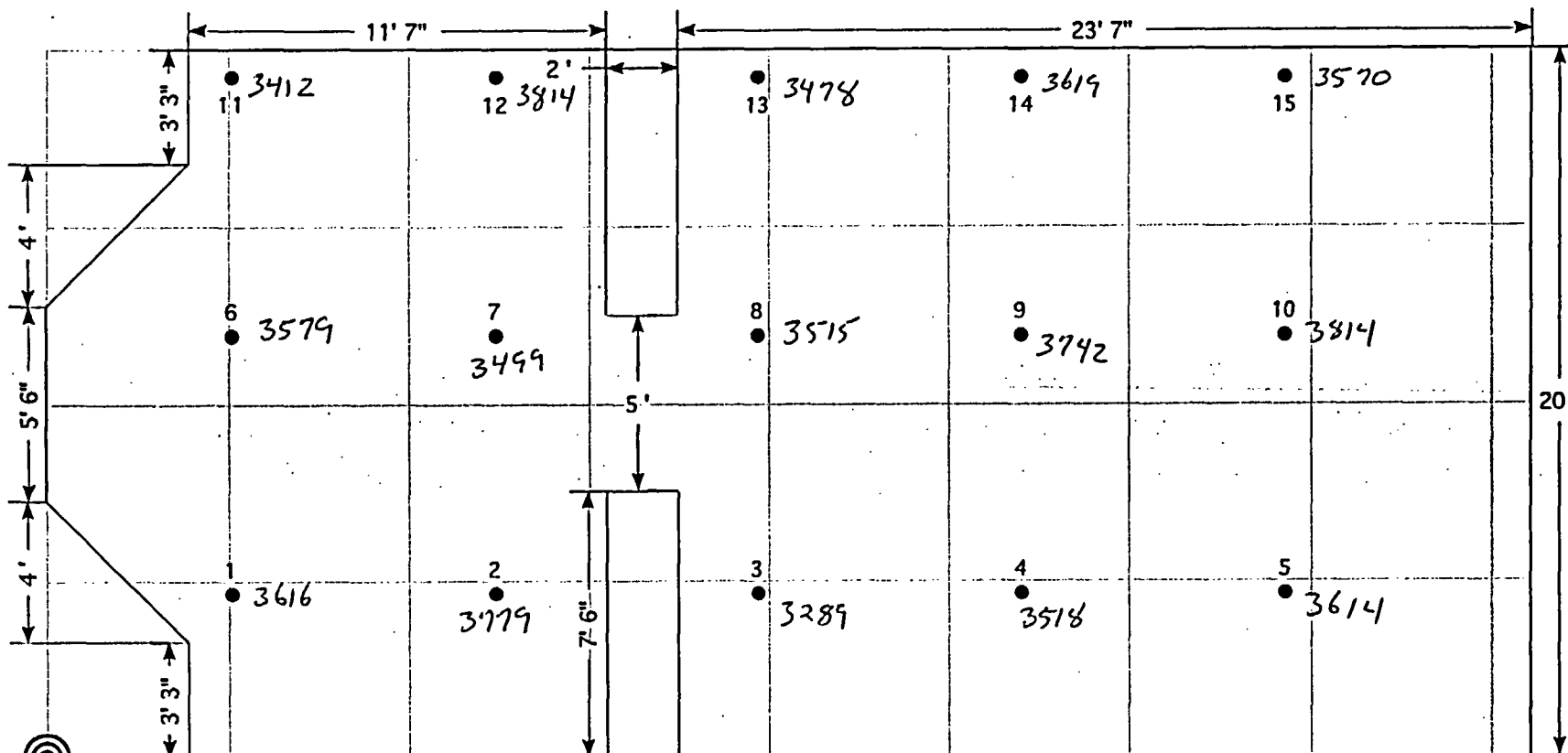
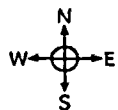
Technician (sign): 

Date: 7-24-04

Reviewed By (print): Mike Taylor

Reviewed By (sign): 

Date: 7-24-04



### POOL-1-A

Gamma Survey

Date: 7-23-04

Background: 511 cpm

Survey Type:

Fixed Pt.

Scan

Dose Rate

Instrument ID#: Model 2350 / 44-2  
# 203445 / # 213337

Start Time: 1630

Stop Time: 1730

Technician: Mike Taylor / Chris Higgins

• SURVEY POINTS

◎ STARTING LOCATION

All readings in cpm.

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Reactor Pool Floor	
SCIENTECH SCIENTECH, Inc. 145 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 21329-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-A	

# POOL-1-A Alpha Results

Log #	Source
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	
101	


	X	Y
	n/a	n/a
1	5.1	4.6
2	12.4	4.6
3	19.7	4.6
4	27.0	4.6
5	34.3	4.6
6	5.1	11.9
7	12.4	11.9
8	19.7	11.9
9	27.0	11.9
10	34.3	11.9
11	5.1	19.2
12	12.4	19.2
13	19.7	19.2
14	27.0	19.2
15	34.3	19.2

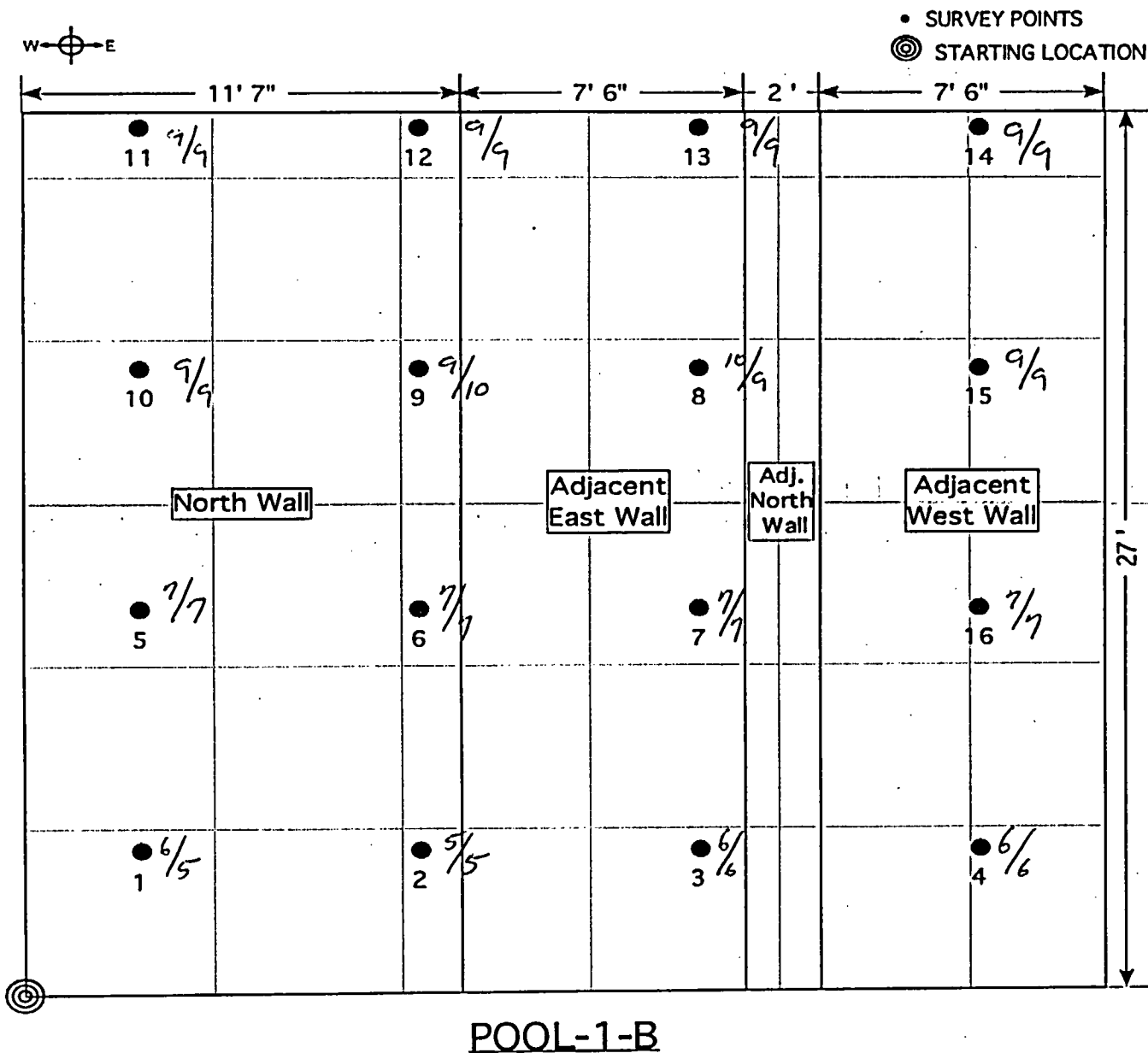
L (ft)= 7.3

A (ft')= 736

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
1	1	3
0	1	3
0	1	3
1	1	3
2	1	3
1	1	3
0	1	3
1	1	3
0	1	3
1	1	3
0	1	3
0	1	3
0	1	3
2	1	3

**POOL-1-B Reactor Pool**

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Reactor Pool North Wall and Adjacent Walls
 <b>SCIENTECH</b> <small>SCIENTECH, Inc. 140 WEST STREET NEW MILFORD, CT 06756</small>	
PROJECT NO: 23529-0301	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-B	



Date: 7-23-04

Background: 92R/h-

All readings in 2R/h-

Survey Type: Fixed Pt. Scan

Dose Rate

contact / 1 meter

Instrument ID#: Model 19 # 062196

Start Time: 1630

Stop Time: 1730

Technician: Mike Taylor / Chris Higgins

# POOL-1-B Beta/Gamma Results

Log #
1 Source
2
3
4
5
6
7
8
17
11
10
9
16
12
13
14
15

	X	Y
	n/a	n/a
1	3.1	4.3
2	10.5	4.3
3	17.9	4.3
4	25.3	4.3
5	3.1	11.7
6	10.5	11.7
7	17.9	11.7
16	25.3	11.7
10	3.1	19.1
9	10.5	19.1
8	17.9	19.1
15	25.3	19.1
11	3.1	26.5
12	10.5	26.5
13	17.9	26.5
14	25.3	26.5

L (ft)= 7.4

A (ft')= 772

Fixed Points	Ave. (Scan)	Max. (Scan)
35167	n/a	n/a
91	80	120
105	80	130
125	100	200
86	80	120
95	100	140
100	100	160
111	110	160
99	100	150
106	120	160
98	130	160
100	100	150
115	120	160
132	120	160
151	160	200
139	160	200
133	140	180

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

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07/24/2004  
10:19:10 AM

Header 1: Chris Higgins  
Header 2: Serial#202475  
Header 3: DetSer#PR208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Rx Pool  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 07/24/2004  
Model 2360 Time: 09:52:50  
Sample Number: 0102

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 050000  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 050000  
Alpha + Beta Scaler Alarm: 050000

Count Time  
Ratemeter  
Scaler

Log Data:

Run Date	Time	Alpha	Beta	UsrTime	Location
				CntTime	

001	07/23/04	10:19:32	000000	035167	S 001.0 Source Check
002	07/23/04	11:31:54	000000	000091	S 001.0 Pool 1-B
003	07/23/04	11:35:24	000001	000105	S 001.0 Pool 1-B
004	07/23/04	11:37:24	000018	000125	S 001.0 Pool 1-B
005	07/23/04	11:40:40	000000	000086	S 001.0 Pool 1-B
006	07/23/04	11:50:44	000001	000095	S 001.0 Pool 1-B
007	07/23/04	11:53:26	000000	000100	S 001.0 Pool 1-B
008	07/23/04	11:56:01	000001	000111	S 001.0 Pool 1-B
009	07/23/04	12:00:49	000001	000100	S 001.0 Pool 1-B
010	07/23/04	12:02:42	000001	000098	S 001.0 Pool 1-B
011	07/23/04	12:05:25	000003	000106	S 001.0 Pool 1-B
012	07/23/04	12:08:12	000001	000132	S 001.0 Pool 1-B
013	07/23/04	12:11:58	000002	000151	S 001.0 Pool 1-B
014	07/23/04	12:13:42	000000	000139	S 001.0 Pool 1-B
015	07/23/04	12:16:40	000001	000133	S 001.0 Pool 1-B
016	07/23/04	12:19:23	000000	000115	S 001.0 Pool 1-B
017	07/23/04	12:22:09	000000	000099	S 001.0 Pool 1-B
018	07/23/04	12:26:02	000002	034396	S 001.0 Source Check
019	07/23/04	12:28:52	000000	000086	S 001.0 Pool 1-C
020	07/23/04	12:31:04	000001	000094	S 001.0 Pool 1-C
021	07/23/04	12:33:14	000000	000090	S 001.0 Pool 1-C
022	07/23/04	12:35:31	000000	000090	S 001.0 Pool 1-C
023	07/23/04	12:40:11	000003	000115	S 001.0 Pool 1-C
024	07/23/04	12:42:37	000001	000120	S 001.0 Pool 1-C
025	07/23/04	12:45:05	000000	000128	S 001.0 Pool 1-C
026	07/23/04	12:48:06	000000	000126	S 001.0 Pool 1-C
027	07/23/04	12:50:24	000000	000114	S 001.0 Pool 1-C
028	07/23/04	12:52:52	000002	000100	S 001.0 Pool 1-C
029	07/23/04	12:57:03	000002	000104	S 001.0 Pool 1-C
030	07/23/04	13:00:21	000005	000118	S 001.0 Pool 1-C
031	07/23/04	13:02:43	000001	000127	S 001.0 Pool 1-C
032	07/23/04	13:07:00	000003	000132	S 001.0 Pool 1-C
033	07/23/04	13:10:47	000001	000109	S 001.0 Pool 1-C

0035 07/23/04 13:17:52 000000 034111 S 001.0 Source Check  
0036 07/23/04 13:20:20 000000 000104 S 001.0 Pool 1-D  
0037 07/23/04 13:22:44 000001 000080 S 001.0 Pool 1-D  
0038 07/23/04 13:25:21 000001 000109 S 001.0 Pool 1-D  
0039 07/23/04 13:27:44 000001 000091 S 001.0 Pool 1-D  
0040 07/23/04 13:34:14 000001 000071 S 001.0 Pool 1-D  
0041 07/23/04 13:38:11 000001 000093 S 001.0 Pool 1-D  
0042 07/23/04 13:41:45 000000 000123 S 001.0 Pool 1-D  
0043 07/23/04 13:47:31 000001 000114 S 001.0 Pool 1-D  
0044 07/23/04 13:52:10 000000 000102 S 001.0 Pool 1-D  
0045 07/23/04 13:56:19 000002 000117 S 001.0 Pool 1-D  
0046 07/23/04 14:01:15 000000 000112 S 001.0 Pool 1-D  
0047 07/23/04 14:05:36 000000 000118 S 001.0 Pool 1-D  
0048 07/23/04 14:09:38 000001 000101 S 001.0 Pool 1-D  
0049 07/23/04 14:14:31 000001 000099 S 001.0 Pool 1-D  
0050 07/23/04 14:18:17 000000 000110 S 001.0 Pool 1-D  
0051 07/23/04 14:21:21 000001 000111 S 001.0 Pool 1-D  
0052 07/23/04 14:30:48 000000 033953 S 001.0 Source Check  
0053 07/23/04 14:34:35 000000 000097 S 001.0 Pool 1-E  
0054 07/23/04 14:37:59 000001 000118 S 001.0 Pool 1-E  
0055 07/23/04 14:42:03 000000 000110 S 001.0 Pool 1-E  
0056 07/23/04 14:45:58 000001 000107 S 001.0 Pool 1-E  
0057 07/23/04 14:49:21 000000 000088 S 001.0 Pool 1-E  
0058 07/23/04 14:51:50 000000 000124 S 001.0 Pool 1-E  
0059 07/23/04 14:56:19 000003 000106 S 001.0 Pool 1-E  
0060 07/23/04 14:58:29 000001 000133 S 001.0 Pool 1-E  
0061 07/23/04 15:03:36 000000 000140 S 001.0 Pool 1-E  
0062 07/23/04 15:06:16 000001 000128 S 001.0 Pool 1-E  
0063 07/23/04 15:11:18 000001 000113 S 001.0 Pool 1-E  
0064 07/23/04 15:14:26 000000 000110 S 001.0 Pool 1-E  
0065 07/23/04 15:18:58 000004 000105 S 001.0 Pool 1-E  
0066 07/23/04 15:25:04 000001 000114 S 001.0 Pool 1-E  
0067 07/23/04 15:27:04 000001 000106 S 001.0 Pool 1-E  
0068 07/23/04 15:31:43 000001 000121 S 001.0 Pool 1-E  
0069 07/23/04 15:34:45 000000 035271 S 001.0 Source Check  
0070 07/23/04 15:39:44 000002 000081 S 001.0 Pool 1-F  
0071 07/23/04 15:41:45 000001 000101 S 001.0 Pool 1-F  
0072 07/23/04 15:47:45 000000 000089 S 001.0 Pool 1-F  
0073 07/23/04 15:52:38 000001 000089 S 001.0 Pool 1-F  
0074 07/23/04 15:57:58 000001 000099 S 001.0 Pool 1-F  
0075 07/23/04 16:01:12 000001 000113 S 001.0 Pool 1-F  
0076 07/23/04 16:04:00 000000 000145 S 001.0 Pool 1-F  
0077 07/23/04 16:07:49 000000 000126 S 001.0 Pool 1-F  
0078 07/23/04 16:10:34 000002 000122 S 001.0 Pool 1-F  
0079 07/23/04 16:14:13 000002 000097 S 001.0 Pool 1-F  
0080 07/23/04 16:17:11 000001 000098 S 001.0 Pool 1-F  
0081 07/23/04 16:20:40 000001 000105 S 001.0 Pool 1-F  
0082 07/23/04 16:23:01 000000 000140 S 001.0 Pool 1-F  
0083 07/23/04 16:26:03 000001 000124 S 001.0 Pool 1-F  
0084 07/23/04 16:29:44 000001 000095 S 001.0 Pool 1-F  
0085 07/23/04 16:33:31 000001 000087 S 001.0 Pool 1-F  
0086 07/23/04 16:35:07 000000 035329 S 001.0 Source Check  
0087 07/23/04 16:39:33 000001 000135 S 001.0 Pool 1-A  
0088 07/23/04 16:42:11 000000 000095 S 001.0 Pool 1-A  
0089 07/23/04 16:45:08 000000 000129 S 001.0 Pool 1-A  
0090 07/23/04 16:49:37 000001 000158 S 001.0 Pool 1-A  
0091 07/23/04 16:52:03 000002 000150 S 001.0 Pool 1-A  
0092 07/23/04 16:55:06 000001 000121 S 001.0 Pool 1-A  
0093 07/23/04 16:57:18 000000 000138 S 001.0 Pool 1-A  
0094 07/23/04 16:59:40 000001 000146 S 001.0 Pool 1-A  
0095 07/23/04 17:01:58 000000 000140 S 001.0 Pool 1-A  
0096 07/23/04 17:04:41 000001 000157 S 001.0 Pool 1-A  
0097 07/23/04 17:07:47 000001 000112 S 001.0 Pool 1-A  
0098 07/23/04 17:11:17 000000 000114 S 001.0 Pool 1-A  
0099 07/23/04 17:13:12 000000 000122 S 001.0 Pool 1-A  
0100 07/23/04 17:15:22 000000 000129 S 001.0 Pool 1-A  
0101 07/23/04 17:18:39 000002 000138 S 001.0 Pool 1-A



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	07/24/04	11:58:08	Rx Pool-1-A	Final Status Survey	07/24/04	11:58:08	1.000	1.00
2	Smear 2	07/24/04	11:58:47	Rx Pool-1-A	Final Status Survey	07/24/04	11:58:47	1.000	1.00
3	Smear 3	07/24/04	11:55:28	Rx Pool-1-A	Final Status Survey	07/24/04	11:55:28	1.000	1.00
4	Smear 4	07/24/04	11:54:05	Rx Pool-1-A	Final Status Survey	07/24/04	11:54:05	1.000	1.00
5	Smear 5	07/24/04	11:52:44	Rx Pool-1-A	Final Status Survey	07/24/04	11:52:44	1.000	1.00
6	Smear 6	07/24/04	11:51:23	Rx Pool-1-A	Final Status Survey	07/24/04	11:51:23	1.000	1.00
7	Smear 7	07/24/04	11:50:02	Rx Pool-1-A	Final Status Survey	07/24/04	11:50:02	1.000	1.00
8	Smear 8	07/24/04	11:48:42	Rx Pool-1-A	Final Status Survey	07/24/04	11:48:42	1.000	1.00
9	Smear 9	07/24/04	11:47:21	Rx Pool-1-A	Final Status Survey	07/24/04	11:47:21	1.000	1.00
10	Smear 10	07/24/04	11:46:00	Rx Pool-1-A	Final Status Survey	07/24/04	11:46:00	1.000	1.00
11	Smear 11	07/24/04	11:44:39	Rx Pool-1-A	Final Status Survey	07/24/04	11:44:39	1.000	1.00
12	Smear 12	07/24/04	11:43:18	Rx Pool-1-A	Final Status Survey	07/24/04	11:43:18	1.000	1.00
13	Smear 13	07/24/04	11:41:57	Rx Pool-1-A	Final Status Survey	07/24/04	11:41:57	1.000	1.00
14	Smear 14	07/24/04	11:40:37	Rx Pool-1-A	Final Status Survey	07/24/04	11:40:37	1.000	1.00
15	Smear 15	07/24/04	11:39:16	Rx Pool-1-A	Final Status Survey	07/24/04	11:39:16	1.000	1.00
16	Smear 1	07/24/04	11:37:55	Rx Pool-1-B	Final Status Survey	07/24/04	11:37:55	1.000	1.00
17	Smear 2	07/24/04	11:36:34	Rx Pool-1-B	Final Status Survey	07/24/04	11:36:34	1.000	1.00
18	Smear 3	07/24/04	11:35:14	Rx Pool-1-B	Final Status Survey	07/24/04	11:35:14	1.000	1.00
19	Smear 4	07/24/04	11:33:53	Rx Pool-1-B	Final Status Survey	07/24/04	11:33:53	1.000	1.00
20	Smear 5	07/24/04	11:32:32	Rx Pool-1-B	Final Status Survey	07/24/04	11:32:32	1.000	1.00
21	Smear 6	07/24/04	11:31:11	Rx Pool-1-B	Final Status Survey	07/24/04	11:31:11	1.000	1.00
22	Smear 7	07/24/04	11:29:50	Rx Pool-1-B	Final Status Survey	07/24/04	11:29:50	1.000	1.00
23	Smear 8	07/24/04	11:28:30	Rx Pool-1-B	Final Status Survey	07/24/04	11:28:30	1.000	1.00
24	Smear 9	07/24/04	11:27:09	Rx Pool-1-B	Final Status Survey	07/24/04	11:27:09	1.000	1.00
25	Smear 10	07/24/04	11:25:49	Rx Pool-1-B	Final Status Survey	07/24/04	11:25:49	1.000	1.00
26	Smear 11	07/24/04	11:24:28	Rx Pool-1-B	Final Status Survey	07/24/04	11:24:28	1.000	1.00
27	Smear 12	07/24/04	11:23:07	Rx Pool-1-B	Final Status Survey	07/24/04	11:23:07	1.000	1.00
28	Smear 13	07/24/04	11:21:46	Rx Pool-1-B	Final Status Survey	07/24/04	11:21:46	1.000	1.00
29	Smear 14	07/24/04	11:20:25	Rx Pool-1-B	Final Status Survey	07/24/04	11:20:25	1.000	1.00
30	Smear 15	07/24/04	11:19:05	Rx Pool-1-B	Final Status Survey	07/24/04	11:19:05	1.000	1.00
31	Smear 16	07/24/04	11:17:44	Rx Pool-1-B	Final Status Survey	07/24/04	11:17:44	1.000	1.00
32	Smear 1	07/24/04	11:16:23	Rx Pool-1-C	Final Status Survey	07/24/04	11:16:23	1.000	1.00
33	Smear 2	07/24/04	11:15:03	Rx Pool-1-C	Final Status Survey	07/24/04	11:15:03	1.000	1.00
34	Smear 3	07/24/04	11:13:42	Rx Pool-1-C	Final Status Survey	07/24/04	11:13:42	1.000	1.00
35	Smear 4	07/24/04	11:12:21	Rx Pool-1-C	Final Status Survey	07/24/04	11:12:21	1.000	1.00
36	Smear 5	07/24/04	11:11:01	Rx Pool-1-C	Final Status Survey	07/24/04	11:11:01	1.000	1.00
37	Smear 6	07/24/04	11:09:40	Rx Pool-1-C	Final Status Survey	07/24/04	11:09:40	1.000	1.00
38	Smear 7	07/24/04	11:08:19	Rx Pool-1-C	Final Status Survey	07/24/04	11:08:19	1.000	1.00
39	Smear 8	07/24/04	11:06:59	Rx Pool-1-C	Final Status Survey	07/24/04	11:06:59	1.000	1.00
40	Smear 9	07/24/04	11:05:38	Rx Pool-1-C	Final Status Survey	07/24/04	11:05:38	1.000	1.00
41	Smear 10	07/24/04	11:04:18	Rx Pool-1-C	Final Status Survey	07/24/04	11:04:18	1.000	1.00
42	Smear 11	07/24/04	11:02:57	Rx Pool-1-C	Final Status Survey	07/24/04	11:02:57	1.000	1.00
43	Smear 12	07/24/04	11:01:36	Rx Pool-1-C	Final Status Survey	07/24/04	11:01:36	1.000	1.00
44	Smear 13	07/24/04	11:00:16	Rx Pool-1-C	Final Status Survey	07/24/04	11:00:16	1.000	1.00
45	Smear 14	07/24/04	10:58:55	Rx Pool-1-C	Final Status Survey	07/24/04	10:58:55	1.000	1.00
46	Smear 15	07/24/04	10:57:35	Rx Pool-1-C	Final Status Survey	07/24/04	10:57:35	1.000	1.00
47	Smear 16	07/24/04	10:56:14	Rx Pool-1-C	Final Status Survey	07/24/04	10:56:14	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): 

Date: 7-24-04

Reviewed By (print): Mike Taylor

Reviewed By (sign): 

Date: 7-24-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 27.91 LLD: 12.8 dpm				Bkg: 0.4 cpm %Eff: 44.19 LLD: 10.92 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	07/24/04	11:58:08	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
2	Smear 2	07/24/04	11:56:47	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
3	Smear 3	07/24/04	11:55:26	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
4	Smear 4	07/24/04	11:54:05	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
5	Smear 5	07/24/04	11:52:44	0.00	-0.07	-0.24	12.80	12.00	11.60	26.25	10.92
6	Smear 6	07/24/04	11:51:23	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
7	Smear 7	07/24/04	11:50:02	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
8	Smear 8	07/24/04	11:48:42	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
9	Smear 9	07/24/04	11:47:21	0.00	-0.07	-0.24	12.80	5.00	4.60	10.41	10.92
10	Smear 10	07/24/04	11:46:00	0.00	-0.07	-0.24	12.80	4.00	3.60	8.15	10.92
11	Smear 11	07/24/04	11:44:39	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
12	Smear 12	07/24/04	11:43:18	0.00	-0.07	-0.24	12.80	4.00	3.60	8.15	10.92
13	Smear 13	07/24/04	11:41:57	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
14	Smear 14	07/24/04	11:40:37	0.00	-0.07	-0.24	12.80	5.00	4.60	10.41	10.92
15	Smear 15	07/24/04	11:39:16	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
16	Smear 1	07/24/04	11:37:55	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
17	Smear 2	07/24/04	11:36:34	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
18	Smear 3	07/24/04	11:35:14	2.00	1.93	6.93	12.80	0.00	-0.40	-0.91	10.92
19	Smear 4	07/24/04	11:33:53	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
20	Smear 5	07/24/04	11:32:32	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
21	Smear 6	07/24/04	11:31:11	0.00	-0.07	-0.24	12.80	8.00	7.60	17.20	10.92
22	Smear 7	07/24/04	11:29:50	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
23	Smear 8	07/24/04	11:28:30	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
24	Smear 9	07/24/04	11:27:09	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
25	Smear 10	07/24/04	11:25:49	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
26	Smear 11	07/24/04	11:24:28	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
27	Smear 12	07/24/04	11:23:07	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
28	Smear 13	07/24/04	11:21:46	0.00	-0.07	-0.24	12.80	4.00	3.60	8.15	10.92
29	Smear 14	07/24/04	11:20:25	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
30	Smear 15	07/24/04	11:19:05	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
31	Smear 16	07/24/04	11:17:44	0.00	-0.07	-0.24	12.80	4.00	3.60	8.15	10.92
32	Smear 1	07/24/04	11:16:23	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
33	Smear 2	07/24/04	11:15:03	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
34	Smear 3	07/24/04	11:13:42	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
35	Smear 4	07/24/04	11:12:21	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
36	Smear 5	07/24/04	11:11:01	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
37	Smear 6	07/24/04	11:09:40	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
38	Smear 7	07/24/04	11:08:19	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
39	Smear 8	07/24/04	11:06:59	1.00	0.93	3.34	12.80	0.00	-0.40	-0.91	10.92
40	Smear 9	07/24/04	11:05:38	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
41	Smear 10	07/24/04	11:04:18	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
42	Smear 11	07/24/04	11:02:57	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
43	Smear 12	07/24/04	11:01:36	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
44	Smear 13	07/24/04	11:00:16	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
45	Smear 14	07/24/04	10:58:55	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
46	Smear 15	07/24/04	10:57:35	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
47	Smear 16	07/24/04	10:56:14	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92

Technician (print): Chris Higgins


Technician (sign):

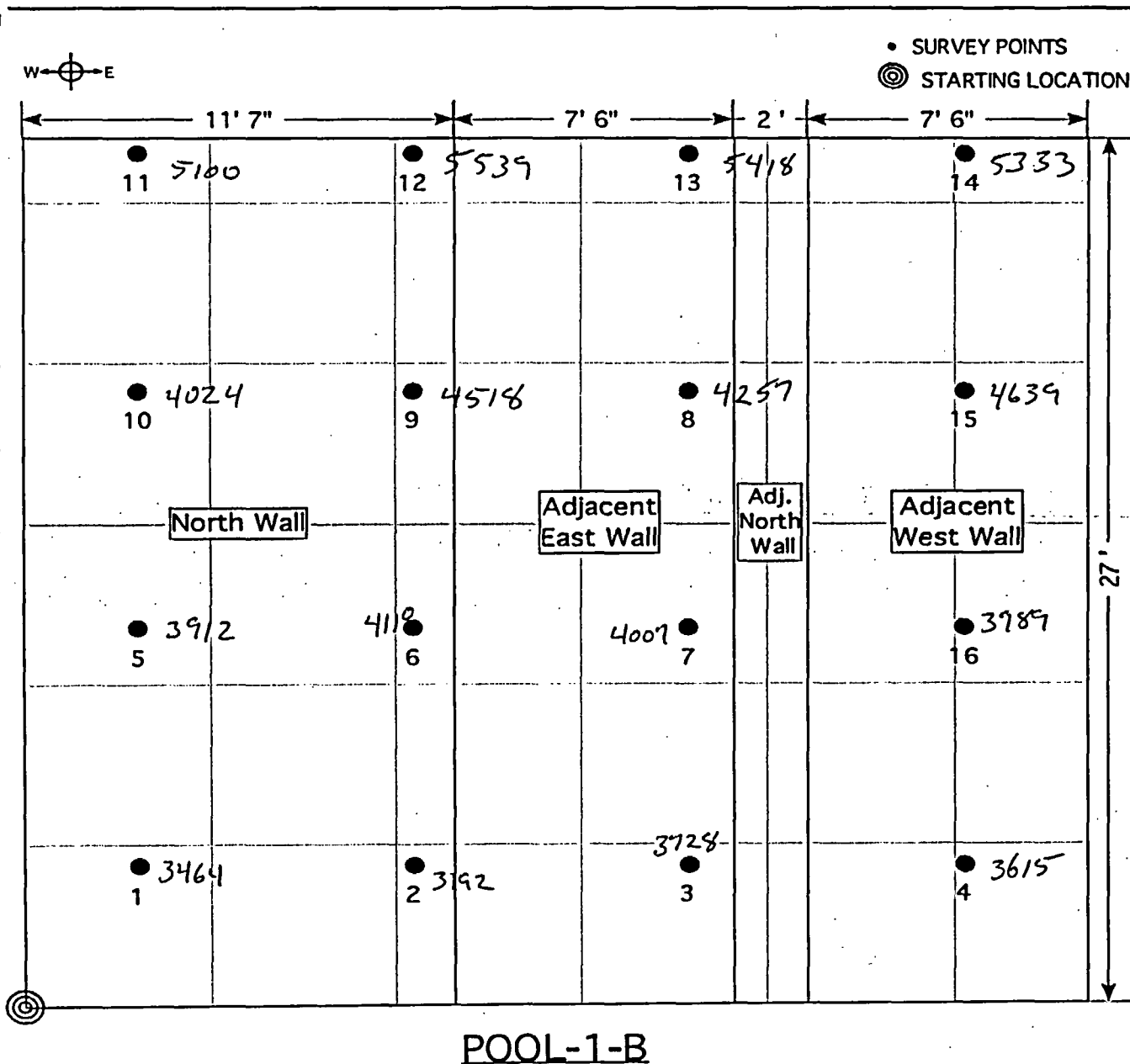
Date: 7-24-04

Reviewed By (print): Mike Taylor

Reviewed By (sign):

Date: 7-24-04

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Reactor Pool North Wall and Adjacent Walls
 <small>SCIENTECH, Inc. 141 WEST STREET NEW MILFORD, CT 06756</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-B	



Date: 7-23-04 Background: Still cpm All readings in cpm.

Survey Type: Fixed Pt. Scan Dose Rate

Instrument ID#: Model 2350 / 44-2  
 # 203415 / # 213337

Start Time: 1130  
 Stop Time: 1215

Technician: Mike Taylor / Chris Higgins

German Survey

# POOL-1-B Alpha Results

Log #
1 Source
2
3
4
5
6
7
8
17
11
10
9
16
12
13
14
15

	X	Y
	n/a	n/a
1	3.1	4.3
2	10.5	4.3
3	17.9	4.3
4	25.3	4.3
5	3.1	11.7
6	10.5	11.7
7	17.9	11.7
16	25.3	11.7
10	3.1	19.1
9	10.5	19.1
8	17.9	19.1
15	25.3	19.1
11	3.1	26.5
12	10.5	26.5
13	17.9	26.5
14	25.3	26.5

L (ft)= 7.4

A (ft')= 772

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
0	1	3
1	1	3
18	10	30
0	1	3
1	1	3
0	1	3
1	1	3
0	1	3
3	1	3
1	1	3
1	1	3
0	1	3
1	1	3
2	1	3
0	1	3
1	1	3

## Survey Cover Sheet

Surveyor: Chris Higgins  
 Print  
 Reviewer: Mike Taylor  
 Print

Sign  
 Sign

7/26/2004  
 Date  
 7/26/2004  
 Date

## Survey Meters

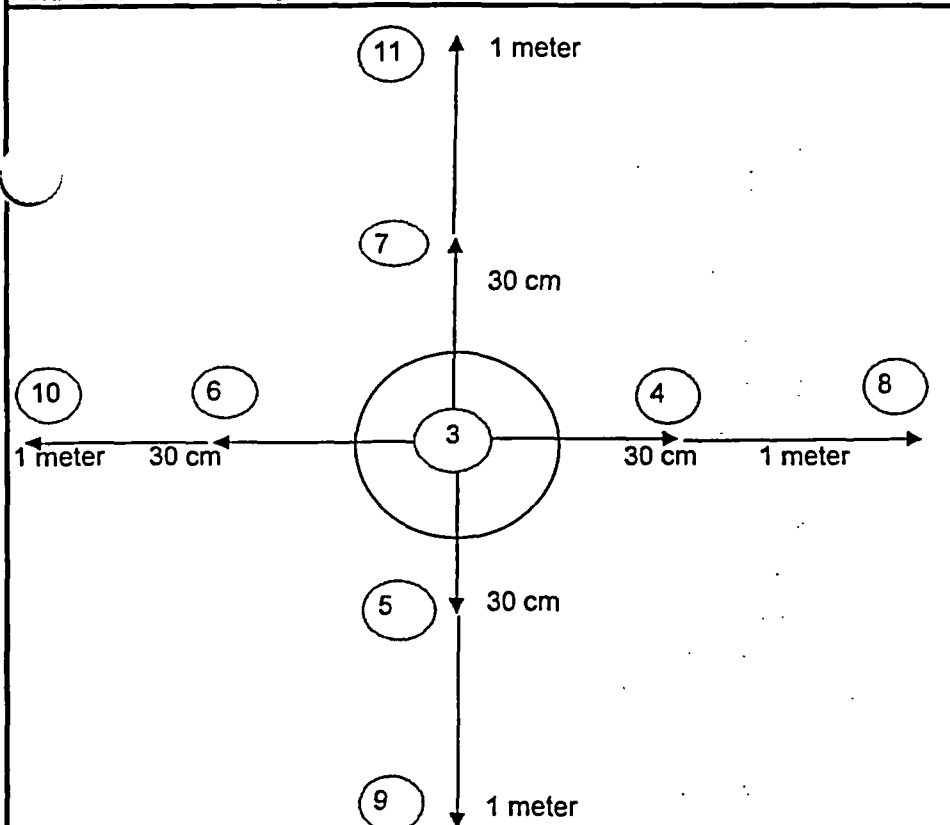
Meter Model # \_\_\_\_\_  
 Meter / Probe Serial # \_\_\_\_\_  
 Cal Due \_\_\_\_\_  
 Efficiency \_\_\_\_\_  
 Type  $\alpha, \beta, \gamma$  \_\_\_\_\_  
 Sample Time \_\_\_\_\_  
 Background Time \_\_\_\_\_  
 BKG \_\_\_\_\_  
 MDA \_\_\_\_\_  
 Guideline \_\_\_\_\_  
 Action Level \_\_\_\_\_

Meter Model # \_\_\_\_\_  
 Meter / Probe Serial # \_\_\_\_\_  
 Cal Due \_\_\_\_\_  
 Efficiency \_\_\_\_\_  
 Type  $\alpha, \beta, \gamma$  \_\_\_\_\_  
 Sample Time \_\_\_\_\_  
 Background Time \_\_\_\_\_  
 BKG \_\_\_\_\_  
 MDA \_\_\_\_\_  
 Guideline \_\_\_\_\_  
 Action Level \_\_\_\_\_

Meter Model # L-2350  
 Meter / Probe Serial # 202475/208661  
 Cal Due 3/22/2005  
 Efficiency 49%  
 Type  $\alpha, \beta, \gamma$   $\alpha, \beta, \gamma$   
 Sample Time 1 min  
 Background Time NA  
 BKG NA  
 MDA NA  
 Guideline NA  
 Action Level NA

LOCATION: Reactor Pool- FFS Map Pool-1-B (Survey Point #3)

PURPOSE: Alpha Scoping



Survey point 12 was 1 meter in front of the wall, underneath #3.  
 Survey point 13 was the opposite wall behind #3.

Direct #	cpm/100cm <sup>2</sup>	
	$\alpha$	$\beta\gamma$
1 Source	2526	520
2 Source	0	36702
3	24	124
4	20	115
5	5	90
6	32	131
7	5	101
8	0	103
9	1	79
10	24	121
11	7	95
12	0	129
13	1	80

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
 (eff X  $\frac{100cm^2}{2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$dpm / 100cm^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$


where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

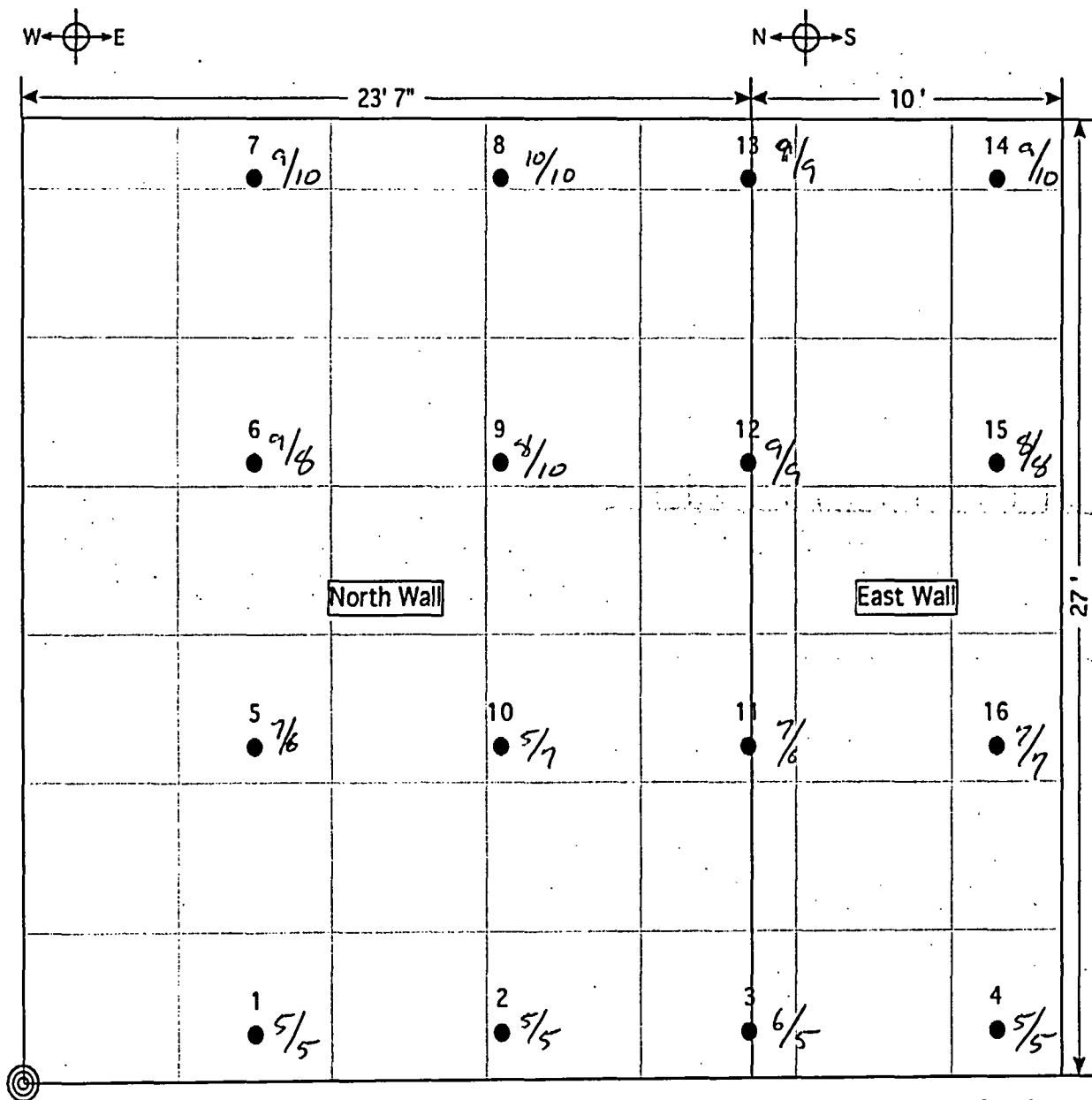
AI = action level

Reactor Pool Radon Survey							
Num	Date	Time	Alpha	Beta	UsrTime	Location	
0001	07/26/04	10:12:35	002526	000520	S 001.0	Source 1	
0002	07/26/04	10:14:05	000000	036702	S 001.0	Source 2	
0003	07/26/04	13:00:31	000024	000124	S 001.0	Location 3	
0004	07/26/04	13:02:19	000020	000115	S 001.0	Location 4	
0005	07/26/04	13:05:39	000005	000090	S 001.0	Location 5	
0006	07/26/04	13:07:04	000032	000131	S 001.0	Location 6	
0007	07/26/04	13:09:55	000005	000101	S 001.0	Location 7	
0008	07/26/04	13:12:45	000000	000103	S 001.0	Location 8	
0009	07/26/04	13:14:30	000001	000079	S 001.0	Location 9	
0010	07/26/04	13:17:24	000024	000121	S 001.0	Location 10	
0011	07/26/04	13:21:27	000007	000095	S 001.0	Location 11	
0012	07/26/04	13:23:21	000000	000129	S 001.0	Location 12	
0013	07/26/04	13:25:22	000001	000080	S 001.0	Location 13	

\$

**POOL-1-C Reactor Pool**

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Reactor Pool North and East Wall
 <small>SCIENTECH, Inc. 141 WEST STREET NEW MILFORD, CT 06776</small>	
PROJECT NO: 23529-0301	
FILE NAME:	
SCALE: N.T.S.	DATE: 01/06/2004
By:	CK:
FIGURE: POOL-1-C	



POOL-1-C

• SURVEY POINTS  
 ◎ STARTING LOCATION

Date: 7-23-04

Background: GUR/h-

Survey Type: Fixed Pt. Scan

Dose Rate

Instrument ID#: Model 15 # 062146

All doses in R/h.  
 contact / 1 meter

Start Time: 1220  
 Stop Time: 1310

Technician: Mike Taylor / Chris Higgins



# POOL-1-C Beta/Gamma Results

Log #
18 Source
19
20
21
22
23
28
29
34
24
27
30
33
25
26
31
32

	X	Y
	n/a	n/a
1	7.5	1.3
2	15.5	1.3
3	23.5	1.3
4	31.5	1.3
5	7.5	9.3
10	15.5	9.3
11	23.5	9.3
16	31.5	9.3
6	7.5	17.3
9	15.5	17.3
12	23.5	17.3
15	31.5	17.3
7	7.5	25.3
8	15.5	25.3
13	23.5	25.3
14	31.5	25.3

L (ft)= 8

A (ft<sup>2</sup>)= 907

Fixed Points	Ave. (Scan)	Max. (Scan)
34396	n/a	n/a
86	80	110
94	80	120
90	80	110
90	80	120
115	100	160
100	120	140
104	120	140
102	100	160
120	120	160
114	80	140
118	100	160
109	100	160
128	120	180
126	120	180
127	120	200
132	140	200

# Ludlum Measurements, Inc.

## Model 2360 Log Data

7/24/2004  
10:19:10 AM

Header 1: Chris Higgins  
Header 2: Serial#202475  
Header 3: DetSer#PR208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Rx Pool  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 07/24/2004  
Model 2360 Time: 09:52:50  
Sample Number: 0102

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 050000  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 050000  
Alpha + Beta Scaler Alarm: 050000

Count - Count Time  
Ratmeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	07/23/04	10:19:32	000000	035167	S 001.0	Source Check
0002	07/23/04	11:31:54	000000	000091	S 001.0	Pool 1-B
0003	07/23/04	11:35:24	000001	000105	S 001.0	Pool 1-B
0004	07/23/04	11:37:24	000018	000125	S 001.0	Pool 1-B
0005	07/23/04	11:40:40	000000	000086	S 001.0	Pool 1-B
0006	07/23/04	11:50:44	000001	000095	S 001.0	Pool 1-B
0007	07/23/04	11:53:26	000000	000100	S 001.0	Pool 1-B
0008	07/23/04	11:56:01	000001	000111	S 001.0	Pool 1-B
0009	07/23/04	12:00:49	000001	000100	S 001.0	Pool 1-B
0010	07/23/04	12:02:42	000001	000098	S 001.0	Pool 1-B
0011	07/23/04	12:05:25	000003	000106	S 001.0	Pool 1-B
0012	07/23/04	12:08:12	000001	000132	S 001.0	Pool 1-B
0013	07/23/04	12:11:58	000002	000151	S 001.0	Pool 1-B
0014	07/23/04	12:13:42	000000	000139	S 001.0	Pool 1-B
0015	07/23/04	12:16:40	000001	000133	S 001.0	Pool 1-B
0016	07/23/04	12:19:23	000000	000115	S 001.0	Pool 1-B
0017	07/23/04	12:22:09	000000	000099	S 001.0	Pool 1-B
0018	07/23/04	12:26:02	000002	034396	S 001.0	Source Check
0019	07/23/04	12:28:52	000000	000086	S 001.0	Pool 1-C
0020	07/23/04	12:31:04	000001	000094	S 001.0	Pool 1-C
0021	07/23/04	12:33:14	000000	000090	S 001.0	Pool 1-C
0022	07/23/04	12:35:31	000000	000090	S 001.0	Pool 1-C
0023	07/23/04	12:40:11	000003	000115	S 001.0	Pool 1-C
0024	07/23/04	12:42:37	000001	000120	S 001.0	Pool 1-C
0025	07/23/04	12:45:05	000000	000128	S 001.0	Pool 1-C
0026	07/23/04	12:48:06	000000	000126	S 001.0	Pool 1-C
0027	07/23/04	12:50:24	000000	000114	S 001.0	Pool 1-C
0028	07/23/04	12:52:52	000002	000100	S 001.0	Pool 1-C
0029	07/23/04	12:57:03	000002	000104	S 001.0	Pool 1-C
0030	07/23/04	13:00:21	000005	000118	S 001.0	Pool 1-C
0031	07/23/04	13:02:43	000001	000127	S 001.0	Pool 1-C
0032	07/23/04	13:07:00	000003	000132	S 001.0	Pool 1-C
0033	07/23/04	13:10:47	000001	000109	S 001.0	Pool 1-C
0034	07/23/04	13:14:08	000001	000102	S 001.0	Pool 1-C

035 07/23/04 13:17:52 000000 034111 S 001.0 Source Check  
036 07/23/04 13:20:20 000000 000104 S 001.0 Pool 1-D  
037 07/23/04 13:22:44 000001 000080 S 001.0 Pool 1-D  
038 07/23/04 13:25:21 000001 000109 S 001.0 Pool 1-D  
039 07/23/04 13:27:44 000001 000091 S 001.0 Pool 1-D  
040 07/23/04 13:34:14 000001 000071 S 001.0 Pool 1-D  
041 07/23/04 13:38:11 000001 000093 S 001.0 Pool 1-D  
042 07/23/04 13:41:45 000000 000123 S 001.0 Pool 1-D  
043 07/23/04 13:47:31 000001 000114 S 001.0 Pool 1-D  
044 07/23/04 13:52:10 000000 000102 S 001.0 Pool 1-D  
045 07/23/04 13:56:19 000002 000117 S 001.0 Pool 1-D  
046 07/23/04 14:01:15 000000 000112 S 001.0 Pool 1-D  
047 07/23/04 14:05:36 000000 000118 S 001.0 Pool 1-D  
048 07/23/04 14:09:38 000001 000101 S 001.0 Pool 1-D  
049 07/23/04 14:14:31 000001 000099 S 001.0 Pool 1-D  
050 07/23/04 14:18:17 000000 000110 S 001.0 Pool 1-D  
051 07/23/04 14:21:21 000001 000111 S 001.0 Pool 1-D  
052 07/23/04 14:30:48 000000 033953 S 001.0 Source Check  
053 07/23/04 14:34:35 000000 000097 S 001.0 Pool 1-E  
054 07/23/04 14:37:59 000001 000118 S 001.0 Pool 1-E  
055 07/23/04 14:42:03 000000 000110 S 001.0 Pool 1-E  
056 07/23/04 14:45:58 000001 000107 S 001.0 Pool 1-E  
057 07/23/04 14:49:21 000000 000088 S 001.0 Pool 1-E  
058 07/23/04 14:51:50 000000 000124 S 001.0 Pool 1-E  
059 07/23/04 14:56:19 000003 000106 S 001.0 Pool 1-E  
060 07/23/04 14:58:29 000001 000133 S 001.0 Pool 1-E  
061 07/23/04 15:03:36 000000 000140 S 001.0 Pool 1-E  
062 07/23/04 15:06:16 000001 000128 S 001.0 Pool 1-E  
063 07/23/04 15:11:18 000001 000113 S 001.0 Pool 1-E  
064 07/23/04 15:14:26 000000 000110 S 001.0 Pool 1-E  
065 07/23/04 15:18:58 000004 000105 S 001.0 Pool 1-E  
066 07/23/04 15:25:04 000001 000114 S 001.0 Pool 1-E  
067 07/23/04 15:27:04 000001 000106 S 001.0 Pool 1-E  
068 07/23/04 15:31:43 000001 000121 S 001.0 Pool 1-E  
069 07/23/04 15:34:45 000000 035271 S 001.0 Source Check  
070 07/23/04 15:39:44 000002 000081 S 001.0 Pool 1-F  
071 07/23/04 15:41:45 000001 000101 S 001.0 Pool 1-F  
072 07/23/04 15:47:45 000000 000089 S 001.0 Pool 1-F  
073 07/23/04 15:52:38 000001 000089 S 001.0 Pool 1-F  
074 07/23/04 15:57:58 000001 000099 S 001.0 Pool 1-F  
075 07/23/04 16:01:12 000001 000113 S 001.0 Pool 1-F  
076 07/23/04 16:04:00 000000 000145 S 001.0 Pool 1-F  
077 07/23/04 16:07:49 000000 000126 S 001.0 Pool 1-F  
078 07/23/04 16:10:34 000002 000122 S 001.0 Pool 1-F  
079 07/23/04 16:14:13 000002 000097 S 001.0 Pool 1-F  
080 07/23/04 16:17:11 000001 000098 S 001.0 Pool 1-F  
081 07/23/04 16:20:40 000001 000105 S 001.0 Pool 1-F  
082 07/23/04 16:23:01 000000 000140 S 001.0 Pool 1-F  
083 07/23/04 16:26:03 000001 000124 S 001.0 Pool 1-F  
084 07/23/04 16:29:44 000001 000095 S 001.0 Pool 1-F  
085 07/23/04 16:33:31 000001 000087 S 001.0 Pool 1-F  
086 07/23/04 16:35:07 000000 035329 S 001.0 Source Check  
087 07/23/04 16:39:33 000001 000135 S 001.0 Pool 1-A  
088 07/23/04 16:42:11 000000 000095 S 001.0 Pool 1-A  
089 07/23/04 16:45:08 000000 000129 S 001.0 Pool 1-A  
090 07/23/04 16:49:37 000001 000158 S 001.0 Pool 1-A  
091 07/23/04 16:52:03 000002 000150 S 001.0 Pool 1-A  
092 07/23/04 16:55:06 000001 000121 S 001.0 Pool 1-A  
093 07/23/04 16:57:18 000000 000138 S 001.0 Pool 1-A  
094 07/23/04 16:59:40 000001 000146 S 001.0 Pool 1-A  
095 07/23/04 17:01:58 000000 000140 S 001.0 Pool 1-A  
096 07/23/04 17:04:41 000001 000157 S 001.0 Pool 1-A  
097 07/23/04 17:07:47 000001 000112 S 001.0 Pool 1-A  
098 07/23/04 17:11:17 000000 000114 S 001.0 Pool 1-A  
099 07/23/04 17:13:12 000000 000122 S 001.0 Pool 1-A  
100 07/23/04 17:15:22 000000 000129 S 001.0 Pool 1-A  
101 07/23/04 17:18:39 000002 000138 S 001.0 Pool 1-A  
\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	07/24/04	11:58:08	Rx Pool-1-A	Final Status Survey	07/24/04	11:58:08	1.000	1.00
2	Smear 2	07/24/04	11:58:47	Rx Pool-1-A	Final Status Survey	07/24/04	11:58:47	1.000	1.00
3	Smear 3	07/24/04	11:55:28	Rx Pool-1-A	Final Status Survey	07/24/04	11:55:28	1.000	1.00
4	Smear 4	07/24/04	11:54:05	Rx Pool-1-A	Final Status Survey	07/24/04	11:54:05	1.000	1.00
5	Smear 5	07/24/04	11:52:44	Rx Pool-1-A	Final Status Survey	07/24/04	11:52:44	1.000	1.00
6	Smear 6	07/24/04	11:51:23	Rx Pool-1-A	Final Status Survey	07/24/04	11:51:23	1.000	1.00
7	Smear 7	07/24/04	11:50:02	Rx Pool-1-A	Final Status Survey	07/24/04	11:50:02	1.000	1.00
8	Smear 8	07/24/04	11:48:42	Rx Pool-1-A	Final Status Survey	07/24/04	11:48:42	1.000	1.00
9	Smear 9	07/24/04	11:47:21	Rx Pool-1-A	Final Status Survey	07/24/04	11:47:21	1.000	1.00
10	Smear 10	07/24/04	11:46:00	Rx Pool-1-A	Final Status Survey	07/24/04	11:46:00	1.000	1.00
11	Smear 11	07/24/04	11:44:39	Rx Pool-1-A	Final Status Survey	07/24/04	11:44:39	1.000	1.00
12	Smear 12	07/24/04	11:43:18	Rx Pool-1-A	Final Status Survey	07/24/04	11:43:18	1.000	1.00
13	Smear 13	07/24/04	11:41:57	Rx Pool-1-A	Final Status Survey	07/24/04	11:41:57	1.000	1.00
14	Smear 14	07/24/04	11:40:37	Rx Pool-1-A	Final Status Survey	07/24/04	11:40:37	1.000	1.00
15	Smear 15	07/24/04	11:39:16	Rx Pool-1-A	Final Status Survey	07/24/04	11:39:16	1.000	1.00
16	Smear 1	07/24/04	11:37:55	Rx Pool-1-B	Final Status Survey	07/24/04	11:37:55	1.000	1.00
17	Smear 2	07/24/04	11:36:34	Rx Pool-1-B	Final Status Survey	07/24/04	11:36:34	1.000	1.00
18	Smear 3	07/24/04	11:35:14	Rx Pool-1-B	Final Status Survey	07/24/04	11:35:14	1.000	1.00
19	Smear 4	07/24/04	11:33:53	Rx Pool-1-B	Final Status Survey	07/24/04	11:33:53	1.000	1.00
20	Smear 5	07/24/04	11:32:32	Rx Pool-1-B	Final Status Survey	07/24/04	11:32:32	1.000	1.00
21	Smear 6	07/24/04	11:31:11	Rx Pool-1-B	Final Status Survey	07/24/04	11:31:11	1.000	1.00
22	Smear 7	07/24/04	11:29:50	Rx Pool-1-B	Final Status Survey	07/24/04	11:29:50	1.000	1.00
23	Smear 8	07/24/04	11:28:30	Rx Pool-1-B	Final Status Survey	07/24/04	11:28:30	1.000	1.00
24	Smear 9	07/24/04	11:27:09	Rx Pool-1-B	Final Status Survey	07/24/04	11:27:09	1.000	1.00
25	Smear 10	07/24/04	11:25:49	Rx Pool-1-B	Final Status Survey	07/24/04	11:25:49	1.000	1.00
26	Smear 11	07/24/04	11:24:28	Rx Pool-1-B	Final Status Survey	07/24/04	11:24:28	1.000	1.00
27	Smear 12	07/24/04	11:23:07	Rx Pool-1-B	Final Status Survey	07/24/04	11:23:07	1.000	1.00
28	Smear 13	07/24/04	11:21:46	Rx Pool-1-B	Final Status Survey	07/24/04	11:21:46	1.000	1.00
29	Smear 14	07/24/04	11:20:25	Rx Pool-1-B	Final Status Survey	07/24/04	11:20:25	1.000	1.00
30	Smear 15	07/24/04	11:19:05	Rx Pool-1-B	Final Status Survey	07/24/04	11:19:05	1.000	1.00
31	Smear 16	07/24/04	11:17:44	Rx Pool-1-B	Final Status Survey	07/24/04	11:17:44	1.000	1.00
32	Smear 1	07/24/04	11:16:23	Rx Pool-1-C	Final Status Survey	07/24/04	11:16:23	1.000	1.00
33	Smear 2	07/24/04	11:15:03	Rx Pool-1-C	Final Status Survey	07/24/04	11:15:03	1.000	1.00
34	Smear 3	07/24/04	11:13:42	Rx Pool-1-C	Final Status Survey	07/24/04	11:13:42	1.000	1.00
35	Smear 4	07/24/04	11:12:21	Rx Pool-1-C	Final Status Survey	07/24/04	11:12:21	1.000	1.00
36	Smear 5	07/24/04	11:11:01	Rx Pool-1-C	Final Status Survey	07/24/04	11:11:01	1.000	1.00
37	Smear 6	07/24/04	11:09:40	Rx Pool-1-C	Final Status Survey	07/24/04	11:09:40	1.000	1.00
38	Smear 7	07/24/04	11:08:19	Rx Pool-1-C	Final Status Survey	07/24/04	11:08:19	1.000	1.00
39	Smear 8	07/24/04	11:06:59	Rx Pool-1-C	Final Status Survey	07/24/04	11:06:59	1.000	1.00
40	Smear 9	07/24/04	11:05:38	Rx Pool-1-C	Final Status Survey	07/24/04	11:05:38	1.000	1.00
41	Smear 10	07/24/04	11:04:18	Rx Pool-1-C	Final Status Survey	07/24/04	11:04:18	1.000	1.00
42	Smear 11	07/24/04	11:02:57	Rx Pool-1-C	Final Status Survey	07/24/04	11:02:57	1.000	1.00
43	Smear 12	07/24/04	11:01:36	Rx Pool-1-C	Final Status Survey	07/24/04	11:01:36	1.000	1.00
44	Smear 13	07/24/04	11:00:16	Rx Pool-1-C	Final Status Survey	07/24/04	11:00:16	1.000	1.00
45	Smear 14	07/24/04	10:58:55	Rx Pool-1-C	Final Status Survey	07/24/04	10:58:55	1.000	1.00
46	Smear 15	07/24/04	10:57:35	Rx Pool-1-C	Final Status Survey	07/24/04	10:57:35	1.000	1.00
47	Smear 16	07/24/04	10:56:14	Rx Pool-1-C	Final Status Survey	07/24/04	10:56:14	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): 

Date: 7-24-04

Reviewed By (print): Mike Taylor

Reviewed By (sign): 

Date: 7-24-04

B Pool-1-C

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 27.91 LLD: 12.8 dpm				Bkg: 0.4 cpm %Eff: 44.19 LLD: 10.92 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	07/24/04	11:58:08	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
2	Smear 2	07/24/04	11:58:47	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
3	Smear 3	07/24/04	11:55:26	0.00	-0.07	-0.24	12.80	8.00	5.60	12.67	10.92
4	Smear 4	07/24/04	11:54:05	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
5	Smear 5	07/24/04	11:52:44	0.00	-0.07	-0.24	12.80	12.00	11.60	26.25	10.92
6	Smear 6	07/24/04	11:51:23	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
7	Smear 7	07/24/04	11:50:02	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
8	Smear 8	07/24/04	11:48:42	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
9	Smear 9	07/24/04	11:47:21	0.00	-0.07	-0.24	12.80	5.00	4.60	10.41	10.92
10	Smear 10	07/24/04	11:46:00	0.00	-0.07	-0.24	12.80	4.00	3.60	8.15	10.92
11	Smear 11	07/24/04	11:44:39	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
12	Smear 12	07/24/04	11:43:18	0.00	-0.07	-0.24	12.80	4.00	3.60	8.15	10.92
13	Smear 13	07/24/04	11:41:57	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
14	Smear 14	07/24/04	11:40:37	0.00	-0.07	-0.24	12.80	5.00	4.60	10.41	10.92
15	Smear 15	07/24/04	11:39:16	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
16	Smear 1	07/24/04	11:37:55	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
17	Smear 2	07/24/04	11:36:34	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
18	Smear 3	07/24/04	11:35:14	2.00	1.93	6.93	12.80	0.00	-0.40	-0.91	10.92
19	Smear 4	07/24/04	11:33:53	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
20	Smear 5	07/24/04	11:32:32	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
21	Smear 6	07/24/04	11:31:11	0.00	-0.07	-0.24	12.80	8.00	7.60	17.20	10.92
22	Smear 7	07/24/04	11:29:50	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
23	Smear 8	07/24/04	11:28:30	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
24	Smear 9	07/24/04	11:27:09	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
25	Smear 10	07/24/04	11:25:49	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
26	Smear 11	07/24/04	11:24:28	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
27	Smear 12	07/24/04	11:23:07	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
28	Smear 13	07/24/04	11:21:46	0.00	-0.07	-0.24	12.80	4.00	3.60	8.15	10.92
29	Smear 14	07/24/04	11:20:25	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
30	Smear 15	07/24/04	11:19:05	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
31	Smear 16	07/24/04	11:17:44	0.00	-0.07	-0.24	12.80	4.00	3.60	8.15	10.92
32	Smear 1	07/24/04	11:16:23	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
33	Smear 2	07/24/04	11:15:03	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
34	Smear 3	07/24/04	11:13:42	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
35	Smear 4	07/24/04	11:12:21	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
36	Smear 5	07/24/04	11:11:01	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
37	Smear 6	07/24/04	11:09:40	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
38	Smear 7	07/24/04	11:08:19	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
39	Smear 8	07/24/04	11:06:59	1.00	0.93	3.34	12.80	0.00	-0.40	-0.91	10.92
40	Smear 9	07/24/04	11:05:38	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
41	Smear 10	07/24/04	11:04:18	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
42	Smear 11	07/24/04	11:02:57	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
43	Smear 12	07/24/04	11:01:36	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
44	Smear 13	07/24/04	11:00:16	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
45	Smear 14	07/24/04	10:58:55	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
46	Smear 15	07/24/04	10:57:35	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
47	Smear 16	07/24/04	10:56:14	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92

Technician (print): Chris Higgins

Technician (sign):


Date: 7-24-04

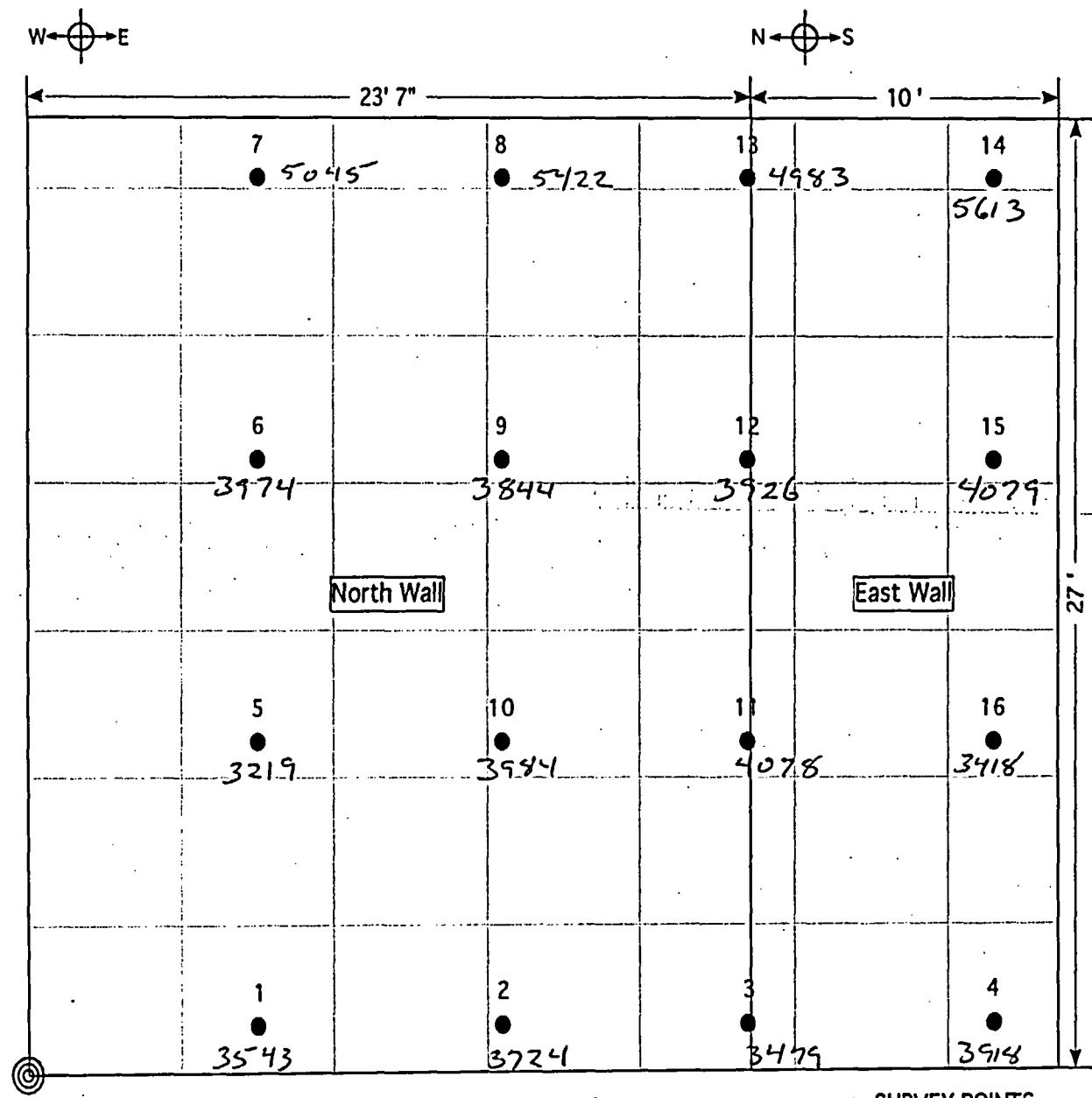
Reviewed By (print): Mike Taylor

Reviewed By (sign):

Date: 7-24-04

BPOOL-1-C

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Reactor Pool North and East Wall
 <small>SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456</small>	
PROJECT NO.: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CR:
FIGURE: POOL-1-C	



POOL-1-C

• SURVEY POINTS  
 ◎ STARTING LOCATION

Date: 7-23-04 Background: 5111 epm  
 Survey Type: Fixed Pt. Scan Dose Rate  
 Instrument ID#: Model 2350 / 44-2  
 Start Time: 122c # 203445 # 213337  
 Stop Time: 1310  
 Technician: Mike Taylor / Chris Higgins  
 Gamma Survey  
 All readings in epm.

# POOL-1-C Alpha Results

Log #
18 Source
19
20
21
22
23
28
29
34
24
27
30
33
25
26
31
32


	X	Y
	n/a	n/a
1	7.5	1.3
2	15.5	1.3
3	23.5	1.3
4	31.5	1.3
5	7.5	9.3
10	15.5	9.3
11	23.5	9.3
16	31.5	9.3
6	7.5	17.3
9	15.5	17.3
12	23.5	17.3
15	31.5	17.3
7	7.5	25.3
8	15.5	25.3
13	23.5	25.3
14	31.5	25.3

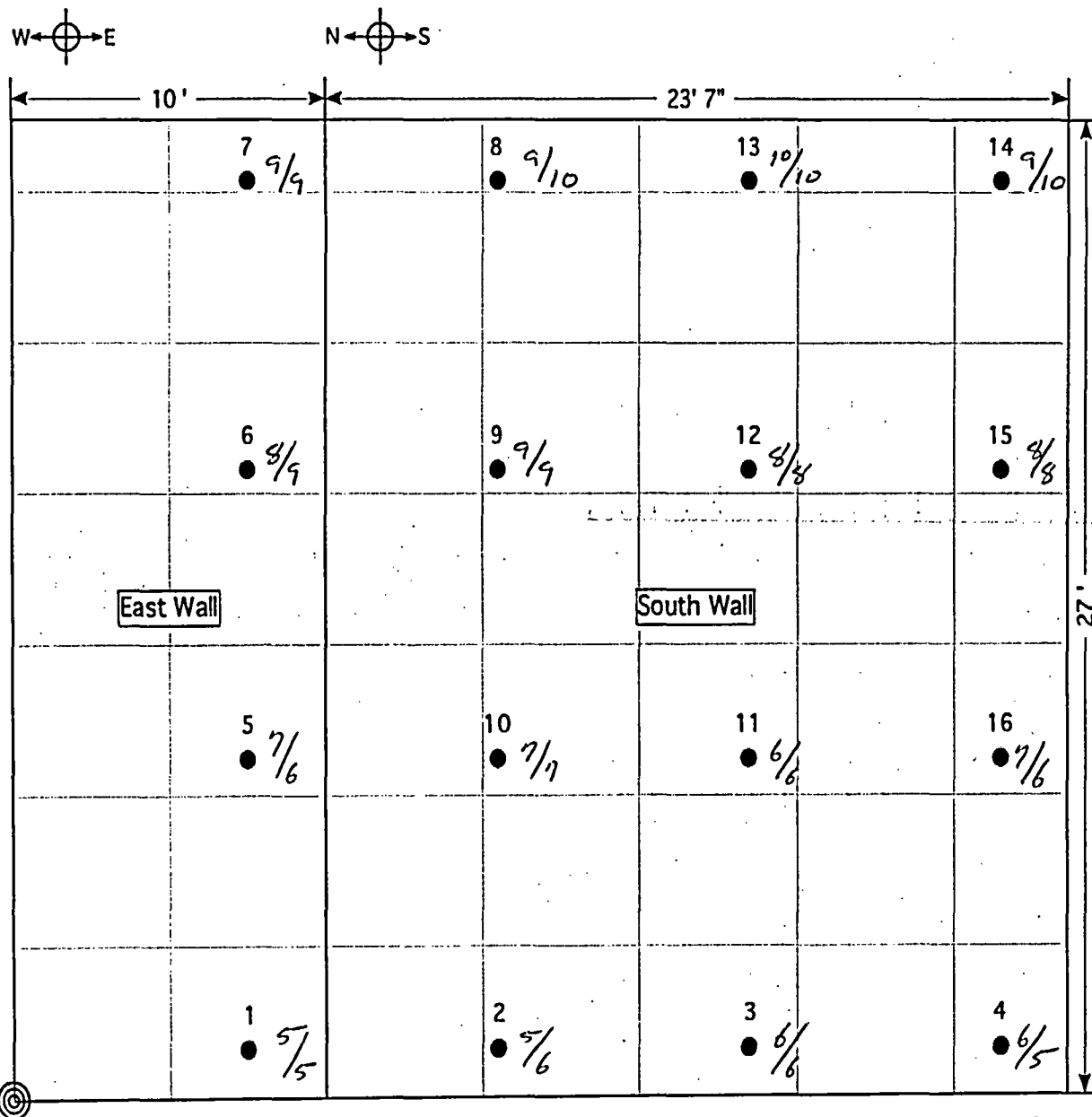
L (ft)= 8  
A (ft')= 907

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
0	1	3
1	1	3
0	1	3
0	1	3
3	1	3
2	1	3
2	1	3
1	1	3
1	1	3
0	1	3
5	1	3
1	1	3
0	1	3
0	1	3
1	1	3
3	1	3

**POOL-1-D Reactor Pool**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Reactor Pool East and South Wall
 <small>SCIENTECH, Inc. 145 WEST STREET NEW MILFORD, CT 06470</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-D	



POOL-1-D

• SURVEY POINTS  
 ◎ STARTING LOCATION

Date: 7-23-04 Background: 92 R/h  
 Survey Type: Fixed Pt. Scan Dose Rate  
 Instrument ID#: Model 15 # 062196  
 Start Time: 1315  
 Stop Time: 1430  
 Technician: Mike Taylor / Chris Higgins  
 All dosimetry in uR/h.  
 contact / meter.

POOL-1-D Beta/Gamma Results

Log #
35 Source
36
37
38
39
40
45
46
51
41
44
47
50
42
43
48
49

	X	Y
	n/a	n/a
1	7.5	1.3
2	15.5	1.3
3	23.5	1.3
4	31.5	1.3
5	7.5	9.3
10	15.5	9.3
11	23.5	9.3
16	31.5	9.3
6	7.5	17.3
9	15.5	17.3
12	23.5	17.3
15	31.5	17.3
7	7.5	25.3
8	15.5	25.3
13	23.5	25.3
14	31.5	25.3

L (ft)= 8

A (ft<sup>2</sup>)= 907

Fixed Points	Ave. (Scan)	Max. (Scan)
34111	n/a	n/a
104	100	140
80	80	120
109	80	160
91	80	140
71	80	120
117	120	180
112	80	120
111	100	140
93	100	160
102	100	140
118	110	160
110	80	120
123	120	160
114	120	160
101	100	180
99	80	120

Ludlum Measurements, Inc.  
Model 2360 Log Data

D. 7/24/2004  
Ti. 10:19:10 AM

Header 1: Chris Higgins  
Header 2: Serial#202475  
Header 3: DetSer#PR208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Rx Pool  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 07/24/2004  
Model 2360 Time: 09:52:50  
Sample Number: 0102

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 050000  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 050000  
Alpha + Beta Scaler Alarm: 050000

me - Count Time  
F emeter  
S aler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	07/23/04	10:19:32	000000	035167	S 001.0	Source Check
0002	07/23/04	11:31:54	000000	000091	S 001.0	Pool 1-B
0003	07/23/04	11:35:24	000001	000105	S 001.0	Pool 1-B
0004	07/23/04	11:37:24	000018	000125	S 001.0	Pool 1-B
0005	07/23/04	11:40:40	000000	000086	S 001.0	Pool 1-B
0006	07/23/04	11:50:44	000001	000095	S 001.0	Pool 1-B
0007	07/23/04	11:53:26	000000	000100	S 001.0	Pool 1-B
0008	07/23/04	11:56:01	000001	000111	S 001.0	Pool 1-B
0009	07/23/04	12:00:49	000001	000100	S 001.0	Pool 1-B
0010	07/23/04	12:02:42	000001	000098	S 001.0	Pool 1-B
0011	07/23/04	12:05:25	000003	000106	S 001.0	Pool 1-B
0012	07/23/04	12:08:12	000001	000132	S 001.0	Pool 1-B
0013	07/23/04	12:11:58	000002	000151	S 001.0	Pool 1-B
0014	07/23/04	12:13:42	000000	000139	S 001.0	Pool 1-B
0015	07/23/04	12:16:40	000001	000133	S 001.0	Pool 1-B
0016	07/23/04	12:19:23	000000	000115	S 001.0	Pool 1-B
0017	07/23/04	12:22:09	000000	000099	S 001.0	Pool 1-B
0018	07/23/04	12:26:02	000002	034396	S 001.0	Source Check
0019	07/23/04	12:28:52	000000	000086	S 001.0	Pool 1-C
0020	07/23/04	12:31:04	000001	000094	S 001.0	Pool 1-C
0021	07/23/04	12:33:14	000000	000090	S 001.0	Pool 1-C
0022	07/23/04	12:35:31	000000	000090	S 001.0	Pool 1-C
0023	07/23/04	12:40:11	000003	000115	S 001.0	Pool 1-C
0024	07/23/04	12:42:37	000001	000120	S 001.0	Pool 1-C
0025	07/23/04	12:45:05	000000	000128	S 001.0	Pool 1-C
0026	07/23/04	12:48:06	000000	000126	S 001.0	Pool 1-C
0027	07/23/04	12:50:24	000000	000114	S 001.0	Pool 1-C
0028	07/23/04	12:52:52	000002	000100	S 001.0	Pool 1-C
0029	07/23/04	12:57:03	000002	000104	S 001.0	Pool 1-C
0030	07/23/04	13:00:21	000005	000118	S 001.0	Pool 1-C
0031	07/23/04	13:02:43	000001	000127	S 001.0	Pool 1-C
0032	07/23/04	13:07:00	000003	000132	S 001.0	Pool 1-C
0033	07/23/04	13:10:47	000001	000109	S 001.0	Pool 1-C

0035 07/23/04 13:17:52 000000 034111 S 001.0 Source Check  
0036 07/23/04 13:20:20 000000 000104 S 001.0 Pool 1-D  
0037 07/23/04 13:22:44 000001 000080 S 001.0 Pool 1-D  
0038 07/23/04 13:25:21 000001 000109 S 001.0 Pool 1-D  
0039 07/23/04 13:27:44 000001 000091 S 001.0 Pool 1-D  
0040 07/23/04 13:34:14 000001 000071 S 001.0 Pool 1-D  
0041 07/23/04 13:38:11 000001 000093 S 001.0 Pool 1-D  
0042 07/23/04 13:41:45 000000 000123 S 001.0 Pool 1-D  
0043 07/23/04 13:47:31 000001 000114 S 001.0 Pool 1-D  
0044 07/23/04 13:52:10 000000 000102 S 001.0 Pool 1-D  
0045 07/23/04 13:56:19 000002 000117 S 001.0 Pool 1-D  
0046 07/23/04 14:01:15 000000 000112 S 001.0 Pool 1-D  
0047 07/23/04 14:05:36 000000 000118 S 001.0 Pool 1-D  
0048 07/23/04 14:09:38 000001 000101 S 001.0 Pool 1-D  
0049 07/23/04 14:14:31 000001 000099 S 001.0 Pool 1-D  
0050 07/23/04 14:18:17 000000 000110 S 001.0 Pool 1-D  
0051 07/23/04 14:21:21 000001 000111 S 001.0 Pool 1-D  
0052 07/23/04 14:30:48 000000 033953 S 001.0 Source Check  
0053 07/23/04 14:34:35 000000 000097 S 001.0 Pool 1-E  
0054 07/23/04 14:37:59 000001 000118 S 001.0 Pool 1-E  
0055 07/23/04 14:42:03 000000 000110 S 001.0 Pool 1-E  
0056 07/23/04 14:45:58 000001 000107 S 001.0 Pool 1-E  
0057 07/23/04 14:49:21 000000 000088 S 001.0 Pool 1-E  
0058 07/23/04 14:51:50 000000 000124 S 001.0 Pool 1-E  
0059 07/23/04 14:56:19 000003 000106 S 001.0 Pool 1-E  
0060 07/23/04 14:58:29 000001 000133 S 001.0 Pool 1-E  
0061 07/23/04 15:03:36 000000 000140 S 001.0 Pool 1-E  
0062 07/23/04 15:06:16 000001 000128 S 001.0 Pool 1-E  
0063 07/23/04 15:11:18 000001 000113 S 001.0 Pool 1-E  
0064 07/23/04 15:14:26 000000 000110 S 001.0 Pool 1-E  
0065 07/23/04 15:18:58 000004 000105 S 001.0 Pool 1-E  
0066 07/23/04 15:25:04 000001 000114 S 001.0 Pool 1-E  
0067 07/23/04 15:27:04 000001 000106 S 001.0 Pool 1-E  
0068 07/23/04 15:31:43 000001 000121 S 001.0 Pool 1-E  
0069 07/23/04 15:34:45 000000 035271 S 001.0 Source Check  
0070 07/23/04 15:39:44 000002 000081 S 001.0 Pool 1-F  
0071 07/23/04 15:41:45 000001 000101 S 001.0 Pool 1-F  
0072 07/23/04 15:47:45 000000 000089 S 001.0 Pool 1-F  
0073 07/23/04 15:52:38 000001 000089 S 001.0 Pool 1-F  
0074 07/23/04 15:57:58 000001 000099 S 001.0 Pool 1-F  
0075 07/23/04 16:01:12 000001 000113 S 001.0 Pool 1-F  
0076 07/23/04 16:04:00 000000 000145 S 001.0 Pool 1-F  
0077 07/23/04 16:07:49 000000 000126 S 001.0 Pool 1-F  
0078 07/23/04 16:10:34 000002 000122 S 001.0 Pool 1-F  
0079 07/23/04 16:14:13 000002 000097 S 001.0 Pool 1-F  
0080 07/23/04 16:17:11 000001 000098 S 001.0 Pool 1-F  
0081 07/23/04 16:20:40 000001 000105 S 001.0 Pool 1-F  
0082 07/23/04 16:23:01 000000 000140 S 001.0 Pool 1-F  
0083 07/23/04 16:26:03 000001 000124 S 001.0 Pool 1-F  
0084 07/23/04 16:29:44 000001 000095 S 001.0 Pool 1-F  
0085 07/23/04 16:33:31 000001 000087 S 001.0 Pool 1-F  
0086 07/23/04 16:35:07 000000 035329 S 001.0 Source Check  
0087 07/23/04 16:39:33 000001 000135 S 001.0 Pool 1-A  
0088 07/23/04 16:42:11 000000 000095 S 001.0 Pool 1-A  
0089 07/23/04 16:45:08 000000 000129 S 001.0 Pool 1-A  
0090 07/23/04 16:49:37 000001 000158 S 001.0 Pool 1-A  
0091 07/23/04 16:52:03 000002 000150 S 001.0 Pool 1-A  
0092 07/23/04 16:55:06 000001 000121 S 001.0 Pool 1-A  
0093 07/23/04 16:57:18 000000 000138 S 001.0 Pool 1-A  
0094 07/23/04 16:59:40 000001 000146 S 001.0 Pool 1-A  
0095 07/23/04 17:01:58 000000 000140 S 001.0 Pool 1-A  
0096 07/23/04 17:04:41 000001 000157 S 001.0 Pool 1-A  
0097 07/23/04 17:07:47 000001 000112 S 001.0 Pool 1-A  
0098 07/23/04 17:11:17 000000 000114 S 001.0 Pool 1-A  
0099 07/23/04 17:13:12 000000 000122 S 001.0 Pool 1-A  
0100 07/23/04 17:15:22 000000 000129 S 001.0 Pool 1-A  
0101 07/23/04 17:18:39 000002 000138 S 001.0 Pool 1-A  
S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
48	Smear 1	07/24/04	14:35:53	Rx Pool-1-D	Final Status Survey	07/24/04	14:35:53	1.000	1.00
49	Smear 2	07/24/04	14:34:32	Rx Pool-1-D	Final Status Survey	07/24/04	14:34:32	1.000	1.00
50	Smear 3	07/24/04	14:33:12	Rx Pool-1-D	Final Status Survey	07/24/04	14:33:12	1.000	1.00
51	Smear 4	07/24/04	14:31:51	Rx Pool-1-D	Final Status Survey	07/24/04	14:31:51	1.000	1.00
52	Smear 5	07/24/04	14:30:31	Rx Pool-1-D	Final Status Survey	07/24/04	14:30:31	1.000	1.00
53	Smear 6	07/24/04	14:29:10	Rx Pool-1-D	Final Status Survey	07/24/04	14:29:10	1.000	1.00
54	Smear 7	07/24/04	14:27:49	Rx Pool-1-D	Final Status Survey	07/24/04	14:27:49	1.000	1.00
55	Smear 8	07/24/04	14:26:28	Rx Pool-1-D	Final Status Survey	07/24/04	14:26:28	1.000	1.00
56	Smear 9	07/24/04	14:25:08	Rx Pool-1-D	Final Status Survey	07/24/04	14:25:08	1.000	1.00
57	Smear 10	07/24/04	14:23:47	Rx Pool-1-D	Final Status Survey	07/24/04	14:23:47	1.000	1.00
58	Smear 11	07/24/04	14:22:26	Rx Pool-1-D	Final Status Survey	07/24/04	14:22:26	1.000	1.00
59	Smear 12	07/24/04	14:21:06	Rx Pool-1-D	Final Status Survey	07/24/04	14:21:06	1.000	1.00
60	Smear 13	07/24/04	14:19:45	Rx Pool-1-D	Final Status Survey	07/24/04	14:19:45	1.000	1.00
61	Smear 14	07/24/04	14:18:25	Rx Pool-1-D	Final Status Survey	07/24/04	14:18:25	1.000	1.00
62	Smear 15	07/24/04	14:17:04	Rx Pool-1-D	Final Status Survey	07/24/04	14:17:04	1.000	1.00
63	Smear 16	07/24/04	14:15:44	Rx Pool-1-D	Final Status Survey	07/24/04	14:15:44	1.000	1.00
64	Smear 1	07/24/04	14:13:03	Rx Pool-1-E	Final Status Survey	07/24/04	14:13:03	1.000	1.00
65	Smear 2	07/24/04	14:11:42	Rx Pool-1-E	Final Status Survey	07/24/04	14:11:42	1.000	1.00
66	Smear 3	07/24/04	14:10:22	Rx Pool-1-E	Final Status Survey	07/24/04	14:10:22	1.000	1.00
67	Smear 4	07/24/04	14:09:01	Rx Pool-1-E	Final Status Survey	07/24/04	14:09:01	1.000	1.00
68	Smear 5	07/24/04	14:07:41	Rx Pool-1-E	Final Status Survey	07/24/04	14:07:41	1.000	1.00
69	Smear 6	07/24/04	14:06:20	Rx Pool-1-E	Final Status Survey	07/24/04	14:06:20	1.000	1.00
70	Smear 7	07/24/04	14:04:59	Rx Pool-1-E	Final Status Survey	07/24/04	14:04:59	1.000	1.00
71	Smear 8	07/24/04	14:03:38	Rx Pool-1-E	Final Status Survey	07/24/04	14:03:38	1.000	1.00
72	Smear 9	07/24/04	14:02:18	Rx Pool-1-E	Final Status Survey	07/24/04	14:02:18	1.000	1.00
73	Smear 10	07/24/04	14:00:57	Rx Pool-1-E	Final Status Survey	07/24/04	14:00:57	1.000	1.00
74	Smear 11	07/24/04	13:59:37	Rx Pool-1-E	Final Status Survey	07/24/04	13:59:37	1.000	1.00
75	Smear 12	07/24/04	13:58:16	Rx Pool-1-E	Final Status Survey	07/24/04	13:58:16	1.000	1.00
76	Smear 13	07/24/04	13:56:56	Rx Pool-1-E	Final Status Survey	07/24/04	13:56:56	1.000	1.00
77	Smear 14	07/24/04	13:55:35	Rx Pool-1-E	Final Status Survey	07/24/04	13:55:35	1.000	1.00
78	Smear 15	07/24/04	13:54:15	Rx Pool-1-E	Final Status Survey	07/24/04	13:54:15	1.000	1.00
79	Smear 16	07/24/04	14:14:23	Rx Pool-1-E	Final Status Survey	07/24/04	14:14:23	1.000	1.00
80	Smear 1	07/24/04	13:52:54	Rx Pool-1-F	Final Status Survey	07/24/04	13:52:54	1.000	1.00
81	Smear 2	07/24/04	13:51:33	Rx Pool-1-F	Final Status Survey	07/24/04	13:51:33	1.000	1.00
82	Smear 3	07/24/04	13:50:13	Rx Pool-1-F	Final Status Survey	07/24/04	13:50:13	1.000	1.00
83	Smear 4	07/24/04	13:48:52	Rx Pool-1-F	Final Status Survey	07/24/04	13:48:52	1.000	1.00
84	Smear 5	07/24/04	13:47:31	Rx Pool-1-F	Final Status Survey	07/24/04	13:47:31	1.000	1.00
85	Smear 6	07/24/04	13:46:11	Rx Pool-1-F	Final Status Survey	07/24/04	13:46:11	1.000	1.00
86	Smear 7	07/24/04	13:44:50	Rx Pool-1-F	Final Status Survey	07/24/04	13:44:50	1.000	1.00
87	Smear 8	07/24/04	13:43:30	Rx Pool-1-F	Final Status Survey	07/24/04	13:43:30	1.000	1.00
88	Smear 9	07/24/04	13:42:09	Rx Pool-1-F	Final Status Survey	07/24/04	13:42:09	1.000	1.00
89	Smear 10	07/24/04	13:40:49	Rx Pool-1-F	Final Status Survey	07/24/04	13:40:49	1.000	1.00
90	Smear 11	07/24/04	13:39:28	Rx Pool-1-F	Final Status Survey	07/24/04	13:39:28	1.000	1.00
91	Smear 12	07/24/04	13:38:08	Rx Pool-1-F	Final Status Survey	07/24/04	13:38:08	1.000	1.00
92	Smear 13	07/24/04	13:36:47	Rx Pool-1-F	Final Status Survey	07/24/04	13:36:47	1.000	1.00
93	Smear 14	07/24/04	13:35:27	Rx Pool-1-F	Final Status Survey	07/24/04	13:35:27	1.000	1.00
94	Smear 15	07/24/04	13:34:07	Rx Pool-1-F	Final Status Survey	07/24/04	13:34:07	1.000	1.00
95	Smear 16	07/24/04	13:32:47	Rx Pool-1-F	Final Status Survey	07/24/04	13:32:47	1.000	1.00

Technician (print): Chris Higgins

Technician (sign):

Date: 7-25-04

Reviewed By (print): Mike Taylor

Reviewed By (sign):

Date: 7-24-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 27.91 LLD: 12.8 dpm				Bkg: 0.4 cpm %Eff: 44.19 LLD: 10.92 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
48	Smear 1	07/24/04	14:35:53	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
49	Smear 2	07/24/04	14:34:32	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
50	Smear 3	07/24/04	14:33:12	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
51	Smear 4	07/24/04	14:31:51	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
52	Smear 5	07/24/04	14:30:31	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
53	Smear 6	07/24/04	14:29:10	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
54	Smear 7	07/24/04	14:27:49	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
55	Smear 8	07/24/04	14:26:28	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
56	Smear 9	07/24/04	14:25:08	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
57	Smear 10	07/24/04	14:23:47	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
58	Smear 11	07/24/04	14:22:26	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
59	Smear 12	07/24/04	14:21:06	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
60	Smear 13	07/24/04	14:19:45	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
61	Smear 14	07/24/04	14:18:25	0.00	-0.07	-0.24	12.80	17.00	16.60	37.57	10.92
62	Smear 15	07/24/04	14:17:04	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
63	Smear 16	07/24/04	14:15:44	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
64	Smear 1	07/24/04	14:13:03	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
65	Smear 2	07/24/04	14:11:42	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
66	Smear 3	07/24/04	14:10:22	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
67	Smear 4	07/24/04	14:09:01	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
68	Smear 5	07/24/04	14:07:41	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
69	Smear 6	07/24/04	14:06:20	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
70	Smear 7	07/24/04	14:04:59	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
71	Smear 8	07/24/04	14:03:38	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
72	Smear 9	07/24/04	14:02:18	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
73	Smear 10	07/24/04	14:00:57	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
74	Smear 11	07/24/04	13:59:37	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
75	Smear 12	07/24/04	13:58:16	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
76	Smear 13	07/24/04	13:56:56	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
77	Smear 14	07/24/04	13:55:35	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
78	Smear 15	07/24/04	13:54:15	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
79	Smear 16	07/24/04	14:14:23	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
80	Smear 1	07/24/04	13:52:54	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
81	Smear 2	07/24/04	13:51:33	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
82	Smear 3	07/24/04	13:50:13	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
83	Smear 4	07/24/04	13:48:52	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
84	Smear 5	07/24/04	13:47:31	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
85	Smear 6	07/24/04	13:46:11	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
86	Smear 7	07/24/04	13:44:50	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
87	Smear 8	07/24/04	13:43:30	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
88	Smear 9	07/24/04	13:42:09	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
89	Smear 10	07/24/04	13:40:49	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
90	Smear 11	07/24/04	13:39:28	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
91	Smear 12	07/24/04	13:38:08	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
92	Smear 13	07/24/04	13:36:47	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
93	Smear 14	07/24/04	13:35:27	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
94	Smear 15	07/24/04	13:34:07	1.00	0.93	3.34	12.80	0.00	-0.40	-0.91	10.92
95	Smear 16	07/24/04	13:32:47	1.00	0.93	3.34	12.80	0.00	-0.40	-0.91	10.92

Technician (print): Chris Higgins


Technician (sign):

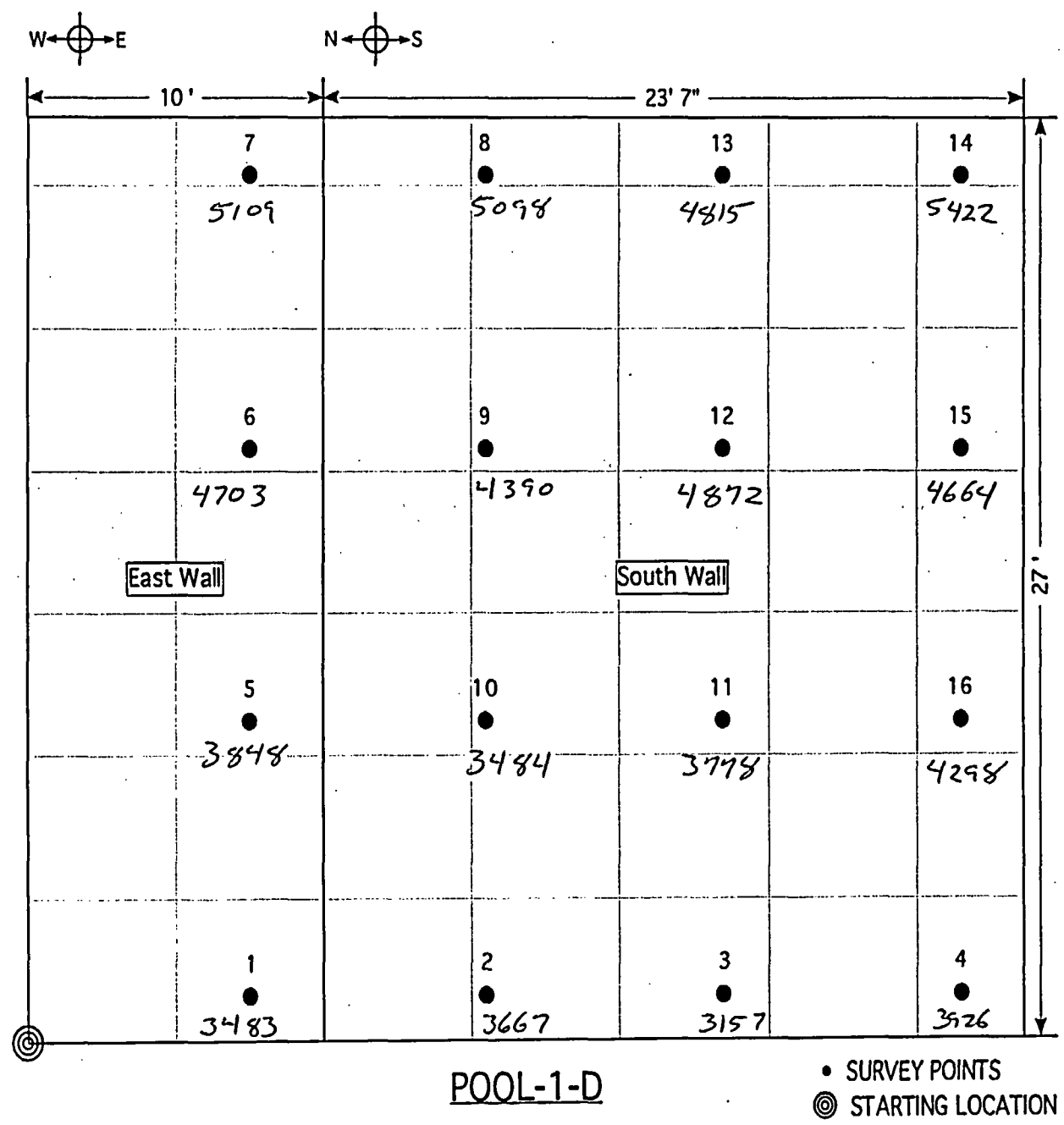
Date: 7-25-04

Reviewed By (print): Mike Taylor

Reviewed By (sign):

Date: 7-24-04


Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Reactor Pool East and South Wall
 <small>SCIENTECH, Inc. 145 WEST STREET NEW MILFORD, CT 06476</small>	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-D	

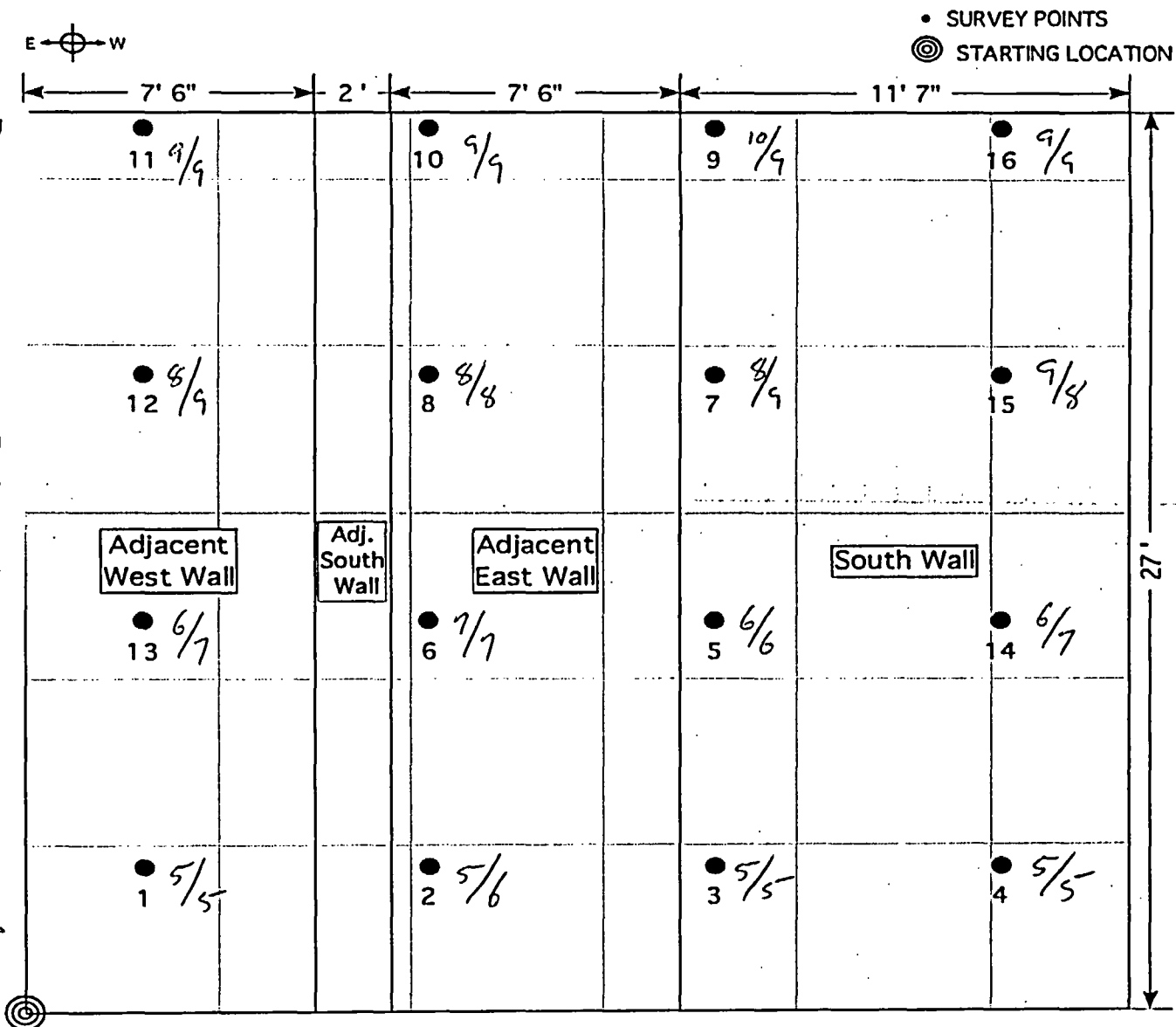


Date: 7-23-04 Background: 5111 cpm  
 Survey Type: Fixed Pt. Scan Dose Rate  
 Instrument ID#: Model 2350 144-2  
 Start Time: 1315 # 203445 # 218337  
 Stop Time: 1430  
 Technician: Mike Taylor / Chris Higgins  
 Gamma Survey  
 All readings in cpm

**POOL-1-E Reactor Pool**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHIAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Reactor Pool Adjacent Walls and South Wall
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23329-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-E	



POOL-1-E

Date: 7-23-04

Background:

Gar/R/h

All dosimetry Gar/R/h

Survey Type: Fixed Pt. Scan

Dose Rate

Contact / meter

Instrument ID#: Model 15 # 062196

Start Time: 1435

Stop Time: 1530

Technician: Mike Taylor / Chris Higgins

# POOL-1-E Beta/Gamma Results

Log #
52 Source
53
54
55
56
65
58
57
66
64
60
59
67
63
62
61
68

	X	Y
	n/a	n/a
1	2.7	1.3
2	10.5	1.3
3	18.3	1.3
4	26.1	1.3
13	2.7	9.1
6	10.5	9.1
5	18.3	9.1
14	26.1	9.1
12	2.7	16.9
8	10.5	16.9
7	18.3	16.9
15	26.1	16.9
11	2.7	24.7
10	10.5	24.7
9	18.3	24.7
16	26.1	24.7

L (ft)= 7.8

A (ft')= 858

Fixed Points	Ave. (Scan)	Max. (Scan)
33953	n/a	n/a
97	80	120
118	100	140
110	80	160
107	100	140
105	100	130
124	100	180
88	80	140
114	100	180
110	100	160
133	120	180
106	80	140
106	100	180
113	110	180
128	120	180
140	120	200
121	120	200

Ludlum Measurements, Inc.  
Model 2360 Log Data

07/24/2004  
10:19:10 AM

Header 1: Chris Higgins  
Header 2: Serial#202475  
Header 3: DetSer#PR208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Rx Pool  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 07/24/2004  
Model 2360 Time: 09:52:50  
Sample Number: 0102

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 050000  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 050000  
Alpha + Beta Scaler Alarm: 050000

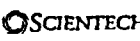
C - Count Time  
R - Ratemeter  
S - Scaler

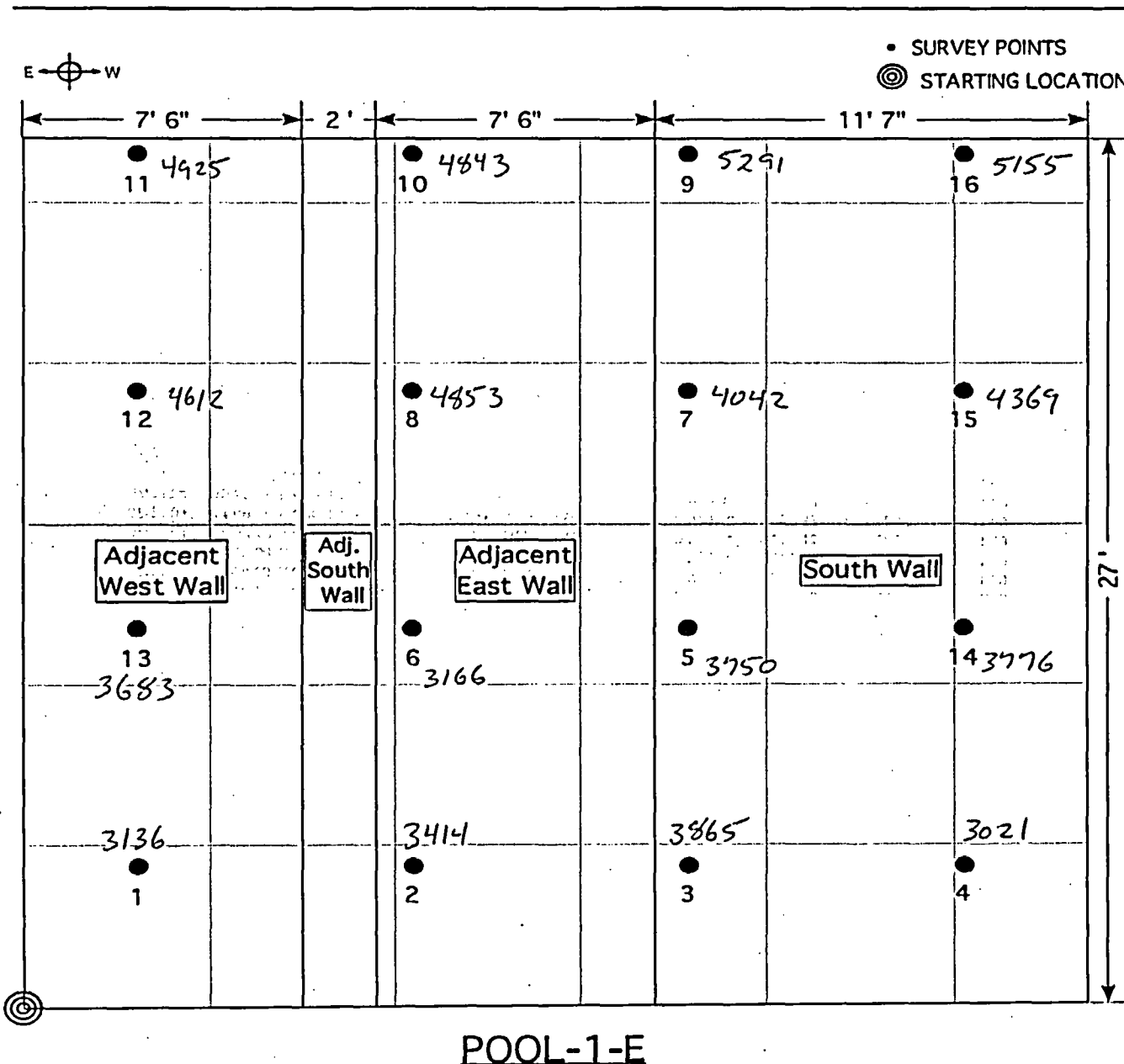
Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	07/23/04	10:19:32	000000	035167	S 001.0	Source Check
0002	07/23/04	11:31:54	000000	000091	S 001.0	Pool 1-B
0003	07/23/04	11:35:24	000001	000105	S 001.0	Pool 1-B
0004	07/23/04	11:37:24	000018	000125	S 001.0	Pool 1-B
0005	07/23/04	11:40:40	000000	000086	S 001.0	Pool 1-B
0006	07/23/04	11:50:44	000001	000095	S 001.0	Pool 1-B
0007	07/23/04	11:53:26	000000	000100	S 001.0	Pool 1-B
0008	07/23/04	11:56:01	000001	000111	S 001.0	Pool 1-B
0009	07/23/04	12:00:49	000001	000100	S 001.0	Pool 1-B
0010	07/23/04	12:02:42	000001	000098	S 001.0	Pool 1-B
0011	07/23/04	12:05:25	000003	000106	S 001.0	Pool 1-B
0012	07/23/04	12:08:12	000001	000132	S 001.0	Pool 1-B
0013	07/23/04	12:11:58	000002	000151	S 001.0	Pool 1-B
0014	07/23/04	12:13:42	000000	000139	S 001.0	Pool 1-B
0015	07/23/04	12:16:40	000001	000133	S 001.0	Pool 1-B
0016	07/23/04	12:19:23	000000	000115	S 001.0	Pool 1-B
0017	07/23/04	12:22:09	000000	000099	S 001.0	Pool 1-B
0018	07/23/04	12:26:02	000002	034396	S 001.0	Source Check
0019	07/23/04	12:28:52	000000	000086	S 001.0	Pool 1-C
0020	07/23/04	12:31:04	000001	000094	S 001.0	Pool 1-C
0021	07/23/04	12:33:14	000000	000090	S 001.0	Pool 1-C
0022	07/23/04	12:35:31	000000	000090	S 001.0	Pool 1-C
0023	07/23/04	12:40:11	000003	000115	S 001.0	Pool 1-C
0024	07/23/04	12:42:37	000001	000120	S 001.0	Pool 1-C
0025	07/23/04	12:45:05	000000	000128	S 001.0	Pool 1-C
0026	07/23/04	12:48:06	000000	000126	S 001.0	Pool 1-C
0027	07/23/04	12:50:24	000000	000114	S 001.0	Pool 1-C
0028	07/23/04	12:52:52	000002	000100	S 001.0	Pool 1-C
0029	07/23/04	12:57:03	000002	000104	S 001.0	Pool 1-C
0030	07/23/04	13:00:21	000005	000118	S 001.0	Pool 1-C
0031	07/23/04	13:02:43	000001	000127	S 001.0	Pool 1-C
0032	07/23/04	13:07:00	000003	000132	S 001.0	Pool 1-C
0033	07/23/04	13:10:47	000001	000109	S 001.0	Pool 1-C
0034	07/23/04	13:14:08	000001	000102	S 001.0	Pool 1-C

0035 07/23/04 13:17:52 000000 034111 S 001.0 Source Check  
0036 07/23/04 13:20:20 000000 000104 S 001.0 Pool 1-D  
0037 07/23/04 13:22:44 000001 000080 S 001.0 Pool 1-D  
0038 07/23/04 13:25:21 000001 000109 S 001.0 Pool 1-D  
0039 07/23/04 13:27:44 000001 000091 S 001.0 Pool 1-D  
0040 07/23/04 13:34:14 000001 000071 S 001.0 Pool 1-D  
0041 07/23/04 13:38:11 000001 000093 S 001.0 Pool 1-D  
0042 07/23/04 13:41:45 000000 000123 S 001.0 Pool 1-D  
0043 07/23/04 13:47:31 000001 000114 S 001.0 Pool 1-D  
0044 07/23/04 13:52:10 000000 000102 S 001.0 Pool 1-D  
0045 07/23/04 13:56:19 000002 000117 S 001.0 Pool 1-D  
0046 07/23/04 14:01:15 000000 000112 S 001.0 Pool 1-D  
0047 07/23/04 14:05:36 000000 000118 S 001.0 Pool 1-D  
0048 07/23/04 14:09:38 000001 000101 S 001.0 Pool 1-D  
0049 07/23/04 14:14:31 000001 000099 S 001.0 Pool 1-D  
0050 07/23/04 14:18:17 000000 000110 S 001.0 Pool 1-D  
0051 07/23/04 14:21:21 000001 000111 S 001.0 Pool 1-D  
0052 07/23/04 14:30:48 000000 033953 S 001.0 Source Check  
0053 07/23/04 14:34:35 000000 000097 S 001.0 Pool 1-E  
0054 07/23/04 14:37:59 000001 000118 S 001.0 Pool 1-E  
0055 07/23/04 14:42:03 000000 000110 S 001.0 Pool 1-E  
0056 07/23/04 14:45:58 000001 000107 S 001.0 Pool 1-E  
0057 07/23/04 14:49:21 000000 000088 S 001.0 Pool 1-E  
0058 07/23/04 14:51:50 000000 000124 S 001.0 Pool 1-E  
0059 07/23/04 14:56:19 000003 000106 S 001.0 Pool 1-E  
0060 07/23/04 14:58:29 000001 000133 S 001.0 Pool 1-E  
0061 07/23/04 15:03:36 000000 000140 S 001.0 Pool 1-E  
0062 07/23/04 15:06:16 000001 000128 S 001.0 Pool 1-E  
0063 07/23/04 15:11:18 000001 000113 S 001.0 Pool 1-E  
0064 07/23/04 15:14:26 000000 000110 S 001.0 Pool 1-E  
0065 07/23/04 15:18:58 000004 000105 S 001.0 Pool 1-E  
0066 07/23/04 15:25:04 000001 000114 S 001.0 Pool 1-E  
0067 07/23/04 15:27:04 000001 000106 S 001.0 Pool 1-E  
0068 07/23/04 15:31:43 000001 000121 S 001.0 Pool 1-E  
0069 07/23/04 15:34:45 000000 035271 S 001.0 Source Check  
0070 07/23/04 15:39:44 000002 000081 S 001.0 Pool 1-F  
0071 07/23/04 15:41:45 000001 000101 S 001.0 Pool 1-F  
0072 07/23/04 15:47:45 000000 000089 S 001.0 Pool 1-F  
0073 07/23/04 15:52:38 000001 000089 S 001.0 Pool 1-F  
0074 07/23/04 15:57:58 000001 000099 S 001.0 Pool 1-F  
0075 07/23/04 16:01:12 000001 000113 S 001.0 Pool 1-F  
0076 07/23/04 16:04:00 000000 000145 S 001.0 Pool 1-F  
0077 07/23/04 16:07:49 000000 000126 S 001.0 Pool 1-F  
0078 07/23/04 16:10:34 000002 000122 S 001.0 Pool 1-F  
0079 07/23/04 16:14:13 000002 000097 S 001.0 Pool 1-F  
0080 07/23/04 16:17:11 000001 000098 S 001.0 Pool 1-F  
0081 07/23/04 16:20:40 000001 000105 S 001.0 Pool 1-F  
0082 07/23/04 16:23:01 000000 000140 S 001.0 Pool 1-F  
0083 07/23/04 16:26:03 000001 000124 S 001.0 Pool 1-F  
0084 07/23/04 16:29:44 000001 000095 S 001.0 Pool 1-F  
0085 07/23/04 16:33:31 000001 000087 S 001.0 Pool 1-F  
0086 07/23/04 16:35:07 000000 035329 S 001.0 Source Check  
0087 07/23/04 16:39:33 000001 000135 S 001.0 Pool 1-A  
0088 07/23/04 16:42:11 000000 000095 S 001.0 Pool 1-A  
0089 07/23/04 16:45:08 000000 000129 S 001.0 Pool 1-A  
0090 07/23/04 16:49:37 000001 000158 S 001.0 Pool 1-A  
0091 07/23/04 16:52:03 000002 000150 S 001.0 Pool 1-A  
0092 07/23/04 16:55:06 000001 000121 S 001.0 Pool 1-A  
0093 07/23/04 16:57:18 000000 000138 S 001.0 Pool 1-A  
0094 07/23/04 16:59:40 000001 000146 S 001.0 Pool 1-A  
0095 07/23/04 17:01:58 000000 000140 S 001.0 Pool 1-A  
0096 07/23/04 17:04:41 000001 000157 S 001.0 Pool 1-A  
0097 07/23/04 17:07:47 000001 000112 S 001.0 Pool 1-A  
0098 07/23/04 17:11:17 000000 000114 S 001.0 Pool 1-A  
0099 07/23/04 17:13:12 000000 000122 S 001.0 Pool 1-A  
0100 07/23/04 17:15:22 000000 000129 S 001.0 Pool 1-A  
0101 07/23/04 17:18:39 000002 000138 S 001.0 Pool 1-A

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Reactor Pool Adjacent Walls and South Wall
 SCIENCETECH, Inc. 143 WEST STREET NEW MILFORD, CT 06474	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-E	



POOL-1-E

Date: 7-23-04

Background: Still open

All readings in cpm

Survey Type:

Fixed Pt.

Scan

Dose Rate

Instrument ID#: Model 1350 / 44-2

# 203445

# 213337

Gamma Surveys

Start Time: 1435

Stop Time: 1530

Technician: Mike Taylor / Chris Higgins

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
48	Smear 1	07/24/04	14:35:53	Rx Pool-1-D	Final Status Survey	07/24/04	14:35:53	1.000	1.00
49	Smear 2	07/24/04	14:34:32	Rx Pool-1-D	Final Status Survey	07/24/04	14:34:32	1.000	1.00
50	Smear 3	07/24/04	14:33:12	Rx Pool-1-D	Final Status Survey	07/24/04	14:33:12	1.000	1.00
51	Smear 4	07/24/04	14:31:51	Rx Pool-1-D	Final Status Survey	07/24/04	14:31:51	1.000	1.00
52	Smear 5	07/24/04	14:30:31	Rx Pool-1-D	Final Status Survey	07/24/04	14:30:31	1.000	1.00
53	Smear 6	07/24/04	14:29:10	Rx Pool-1-D	Final Status Survey	07/24/04	14:29:10	1.000	1.00
54	Smear 7	07/24/04	14:27:49	Rx Pool-1-D	Final Status Survey	07/24/04	14:27:49	1.000	1.00
55	Smear 8	07/24/04	14:26:28	Rx Pool-1-D	Final Status Survey	07/24/04	14:26:28	1.000	1.00
56	Smear 9	07/24/04	14:25:08	Rx Pool-1-D	Final Status Survey	07/24/04	14:25:08	1.000	1.00
57	Smear 10	07/24/04	14:23:47	Rx Pool-1-D	Final Status Survey	07/24/04	14:23:47	1.000	1.00
58	Smear 11	07/24/04	14:22:26	Rx Pool-1-D	Final Status Survey	07/24/04	14:22:26	1.000	1.00
59	Smear 12	07/24/04	14:21:06	Rx Pool-1-D	Final Status Survey	07/24/04	14:21:06	1.000	1.00
60	Smear 13	07/24/04	14:19:45	Rx Pool-1-D	Final Status Survey	07/24/04	14:19:45	1.000	1.00
61	Smear 14	07/24/04	14:18:25	Rx Pool-1-D	Final Status Survey	07/24/04	14:18:25	1.000	1.00
62	Smear 15	07/24/04	14:17:04	Rx Pool-1-D	Final Status Survey	07/24/04	14:17:04	1.000	1.00
63	Smear 16	07/24/04	14:15:44	Rx Pool-1-D	Final Status Survey	07/24/04	14:15:44	1.000	1.00
64	Smear 1	07/24/04	14:13:03	Rx Pool-1-E	Final Status Survey	07/24/04	14:13:03	1.000	1.00
65	Smear 2	07/24/04	14:11:42	Rx Pool-1-E	Final Status Survey	07/24/04	14:11:42	1.000	1.00
66	Smear 3	07/24/04	14:10:22	Rx Pool-1-E	Final Status Survey	07/24/04	14:10:22	1.000	1.00
67	Smear 4	07/24/04	14:09:01	Rx Pool-1-E	Final Status Survey	07/24/04	14:09:01	1.000	1.00
68	Smear 5	07/24/04	14:07:41	Rx Pool-1-E	Final Status Survey	07/24/04	14:07:41	1.000	1.00
69	Smear 6	07/24/04	14:06:20	Rx Pool-1-E	Final Status Survey	07/24/04	14:06:20	1.000	1.00
70	Smear 7	07/24/04	14:04:59	Rx Pool-1-E	Final Status Survey	07/24/04	14:04:59	1.000	1.00
71	Smear 8	07/24/04	14:03:38	Rx Pool-1-E	Final Status Survey	07/24/04	14:03:38	1.000	1.00
72	Smear 9	07/24/04	14:02:18	Rx Pool-1-E	Final Status Survey	07/24/04	14:02:18	1.000	1.00
73	Smear 10	07/24/04	14:00:57	Rx Pool-1-E	Final Status Survey	07/24/04	14:00:57	1.000	1.00
74	Smear 11	07/24/04	13:59:37	Rx Pool-1-E	Final Status Survey	07/24/04	13:59:37	1.000	1.00
75	Smear 12	07/24/04	13:58:16	Rx Pool-1-E	Final Status Survey	07/24/04	13:58:16	1.000	1.00
76	Smear 13	07/24/04	13:56:56	Rx Pool-1-E	Final Status Survey	07/24/04	13:56:56	1.000	1.00
77	Smear 14	07/24/04	13:55:35	Rx Pool-1-E	Final Status Survey	07/24/04	13:55:35	1.000	1.00
78	Smear 15	07/24/04	13:54:15	Rx Pool-1-E	Final Status Survey	07/24/04	13:54:15	1.000	1.00
79	Smear 16	07/24/04	14:14:23	Rx Pool-1-E	Final Status Survey	07/24/04	14:14:23	1.000	1.00
80	Smear 1	07/24/04	13:52:54	Rx Pool-1-F	Final Status Survey	07/24/04	13:52:54	1.000	1.00
81	Smear 2	07/24/04	13:51:33	Rx Pool-1-F	Final Status Survey	07/24/04	13:51:33	1.000	1.00
82	Smear 3	07/24/04	13:50:13	Rx Pool-1-F	Final Status Survey	07/24/04	13:50:13	1.000	1.00
83	Smear 4	07/24/04	13:48:52	Rx Pool-1-F	Final Status Survey	07/24/04	13:48:52	1.000	1.00
84	Smear 5	07/24/04	13:47:31	Rx Pool-1-F	Final Status Survey	07/24/04	13:47:31	1.000	1.00
85	Smear 6	07/24/04	13:46:11	Rx Pool-1-F	Final Status Survey	07/24/04	13:46:11	1.000	1.00
86	Smear 7	07/24/04	13:44:50	Rx Pool-1-F	Final Status Survey	07/24/04	13:44:50	1.000	1.00
87	Smear 8	07/24/04	13:43:30	Rx Pool-1-F	Final Status Survey	07/24/04	13:43:30	1.000	1.00
88	Smear 9	07/24/04	13:42:09	Rx Pool-1-F	Final Status Survey	07/24/04	13:42:09	1.000	1.00
89	Smear 10	07/24/04	13:40:49	Rx Pool-1-F	Final Status Survey	07/24/04	13:40:49	1.000	1.00
90	Smear 11	07/24/04	13:39:28	Rx Pool-1-F	Final Status Survey	07/24/04	13:39:28	1.000	1.00
91	Smear 12	07/24/04	13:38:08	Rx Pool-1-F	Final Status Survey	07/24/04	13:38:08	1.000	1.00
92	Smear 13	07/24/04	13:36:47	Rx Pool-1-F	Final Status Survey	07/24/04	13:36:47	1.000	1.00
93	Smear 14	07/24/04	13:35:27	Rx Pool-1-F	Final Status Survey	07/24/04	13:35:27	1.000	1.00
94	Smear 15	07/24/04	13:34:07	Rx Pool-1-F	Final Status Survey	07/24/04	13:34:07	1.000	1.00
95	Smear 16	07/24/04	13:32:47	Rx Pool-1-F	Final Status Survey	07/24/04	13:32:47	1.000	1.00

Technician (print): Chris Higgins

Technician (sign):

Date: 25-04

Reviewed By (print): Mike Taylor

Reviewed By (sign):

Date: 7-24-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 27.91 LLD: 12.8 dpm				Bkg: 0.4 cpm %Eff: 44.19 LLD: 10.92 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
48	Smear 1	07/24/04	14:35:53	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
49	Smear 2	07/24/04	14:34:32	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
50	Smear 3	07/24/04	14:33:12	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
51	Smear 4	07/24/04	14:31:51	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
52	Smear 5	07/24/04	14:30:31	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
53	Smear 6	07/24/04	14:29:10	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
54	Smear 7	07/24/04	14:27:49	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
55	Smear 8	07/24/04	14:26:28	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
56	Smear 9	07/24/04	14:25:08	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
57	Smear 10	07/24/04	14:23:47	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
58	Smear 11	07/24/04	14:22:26	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
59	Smear 12	07/24/04	14:21:06	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
60	Smear 13	07/24/04	14:19:45	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
61	Smear 14	07/24/04	14:18:25	0.00	-0.07	-0.24	12.80	17.00	16.60	37.57	10.92
62	Smear 15	07/24/04	14:17:04	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
63	Smear 16	07/24/04	14:15:44	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
64	Smear 1	07/24/04	14:13:03	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
65	Smear 2	07/24/04	14:11:42	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
66	Smear 3	07/24/04	14:10:22	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
67	Smear 4	07/24/04	14:09:01	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
68	Smear 5	07/24/04	14:07:41	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
69	Smear 6	07/24/04	14:06:20	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
70	Smear 7	07/24/04	14:04:59	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
71	Smear 8	07/24/04	14:03:38	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
72	Smear 9	07/24/04	14:02:18	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
73	Smear 10	07/24/04	14:00:57	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
74	Smear 11	07/24/04	13:59:37	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
75	Smear 12	07/24/04	13:58:16	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
76	Smear 13	07/24/04	13:56:56	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
77	Smear 14	07/24/04	13:55:35	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
78	Smear 15	07/24/04	13:54:15	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
79	Smear 16	07/24/04	14:14:23	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
80	Smear 1	07/24/04	13:52:54	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
81	Smear 2	07/24/04	13:51:33	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
82	Smear 3	07/24/04	13:50:13	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
83	Smear 4	07/24/04	13:48:52	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
84	Smear 5	07/24/04	13:47:31	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
85	Smear 6	07/24/04	13:46:11	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
86	Smear 7	07/24/04	13:44:50	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
87	Smear 8	07/24/04	13:43:30	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
88	Smear 9	07/24/04	13:42:09	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
89	Smear 10	07/24/04	13:40:49	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
90	Smear 11	07/24/04	13:39:28	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
91	Smear 12	07/24/04	13:38:08	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
92	Smear 13	07/24/04	13:36:47	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
93	Smear 14	07/24/04	13:35:27	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
94	Smear 15	07/24/04	13:34:07	1.00	0.93	3.34	12.80	0.00	-0.40	-0.91	10.92
95	Smear 16	07/24/04	13:32:47	1.00	0.93	3.34	12.80	0.00	-0.40	-0.91	10.92

Technician (print): Chris Higgins

Technician (sign):

Date: 7-25-04


Reviewed By (print): Mike Taylor

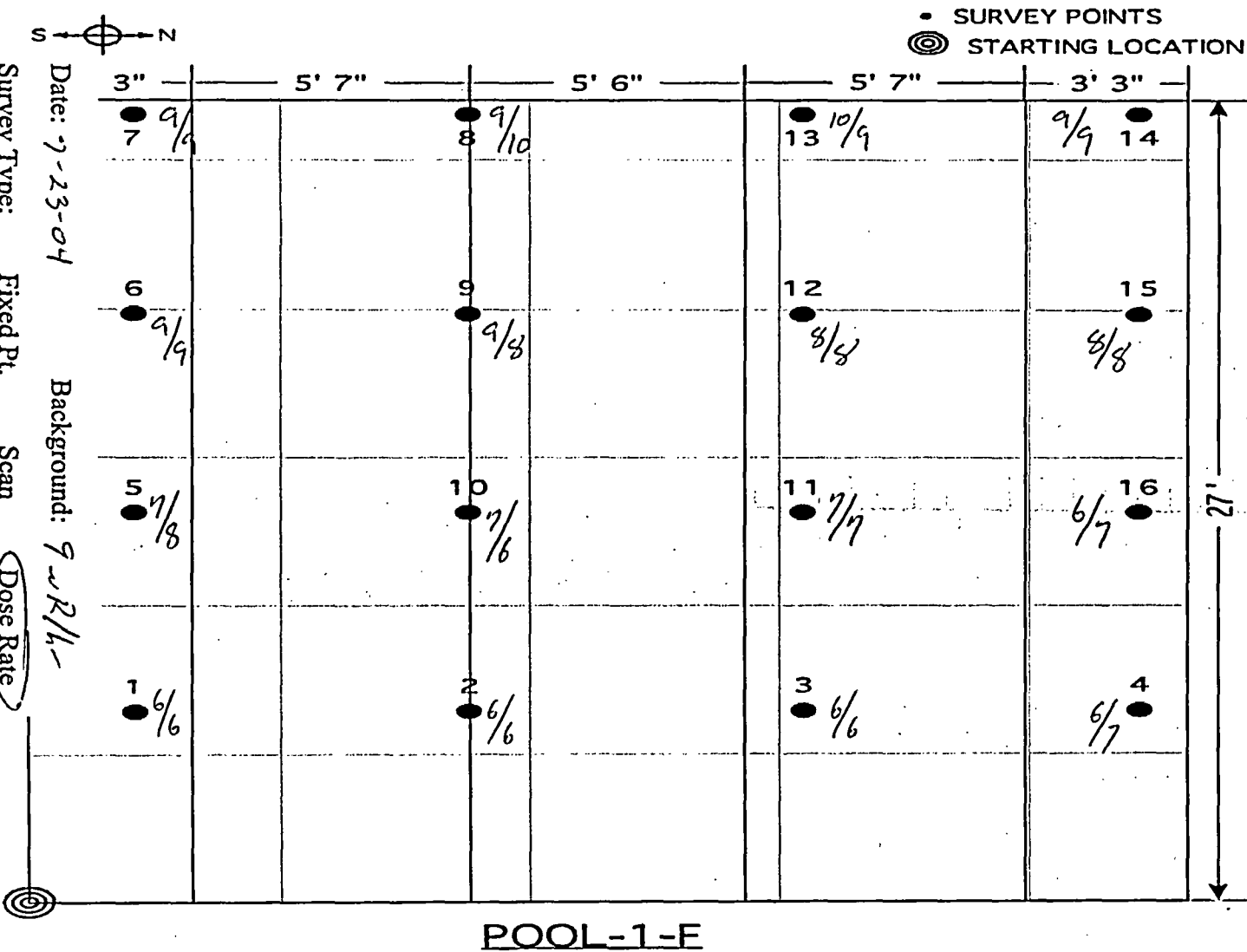
Reviewed By (sign):

Date: 7-24-04

**POOL-1-F Reactor Pool**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTIUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 1 Reactor Pool West Wall
 SCIENCETECH, Inc. 143 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-F	



POOL-1-E

Date: 7-23-04

Background: 9 w R/h

Survey Type: Fixed Pt.

Scan

Dose Rate

Instrument ID#: Model 19 # 062196

All doserates in w R/h.  
 contact / meter

Start Time: 1530

Stop Time: 1630

Technician: Mike Taylor / Chris Higgins

# POOL-1-F Beta/Gamma Results

Log #
69 Source
70
71
72
73
74
79
80
85
75
78
81
84
75
77
82
83

	X	Y
	n/a	n/a
1	2.1	6.4
2	8.8	6.4
3	15.5	6.4
4	22.2	6.4
5	2.1	13.1
10	8.8	13.1
11	15.5	13.1
16	22.2	13.1
6	2.1	19.8
9	8.8	19.8
12	15.5	19.8
15	22.2	19.8
7	2.1	26.5
8	8.8	26.5
13	15.5	26.5
14	22.2	26.5

L (ft)= 6.7

A (ft')= 624

Fixed Points	Ave. (Scan)	Max. (Scan)
35271	n/a	n/a
81	80	140
101	80	140
89	80	140
89	100	160
99	80	120
97	80	120
98	80	120
87	80	140
113	100	180
122	120	180
105	100	160
95	100	160
145	120	200
126	120	220
140	120	200
124	120	200

Ludlum Measurements, Inc.  
Model 2360 Log Data

D. 7/24/2004  
Ti. 10:19:10 AM

Header 1: Chris Higgins  
Header 2: Serial#202475  
Header 3: DetSer#PR208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Rx Pool  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 07/24/2004  
Model 2360 Time: 09:52:50  
Sample Number: 0102

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 050000  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 050000  
Alpha + Beta Scaler Alarm: 050000

me - Count Time  
emeter  
S aler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	07/23/04	10:19:32	000000	035167	S 001.0	Source Check
0002	07/23/04	11:31:54	000000	000091	S 001.0	Pool 1-B
0003	07/23/04	11:35:24	000001	000105	S 001.0	Pool 1-B
0004	07/23/04	11:37:24	000018	000125	S 001.0	Pool 1-B
0005	07/23/04	11:40:40	000000	000086	S 001.0	Pool 1-B
0006	07/23/04	11:50:44	000001	000095	S 001.0	Pool 1-B
0007	07/23/04	11:53:26	000000	000100	S 001.0	Pool 1-B
0008	07/23/04	11:56:01	000001	000111	S 001.0	Pool 1-B
0009	07/23/04	12:00:49	000001	000100	S 001.0	Pool 1-B
0010	07/23/04	12:02:42	000001	000098	S 001.0	Pool 1-B
0011	07/23/04	12:05:25	000003	000106	S 001.0	Pool 1-B
0012	07/23/04	12:08:12	000001	000132	S 001.0	Pool 1-B
0013	07/23/04	12:11:58	000002	000151	S 001.0	Pool 1-B
0014	07/23/04	12:13:42	000000	000139	S 001.0	Pool 1-B
0015	07/23/04	12:16:40	000001	000133	S 001.0	Pool 1-B
0016	07/23/04	12:19:23	000000	000115	S 001.0	Pool 1-B
0017	07/23/04	12:22:09	000000	000099	S 001.0	Pool 1-B
0018	07/23/04	12:26:02	000002	034396	S 001.0	Source Check
0019	07/23/04	12:28:52	000000	000086	S 001.0	Pool 1-C
0020	07/23/04	12:31:04	000001	000094	S 001.0	Pool 1-C
0021	07/23/04	12:33:14	000000	000090	S 001.0	Pool 1-C
0022	07/23/04	12:35:31	000000	000090	S 001.0	Pool 1-C
0023	07/23/04	12:40:11	000003	000115	S 001.0	Pool 1-C
0024	07/23/04	12:42:37	000001	000120	S 001.0	Pool 1-C
0025	07/23/04	12:45:05	000000	000128	S 001.0	Pool 1-C
0026	07/23/04	12:48:06	000000	000126	S 001.0	Pool 1-C
0027	07/23/04	12:50:24	000000	000114	S 001.0	Pool 1-C
0028	07/23/04	12:52:52	000002	000100	S 001.0	Pool 1-C
0029	07/23/04	12:57:03	000002	000104	S 001.0	Pool 1-C
0030	07/23/04	13:00:21	000005	000118	S 001.0	Pool 1-C
0031	07/23/04	13:02:43	000001	000127	S 001.0	Pool 1-C
0032	07/23/04	13:07:00	000003	000132	S 001.0	Pool 1-C
0033	07/23/04	13:10:47	000001	000109	S 001.0	Pool 1-C

0035 07/23/04 13:17:52 000000 034111 S 001.0 Source Check  
0036 07/23/04 13:20:20 000000 000104 S 001.0 Pool 1-D  
0037 07/23/04 13:22:44 000001 000080 S 001.0 Pool 1-D  
0038 07/23/04 13:25:21 000001 000109 S 001.0 Pool 1-D  
0039 07/23/04 13:27:44 000001 000091 S 001.0 Pool 1-D  
0040 07/23/04 13:34:14 000001 000071 S 001.0 Pool 1-D  
0041 07/23/04 13:38:11 000001 000093 S 001.0 Pool 1-D  
0042 07/23/04 13:41:45 000000 000123 S 001.0 Pool 1-D  
0043 07/23/04 13:47:31 000001 000114 S 001.0 Pool 1-D  
0044 07/23/04 13:52:10 000000 000102 S 001.0 Pool 1-D  
0045 07/23/04 13:56:19 000002 000117 S 001.0 Pool 1-D  
0046 07/23/04 14:01:15 000000 000112 S 001.0 Pool 1-D  
0047 07/23/04 14:05:36 000000 000118 S 001.0 Pool 1-D  
0048 07/23/04 14:09:38 000001 000101 S 001.0 Pool 1-D  
0049 07/23/04 14:14:31 000001 000099 S 001.0 Pool 1-D  
0050 07/23/04 14:18:17 000000 000110 S 001.0 Pool 1-D  
0051 07/23/04 14:21:21 000001 000111 S 001.0 Pool 1-D  
0052 07/23/04 14:30:48 000000 033953 S 001.0 Source Check  
0053 07/23/04 14:34:35 000000 000097 S 001.0 Pool 1-E  
0054 07/23/04 14:37:59 000001 000118 S 001.0 Pool 1-E  
0055 07/23/04 14:42:03 000000 000110 S 001.0 Pool 1-E  
0056 07/23/04 14:45:58 000001 000107 S 001.0 Pool 1-E  
0057 07/23/04 14:49:21 000000 000088 S 001.0 Pool 1-E  
0058 07/23/04 14:51:50 000000 000124 S 001.0 Pool 1-E  
0059 07/23/04 14:56:19 000003 000106 S 001.0 Pool 1-E  
0060 07/23/04 14:58:29 000001 000133 S 001.0 Pool 1-E  
0061 07/23/04 15:03:36 000000 000140 S 001.0 Pool 1-E  
0062 07/23/04 15:06:16 000001 000128 S 001.0 Pool 1-E  
0063 07/23/04 15:11:18 000001 000113 S 001.0 Pool 1-E  
0064 07/23/04 15:14:26 000000 000110 S 001.0 Pool 1-E  
0065 07/23/04 15:18:58 000004 000105 S 001.0 Pool 1-E  
0066 07/23/04 15:25:04 000001 000114 S 001.0 Pool 1-E  
0067 07/23/04 15:27:04 000001 000106 S 001.0 Pool 1-E  
0068 07/23/04 15:31:43 000001 000121 S 001.0 Pool 1-E  
0069 07/23/04 15:34:45 000000 035271 S 001.0 Source Check  
0070 07/23/04 15:39:44 000002 000081 S 001.0 Pool 1-F  
0071 07/23/04 15:41:45 000001 000101 S 001.0 Pool 1-F  
0072 07/23/04 15:47:45 000000 000089 S 001.0 Pool 1-F  
0073 07/23/04 15:52:38 000001 000089 S 001.0 Pool 1-F  
0074 07/23/04 15:57:58 000001 000099 S 001.0 Pool 1-F  
0075 07/23/04 16:01:12 000001 000113 S 001.0 Pool 1-F  
0076 07/23/04 16:04:00 000000 000145 S 001.0 Pool 1-F  
0077 07/23/04 16:07:49 000000 000126 S 001.0 Pool 1-F  
0078 07/23/04 16:10:34 000002 000122 S 001.0 Pool 1-F  
0079 07/23/04 16:14:13 000002 000097 S 001.0 Pool 1-F  
0080 07/23/04 16:17:11 000001 000098 S 001.0 Pool 1-F  
0081 07/23/04 16:20:40 000001 000105 S 001.0 Pool 1-F  
0082 07/23/04 16:23:01 000000 000140 S 001.0 Pool 1-F  
0083 07/23/04 16:26:03 000001 000124 S 001.0 Pool 1-F  
0084 07/23/04 16:29:44 000001 000095 S 001.0 Pool 1-F  
0085 07/23/04 16:33:31 000001 000087 S 001.0 Pool 1-F  
0086 07/23/04 16:35:07 000000 035329 S 001.0 Source Check  
0087 07/23/04 16:39:33 000001 000135 S 001.0 Pool 1-A  
0088 07/23/04 16:42:11 000000 000095 S 001.0 Pool 1-A  
0089 07/23/04 16:45:08 000000 000129 S 001.0 Pool 1-A  
0090 07/23/04 16:49:37 000001 000158 S 001.0 Pool 1-A  
0091 07/23/04 16:52:03 000002 000150 S 001.0 Pool 1-A  
0092 07/23/04 16:55:06 000001 000121 S 001.0 Pool 1-A  
0093 07/23/04 16:57:18 000000 000138 S 001.0 Pool 1-A  
0094 07/23/04 16:59:40 000001 000146 S 001.0 Pool 1-A  
0095 07/23/04 17:01:58 000000 000140 S 001.0 Pool 1-A  
0096 07/23/04 17:04:41 000001 000157 S 001.0 Pool 1-A  
0097 07/23/04 17:07:47 000001 000112 S 001.0 Pool 1-A  
0098 07/23/04 17:11:17 000000 000114 S 001.0 Pool 1-A  
0099 07/23/04 17:13:12 000000 000122 S 001.0 Pool 1-A  
0100 07/23/04 17:15:22 000000 000129 S 001.0 Pool 1-A  
0101 07/23/04 17:18:39 000002 000138 S 001.0 Pool 1-A  
S

Smears		Count Mins: 1			Sample Collected			Fraction	
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
48	Smear 1	07/24/04	14:35:53	Rx Pool-1-D	Final Status Survey	07/24/04	14:35:53	1.000	1.00
49	Smear 2	07/24/04	14:34:32	Rx Pool-1-D	Final Status Survey	07/24/04	14:34:32	1.000	1.00
50	Smear 3	07/24/04	14:33:12	Rx Pool-1-D	Final Status Survey	07/24/04	14:33:12	1.000	1.00
51	Smear 4	07/24/04	14:31:51	Rx Pool-1-D	Final Status Survey	07/24/04	14:31:51	1.000	1.00
52	Smear 5	07/24/04	14:30:31	Rx Pool-1-D	Final Status Survey	07/24/04	14:30:31	1.000	1.00
53	Smear 6	07/24/04	14:29:10	Rx Pool-1-D	Final Status Survey	07/24/04	14:29:10	1.000	1.00
54	Smear 7	07/24/04	14:27:49	Rx Pool-1-D	Final Status Survey	07/24/04	14:27:49	1.000	1.00
55	Smear 8	07/24/04	14:26:28	Rx Pool-1-D	Final Status Survey	07/24/04	14:26:28	1.000	1.00
56	Smear 9	07/24/04	14:25:08	Rx Pool-1-D	Final Status Survey	07/24/04	14:25:08	1.000	1.00
57	Smear 10	07/24/04	14:23:47	Rx Pool-1-D	Final Status Survey	07/24/04	14:23:47	1.000	1.00
58	Smear 11	07/24/04	14:22:26	Rx Pool-1-D	Final Status Survey	07/24/04	14:22:26	1.000	1.00
59	Smear 12	07/24/04	14:21:06	Rx Pool-1-D	Final Status Survey	07/24/04	14:21:06	1.000	1.00
60	Smear 13	07/24/04	14:19:45	Rx Pool-1-D	Final Status Survey	07/24/04	14:19:45	1.000	1.00
61	Smear 14	07/24/04	14:18:25	Rx Pool-1-D	Final Status Survey	07/24/04	14:18:25	1.000	1.00
62	Smear 15	07/24/04	14:17:04	Rx Pool-1-D	Final Status Survey	07/24/04	14:17:04	1.000	1.00
63	Smear 16	07/24/04	14:15:44	Rx Pool-1-D	Final Status Survey	07/24/04	14:15:44	1.000	1.00
64	Smear 1	07/24/04	14:13:03	Rx Pool-1-E	Final Status Survey	07/24/04	14:13:03	1.000	1.00
65	Smear 2	07/24/04	14:11:42	Rx Pool-1-E	Final Status Survey	07/24/04	14:11:42	1.000	1.00
66	Smear 3	07/24/04	14:10:22	Rx Pool-1-E	Final Status Survey	07/24/04	14:10:22	1.000	1.00
67	Smear 4	07/24/04	14:09:01	Rx Pool-1-E	Final Status Survey	07/24/04	14:09:01	1.000	1.00
68	Smear 5	07/24/04	14:07:41	Rx Pool-1-E	Final Status Survey	07/24/04	14:07:41	1.000	1.00
69	Smear 6	07/24/04	14:06:20	Rx Pool-1-E	Final Status Survey	07/24/04	14:06:20	1.000	1.00
70	Smear 7	07/24/04	14:04:59	Rx Pool-1-E	Final Status Survey	07/24/04	14:04:59	1.000	1.00
71	Smear 8	07/24/04	14:03:38	Rx Pool-1-E	Final Status Survey	07/24/04	14:03:38	1.000	1.00
72	Smear 9	07/24/04	14:02:18	Rx Pool-1-E	Final Status Survey	07/24/04	14:02:18	1.000	1.00
73	Smear 10	07/24/04	14:00:57	Rx Pool-1-E	Final Status Survey	07/24/04	14:00:57	1.000	1.00
74	Smear 11	07/24/04	13:59:37	Rx Pool-1-E	Final Status Survey	07/24/04	13:59:37	1.000	1.00
75	Smear 12	07/24/04	13:58:16	Rx Pool-1-E	Final Status Survey	07/24/04	13:58:16	1.000	1.00
76	Smear 13	07/24/04	13:56:56	Rx Pool-1-E	Final Status Survey	07/24/04	13:56:56	1.000	1.00
77	Smear 14	07/24/04	13:55:35	Rx Pool-1-E	Final Status Survey	07/24/04	13:55:35	1.000	1.00
78	Smear 15	07/24/04	13:54:15	Rx Pool-1-E	Final Status Survey	07/24/04	13:54:15	1.000	1.00
79	Smear 16	07/24/04	14:14:23	Rx Pool-1-E	Final Status Survey	07/24/04	14:14:23	1.000	1.00
80	Smear 1	07/24/04	13:52:54	Rx Pool-1-F	Final Status Survey	07/24/04	13:52:54	1.000	1.00
81	Smear 2	07/24/04	13:51:33	Rx Pool-1-F	Final Status Survey	07/24/04	13:51:33	1.000	1.00
82	Smear 3	07/24/04	13:50:13	Rx Pool-1-F	Final Status Survey	07/24/04	13:50:13	1.000	1.00
83	Smear 4	07/24/04	13:48:52	Rx Pool-1-F	Final Status Survey	07/24/04	13:48:52	1.000	1.00
84	Smear 5	07/24/04	13:47:31	Rx Pool-1-F	Final Status Survey	07/24/04	13:47:31	1.000	1.00
85	Smear 6	07/24/04	13:46:11	Rx Pool-1-F	Final Status Survey	07/24/04	13:46:11	1.000	1.00
86	Smear 7	07/24/04	13:44:50	Rx Pool-1-F	Final Status Survey	07/24/04	13:44:50	1.000	1.00
87	Smear 8	07/24/04	13:43:30	Rx Pool-1-F	Final Status Survey	07/24/04	13:43:30	1.000	1.00
88	Smear 9	07/24/04	13:42:09	Rx Pool-1-F	Final Status Survey	07/24/04	13:42:09	1.000	1.00
89	Smear 10	07/24/04	13:40:49	Rx Pool-1-F	Final Status Survey	07/24/04	13:40:49	1.000	1.00
90	Smear 11	07/24/04	13:39:28	Rx Pool-1-F	Final Status Survey	07/24/04	13:39:28	1.000	1.00
91	Smear 12	07/24/04	13:38:08	Rx Pool-1-F	Final Status Survey	07/24/04	13:38:08	1.000	1.00
92	Smear 13	07/24/04	13:36:47	Rx Pool-1-F	Final Status Survey	07/24/04	13:36:47	1.000	1.00
93	Smear 14	07/24/04	13:35:27	Rx Pool-1-F	Final Status Survey	07/24/04	13:35:27	1.000	1.00
94	Smear 15	07/24/04	13:34:07	Rx Pool-1-F	Final Status Survey	07/24/04	13:34:07	1.000	1.00
95	Smear 16	07/24/04	13:32:47	Rx Pool-1-F	Final Status Survey	07/24/04	13:32:47	1.000	1.00

Technician (print): Chris Higgins

Technician (sign): 

Date: 7-25-04

Reviewed By (print): Mike Taylor

Reviewed By (sign): 

Date: 7-24-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 27.91 LLD: 12.6 dpm				Bkg: 0.4 cpm %Eff: 44.19 LLD: 10.92 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
48	Smear 1	07/24/04	14:35:53	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
49	Smear 2	07/24/04	14:34:32	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
50	Smear 3	07/24/04	14:33:12	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
51	Smear 4	07/24/04	14:31:51	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
52	Smear 5	07/24/04	14:30:31	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
53	Smear 6	07/24/04	14:29:10	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
54	Smear 7	07/24/04	14:27:49	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
55	Smear 8	07/24/04	14:26:28	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
56	Smear 9	07/24/04	14:25:08	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
57	Smear 10	07/24/04	14:23:47	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
58	Smear 11	07/24/04	14:22:26	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
59	Smear 12	07/24/04	14:21:06	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
60	Smear 13	07/24/04	14:19:45	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
61	Smear 14	07/24/04	14:18:25	0.00	-0.07	-0.24	12.80	17.00	16.60	37.57	10.92
62	Smear 15	07/24/04	14:17:04	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
63	Smear 16	07/24/04	14:15:44	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
64	Smear 1	07/24/04	14:13:03	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
65	Smear 2	07/24/04	14:11:42	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
66	Smear 3	07/24/04	14:10:22	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
67	Smear 4	07/24/04	14:09:01	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
68	Smear 5	07/24/04	14:07:41	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
69	Smear 6	07/24/04	14:06:20	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
70	Smear 7	07/24/04	14:04:59	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
71	Smear 8	07/24/04	14:03:38	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
72	Smear 9	07/24/04	14:02:18	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
73	Smear 10	07/24/04	14:00:57	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
74	Smear 11	07/24/04	13:59:37	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
75	Smear 12	07/24/04	13:58:16	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
76	Smear 13	07/24/04	13:56:56	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
77	Smear 14	07/24/04	13:55:35	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
78	Smear 15	07/24/04	13:54:15	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
79	Smear 16	07/24/04	14:14:23	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
80	Smear 1	07/24/04	13:52:54	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
81	Smear 2	07/24/04	13:51:33	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
82	Smear 3	07/24/04	13:50:13	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
83	Smear 4	07/24/04	13:48:52	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
84	Smear 5	07/24/04	13:47:31	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
85	Smear 6	07/24/04	13:46:11	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
86	Smear 7	07/24/04	13:44:50	0.00	-0.07	-0.24	12.80	1.00	0.60	1.36	10.92
87	Smear 8	07/24/04	13:43:30	0.00	-0.07	-0.24	12.80	3.00	2.60	5.88	10.92
88	Smear 9	07/24/04	13:42:09	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
89	Smear 10	07/24/04	13:40:49	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
90	Smear 11	07/24/04	13:39:28	0.00	-0.07	-0.24	12.80	2.00	1.60	3.62	10.92
91	Smear 12	07/24/04	13:38:08	0.00	-0.07	-0.24	12.80	6.00	5.60	12.67	10.92
92	Smear 13	07/24/04	13:36:47	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
93	Smear 14	07/24/04	13:35:27	0.00	-0.07	-0.24	12.80	0.00	-0.40	-0.91	10.92
94	Smear 15	07/24/04	13:34:07	1.00	0.93	3.34	12.80	0.00	-0.40	-0.91	10.92
95	Smear 16	07/24/04	13:32:47	1.00	0.93	3.34	12.80	0.00	-0.40	-0.91	10.92

Technician (print): Chris Nigam


Technician (sign):

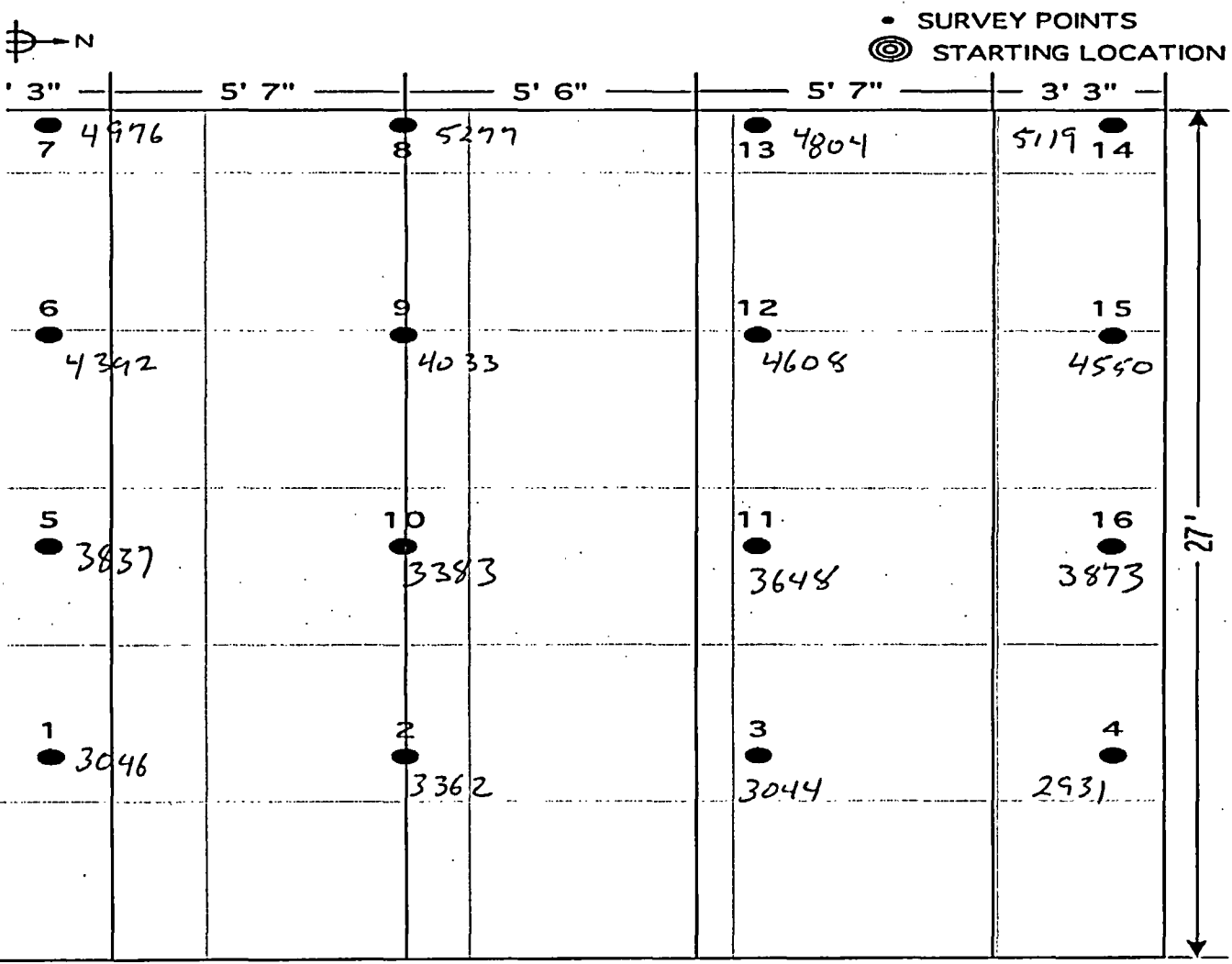
Date: 7-25-04

Reviewed By (print): Mike Taylor

Reviewed By (sign):

Date: 7-24-04

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING
DRAWING	KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 1 Reactor Pool West Wall
 SCIENCETECH, Inc. 140 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO. 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
By:	CK:
FIGURE: POOL-1-F	



POOL-1-E

Date: 7-23-04 Background: 5/11 cpm

Survey Type: Fixed Pt Scan Dose Rate

Instrument ID#: Model 2350 / 44-2  
 # 203445 # 213337

Start Time: 1530  
 Stop Time: 1630

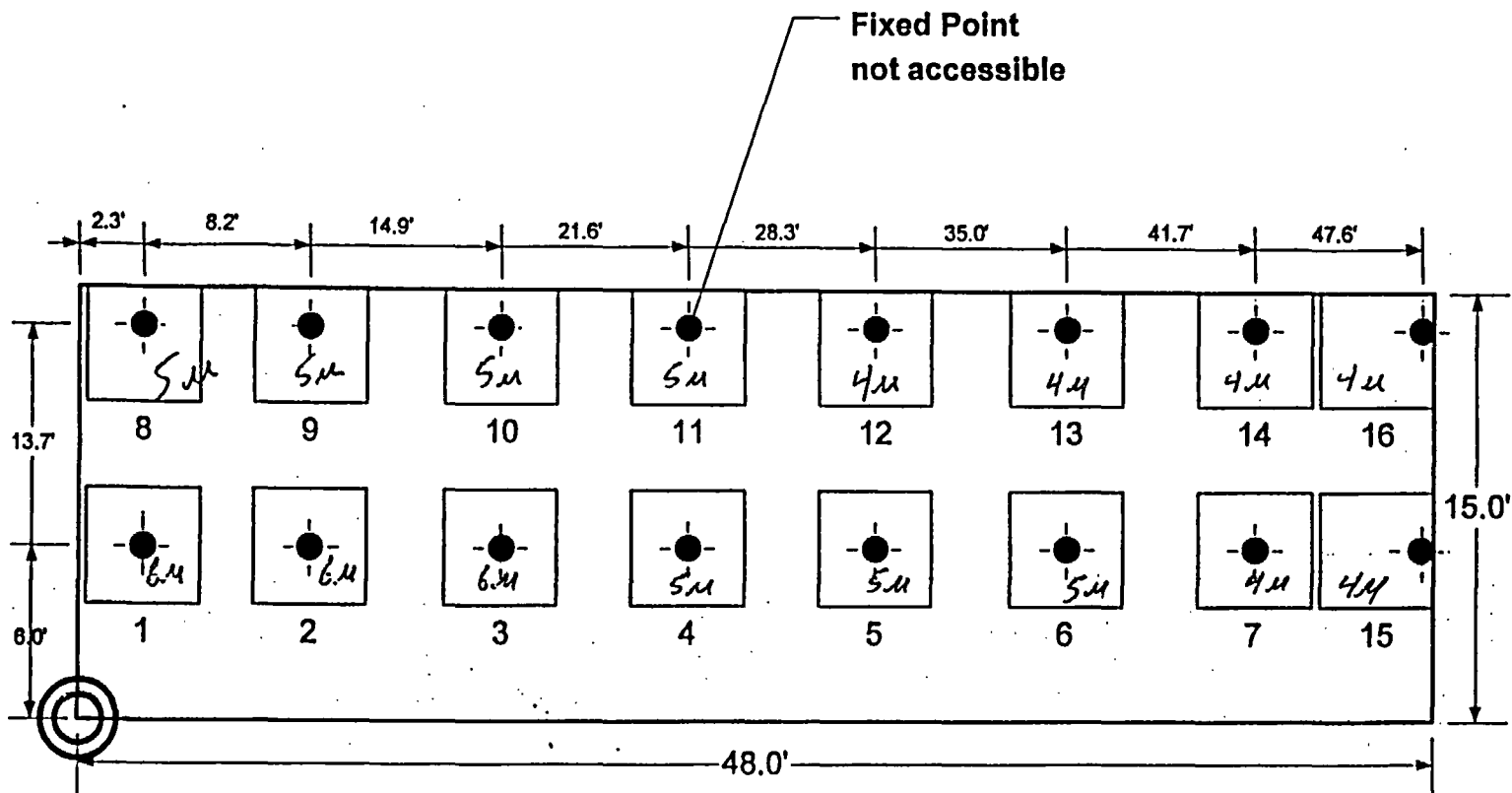
Technician: Mike Taylor / Chris Higgins

All readings in cpm.  
Gamma Survey

**PUMP-2-A Pump Room**



Pump-2-A



Document Title No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARHAUS, PENNSYLVANIA 113 REACTOR ROAD	
CLASS 2 Pump-2-A	
SCIENTECH. SCIENTECH, LLC 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO. 23529 - 0501	
FILENAME PUMP-2-A.VSD	
SCALE NTS	DATE 11/13/2004
DRAWN BY S.R. SMITH	Checked By:
FIGURE PUMP-2-A	

# PUMP-2-A

Log #
4 - Source
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

	X	Y
	n/a	n/a
1	2.3	6.0
2	8.2	6.0
3	14.9	6.0
4	21.6	6.0
5	28.3	6.0
6	35.0	6.0
7	41.7	6.0
8	2.3	13.7
9	8.2	13.7
10	14.9	13.7
11	21.6	13.7
12	28.3	13.7
13	35.0	13.7
14	41.7	13.7
15	47.6	6.0
16	47.6	13.7

L (ft)= 6.7

A (ft<sup>2</sup>)= 675

Fixed Points	Ave. (Scan)	Max. (Scan)
1647	n/a	n/a
138	220	300
203	220	300
221	220	300
228	240	280
221	180	280
155	160	240
146	160	260
206	180	280
173	180	240
186	200	300
na	na	na
128	140	200
165	160	220
127	120	180
123	100	140
108	100	200

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

10/20/2004  
1:46:03 PM

Header 1: Joe Kozyra  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/13/2004  
Model 2360 Time: 13:01:01  
Sample Number: 0004

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

Time - Count Time  
Ratemeter  
Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

---

0001	10/13/04	07:45:05	000002	000210	S 001.0	Lab Background
0002	10/13/04	07:47:03	000001	032506	S 001.0	Lab Source
0003	10/13/04	08:10:05	000000	000103	S 001.0	Field Background
0004	10/13/04	08:11:37	000004	001647	S 001.0	Field Source
0005	10/13/04	08:21:55	000001	000138	S 001.0	Pump-2-A Point 5
0006	10/13/04	08:48:23	000001	000203	S 001.0	Pump-2-A Point 1
0007	10/13/04	08:54:03	000002	000221	S 001.0	Pump-2-A Point 2
0008	10/13/04	09:04:17	000001	000228	S 001.0	Pump-2-A Point 3
0009	10/13/04	09:51:21	000000	000221	S 001.0	Pump-2-A Point 4
0010	10/13/04	09:58:48	000004	000155	S 001.0	Pump-2-A Point 6
0011	10/13/04	10:04:29	000006	000146	S 001.0	Pump-2-A Point 7
0012	10/13/04	10:14:22	000004	000206	S 001.0	Pump-2-A Point 8
0013	10/13/04	10:28:19	000000	000173	S 001.0	Pump-2-A Point 9
0014	10/13/04	10:35:13	000001	000186	S 001.0	Pump-2-A Point 10
0015	10/13/04	10:47:25	000003	000128	S 001.0	Void
0016	10/13/04	10:58:26	000002	000165	S 001.0	Pump-2-A Point 12
0017	10/13/04	11:08:00	000004	000127	S 001.0	Pump-2-A Point 13
0018	10/13/04	11:19:00	000002	000123	S 001.0	Pump-2-A Point 14
0019	10/13/04	11:23:10	000003	000108	S 001.0	Pump-2-A Point 15
0020	10/13/04	12:50:06	000003	001494	S 001.0	Field Source

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/13/04	13:33:25	Pump-2-A	Final Status Survey	10/13/04	13:33:25	1.000	1.00
2	Smear 2	10/13/04	13:32:05	Pump-2-A	Final Status Survey	10/13/04	13:32:05	1.000	1.00
3	Smear 3	10/13/04	13:30:44	Pump-2-A	Final Status Survey	10/13/04	13:30:44	1.000	1.00
4	Smear 4	10/13/04	13:29:24	Pump-2-A	Final Status Survey	10/13/04	13:29:24	1.000	1.00
5	Smear 5	10/13/04	13:28:04	Pump-2-A	Final Status Survey	10/13/04	13:28:04	1.000	1.00
6	Smear 6	10/13/04	13:26:44	Pump-2-A	Final Status Survey	10/13/04	13:26:44	1.000	1.00
7	Smear 7	10/13/04	13:25:24	Pump-2-A	Final Status Survey	10/13/04	13:25:24	1.000	1.00
8	Smear 8	10/13/04	13:24:03	Pump-2-A	Final Status Survey	10/13/04	13:24:03	1.000	1.00
9	Smear 9	10/13/04	13:22:43	Pump-2-A	Final Status Survey	10/13/04	13:22:43	1.000	1.00
11	Smear 10	10/13/04	13:21:23	Pump-2-A	Final Status Survey	10/13/04	13:21:23	1.000	1.00
12	Void	10/13/04	13:20:03			10/13/04	13:20:03	1.000	1.00
13	Smear 12	10/13/04	13:18:43	Pump-2-A	Final Status Survey	10/13/04	13:18:43	1.000	1.00
14	Smear 13	10/13/04	13:17:23	Pump-2-A	Final Status Survey	10/13/04	13:17:23	1.000	1.00
15	Smear 14	10/13/04	13:16:02	Pump-2-A	Final Status Survey	10/13/04	13:16:02	1.000	1.00
16	Smear 15	10/13/04	13:14:42	Pump-2-A	Final Status Survey	10/13/04	13:14:42	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11/7-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 27.23 LLD: 12.19 dpm				Bkg: 0.47 cpm %Eff: 44.2 LLD: 11.3 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/13/04	13:33:25	0.00	-0.03	-0.12	12.19	1.00	0.53	1.21	11.30
2	Smear 2	10/13/04	13:32:05	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
3	Smear 3	10/13/04	13:30:44	1.00	0.97	3.55	12.19	3.00	2.53	5.73	11.30
4	Smear 4	10/13/04	13:29:24	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
5	Smear 5	10/13/04	13:28:04	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
6	Smear 6	10/13/04	13:26:44	1.00	0.97	3.55	12.19	0.00	-0.47	-1.06	11.30
7	Smear 7	10/13/04	13:25:24	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
8	Smear 8	10/13/04	13:24:03	0.00	-0.03	-0.12	12.19	2.00	1.53	3.47	11.30
9	Smear 9	10/13/04	13:22:43	0.00	-0.03	-0.12	12.19	1.00	0.53	1.21	11.30
11	Smear 10	10/13/04	13:21:23	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
12	Void	10/13/04	13:20:03	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
13	Smear 12	10/13/04	13:18:43	0.00	-0.03	-0.12	12.19	1.00	0.53	1.21	11.30
14	Smear 13	10/13/04	13:17:23	1.00	0.97	3.55	12.19	1.00	0.53	1.21	11.30
15	Smear 14	10/13/04	13:16:02	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
16	Smear 15	10/13/04	13:14:42	0.00	-0.03	-0.12	12.19	2.00	1.53	3.47	11.30

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-13-04

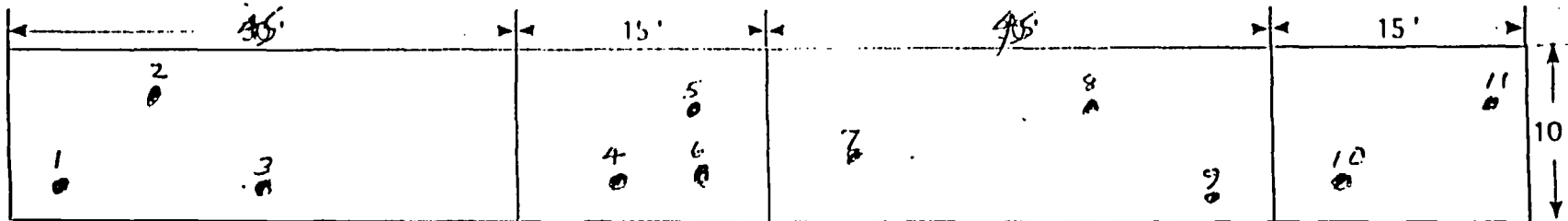
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**PUMP-3-A Pump Room**

# PUMP-3-A

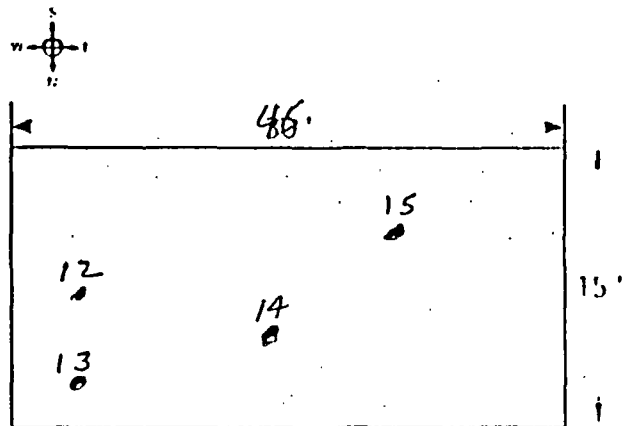


North Wall

Last Wall

South Wall

West Wall



Ceiling

START 12 OCT 04 1515 HRS  
STOP 12 OCT 04 1635 HRS

Document  
Control No.

REVISION NO.

PROJECT  
DRAWING

QUEHANNA DECOMMISSIONING  
KATHAUS, PENNSYLVANIA  
115 REACTOR ROAD  
CLASS 3  
Pump Room Walls and Ceiling

OSCIENTECH

OSCIENTECH Inc.  
110 WEST STREET  
NEW BRIDGECITY, PA 15066

PROJECT NO.  
23529-0001

FILE NAME:

SCALE N.T.S.	DATE 07 06 2004
PT	CK:

FIGURE  
PUMP-3-A

11

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 10/13/2004  
Time: 7:36:24 AM

Header 1: Joe Kozyra  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Pump-3-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/13/2004  
Model 2360 Time: 07:30:04  
Sample Number: 0022

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

CntTime - Count Time  
R- Ratemeter  
S- Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

---

0001	10/12/04	11:14:19	000000	000206	S 001.0	Lab Background
0002	10/12/04	11:15:30	000000	032431	S 001.0	Lab Source
0003	10/12/04	15:24:21	000004	001529	S 001.0	Field Source
0004	10/12/04	15:25:55	000000	000146	S 001.0	Field Background
0005	10/12/04	15:27:57	000001	000142	S 001.0	Pump-3-A Point 1
0006	10/12/04	15:33:02	000001	000146	S 001.0	Pump-3-A Point 2
0007	10/12/04	15:35:24	000002	000112	S 001.0	Pump-3-A Point 3
0008	10/12/04	15:39:17	000000	000105	S 001.0	Pump-3-A Point 4
0009	10/12/04	15:43:05	000001	000111	S 001.0	Pump-3-A Point 5
0010	10/12/04	15:46:22	000002	000103	S 001.0	Pump-3-A Point 7
0011	10/12/04	15:50:00	000003	000244	S 001.0	Pump-3-A Point 8
0012	10/12/04	16:10:49	000000	000189	S 001.0	Pump-3-A Point 9
0013	10/12/04	16:14:38	000001	000107	S 001.0	Pump-3-A Point 6
0014	10/12/04	16:17:31	000001	000200	S 001.0	Pump-3-A Point 10
0015	10/12/04	16:24:40	000003	000250	S 001.0	Pump-3-A Point 11
0016	10/12/04	16:28:53	000001	000214	S 001.0	Pump-3-A Point 12
0017	10/12/04	16:31:13	000001	000251	S 001.0	Pump-3-A Point 13
0018	10/12/04	16:34:49	000001	000131	S 001.0	Pump-3-A Point 14
0019	10/12/04	16:38:28	000003	000141	S 001.0	Pump-3-A Point 15
0020	10/12/04	16:40:52	000000	000231	S 001.0	Field Background
0021	10/12/04	16:48:39	000000	001663	S 001.0	Field Source

\$



Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/13/04	8:09:20	Pump-3-A	Final Status Survey	10/13/04	8:09:20	1.000	1.00
2	Smear 2	10/13/04	8:08:00	Pump-3-A	Final Status Survey	10/13/04	8:08:00	1.000	1.00
3	Smear 3	10/13/04	8:06:39	Pump-3-A	Final Status Survey	10/13/04	8:06:39	1.000	1.00
4	Smear 4	10/13/04	8:05:18	Pump-3-A	Final Status Survey	10/13/04	8:05:18	1.000	1.00
5	Smear 5	10/13/04	8:03:58	Pump-3-A	Final Status Survey	10/13/04	8:03:58	1.000	1.00
6	Smear 6	10/13/04	8:02:37	Pump-3-A	Final Status Survey	10/13/04	8:02:37	1.000	1.00
7	Smear 7	10/13/04	8:01:17	Pump-3-A	Final Status Survey	10/13/04	8:01:17	1.000	1.00
8	Smear 8	10/13/04	7:59:57	Pump-3-A	Final Status Survey	10/13/04	7:59:57	1.000	1.00
9	Smear 9	10/13/04	7:58:36	Pump-3-A	Final Status Survey	10/13/04	7:58:36	1.000	1.00
10	Smear 10	10/13/04	7:57:16	Pump-3-A	Final Status Survey	10/13/04	7:57:16	1.000	1.00
11	Smear 11	10/13/04	7:55:55	Pump-3-A	Final Status Survey	10/13/04	7:55:55	1.000	1.00
12	Smear 12	10/13/04	7:54:35	Pump-3-A	Final Status Survey	10/13/04	7:54:35	1.000	1.00
13	Smear 13	10/13/04	7:53:15	Pump-3-A	Final Status Survey	10/13/04	7:53:15	1.000	1.00
14	Smear 14	10/13/04	7:51:55	Pump-3-A	Final Status Survey	10/13/04	7:51:55	1.000	1.00
15	Smear 15	10/13/04	7:50:34	Pump-3-A	Final Status Survey	10/13/04	7:50:34	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-13-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 27.23 LLD: 12.19 dpm				Bkg: 0.47 cpm %Eff: 44.2 LLD: 11.3 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/13/04	8:09:20	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
2	Smear 2	10/13/04	8:08:00	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
3	Smear 3	10/13/04	8:06:39	1.00	0.97	3.55	12.19	2.00	1.53	3.47	11.30
4	Smear 4	10/13/04	8:05:18	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
5	Smear 5	10/13/04	8:03:58	0.00	-0.03	-0.12	12.19	1.00	0.53	1.21	11.30
6	Smear 6	10/13/04	8:02:37	0.00	-0.03	-0.12	12.19	1.00	0.53	1.21	11.30
7	Smear 7	10/13/04	8:01:17	0.00	-0.03	-0.12	12.19	3.00	2.53	5.73	11.30
8	Smear 8	10/13/04	7:59:57	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
9	Smear 9	10/13/04	7:58:36	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
10	Smear 10	10/13/04	7:57:16	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
11	Smear 11	10/13/04	7:55:55	0.00	-0.03	-0.12	12.19	0.00	-0.47	-1.06	11.30
12	Smear 12	10/13/04	7:54:35	0.00	-0.03	-0.12	12.19	1.00	0.53	1.21	11.30
13	Smear 13	10/13/04	7:53:15	0.00	-0.03	-0.12	12.19	2.00	1.53	3.47	11.30
14	Smear 14	10/13/04	7:51:55	0.00	-0.03	-0.12	12.19	2.00	1.53	3.47	11.30
15	Smear 15	10/13/04	7:50:34	0.00	-0.03	-0.12	12.19	2.00	1.53	3.47	11.30

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10/13/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**PUMP-3-A**

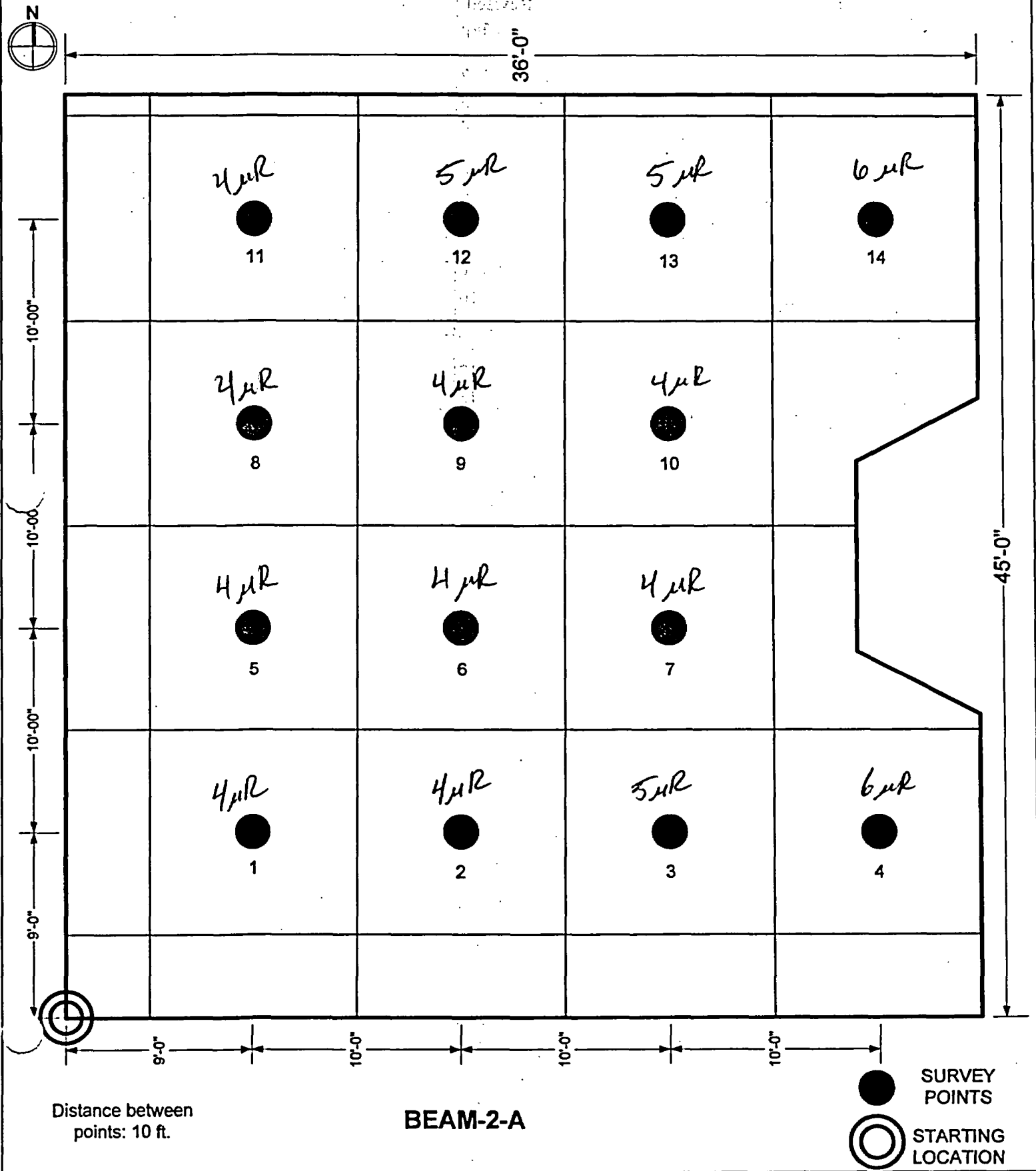
Log #	Source
3	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	

[illegible]
$$A \text{ (ft}^2\text{)} = 1350$$

Fixed Points	Ave. (Scan)	Max. (Scan)
1529	n/a	n/a
142	NA	NA
146		
112		
105		
111		
103		
244		
189		
107		
200		
250		
214		
251	↓	↓
131	NA	NA
141		

**BEAM-2-A Beam Room**

Document of No. REVISION NO. 2	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD		SCIEN TECH. SCIENTECH, LLC 143 WEST STREET NEW MILFORD, CT 06776	PROJECT NO.	23529 - 0501	FILENAME	BEAM ROOM FLOOR.YSD	DATE	11/13/2004	Checked By:	BEAM-2-A FIGURE
	DRAWING	CLASS 2 Beam Room Floor			SCALE	NTS	DRAWN BY	S.R. SMITH				



# BEAM-2-A

Log #
1546 Source
6
13
14
15
16
17
18
na
19
20
26
na
27
28
29
30

Old Map	X	Y
na	na	n/a
1	9.0	9.0
2	18.0	9.0
3	27.0	9.0
4	36.0	9.0
5	9.0	19.0
6	18.0	19.0
7	27.0	19.0
8	na	na
9	9.0	29.0
10	18.0	29.0
11	na	na
12	36.0	29.0
13	9.0	39.0
14	18.0	39.0
15	27.0	39.0
16	36.0	39.0

Revised Map	Fixed Points	Avg	Max
na	na		
1	137	160	240
2	170	160	220
3	178	200	260
4	152	180	300
5	167	200	300
6	174	180	260
7	135	160	220
na	na		
8	169	160	200
9	164	150	200
10	146	160	220
na	na		
11	149	180	200
12	160	160	220
13	113	160	300
14	155	160	240

A (ft<sup>2</sup>)= 1812

Ludlum Measurements, Inc.  
Model 2360 Log Data

1/11/2004  
29:03 PM

Header 1: Joe Kozyra  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Beam-2-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/11/2004  
Model 2360 Time: 14:01:05  
Sample Number: 0032

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000441  
Beta Ratemeter Alarm: 000441  
Alpha + Beta Ratemeter Alarm: 000441  
Alpha Scaler Alarm: 000441  
Beta Scaler Alarm: 000441  
Alpha + Beta Scaler Alarm: 000441

C - Count Time  
R - meter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	11/02/04	08:13:19	000003	000170	S 001.0	Lab Background
0002	11/02/04	08:16:57	000000	032613	S 001.0	Lab Source
0003	11/02/04	08:28:50	000001	001546	S 001.0	Field Source
0004	11/02/04	08:30:25	000000	000114	S 001.0	Field Background
0005	11/02/04	12:57:16	000000	001691	S 001.0	Void
0006	11/02/04	16:41:20	000001	000137	S 001.0	Beam-2-A
0007	11/02/04	16:43:43	000000	000121	S 001.0	Field Background
0008	11/02/04	17:05:36	000003	001580	S 001.0	Field Source
0009	11/03/04	07:36:26	000002	000148	S 001.0	Lab Background
0010	11/03/04	07:37:44	000003	032970	S 001.0	Lab Source
0011	11/03/04	07:43:21	000001	001673	S 001.0	Field Source
0012	11/03/04	08:12:08	000000	000115	S 001.0	Field Background
0013	11/03/04	08:23:30	000002	000170	S 001.0	Beam-2-A
0014	11/03/04	08:52:12	000000	000198	S 001.0	Beam-2-A
0015	11/03/04	09:57:53	000000	000152	S 001.0	Beam-2-A
0016	11/03/04	10:31:03	000000	000167	S 001.0	Beam-2-A
0017	11/03/04	13:21:04	000000	000174	S 001.0	Beam-2-A
0018	11/03/04	15:29:12	000000	000135	S 001.0	Beam-2-A
0019	11/03/04	15:44:54	000000	000164	S 001.0	Beam-2-A
0020	11/03/04	16:26:55	000001	000164	S 001.0	Beam-2-A
0021	11/03/04	16:52:00	000002	001689	S 001.0	Field Source
0022	11/04/04	07:26:12	000000	000157	S 001.0	Lab Background
0023	11/04/04	07:30:39	000001	032889	S 001.0	Lab Source
0024	11/04/04	07:34:42	000000	001670	S 001.0	Field Source
0025	11/04/04	07:45:54	000000	000130	S 001.0	Field Background
0026	11/11/04	08:23:07	000000	000146	S 001.0	Beam-2-A
0027	10/11/04	08:37:23	000000	000149	S 001.0	Beam-2-A
0028	10/11/04	09:41:41	000000	000160	S 001.0	Beam-2-A
0029	10/11/04	10:24:10	000000	000113	S 001.0	Beam-2-A
0030	10/11/04	10:52:40	000000	000155	S 001.0	Beam-2-A
0031	10/11/04	11:32:22	000001	001635	S 001.0	Field Source

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	11/11/04	12:43:41	Beam-2-A	Final Status Survey	11/11/04	12:43:41	1.000	1.00
2	Smear 2	11/11/04	12:42:21	Beam-2-A	Final Status Survey	11/11/04	12:42:21	1.000	1.00
3	Smear 3	11/11/04	12:41:01	Beam-2-A	Final Status Survey	11/11/04	12:41:01	1.000	1.00
4	Smear 4	11/11/04	12:39:41	Beam-2-A	Final Status Survey	11/11/04	12:39:41	1.000	1.00
5	Smear 5	11/11/04	12:38:21	Beam-2-A	Final Status Survey	11/11/04	12:38:21	1.000	1.00
6	Smear 6	11/11/04	12:37:01	Beam-2-A	Final Status Survey	11/11/04	12:37:01	1.000	1.00
7	Smear 7	11/11/04	12:35:41	Beam-2-A	Final Status Survey	11/11/04	12:35:41	1.000	1.00
8	Smear 8	11/11/04	12:34:21	Beam-2-A	Final Status Survey	11/11/04	12:34:21	1.000	1.00
9	Smear 9	11/11/04	12:33:01	Beam-2-A	Final Status Survey	11/11/04	12:33:01	1.000	1.00
10	Smear 10	11/11/04	12:31:41	Beam-2-A	Final Status Survey	11/11/04	12:31:41	1.000	1.00
11	Smear 11	11/11/04	12:30:21	Beam-2-A	Final Status Survey	11/11/04	12:30:21	1.000	1.00
12	Smear 12	11/11/04	12:29:01	Beam-2-A	Final Status Survey	11/11/04	12:29:01	1.000	1.00
13	Smear 13	11/11/04	12:27:41	Beam-2-A	Final Status Survey	11/11/04	12:27:41	1.000	1.00
14	Smear 14	11/11/04	12:26:22	Beam-2-A	Final Status Survey	11/11/04	12:26:22	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.13 cpm %Eff: 24.37 LLD: 16.13 dpm				Bkg: 0.33 cpm %Eff: 44.24 LLD: 10.49 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	11/11/04	12:43:41	0.00	-0.13	-0.55	16.13	0.00	-0.33	-0.75	10.49
2	Smear 2	11/11/04	12:42:21	0.00	-0.13	-0.55	16.13	3.00	2.67	6.03	10.49
3	Smear 3	11/11/04	12:41:01	0.00	-0.13	-0.55	16.13	0.00	-0.33	-0.75	10.49
4	Smear 4	11/11/04	12:39:41	0.00	-0.13	-0.55	16.13	1.00	0.67	1.51	10.49
5	Smear 5	11/11/04	12:38:21	0.00	-0.13	-0.55	16.13	0.00	-0.33	-0.75	10.49
6	Smear 6	11/11/04	12:37:01	0.00	-0.13	-0.55	16.13	3.00	2.67	6.03	10.49
7	Smear 7	11/11/04	12:35:41	0.00	-0.13	-0.55	16.13	1.00	0.67	1.51	10.49
8	Smear 8	11/11/04	12:34:21	0.00	-0.13	-0.55	16.13	0.00	-0.33	-0.75	10.49
9	Smear 9	11/11/04	12:33:01	0.00	-0.13	-0.55	16.13	1.00	0.67	1.51	10.49
10	Smear 10	11/11/04	12:31:41	0.00	-0.13	-0.55	16.13	0.00	-0.33	-0.75	10.49
11	Smear 11	11/11/04	12:30:21	0.00	-0.13	-0.55	16.13	1.00	0.67	1.51	10.49
12	Smear 12	11/11/04	12:29:01	0.00	-0.13	-0.55	16.13	3.00	2.67	6.03	10.49
13	Smear 13	11/11/04	12:27:41	0.00	-0.13	-0.55	16.13	1.00	0.67	1.51	10.49
14	Smear 14	11/11/04	12:26:22	0.00	-0.13	-0.55	16.13	1.00	0.67	1.51	10.49

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

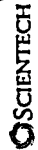
Date: 11-11-04

Reviewed By (print): Joe Trowbridge

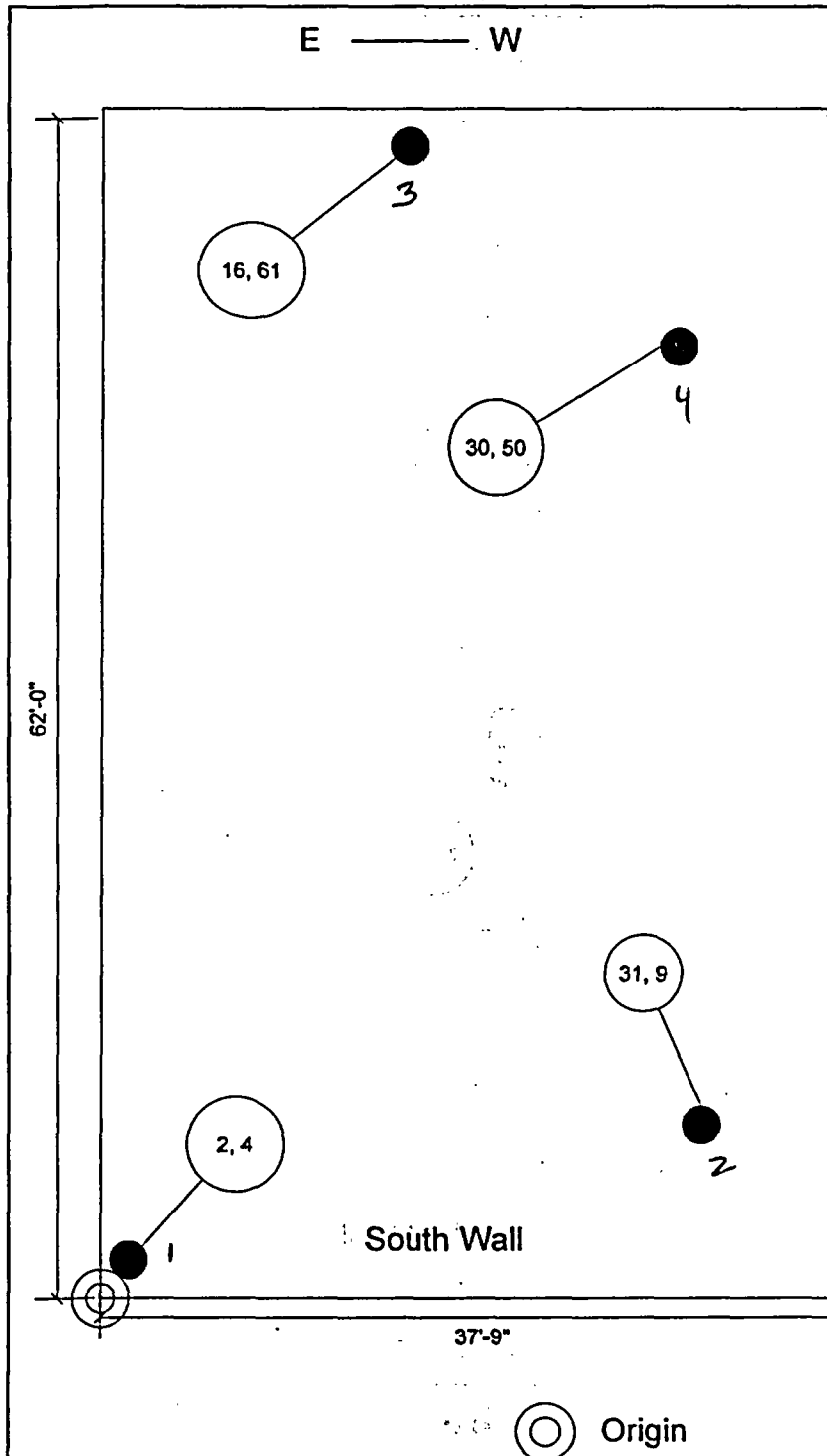
Reviewed By (sign):

Date:

**BEAM-3-A Beam Room**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHUS, PENNSYLVANIA 115 REACTOR ROAD	 OSCIENTECH, Inc. 110 WEST STREET NEW HAVEN, CT 06510	PROJECT NO. 23394901	FILE NAME:	DATE:	11/05/2004	By:	CW	FIGURE: Beam-3-A-South
		DRAWING	CLASS 3 Beam Room South Wall				SCALE:	N.T.S.			

BEAM-3-A



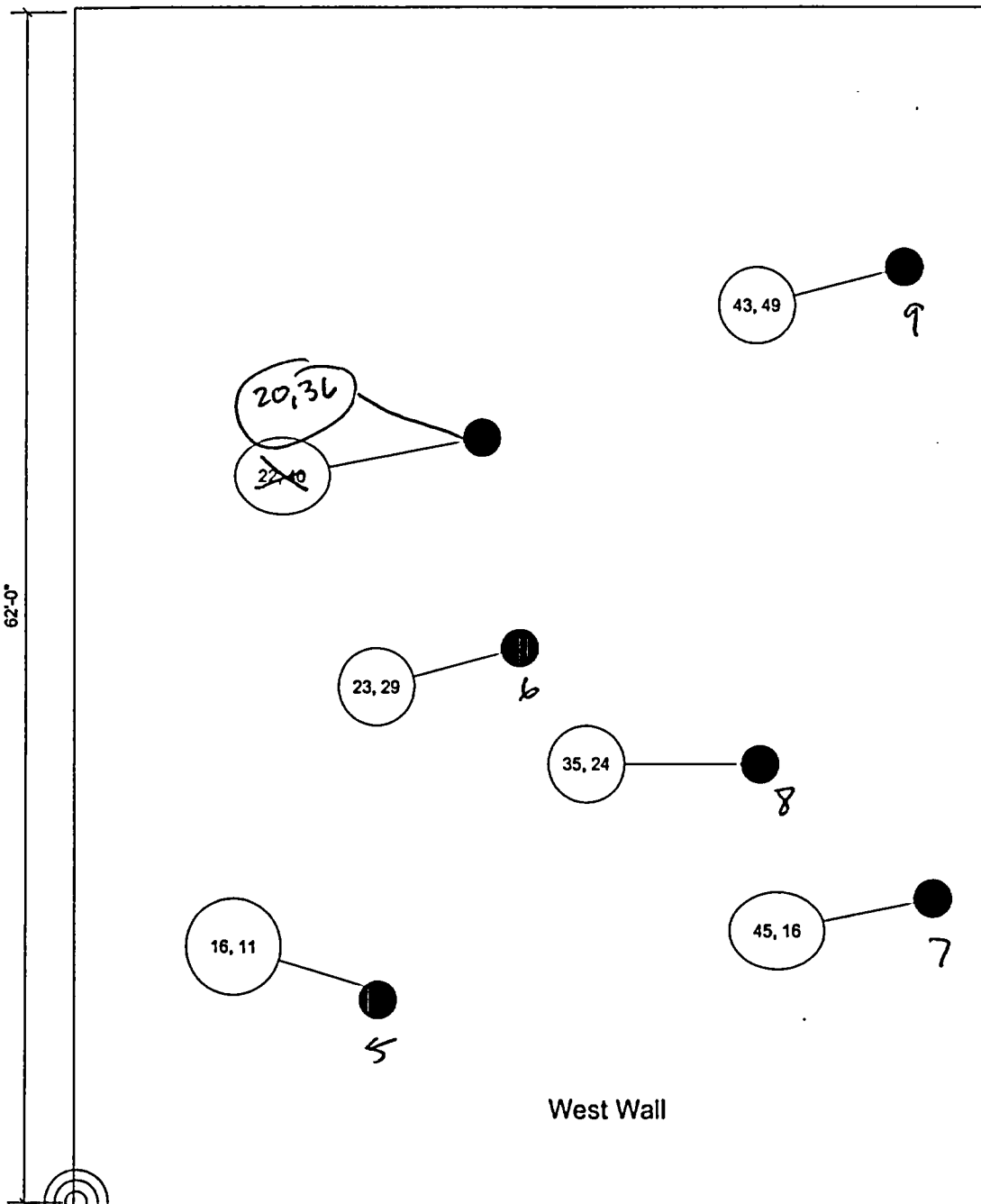
Origin

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENCETECH, LLC 10 WEST STREET NEW HAVEN, CT 06774	PROJECT NO: 21519-0501	FILE NAME:	DATE:	11/03/2004	BY:	CW	FIGURE:	BEAM-3-A- West
		DRAWING	CLASS 3 Beam Room West Wall				SCALE:	N.T.S.				

BEAM-3-A

S ——— N

62'-0"



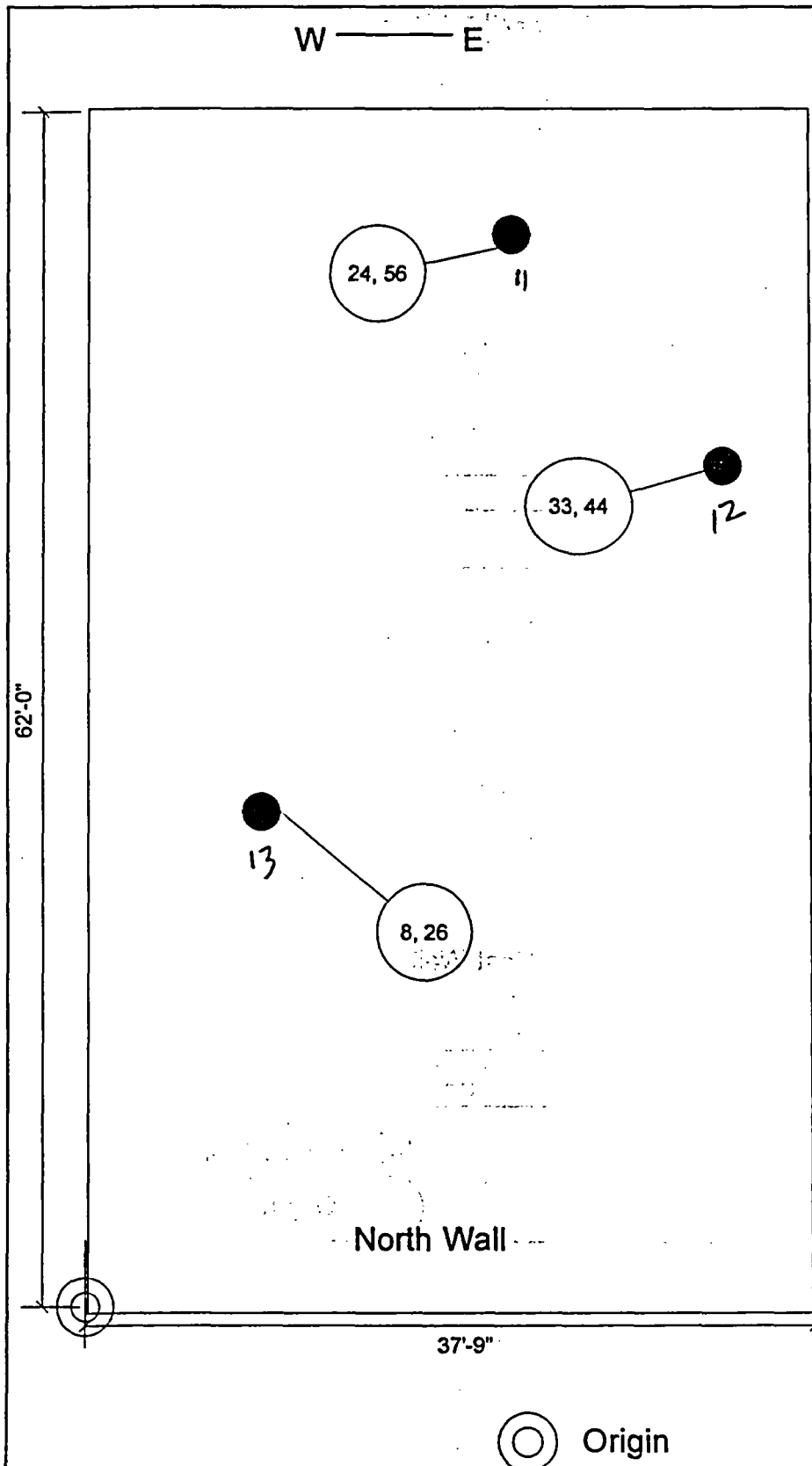
West Wall


48'-0"

Survey Point  
 Origin

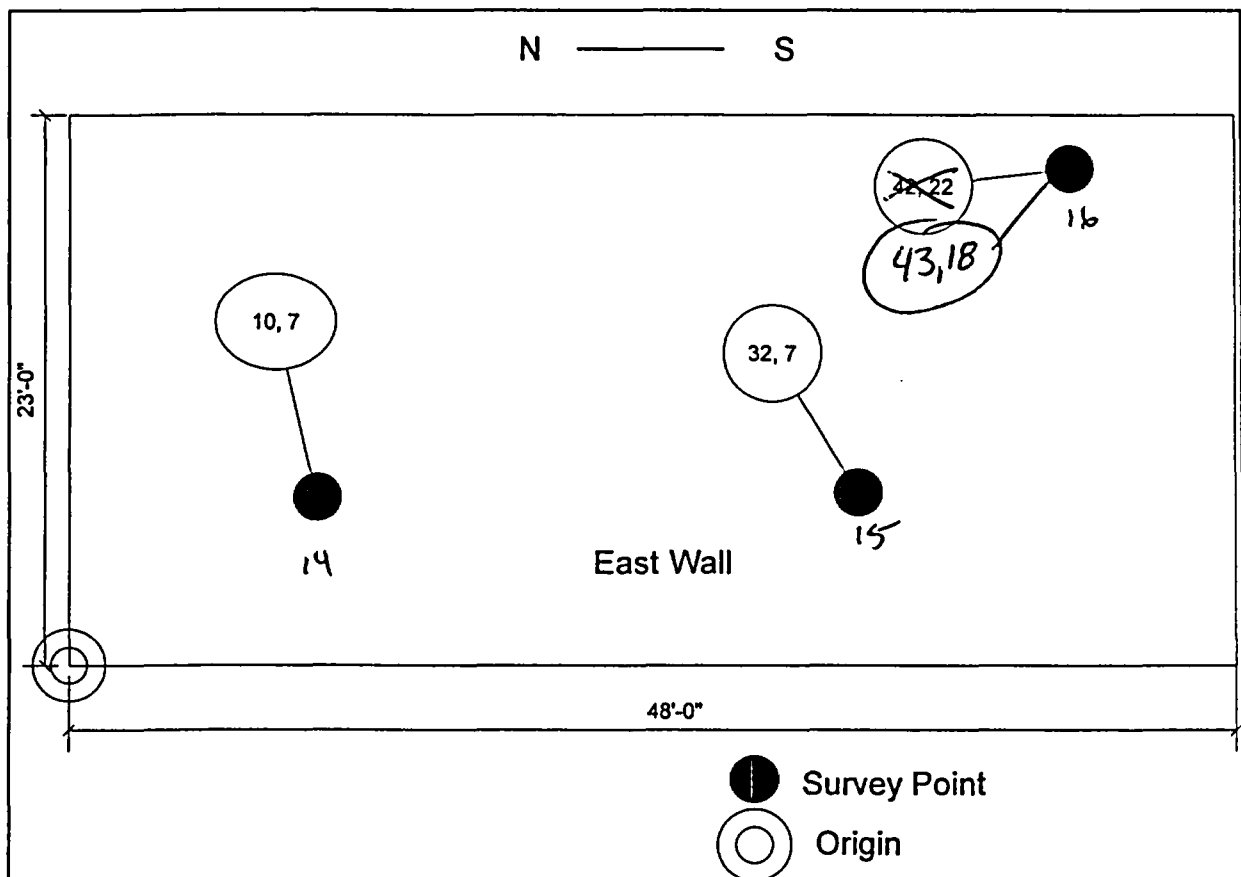
Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	<b>SCIENTECH</b> SCIENTECH, Inc. 143 WEST STREET NEW HAVEN, CT 06510	PROJECT NO. 31529-0501	FILE NAME:	DATE:	11/05/2004	BY:	CW	FIGURE:	BEAM-3-A-North
		DRAWING	CLASS 3 Beam Room North Wall				SCALE:	N.T.S.	CK:			

BEAM-3-A



Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENCETECH, Inc. 141 WEST STREET NEW HAVEN, CT 06778	PROJECT NO. 21529-0501	FILE NAME	DATE	11/05/2004	BY	C/C	FIGURE	BEAM-3-A-Beam
		DRAWING	CLASS 3 Beam Room East Wall				SCALE	N.T.S.				

BEAM-3-A



# BEAM-3-A

Log #
1618 Source
4
5
11
12
18
19
20
21
22
26
27
28
29
30
31
32

	X	Y
	n/a	n/a
South-1	2	4
2	31	9
3	16	61
4	30	50
West-1	16	11
2	23	29
3	45	16
4	35	24
5	43	49
6	20	36
North-1	24	56
2	33	44
3	8	26
East-1	10	7
2	32	7
3	43	18

Fixed Points
NA
79 ✓ 1
113 ✓ 2
102 ✓ 3
154 ✓ 4
125 5
145 6
131 7
141 8
132 9
154 10 10
163 11
128 12
116 13
152 14
115 15
142 16

Start 16 Nov 04 1515 hrs

#2 - 1618 Field Source

#3 - 121 Field BKG

#4 - 79

#5 - 113

#6 - 1675 Field Source

Stop 16 Nov 04 1745 hrs

Start 17 Nov 04 0715 hrs

#9 - 1558 Field Source

#10 - 127

#11 - 102

#12 - 154

#13 - 125

#14 - 33524 Field Source

Stop 17 Nov 04 1845 hrs

Start 18 Nov 04 0730 hrs

#16 - 30783 Field Source

#17 - 129 Field BKG

#18 - 125

#19 - 145

#20 - 131

#21 - 141

#22 - 132

#23 - 32626 Field Source

Stop 1830 hrs 18 Nov 04

Start 19 Nov 04 0700 hrs

#25 Source Field - 1655

#26 - 154

#27 - 163

#28 - 128

#29 - 116

#30 - 152

#31 - 115

#32 - 142

#33 - 158 Field BKG

#34 - void

#35 - 1697 Field Source

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 11/24/2004  
Time: 7:49:44 AM

Header 1: Joe Kozyra  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Beam-3-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/24/2004  
Model 2360 Time: 07:49:14  
Sample Number: 0014

User PC Time: 000.0  
Alpha Ratemeter Alarm: 000364  
Beta Ratemeter Alarm: 000364  
Alpha + Beta Ratemeter Alarm: 000364  
Alpha Scaler Alarm: 000364  
Beta Scaler Alarm: 000364  
Alpha + Beta Scaler Alarm: 000364

CntTime - Count Time  
R- Ratemeter  
S- Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	10/16/04	15:09:26	000000	031664	S 001.0	Lab Source
0002	10/16/04	15:14:53	000000	001618	S 001.0	Field Source
0003	10/16/04	15:20:12	000000	000121	S 001.0	Field Background
0004	10/16/04	15:23:01	000001	000079	S 001.0	Beam-3-A
0005	10/16/04	15:26:37	000000	000113	S 001.0	Beam-3-A
0006	10/16/04	18:45:18	000002	001675	S 001.0	Field Source
0007	10/17/04	07:09:01	000001	032161	S 001.0	Lab Source
0008	10/17/04	07:15:37	000000	000197	S 001.0	Lab Background
0009	10/17/04	07:17:40	000002	001558	S 001.0	Field Source
0010	10/17/04	07:23:27	000000	000127	S 001.0	Field Background
0011	10/17/04	13:01:32	000001	000102	S 001.0	Beam-3-A
0012	10/17/04	14:16:24	000000	000154	S 001.0	Beam-3-A
0013	10/17/04	18:42:02	000001	000184	S 001.0	Void
0014	10/17/04	18:45:12	000000	033524	S 001.0	Lab Source
0015	10/18/04	06:49:30	000001	031316	S 001.0	Lab Source
0016	10/18/04	07:29:57	000001	030782	S 001.0	Lab Source
0017	10/18/04	07:39:43	000000	000129	S 001.0	Beam-3-A
0018	10/18/04	07:56:21	000000	000125	S 001.0	Beam-3-A
0019	10/18/04	08:15:20	000002	000145	S 001.0	Beam-3-A
0020	10/18/04	08:30:51	000002	000131	S 001.0	Beam-3-A
0021	10/18/04	15:35:39	000001	000141	S 001.0	Beam-3-A
0022	10/18/04	16:12:42	000001	000132	S 001.0	Beam-3-A
0023	10/18/04	18:33:47	000002	032624	S 001.0	Lab Source
0024	10/19/04	07:11:39	000000	032254	S 001.0	Lab Source
0025	10/19/04	07:17:08	000003	001652	S 001.0	Field Source
0026	10/19/04	07:49:16	000000	000154	S 001.0	Beam-3-A
0027	10/19/04	14:32:27	000001	000163	S 001.0	Beam-3-A
0028	10/19/04	15:47:17	000001	000128	S 001.0	Beam-3-A
0029	10/19/04	16:07:22	000000	000116	S 001.0	Beam-3-A
0030	10/19/04	16:49:59	000000	000152	S 001.0	Beam-3-A
0031	10/19/04	16:52:48	000002	000115	S 001.0	Beam-3-A
0032	10/19/04	17:04:51	000002	000142	S 001.0	Beam-3-A
0033	10/19/04	17:29:05	000000	000158	S 001.0	Field Background
0034	10/19/04	17:30:50	000000	002002	S 001.0	Void



1035 10/19/04 17:32:59 000001 001697 S 001.0 Field Source  
1036 10/20/04 07:11:18 000000 032517 S 001.0 Lab Source  
1037 10/20/04 12:58:12 000000 031789 S 001.0 Lab Source  
;

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	11/22/04	15:37:22	Beam-3-A South	Final Status Survey	11/22/04	15:37:22	1.000	1.00
2	Smear 2	11/22/04	15:36:02	Beam-3-A South	Final Status Survey	11/22/04	15:36:02	1.000	1.00
3	Smear 3	11/22/04	15:34:43	Beam-3-A South	Final Status Survey	11/22/04	15:34:43	1.000	1.00
4	Smear 4	11/22/04	15:33:23	Beam-3-A South	Final Status Survey	11/22/04	15:33:23	1.000	1.00
5	Smear 1	11/22/04	15:32:03	Beam-3-A West	Final Status Survey	11/22/04	15:32:03	1.000	1.00
6	Smear 2	11/22/04	15:30:43	Beam-3-A West	Final Status Survey	11/22/04	15:30:43	1.000	1.00
7	Smear 3	11/22/04	15:29:23	Beam-3-A West	Final Status Survey	11/22/04	15:29:23	1.000	1.00
8	Smear 4	11/22/04	15:28:03	Beam-3-A West	Final Status Survey	11/22/04	15:28:03	1.000	1.00
9	Smear 5	11/22/04	15:26:43	Beam-3-A West	Final Status Survey	11/22/04	15:26:43	1.000	1.00
10	Smear 6	11/22/04	15:25:24	Beam-3-A West	Final Status Survey	11/22/04	15:25:24	1.000	1.00
11	Smear 1	11/22/04	15:24:04	Beam-3-A North	Final Status Survey	11/22/04	15:24:04	1.000	1.00
12	Smear 2	11/22/04	15:22:44	Beam-3-A North	Final Status Survey	11/22/04	15:22:44	1.000	1.00
13	Smear 3	11/22/04	15:21:24	Beam-3-A North	Final Status Survey	11/22/04	15:21:24	1.000	1.00
14	Smear 1	11/22/04	15:20:04	Beam-3-A East	Final Status Survey	11/22/04	15:20:04	1.000	1.00
15	Smear 2	11/22/04	15:18:44	Beam-3-A East	Final Status Survey	11/22/04	15:18:44	1.000	1.00
16	Smear 3	11/22/04	15:17:25	Beam-3-A East	Final Status Survey	11/22/04	15:17:25	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): 

Date: 11/22/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.1 cpm %Eff: 23.71 LLD: 16.89 dpm				Bkg: 0.37 cpm %Eff: 43.89 LLD: 10.79 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	11/22/04	15:37:22	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
2	Smear 2	11/22/04	15:36:02	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79
3	Smear 3	11/22/04	15:34:43	0.00	-0.10	-0.42	15.89	2.00	1.63	3.72	10.79
4	Smear 4	11/22/04	15:33:23	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79
5	Smear 1	11/22/04	15:32:03	1.00	0.90	3.80	15.89	1.00	0.63	1.44	10.79
6	Smear 2	11/22/04	15:30:43	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
7	Smear 3	11/22/04	15:29:23	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79
8	Smear 4	11/22/04	15:28:03	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
9	Smear 5	11/22/04	15:26:43	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79
10	Smear 6	11/22/04	15:25:24	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79
11	Smear 1	11/22/04	15:24:04	0.00	-0.10	-0.42	15.89	3.00	2.63	6.00	10.79
12	Smear 2	11/22/04	15:22:44	0.00	-0.10	-0.42	15.89	5.00	4.63	10.56	10.79
13	Smear 3	11/22/04	15:21:24	0.00	-0.10	-0.42	15.89	1.00	0.63	1.44	10.79
14	Smear 1	11/22/04	15:20:04	0.00	-0.10	-0.42	15.89	0.00	-0.37	-0.84	10.79
15	Smear 2	11/22/04	15:18:44	0.00	-0.10	-0.42	15.89	11.00	10.63	24.23	10.79
16	Smear 3	11/22/04	15:17:25	0.00	-0.10	-0.42	15.89	9.00	8.63	19.67	10.79

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

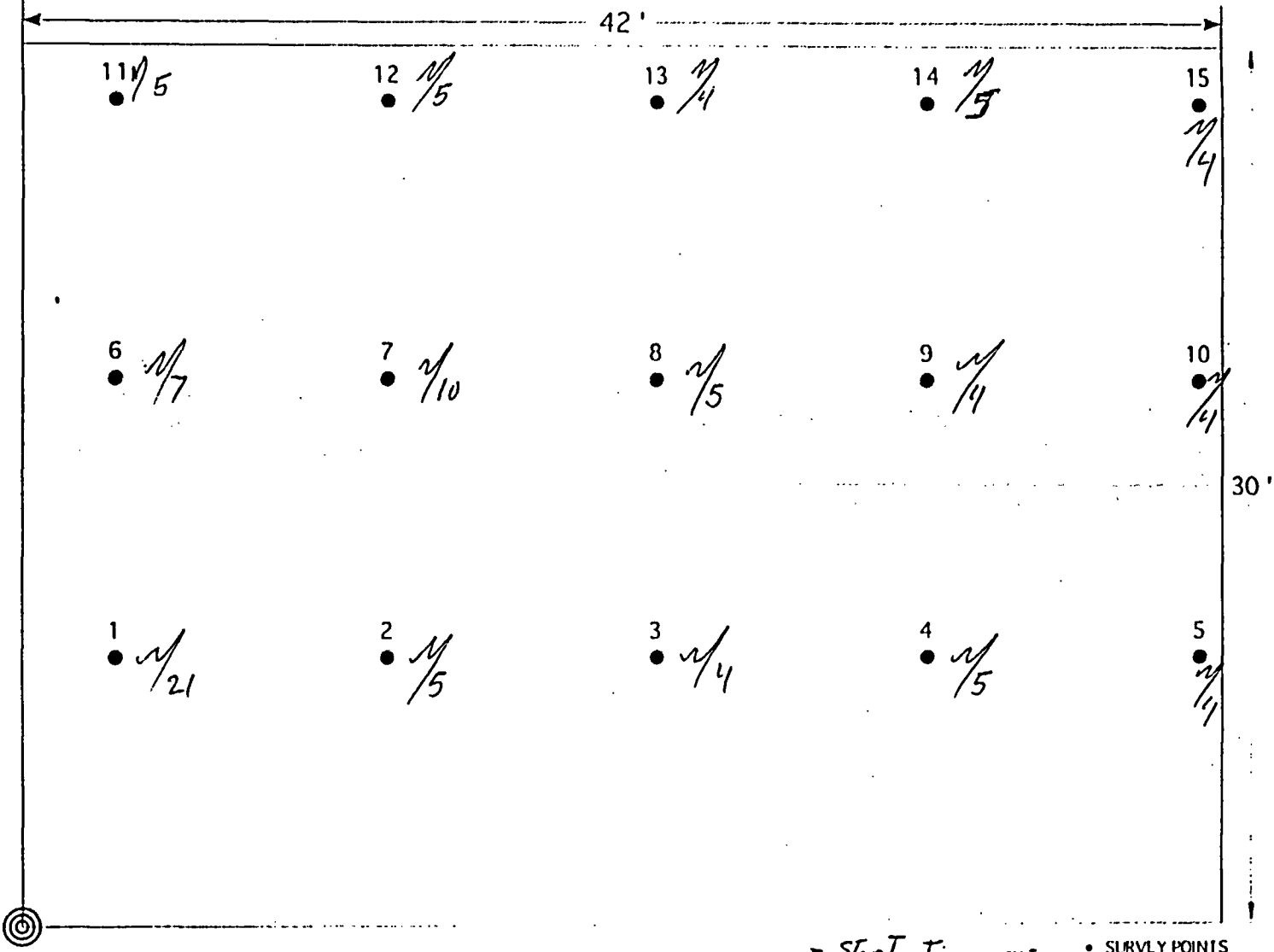
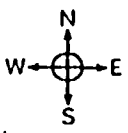
Date: 11-22-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**DUN-2-A    Dungeon**



DUN-2-A

- Start Time - OCT 4-04 • SURVLY POINTS  
10:30 • STARTING LOCATION

- End Time - OCT - 4-011  
14:33

Note: All dose rates -  $\mu$ R/hr

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD CLASS 2 Dungeon Floor	
 SCIENTECH Inc. 145 WEST STREET NEW MILFORD, CT 06756	
PROJECT NO: 23529-0301	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/06/2004
BY:	CK:
FIGURE: DUN-2-A	

# DUN-2-A

Log #
6 Source
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

	X	Y
	n/a	n/a
1	3.2	9.1
2	12.7	9.1
3	22.2	9.1
4	31.7	9.1
5	41.2	9.1
6	3.2	18.6
7	12.7	18.6
8	22.2	18.6
9	31.7	18.6
10	41.2	18.6
11	3.2	28.1
12	12.7	28.1
13	22.2	28.1
14	31.7	28.1
15	41.2	28.1

L (ft)= 9.5

A (ft²)= 1260

Fixed Points	Ave. (Scan)	Max. (Scan)
1569	n/a	n/a
150	140	200
135	160	200
159	140	180
143	150	180
115	120	140
149	150	220
177	180	240
136	150	200
129	140	200
112	140	220
134	120	160
155	160	260
149	140	200
120	150	220
111	120	160

Ludlum Measurements, Inc.  
Model 2360 Log Data

---

Date: 10/4/2004  
Time: 2:40:44 PM

Header 1: Joe Kozyra  
Header 2: Serial#202475  
Header 3: DetSer#208661  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: DUN-2-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/04/2004  
Model 2360 Time: 14:42:17  
Sample Number: 0024

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

CntTime - Count Time  
R- Ratemeter  
S- Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	10/02/04	10:30:42	000001	000190	S 001.0	Lab Background
0002	10/02/04	10:32:16	000000	032410	S 001.0	Lab Source
0003	10/04/04	07:39:29	000000	000183	S 001.0	Lab Background
0004	10/04/04	07:41:50	000001	032939	S 001.0	Lab Source
0005	10/04/04	10:28:36	000001	000135	S 001.0	Field Background
0006	10/04/04	10:30:06	000001	001569	S 001.0	Field Source
0007	10/04/04	10:42:15	000001	000150	S 001.0	DUN-2-A
0008	10/04/04	10:47:37	000001	000135	S 001.0	DUN-2-A
0009	10/04/04	10:53:11	000002	000159	S 001.0	DUN-2-A
0010	10/04/04	10:59:49	000000	000143	S 001.0	DUN-2-A
0011	10/04/04	11:06:15	000001	000115	S 001.0	DUN-2-A
0012	10/04/04	11:12:38	000001	000149	S 001.0	DUN-2-A
0013	10/04/04	11:22:20	000001	000177	S 001.0	DUN-2-A
0014	10/04/04	11:28:58	000000	000136	S 001.0	DUN-2-A
0015	10/04/04	11:34:49	000001	000129	S 001.0	DUN-2-A
0016	10/04/04	12:52:31	000002	000112	S 001.0	DUN-2-A
0017	10/04/04	12:58:17	000000	000134	S 001.0	DUN-2-A
0018	10/04/04	13:07:09	000000	000155	S 001.0	DUN-2-A
0019	10/04/04	13:13:02	000001	000149	S 001.0	DUN-2-A
0020	10/04/04	14:04:32	000001	000120	S 001.0	DUN-2-A
0021	10/04/04	14:09:15	000000	000111	S 001.0	DUN-2-A
0022	10/04/04	14:31:25	000000	000148	S 001.0	Field Background
0023	10/04/04	14:33:00	000003	001608	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	10/04/04	12:32:28	DUN-2-A	Final Status Survey	10/04/04	12:32:28	1.000	1.00
2	Smear 2	10/04/04	12:31:08	DUN-2-A	Final Status Survey	10/04/04	12:31:08	1.000	1.00
3	Smear 3	10/04/04	12:29:47	DUN-2-A	Final Status Survey	10/04/04	12:29:47	1.000	1.00
4	Smear 4	10/04/04	12:28:27	DUN-2-A	Final Status Survey	10/04/04	12:28:27	1.000	1.00
5	Smear 5	10/04/04	12:27:06	DUN-2-A	Final Status Survey	10/04/04	12:27:06	1.000	1.00
6	Smear 6	10/04/04	12:25:45	DUN-2-A	Final Status Survey	10/04/04	12:25:45	1.000	1.00
7	Smear 7	10/04/04	12:24:25	DUN-2-A	Final Status Survey	10/04/04	12:24:25	1.000	1.00
8	Smear 8	10/04/04	12:23:05	DUN-2-A	Final Status Survey	10/04/04	12:23:05	1.000	1.00
9	Smear 9	10/04/04	12:21:44	DUN-2-A	Final Status Survey	10/04/04	12:21:44	1.000	1.00
10	Smear 10	10/04/04	12:20:24	DUN-2-A	Final Status Survey	10/04/04	12:20:24	1.000	1.00
11	Smear 11	10/04/04	12:19:03	DUN-2-A	Final Status Survey	10/04/04	12:19:03	1.000	1.00
12	Smear 12	10/04/04	12:17:42	DUN-2-A	Final Status Survey	10/04/04	12:17:42	1.000	1.00
13	Smear 13	10/04/04	12:16:22	DUN-2-A	Final Status Survey	10/04/04	12:16:22	1.000	1.00
14	Smear 14	10/04/04	12:15:01	DUN-2-A	Final Status Survey	10/04/04	12:15:01	1.000	1.00
15	Smear 15	10/04/04	12:13:41	DUN-2-A	Final Status Survey	10/04/04	12:13:41	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-4-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 27.75 LLD: 12.88 dpm				Bkg: 0.83 cpm %Eff: 44.32 LLD: 13 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	10/04/04	12:32:28	0.00	-0.07	-0.24	12.88	0.00	-0.83	-1.88	13.00
2	Smear 2	10/04/04	12:31:08	0.00	-0.07	-0.24	12.88	2.00	1.17	2.63	13.00
3	Smear 3	10/04/04	12:29:47	0.00	-0.07	-0.24	12.88	3.00	2.17	4.89	13.00
4	Smear 4	10/04/04	12:28:27	0.00	-0.07	-0.24	12.88	2.00	1.17	2.63	13.00
5	Smear 5	10/04/04	12:27:08	0.00	-0.07	-0.24	12.88	2.00	1.17	2.63	13.00
6	Smear 6	10/04/04	12:25:45	0.00	-0.07	-0.24	12.88	1.00	0.17	0.38	13.00
7	Smear 7	10/04/04	12:24:25	0.00	-0.07	-0.24	12.88	3.00	2.17	4.89	13.00
8	Smear 8	10/04/04	12:23:05	0.00	-0.07	-0.24	12.88	3.00	2.17	4.89	13.00
9	Smear 9	10/04/04	12:21:44	0.00	-0.07	-0.24	12.88	0.00	-0.83	-1.88	13.00
10	Smear 10	10/04/04	12:20:24	0.00	-0.07	-0.24	12.88	1.00	0.17	0.38	13.00
11	Smear 11	10/04/04	12:19:03	0.00	-0.07	-0.24	12.88	1.00	0.17	0.38	13.00
12	Smear 12	10/04/04	12:17:42	0.00	-0.07	-0.24	12.88	1.00	0.17	0.38	13.00
13	Smear 13	10/04/04	12:16:22	1.00	0.93	3.38	12.88	4.00	3.17	7.14	13.00
14	Smear 14	10/04/04	12:15:01	0.00	-0.07	-0.24	12.88	1.00	0.17	0.38	13.00
15	Smear 15	10/04/04	12:13:41	0.00	-0.07	-0.24	12.88	2.00	1.17	2.63	13.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

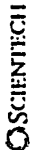
Date: 10-04-04

Reviewed By (print): Joe Trowbridge

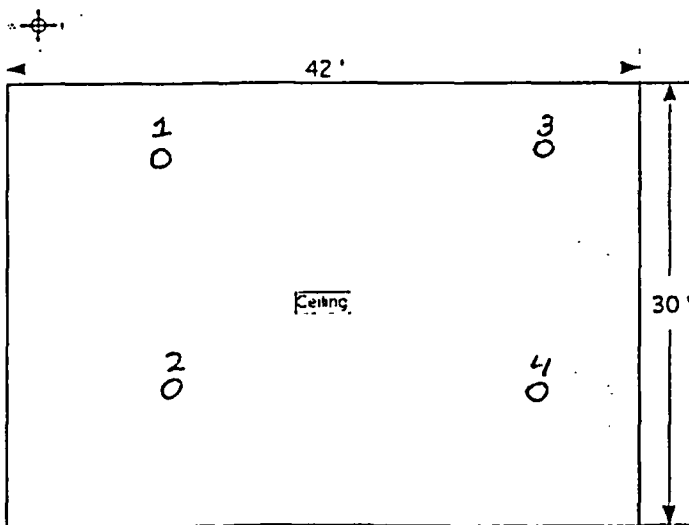
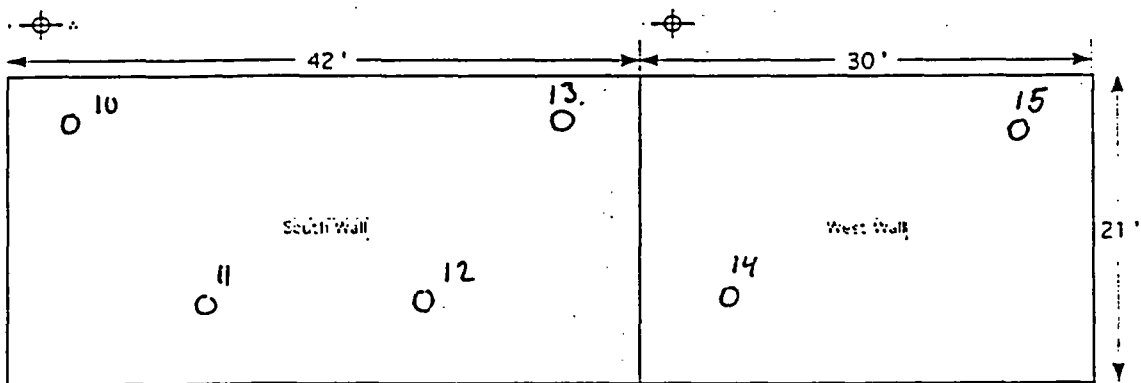
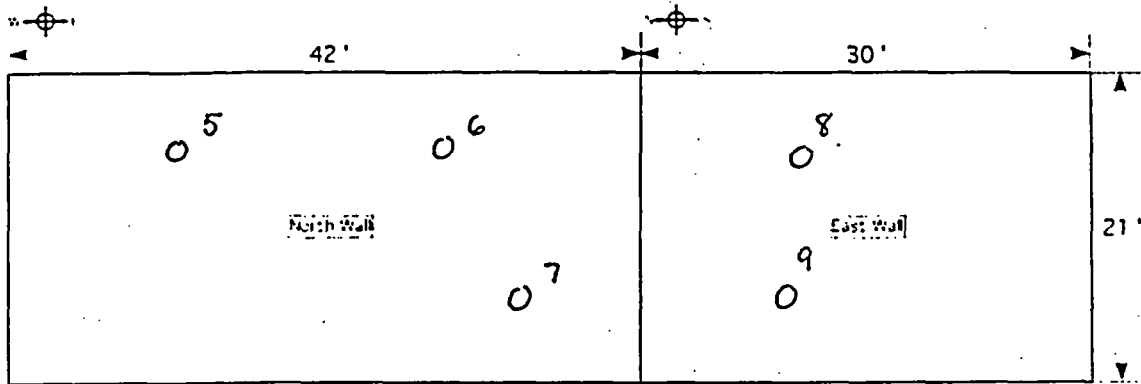
Reviewed By (sign):

Date:

**DUN-3-A    Dungeon**

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD		 OSCIENTECH 100 WEST STREET NEW HAVEN, CT 06510	PROJECT NO: 23599-0301	FILE NAME	DATE	07/06/2004	BY	CHK	FIGURE DUN-3-A
		DRAWING	CLASS 3 Dungeon Walls and Ceiling					SCALE	NTS			

DUN-3-A



- Start Time - OCT-4-04  
14:00

- End Time - OCT-4-04  
16:45

# DUN-3-A

Log #		X	Y
4		n/a	n/a
5	Ceiling-1	10	25
6	2	10	10
7	3	40	25
8	4	40	10
9	North-5	10	15
10	6	30	15
11	7	35	5
12	East-8	25	15
13	9	20	5
14	South-10	5	18
15	11	15	10
16	12	25	10
17	13	35	18
18	West-14	10	10
19	15	25	18

A (ft<sup>2</sup>)= 4284

Fixed Points	Ave. (Scan)	Max. (Scan)
1586	n/a	n/a
138	160	240
142	180	240
152	120	160
156	180	220
185	180	260
102	120	160
117	140	240
138	120	180
126	120	160
103	120	180
107	100	140
107	120	160
145	120	200
121	100	140
96	120	160

Ludlum Measurements, Inc.  
Model 2360 Log Data

---

Date: 10/5/2004  
Time: 9:41:01 AM

Header 1: John Albert  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: DUN-3-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 10/05/2004  
Model 2360 Time: 09:42:44  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 000576  
Alpha + Beta Ratemeter Alarm: 000576  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 000576  
Alpha + Beta Scaler Alarm: 000576

CntTime - Count Time  
F meter  
S culer

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

---

0001	10/05/04	08:12:32	000000	000197	S 001.0	Lab Background
0002	10/05/04	08:14:15	000005	035007	S 001.0	Lab Source
0003	10/05/04	08:36:44	000001	000199	S 001.0	Field Background
0004	10/05/04	08:38:05	000001	001586	S 001.0	Field Source
0005	10/05/04	08:40:07	000000	000138	S 001.0	DUN-3-A
0006	10/05/04	08:46:01	000002	000142	S 001.0	DUN-3-A
0007	10/05/04	08:49:19	000001	000152	S 001.0	DUN-3-A
0008	10/05/04	08:52:24	000002	000156	S 001.0	DUN-3-A
0009	10/05/04	08:54:50	000001	000185	S 001.0	DUN-3-A
0010	10/05/04	08:56:58	000000	000102	S 001.0	DUN-3-A
0011	10/05/04	08:58:44	000001	000117	S 001.0	DUN-3-A
0012	10/05/04	09:01:12	000005	000138	S 001.0	DUN-3-A
0013	10/05/04	09:02:39	000002	000126	S 001.0	DUN-3-A
0014	10/05/04	09:05:10	000000	000103	S 001.0	DUN-3-A
0015	10/05/04	09:07:06	000001	000107	S 001.0	DUN-3-A
0016	10/05/04	09:10:57	000001	000107	S 001.0	DUN-3-A
0017	10/05/04	09:12:39	000002	000145	S 001.0	DUN-3-A
0018	10/05/04	09:14:24	000001	000121	S 001.0	DUN-3-A
0019	10/05/04	09:16:21	000002	000096	S 001.0	DUN-3-A
0020	10/05/04	09:18:06	000003	001767	S 001.0	Field Source

S

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
41	Smear 1	10/05/04	9:57:21	DUN-3-A	Final Status Survey	10/05/04	9:57:21	1.000	1.00
42	Smear 2	10/05/04	9:56:01	DUN-3-A	Final Status Survey	10/05/04	9:56:01	1.000	1.00
43	Smear 3	10/05/04	9:54:40	DUN-3-A	Final Status Survey	10/05/04	9:54:40	1.000	1.00
44	Smear 4	10/05/04	9:53:20	DUN-3-A	Final Status Survey	10/05/04	9:53:20	1.000	1.00
45	Smear 5	10/05/04	9:51:59	DUN-3-A	Final Status Survey	10/05/04	9:51:59	1.000	1.00
46	Smear 6	10/05/04	9:50:38	DUN-3-A	Final Status Survey	10/05/04	9:50:38	1.000	1.00
47	Smear 7	10/05/04	9:49:17	DUN-3-A	Final Status Survey	10/05/04	9:49:17	1.000	1.00
48	Smear 8	10/05/04	9:47:57	DUN-3-A	Final Status Survey	10/05/04	9:47:57	1.000	1.00
49	Smear 9	10/05/04	9:46:36	DUN-3-A	Final Status Survey	10/05/04	9:46:36	1.000	1.00
50	Smear 10	10/05/04	9:45:16	DUN-3-A	Final Status Survey	10/05/04	9:45:16	1.000	1.00
51	Smear 11	10/05/04	9:43:55	DUN-3-A	Final Status Survey	10/05/04	9:43:55	1.000	1.00
52	Smear 12	10/05/04	9:42:35	DUN-3-A	Final Status Survey	10/05/04	9:42:35	1.000	1.00
53	Smear 13	10/05/04	9:41:15	DUN-3-A	Final Status Survey	10/05/04	9:41:15	1.000	1.00
54	Smear 14	10/05/04	9:39:54	DUN-3-A	Final Status Survey	10/05/04	9:39:54	1.000	1.00
55	Smear 15	10/05/04	9:38:34	DUN-3-A	Final Status Survey	10/05/04	9:38:34	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11/5/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.07 cpm %Eff: 26.91 LLD: 13.28 dpm				Bkg: 0.53 cpm %Eff: 44.17 LLD: 11.66 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
41	Smear 1	10/05/04	9:57:21	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
42	Smear 2	10/05/04	9:58:01	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
43	Smear 3	10/05/04	9:54:40	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
44	Smear 4	10/05/04	9:53:20	0.00	-0.07	-0.25	13.28	3.00	2.47	5.58	11.66
45	Smear 5	10/05/04	9:51:59	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
46	Smear 6	10/05/04	9:50:38	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
47	Smear 7	10/05/04	9:49:17	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
48	Smear 8	10/05/04	9:47:57	0.00	-0.07	-0.25	13.28	1.00	0.47	1.06	11.66
49	Smear 9	10/05/04	9:46:38	0.00	-0.07	-0.25	13.28	2.00	1.47	3.32	11.66
50	Smear 10	10/05/04	9:45:16	0.00	-0.07	-0.25	13.28	2.00	1.47	3.32	11.66
51	Smear 11	10/05/04	9:43:55	0.00	-0.07	-0.25	13.28	1.00	0.47	1.06	11.66
52	Smear 12	10/05/04	9:42:35	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
53	Smear 13	10/05/04	9:41:15	0.00	-0.07	-0.25	13.28	0.00	-0.53	-1.21	11.66
54	Smear 14	10/05/04	9:39:54	1.00	0.93	3.47	13.28	0.00	-0.53	-1.21	11.66
55	Smear 15	10/05/04	9:38:34	0.00	-0.07	-0.25	13.28	1.00	0.47	1.06	11.66

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 10-05-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**ROAD-3-A Road**





ROAD-3-A  
Class 3 Road

Log #
Source
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

X	Y
n/a	n/a
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Fixed Points
775
645
678
669
653
573
651
629
610
606
565
661
593
633
468
441

BKGD

1-4 Concrete  
5-11 Asphalt  
12-13 Concrete  
14-15 Asphalt

Ludlum Measurements, Inc.  
Model 2360 Log Data

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12/10/2004  
12:56:22 PM

Header 1: Technician  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: ROAD-3-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/10/2004  
Model 2360 Time: 12:55:26  
Sample Number: 0021

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 999999  
Alpha + Beta Ratemeter Alarm: 999999  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 999999  
Alpha + Beta Scaler Alarm: 999999

Cr - Count Time  
R - meter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/10/04	11:22:31	000000	000230	S 001.0	Lab Background
0002	12/10/04	11:23:47	000004	034871	S 001.0	Lab Source
0003	12/10/04	11:25:26	000002	001910	S 001.0	Field Source
0004	12/10/04	11:41:24	000012	000775	S 001.0	Field Background
0005	12/10/04	11:42:36	000005	000645	S 001.0	ROAD-3-A
0006	12/10/04	11:43:42	000011	000678	S 001.0	ROAD-3-A
0007	12/10/04	11:44:47	000015	000669	S 001.0	ROAD-3-A
0008	12/10/04	11:45:52	000010	000653	S 001.0	ROAD-3-A
0009	12/10/04	11:48:09	000050	000573	S 001.0	ROAD-3-A
0010	12/10/04	11:49:14	000046	000651	S 001.0	ROAD-3-A
0011	12/10/04	11:50:19	000042	000629	S 001.0	ROAD-3-A
0012	12/10/04	11:51:24	000043	000610	S 001.0	ROAD-3-A
0013	12/10/04	11:52:29	000048	000600	S 001.0	ROAD-3-A
0014	12/10/04	11:53:33	000046	000565	S 001.0	ROAD-3-A
0015	12/10/04	11:54:38	000027	000661	S 001.0	ROAD-3-A
0016	12/10/04	11:56:08	000014	000593	S 001.0	ROAD-3-A
0017	12/10/04	11:57:14	000015	000633	S 001.0	ROAD-3-A
0018	12/10/04	11:58:27	000018	000468	S 001.0	ROAD-3-A
0019	12/10/04	11:59:32	000017	000441	S 001.0	ROAD-3-A
0020	12/10/04	12:01:18	000004	001688	S 001.0	Field Source

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Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/10/04	13:14:14	ROAD-3-A	Final Status Survey	12/10/04	13:14:14	1.000	1.00
2	Smear 2	12/10/04	13:12:54	ROAD-3-A	Final Status Survey	12/10/04	13:12:54	1.000	1.00
3	Smear 3	12/10/04	13:11:34	ROAD-3-A	Final Status Survey	12/10/04	13:11:34	1.000	1.00
4	Smear 4	12/10/04	13:10:14	ROAD-3-A	Final Status Survey	12/10/04	13:10:14	1.000	1.00
5	Smear 5	12/10/04	13:08:54	ROAD-3-A	Final Status Survey	12/10/04	13:08:54	1.000	1.00
6	Smear 6	12/10/04	13:07:34	ROAD-3-A	Final Status Survey	12/10/04	13:07:34	1.000	1.00
7	Smear 7	12/10/04	13:06:14	ROAD-3-A	Final Status Survey	12/10/04	13:06:14	1.000	1.00
8	Smear 8	12/10/04	13:04:54	ROAD-3-A	Final Status Survey	12/10/04	13:04:54	1.000	1.00
9	Smear 9	12/10/04	13:03:34	ROAD-3-A	Final Status Survey	12/10/04	13:03:34	1.000	1.00
10	Smear 10	12/10/04	13:02:15	ROAD-3-A	Final Status Survey	12/10/04	13:02:15	1.000	1.00
11	Smear 11	12/10/04	13:00:55	ROAD-3-A	Final Status Survey	12/10/04	13:00:55	1.000	1.00
12	Smear 12	12/10/04	12:59:35	ROAD-3-A	Final Status Survey	12/10/04	12:59:35	1.000	1.00
13	Smear 13	12/10/04	12:58:15	ROAD-3-A	Final Status Survey	12/10/04	12:58:15	1.000	1.00
14	Smear 14	12/10/04	12:56:56	ROAD-3-A	Final Status Survey	12/10/04	12:56:56	1.000	1.00
15	Smear 15	12/10/04	12:55:36	ROAD-3-A	Final Status Survey	12/10/04	12:55:36	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: ( '0-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.17 cpm %Eff: 23.99 LLD: 16.99 dpm				Bkg: 0.6 cpm %Eff: 46.01 LLD: 11.78 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/10/04	13:14:14	0.00	-0.17	-0.69	16.99	3.00	2.40	5.33	11.78
2	Smear 2	12/10/04	13:12:54	1.00	0.83	3.47	16.99	4.00	3.40	7.55	11.78
3	Smear 3	12/10/04	13:11:34	2.00	1.83	7.64	16.99	0.00	-0.60	-1.33	11.78
4	Smear 4	12/10/04	13:10:14	2.00	1.83	7.64	16.99	6.00	5.40	12.00	11.78
5	Smear 5	12/10/04	13:08:54	1.00	0.83	3.47	16.99	3.00	2.40	5.33	11.78
6	Smear 6	12/10/04	13:07:34	0.00	-0.17	-0.69	16.99	0.00	-0.60	-1.33	11.78
7	Smear 7	12/10/04	13:06:14	0.00	-0.17	-0.69	16.99	0.00	-0.60	-1.33	11.78
8	Smear 8	12/10/04	13:04:54	1.00	0.83	3.47	16.99	2.00	1.40	3.11	11.78
9	Smear 9	12/10/04	13:03:34	0.00	-0.17	-0.69	16.99	0.00	-0.60	-1.33	11.78
10	Smear 10	12/10/04	13:02:15	1.00	0.83	3.47	16.99	11.00	10.40	23.10	11.78
11	Smear 11	12/10/04	13:00:55	2.00	1.83	7.64	16.99	7.00	6.40	14.22	11.78
12	Smear 12	12/10/04	12:59:35	2.00	1.83	7.64	16.99	3.00	2.40	5.33	11.78
13	Smear 13	12/10/04	12:58:15	1.00	0.83	3.47	16.99	7.00	6.40	14.22	11.78
14	Smear 14	12/10/04	12:56:56	1.00	0.83	3.47	16.99	5.00	4.40	9.77	11.78
15	Smear 15	12/10/04	12:55:36	0.00	-0.17	-0.69	16.99	3.00	2.40	5.33	11.78

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-10-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Ludlum Measurements, Inc.  
Model 2360 Log Data

Date: 12/10/2004  
Time: 11:18:12 AM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Background  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/10/2004  
Model 2360 Time: 11:12:46  
Sample Number: 0038

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 999999  
Alpha + Beta Ratemeter Alarm: 999999  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 999999  
Alpha + Beta Scaler Alarm: 999999

CntTime - Count Time  
R- Ratemeter  
S- Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime CntTime	Location
0001	12/10/04	10:13:52	000001	000205	S 001.0	Lab Background
0002	12/10/04	10:20:33	000001	034601	S 001.0	Lab Source
0003	12/10/04	10:23:12	000002	002116	S 001.0	Field Source
0004	12/10/04	10:30:59	000016	000458	S 001.0	Asphalt Background
0005	12/10/04	10:32:03	000024	000462	S 001.0	Asphalt Background
0006	12/10/04	10:33:09	000019	000441	S 001.0	Asphalt Background
0007	12/10/04	10:34:15	000022	000441	S 001.0	Asphalt Background
0008	12/10/04	10:35:20	000022	000437	S 001.0	Asphalt Background
0009	12/10/04	10:36:26	000023	000400	S 001.0	Asphalt Background
0010	12/10/04	10:37:31	000015	000402	S 001.0	Asphalt Background
0011	12/10/04	10:38:35	000011	000443	S 001.0	Asphalt Background
0012	12/10/04	10:39:40	000016	000422	S 001.0	Asphalt Background
0013	12/10/04	10:40:46	000024	000426	S 001.0	Asphalt Background
0014	12/10/04	10:41:52	000020	000424	S 001.0	Asphalt Background
0015	12/10/04	10:42:57	000019	000437	S 001.0	Asphalt Background
0016	12/10/04	10:44:03	000016	000478	S 001.0	Asphalt Background
0017	12/10/04	10:45:09	000015	000403	S 001.0	Asphalt Background
0018	12/10/04	10:46:15	000015	000453	S 001.0	Asphalt Background
0019	12/10/04	10:47:21	000020	000450	S 001.0	Asphalt Background
0020	12/10/04	10:49:14	000005	001776	S 001.0	Field Source
0021	12/10/04	10:50:39	000061	000742	S 001.0	Concrete Background
0022	12/10/04	10:51:43	000056	000777	S 001.0	Concrete Background
0023	12/10/04	10:52:48	000050	000754	S 001.0	Concrete Background
0024	12/10/04	10:55:04	000034	000776	S 001.0	Concrete Background
0025	12/10/04	10:56:09	000042	000758	S 001.0	Concrete Background
0026	12/10/04	10:57:29	000041	000779	S 001.0	Concrete Background
0027	12/10/04	10:58:35	000052	000717	S 001.0	Concrete Background
0028	12/10/04	10:59:39	000037	000747	S 001.0	Concrete Background
0029	12/10/04	11:00:45	000056	000734	S 001.0	Concrete Background
0030	12/10/04	11:01:51	000061	000695	S 001.0	Concrete Background
0031	12/10/04	11:02:57	000060	000656	S 001.0	Concrete Background
0032	12/10/04	11:04:03	000057	000699	S 001.0	Concrete Background
0033	12/10/04	11:05:09	000058	000712	S 001.0	Concrete Background
0034	12/10/04	11:06:14	000058	000684	S 001.0	Concrete Background

Weather  
Low pressure system  
Slight rain/sporadic

New background measurements  
for ROAD-3-A survey.  
Ref. area background not  
applicable due to weather  
conditions that resulted  
in high  $\alpha$  and  $\beta$  background  
activity.

-KT

0035 12/10/04 11:07:18 000037 000047 S 001.0 Concrete Background  
0036 12/10/04 11:08:25 000059 000676 S 001.0 Concrete Background  
0037 12/10/04 11:09:40 000004 001703 S 001.0 Field Source  
S

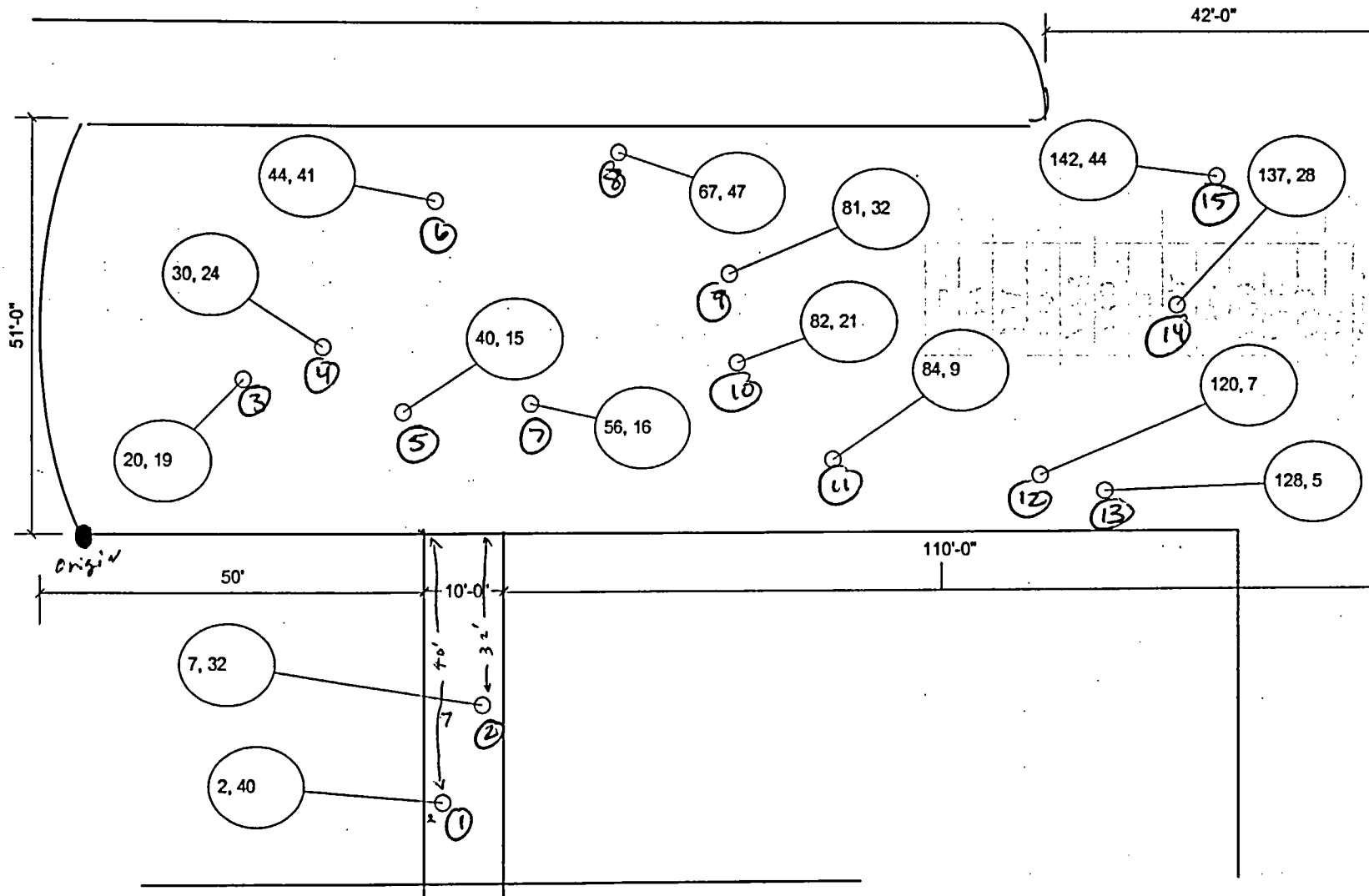
ROAD-3-A

NUM	BETA	BKG	Surface Eff	Instrument Eff.	dpm/100cm <sup>2</sup>	Sigma
1	645	723	0.5	0.479	-326	25
2	678	723	0.5	0.479	-188	26
3	669	723	0.5	0.479	-225	26
4	653	723	0.5	0.479	-292	26
5	573	436	0.5	0.479	572	24
6	651	436	0.5	0.479	898	26
7	629	436	0.5	0.479	806	25
8	610	436	0.5	0.479	727	25
9	600	436	0.5	0.479	685	25
10	565	436	0.5	0.479	539	24
11	661	436	0.5	0.479	939	26
12	593	723	0.5	0.479	-543	24
13	633	723	0.5	0.479	-376	25
14	468	436	0.5	0.479	134	22
15	441	436	0.5	0.479	21	21



**PLOT-3-A    Parking Lot**

Parking Lot



Plot-3-A

110  
51  
110  
550  
5,610  
500  
6110

x 10

Admin Building

# Class 3 Parking Lot Locations

Log #					
Source	N	X	Y	cpm	$\mu$ R/hour
	1	2	40	256	6
	2	7	32	243	6
	3	20	19	193	8
	4	30	24	198	7
	5	40	15	182	6
	6	44	41	199	8
	7	56	16	194	7
	8	67	47	202	7
	9	81	32	218	7
	10	82	21	190	5
	11	84	9	188	6
	12	120	7	209	6
	13	<del>128</del> <del>112</del>	<del>54</del> 5	201	6
	14	137	28	194	5
	15	142	44	200	6

Ludlum Measurements, Inc.  
Model 2360 Log Data

11/29/2004  
11:05:31 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Parking  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 11/29/2004  
Model 2360 Time: 13:00:33  
Sample Number: 0020

User PC Time: 001.0  
Alpha Ratemeter Alarm: 000364  
Beta Ratemeter Alarm: 000364  
Alpha + Beta Ratemeter Alarm: 000364  
Alpha Scaler Alarm: 000364  
Beta Scaler Alarm: 000364  
Alpha + Beta Scaler Alarm: 000364

C - Count Time  
F - Ratemeter  
S - Scaler

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	11/29/04	11:39:35	000000	000181	S 001.0	Lab Background
0002	11/29/04	11:42:22	000004	034793	S 001.0	Lab Source
0003	11/29/04	11:43:54	000003	001650	S 001.0	Field Source
0004	11/29/04	11:47:54	000005	000256	S 001.0	Parking Lot
0005	11/29/04	11:49:09	000003	000243	S 001.0	Parking Lot
0006	11/29/04	11:50:38	000002	000193	S 001.0	Parking Lot
0007	11/29/04	11:52:00	000005	000198	S 001.0	Parking Lot
0008	11/29/04	11:53:15	000003	000182	S 001.0	Parking Lot
0009	11/29/04	11:54:23	000006	000199	S 001.0	Parking Lot
0010	11/29/04	11:55:34	000003	000194	S 001.0	Parking Lot
0011	11/29/04	11:56:51	000002	000202	S 001.0	Parking Lot
0012	11/29/04	11:58:05	000001	000218	S 001.0	Parking Lot
0013	11/29/04	11:59:23	000003	000190	S 001.0	Parking Lot
0014	11/29/04	12:00:36	000004	000188	S 001.0	Parking Lot
0015	11/29/04	12:01:46	000005	000209	S 001.0	Parking Lot
0016	11/29/04	12:02:59	000002	000201	S 001.0	Parking Lot
0017	11/29/04	12:04:04	000002	000194	S 001.0	Parking Lot
0018	11/29/04	12:05:21	000003	000200	S 001.0	Parking Lot
0019	11/29/04	12:07:43	000002	001639	S 001.0	Field Source

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	11/30/04	10:31:59	PLot-3-A	Final Status Survey	11/30/04	10:31:59	1.000	1.00
2	Smear 2	11/30/04	10:30:39	PLot-3-A	Final Status Survey	11/30/04	10:30:39	1.000	1.00
3	Smear 3	11/30/04	10:29:20	PLot-3-A	Final Status Survey	11/30/04	10:29:20	1.000	1.00
4	Smear 4	11/30/04	10:28:00	PLot-3-A	Final Status Survey	11/30/04	10:28:00	1.000	1.00
5	Smear 5	11/30/04	10:26:40	PLot-3-A	Final Status Survey	11/30/04	10:26:40	1.000	1.00
6	Smear 6	11/30/04	10:25:21	PLot-3-A	Final Status Survey	11/30/04	10:25:21	1.000	1.00
7	Smear 7	11/30/04	10:24:01	PLot-3-A	Final Status Survey	11/30/04	10:24:01	1.000	1.00
8	Smear 8	11/30/04	10:22:41	PLot-3-A	Final Status Survey	11/30/04	10:22:41	1.000	1.00
9	Smear 9	11/30/04	10:21:21	PLot-3-A	Final Status Survey	11/30/04	10:21:21	1.000	1.00
10	Smear 10	11/30/04	10:20:01	PLot-3-A	Final Status Survey	11/30/04	10:20:01	1.000	1.00
11	Smear 11	11/30/04	10:18:42	PLot-3-A	Final Status Survey	11/30/04	10:18:42	1.000	1.00
12	Smear 12	11/30/04	10:17:22	PLot-3-A	Final Status Survey	11/30/04	10:17:22	1.000	1.00
13	Smear 13	11/30/04	10:16:03	PLot-3-A	Final Status Survey	11/30/04	10:16:03	1.000	1.00
14	Smear 14	11/30/04	10:14:43	PLot-3-A	Final Status Survey	11/30/04	10:14:43	1.000	1.00
15	Smear 15	11/30/04	10:13:23	PLot-3-A	Final Status Survey	11/30/04	10:13:23	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11/30/04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta				Smears	
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 24.17 LLD: 11.21 dpm				Bkg: 0.83 cpm %Eff: 44.73 LLD: 12.88 dpm				Sample Parameter Entry	
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA	Carrier No.	Sample ID
1 Smear 1		11/30/04	10:31:59	0.00	0.00	0.00	11.21	1.00	0.17	0.37	12.88	1 Smear 1	
2 Smear 2		11/30/04	10:30:39	0.00	0.00	0.00	11.21	1.00	0.17	0.37	12.88	2 Smear 2	
3 Smear 3		11/30/04	10:29:20	1.00	1.00	4.14	11.21	0.00	-0.83	-1.86	12.88	3 Smear 3	
4 Smear 4		11/30/04	10:28:00	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88	4 Smear 4	
5 Smear 5		11/30/04	10:26:40	0.00	0.00	0.00	11.21	1.00	0.17	0.37	12.88	5 Smear 5	
6 Smear 6		11/30/04	10:25:21	1.00	1.00	4.14	11.21	0.00	-0.83	-1.86	12.88	6 Smear 6	
7 Smear 7		11/30/04	10:24:01	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88	7 Smear 7	
8 Smear 8		11/30/04	10:22:41	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88	8 Smear 8	
9 Smear 9		11/30/04	10:21:21	0.00	0.00	0.00	11.21	1.00	0.17	0.37	12.88	9 Smear 9	
10 Smear 10		11/30/04	10:20:01	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88	10 Smear 10	
11 Smear 11		11/30/04	10:18:42	0.00	0.00	0.00	11.21	1.00	0.17	0.37	12.88	11 Smear 11	
12 Smear 12		11/30/04	10:17:22	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88	12 Smear 12	
13 Smear 13		11/30/04	10:16:03	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88	13 Smear 13	
14 Smear 14		11/30/04	10:14:43	0.00	0.00	0.00	11.21	2.00	1.17	2.61	12.88	14 Smear 14	
15 Smear 15		11/30/04	10:13:23	0.00	0.00	0.00	11.21	0.00	-0.83	-1.86	12.88	15 Smear 15	

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 11-30-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**LZone-1-A Loading Zone**

(paved area)





# Class 1 Loading Zone

Log #			
34664	Source	N	cpm
0003		3	204
		7	188
		8	188
		12	214
		13	304
		17	333
		18	229
		19	202
		20	212
		22	208
		23	346
		24	212
		25	205
		27	218
		28	218
		29	164
		31	326
		32	168
		33	178
		36	207
↓		37	211
0024		38	190

6K60 222 25

**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Dr 12/5/2004  
Fil 8:57:52 AM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: LZone-1-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/05/2004  
Model 2360 Time: 08:56:53  
Sample Number: 0027

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

C me - Count Time  
F ameter  
S -caler

**Log Data:**

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/04/04	07:33:39	000001	000234	S 001.0	Lab Background
0002	12/04/04	07:35:25	000002	034664	S 001.0	Lab Source
0003	12/04/04	13:58:20	000002	000204	S 001.0	LZone-1-A
0004	12/04/04	14:00:22	000002	000188	S 001.0	LZone-1-A
0005	12/04/04	14:01:30	000002	000188	S 001.0	LZone-1-A
0006	12/04/04	14:02:38	000001	000214	S 001.0	LZone-1-A
0007	12/04/04	14:04:16	000004	000304	S 001.0	LZone-1-A
0008	12/04/04	14:05:25	000004	000333	S 001.0	LZone-1-A
0009	12/04/04	14:06:46	000006	000229	S 001.0	LZone-1-A
0010	12/04/04	14:08:23	000003	000202	S 001.0	LZone-1-A
0011	12/04/04	14:09:32	000000	000212	S 001.0	LZone-1-A
0012	12/04/04	14:11:06	000003	000208	S 001.0	LZone-1-A
0013	12/04/04	14:12:46	000002	000346	S 001.0	LZone-1-A
0014	12/04/04	14:13:54	000002	000212	S 001.0	LZone-1-A
0015	12/04/04	14:15:17	000005	000205	S 001.0	LZone-1-A
0016	12/04/04	14:16:44	000003	000218	S 001.0	LZone-1-A
0017	12/04/04	14:17:49	000001	000218	S 001.0	LZone-1-A
0018	12/04/04	14:19:07	000007	000164	S 001.0	LZone-1-A
0019	12/04/04	14:20:31	000001	000326	S 001.0	LZone-1-A
0020	12/04/04	14:22:00	000003	000168	S 001.0	LZone-1-A
0021	12/04/04	14:23:29	000002	000178	S 001.0	LZone-1-A
0022	12/04/04	14:24:59	000003	000207	S 001.0	LZone-1-A
0023	12/04/04	14:26:24	000002	000211	S 001.0	LZone-1-A
0024	12/04/04	14:27:33	000004	000190	S 001.0	LZone-1-A
C	12/04/04	14:28:43	000005	000222	S 001.0	Field Background
C	12/04/04	14:40:39	000003	001752	S 001.0	Field Source

...L Zone-1-A

## Class Loading Zone

Log #					
Source	N	cpm	Ave	Max	
	3	204	200	220	
	7	198	190	200	
	8	188	190	200	
	12	214	220	240	
	13	304	300	320	
	17	303	340	360	
	18	229	240	260	
	19	202	200	220	
	20	212	220	240	
	22	208	200	220	
	23	346	340	360	
	24	212	220	240	
	25	205	200	220	
	27	218	220	240	
	28	218	220	240	
	29	164	160	180	
	31	326	320	340	
	32	168	160	180	
	33	178	180	200	
	36	207	200	220	
	37	211	220	240	
	38	190	200	220	

BKGD 222 25

C. Higgins faxed  
this data.

CW

MPCR MDC scan  
305 982

2360

12800 4393

479

242

41

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/05/04	9:52:43	Lzone-1-A	Final Status Survey	12/05/04	9:52:43	1.000	1.00
2	Smear 2	12/05/04	9:51:23	Lzone-1-A	Final Status Survey	12/05/04	9:51:23	1.000	1.00
3	Smear 3	12/05/04	9:50:03	Lzone-1-A	Final Status Survey	12/05/04	9:50:03	1.000	1.00
4	Smear 4	12/05/04	9:48:43	Lzone-1-A	Final Status Survey	12/05/04	9:48:43	1.000	1.00
5	Smear 5	12/05/04	9:47:23	Lzone-1-A	Final Status Survey	12/05/04	9:47:23	1.000	1.00
6	Smear 6	12/05/04	9:46:04	Lzone-1-A	Final Status Survey	12/05/04	9:46:04	1.000	1.00
7	Smear 7	12/05/04	9:44:44	Lzone-1-A	Final Status Survey	12/05/04	9:44:44	1.000	1.00
8	Smear 8	12/05/04	9:43:24	Lzone-1-A	Final Status Survey	12/05/04	9:43:24	1.000	1.00
9	Smear 9	12/05/04	9:42:04	Lzone-1-A	Final Status Survey	12/05/04	9:42:04	1.000	1.00
10	Smear 10	12/05/04	9:40:44	Lzone-1-A	Final Status Survey	12/05/04	9:40:44	1.000	1.00
11	Smear 11	12/05/04	9:39:24	Lzone-1-A	Final Status Survey	12/05/04	9:39:24	1.000	1.00
12	Smear 12	12/05/04	9:38:04	Lzone-1-A	Final Status Survey	12/05/04	9:38:04	1.000	1.00
13	Smear 13	12/05/04	9:36:45	Lzone-1-A	Final Status Survey	12/05/04	9:36:45	1.000	1.00
14	Smear 14	12/05/04	9:35:25	Lzone-1-A	Final Status Survey	12/05/04	9:35:25	1.000	1.00
15	Smear 15	12/05/04	9:34:05	Lzone-1-A	Final Status Survey	12/05/04	9:34:05	1.000	1.00
16	Smear 16	12/05/04	9:32:45	Lzone-1-A	Final Status Survey	12/05/04	9:32:45	1.000	1.00
17	Smear 17	12/05/04	9:31:25	Lzone-1-A	Final Status Survey	12/05/04	9:31:25	1.000	1.00
18	Smear 18	12/05/04	9:30:05	Lzone-1-A	Final Status Survey	12/05/04	9:30:05	1.000	1.00
19	Smear 19	12/05/04	9:28:45	Lzone-1-A	Final Status Survey	12/05/04	9:28:45	1.000	1.00
20	Smear 20	12/05/04	9:27:25	Lzone-1-A	Final Status Survey	12/05/04	9:27:25	1.000	1.00
21	Smear 21	12/05/04	9:26:05	Lzone-1-A	Final Status Survey	12/05/04	9:26:05	1.000	1.00
22	Smear 22	12/05/04	9:24:45	Lzone-1-A	Final Status Survey	12/05/04	9:24:45	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-05-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 26.28 LLD: 10.72 dpm				Bkg: 0.7 cpm %Eff: 44.67 LLD: 12.36 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/05/04	9:52:43	0.00	0.00	0.00	10.72	1.00	0.30	0.67	12.36
2	Smear 2	12/05/04	9:51:23	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
3	Smear 3	12/05/04	9:50:03	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
4	Smear 4	12/05/04	9:48:43	0.00	0.00	0.00	10.72	1.00	0.30	0.67	12.36
5	Smear 5	12/05/04	9:47:23	0.00	0.00	0.00	10.72	1.00	0.30	0.67	12.36
6	Smear 6	12/05/04	9:46:04	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
7	Smear 7	12/05/04	9:44:44	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
8	Smear 8	12/05/04	9:43:24	0.00	0.00	0.00	10.72	3.00	2.30	5.16	12.36
9	Smear 9	12/05/04	9:42:04	0.00	0.00	0.00	10.72	1.00	0.30	0.67	12.36
10	Smear 10	12/05/04	9:40:44	0.00	0.00	0.00	10.72	1.00	0.30	0.67	12.36
11	Smear 11	12/05/04	9:39:24	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
12	Smear 12	12/05/04	9:38:04	0.00	0.00	0.00	10.72	1.00	0.30	0.67	12.36
13	Smear 13	12/05/04	9:36:45	0.00	0.00	0.00	10.72	4.00	3.30	7.40	12.36
14	Smear 14	12/05/04	9:35:25	0.00	0.00	0.00	10.72	3.00	2.30	5.16	12.36
15	Smear 15	12/05/04	9:34:05	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
16	Smear 16	12/05/04	9:32:45	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
17	Smear 17	12/05/04	9:31:25	0.00	0.00	0.00	10.72	1.00	0.30	0.67	12.36
18	Smear 18	12/05/04	9:30:05	0.00	0.00	0.00	10.72	2.00	1.30	2.92	12.36
19	Smear 19	12/05/04	9:28:45	0.00	0.00	0.00	10.72	1.00	0.30	0.67	12.36
20	Smear 20	12/05/04	9:27:25	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
21	Smear 21	12/05/04	9:26:05	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
22	Smear 22	12/05/04	9:24:45	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36

Technician (print): Rob Ellison

Technician (sign): 


Date: 12-05-04

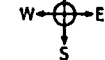
Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

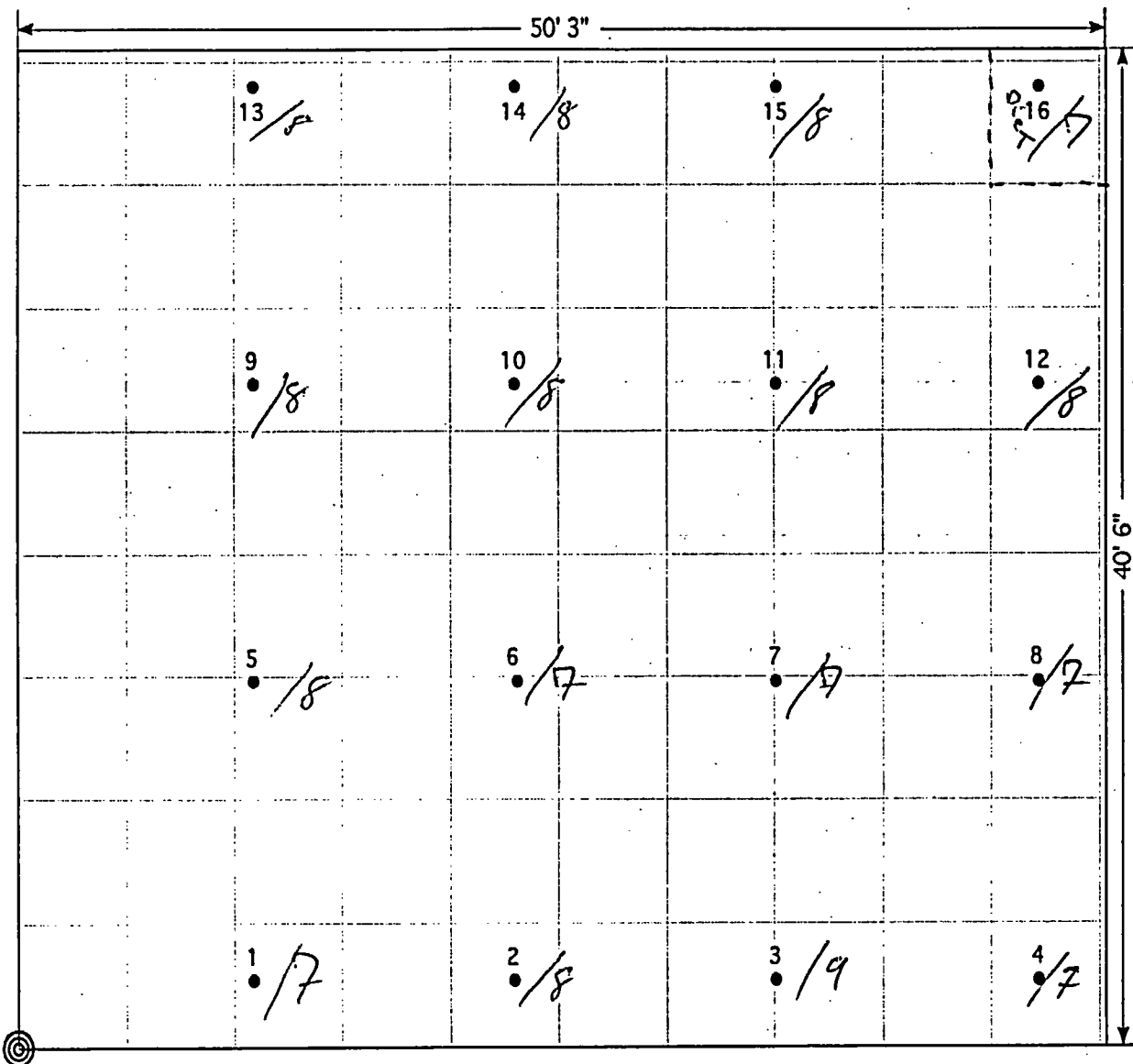
Date:

**SAW-2-A    Sawdust Shed**

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	CLASS 2 Sawdust Building - Floor
 SCIENCETECH, Inc. 141 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 08/10/2004
By:	CK:
FIGURE: SAW-2-A	



• SURVEY POINTS  
 ◎ STARTING LOCATION



SAW-2-A

Dose rates in  $\mu R/hr.$

Date: 8-14-04 Background:  
 Survey Type: Fixed Pt. Scan Dose Rate  
 Instrument ID#: 202410  
 Start Time: 0730  
 Stop Time: 1501

Technician: Nick Parker *Nick Parker*

SAW-2-A

Log #
Source
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73

	X	Y
	n/a	n/a
1	10.9	2.7
2	23.0	2.7
3	35.1	2.7
4	47.2	2.7
5	10.9	14.8
6	23.0	14.8
7	35.1	14.8
8	47.2	14.8
9	10.9	26.9
10	23.0	26.9
11	35.1	26.9
12	47.2	26.9
13	10.9	39.0
14	23.0	39.0
15	35.1	39.0
16	47.2	39.0

L (ft)= 12.1

A (ft<sup>2</sup>)= 2035

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
220	250	300
242	250	220
243	220	300
271	220	350
231	250	320
225	250	300
232	250	300
223	220	300
220	250	320
216	250	340
251	200	300
255	250	310
217	220	300
241	225	320
267	220	300
145	180	220



Ludlum Measurements, Inc.  
Model 2360 Log Data

08/19/2004  
1:04:50 PM

Header 1: Nick Parker  
Header 2: Serial#202410  
Header 3: DetSer#PR208657  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Admin/SD  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 08/19/2004  
Model 2360 Time: 12:43:52  
Sample Number: 0105

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 050000  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 050000  
Alpha + Beta Scaler Alarm: 050000

CntTime - Count Time  
R meter  
S er

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	
0001	08/16/04	08:06:48	000000	035298	S 001.0	Source Check Beta
0002	08/16/04	08:20:00	002350	000912	S 001.0	Source Check Alpha
0003	08/16/04	08:39:37	000003	000179	S 001.0	Admin-1-J
0004	08/16/04	09:01:34	000002	000172	S 001.0	Admin-1-J
0005	08/16/04	09:51:51	000001	000143	S 001.0	Admin-1-J
0006	08/16/04	10:06:29	000000	000159	S 001.0	Admin-1-J
0007	08/16/04	10:17:09	000003	000178	S 001.0	Admin-1-J
0008	08/16/04	10:32:07	000003	000170	S 001.0	Admin-1-J
0009	08/16/04	10:41:59	000001	000161	S 001.0	Admin-1-J
0010	08/16/04	10:56:11	000003	000112	S 001.0	Admin-1-J
0011	08/16/04	11:11:31	000001	000180	S 001.0	Admin-1-J
0012	08/16/04	12:54:34	000001	000202	S 001.0	Admin-1-J
0013	08/16/04	13:06:03	000001	000181	S 001.0	Admin-1-J
0014	08/16/04	13:20:31	000001	000179	S 001.0	Admin-1-J
0015	08/16/04	13:32:31	000002	000155	S 001.0	Admin-1-J
0016	08/16/04	13:43:24	000002	000168	S 001.0	Admin-1-J
0017	08/16/04	13:53:53	000002	000148	S 001.0	Admin-1-J
0018	08/16/04	14:05:54	000002	000155	S 001.0	Admin-1-J
0019	08/16/04	14:18:52	000003	000141	S 001.0	Admin-1-J
0020	08/16/04	14:28:51	000001	000160	S 001.0	Admin-1-J
0021	08/17/04	07:47:29	000002	036183	S 001.0	Source Check
0022	08/17/04	07:51:35	002397	000519	S 001.0	Admin-1-K
0023	08/17/04	08:32:34	000001	000107	S 001.0	Admin-1-K
0024	08/17/04	08:35:10	000001	000172	S 001.0	Admin-1-K
0025	08/17/04	08:45:25	000002	000176	S 001.0	Admin-1-K
0026	08/17/04	08:53:53	000003	000130	S 001.0	Admin-1-K
0027	08/17/04	09:01:40	000007	000166	S 001.0	Admin-1-K
0028	08/17/04	10:00:38	000002	000193	S 001.0	Admin-1-K
0029	08/17/04	10:09:02	000002	000170	S 001.0	Admin-1-K
0030	08/17/04	10:20:00	000000	000157	S 001.0	Admin-1-K
0031	08/17/04	10:32:42	000009	000173	S 001.0	Admin-1-K
0032	08/17/04	10:47:02	000002	000186	S 001.0	Admin-1-K
0033	08/17/04	10:53:42	000004	000147	S 001.0	Admin-1-K
0034	08/17/04	11:00:52	000003	000185	S 001.0	Admin-1-K

035 08/17/04 11:09:00 000001 000147 S 001.0 Admin-1-K  
036 08/17/04 11:25:13 000002 000167 S 001.0 Admin-1-K  
037 08/17/04 12:52:29 000000 000159 S 001.0 Admin-1-K  
038 08/17/04 13:02:05 000001 000157 S 001.0 Admin-1-K  
041 08/17/04 13:58:12 000000 033847 S 001.0 Source Check  
042 08/17/04 15:17:21 000000 000266 S 001.0 Admin-1-P  
043 08/17/04 15:21:35 000000 000182 S 001.0 Admin-1-P  
044 08/17/04 15:25:53 000000 000215 S 001.0 Admin-1-P  
045 08/17/04 15:34:12 000000 000232 S 001.0 Admin-1-P  
046 08/17/04 15:39:35 000000 000270 S 001.0 Admin-1-P  
047 08/17/04 15:43:19 000002 000284 S 001.0 Admin-1-P  
048 08/17/04 15:47:56 000000 000255 S 001.0 Admin-1-P  
049 08/17/04 15:51:55 000001 000248 S 001.0 Admin-1-P  
050 08/17/04 15:54:42 000002 000255 S 001.0 Admin-1-P  
051 08/17/04 16:11:30 000001 000233 S 001.0 Admin-1-P  
052 08/17/04 16:17:48 000001 000237 S 001.0 Admin-1-P  
053 08/17/04 16:25:04 000001 000237 S 001.0 Admin-1-P  
054 08/17/04 16:32:43 000002 000255 S 001.0 Admin-1-P  
055 08/17/04 16:34:42 000000 000228 S 001.0 Admin-1-P  
056 08/18/04 07:20:53 000002 034972 S 001.0 Source Check Beta  
057 08/18/04 07:23:33 002172 000534 S 001.0 Source Check Alpha  
058 08/18/04 08:38:25 000001 000220 S 001.0 SAW-2-A  
059 08/18/04 08:41:21 000001 000242 S 001.0 SAW-2-A  
060 08/18/04 08:45:05 000000 000243 S 001.0 SAW-2-A  
061 08/18/04 08:47:45 000002 000271 S 001.0 SAW-2-A  
062 08/18/04 08:51:17 000002 000231 S 001.0 SAW-2-A  
063 08/18/04 08:53:45 000000 000225 S 001.0 SAW-2-A  
064 08/18/04 08:57:12 000001 000232 S 001.0 SAW-2-A  
065 08/18/04 09:02:53 000003 000223 S 001.0 SAW-2-A  
066 08/18/04 09:07:40 000001 000220 S 001.0 SAW-2-A  
067 08/18/04 09:11:27 000002 000216 S 001.0 SAW-2-A  
068 08/18/04 09:14:58 000004 000251 S 001.0 SAW-2-A  
069 08/18/04 09:18:00 000004 000255 S 001.0 SAW-2-A  
070 08/18/04 09:22:30 000002 000217 S 001.0 SAW-2-A  
071 08/18/04 09:25:03 000001 000241 S 001.0 SAW-2-A  
072 08/18/04 09:29:04 000001 000267 S 001.0 SAW-2-A  
073 08/18/04 09:38:00 000001 000145 S 001.0 SAW-2-A  
074 08/18/04 10:23:17 000001 033759 S 001.0 Source Check  
075 08/18/04 10:53:26 000001 000162 S 001.0 SAW-3-A  
076 08/18/04 10:59:01 000000 000124 S 001.0 SAW-3-A  
077 08/18/04 11:06:34 000002 000117 S 001.0 SAW-3-A  
078 08/18/04 11:16:11 000002 000122 S 001.0 SAW-3-A  
079 08/18/04 11:25:29 000000 000151 S 001.0 SAW-3-A  
080 08/18/04 11:32:07 000000 000118 S 001.0 SAW-3-A  
081 08/18/04 13:19:25 000000 000123 S 001.0 SAW-3-A  
082 08/18/04 13:22:03 000001 000105 S 001.0 SAW-3-A  
083 08/18/04 13:25:24 000000 000116 S 001.0 SAW-3-A  
084 08/18/04 13:29:40 000000 000124 S 001.0 SAW-3-A  
085 08/18/04 13:34:58 000000 000118 S 001.0 SAW-3-A  
086 08/18/04 13:40:08 000002 000150 S 001.0 SAW-3-A  
087 08/18/04 13:45:42 000001 000107 S 001.0 SAW-3-A  
088 08/18/04 13:52:51 000000 000094 S 001.0 SAW-3-A  
089 08/18/04 13:55:15 000000 000130 S 001.0 SAW-3-A  
090 08/18/04 13:58:32 000000 000116 S 001.0 SAW-3-A  
091 08/18/04 14:03:38 000001 000126 S 001.0 SAW-3-A  
092 08/18/04 14:10:43 000000 000111 S 001.0 SAW-3-A  
093 08/18/04 14:16:11 000000 000151 S 001.0 SAW-3-A  
094 08/18/04 14:20:24 000001 000115 S 001.0 SAW-3-A  
095 08/18/04 14:23:18 000001 000118 S 001.0 SAW-3-A  
096 08/18/04 14:28:15 000001 000117 S 001.0 SAW-3-A  
097 08/18/04 14:32:17 000000 000108 S 001.0 SAW-3-A  
098 08/18/04 14:38:05 000000 000130 S 001.0 SAW-3-A  
099 08/18/04 14:40:50 000002 000109 S 001.0 SAW-3-A  
100 08/18/04 14:43:08 000002 000145 S 001.0 SAW-3-A  
101 08/18/04 14:45:09 000000 000116 S 001.0 SAW-3-A  
102 08/18/04 14:49:00 000000 000128 S 001.0 SAW-3-A  
103 08/18/04 14:55:50 000000 000127 S 001.0 SAW-3-A  
104 08/18/04 15:01:06 000000 000139 S 001.0 SAW-3-A  
\$

Smears		Count Mins: 1									
PIC WPC-9550 Instr No 1		Count Started						Sample Collected			Fraction
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample		
1	Smear 1	08/19/04	15:02:01	SAW-2-A	Final Status Survey	08/19/04	15:02:01	1.000	1.00		
2	Smear 2	08/19/04	15:00:41	SAW-2-A	Final Status Survey	08/19/04	15:00:41	1.000	1.00		
3	Smear 3	08/19/04	14:59:20	SAW-2-A	Final Status Survey	08/19/04	14:59:20	1.000	1.00		
4	Smear 4	08/19/04	14:58:00	SAW-2-A	Final Status Survey	08/19/04	14:58:00	1.000	1.00		
5	Smear 5	08/19/04	14:56:39	SAW-2-A	Final Status Survey	08/19/04	14:56:39	1.000	1.00		
6	Smear 6	08/19/04	14:55:19	SAW-2-A	Final Status Survey	08/19/04	14:55:19	1.000	1.00		
7	Smear 7	08/19/04	14:53:58	SAW-2-A	Final Status Survey	08/19/04	14:53:58	1.000	1.00		
8	Smear 8	08/19/04	14:52:37	SAW-2-A	Final Status Survey	08/19/04	14:52:37	1.000	1.00		
9	Smear 9	08/19/04	14:51:17	SAW-2-A	Final Status Survey	08/19/04	14:51:17	1.000	1.00		
10	Smear 10	08/19/04	14:49:56	SAW-2-A	Final Status Survey	08/19/04	14:49:56	1.000	1.00		
11	Smear 11	08/19/04	14:48:35	SAW-2-A	Final Status Survey	08/19/04	14:48:35	1.000	1.00		
12	Smear 12	08/19/04	14:47:15	SAW-2-A	Final Status Survey	08/19/04	14:47:15	1.000	1.00		
13	Smear 13	08/19/04	14:45:54	SAW-2-A	Final Status Survey	08/19/04	14:45:54	1.000	1.00		
14	Smear 14	08/19/04	14:44:34	SAW-2-A	Final Status Survey	08/19/04	14:44:34	1.000	1.00		
15	Smear 15	08/19/04	14:43:13	SAW-2-A	Final Status Survey	08/19/04	14:43:13	1.000	1.00		
16	Smear 16	08/19/04	14:41:53	SAW-2-A	Final Status Survey	08/19/04	14:41:53	1.000	1.00		
17	Smear 1	08/19/04	14:40:32	SAW-3-A	Final Status Survey	08/19/04	14:40:32	1.000	1.00		
18	Smear 2	08/19/04	14:39:12	SAW-3-A	Final Status Survey	08/19/04	14:39:12	1.000	1.00		
19	Smear 3	08/19/04	14:37:52	SAW-3-A	Final Status Survey	08/19/04	14:37:52	1.000	1.00		
20	Smear 4	08/19/04	14:36:31	SAW-3-A	Final Status Survey	08/19/04	14:36:31	1.000	1.00		
21	Smear 5	08/19/04	14:35:10	SAW-3-A	Final Status Survey	08/19/04	14:35:10	1.000	1.00		
22	Smear 6	08/19/04	14:33:50	SAW-3-A	Final Status Survey	08/19/04	14:33:50	1.000	1.00		
23	Smear 1	08/19/04	14:32:30	SAW-3-A	Final Status Survey	08/19/04	14:32:30	1.000	1.00		
24	Smear 2	08/19/04	14:31:10	SAW-3-A	Final Status Survey	08/19/04	14:31:10	1.000	1.00		
25	Smear 3	08/19/04	14:29:49	SAW-3-A	Final Status Survey	08/19/04	14:29:49	1.000	1.00		
26	Smear 4	08/19/04	14:28:28	SAW-3-A	Final Status Survey	08/19/04	14:28:28	1.000	1.00		
27	Smear 5	08/19/04	14:27:08	SAW-3-A	Final Status Survey	08/19/04	14:27:08	1.000	1.00		
28	Smear 6	08/19/04	14:25:48	SAW-3-A	Final Status Survey	08/19/04	14:25:48	1.000	1.00		
29	Smear 1	08/19/04	14:24:28	SAW-3-A	Final Status Survey	08/19/04	14:24:28	1.000	1.00		
30	Smear 2	08/19/04	14:23:07	SAW-3-A	Final Status Survey	08/19/04	14:23:07	1.000	1.00		
31	Smear 3	08/19/04	14:21:47	SAW-3-A	Final Status Survey	08/19/04	14:21:47	1.000	1.00		
32	Smear 4	08/19/04	14:20:27	SAW-3-A	Final Status Survey	08/19/04	14:20:27	1.000	1.00		
33	Smear 5	08/19/04	14:19:07	SAW-3-A	Final Status Survey	08/19/04	14:19:07	1.000	1.00		
34	Smear 6	08/19/04	14:17:47	SAW-3-A	Final Status Survey	08/19/04	14:17:47	1.000	1.00		
35	Smear 1	08/19/04	14:16:27	SAW-3-A	Final Status Survey	08/19/04	14:16:27	1.000	1.00		
36	Smear 2	08/19/04	14:15:06	SAW-3-A	Final Status Survey	08/19/04	14:15:06	1.000	1.00		
37	Smear 3	08/19/04	14:13:46	SAW-3-A	Final Status Survey	08/19/04	14:13:46	1.000	1.00		
38	Smear 4	08/19/04	14:12:26	SAW-3-A	Final Status Survey	08/19/04	14:12:26	1.000	1.00		
39	Smear 5	08/19/04	14:11:06	SAW-3-A	Final Status Survey	08/19/04	14:11:06	1.000	1.00		
40	Smear 6	08/19/04	14:09:46	SAW-3-A	Final Status Survey	08/19/04	14:09:46	1.000	1.00		
41	Smear 1	08/19/04	14:08:26	SAW-3-A	Final Status Survey	08/19/04	14:08:26	1.000	1.00		
42	Smear 2	08/19/04	14:07:06	SAW-3-A	Final Status Survey	08/19/04	14:07:06	1.000	1.00		
43	Smear 3	08/19/04	14:05:46	SAW-3-A	Final Status Survey	08/19/04	14:05:46	1.000	1.00		
44	Smear 4	08/19/04	14:04:26	SAW-3-A	Final Status Survey	08/19/04	14:04:26	1.000	1.00		
45	Smear 5	08/19/04	14:03:06	SAW-3-A	Final Status Survey	08/19/04	14:03:06	1.000	1.00		
46	Smear 6	08/19/04	14:01:46	SAW-3-A	Final Status Survey	08/19/04	14:01:46	1.000	1.00		

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 8-19-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 26.96 LLD: 10.06 dpm				Bkg: 0.77 cpm %Eff: 44.73 LLD: 12.61 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	08/19/04	15:02:01	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
2	Smear 2	08/19/04	15:00:41	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
3	Smear 3	08/19/04	14:59:20	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
4	Smear 4	08/19/04	14:58:00	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
5	Smear 5	08/19/04	14:56:39	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
6	Smear 6	08/19/04	14:55:19	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
7	Smear 7	08/19/04	14:53:58	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
8	Smear 8	08/19/04	14:52:37	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
9	Smear 9	08/19/04	14:51:17	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
10	Smear 10	08/19/04	14:49:56	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
11	Smear 11	08/19/04	14:48:35	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
12	Smear 12	08/19/04	14:47:15	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
13	Smear 13	08/19/04	14:45:54	1.00	1.00	3.71	10.06	0.00	-0.77	-1.71	12.61
14	Smear 14	08/19/04	14:44:34	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
15	Smear 15	08/19/04	14:43:13	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
16	Smear 16	08/19/04	14:41:53	1.00	1.00	3.71	10.06	0.00	-0.77	-1.71	12.61
17	Smear 1	08/19/04	14:40:32	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
18	Smear 2	08/19/04	14:39:12	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
19	Smear 3	08/19/04	14:37:52	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
20	Smear 4	08/19/04	14:36:31	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
21	Smear 5	08/19/04	14:35:10	1.00	1.00	3.71	10.06	1.00	0.23	0.52	12.61
22	Smear 6	08/19/04	14:33:50	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
23	Smear 1	08/19/04	14:32:30	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
24	Smear 2	08/19/04	14:31:10	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
25	Smear 3	08/19/04	14:29:49	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
26	Smear 4	08/19/04	14:28:28	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
27	Smear 5	08/19/04	14:27:08	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
28	Smear 6	08/19/04	14:25:48	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
29	Smear 1	08/19/04	14:24:28	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
30	Smear 2	08/19/04	14:23:07	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
31	Smear 3	08/19/04	14:21:47	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
32	Smear 4	08/19/04	14:20:27	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
33	Smear 5	08/19/04	14:19:07	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
34	Smear 6	08/19/04	14:17:47	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
35	Smear 1	08/19/04	14:16:27	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
36	Smear 2	08/19/04	14:15:06	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
37	Smear 3	08/19/04	14:13:46	1.00	1.00	3.71	10.06	0.00	-0.77	-1.71	12.61
38	Smear 4	08/19/04	14:12:26	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
39	Smear 5	08/19/04	14:11:06	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
40	Smear 6	08/19/04	14:09:46	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
41	Smear 1	08/19/04	14:08:26	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
42	Smear 2	08/19/04	14:07:06	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
43	Smear 3	08/19/04	14:05:46	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
44	Smear 4	08/19/04	14:04:26	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
45	Smear 5	08/19/04	14:03:06	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
46	Smear 6	08/19/04	14:01:46	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

Technician (sign): *Rob Ellison*

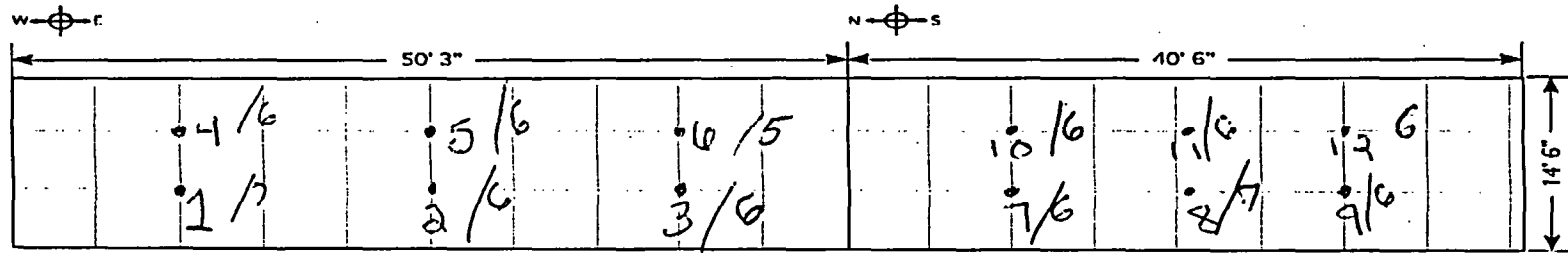
Reviewed By (sign):

Date: 8-19-04

Date:

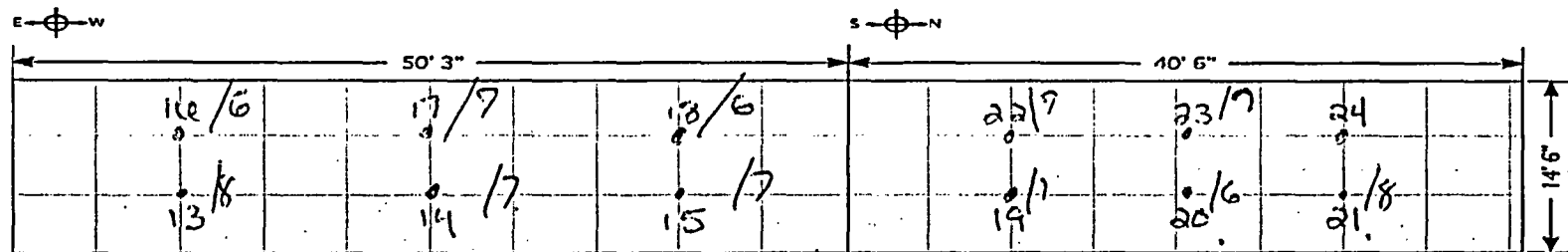
**SAW-3-A    Sawdust Shed**

# SAW-3-A



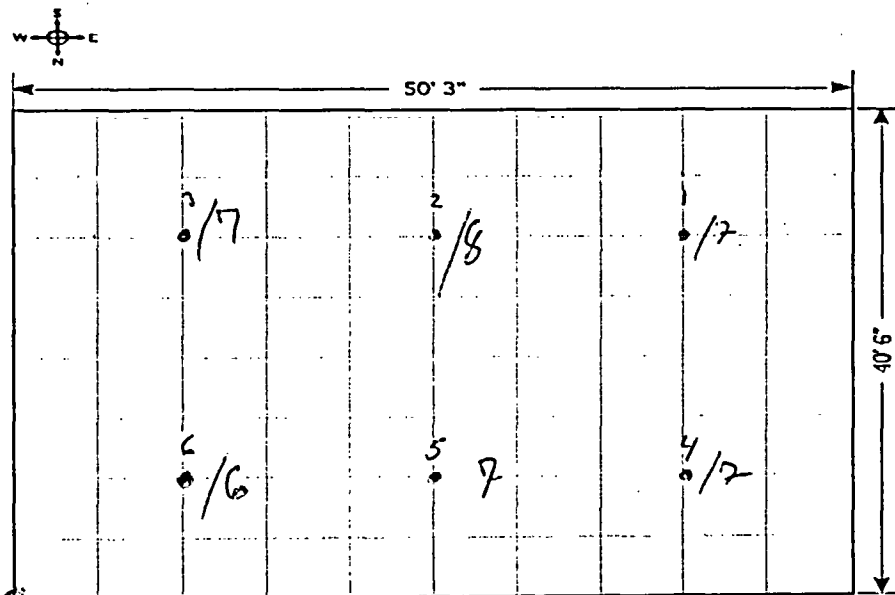
North Wall

East Wall



South Wall

West Wall



Ceiling

START  
8-15-04  
08:00  
  
STOP  
8-19-0700

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD CLASS 3 Sawdust Building - Walls and Ceiling	
SCIENSTECH SCIENSTECH, Inc. 141 WEST STREET NEW MILFORD, CT 06455	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 08/10/2004
By:	CK:
FIGURE: SAW-3-A	

## SAW-3-A

[illegible][illegible]

$$A \text{ (ft}^2\text{)} = 4667$$

[illegible]

## 134

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**SAW-3-A**

[illegible][illegible]
$$A \text{ (ft}^2\text{)} = 4667$$
[illegible]

# E-WALL

SAW-3-A

[illegible][illegible]
$$A \text{ (ft}^2\text{)} = 4667$$
[illegible]

**11.**

$$A \text{ (ft}^2\text{)} = 4667$$

Admin-1-J-K-P-SAW-2-3-A							
Num	Date	Time	Alpha	Beta	UsrTime	Location	
0001	08/16/04	08:06:48	000000	035298	S	001.0	Source Check Beta
0002	08/16/04	08:20:00	002350	000912	S	001.0	Source Check Alpha
0003	08/16/04	08:39:37	000003	000179	S	001.0	Admin-1-J
0004	08/16/04	09:01:34	000002	000172	S	001.0	Admin-1-J
0005	08/16/04	09:51:51	000001	000143	S	001.0	Admin-1-J
0006	08/16/04	10:06:29	000000	000159	S	001.0	Admin-1-J
0007	08/16/04	10:17:09	000003	000178	S	001.0	Admin-1-J
0008	08/16/04	10:32:07	000003	000170	S	001.0	Admin-1-J
0009	08/16/04	10:41:59	000001	000161	S	001.0	Admin-1-J
0010	08/16/04	10:56:11	000003	000112	S	001.0	Admin-1-J
0011	08/16/04	11:11:31	000001	000180	S	001.0	Admin-1-J
0012	08/16/04	12:54:34	000001	000202	S	001.0	Admin-1-J
0013	08/16/04	13:06:03	000001	000181	S	001.0	Admin-1-J
0014	08/16/04	13:20:31	000001	000179	S	001.0	Admin-1-J
0015	08/16/04	13:32:31	000002	000155	S	001.0	Admin-1-J
0016	08/16/04	13:43:24	000002	000168	S	001.0	Admin-1-J
0017	08/16/04	13:53:53	000002	000148	S	001.0	Admin-1-J
0018	08/16/04	14:05:54	000002	000155	S	001.0	Admin-1-J
0019	08/16/04	14:18:52	000003	000141	S	001.0	Admin-1-J
0020	08/16/04	14:28:51	000001	000160	S	001.0	Admin-1-J
0021	08/17/04	07:47:29	000002	036183	S	001.0	Source Check
0022	08/17/04	07:51:35	002397	000519	S	001.0	Admin-1-K
0023	08/17/04	08:32:34	000001	000107	S	001.0	Admin-1-K
0024	08/17/04	08:35:10	000001	000172	S	001.0	Admin-1-K
0025	08/17/04	08:45:25	000002	000176	S	001.0	Admin-1-K
0026	08/17/04	08:53:53	000003	000130	S	001.0	Admin-1-K
0027	08/17/04	09:01:40	000007	000166	S	001.0	Admin-1-K
0028	08/17/04	10:00:38	000002	000193	S	001.0	Admin-1-K
0029	08/17/04	10:09:02	000002	000170	S	001.0	Admin-1-K
0030	08/17/04	10:20:00	000000	000157	S	001.0	Admin-1-K
0031	08/17/04	10:32:42	000009	000173	S	001.0	Admin-1-K
0032	08/17/04	10:47:02	000002	000186	S	001.0	Admin-1-K
0033	08/17/04	10:53:42	000004	000147	S	001.0	Admin-1-K
0034	08/17/04	11:00:52	000003	000185	S	001.0	Admin-1-K
0035	08/17/04	11:09:00	000001	000147	S	001.0	Admin-1-K
0036	08/17/04	11:25:13	000002	000167	S	001.0	Admin-1-K
0037	08/17/04	12:52:29	000000	000159	S	001.0	Admin-1-K
0038	08/17/04	13:02:05	000001	000157	S	001.0	Admin-1-K
0041	08/17/04	13:58:12	000000	033847	S	001.0	Source Check
0042	08/17/04	15:17:21	000000	000266	S	001.0	Admin-1-P
0043	08/17/04	15:21:35	000000	000182	S	001.0	Admin-1-P
0044	08/17/04	15:25:53	000000	000215	S	001.0	Admin-1-P
0045	08/17/04	15:34:12	000000	000232	S	001.0	Admin-1-P
0046	08/17/04	15:39:35	000000	000270	S	001.0	Admin-1-P
0047	08/17/04	15:43:19	000002	000284	S	001.0	Admin-1-P
0048	08/17/04	15:47:56	000000	000255	S	001.0	Admin-1-P
0049	08/17/04	15:51:55	000001	000248	S	001.0	Admin-1-P
0050	08/17/04	15:54:42	000002	000255	S	001.0	Admin-1-P
0051	08/17/04	16:11:30	000001	000233	S	001.0	Admin-1-P
0052	08/17/04	16:17:48	000001	000237	S	001.0	Admin-1-P
0053	08/17/04	16:25:04	000001	000237	S	001.0	Admin-1-P
0054	08/17/04	16:32:43	000002	000255	S	001.0	Admin-1-P
0055	08/17/04	16:34:42	000000	000228	S	001.0	Admin-1-P
0056	08/18/04	07:20:53	000002	034972	S	001.0	Source Check Beta
0057	08/18/04	07:23:33	002172	000534	S	001.0	Source Check Alpha
0058	08/18/04	08:38:25	000001	000220	S	001.0	SAW-2-A
0059	08/18/04	08:41:21	000001	000242	S	001.0	SAW-2-A
0060	08/18/04	08:45:05	000000	000243	S	001.0	SAW-2-A
0061	08/18/04	08:47:45	000002	000271	S	001.0	SAW-2-A
0062	08/18/04	08:51:17	000002	000231	S	001.0	SAW-2-A
0063	08/18/04	08:53:45	000000	000225	S	001.0	SAW-2-A

Admin-1-J-K-P-SAW-2-3-A

0064	08/18/04	08:57:12	000001	000232	S	001.0	SAW-2-A
0065	08/18/04	09:02:53	000003	000223	S	001.0	SAW-2-A
0066	08/18/04	09:07:40	000001	000220	S	001.0	SAW-2-A
0067	08/18/04	09:11:27	000002	000216	S	001.0	SAW-2-A
0068	08/18/04	09:14:58	000004	000251	S	001.0	SAW-2-A
0069	08/18/04	09:18:00	000004	000255	S	001.0	SAW-2-A
0070	08/18/04	09:22:30	000002	000217	S	001.0	SAW-2-A
0071	08/18/04	09:25:03	000001	000241	S	001.0	SAW-2-A
0072	08/18/04	09:29:04	000001	000267	S	001.0	SAW-2-A
0073	08/18/04	09:38:00	000001	000145	S	001.0	SAW-2-A
0074	08/18/04	10:23:17	000001	033759	S	001.0	Source check
0075	08/18/04	10:53:26	000001	000162	S	001.0	SAW-3-A
0076	08/18/04	10:59:01	000000	000124	S	001.0	SAW-3-A
0077	08/18/04	11:06:34	000002	000117	S	001.0	SAW-3-A
0078	08/18/04	11:16:11	000002	000122	S	001.0	SAW-3-A
0079	08/18/04	11:25:29	000000	000151	S	001.0	SAW-3-A
0080	08/18/04	11:32:07	000000	000118	S	001.0	SAW-3-A
0081	08/18/04	13:19:25	000000	000123	S	001.0	SAW-3-A
0082	08/18/04	13:22:03	000001	000105	S	001.0	SAW-3-A
0083	08/18/04	13:25:24	000000	000116	S	001.0	SAW-3-A
0084	08/18/04	13:29:40	000000	000124	S	001.0	SAW-3-A
0085	08/18/04	13:34:58	000000	000118	S	001.0	SAW-3-A
0086	08/18/04	13:40:08	000002	000150	S	001.0	SAW-3-A
0087	08/18/04	13:45:42	000001	000107	S	001.0	SAW-3-A
0088	08/18/04	13:52:51	000000	000094	S	001.0	SAW-3-A
0089	08/18/04	13:55:15	000000	000130	S	001.0	SAW-3-A
0090	08/18/04	13:58:32	000000	000116	S	001.0	SAW-3-A
0091	08/18/04	14:03:38	000001	000126	S	001.0	SAW-3-A
0092	08/18/04	14:10:43	000000	000111	S	001.0	SAW-3-A
0093	08/18/04	14:16:11	000000	000151	S	001.0	SAW-3-A
0094	08/18/04	14:20:24	000001	000115	S	001.0	SAW-3-A
0095	08/18/04	14:23:18	000001	000118	S	001.0	SAW-3-A
0096	08/18/04	14:28:15	000001	000117	S	001.0	SAW-3-A
0097	08/18/04	14:32:17	000000	000108	S	001.0	SAW-3-A
0098	08/18/04	14:38:05	000000	000130	S	001.0	SAW-3-A
0099	08/18/04	14:40:50	000002	000109	S	001.0	SAW-3-A
0100	08/18/04	14:43:08	000002	000145	S	001.0	SAW-3-A
0101	08/18/04	14:45:09	000000	000116	S	001.0	SAW-3-A
0102	08/18/04	14:49:00	000000	000128	S	001.0	SAW-3-A
0103	08/18/04	14:55:50	000000	000127	S	001.0	SAW-3-A
0104	08/18/04	15:01:06	000000	000139	S	001.0	SAW-3-A

\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1 Smear 1		08/19/04	15:02:01	SAW-2-A	FSS Floor	08/19/04	15:02:01	1.000	1.00
2 Smear 2		08/19/04	15:00:41	SAW-2-A	FSS Floor	08/19/04	15:00:41	1.000	1.00
3 Smear 3		08/19/04	14:59:20	SAW-2-A	FSS Floor	08/19/04	14:59:20	1.000	1.00
4 Smear 4		08/19/04	14:58:00	SAW-2-A	FSS Floor	08/19/04	14:58:00	1.000	1.00
5 Smear 5		08/19/04	14:56:39	SAW-2-A	FSS Floor	08/19/04	14:56:39	1.000	1.00
6 Smear 6		08/19/04	14:55:19	SAW-2-A	FSS Floor	08/19/04	14:55:19	1.000	1.00
7 Smear 7		08/19/04	14:53:58	SAW-2-A	FSS Floor	08/19/04	14:53:58	1.000	1.00
8 Smear 8		08/19/04	14:52:37	SAW-2-A	FSS Floor	08/19/04	14:52:37	1.000	1.00
9 Smear 9		08/19/04	14:51:17	SAW-2-A	FSS Floor	08/19/04	14:51:17	1.000	1.00
10 Smear 10		08/19/04	14:49:56	SAW-2-A	FSS Floor	08/19/04	14:49:56	1.000	1.00
11 Smear 11		08/19/04	14:48:35	SAW-2-A	FSS Floor	08/19/04	14:48:35	1.000	1.00
12 Smear 12		08/19/04	14:47:15	SAW-2-A	FSS Floor	08/19/04	14:47:15	1.000	1.00
13 Smear 13		08/19/04	14:45:54	SAW-2-A	FSS Floor	08/19/04	14:45:54	1.000	1.00
14 Smear 14		08/19/04	14:44:34	SAW-2-A	FSS Floor	08/19/04	14:44:34	1.000	1.00
15 Smear 15		08/19/04	14:43:13	SAW-2-A	FSS Floor	08/19/04	14:43:13	1.000	1.00
16 Smear 16		08/19/04	14:41:53	SAW-2-A	FSS Floor	08/19/04	14:41:53	1.000	1.00
17 Smear 1 7		08/19/04	14:40:32	SAW-3-A	FSS North Wall	08/19/04	14:40:32	1.000	1.00
18 Smear 2 8		08/19/04	14:39:12	SAW-3-A	FSS North Wall	08/19/04	14:39:12	1.000	1.00
19 Smear 3 9		08/19/04	14:37:52	SAW-3-A	FSS North Wall	08/19/04	14:37:52	1.000	1.00
20 Smear 4 10		08/19/04	14:36:31	SAW-3-A	FSS North Wall	08/19/04	14:36:31	1.000	1.00
21 Smear 5 11		08/19/04	14:35:10	SAW-3-A	FSS North Wall	08/19/04	14:35:10	1.000	1.00
22 Smear 6 12		08/19/04	14:33:50	SAW-3-A	FSS North Wall	08/19/04	14:33:50	1.000	1.00
23 Smear 1 19		08/19/04	14:32:30	SAW-3-A	FSS East Wall	08/19/04	14:32:30	1.000	1.00
24 Smear 2 20		08/19/04	14:31:10	SAW-3-A	FSS East Wall	08/19/04	14:31:10	1.000	1.00
25 Smear 3 21		08/19/04	14:29:49	SAW-3-A	FSS East Wall	08/19/04	14:29:49	1.000	1.00
26 Smear 4 22		08/19/04	14:28:28	SAW-3-A	FSS East Wall	08/19/04	14:28:28	1.000	1.00
27 Smear 5 23		08/19/04	14:27:08	SAW-3-A	FSS East Wall	08/19/04	14:27:08	1.000	1.00
28 Smear 6 24		08/19/04	14:25:48	SAW-3-A	FSS East Wall	08/19/04	14:25:48	1.000	1.00
29 Smear 1 13		08/19/04	14:24:28	SAW-3-A	FSS South Wall	08/19/04	14:24:28	1.000	1.00
30 Smear 2 14		08/19/04	14:23:07	SAW-3-A	FSS South Wall	08/19/04	14:23:07	1.000	1.00
31 Smear 3 15		08/19/04	14:21:47	SAW-3-A	FSS South Wall	08/19/04	14:21:47	1.000	1.00
32 Smear 4 16		08/19/04	14:20:27	SAW-3-A	FSS South Wall	08/19/04	14:20:27	1.000	1.00
33 Smear 5 17		08/19/04	14:19:07	SAW-3-A	FSS South Wall	08/19/04	14:19:07	1.000	1.00
34 Smear 6 18		08/19/04	14:17:47	SAW-3-A	FSS South Wall	08/19/04	14:17:47	1.000	1.00
35 Smear 1 25		08/19/04	14:16:27	SAW-3-A	FSS West Wall	08/19/04	14:16:27	1.000	1.00
36 Smear 2 26		08/19/04	14:15:06	SAW-3-A	FSS West Wall	08/19/04	14:15:06	1.000	1.00
37 Smear 3 27		08/19/04	14:13:46	SAW-3-A	FSS West Wall	08/19/04	14:13:46	1.000	1.00
38 Smear 4 28		08/19/04	14:12:26	SAW-3-A	FSS West Wall	08/19/04	14:12:26	1.000	1.00
39 Smear 5 29		08/19/04	14:11:06	SAW-3-A	FSS West Wall	08/19/04	14:11:06	1.000	1.00
40 Smear 6 36		08/19/04	14:09:46	SAW-3-A	FSS West Wall	08/19/04	14:09:46	1.000	1.00
41 Smear 1 1		08/19/04	14:08:26	SAW-3-A	FSS Ceiling	08/19/04	14:08:26	1.000	1.00
42 Smear 2 2		08/19/04	14:07:06	SAW-3-A	FSS Ceiling	08/19/04	14:07:06	1.000	1.00
43 Smear 3 3		08/19/04	14:05:46	SAW-3-A	FSS Ceiling	08/19/04	14:05:46	1.000	1.00
44 Smear 4 4		08/19/04	14:04:26	SAW-3-A	FSS Ceiling	08/19/04	14:04:26	1.000	1.00
45 Smear 5 5		08/19/04	14:03:06	SAW-3-A	FSS Ceiling	08/19/04	14:03:06	1.000	1.00
46 Smear 6 6		08/19/04	14:01:46	SAW-3-A	FSS Ceiling	08/19/04	14:01:46	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 8-19-04

Reviewed By (print): Mike Taylor

Reviewed By (sign): *[Signature]*

Date: 8-19-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %EFF: 26.36 LLD: 10.06 dpm				Bkg: 0.77 cpm %EFF: 44.73 LLD: 12.61 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	08/19/04	15:02:01	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
2	Smear 2	08/19/04	15:00:41	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
3	Smear 3	08/19/04	14:59:20	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
4	Smear 4	08/19/04	14:58:00	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
5	Smear 5	08/19/04	14:56:39	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
6	Smear 6	08/19/04	14:55:19	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
7	Smear 7	08/19/04	14:53:58	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
8	Smear 8	08/19/04	14:52:37	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
9	Smear 9	08/19/04	14:51:17	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
10	Smear 10	08/19/04	14:49:56	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
11	Smear 11	08/19/04	14:48:35	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
12	Smear 12	08/19/04	14:47:15	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
13	Smear 13	08/19/04	14:45:54	1.00	1.00	3.71	10.06	0.00	-0.77	-1.71	12.61
14	Smear 14	08/19/04	14:44:34	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
15	Smear 15	08/19/04	14:43:13	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
16	Smear 16	08/19/04	14:41:53	1.00	1.00	3.71	10.06	0.00	-0.77	-1.71	12.61
17	Smear 17	08/19/04	14:40:32	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
18	Smear 28	08/19/04	14:39:12	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
19	Smear 37	08/19/04	14:37:52	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
20	Smear 410	08/19/04	14:36:31	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
21	Smear 511	08/19/04	14:35:10	1.00	1.00	3.71	10.06	1.00	0.23	0.52	12.61
22	Smear 612	08/19/04	14:33:50	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
23	Smear 119	08/19/04	14:32:30	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
24	Smear 220	08/19/04	14:31:10	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
25	Smear 321	08/19/04	14:29:49	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
26	Smear 422	08/19/04	14:28:28	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
27	Smear 523	08/19/04	14:27:08	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
28	Smear 624	08/19/04	14:25:48	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
29	Smear 113	08/19/04	14:24:28	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
30	Smear 214	08/19/04	14:23:07	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
31	Smear 315	08/19/04	14:21:47	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
32	Smear 416	08/19/04	14:20:27	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
33	Smear 517	08/19/04	14:19:07	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
34	Smear 618	08/19/04	14:17:47	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
35	Smear 125	08/19/04	14:16:27	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
36	Smear 226	08/19/04	14:15:06	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
37	Smear 327	08/19/04	14:13:46	1.00	1.00	3.71	10.06	0.00	-0.77	-1.71	12.61
38	Smear 428	08/19/04	14:12:26	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
39	Smear 529	08/19/04	14:11:06	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
40	Smear 630	08/19/04	14:09:46	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
41	Smear 11	08/19/04	14:08:26	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
42	Smear 22	08/19/04	14:07:06	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
43	Smear 33	08/19/04	14:05:46	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
44	Smear 44	08/19/04	14:04:26	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
45	Smear 55	08/19/04	14:03:06	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
46	Smear 66	08/19/04	14:01:46	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61

SAW-3-A

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 8-19-04

Reviewed By (print): Mike Taylor

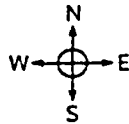
Reviewed By (sign): *Mike Taylor*

Date: 8-19-04

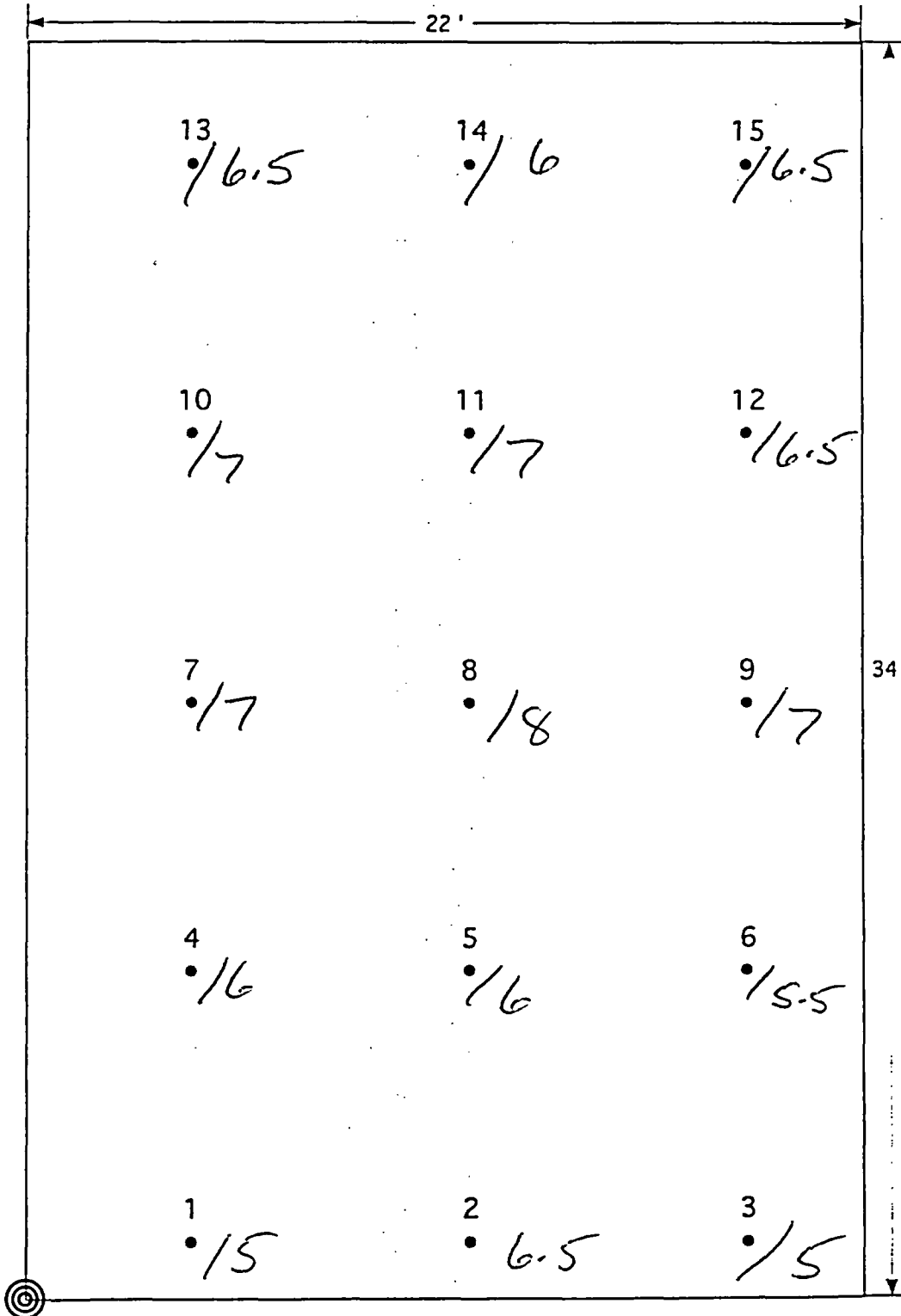
**WWTB-1-A Waste Water Treatment Building**



Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHUS, PENNSYLVANIA 115 REACTOR ROAD	 SCIENTECH, Inc. 101 WEST STREET NEW HAVEN, CT 06511	PROJECT NO: 23159-0301	FILENAME	SCALE DATE 07 12 2004	BY	CHK	FIGURE WWTB-1A
		DRAWING	CLASS 1 Waste Water Treatment Building Floor							



- SURVEY POINTS
- ⊙ STARTING LOCATION



ALL Reading ARE IN  
MICRO-R

8-19-04  
START - 1310  
STOP 1935

WWTB-1-A

WWTB-1-A

Log #
Source
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

	X	Y
	n/a	n/a
1	4.4	1.5
2	11.7	1.5
3	19.0	1.5
4	4.4	8.8
5	11.7	8.8
6	19.0	8.8
7	4.4	16.1
8	11.7	16.1
9	19.0	16.1
10	4.4	23.4
11	11.7	23.4
12	19.0	23.4
13	4.4	30.7
14	11.7	30.7
15	19.0	30.7

L (ft)= 7.3

A (ft²)= 748

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
231	200	300
223	220	300
196	220	280
255	240	300
257	250	300
184	220	300
264	220	280
283	240	320
267	240	320
252	240	340
286	220	280
228	240	280
265	240	280
279	220	300
410	350	450

Ludlum Measurements, Inc.  
Model 2360 Log Data

Date: 8/26/2004  
Time: 3:36:16 AM

Header 1: Nick Parker  
Header 2: Serial#202433  
Header 3: DetSer#PR208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: Location 1  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 08/26/2004  
Model 2360 Time: 08:24:10  
Sample Number: 0010

User PC Time: 001.0  
Alpha Ratemeter Alarm: 050000  
Beta Ratemeter Alarm: 050000  
Alpha + Beta Ratemeter Alarm: 050000  
Alpha Scaler Alarm: 050000  
Beta Scaler Alarm: 050000  
Alpha + Beta Scaler Alarm: 050000

CntTime - Count Time  
F meter  
S er  
Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	08/19/04	13:21:06	000002	035980	S 001.0	Source Check Beta
0002	08/19/04	13:23:16	002440	000516	S 001.0	Source Check Alpha
0003	08/19/04	14:31:47	000000	000231	S 001.0	WWTB-1-A
0004	08/19/04	15:16:27	000001	000223	S 001.0	WWTB-1-A
0005	08/19/04	15:22:15	000000	000196	S 001.0	WWTB-1-A
0006	08/19/04	15:32:01	000002	000255	S 001.0	WWTB-1-A
0007	08/19/04	15:38:40	000005	000257	S 001.0	WWTB-1-A
0008	08/19/04	15:50:05	000005	000184	S 001.0	WWTB-1-A
0009	08/19/04	16:01:16	000000	000264	S 001.0	WWTB-1-A
0010	08/19/04	16:07:00	000000	000283	S 001.0	WWTB-1-A
0011	08/19/04	16:15:53	000003	000267	S 001.0	WWTB-1-A
0012	08/19/04	16:23:23	000002	000252	S 001.0	WWTB-1-A
0013	08/19/04	16:29:49	000003	000286	S 001.0	WWTB-1-A
0014	08/19/04	16:53:00	000002	000228	S 001.0	WWTB-1-A
0015	08/19/04	16:59:48	000003	000265	S 001.0	WWTB-1-A
0016	08/19/04	17:06:35	000002	000279	S 001.0	WWTB-1-A
0017	08/19/04	17:13:37	000000	000410	S 001.0	WWTB-1-A
0018	08/20/04	07:15:27	000002	035969	S 001.0	Source Check Beta
0019	08/20/04	07:18:00	001945	000501	S 001.0	Source Check Alpha
0020	08/20/04	07:19:33	002476	000566	S 001.0	Source Check Alpha
0021	08/20/04	09:53:31	000002	000149	S 001.0	WWTB-1-B
0022	08/20/04	10:01:52	000001	000136	S 001.0	WWTB-1-B
0023	08/20/04	10:04:40	000001	000119	S 001.0	WWTB-1-B
0024	08/20/04	10:13:20	000003	000136	S 001.0	WWTB-1-B
0025	08/20/04	10:22:32	000001	000122	S 001.0	WWTB-1-B
0026	08/20/04	10:30:22	000000	000128	S 001.0	WWTB-1-B
0027	08/20/04	10:45:31	000001	000128	S 001.0	WWTB-1-B
0028	08/20/04	11:08:10	000001	000146	S 001.0	WWTB-1-B
0029	08/20/04	11:13:41	000002	000185	S 001.0	WWTB-1-B
0030	08/20/04	11:23:46	000000	000196	S 001.0	WWTB-1-B
0031	08/20/04	11:32:57	000002	000176	S 001.0	WWTB-1-B
0032	08/20/04	12:44:36	000004	000162	S 001.0	WWTB-1-B
0033	08/20/04	13:01:04	000000	000162	S 001.0	WWTB-1-B
0034	08/20/04	13:08:36	000000	000117	S 001.0	WWTB-1-B

0035 08/20/04 13:15:53 000001 034701 S 001.0 Source Check  
0036 08/20/04 13:40:01 000002 000092 S 001.0 WWTB-1-C  
0037 08/20/04 13:47:30 000001 000111 S 001.0 WWTB-1-C  
0038 08/20/04 13:54:23 000000 000109 S 001.0 WWTB-1-C  
0039 08/20/04 13:59:38 000000 000137 S 001.0 WWTB-1-C  
0040 08/20/04 14:08:25 000000 000132 S 001.0 WWTB-1-C  
0041 08/20/04 14:13:29 000001 000135 S 001.0 WWTB-1-C  
0042 08/20/04 14:18:26 000001 000133 S 001.0 WWTB-1-C  
0043 08/20/04 14:24:23 000000 000101 S 001.0 WWTB-1-C  
0044 08/20/04 14:30:13 000001 000121 S 001.0 WWTB-1-C  
0045 08/20/04 14:33:57 000000 000101 S 001.0 WWTB-1-C  
0046 08/20/04 14:39:34 000001 000129 S 001.0 WWTB-1-C  
0047 08/20/04 14:46:22 000000 000136 S 001.0 WWTB-1-C  
0048 08/20/04 14:53:10 000002 000165 S 001.0 WWTB-1-C  
0049 08/20/04 14:57:37 000002 000171 S 001.0 WWTB-1-C  
0050 08/21/04 07:21:24 000000 037754 S 001.0 Source Check Beta  
0051 08/21/04 07:23:47 002489 000693 S 001.0 Source Check Alpha  
0052 08/21/04 09:05:30 000000 000184 S 001.0 WWTB-1-D  
0053 08/21/04 09:33:41 000001 000161 S 001.0 WWTB-1-D  
0054 08/21/04 09:39:35 000001 000165 S 001.0 WWTB-1-D  
0055 08/21/04 09:48:31 000000 000172 S 001.0 WWTB-1-D  
0056 08/21/04 09:59:00 000001 000143 S 001.0 WWTB-1-D  
0057 08/21/04 10:15:51 000000 000180 S 001.0 WWTB-1-D  
0058 08/21/04 10:22:15 000001 000140 S 001.0 WWTB-1-D  
0059 08/21/04 10:29:26 000000 000160 S 001.0 WWTB-1-D  
0060 08/21/04 10:36:03 000002 000162 S 001.0 WWTB-1-D  
0061 08/21/04 10:45:22 000000 000164 S 001.0 WWTB-1-D  
0062 08/21/04 10:53:55 000001 000168 S 001.0 WWTB-1-D  
0063 08/21/04 11:05:05 000000 000155 S 001.0 WWTB-1-D  
0064 08/21/04 11:13:51 000001 000137 S 001.0 WWTB-1-D  
0065 08/21/04 11:28:21 000000 000157 S 001.0 WWTB-1-D  
0066 08/21/04 11:37:14 000003 000163 S 001.0 WWTB-1-D  
S

Smears		Count Mins: 1							Fraction	
PIC WPC-9550 Instr No 1		Count Started		Sample Collected						
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample	
1	Smear 1	08/19/04	18:55:48	WWTB-1-A	FFS-Floor	08/02/04	8:22:15	1.000	1.00	
2	Smear 2	08/19/04	18:54:27	WWTB-1-A	FFS-Floor	08/19/04	18:54:27	1.000	1.00	
3	Smear 3	08/19/04	18:53:07	WWTB-1-A	FFS-Floor	08/19/04	18:53:07	1.000	1.00	
4	Smear 4	08/19/04	18:51:47	WWTB-1-A	FFS-Floor	08/19/04	18:51:47	1.000	1.00	
5	Smear 5	08/19/04	18:50:26	WWTB-1-A	FFS-Floor	08/19/04	18:50:26	1.000	1.00	
6	Smear 6	08/19/04	18:49:06	WWTB-1-A	FFS-Floor	08/19/04	18:49:06	1.000	1.00	
7	Smear 7	08/19/04	18:47:45	WWTB-1-A	FFS-Floor	08/19/04	18:47:45	1.000	1.00	
8	Smear 8	08/19/04	18:46:24	WWTB-1-A	FFS-Floor	08/19/04	18:46:24	1.000	1.00	
9	Smear 9	08/19/04	18:45:04	WWTB-1-A	FFS-Floor	08/19/04	18:45:04	1.000	1.00	
10	Smear 10	08/19/04	18:43:43	WWTB-1-A	FSS-Floor	08/19/04	18:43:43	1.000	1.00	
11	Smear 11	08/19/04	18:42:23	WWTB-1-A	FSS-Floor	08/19/04	18:42:23	1.000	1.00	
12	Smear 12	08/19/04	18:41:03	WWTB-1-A	FSS-Floor	08/19/04	18:41:03	1.000	1.00	
13	Smear 13	08/19/04	18:39:42	WWTB-1-A	FSS-Floor	08/19/04	18:39:42	1.000	1.00	
14	Smear 14	08/19/04	18:38:22	WWTB-1-A	FSS-Floor	08/19/04	18:38:22	1.000	1.00	
15	Smear 15	08/19/04	18:37:02	WWTB-1-A	FSS-Floor	08/19/04	18:37:02	1.000	1.00	
16	Smear 1	08/19/04	18:35:41	WWTB-1-B	FSS-North & East Wall	08/19/04	18:35:41	1.000	1.00	
17	Smear 2	08/19/04	18:34:21	WWTB-1-B	FSS-North & East Wall	08/19/04	18:34:21	1.000	1.00	
18	Smear 3	08/19/04	18:33:01	WWTB-1-B	FSS-North & East Wall	08/19/04	18:33:01	1.000	1.00	
19	Smear 4	08/19/04	18:31:40	WWTB-1-B	FSS-North & East Wall	08/19/04	18:31:40	1.000	1.00	
20	Smear 5	08/19/04	18:30:20	WWTB-1-B	FSS-North & East Wall	08/19/04	18:30:20	1.000	1.00	
21	Smear 6	08/19/04	18:29:00	WWTB-1-B	FSS-North & East Wall	08/19/04	18:29:00	1.000	1.00	
22	Smear 7	08/19/04	18:27:39	WWTB-1-B	FSS-North & East Wall	08/19/04	18:27:39	1.000	1.00	
23	Smear 8	08/19/04	18:26:19	WWTB-1-B	FSS-North & East Wall	08/19/04	18:26:19	1.000	1.00	
24	Smear 9	08/19/04	18:24:58	WWTB-1-B	FSS-North & East Wall	08/19/04	18:24:58	1.000	1.00	
25	Smear 10	08/19/04	18:23:38	WWTB-1-B	FSS-North & East Wall	08/19/04	18:23:38	1.000	1.00	
26	Smear 11	08/19/04	18:22:18	WWTB-1-B	FSS-North & East Wall	08/19/04	18:22:18	1.000	1.00	
27	Smear 12	08/19/04	18:20:58	WWTB-1-B	FSS-North & East Wall	08/19/04	18:20:58	1.000	1.00	
28	Smear 13	08/19/04	18:19:37	WWTB-1-B	FSS-North & East Wall	08/19/04	18:19:37	1.000	1.00	
29	Smear 14	08/19/04	18:18:17	WWTB-1-B	FSS-North & East Wall	08/19/04	18:18:17	1.000	1.00	
30	Smear 1	08/19/04	18:16:57	WWTB-1-C	FSS-South & West Wall	08/19/04	18:16:57	1.000	1.00	
31	Smear 2	08/19/04	18:15:36	WWTB-1-C	FSS-South & West Wall	08/19/04	18:15:36	1.000	1.00	
32	Smear 3	08/19/04	18:14:16	WWTB-1-C	FSS-South & West Wall	08/19/04	18:14:16	1.000	1.00	
33	Smear 4	08/19/04	18:12:56	WWTB-1-C	FSS-South & West Wall	08/19/04	18:12:56	1.000	1.00	
34	Smear 5	08/19/04	18:11:35	WWTB-1-C	FSS-South & West Wall	08/19/04	18:11:35	1.000	1.00	
35	Smear 6	08/19/04	18:10:15	WWTB-1-C	FSS-South & West Wall	08/19/04	18:10:15	1.000	1.00	
36	Smear 7	08/19/04	18:08:55	WWTB-1-C	FSS-South & West Wall	08/19/04	18:08:55	1.000	1.00	
37	Smear 8	08/19/04	18:07:35	WWTB-1-C	FSS-South & West Wall	08/19/04	18:07:35	1.000	1.00	
38	Smear 9	08/19/04	18:06:14	WWTB-1-C	FSS-South & West Wall	08/19/04	18:06:14	1.000	1.00	
39	Smear 10	08/19/04	18:04:54	WWTB-1-C	FSS-South & West Wall	08/19/04	18:04:54	1.000	1.00	
40	Smear 11	08/19/04	18:03:34	WWTB-1-C	FSS-South & West Wall	08/19/04	18:03:34	1.000	1.00	
41	Smear 12	08/19/04	18:02:13	WWTB-1-C	FSS-South & West Wall	08/19/04	18:02:13	1.000	1.00	
42	Smear 13	08/19/04	18:00:53	WWTB-1-C	FSS-South & West Wall	08/19/04	18:00:53	1.000	1.00	
43	Smear 14	08/19/04	17:59:33	WWTB-1-C	FSS-South & West Wall	08/19/04	17:59:33	1.000	1.00	

WWTB-1-A

Technician (print): Robert Matthew Ellison

Technician (sign): *Rob Ellison*

Date: 8-19-04

Reviewed By (print): Mike Taylor

Reviewed By (sign): *[Signature]*

Date: 8-19-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 26.96 LLD: 10.06 dpm				Bkg: 0.77 cpm %Eff: 44.73 LLD: 12.61 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	08/19/04	18:55:48	0.00	0.00	0.00	10.06	3.00	2.23	4.99	12.61
2	Smear 2	08/19/04	18:54:27	1.00	1.00	3.71	10.06	0.00	-0.77	-1.71	12.61
3	Smear 3	08/19/04	18:53:07	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
4	Smear 4	08/19/04	18:51:47	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
5	Smear 5	08/19/04	18:50:26	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
6	Smear 6	08/19/04	18:49:06	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
7	Smear 7	08/19/04	18:47:45	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
8	Smear 8	08/19/04	18:46:24	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
9	Smear 9	08/19/04	18:45:04	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
10	Smear 10	08/19/04	18:43:43	1.00	1.00	3.71	10.06	2.00	1.23	2.76	12.61
11	Smear 11	08/19/04	18:42:23	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
12	Smear 12	08/19/04	18:41:03	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
13	Smear 13	08/19/04	18:39:42	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
14	Smear 14	08/19/04	18:38:22	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
15	Smear 15	08/19/04	18:37:02	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
16	Smear 1	08/19/04	18:35:41	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
17	Smear 2	08/19/04	18:34:21	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
18	Smear 3	08/19/04	18:33:01	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
19	Smear 4	08/19/04	18:31:40	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
20	Smear 5	08/19/04	18:30:20	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
21	Smear 6	08/19/04	18:29:00	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
22	Smear 7	08/19/04	18:27:39	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
23	Smear 8	08/19/04	18:26:19	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
24	Smear 9	08/19/04	18:24:58	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
25	Smear 10	08/19/04	18:23:38	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
26	Smear 11	08/19/04	18:22:18	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
27	Smear 12	08/19/04	18:20:58	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
28	Smear 13	08/19/04	18:19:37	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
29	Smear 14	08/19/04	18:18:17	0.00	0.00	0.00	10.06	3.00	2.23	4.99	12.61
30	Smear 1	08/19/04	18:16:57	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
31	Smear 2	08/19/04	18:15:36	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
32	Smear 3	08/19/04	18:14:16	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
33	Smear 4	08/19/04	18:12:56	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
34	Smear 5	08/19/04	18:11:35	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
35	Smear 6	08/19/04	18:10:15	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
36	Smear 7	08/19/04	18:08:55	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
37	Smear 8	08/19/04	18:07:35	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
38	Smear 9	08/19/04	18:06:14	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
39	Smear 10	08/19/04	18:04:54	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
40	Smear 11	08/19/04	18:03:34	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
41	Smear 12	08/19/04	18:02:13	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
42	Smear 13	08/19/04	18:00:53	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
43	Smear 14	08/19/04	17:59:33	0.00	0.00	0.00	10.06	3.00	2.23	4.99	12.61

WWTB-1-A

Technician (print): Robert Matthew Ellison

Technician (sign): *Rob Ellison*

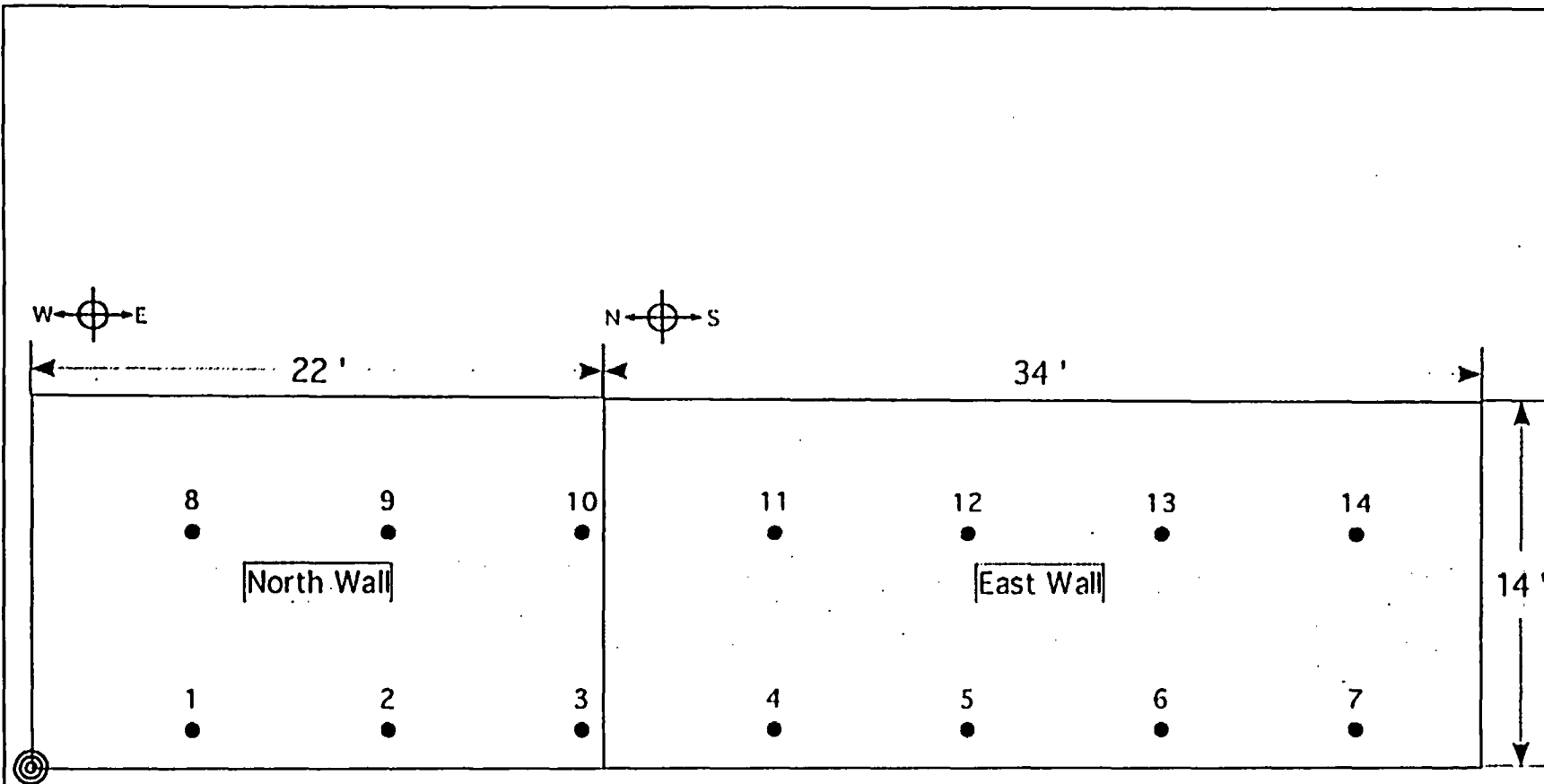
Date: 8-19-04

Reviewed By (print): Mike Taylor

Reviewed By (sign): *[Signature]*

Date: 8-19-04

**WWTB-1-B Waste Water Treatment Building**



WWTB-1-B

• SURVEY POINTS  
 Ⓢ STARTING LOCATION

8-20-04  
 START 0700  
 STOP 1400

Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	Waste Water Treatment Building North and East Walls CLASS 1
SCIENTECH SCIENTECH Inc. 145 WEST STREET NEW HAVEN, CT 06510	
PROJECT NO: 23529-0301	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/12/2004
By:	CK:
FIGURE: WWTB-1-B	



# WWTB-1-B

Log #
Source
21
22
23
24
25
26
27
28
29
30
31
32
33
34

	X	Y
	n/a	n/a
1	6.2	1.4
2	13.7	1.4
3	21.2	1.4
4	28.7	1.4
5	36.2	1.4
6	43.7	1.4
7	51.2	1.4
8	6.2	8.9
9	13.7	8.9
10	21.2	8.9
11	28.7	8.9
12	36.2	8.9
13	43.7	8.9
14	51.2	8.9

L (ft)= 7.5

A (ft²)= 784

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
149	120	180
136	140	220
119	140	200
136	120	180
122	100	200
128	120	180
128	140	180
146	120	220
185	100	200
196	140	220
176	160	240
162	120	180
162	150	210
117	100	150

Num	Date	Time	Alpha	Beta	WWTB UsrTime	Location
0001	08/19/04	13:21:06	000002	035980	S 001.0	Source Check Beta
0002	08/19/04	13:23:16	002440	000516	S 001.0	Source Check Alpha
0003	08/19/04	14:31:47	000000	000231	S 001.0	WWTB-1-A
0004	08/19/04	15:16:27	000001	000223	S 001.0	WWTB-1-A
0005	08/19/04	15:22:15	000000	000196	S 001.0	WWTB-1-A
0006	08/19/04	15:32:01	000002	000255	S 001.0	WWTB-1-A
0007	08/19/04	15:38:40	000005	000257	S 001.0	WWTB-1-A
0008	08/19/04	15:50:05	000005	000184	S 001.0	WWTB-1-A
0009	08/19/04	16:01:16	000000	000264	S 001.0	WWTB-1-A
0010	08/19/04	16:07:00	000000	000283	S 001.0	WWTB-1-A
0011	08/19/04	16:15:53	000003	000267	S 001.0	WWTB-1-A
0012	08/19/04	16:23:23	000002	000252	S 001.0	WWTB-1-A
0013	08/19/04	16:29:49	000003	000286	S 001.0	WWTB-1-A
0014	08/19/04	16:53:00	000002	000228	S 001.0	WWTB-1-A
0015	08/19/04	16:59:48	000003	000265	S 001.0	WWTB-1-A
0016	08/19/04	17:06:35	000002	000279	S 001.0	WWTB-1-A
0017	08/19/04	17:13:37	000000	000410	S 001.0	WWTB-1-A
0018	08/20/04	07:15:27	000002	035969	S 001.0	Source Check Beta
0019	08/20/04	07:18:00	001945	000501	S 001.0	Source Check Alpha
0020	08/20/04	07:19:33	002476	000566	S 001.0	Source Check Alpha
0021	08/20/04	09:53:31	000002	000149	S 001.0	WWTB-1-B
0022	08/20/04	10:01:52	000001	000136	S 001.0	WWTB-1-B
0023	08/20/04	10:04:40	000001	000119	S 001.0	WWTB-1-B
0024	08/20/04	10:13:20	000003	000136	S 001.0	WWTB-1-B
0025	08/20/04	10:22:32	000001	000122	S 001.0	WWTB-1-B
0026	08/20/04	10:30:22	000000	000128	S 001.0	WWTB-1-B
0027	08/20/04	10:45:31	000001	000128	S 001.0	WWTB-1-B
0028	08/20/04	11:08:10	000001	000146	S 001.0	WWTB-1-B
0029	08/20/04	11:13:41	000002	000185	S 001.0	WWTB-1-B
0030	08/20/04	11:23:46	000000	000196	S 001.0	WWTB-1-B
0031	08/20/04	11:32:57	000002	000176	S 001.0	WWTB-1-B
0032	08/20/04	12:44:36	000004	000162	S 001.0	WWTB-1-B
0033	08/20/04	13:01:04	000000	000162	S 001.0	WWTB-1-B
0034	08/20/04	13:08:36	000000	000117	S 001.0	WWTB-1-B
0035	08/20/04	13:15:53	000001	034701	S 001.0	Source Check
0036	08/20/04	13:40:01	000002	000092	S 001.0	WWTB-1-C
0037	08/20/04	13:47:30	000001	000111	S 001.0	WWTB-1-C
0038	08/20/04	13:54:23	000000	000109	S 001.0	WWTB-1-C
0039	08/20/04	13:59:38	000000	000137	S 001.0	WWTB-1-C
0040	08/20/04	14:08:25	000000	000132	S 001.0	WWTB-1-C
0041	08/20/04	14:13:29	000001	000135	S 001.0	WWTB-1-C
0042	08/20/04	14:18:26	000001	000133	S 001.0	WWTB-1-C
0043	08/20/04	14:24:23	000000	000101	S 001.0	WWTB-1-C
0044	08/20/04	14:30:13	000001	000121	S 001.0	WWTB-1-C
0045	08/20/04	14:33:57	000000	000101	S 001.0	WWTB-1-C
0046	08/20/04	14:39:34	000001	000129	S 001.0	WWTB-1-C
0047	08/20/04	14:46:22	000000	000136	S 001.0	WWTB-1-C
0048	08/20/04	14:53:10	000002	000165	S 001.0	WWTB-1-C
0049	08/20/04	14:57:37	000002	000171	S 001.0	WWTB-1-C
0050	08/21/04	07:21:24	000000	037754	S 001.0	Source Check Beta
0051	08/21/04	07:23:47	002489	000693	S 001.0	Source Check Alpha
0052	08/21/04	09:05:30	000000	000184	S 001.0	WWTB-1-D
0053	08/21/04	09:33:41	000001	000161	S 001.0	WWTB-1-D
0054	08/21/04	09:39:35	000001	000165	S 001.0	WWTB-1-D
0055	08/21/04	09:48:31	000000	000172	S 001.0	WWTB-1-D
0056	08/21/04	09:59:00	000001	000143	S 001.0	WWTB-1-D
0057	08/21/04	10:15:51	000000	000180	S 001.0	WWTB-1-D
0058	08/21/04	10:22:15	000001	000140	S 001.0	WWTB-1-D
0059	08/21/04	10:29:26	000000	000160	S 001.0	WWTB-1-D
0060	08/21/04	10:36:03	000002	000162	S 001.0	WWTB-1-D
0061	08/21/04	10:45:22	000000	000164	S 001.0	WWTB-1-D

WWTB  
0062 08/21/04 10:53:55 000001 000168 S 001.0 WWTB-1-D  
0063 08/21/04 11:05:05 000000 000155 S 001.0 WWTB-1-D  
0064 08/21/04 11:13:51 000001 000137 S 001.0 WWTB-1-D  
0065 08/21/04 11:28:21 000000 000157 S 001.0 WWTB-1-D  
0066 08/21/04 11:37:14 000003 000163 S 001.0 WWTB-1-D  
\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	08/19/04	18:55:48	WWTB-1-A	Final Status Survey	08/02/04	8:22:15	1.000	1.00
2	Smear 2	08/19/04	18:54:27	WWTB-1-A	Final Status Survey	08/19/04	18:54:27	1.000	1.00
3	Smear 3	08/19/04	18:53:07	WWTB-1-A	Final Status Survey	08/19/04	18:53:07	1.000	1.00
4	Smear 4	08/19/04	18:51:47	WWTB-1-A	Final Status Survey	08/19/04	18:51:47	1.000	1.00
5	Smear 5	08/19/04	18:50:26	WWTB-1-A	Final Status Survey	08/19/04	18:50:26	1.000	1.00
6	Smear 6	08/19/04	18:49:06	WWTB-1-A	Final Status Survey	08/19/04	18:49:06	1.000	1.00
7	Smear 7	08/19/04	18:47:45	WWTB-1-A	Final Status Survey	08/19/04	18:47:45	1.000	1.00
8	Smear 8	08/19/04	18:46:24	WWTB-1-A	Final Status Survey	08/19/04	18:46:24	1.000	1.00
9	Smear 9	08/19/04	18:45:04	WWTB-1-A	Final Status Survey	08/19/04	18:45:04	1.000	1.00
10	Smear 10	08/19/04	18:43:43	WWTB-1-A	Final Status Survey	08/19/04	18:43:43	1.000	1.00
11	Smear 11	08/19/04	18:42:23	WWTB-1-A	Final Status Survey	08/19/04	18:42:23	1.000	1.00
12	Smear 12	08/19/04	18:41:03	WWTB-1-A	Final Status Survey	08/19/04	18:41:03	1.000	1.00
13	Smear 13	08/19/04	18:39:42	WWTB-1-A	Final Status Survey	08/19/04	18:39:42	1.000	1.00
14	Smear 14	08/19/04	18:38:22	WWTB-1-A	Final Status Survey	08/19/04	18:38:22	1.000	1.00
15	Smear 15	08/19/04	18:37:02	WWTB-1-A	Final Status Survey	08/19/04	18:37:02	1.000	1.00
16	Smear 1	08/19/04	18:35:41	WWTB-1-B	Final Status Survey	08/19/04	18:35:41	1.000	1.00
17	Smear 2	08/19/04	18:34:21	WWTB-1-B	Final Status Survey	08/19/04	18:34:21	1.000	1.00
18	Smear 3	08/19/04	18:33:01	WWTB-1-B	Final Status Survey	08/19/04	18:33:01	1.000	1.00
19	Smear 4	08/19/04	18:31:40	WWTB-1-B	Final Status Survey	08/19/04	18:31:40	1.000	1.00
20	Smear 5	08/19/04	18:30:20	WWTB-1-B	Final Status Survey	08/19/04	18:30:20	1.000	1.00
21	Smear 6	08/19/04	18:29:00	WWTB-1-B	Final Status Survey	08/19/04	18:29:00	1.000	1.00
22	Smear 7	08/19/04	18:27:39	WWTB-1-B	Final Status Survey	08/19/04	18:27:39	1.000	1.00
23	Smear 8	08/19/04	18:26:19	WWTB-1-B	Final Status Survey	08/19/04	18:26:19	1.000	1.00
24	Smear 9	08/19/04	18:24:58	WWTB-1-B	Final Status Survey	08/19/04	18:24:58	1.000	1.00
25	Smear 10	08/19/04	18:23:38	WWTB-1-B	Final Status Survey	08/19/04	18:23:38	1.000	1.00
26	Smear 11	08/19/04	18:22:18	WWTB-1-B	Final Status Survey	08/19/04	18:22:18	1.000	1.00
27	Smear 12	08/19/04	18:20:58	WWTB-1-B	Final Status Survey	08/19/04	18:20:58	1.000	1.00
28	Smear 13	08/19/04	18:19:37	WWTB-1-B	Final Status Survey	08/19/04	18:19:37	1.000	1.00
29	Smear 14	08/19/04	18:18:17	WWTB-1-B	Final Status Survey	08/19/04	18:18:17	1.000	1.00
30	Smear 1	08/19/04	18:16:57	WWTB-1-C	Final Status Survey	08/19/04	18:16:57	1.000	1.00
31	Smear 2	08/19/04	18:15:36	WWTB-1-C	Final Status Survey	08/19/04	18:15:36	1.000	1.00
32	Smear 3	08/19/04	18:14:16	WWTB-1-C	Final Status Survey	08/19/04	18:14:16	1.000	1.00
33	Smear 4	08/19/04	18:12:56	WWTB-1-C	Final Status Survey	08/19/04	18:12:56	1.000	1.00
34	Smear 5	08/19/04	18:11:35	WWTB-1-C	Final Status Survey	08/19/04	18:11:35	1.000	1.00
35	Smear 6	08/19/04	18:10:15	WWTB-1-C	Final Status Survey	08/19/04	18:10:15	1.000	1.00
36	Smear 7	08/19/04	18:08:55	WWTB-1-C	Final Status Survey	08/19/04	18:08:55	1.000	1.00
37	Smear 8	08/19/04	18:07:35	WWTB-1-C	Final Status Survey	08/19/04	18:07:35	1.000	1.00
38	Smear 9	08/19/04	18:06:14	WWTB-1-C	Final Status Survey	08/19/04	18:06:14	1.000	1.00
39	Smear 10	08/19/04	18:04:54	WWTB-1-C	Final Status Survey	08/19/04	18:04:54	1.000	1.00
40	Smear 11	08/19/04	18:03:34	WWTB-1-C	Final Status Survey	08/19/04	18:03:34	1.000	1.00
41	Smear 12	08/19/04	18:02:13	WWTB-1-C	Final Status Survey	08/19/04	18:02:13	1.000	1.00
42	Smear 13	08/19/04	18:00:53	WWTB-1-C	Final Status Survey	08/19/04	18:00:53	1.000	1.00
43	Smear 14	08/19/04	17:59:33	WWTB-1-C	Final Status Survey	08/19/04	17:59:33	1.000	1.00

WWTB-1-B

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 8-19-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %EF: 26.96 LLD: 10.06 dpm				Bkg: 0.77 cpm %EF: 44.73 LLD: 12.61 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	08/19/04	18:55:48	0.00	0.00	0.00	10.06	3.00	2.23	4.99	12.61
2	Smear 2	08/19/04	18:54:27	1.00	1.00	3.71	10.06	0.00	-0.77	-1.71	12.61
3	Smear 3	08/19/04	18:53:07	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
4	Smear 4	08/19/04	18:51:47	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
5	Smear 5	08/19/04	18:50:26	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
6	Smear 6	08/19/04	18:49:06	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
7	Smear 7	08/19/04	18:47:45	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
8	Smear 8	08/19/04	18:46:24	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
9	Smear 9	08/19/04	18:45:04	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
10	Smear 10	08/19/04	18:43:43	1.00	1.00	3.71	10.06	2.00	1.23	2.76	12.61
11	Smear 11	08/19/04	18:42:23	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
12	Smear 12	08/19/04	18:41:03	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
13	Smear 13	08/19/04	18:39:42	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
14	Smear 14	08/19/04	18:38:22	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
15	Smear 15	08/19/04	18:37:02	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
16	Smear 1	08/19/04	18:35:41	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
17	Smear 2	08/19/04	18:34:21	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
18	Smear 3	08/19/04	18:33:01	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
19	Smear 4	08/19/04	18:31:40	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
20	Smear 5	08/19/04	18:30:20	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
21	Smear 6	08/19/04	18:29:00	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
22	Smear 7	08/19/04	18:27:39	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
23	Smear 8	08/19/04	18:26:19	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
24	Smear 9	08/19/04	18:24:58	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
25	Smear 10	08/19/04	18:23:38	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
26	Smear 11	08/19/04	18:22:18	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
27	Smear 12	08/19/04	18:20:58	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
28	Smear 13	08/19/04	18:19:37	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
29	Smear 14	08/19/04	18:18:17	0.00	0.00	0.00	10.06	3.00	2.23	4.99	12.61
30	Smear 1	08/19/04	18:16:57	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
31	Smear 2	08/19/04	18:15:36	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
32	Smear 3	08/19/04	18:14:16	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
33	Smear 4	08/19/04	18:12:56	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
34	Smear 5	08/19/04	18:11:35	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
35	Smear 6	08/19/04	18:10:15	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
36	Smear 7	08/19/04	18:08:55	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
37	Smear 8	08/19/04	18:07:35	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
38	Smear 9	08/19/04	18:06:14	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
39	Smear 10	08/19/04	18:04:54	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
40	Smear 11	08/19/04	18:03:34	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
41	Smear 12	08/19/04	18:02:13	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
42	Smear 13	08/19/04	18:00:53	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
43	Smear 14	08/19/04	17:59:33	0.00	0.00	0.00	10.06	3.00	2.23	4.99	12.61

WWTB-1-B

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

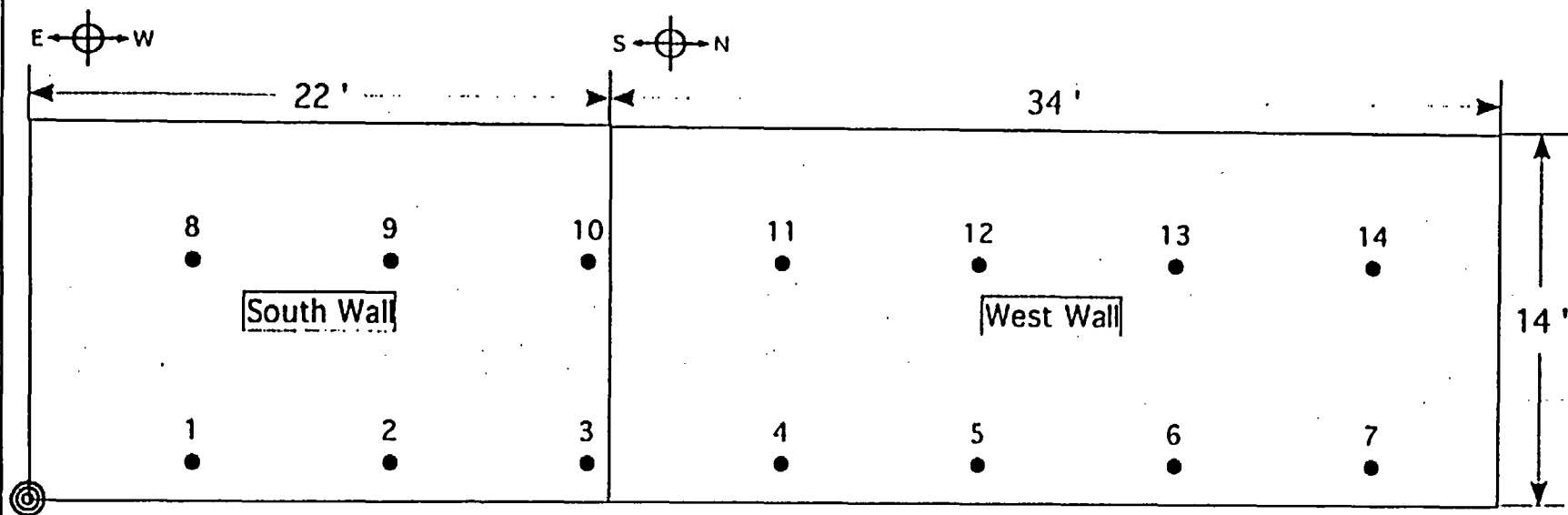
Technician (sign): *Rob Ellison*

Reviewed By (sign):

Date: 8 '9-04

Date:

**WWTB-1-C Waste Water Treatment Building**



WWTB-1-C

• SURVEY POINTS  
 ◎ STARTING LOCATION

8-20-04  
 START - 1300  
 STOP - 1500

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
Waste Water Treatment Building South and West Walls CLASS I KATHAUS, PENNSYLVANIA 115 REACTOR ROAD	
QUEHANNA DECOMMISSIONING KATHAUS, PENNSYLVANIA 115 REACTOR ROAD	
SCIEN TECH SCIEN TECH Inc. 143 WEST STREET NEW MILFORD, CT 06456	
PROJECT NO: 23529-0301	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/12/2004
By:	CK:
FIGURE: WWTB-1-C	

WWTB-1-C

Log #
35 Source
36
37
38
39
40
41
42
43
44
45
46
47
48
49

	X	Y
	n/a	n/a
1	6.2	1.4
2	13.7	1.4
3	21.2	1.4
4	28.7	1.4
5	36.2	1.4
6	43.7	1.4
7	51.2	1.4
8	6.2	8.9
9	13.7	8.9
10	21.2	8.9
11	28.7	8.9
12	36.2	8.9
13	43.7	8.9
14	51.2	8.9

L (ft)= 7.5  
A (ft²)= 784

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
92	100	140
111	120	180
109	100	160
137	120	160
132	120	180
135	140	210
133	160	200
101	120	160
121	120	160
101	120	160
129	110	160
136	100	180
165	140	200
171	140	210



Num	Date	Time	Alpha	Beta	WWTB UsrTime	Location
0001	08/19/04	13:21:06	000002	035980	S 001.0	Source Check Beta
0002	08/19/04	13:23:16	002440	000516	S 001.0	Source Check Alpha
0003	08/19/04	14:31:47	000000	000231	S 001.0	WWTB-1-A
0004	08/19/04	15:16:27	000001	000223	S 001.0	WWTB-1-A
0005	08/19/04	15:22:15	000000	000196	S 001.0	WWTB-1-A
0006	08/19/04	15:32:01	000002	000255	S 001.0	WWTB-1-A
0007	08/19/04	15:38:40	000005	000257	S 001.0	WWTB-1-A
0008	08/19/04	15:50:05	000005	000184	S 001.0	WWTB-1-A
0009	08/19/04	16:01:16	000000	000264	S 001.0	WWTB-1-A
0010	08/19/04	16:07:00	000000	000283	S 001.0	WWTB-1-A
0011	08/19/04	16:15:53	000003	000267	S 001.0	WWTB-1-A
0012	08/19/04	16:23:23	000002	000252	S 001.0	WWTB-1-A
0013	08/19/04	16:29:49	000003	000286	S 001.0	WWTB-1-A
0014	08/19/04	16:53:00	000002	000228	S 001.0	WWTB-1-A
0015	08/19/04	16:59:48	000003	000265	S 001.0	WWTB-1-A
0016	08/19/04	17:06:35	000002	000279	S 001.0	WWTB-1-A
0017	08/19/04	17:13:37	000000	000410	S 001.0	WWTB-1-A
0018	08/20/04	07:15:27	000002	035969	S 001.0	Source Check Beta
0019	08/20/04	07:18:00	001945	000501	S 001.0	Source Check Alpha
0020	08/20/04	07:19:33	002476	000566	S 001.0	Source Check Alpha
0021	08/20/04	09:53:31	000002	000149	S 001.0	WWTB-1-B
0022	08/20/04	10:01:52	000001	000136	S 001.0	WWTB-1-B
0023	08/20/04	10:04:40	000001	000119	S 001.0	WWTB-1-B
0024	08/20/04	10:13:20	000003	000136	S 001.0	WWTB-1-B
0025	08/20/04	10:22:32	000001	000122	S 001.0	WWTB-1-B
0026	08/20/04	10:30:22	000000	000128	S 001.0	WWTB-1-B
0027	08/20/04	10:45:31	000001	000128	S 001.0	WWTB-1-B
0028	08/20/04	11:08:10	000001	000146	S 001.0	WWTB-1-B
0029	08/20/04	11:13:41	000002	000185	S 001.0	WWTB-1-B
0030	08/20/04	11:23:46	000000	000196	S 001.0	WWTB-1-B
0031	08/20/04	11:32:57	000002	000176	S 001.0	WWTB-1-B
0032	08/20/04	12:44:36	000004	000162	S 001.0	WWTB-1-B
0033	08/20/04	13:01:04	000000	000162	S 001.0	WWTB-1-B
0034	08/20/04	13:08:36	000000	000117	S 001.0	WWTB-1-B
0035	08/20/04	13:15:53	000001	034701	S 001.0	Source Check
0036	08/20/04	13:40:01	000002	000092	S 001.0	WWTB-1-C
0037	08/20/04	13:47:30	000001	000111	S 001.0	WWTB-1-C
0038	08/20/04	13:54:23	000000	000109	S 001.0	WWTB-1-C
0039	08/20/04	13:59:38	000000	000137	S 001.0	WWTB-1-C
0040	08/20/04	14:08:25	000000	000132	S 001.0	WWTB-1-C
0041	08/20/04	14:13:29	000001	000135	S 001.0	WWTB-1-C
0042	08/20/04	14:18:26	000001	000133	S 001.0	WWTB-1-C
0043	08/20/04	14:24:23	000000	000101	S 001.0	WWTB-1-C
0044	08/20/04	14:30:13	000001	000121	S 001.0	WWTB-1-C
0045	08/20/04	14:33:57	000000	000101	S 001.0	WWTB-1-C
0046	08/20/04	14:39:34	000001	000129	S 001.0	WWTB-1-C
0047	08/20/04	14:46:22	000000	000136	S 001.0	WWTB-1-C
0048	08/20/04	14:53:10	000002	000165	S 001.0	WWTB-1-C
0049	08/20/04	14:57:37	000002	000171	S 001.0	WWTB-1-C
0050	08/21/04	07:21:24	000000	037754	S 001.0	Source Check Beta
0051	08/21/04	07:23:47	002489	000693	S 001.0	Source Check Alpha
0052	08/21/04	09:05:30	000000	000184	S 001.0	WWTB-1-D
0053	08/21/04	09:33:41	000001	000161	S 001.0	WWTB-1-D
0054	08/21/04	09:39:35	000001	000165	S 001.0	WWTB-1-D
0055	08/21/04	09:48:31	000000	000172	S 001.0	WWTB-1-D
0056	08/21/04	09:59:00	000001	000143	S 001.0	WWTB-1-D
0057	08/21/04	10:15:51	000000	000180	S 001.0	WWTB-1-D
0058	08/21/04	10:22:15	000001	000140	S 001.0	WWTB-1-D
0059	08/21/04	10:29:26	000000	000160	S 001.0	WWTB-1-D
0060	08/21/04	10:36:03	000002	000162	S 001.0	WWTB-1-D
0061	08/21/04	10:45:22	000000	000164	S 001.0	WWTB-1-D

WWTB  
0062 08/21/04 10:53:55 000001 000168 S 001.0 WWTB-1-D  
0063 08/21/04 11:05:05 000000 000155 S 001.0 WWTB-1-D  
0064 08/21/04 11:13:51 000001 000137 S 001.0 WWTB-1-D  
0065 08/21/04 11:28:21 000000 000157 S 001.0 WWTB-1-D  
0066 08/21/04 11:37:14 000003 000163 S 001.0 WWTB-1-D  
\$

Smears		Count Mins: 1			Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started						of Sample
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF
1	Smear 1	08/19/04	18:55:48	WWTB-1-A	Final Status Survey	08/02/04	8:22:15	1.000
2	Smear 2	08/19/04	18:54:27	WWTB-1-A	Final Status Survey	08/19/04	18:54:27	1.000
3	Smear 3	08/19/04	18:53:07	WWTB-1-A	Final Status Survey	08/19/04	18:53:07	1.000
4	Smear 4	08/19/04	18:51:47	WWTB-1-A	Final Status Survey	08/19/04	18:51:47	1.000
5	Smear 5	08/19/04	18:50:26	WWTB-1-A	Final Status Survey	08/19/04	18:50:26	1.000
6	Smear 6	08/19/04	18:49:06	WWTB-1-A	Final Status Survey	08/19/04	18:49:06	1.000
7	Smear 7	08/19/04	18:47:45	WWTB-1-A	Final Status Survey	08/19/04	18:47:45	1.000
8	Smear 8	08/19/04	18:46:24	WWTB-1-A	Final Status Survey	08/19/04	18:46:24	1.000
9	Smear 9	08/19/04	18:45:04	WWTB-1-A	Final Status Survey	08/19/04	18:45:04	1.000
10	Smear 10	08/19/04	18:43:43	WWTB-1-A	Final Status Survey	08/19/04	18:43:43	1.000
11	Smear 11	08/19/04	18:42:23	WWTB-1-A	Final Status Survey	08/19/04	18:42:23	1.000
12	Smear 12	08/19/04	18:41:03	WWTB-1-A	Final Status Survey	08/19/04	18:41:03	1.000
13	Smear 13	08/19/04	18:39:42	WWTB-1-A	Final Status Survey	08/19/04	18:39:42	1.000
14	Smear 14	08/19/04	18:38:22	WWTB-1-A	Final Status Survey	08/19/04	18:38:22	1.000
15	Smear 15	08/19/04	18:37:02	WWTB-1-A	Final Status Survey	08/19/04	18:37:02	1.000
16	Smear 1	08/19/04	18:35:41	WWTB-1-B	Final Status Survey	08/19/04	18:35:41	1.000
17	Smear 2	08/19/04	18:34:21	WWTB-1-B	Final Status Survey	08/19/04	18:34:21	1.000
18	Smear 3	08/19/04	18:33:01	WWTB-1-B	Final Status Survey	08/19/04	18:33:01	1.000
19	Smear 4	08/19/04	18:31:40	WWTB-1-B	Final Status Survey	08/19/04	18:31:40	1.000
20	Smear 5	08/19/04	18:30:20	WWTB-1-B	Final Status Survey	08/19/04	18:30:20	1.000
21	Smear 6	08/19/04	18:29:00	WWTB-1-B	Final Status Survey	08/19/04	18:29:00	1.000
22	Smear 7	08/19/04	18:27:39	WWTB-1-B	Final Status Survey	08/19/04	18:27:39	1.000
23	Smear 8	08/19/04	18:26:19	WWTB-1-B	Final Status Survey	08/19/04	18:26:19	1.000
24	Smear 9	08/19/04	18:24:58	WWTB-1-B	Final Status Survey	08/19/04	18:24:58	1.000
25	Smear 10	08/19/04	18:23:38	WWTB-1-B	Final Status Survey	08/19/04	18:23:38	1.000
26	Smear 11	08/19/04	18:22:18	WWTB-1-B	Final Status Survey	08/19/04	18:22:18	1.000
27	Smear 12	08/19/04	18:20:58	WWTB-1-B	Final Status Survey	08/19/04	18:20:58	1.000
28	Smear 13	08/19/04	18:19:37	WWTB-1-B	Final Status Survey	08/19/04	18:19:37	1.000
29	Smear 14	08/19/04	18:18:17	WWTB-1-B	Final Status Survey	08/19/04	18:18:17	1.000
30	Smear 1	08/19/04	18:16:57	WWTB-1-C	Final Status Survey	08/19/04	18:16:57	1.000
31	Smear 2	08/19/04	18:15:36	WWTB-1-C	Final Status Survey	08/19/04	18:15:36	1.000
32	Smear 3	08/19/04	18:14:16	WWTB-1-C	Final Status Survey	08/19/04	18:14:16	1.000
33	Smear 4	08/19/04	18:12:56	WWTB-1-C	Final Status Survey	08/19/04	18:12:56	1.000
34	Smear 5	08/19/04	18:11:35	WWTB-1-C	Final Status Survey	08/19/04	18:11:35	1.000
35	Smear 6	08/19/04	18:10:15	WWTB-1-C	Final Status Survey	08/19/04	18:10:15	1.000
36	Smear 7	08/19/04	18:08:55	WWTB-1-C	Final Status Survey	08/19/04	18:08:55	1.000
37	Smear 8	08/19/04	18:07:35	WWTB-1-C	Final Status Survey	08/19/04	18:07:35	1.000
38	Smear 9	08/19/04	18:06:14	WWTB-1-C	Final Status Survey	08/19/04	18:06:14	1.000
39	Smear 10	08/19/04	18:04:54	WWTB-1-C	Final Status Survey	08/19/04	18:04:54	1.000
40	Smear 11	08/19/04	18:03:34	WWTB-1-C	Final Status Survey	08/19/04	18:03:34	1.000
41	Smear 12	08/19/04	18:02:13	WWTB-1-C	Final Status Survey	08/19/04	18:02:13	1.000
42	Smear 13	08/19/04	18:00:53	WWTB-1-C	Final Status Survey	08/19/04	18:00:53	1.000
43	Smear 14	08/19/04	17:59:33	WWTB-1-C	Final Status Survey	08/19/04	17:59:33	1.000

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

Technician (sign): *Rob Ellison*

Reviewed By (sign):

Date: 8-19-04

Date:

WWTB-1-C

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 26.96 LLD: 10.06 dpm				Bkg: 0.77 cpm %Eff: 44.73 LLD: 12.61 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	08/19/04	18:55:48	0.00	0.00	0.00	10.06	3.00	2.23	4.99	12.61
2	Smear 2	08/19/04	18:54:27	1.00	1.00	3.71	10.06	0.00	-0.77	-1.71	12.61
3	Smear 3	08/19/04	18:53:07	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
4	Smear 4	08/19/04	18:51:47	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
5	Smear 5	08/19/04	18:50:26	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
6	Smear 6	08/19/04	18:49:06	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
7	Smear 7	08/19/04	18:47:45	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
8	Smear 8	08/19/04	18:46:24	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
9	Smear 9	08/19/04	18:45:04	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
10	Smear 10	08/19/04	18:43:43	1.00	1.00	3.71	10.06	2.00	1.23	2.76	12.61
11	Smear 11	08/19/04	18:42:23	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
12	Smear 12	08/19/04	18:41:03	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
13	Smear 13	08/19/04	18:39:42	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
14	Smear 14	08/19/04	18:38:22	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
15	Smear 15	08/19/04	18:37:02	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
16	Smear 1	08/19/04	18:35:41	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
17	Smear 2	08/19/04	18:34:21	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
18	Smear 3	08/19/04	18:33:01	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
19	Smear 4	08/19/04	18:31:40	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
20	Smear 5	08/19/04	18:30:20	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
21	Smear 6	08/19/04	18:29:00	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
22	Smear 7	08/19/04	18:27:39	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
23	Smear 8	08/19/04	18:26:19	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
24	Smear 9	08/19/04	18:24:58	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
25	Smear 10	08/19/04	18:23:38	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
26	Smear 11	08/19/04	18:22:18	0.00	0.00	0.00	10.06	2.00	1.23	2.76	12.61
27	Smear 12	08/19/04	18:20:58	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
28	Smear 13	08/19/04	18:19:37	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
29	Smear 14	08/19/04	18:18:17	0.00	0.00	0.00	10.06	3.00	2.23	4.99	12.61
30	Smear 1	08/19/04	18:16:57	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
31	Smear 2	08/19/04	18:15:36	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
32	Smear 3	08/19/04	18:14:16	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
33	Smear 4	08/19/04	18:12:56	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
34	Smear 5	08/19/04	18:11:35	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
35	Smear 6	08/19/04	18:10:15	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
36	Smear 7	08/19/04	18:08:55	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
37	Smear 8	08/19/04	18:07:35	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
38	Smear 9	08/19/04	18:06:14	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
39	Smear 10	08/19/04	18:04:54	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
40	Smear 11	08/19/04	18:03:34	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
41	Smear 12	08/19/04	18:02:13	0.00	0.00	0.00	10.06	1.00	0.23	0.52	12.61
42	Smear 13	08/19/04	18:00:53	0.00	0.00	0.00	10.06	0.00	-0.77	-1.71	12.61
43	Smear 14	08/19/04	17:59:33	0.00	0.00	0.00	10.06	3.00	2.23	4.99	12.61

WWTB-1-C

Technician (print): Rob Ellison

Reviewed By (print): Joe Trowbridge

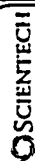
Technician (sign): *Rob Ellison*

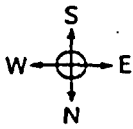
Reviewed By (sign):

Date: 8-19-04

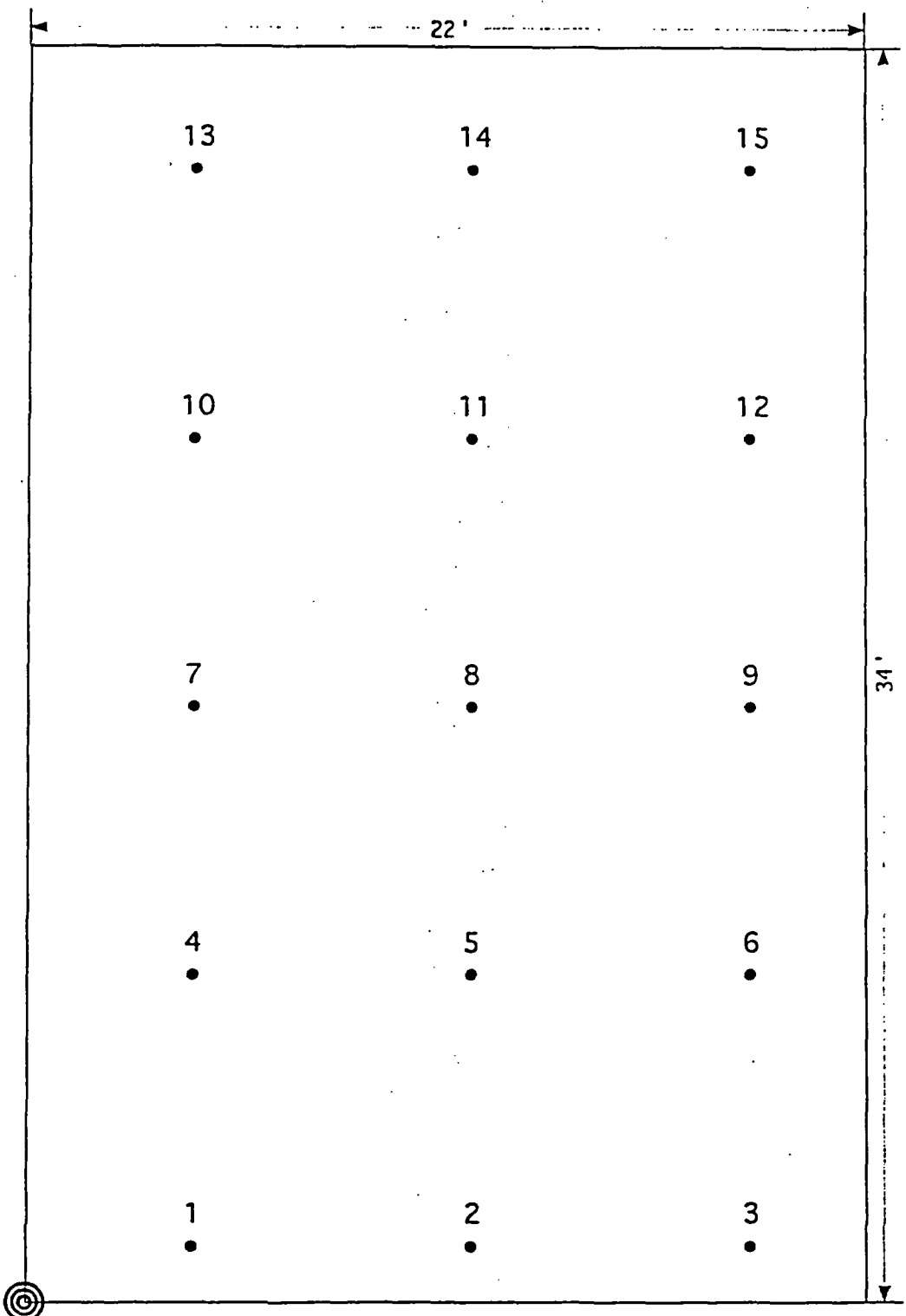
Date:

**WWTB-1-D Waste Water Treatment Building**

Documental Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 <b>SCIENTECH</b> SCIENTECH Inc. 14 WEST STREET NEW MILFORD, CT 06455	PROJECT NO.	21579-0001	FILE NAME:		SCALE	DATE	07/12/2004	By:	CK:	FIGURE	WWTB-1-D
		DRAWING	CLASS 1 Waste Water Treatment Building Ceiling												



• SURVEY POINTS  
 STARTING LOCATION



8-21-04  
 0800  
 1300

**WWTB-1-D**

# WWTB-1-D

Log #
Source
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66

	X	Y
	n/a	n/a
1	4.4	1.5
2	11.7	1.5
3	19.0	1.5
4	4.4	8.8
5	11.7	8.8
6	19.0	8.8
7	4.4	16.1
8	11.7	16.1
9	19.0	16.1
10	4.4	23.4
11	11.7	23.4
12	19.0	23.4
13	4.4	30.7
14	11.7	30.7
15	19.0	30.7

L (ft)= 7.3

A (ft²)= 748

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
184	150	260
161	180	250
165	160	220
172	180	220
143	160	220
180	150	200
140	140	180
160	120	180
162	120	160
164	120	180
168	140	220
155	140	200
137	140	180
157	120	180
163	140	200

Num	Date	Time	Alpha	Beta	WWTB UsrTime	Location
0001	08/19/04	13:21:06	000002	035980	S	001.0 Source Check Beta
0002	08/19/04	13:23:16	002440	000516	S	001.0 Source Check Alpha
0003	08/19/04	14:31:47	000000	000231	S	001.0 WWTB-1-A
0004	08/19/04	15:16:27	000001	000223	S	001.0 WWTB-1-A
0005	08/19/04	15:22:15	000000	000196	S	001.0 WWTB-1-A
0006	08/19/04	15:32:01	000002	000255	S	001.0 WWTB-1-A
0007	08/19/04	15:38:40	000005	000257	S	001.0 WWTB-1-A
0008	08/19/04	15:50:05	000005	000184	S	001.0 WWTB-1-A
0009	08/19/04	16:01:16	000000	000264	S	001.0 WWTB-1-A
0010	08/19/04	16:07:00	000000	000283	S	001.0 WWTB-1-A
0011	08/19/04	16:15:53	000003	000267	S	001.0 WWTB-1-A
0012	08/19/04	16:23:23	000002	000252	S	001.0 WWTB-1-A
0013	08/19/04	16:29:49	000003	000286	S	001.0 WWTB-1-A
0014	08/19/04	16:53:00	000002	000228	S	001.0 WWTB-1-A
0015	08/19/04	16:59:48	000003	000265	S	001.0 WWTB-1-A
0016	08/19/04	17:06:35	000002	000279	S	001.0 WWTB-1-A
0017	08/19/04	17:13:37	000000	000410	S	001.0 WWTB-1-A
0018	08/20/04	07:15:27	000002	035969	S	001.0 Source Check Beta
0019	08/20/04	07:18:00	001945	000501	S	001.0 Source Check Alpha
0020	08/20/04	07:19:33	002476	000566	S	001.0 Source Check Alpha
0021	08/20/04	09:53:31	000002	000149	S	001.0 WWTB-1-B
0022	08/20/04	10:01:52	000001	000136	S	001.0 WWTB-1-B
0023	08/20/04	10:04:40	000001	000119	S	001.0 WWTB-1-B
0024	08/20/04	10:13:20	000003	000136	S	001.0 WWTB-1-B
0025	08/20/04	10:22:32	000001	000122	S	001.0 WWTB-1-B
0026	08/20/04	10:30:22	000000	000128	S	001.0 WWTB-1-B
0027	08/20/04	10:45:31	000001	000128	S	001.0 WWTB-1-B
0028	08/20/04	11:08:10	000001	000146	S	001.0 WWTB-1-B
0029	08/20/04	11:13:41	000002	000185	S	001.0 WWTB-1-B
0030	08/20/04	11:23:46	000000	000196	S	001.0 WWTB-1-B
0031	08/20/04	11:32:57	000002	000176	S	001.0 WWTB-1-B
0032	08/20/04	12:44:36	000004	000162	S	001.0 WWTB-1-B
0033	08/20/04	13:01:04	000000	000162	S	001.0 WWTB-1-B
0034	08/20/04	13:08:36	000000	000117	S	001.0 WWTB-1-B
0035	08/20/04	13:15:53	000001	034701	S	001.0 Source Check
0036	08/20/04	13:40:01	000002	000092	S	001.0 WWTB-1-C
0037	08/20/04	13:47:30	000001	000111	S	001.0 WWTB-1-C
0038	08/20/04	13:54:23	000000	000109	S	001.0 WWTB-1-C
0039	08/20/04	13:59:38	000000	000137	S	001.0 WWTB-1-C
0040	08/20/04	14:08:25	000000	000132	S	001.0 WWTB-1-C
0041	08/20/04	14:13:29	000001	000135	S	001.0 WWTB-1-C
0042	08/20/04	14:18:26	000001	000133	S	001.0 WWTB-1-C
0043	08/20/04	14:24:23	000000	000101	S	001.0 WWTB-1-C
0044	08/20/04	14:30:13	000001	000121	S	001.0 WWTB-1-C
0045	08/20/04	14:33:57	000000	000101	S	001.0 WWTB-1-C
0046	08/20/04	14:39:34	000001	000129	S	001.0 WWTB-1-C
0047	08/20/04	14:46:22	000000	000136	S	001.0 WWTB-1-C
0048	08/20/04	14:53:10	000002	000165	S	001.0 WWTB-1-C
0049	08/20/04	14:57:37	000002	000171	S	001.0 WWTB-1-C
0050	08/21/04	07:21:24	000000	037754	S	001.0 Source Check Beta
0051	08/21/04	07:23:47	002489	000693	S	001.0 Source Check Alpha
0052	08/21/04	09:05:30	000000	000184	S	001.0 WWTB-1-D
0053	08/21/04	09:33:41	000001	000161	S	001.0 WWTB-1-D
0054	08/21/04	09:39:35	000001	000165	S	001.0 WWTB-1-D
0055	08/21/04	09:48:31	000000	000172	S	001.0 WWTB-1-D
0056	08/21/04	09:59:00	000001	000143	S	001.0 WWTB-1-D
0057	08/21/04	10:15:51	000000	000180	S	001.0 WWTB-1-D
0058	08/21/04	10:22:15	000001	000140	S	001.0 WWTB-1-D
0059	08/21/04	10:29:26	000000	000160	S	001.0 WWTB-1-D
0060	08/21/04	10:36:03	000002	000162	S	001.0 WWTB-1-D
0061	08/21/04	10:45:22	000000	000164	S	001.0 WWTB-1-D



WWTB  
0062 08/21/04 10:53:55 000001 000168 S 001.0 WWTB-1-D  
0063 08/21/04 11:05:05 000000 000155 S 001.0 WWTB-1-D  
0064 08/21/04 11:13:51 000001 000137 S 001.0 WWTB-1-D  
0065 08/21/04 11:28:21 000000 000157 S 001.0 WWTB-1-D  
0066 08/21/04 11:37:14 000003 000163 S 001.0 WWTB-1-D  
\$

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
32	Smear 1	08/24/04	10:59:05	WWTB-1D	Final Status Survey	08/24/04	10:59:05	1.000	1.00
33	Smear 2	08/24/04	10:57:44	WWTB-1D	Final Status Survey	08/24/04	10:57:44	1.000	1.00
34	Smear 3	08/24/04	10:56:24	WWTB-1D	Final Status Survey	08/24/04	10:56:24	1.000	1.00
35	Smear 4	08/24/04	10:55:04	WWTB-1D	Final Status Survey	08/24/04	10:55:04	1.000	1.00
36	Smear 5	08/24/04	10:53:43	WWTB-1D	Final Status Survey	08/24/04	10:53:43	1.000	1.00
37	Smear 6	08/24/04	10:52:23	WWTB-1D	Final Status Survey	08/24/04	10:52:23	1.000	1.00
38	Smear 7	08/24/04	10:51:02	WWTB-1D	Final Status Survey	08/24/04	10:51:02	1.000	1.00
39	Smear 8	08/24/04	10:49:42	WWTB-1D	Final Status Survey	08/24/04	10:49:42	1.000	1.00
40	Smear 9	08/24/04	10:48:21	WWTB-1D	Final Status Survey	08/24/04	10:48:21	1.000	1.00
41	Smear 10	08/24/04	10:47:01	WWTB-1D	Final Status Survey	08/24/04	10:47:01	1.000	1.00
42	Smear 11	08/24/04	10:45:41	WWTB-1D	Final Status Survey	08/24/04	10:45:41	1.000	1.00
43	Smear 12	08/24/04	10:44:20	WWTB-1D	Final Status Survey	08/24/04	10:44:20	1.000	1.00
44	Smear 13	08/24/04	10:43:00	WWTB-1D	Final Status Survey	08/24/04	10:43:00	1.000	1.00
45	Smear 14	08/24/04	10:41:40	WWTB-1D	Final Status Survey	08/24/04	10:41:40	1.000	1.00
46	Smear 15	08/24/04	10:40:19	WWTB-1D	Final Status Survey	08/24/04	10:40:19	1.000	1.00
47	Smear 16	08/24/04	10:38:59	WWTB-1D	Final Status Survey	08/24/04	10:38:59	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 8-24-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 27.39 LLD: 12.12 dpm				Bkg: 0.43 cpm %Eff: 44.77 LLD: 10.97 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
32	Smear 1	08/24/04	10:59:05	0.00	-0.03	-0.12	12.12	1.00	0.57	1.27	10.97
33	Smear 2	08/24/04	10:57:44	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97
34	Smear 3	08/24/04	10:56:24	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97
35	Smear 4	08/24/04	10:55:04	1.00	0.97	3.53	12.12	2.00	1.57	3.50	10.97
36	Smear 5	08/24/04	10:53:43	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97
37	Smear 6	08/24/04	10:52:23	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97
38	Smear 7	08/24/04	10:51:02	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97
39	Smear 8	08/24/04	10:49:42	0.00	-0.03	-0.12	12.12	1.00	0.57	1.27	10.97
40	Smear 9	08/24/04	10:48:21	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97
41	Smear 10	08/24/04	10:47:01	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97
42	Smear 11	08/24/04	10:45:41	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97
43	Smear 12	08/24/04	10:44:20	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97
44	Smear 13	08/24/04	10:43:00	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97
45	Smear 14	08/24/04	10:41:40	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97
46	Smear 15	08/24/04	10:40:19	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97
47	Smear 16	08/24/04	10:38:59	0.00	-0.03	-0.12	12.12	0.00	-0.43	-0.97	10.97

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

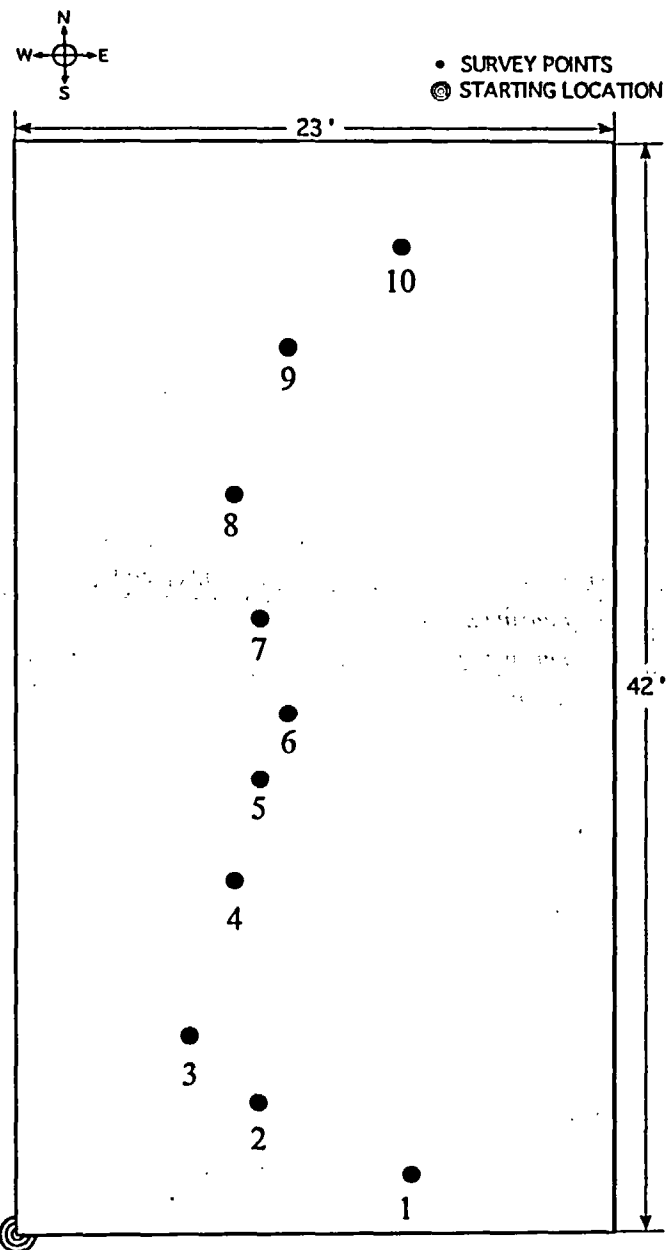
Date: 8-24-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign):

Date:

**Storage Building**



Document Control No.	
REVISION NO.	
PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD
DRAWING	UNIMPACTED Storage Building West of RB - Floor
 SCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06776	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/12/2004
By:	CK:
FIGURE: STOR-FLOOR	

**General Area**  
West of RB

**Survey Unit**  
STOR-3-A

**Class**  
3

**Part**  
Floor

**Material**  
Concrete

**Size**  
966 ft<sup>2</sup>

Beta Directs (dpm/100 cm <sup>2</sup> )			Beta Scans (dpm/100 cm <sup>2</sup> )		Smears (dpm/100 cm <sup>2</sup> )		Gross Exposure Rate ( $\mu$ R/hour)				
N	Net Activity	Sigma	Net Average	Net Maximum	Net Activity	Sigma					
1	156	59	165	248	-1	1		6			
2	152	59	165	248	-1	1		6			
3	256	62	248	332	4	6		6			
4	194	60	248	332	1	4		7			
5	227	61	248	332	-1	1		6			
6	327	65	332	415	1	4		7			
7	286	63	332	415	-1	1		5			
8	281	63	248	332	-1	1		6			
9	336	65	332	415	-1	1		7			
10	336	65	332	415	6	8		6			
Average:	255				Average:	1	Average:	6			
Maximum:	336				Maximum:	6	Maximum:	7			
Minimum:	152				Minimum:	-1	Minimum:	5			
Survey Date	12/15/2004		Survey Date	12/15/2004		Survey Date	12/16/2004		Survey Date	12/15/200	
Inst. Model	M2360		Inst. Model	M2360		Inst. Model	WPC-9550		Inst. Model	M19	
Probe Model	M43-93		Probe Model	M43-93							
Probe Area	100 cm <sup>2</sup>		Probe Area	100 cm <sup>2</sup>		Ei	0.446 cpm/dpm		Background	4.5 $\mu$ R/hour	
	Ei	0.479 cpm/cpm		Ei	0.479 cpm/cpm	Background	0.43 cpm		Bkg $\sigma$	0.52 $\mu$ R/hour	
	Es	0.5 epm/dpm		Es	0.5 epm/dpm	Bkg $\sigma$	0.12 cpm				
						MDC	11 dpm/100 cm <sup>2</sup>				
Background	160.6 cpm		Background	160.6 cpm							
Bkg $\sigma$	10 cpm		Bkg $\sigma$	10 cpm							
MDC	259 dpm/100 cm <sup>2</sup>		MDC	800 dpm/100 cm <sup>2</sup>							

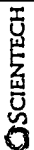
3  
STOR-A

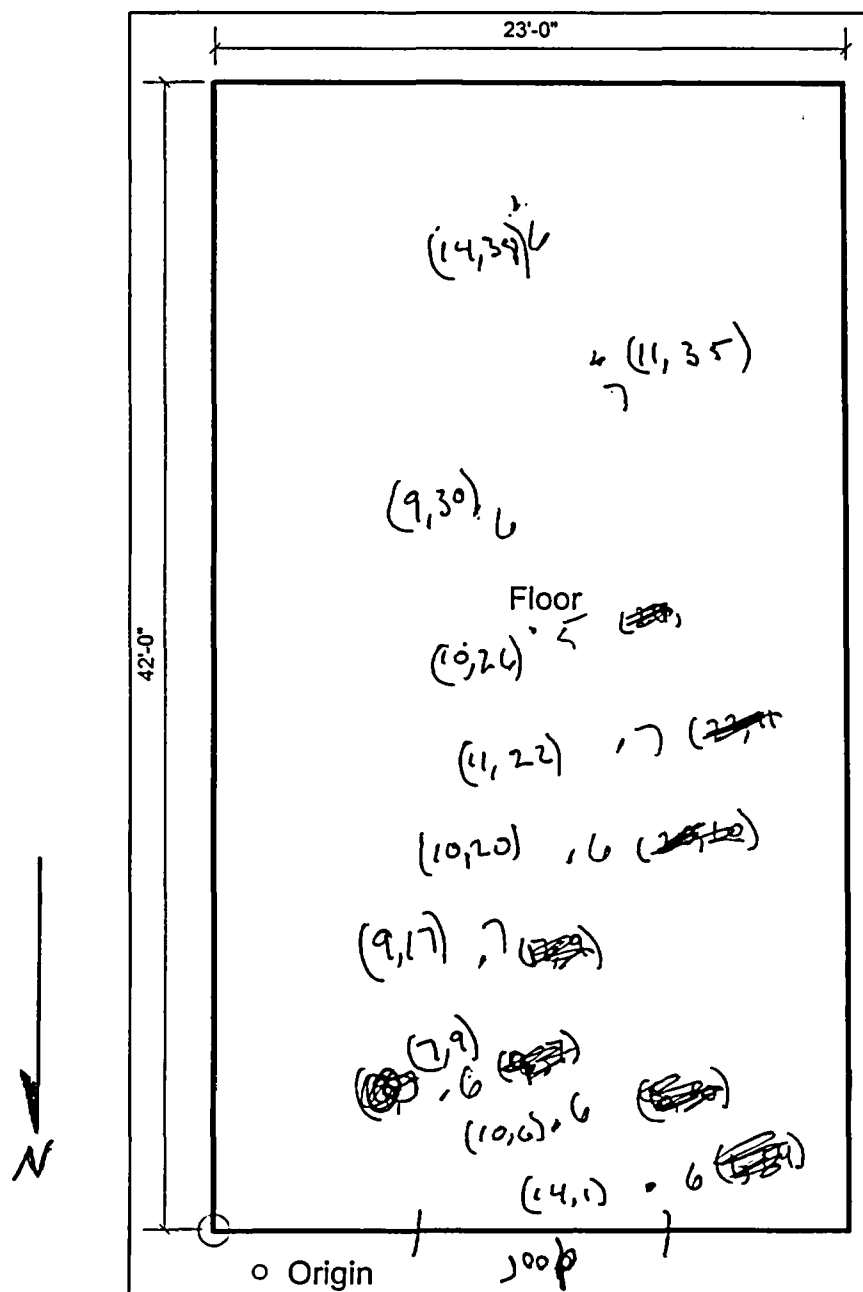
Log #
Source
7
5
6
7
8
9
10
11
12
13
<del>14</del>
<del>15</del>
11

	X	Y
	n/a	n/a
1	14	1
2	10	6
3	7	9
4	9	17
5	10	20
6	11	22
7	10	26
8	9	30
9	11	35
10	14	38
11		
12		
13		
14		
15		

Fixed Points	Ave. (Scan)	Max. (Scan)
	n/a	n/a
199	200	220
197	200	220
223	220	240
212	220	240
214	220	240
241	240	260
231	240	260
224	220	240
243	240	260
242	240	260

3-BKGP

Document Control No.	REVISION NO.	PROJECT	QUEHANNA DECOMMISSIONING KARTHAUS, PENNSYLVANIA 115 REACTOR ROAD	 OSCIENTECH, Inc. 143 WEST STREET NEW MILFORD, CT 06458	PROJECT NO.	23579-0501	FILE NAME:		SCALE:	N.T.S.	DATE:	12/08/2004	By:	ah	FIGURE:	STOR-NA
		DRAWING	Storage Building West of RB - Floor													





**Ludlum Measurements, Inc.**  
**Model 2360 Log Data**

---

Date: 12/15/2004  
Time: 3:57:42 PM

Header 1: Chris Higgins  
Header 2: Serial#202433  
Header 3: DetSer#208664  
Header 4: Quehanna  
Header 5: Karthaus, PA  
Header 6: FSS  
Location: STOR-3-A  
Calibration Due Date: 04/13/2005  
Model 2360 Date: 12/15/2004  
Model 2360 Time: 15:58:28  
Sample Number: 0015

User PC Time: 001.0  
Alpha Ratemeter Alarm: 999999  
Beta Ratemeter Alarm: 000400  
Alpha + Beta Ratemeter Alarm: 000400  
Alpha Scaler Alarm: 999999  
Beta Scaler Alarm: 000400  
Alpha + Beta Scaler Alarm: 000400

CntTime - Count Time  
R meter  
S er

Log Data:

Num	Date	Time	Alpha	Beta	UsrTime	Location
					CntTime	

0001	12/15/04	15:04:45	000000	000184	S 001.0	Lab Background
0002	12/15/04	15:05:56	000000	034571	S 001.0	Lab Source
0003	12/15/04	15:36:16	000000	000214	S 001.0	Field Source
0004	12/15/04	15:37:56	000000	000198	S 001.0	STOR-3-A
0005	12/15/04	15:41:05	000000	000197	S 001.0	STOR-3-A
0006	12/15/04	15:42:09	000001	000222	S 001.0	STOR-3-A
0007	12/15/04	15:43:27	000005	000207	S 001.0	STOR-3-A
0008	12/15/04	15:44:36	000001	000215	S 001.0	STOR-3-A
0009	12/15/04	15:45:45	000002	000239	S 001.0	STOR-3-A
0010	12/15/04	15:46:51	000002	000229	S 001.0	STOR-3-A
0011	12/15/04	15:48:40	000000	000228	S 001.0	STOR-3-A
0012	12/15/04	15:50:07	000002	000241	S 001.0	STOR-3-A
0013	12/15/04	15:51:13	000001	000241	S 001.0	STOR-3-A
0014	12/15/04	15:58:13	000000	001562	S 001.0	Field Source

S

**APPENDIX F**  
**BACKUP DATA – LAND AREAS**

## APPENDIX F - BACKUP DATA - LAND AREAS

Appendix F contains the ATL analytical reports for the final status survey surface and subsurface soil samples from throughout the Quehanna site. Maps of the outside area survey units showing soil sample locations also included in Appendix C. The reports included are summarized in the following table.

Survey Unit	Sample Type	Sample ID Numbers	Report Date	Report Number
Class 1	Surface	1-01 - 1-16	12/17/2004	1
Class 2	Surface	C2-01 - C2-12	12/17/2004	2, 3
Class 3	Surface	C3-01 - C3-23	12/17/2004	2, 4
Class 3	Surface	CW-001 - CW-008	11/8/2004	5
Class 3	Surface	PLC-01 & PLC-02	12/17/2004	2
Class 3	Sediments	Pond-01, -02, -03	7/8/2004	6
Site-wide	Subsurface	DS-01 - DS-32A	11/24/2004	2, 7

The ATL reports provided in this appendix also include the results from additional samples not listed above. These samples were not part of the final status survey. Areas where soil samples showed elevated strontium-90 concentrations were remediated.

**ATL REPORT No. 1**

**ATL International, Inc.**  
**Radioanalytical Laboratory**

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100 Century Blvd.  
Suite 500  
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301-972-4430  
301-972-6904 (fax)

Laboratory  
8146 Beechcraft Ave.  
Gaithersburg, MD 20879  
[atl-lab@atlintl.com](mailto:atl-lab@atlintl.com)  
301-947-4455  
301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 11/23/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 01/06/2005  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
1-01	STPA223	GFPC	2.05 g	Sr-90	2.82E-01	2.77E-01	6.58E-01	pCi/g	
		Gamma Spec.	417.54 g	Co-60	-6.216E-04	7.636E-03	1.189E-02	pCi/g	U
		Gamma Spec.	417.54 g	Cs-137	5.423E-02	1.337E-02	8.833E-03	pCi/g	
		Gamma Spec.	417.54 g	K-40	7.702E+00	5.486E-01	6.142E-02	pCi/g	
1-02	STPA224	GFPC	2.18 g	Sr-90	3.90E-01	2.65E-01	6.18E-01	pCi/g	
		Gamma Spec.	415.75 g	Co-60	-9.699E-04	7.263E-03	1.092E-02	pCi/g	U
		Gamma Spec.	415.75 g	Cs-137	4.910E-02	1.120E-02	8.924E-03	pCi/g	
		Gamma Spec.	415.75 g	K-40	8.399E+00	5.773E-01	7.626E-02	pCi/g	
1-03	STPA225	GFPC	2.14 g	Sr-90	3.64E-01	2.25E-01	6.31E-01	pCi/g	
		Gamma Spec.	502.57 g	Co-60	3.009E-03	2.050E-02	3.813E-02	pCi/g	U
		Gamma Spec.	502.57 g	Cs-137	4.684E-02	3.128E-02	2.108E-02	pCi/g	
		Gamma Spec.	502.57 g	K-40	6.904E+00	9.581E-01	2.261E-01	pCi/g	

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**Radioanalytical Laboratory**

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301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 11/23/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 01/06/2005  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
1-04	STPA226	GFPC	2.39 g	Sr-90	-8.97E-02	1.87E-01	5.64E-01	pCi/g	
		Gamma Spec.	485.94 g	Co-60	-1.376E-02	1.533E-02	2.422E-02	pCi/g	U
		Gamma Spec.	485.94 g	Cs-137	2.693E-02	3.001E-02	5.564E-02	pCi/g	U
		Gamma Spec.	485.94 g	K-40	9.116E+00	1.067E+00	2.700E-01	pCi/g	
1-05	STPA227	GFPC	2.55 g	Sr-90	3.34E-01	1.90E-01	5.29E-01	pCi/g	
		Gamma Spec.	452 g	Co-60	-9.545E-03	2.304E-02	3.881E-02	pCi/g	U
		Gamma Spec.	452 g	Cs-137	6.784E-02	3.492E-02	4.897E-02	pCi/g	
		Gamma Spec.	452 g	K-40	8.558E+00	1.097E+00	2.514E-01	pCi/g	
1-06	STPA228	GFPC	2.22 g	Sr-90	3.80E-01	2.00E-01	6.08E-01	pCi/g	
		Gamma Spec.	450.75 g	Co-60	-1.065E-03	1.884E-02	3.535E-02	pCi/g	U
		Gamma Spec.	450.75 g	Cs-137	2.887E-02	2.661E-02	5.184E-02	pCi/g	U
		Gamma Spec.	450.75 g	K-40	8.593E+00	1.084E+00	2.604E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 11/23/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I

Report Due: 01/06/2005

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
1-07	STPA229	GFPC	2.23 g	Sr-90	-4.25E-02	1.59E-01	6.06E-01	pCi/g	
		Gamma Spec.	241.13 g	Co-60	-5.421E-03	1.230E-02	1.854E-02	pCi/g	U
		Gamma Spec.	241.13 g	Cs-137	3.621E-02	1.850E-02	1.222E-02	pCi/g	
		Gamma Spec.	241.13 g	K-40	5.221E+00	4.572E-01	1.123E-01	pCi/g	
1-08	STPA230	GFPC	2.55 g	Sr-90	2.18E-01	1.63E-01	5.30E-01	pCi/g	
		Gamma Spec.	495.56 g	Co-60	9.307E-03	1.727E-02	3.375E-02	pCi/g	U
		Gamma Spec.	495.56 g	Cs-137	5.114E-02	3.897E-02	2.864E-02	pCi/g	
		Gamma Spec.	495.56 g	K-40	8.746E+00	9.814E-01	1.790E-01	pCi/g	
1-09	STPA231	GFPC	2.26 g	Sr-90	-4.58E-02	1.72E-01	5.97E-01	pCi/g	
		Gamma Spec.	482.97 g	Co-60	-3.199E-03	2.647E-02	4.131E-02	pCi/g	U
		Gamma Spec.	482.97 g	Cs-137	3.772E-03	2.054E-02	3.872E-02	pCi/g	U
		Gamma Spec.	482.97 g	K-40	1.073E+01	1.185E+00	2.353E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 11/23/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I

Report Due: 01/06/2005  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
1-10	STPA232	GFPC	2.46 g	Sr-90	3.10E-01	1.91E-01	5.49E-01	pCi/g	
		Gamma Spec.	480.6 g	Co-60	-4.896E-03	2.067E-02	3.526E-02	pCi/g	U
		Gamma Spec.	480.6 g	Cs-137	1.551E-02	2.118E-02	3.713E-02	pCi/g	U
		Gamma Spec.	480.6 g	K-40	1.590E+01	1.507E+00	2.976E-01	pCi/g	
1-11	STPA233	GFPC	2.67 g	Sr-90	1.24E-01	1.81E-01	5.05E-01	pCi/g	
		Gamma Spec.	382.33 g	Co-60	-4.717E-03	7.580E-03	1.096E-02	pCi/g	U
		Gamma Spec.	382.33 g	Cs-137	9.851E-02	1.411E-02	8.256E-03	pCi/g	
		Gamma Spec.	382.33 g	K-40	7.223E+00	5.096E-01	6.862E-02	pCi/g	
1-12	STPA234	GFPC	2.06 g	Sr-90	2.32E-01	1.98E-01	6.56E-01	pCi/g	
		Gamma Spec.	458.48 g	Co-60	2.674E-02	2.296E-02	4.119E-02	pCi/g	U
		Gamma Spec.	458.48 g	Cs-137	2.861E-01	4.854E-02	2.897E-02	pCi/g	
		Gamma Spec.	458.48 g	K-40	8.248E+00	9.740E-01	1.730E-01	pCi/g	



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## REPORT OF ANALYTICAL RESULTS

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 11/23/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 01/06/2005

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

### RESULTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
1-13	STPA235	GFPC	2.39 g	Sr-90	4.48E-01	1.96E-01	5.65E-01	pCi/g	
		Gamma Spec.	468.43 g	Co-60	1.860E-02	2.574E-02	4.913E-02	pCi/g	U
		Gamma Spec.	468.43 g	Cs-137	2.363E-01	4.941E-02	2.963E-02	pCi/g	
		Gamma Spec.	468.43 g	K-40	9.684E+00	1.205E+00	2.426E-01	pCi/g	
1-14	STPA236	GFPC	2.25 g	Sr-90	-1.01E-02	1.62E-01	6.00E-01	pCi/g	
		Gamma Spec.	452.18 g	Co-60	9.462E-04	1.920E-02	3.483E-02	pCi/g	U
		Gamma Spec.	452.18 g	Cs-137	2.423E-01	4.529E-02	2.829E-02	pCi/g	
		Gamma Spec.	452.18 g	K-40	7.761E+00	9.807E-01	2.774E-01	pCi/g	
1-15	STPA237	GFPC	2.54 g	Sr-90	1.10E-01	1.61E-01	5.32E-01	pCi/g	
		Gamma Spec.	470.7 g	Co-60	1.719E-02	2.454E-02	3.595E-02	pCi/g	U
		Gamma Spec.	470.7 g	Cs-137	2.136E-01	4.464E-02	2.351E-02	pCi/g	
		Gamma Spec.	470.7 g	K-40	1.072E+01	1.260E+00	1.971E-01	pCi/g	

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REPORT OF ANALYTICAL RESULTS

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

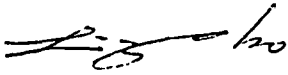
Sample Date: 11/23/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 01/06/2005

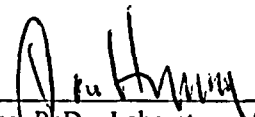
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

RESULTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
1-16	STPA238	GFPC	2.24 g	Sr-90	-7.45E-02	1.55E-01	6.03E-01	pCi/g	
		Gamma Spec.	484.43 g	Co-60	-8.967E-03	2.238E-02	3.761E-02	pCi/g	U
		Gamma Spec.	484.43 g	Cs-137	7.654E-02	3.216E-02	3.232E-02	pCi/g	
		Gamma Spec.	484.43 g	K-40	1.187E+01	1.280E+00	3.128E-01	pCi/g	

ATL warrants that these analytical results were obtained in accordance with ATL Radioanalytical Laboratory Procedures and Quality Assurance Program. ATL makes no other warranty, expressed or implied, including fitness for any particular purpose.

 12/17/04  
Zhibo (David) Lin - Radiochemist

 12/20/04  
Jou Hwang, PhD - Laboratory Manager

**ATL REPORT No. 2**

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/22/2004 - 11/05/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/24/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-26A	STPA174	GFPC	2.12 g	Sr-90	6.16E-02	1.91E-01	6.37E-01	pCi/g	
		Gamma Spec.	504.26 g	Co-60	-1.705E-02	2.038E-02	3.131E-02	pCi/g	U
		Gamma Spec.	504.26 g	Cs-137	-1.236E-02	1.869E-02	2.800E-02	pCi/g	U
		Gamma Spec.	504.26 g	K-40	1.185E+01	2.360E-01	2.360E-01	pCi/g	
DS-26B	STPA175	GFPC	2.16 g	Sr-90	6.28E-02	1.94E-01	6.25E-01	pCi/g	
		Gamma Spec.	506.05 g	Co-60	8.117E-04	2.239E-02	4.026E-02	pCi/g	U
		Gamma Spec.	506.05 g	Cs-137	-1.708E-02	2.028E-02	3.394E-02	pCi/g	U
		Gamma Spec.	506.05 g	K-40	7.295E+00	9.557E-01	1.296E-01	pCi/g	
DS-27A	STPA176	GFPC	2.01 g	Sr-90	-5.45E-02	2.05E-01	6.71E-01	pCi/g	
		Gamma Spec.	506.69 g	Co-60	-3.909E-03	1.923E-02	2.929E-02	pCi/g	U
		Gamma Spec.	506.69 g	Cs-137	-1.284E-03	1.674E-02	2.705E-02	pCi/g	U
		Gamma Spec.	506.69 g	K-40	8.459E+00	9.769E-01	2.626E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/22/2004 - 11/05/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/24/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-28A	STPA177	GFPC	2.09 g	Sr-90	2.60E-02	1.93E-01	6.46E-01	pCi/g	
		Gamma Spec.	502.72 g	Co-60	1.528E-02	2.362E-02	3.825E-02	pCi/g	U
		Gamma Spec.	502.72 g	Cs-137	1.850E-02	2.386E-02	4.544E-02	pCi/g	U
		Gamma Spec.	502.72 g	K-40	9.167E+00	1.074E+00	2.260E-01	pCi/g	
DS-28B	STPA178	GFPC	2.17 g	Sr-90	6.25E-02	1.93E-01	6.22E-01	pCi/g	
		Gamma Spec.	505.05 g	Co-60	6.583E-04	2.162E-02	3.800E-02	pCi/g	U
		Gamma Spec.	505.05 g	Cs-137	1.105E-02	1.879E-02	3.266E-02	pCi/g	U
		Gamma Spec.	505.05 g	K-40	1.896E+01	1.680E+00	3.423E-01	pCi/g	
DS-29A	STPA179	GFPC	2.15 g	Sr-90	2.54E-02	1.89E-01	6.28E-01	pCi/g	
		Gamma Spec.	502.18 g	Co-60	-3.025E-02	2.162E-02	2.873E-02	pCi/g	U
		Gamma Spec.	502.18 g	Cs-137	-8.032E-03	2.239E-02	3.903E-02	pCi/g	U
		Gamma Spec.	502.18 g	K-40	4.658E+00	8.960E-01	2.263E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 10/22/2004 - 11/05/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/24/2004

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**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-30A	STPA180	GFPC	2.13 g	Sr-90	1.79E-01	2.09E-01	6.34E-01	pCi/g	
		Gamma Spec.	493.66 g	Co-60	-1.865E-02	1.569E-02	2.199E-02	pCi/g	U
		Gamma Spec.	493.66 g	Cs-137	1.362E-02	1.593E-02	2.888E-02	pCi/g	U
		Gamma Spec.	493.66 g	K-40	6.289E+00	8.507E-01	1.968E-01	pCi/g	
DS-31A	STPA181	GFPC	2.14 g	Sr-90	2.63E-02	1.96E-01	6.31E-01	pCi/g	
		Gamma Spec.	505.33 g	Co-60	-7.381E-03	2.172E-02	3.300E-02	pCi/g	U
		Gamma Spec.	505.33 g	Cs-137	-1.083E-02	1.947E-02	3.396E-02	pCi/g	U
		Gamma Spec.	505.33 g	K-40	6.048E+00	8.933E-01	1.298E-01	pCi/g	
DS-31B	STPA182	GFPC	2.07 g	Sr-90	-2.93E-01	1.48E-01	6.53E-01	pCi/g	
		Gamma Spec.	504.20 g	Co-60	-2.356E-03	1.850E-02	3.233E-02	pCi/g	U
		Gamma Spec.	504.20 g	Cs-137	8.094E-03	1.634E-02	2.836E-02	pCi/g	U
		Gamma Spec.	504.20 g	K-40	7.381E+00	9.134E-01	1.523E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/22/2004 - 11/05/2004  
Matrix: Soil/Sediment  
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Report Level: QA-I  
Report Due: 12/24/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-32A	STPA183	GFPC	2.15 g	Sr-90	1.62E-01	1.92E-01	6.28E-01	pCi/g	
		Gamma Spec.	502.31 g	Co-60	7.936E-04	2.335E-02	4.175E-02	pCi/g	U
		Gamma Spec.	502.31 g	Cs-137	-1.317E-02	2.326E-02	3.946E-02	pCi/g	U
		Gamma Spec.	502.31 g	K-40	1.379E+01	1.426E+00	2.921E-01	pCi/g	
PLC-01	STPA184	GFPC	2.09 g	Sr-90	2.46E-02	1.83E-01	6.46E-01	pCi/g	
		Gamma Spec.	506.67 g	Co-60	-7.978E-03	1.903E-02	2.789E-02	pCi/g	U
		Gamma Spec.	506.67 g	Cs-137	-2.603E-03	1.657E-02	2.648E-02	pCi/g	U
		Gamma Spec.	506.67 g	K-40	1.148E+01	1.199E+00	3.321E-01	pCi/g	
PLC-02	STPA185	GFPC	2.10 g	Sr-90	5.90E-02	1.83E-01	6.43E-01	pCi/g	
		Gamma Spec.	504.74 g	Co-60	4.861E-03	2.385E-02	4.350E-02	pCi/g	U
		Gamma Spec.	504.74 g	Cs-137	9.823E-03	2.136E-02	4.053E-02	pCi/g	U
		Gamma Spec.	504.74 g	K-40	1.165E+01	1.280E+00	2.600E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/22/2004 - 11/05/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/24/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C2-01	STPA186	GFPC	2.06 g	Sr-90	-2.96E-01	1.49E-01	6.56E-01	pCi/g	
		Gamma Spec.	455.16 g	Co-60	-2.035E-04	2.010E-02	3.742E-02	pCi/g	U
		Gamma Spec.	455.16 g	Cs-137	1.406E-01	4.047E-02	1.953E-02	pCi/g	
		Gamma Spec.	455.16 g	K-40	4.827E+00	7.737E-01	2.038E-01	pCi/g	
C2-02	STPA187	GFPC	2.28 g	Sr-90	-7.86E-02	1.64E-01	5.92E-01	pCi/g	
		Gamma Spec.	465.79 g	Co-60	-5.384E-03	1.826E-02	3.138E-02	pCi/g	U
		Gamma Spec.	465.79 g	Cs-137	1.326E-01	3.624E-02	2.905E-02	pCi/g	
		Gamma Spec.	465.79 g	K-40	3.141E+00	5.634E-01	1.904E-01	pCi/g	
C2-03	STPA188	GFPC	2.13 g	Sr-90	-9.64E-02	2.01E-01	6.33E-01	pCi/g	
		Gamma Spec.	451.30 g	Co-60	-1.282E-02	1.935E-02	3.087E-02	pCi/g	U
		Gamma Spec.	451.30 g	Cs-137	3.050E-01	5.001E-02	2.889E-02	pCi/g	
		Gamma Spec.	451.30 g	K-40	6.494E+00	8.754E-01	2.486E-01	pCi/g	



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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/22/2004 - 11/05/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/24/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C2-04	STPA189	GFPC	2.11 g	Sr-90	-1.43E-02	2.30E-01	6.39E-01	pCi/g	
		Gamma Spec.	456.16 g	Co-60	-1.535E-02	2.085E-02	3.268E-02	pCi/g	U
		Gamma Spec.	456.16 g	Cs-137	2.182E-01	4.658E-02	2.915E-02	pCi/g	
		Gamma Spec.	456.16 g	K-40	6.883E+00	8.987E-01	2.609E-01	pCi/g	
C2-05	STPA190	GFPC	2.21 g	Sr-90	-1.09E-02	1.76E-01	6.11E-01	pCi/g	
		Gamma Spec.	453.87 g	Co-60	3.156E-03	1.962E-02	3.608E-02	pCi/g	U
		Gamma Spec.	453.87 g	Cs-137	1.697E-01	4.431E-02	3.029E-02	pCi/g	
		Gamma Spec.	453.87 g	K-40	7.309E+00	9.681E-01	2.764E-01	pCi/g	
C2-06	STPA191	GFPC	2.18 g	Sr-90	9.82E-02	1.94E-01	6.19E-01	pCi/g	
		Gamma Spec.	455.03 g	Co-60	-7.605E-03	2.144E-02	3.690E-02	pCi/g	U
		Gamma Spec.	455.03 g	Cs-137	1.322E-01	4.213E-02	3.295E-02	pCi/g	
		Gamma Spec.	455.03 g	K-40	6.929E+00	9.535E-01	2.497E-01	pCi/g	

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301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/22/2004 - 11/05/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/24/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C2-07	STPA192	GFPC	2.07 g	Sr-90	5.99E-02	1.85E-01	6.52E-01	pCi/g	
		Gamma Spec.	482.36 g	Co-60	-6.652E-03	2.036E-02	3.428E-02	pCi/g	U
		Gamma Spec.	482.36 g	Cs-137	1.198E-02	1.839E-02	3.231E-02	pCi/g	U
		Gamma Spec.	482.36 g	K-40	9.050E+00	1.037E+00	2.600E-01	pCi/g	
C2-08	STPA193	GFPC	2.17 g	Sr-90	2.37E-02	1.76E-01	6.22E-01	pCi/g	
		Gamma Spec.	507.68 g	Co-60	1.394E-03	2.300E-02	3.810E-02	pCi/g	U
		Gamma Spec.	507.68 g	Cs-137	5.822E-03	2.198E-02	4.073E-02	pCi/g	U
		Gamma Spec.	507.68 g	K-40	8.038E+00	1.026E+00	2.984E-01	pCi/g	
C3-01	STPA194	GFPC	2.25 g	Sr-90	2.33E-02	1.73E-01	6.00E-01	pCi/g	
		Gamma Spec.	500.90 g	Co-60	-2.388E-03	2.053E-02	3.663E-02	pCi/g	U
		Gamma Spec.	500.90 g	Cs-137	1.314E-01	3.920E-02	2.836E-02	pCi/g	
		Gamma Spec.	500.90 g	K-40	7.385E+00	9.611E-01	2.929E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 10/22/2004 - 11/05/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/24/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C3-02	STPA195	GFPC	2.03 g	Sr-90	5.11E-01	2.70E-01	6.64E-01	pCi/g	
		Gamma Spec.	453.71 g	Co-60	-5.506E-03	2.468E-02	3.395E-02	pCi/g	U
		Gamma Spec.	453.71 g	Cs-137	2.520E-01	5.305E-02	3.184E-02	pCi/g	
		Gamma Spec.	453.71 g	K-40	6.596E+00	9.297E-01	1.446E-01	pCi/g	
C3-03	STPA196	GFPC	2.18 g	Sr-90	3.26E-01	2.21E-01	6.19E-01	pCi/g	
		Gamma Spec.	489.03 g	Co-60	-3.311E-03	1.829E-02	2.990E-02	pCi/g	U
		Gamma Spec.	489.03 g	Cs-137	1.926E-01	5.143E-02	3.037E-02	pCi/g	
		Gamma Spec.	489.03 g	K-40	7.034E+00	9.061E-01	2.690E-01	pCi/g	
C3-04	STPA197	GFPC	2.02 g	Sr-90	-4.99E-02	1.87E-01	6.68E-01	pCi/g	
		Gamma Spec.	505.85 g	Co-60	2.915E-03	2.205E-02	3.904E-02	pCi/g	U
		Gamma Spec.	505.85 g	Cs-137	1.922E-01	4.549E-02	2.806E-02	pCi/g	
		Gamma Spec.	505.85 g	K-40	7.158E+00	9.701E-01	1.297E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/22/2004 - 11/05/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/24/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C3-05	STPA198	GFPC	2.05 g	Sr-90	2.67E-02	1.98E-01	6.58E-01	pCi/g	
		Gamma Spec.	457.52 g	Co-60	-5.260E-03	2.064E-02	3.531E-02	pCi/g	U
		Gamma Spec.	457.52 g	Cs-137	2.923E-01	4.384E-02	2.746E-02	pCi/g	
		Gamma Spec.	457.52 g	K-40	6.516E+00	8.654E-01	2.875E-01	pCi/g	
C3-06	STPA199	GFPC	2.05 g	Sr-90	1.62E-01	2.37E-01	6.58E-01	pCi/g	
		Gamma Spec.	513.77 g	Co-60	-2.944E-03	1.606E-02	2.961E-02	pCi/g	U
		Gamma Spec.	513.77 g	Cs-137	3.744E-01	5.305E-02	2.077E-02	pCi/g	
		Gamma Spec.	513.77 g	K-40	6.572E+00	8.765E-01	1.277E-01	pCi/g	
C3-07	STPA200	GFPC	2.35 g	Sr-90	2.12E-02	1.57E-01	5.75E-01	pCi/g	
		Gamma Spec.	499.39 g	Co-60	-1.193E-02	2.580E-02	4.220E-02	pCi/g	U
		Gamma Spec.	499.39 g	Cs-137	1.261E-01	3.720E-02	3.356E-02	pCi/g	
		Gamma Spec.	499.39 g	K-40	1.064E+01	1.196E+00	2.938E-01	pCi/g	

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REPORT OF ANALYTICAL RESULTS

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH


Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111


Sample Date: 10/22/2004 - 11/05/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/24/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

RESULTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C3-08	STPA201	GFPC	2.35 g	Sr-90	-4.32E-02	1.62E-01	5.75E-01	pCi/g	
		Gamma Spec.	503.12 g	Co-60	1.540E-02	2.112E-02	4.066E-02	pCi/g	U
		Gamma Spec.	503.12 g	Cs-137	3.391E-02	2.252E-02	4.150E-02	pCi/g	U
		Gamma Spec.	503.12 g	K-40	7.820E+00	9.087E-01	2.731E-01	pCi/g	

ATL warrants that these analytical results were obtained in accordance with ATL Radioanalytical Laboratory Procedures and Quality Assurance Program. ATL makes no other warranty, expressed or implied, including fitness for any particular purpose.

 12/17/04  
Zhibo (David) Lin - Radiochemist

 12/22/04  
Jou Hwang, PhD - Laboratory Manager

**ATL REPORT No. 3**

**ATL International, Inc.**  
**Radioanalytical Laboratory**

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 301-947-4469 (fax)

## REPORT OF ANALYTICAL RESULTS

Report Date: 12/17/2004  
 Customer ID: SC-00001  
 Customer: SCIENTECH

Sampler's Name: Rob Ellison  
 Project Number: 23530  
 Project Name: Quehanna D&D Project  
 Sciencetech PO Number: N-28111

Sample Date: 12/10/2004  
 Matrix: Soil/Sediment  
 Requested Analyses: Sr-90 and Gamma Spec.  
 Report Level: QA-I  
 Report Due: 01/14/2005

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

### RESULTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C2-09	STPA239	GFPC	2.63 g	Sr-90	-8.81E-03	1.41E-01	5.14E-01	pCi/g	
		Gamma Spec.	496.67 g	Co-60	-8.606E-03	2.003E-02	3.261E-02	pCi/g	U
		Gamma Spec.	496.67 g	Cs-137	4.937E-04	2.054E-02	3.788E-02	pCi/g	U
		Gamma Spec.	496.67 g	K-40	1.267E+01	1.138E+00	1.868E-01	pCi/g	
C2-10	STPA240	GFPC	2.03 g	Sr-90	1.78E-01	2.10E-01	6.65E-01	pCi/g	
		Gamma Spec.	509.08 g	Co-60	-1.926E-03	2.002E-02	3.584E-02	pCi/g	U
		Gamma Spec.	509.08 g	Cs-137	7.251E-02	2.382E-02	1.926E-02	pCi/g	
		Gamma Spec.	509.08 g	K-40	4.976E+00	7.974E-01	2.882E-01	pCi/g	
C2-11	STPA241	GFPC	2.56 g	Sr-90	8.06E-02	1.59E-01	5.27E-01	pCi/g	
		Gamma Spec.	498.61 g	Co-60	-1.693E-02	2.085E-02	3.231E-02	pCi/g	U
		Gamma Spec.	498.61 g	Cs-137	2.203E-02	2.214E-02	4.365E-02	pCi/g	U
		Gamma Spec.	498.61 g	K-40	8.733E+00	1.063E+00	2.279E-01	pCi/g	

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REPORT OF ANALYTICAL RESULTS

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

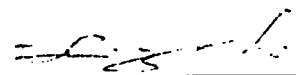
Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

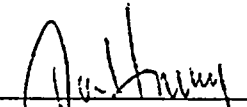
Sample Date: 12/10/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-1  
Report Due: 01/14/2005  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

RESULTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C2-12	STPA242	GFPC	2.95 g	Sr-90	2.02E-01	1.52E-01	4.58E-01	pCi/g	
		Gamma Spec.	498.23 g	Co-60	-1.156E-02	1.746E-02	2.735E-02	pCi/g	U
		Gamma Spec.	498.23 g	Cs-137	2.123E-02	1.597E-02	3.032E-02	pCi/g	U
		Gamma Spec.	498.23 g	K-40	6.644E+00	8.262E-01	1.950E-01	pCi/g	

ATL warrants that these analytical results were obtained in accordance with ATL Radioanalytical Laboratory Procedures and Quality Assurance Program. ATL makes no other warranty, expressed or implied, including fitness for any particular purpose.

  
Zhibo (David) Lin - Radiochemist

 12/20/04  
Jou Hwang, PhD - Laboratory Manager



**ATL REPORT No. 4**

**ATL International, Inc.**  
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301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/25/2004 - 11/06/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/31/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C3-09	STPA202	GFPC	2.13 g	Sr-90	-8.41E-02	1.75E-01	6.34E-01	pCi/g	
		Gamma Spec.	467.16 g	Co-60	8.628E-04	1.795E-02	3.276E-02	pCi/g	U
		Gamma Spec.	467.16 g	Cs-137	1.327E-02	1.938E-02	3.411E-02	pCi/g	U
		Gamma Spec.	467.16 g	K-40	1.012E+01	1.093E+00	2.685E-01	pCi/g	
C3-10	STPA203	GFPC	2.13 g	Sr-90	2.65E-02	1.97E-01	6.34E-01	pCi/g	
		Gamma Spec.	465.94 g	Co-60	-5.631E-03	2.045E-02	3.080E-02	pCi/g	U
		Gamma Spec.	465.94 g	Cs-137	7.426E-03	2.211E-02	4.193E-02	pCi/g	U
		Gamma Spec.	465.94 g	K-40	5.428E+00	7.762E-01	3.085E-01	pCi/g	
C3-11	STPA204	GFPC	2.20 g	Sr-90	-1.16E-02	1.86E-01	6.13E-01	pCi/g	
		Gamma Spec.	496.62 g	Co-60	-8.636E-03	1.417E-02	2.334E-02	pCi/g	U
		Gamma Spec.	496.62 g	Cs-137	1.133E-01	3.297E-02	2.530E-02	pCi/g	
		Gamma Spec.	496.62 g	K-40	6.849E+00	8.977E-01	2.526E-01	pCi/g	

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301-947-4455  
301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 10/25/2004 - 11/06/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/31/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C3-12	STPA205	GFPC	2.34 g	Sr-90	9.69E-02	1.92E-01	5.77E-01	pCi/g	
		Gamma Spec.	354.83 g	Co-60	-3.839E-04	9.208E-03	1.440E-02	pCi/g	U
		Gamma Spec.	354.83 g	Cs-137	2.456E-01	2.628E-02	1.090E-02	pCi/g	
		Gamma Spec.	354.83 g	K-40	8.373E+00	6.056E-01	8.851E-02	pCi/g	
C3-13	STPA206	GFPC	2.01 g	Sr-90	1.02E-01	2.01E-01	6.72E-01	pCi/g	
		Gamma Spec.	456.82 g	Co-60	-1.165E-02	2.133E-02	3.460E-02	pCi/g	U
		Gamma Spec.	456.82 g	Cs-137	1.534E-01	3.737E-02	3.157E-02	pCi/g	
		Gamma Spec.	456.82 g	K-40	6.989E+00	9.224E-01	2.297E-01	pCi/g	
C3-14	STPA207	GFPC	2.17 g	Sr-90	6.19E-02	1.91E-01	6.22E-01	pCi/g	
		Gamma Spec.	500.3 g	Co-60	-1.068E-02	1.962E-02	3.247E-02	pCi/g	U
		Gamma Spec.	500.3 g	Cs-137	1.476E-02	2.328E-02	4.412E-02	pCi/g	U
		Gamma Spec.	500.3 g	K-40	7.115E+00	9.714E-01	2.623E-01	pCi/g	

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301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/25/2004 - 11/06/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/31/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C3-15	STPA208	GFPC	2.02 g	Sr-90	6.98E-02	2.15E-01	6.68E-01	pCi/g	
		Gamma Spec.	462.19 g	Co-60	-4.223E-03	2.051E-02	2.872E-02	pCi/g	U
		Gamma Spec.	462.19 g	Cs-137	8.954E-02	3.415E-02	2.975E-02	pCi/g	
		Gamma Spec.	462.19 g	K-40	7.609E+00	9.081E-01	1.716E-01	pCi/g	
C3-16	STPA209	GFPC	2.07 g	Sr-90	-2.16E-01	1.84E-01	6.52E-01	pCi/g	
		Gamma Spec.	457.38 g	Co-60	-3.595E-03	2.399E-02	4.160E-02	pCi/g	U
		Gamma Spec.	457.38 g	Cs-137	1.407E-01	4.398E-02	3.035E-02	pCi/g	
		Gamma Spec.	457.38 g	K-40	6.310E+00	9.333E-01	2.029E-01	pCi/g	
C3-17	STPA210	GFPC	2.30 g	Sr-90	9.86E-02	1.95E-01	5.87E-01	pCi/g	
		Gamma Spec.	454.42 g	Co-60	5.712E-03	2.074E-02	2.815E-02	pCi/g	U
		Gamma Spec.	454.42 g	Cs-137	3.011E-02	1.968E-02	3.744E-02	pCi/g	U
		Gamma Spec.	454.42 g	K-40	6.855E+00	9.256E-01	2.309E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/25/2004 - 11/06/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/31/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C3-18	STPA211	GFPC	2.05 g	Sr-90	1.64E-01	2.39E-01	6.58E-01	pCi/g	
		Gamma Spec.	488.47 g	Co-60	8.161E-04	2.401E-02	4.294E-02	pCi/g	U
		Gamma Spec.	488.47 g	Cs-137	4.614E-02	2.480E-02	5.076E-02	pCi/g	U
		Gamma Spec.	488.47 g	K-40	9.690E+00	1.179E+00	3.290E-01	pCi/g	
C3-19	STPA212	GFPC	2.19 g	Sr-90	1.01E-01	2.00E-01	6.16E-01	pCi/g	
		Gamma Spec.	482.25 g	Co-60	1.757E-02	1.995E-02	3.845E-02	pCi/g	U
		Gamma Spec.	482.25 g	Cs-137	3.277E-01	5.524E-02	2.386E-02	pCi/g	
		Gamma Spec.	482.25 g	K-40	7.817E+00	8.822E-01	2.015E-01	pCi/g	
C3-20	STPA213	GFPC	2.15 g	Sr-90	-5.11E-02	1.91E-01	6.28E-01	pCi/g	
		Gamma Spec.	478.38 g	Co-60	3.266E-03	1.979E-02	3.763E-02	pCi/g	U
		Gamma Spec.	478.38 g	Cs-137	2.625E-01	5.343E-02	2.625E-02	pCi/g	
		Gamma Spec.	478.38 g	K-40	7.298E+00	9.736E-01	1.940E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 10/25/2004 - 11/06/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/31/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
C3-21	STPA214	GFPC	2.27 g	Sr-90	2.56E-02	1.90E-01	5.94E-01	pCi/g	
		Gamma Spec.	487.58 g	Co-60	-1.053E-02	1.312E-02	2.078E-02	pCi/g	U
		Gamma Spec.	487.58 g	Cs-137	7.921E-02	3.198E-02	2.701E-02	pCi/g	
		Gamma Spec.	487.58 g	K-40	5.364E+00	8.116E-01	2.933E-01	pCi/g	
C3-22	STPA215	GFPC	2.42 g	Sr-90	6.54E-02	2.01E-01	5.57E-01	pCi/g	
		Gamma Spec.	499.73 g	Co-60	7.053E-03	2.387E-02	4.403E-02	pCi/g	U
		Gamma Spec.	499.73 g	Cs-137	8.043E-02	3.445E-02	2.407E-02	pCi/g	
		Gamma Spec.	499.73 g	K-40	7.665E+00	9.696E-01	2.626E-01	pCi/g	
C3-23	STPA216	GFPC	2.06 g	Sr-90	3.30E-01	2.81E-01	6.54E-01	pCi/g	
		Gamma Spec.	492.39 g	Co-60	-1.224E-02	2.281E-02	2.796E-02	pCi/g	U
		Gamma Spec.	492.39 g	Cs-137	2.215E-01	4.504E-02	2.974E-02	pCi/g	
		Gamma Spec.	492.39 g	K-40	6.107E+00	7.764E-01	1.611E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 10/25/2004 - 11/06/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/31/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
FR-01	STPA217	GFPC	2.35 g	Sr-90	1.01E-01	1.99E-01	5.74E-01	pCi/g	
		Gamma Spec.	457.94 g	Co-60	-8.873E-03	2.091E-02	3.558E-02	pCi/g	U
		Gamma Spec.	457.94 g	Cs-137	3.886E-03	2.236E-02	4.180E-02	pCi/g	U
		Gamma Spec.	457.94 g	K-40	1.055E+01	1.229E+00	2.481E-01	pCi/g	
T-01A	STPA218	GFPC	2.26 g	Sr-90	2.58E+00	3.80E-01	5.98E-01	pCi/g	
		Gamma Spec.	503.25 g	Co-60	1.534E-03	1.485E-02	2.797E-02	pCi/g	U
		Gamma Spec.	503.25 g	Cs-137	-3.993E-03	1.596E-02	2.514E-02	pCi/g	U
		Gamma Spec.	503.25 g	K-40	6.604E+00	9.112E-01	2.730E-01	pCi/g	
T-01B	STPA219	GFPC	2.53 g	Sr-90	4.27E+00	4.95E-01	5.34E-01	pCi/g	
		Gamma Spec.	506.87 g	Co-60	-4.783E-03	1.811E-02	2.478E-02	pCi/g	U
		Gamma Spec.	506.87 g	Cs-137	1.056E-02	1.742E-02	3.047E-02	pCi/g	U
		Gamma Spec.	506.87 g	K-40	6.119E+00	7.860E-01	2.595E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/25/2004 - 11/06/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/31/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
T-02A	STPA220	GFPC	2.59 g	Sr-90	8.36E-01	2.29E-01	5.21E-01	pCi/g	
		Gamma Spec.	503.6 g	Co-60	1.617E-02	2.469E-02	4.710E-02	pCi/g	U
		Gamma Spec.	503.6 g	Cs-137	2.175E-01	4.307E-02	2.632E-02	pCi/g	
		Gamma Spec.	503.6 g	K-40	6.638E+00	9.507E-01	1.842E-01	pCi/g	
T-02B	STPA221	GFPC	2.15 g	Sr-90	6.81E-01	2.58E-01	6.28E-01	pCi/g	
		Gamma Spec.	508.15 g	Co-60	2.387E-02	2.508E-02	4.981E-02	pCi/g	U
		Gamma Spec.	508.15 g	Cs-137	1.000E-01	3.407E-02	2.498E-02	pCi/g	
		Gamma Spec.	508.15 g	K-40	6.784E+00	9.380E-01	3.163E-01	pCi/g	
T-04A	STPA222	GFPC	2.24 g	Sr-90	8.17E-01	2.65E-01	6.02E-01	pCi/g	
		Gamma Spec.	506.18 g	Co-60	1.682E-03	1.685E-02	3.008E-02	pCi/g	U
		Gamma Spec.	506.18 g	Cs-137	1.794E-02	1.704E-02	3.122E-02	pCi/g	U
		Gamma Spec.	506.18 g	K-40	6.601E+00	8.731E-01	2.478E-01	pCi/g	



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REPORT OF ANALYTICAL RESULTS

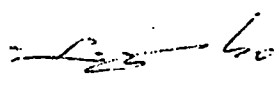
Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

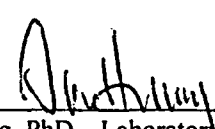
Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/25/2004 - 11/06/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/31/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

RESULTS

ATL warrants that these analytical results were obtained in accordance with ATL Radioanalytical Laboratory Procedures and Quality Assurance Program. ATL makes no other warranty, expressed or implied, including fitness for any particular purpose.

 12/17/04  
\_\_\_\_\_  
Zhibo (David) Lin - Radiochemist

 12/17/04  
\_\_\_\_\_  
Jou Hwang, PhD - Laboratory Manager

**ATL REPORT No. 5**

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/08/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 10/12/2004 - 10/14/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/15/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

ILTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
Sump-1 <i>cell ops Trench near cell #5 - Remediated</i>	STPA116	GFPC	2.0150 g	Sr-90	1.01E+01	9.96E-01	6.70E-01	pCi/g	
		Gamma Spec.	467.46 g	Co-60	1.138E-02	1.756E-02	3.271E-02	pCi/g	U
		Gamma Spec.	467.46 g	Cs-137	5.400E-03	1.810E-02	3.066E-02	pCi/g	U
		Gamma Spec.	467.46 g	K-40	6.463E+00	8.342E-01	2.598E-01	pCi/g	
Sump-3	STPA117	GFPC	2.0261 g	Sr-90	1.33E+00	3.12E-01	6.66E-01	pCi/g	
		Gamma Spec.	486.36 g	Co-60	-3.100E-04	1.926E-02	3.542E-02	pCi/g	U
		Gamma Spec.	486.36 g	Cs-137	-9.605E-03	1.993E-02	3.611E-02	pCi/g	U
		Gamma Spec.	486.36 g	K-40	4.148E+00	8.958E-01	3.827E-01	pCi/g	
Cell 5-1	STPA118	GFPC	2.0081 g	Sr-90	3.42E+01	2.77E+00	6.72E-01	pCi/g	
		Gamma Spec.	461.96 g	Co-60	1.284E-02	2.243E-02	3.756E-02	pCi/g	U
		Gamma Spec.	461.96 g	Cs-137	2.482E-01	5.481E-02	3.348E-02	pCi/g	
		Gamma Spec.	461.96 g	K-40	7.591E+00	9.360E-01	2.351E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/08/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 28530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/12/2004 - 10/14/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/15/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
Cell 5-3 <i>Cell ops Trench - Remediated</i>	STPA119	GFPC	2.0168 g	Sr-90	4.78E+01	3.77E+00	6.69E-01	pCi/g	
		Gamma Spec.	486.00 g	Co-60	3.436E-03	2.098E-02	3.606E-02	pCi/g	U
		Gamma Spec.	486.00 g	Cs-137	1.979E-01	5.157E-02	3.737E-02	pCi/g	
		Gamma Spec.	486.00 g	K-40	7.736E+00	8.732E-01	2.797E-01	pCi/g	
PR Sump	STPA120	GFPC	2.0020 g	Sr-90	-1.04E-01	2.16E-01	6.74E-01	pCi/g	
		Gamma Spec.	479.31 g	Co-60	2.516E-02	1.793E-02	2.553E-02	pCi/g	U
		Gamma Spec.	479.31 g	Cs-137	7.060E-03	1.540E-02	2.678E-02	pCi/g	U
		Gamma Spec.	479.31 g	K-40	3.133E+00	5.905E-01	2.534E-01	pCi/g	
CW-001	STPA121	GFPC	2.0811 g	Sr-90	-2.56E-01	1.78E-01	6.48E-01	pCi/g	
		Gamma Spec.	452.11 g	Co-60	-1.420E-02	2.181E-02	3.504E-02	pCi/g	U
		Gamma Spec.	452.11 g	Cs-137	1.987E-01	4.833E-02	2.687E-02	pCi/g	
		Gamma Spec.	452.11 g	K-40	1.922E+00	7.932E-01	3.007E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/08/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/12/2004 - 10/14/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/15/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

TLTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
CW-002	STPA122	GFPC	2.0250 g	Sr-90	-2.96E-01	1.49E-01	6.67E-01	pCi/g	
		Gamma Spec.	467.46 g	Co-60	2.137E-02	1.950E-02	3.817E-02	pCi/g	U
		Gamma Spec.	467.46 g	Cs-137	3.418E-01	5.572E-02	1.780E-02	pCi/g	
		Gamma Spec.	467.46 g	K-40	5.595E+00	7.875E-01	2.846E-01	pCi/g	
CW-003	STPA123	GFPC	2.0363 g	Sr-90	-4.95E-02	1.88E-01	6.63E-01	pCi/g	
		Gamma Spec.	460.48 g	Co-60	6.029E-03	2.071E-02	3.994E-02	pCi/g	U
		Gamma Spec.	460.48 g	Cs-137	1.019E-01	4.556E-02	2.789E-02	pCi/g	
		Gamma Spec.	460.48 g	K-40	4.402E+00	7.456E-01	2.334E-01	pCi/g	
CW-004	STPA124	GFPC	2.0525 g	Sr-90	-1.12E-02	1.81E-01	6.58E-01	pCi/g	
		Gamma Spec.	452.88 g	Co-60	8.896E-03	1.670E-02	3.075E-02	pCi/g	U
		Gamma Spec.	452.88 g	Cs-137	5.180E-01	7.177E-02	2.770E-02	pCi/g	
		Gamma Spec.	452.88 g	K-40	3.399E+00	7.064E-01	2.399E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/08/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/12/2004 - 10/14/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/15/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
CW-005	STPA125	GFPC	2.0484 g	Sr-90	-2.02E-01	1.71E-01	6.59E-01	pCi/g	
		Gamma Spec.	497.73 g	Co-60	3.824E-03	1.974E-02	3.725E-02	pCi/g	U
		Gamma Spec.	497.73 g	Cs-137	8.996E-02	4.320E-02	3.453E-02	pCi/g	
		Gamma Spec.	497.73 g	K-40	6.112E+00	8.954E-01	2.365E-01	pCi/g	
CW-006	STPA126	GFPC	2.0073 g	Sr-90	6.64E-02	2.05E-01	6.73E-01	pCi/g	
		Gamma Spec.	459.66 g	Co-60	9.757E-03	1.815E-02	3.316E-02	pCi/g	U
		Gamma Spec.	459.66 g	Cs-137	3.259E-01	5.486E-02	3.229E-02	pCi/g	
		Gamma Spec.	459.66 g	K-40	6.054E+00	8.293E-01	2.363E-01	pCi/g	
CW-007	STPA127	GFPC	2.0117 g	Sr-90	1.84E-01	2.16E-01	6.71E-01	pCi/g	
		Gamma Spec.	497.67 g	Co-60	1.638E-03	2.099E-02	3.731E-02	pCi/g	U
		Gamma Spec.	497.67 g	Cs-137	2.405E-02	2.202E-02	4.452E-02	pCi/g	U
		Gamma Spec.	497.67 g	K-40	8.078E+00	9.250E-01	2.897E-01	pCi/g	

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REPORT OF ANALYTICAL RESULTS

Report Date: 11/08/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

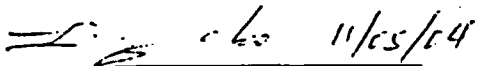
Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

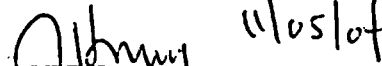
Sample Date: 10/12/2004 - 10/14/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/15/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

DLTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
CW-008	STPA128	GFPC	2.0188 g	Sr-90	2.75E-01	2.07E-01	6.69E-01	pCi/g	
		Gamma Spec.	476.75 g	Co-60	2.977E-02	1.956E-02	3.713E-02	pCi/g	U
		Gamma Spec.	476.75 g	Cs-137	3.150E-02	2.416E-02	4.385E-02	pCi/g	U
		Gamma Spec.	476.75 g	K-40	4.560E+00	7.684E-01	2.201E-01	pCi/g	

ATL warrants that these analytical results were obtained in accordance with ATL Radioanalytical Laboratory Procedures and Quality Assurance Program. ATL makes no other warranty, expressed or implied, including fitness for any particular purpose.

  
Zhibo (David) Lin - Radiochemist

  
Jou Hwang, PhD - Laboratory Manager

**ATL REPORT No. 6**



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**REPORT OF ANALYTICAL RESULTS**

Report Date: 07/08/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Mark Nicholson  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 06/21/2004 12:00 PM – 06/22/2004 12:00 PM

Matrix: Soil/Sediment

Requested Analyses: Sr-90 and Gamma Spec.

Report Level: QA-I

Report Due: 07/22/2004

Comments: Flag U – The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
Tank 411-01	STPA046	GFPC	2.0115 g	Sr-90	-2.47E-01	-2.29E-01	5.70E-01	pCi/g	
		Gamma Spec.	506.46 g	Co-60	6.270E-03	2.416E-02	4.930E-02	pCi/g	U
		Gamma Spec.	506.46 g	Cs-137	3.738E-02	3.462E-02	7.201E-02	pCi/g	U
		Gamma Spec.	506.46 g	K-40	7.481E+00	1.208E+00	2.656E-01	pCi/g	
Tank 411-02	STPA047	GFPC	2.0139 g	Sr-90	7.09E-02	1.90E-01	5.70E-01	pCi/g	
		Gamma Spec.	505.37 g	Co-60	-1.102E-03	2.446E-02	4.639E-02	pCi/g	U
		Gamma Spec.	505.37 g	Cs-137	-9.197E-03	3.180E-02	5.883E-02	pCi/g	U
		Gamma Spec.	505.37 g	K-40	8.110E+00	1.429E+00	4.611E-01	pCi/g	
Pond-01	STPA048	GFPC	1.9877 g	Sr-90	-2.67E-02	-2.05E-01	5.77E-01	pCi/g	
		Gamma Spec.	90.78 g	Co-60	-6.335E-02	4.195E-02	6.624E-02	pCi/g	U
		Gamma Spec.	90.78 g	Cs-137	5.354E-02	5.691E-02	5.120E-02	pCi/g	
		Gamma Spec.	90.78 g	K-40	7.666E+00	1.183E+00	4.026E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 07/08/2004  
Customer ID: SC-00001  
Customer: SCIENTECH


Sampler's Name: Mark Nicholson  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 06/21/2004 12:00 PM – 06/22/2004 12:00 PM  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 07/22/2004  
Comments: Flag U – The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

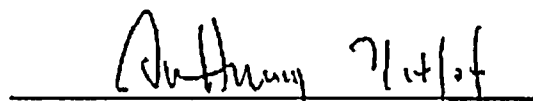
**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
Pond-02	STPA049	GFPC	2.0132 g	Sr-90	2.16E-01	3.17E-01	5.69E-01	pCi/g	
		Gamma Spec.	64.28 g	Co-60	-4.287E-02	4.085E-02	5.831E-02	pCi/g	U
		Gamma Spec.	64.28 g	Cs-137	4.428E-01	9.381E-02	6.792E-02	pCi/g	
		Gamma Spec.	64.28 g	K-40	1.090E+01	1.554E+00	5.540E-01	pCi/g	
Pond-03	STPA050	GFPC	2.0123 g	Sr-90	1.01E-01	1.89E-01	5.70E-01	pCi/g	
		Gamma Spec.	64.37 g	Co-60	2.441E-02	4.440E-02	8.012E-02	pCi/g	U
		Gamma Spec.	64.37 g	Cs-137	2.062E-01	7.451E-02	6.233E-02	pCi/g	
		Gamma Spec.	64.37 g	K-40	7.853E+00	1.338E+00	7.349E-01	pCi/g	

ATL warrants that these analytical results were obtained in accordance with ATL Radioanalytical Laboratory Procedures and Quality Assurance Program. ATL makes no other warranty, expressed or implied, including fitness for any particular purpose.



Zhibo (David) Lin – Radiochemist

  
Jou Hwang, PhD – Laboratory Manager

ATL REPORT No. 7

**ATL International, Inc.**  
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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 10/21/2004 - 10/25/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/30/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-01	STPA137	GFPC	2.02 g	Sr-90	-9.56E-02	1.99E-01	6.67E-01	pCi/g	
		Gamma Spec.	505.13 g	Co-60	-1.958E-02	2.433E-02	3.853E-02	pCi/g	U
		Gamma Spec.	505.13 g	Cs-137	1.450E-02	2.407E-02	4.562E-02	pCi/g	U
		Gamma Spec.	505.13 g	K-40	1.090E+01	1.226E+00	2.605E-01	pCi/g	
DS-02	STPA138	GFPC	2.00 g	Sr-90	-5.41E-02	2.03E-01	6.73E-01	pCi/g	
		Gamma Spec.	507.27 g	Co-60	3.468E-04	1.995E-02	3.530E-02	pCi/g	U
		Gamma Spec.	507.27 g	Cs-137	3.678E-03	1.706E-02	2.860E-02	pCi/g	U
		Gamma Spec.	507.27 g	K-40	8.225E+00	9.482E-01	2.212E-01	pCi/g	
DS-03	STPA139	GFPC	2.03 g	Sr-90	-9.40E-02	1.95E-01	6.63E-01	pCi/g	
		Gamma Spec.	472.99 g	Co-60	-2.729E-02	2.719E-02	4.115E-02	pCi/g	U
		Gamma Spec.	472.99 g	Cs-137	2.722E-02	2.441E-02	4.858E-02	pCi/g	U
		Gamma Spec.	472.99 g	K-40	1.056E+01	1.220E+00	3.681E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/21/2004 - 10/25/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/30/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-04	STPA140	GFPC	2.04 g	Sr-90	-1.30E-01	1.85E-01	6.63E-01	pCi/g	
		Gamma Spec.	467.59 g	Co-60	1.718E-02	2.100E-02	3.731E-02	pCi/g	U
		Gamma Spec.	467.59 g	Cs-137	-8.950E-03	1.622E-02	2.423E-02	pCi/g	U
		Gamma Spec.	467.59 g	K-40	7.718E+00	1.057E+00	2.545E-01	pCi/g	
DS-05	STPA141	GFPC	2.05 g	Sr-90	-1.00E-01	2.09E-01	6.59E-01	pCi/g	
		Gamma Spec.	507.21 g	Co-60	1.555E-03	2.196E-02	4.117E-02	pCi/g	U
		Gamma Spec.	507.21 g	Cs-137	-3.141E-03	2.089E-02	3.818E-02	pCi/g	U
		Gamma Spec.	507.21 g	K-40	1.073E+01	1.243E+00	3.282E-01	pCi/g	
DS-06	STPA142	GFPC	2.05 g	Sr-90	2.39E-01	2.36E-01	6.58E-01	pCi/g	
		Gamma Spec.	487.95 g	Co-60	-1.107E-02	1.812E-02	2.919E-02	pCi/g	U
		Gamma Spec.	487.95 g	Cs-137	4.838E-02	2.134E-02	4.180E-02	pCi/g	U
		Gamma Spec.	487.95 g	K-40	6.469E+00	8.242E-01	2.571E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 10/21/2004 - 10/25/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/30/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-07	STPA143	GFPC	2.06 g	Sr-90	-1.31E-01	1.86E-01	6.57E-01	pCi/g	
		Gamma Spec.	502.67 g	Co-60	-1.071E-02	2.060E-02	3.563E-02	pCi/g	U
		Gamma Spec.	502.67 g	Cs-137	6.927E-03	2.521E-02	4.620E-02	pCi/g	U
		Gamma Spec.	502.67 g	K-40	1.133E+01	1.256E+00	3.312E-01	pCi/g	
DS-08	STPA144	GFPC	2.08 g	Sr-90	-1.97E-01	1.68E-01	6.49E-01	pCi/g	
		Gamma Spec.	503.51 g	Co-60	-1.130E-02	1.974E-02	3.184E-02	pCi/g	U
		Gamma Spec.	503.51 g	Cs-137	8.851E-03	1.859E-02	3.196E-02	pCi/g	U
		Gamma Spec.	503.51 g	K-40	9.428E+00	1.063E+00	1.930E-01	pCi/g	
DS-09	STPA145	GFPC	2.02 g	Sr-90	2.69E-02	2.00E-01	6.69E-01	pCi/g	
		Gamma Spec.	482.17 g	Co-60	-9.262E-03	2.431E-02	4.209E-02	pCi/g	U
		Gamma Spec.	482.17 g	Cs-137	1.253E-02	2.732E-02	5.043E-02	pCi/g	U
		Gamma Spec.	482.17 g	K-40	8.467E+00	1.091E+00	3.152E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/21/2004 - 10/25/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/30/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-10	STPA146	GFPC	2.09 g	Sr-90	-4.87E-02	1.83E-01	6.46E-01	pCi/g	
		Gamma Spec.	498.57 g	Co-60	2.502E-03	1.508E-02	2.863E-02	pCi/g	U
		Gamma Spec.	498.57 g	Cs-137	2.160E-02	1.950E-02	3.546E-02	pCi/g	U
		Gamma Spec.	498.57 g	K-40	8.607E+00	1.018E+00	2.668E-01	pCi/g	
DS-11	STPA147	GFPC	2.08 g	Sr-90	2.39E-02	1.78E-01	6.50E-01	pCi/g	
		Gamma Spec.	502.26 g	Co-60	-2.053E-02	2.569E-02	3.613E-02	pCi/g	U
		Gamma Spec.	502.26 g	Cs-137	1.669E-02	2.389E-02	4.573E-02	pCi/g	U
		Gamma Spec.	502.26 g	K-40	1.028E+01	1.239E+00	3.706E-01	pCi/g	
DS-12	STPA148	GFPC	2.01 g	Sr-90	-4.96E-02	1.86E-01	6.71E-01	pCi/g	
		Gamma Spec.	508.22 g	Co-60	-1.029E-02	1.971E-02	3.207E-02	pCi/g	U
		Gamma Spec.	508.22 g	Cs-137	1.321E-02	1.819E-02	3.209E-02	pCi/g	U
		Gamma Spec.	508.22 g	K-40	1.091E+01	1.104E+00	2.065E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/21/2004 - 10/25/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/30/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-13	STPA149	GFPC	2.01 g	Sr-90	-9.08E-02	1.89E-01	6.72E-01	pCi/g	
		Gamma Spec.	505.73 g	Co-60	3.529E-03	2.311E-02	3.734E-02	pCi/g	U
		Gamma Spec.	505.73 g	Cs-137	-2.132E-02	2.157E-02	3.582E-02	pCi/g	U
		Gamma Spec.	505.73 g	K-40	9.923E+00	1.088E+00	2.851E-01	pCi/g	
DS-14	STPA150	GFPC	2.04 g	Sr-90	1.08E-01	2.14E-01	6.62E-01	pCi/g	
		Gamma Spec.	488.28 g	Co-60	1.541E-02	1.677E-02	3.160E-02	pCi/g	U
		Gamma Spec.	488.28 g	Cs-137	6.565E-03	1.779E-02	3.034E-02	pCi/g	U
		Gamma Spec.	488.28 g	K-40	6.641E+00	8.677E-01	2.694E-01	pCi/g	
DS-15	STPA151	GFPC	2.08 g	Sr-90	-1.72E-01	1.84E-01	6.49E-01	pCi/g	
		Gamma Spec.	495.68 g	Co-60	1.170E-02	2.349E-02	3.762E-02	pCi/g	U
		Gamma Spec.	495.68 g	Cs-137	-1.396E-02	1.976E-02	3.458E-02	pCi/g	U
		Gamma Spec.	495.68 g	K-40	7.817E+00	1.022E+00	2.565E-01	pCi/g	



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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/21/2004 - 10/25/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/30/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-16	STPA152	GFPC	2.08 g	Sr-90	-1.24E-02	2.00E-01	6.50E-01	pCi/g	
		Gamma Spec.	498 g	Co-60	-7.416E-03	1.712E-02	2.863E-02	pCi/g	U
		Gamma Spec.	498 g	Cs-137	8.293E-03	1.712E-02	2.961E-02	pCi/g	U
		Gamma Spec.	498 g	K-40	7.030E+00	8.571E-01	1.951E-01	pCi/g	
DS-17A	STPA153	GFPC	2.06 g	Sr-90	2.68E-02	2.00E-01	6.55E-01	pCi/g	
		Gamma Spec.	481.91 g	Co-60	-4.472E-03	1.815E-02	3.444E-02	pCi/g	U
		Gamma Spec.	481.91 g	Cs-137	-7.712E-03	2.080E-02	3.762E-02	pCi/g	U
		Gamma Spec.	481.91 g	K-40	6.470E+00	9.499E-01	3.731E-01	pCi/g	
DS-17B	STPA154	GFPC	2.04 g	Sr-90	-1.21E-02	1.94E-01	6.60E-01	pCi/g	
		Gamma Spec.	498.12 g	Co-60	5.352E-04	2.140E-02	3.277E-02	pCi/g	U
		Gamma Spec.	498.12 g	Cs-137	-1.683E-03	1.753E-02	2.827E-02	pCi/g	U
		Gamma Spec.	498.12 g	K-40	1.042E+01	1.151E+00	3.084E-01	pCi/g	

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## REPORT OF ANALYTICAL RESULTS

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Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 10/21/2004 - 10/25/2004  
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Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/30/2004

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### RESULTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-18A	STPA155	GFPC	2.04 g	Sr-90	-1.25E-01	1.77E-01	6.62E-01	pCi/g	
		Gamma Spec.	490.56 g	Co-60	-3.239E-02	2.221E-02	2.746E-02	pCi/g	U
		Gamma Spec.	490.56 g	Cs-137	-1.028E-02	2.172E-02	3.838E-02	pCi/g	U
		Gamma Spec.	490.56 g	K-40	7.040E+00	9.319E-01	1.897E-01	pCi/g	
DS-18B	STPA156	GFPC	2.06 g	Sr-90	-8.86E-02	1.84E-01	6.55E-01	pCi/g	
		Gamma Spec.	504.67 g	Co-60	4.052E-03	1.596E-02	3.031E-02	pCi/g	U
		Gamma Spec.	504.67 g	Cs-137	2.241E-03	1.613E-02	2.681E-02	pCi/g	U
		Gamma Spec.	504.67 g	K-40	7.197E+00	8.734E-01	2.407E-01	pCi/g	
DS-19A	STPA157	GFPC	2.02 g	Sr-90	8.62E-01	2.71E-01	6.68E-01	pCi/g	
		Gamma Spec.	492.34 g	Co-60	5.344E-03	2.481E-02	4.158E-02	pCi/g	U
		Gamma Spec.	492.34 g	Cs-137	-2.277E-03	2.283E-02	4.143E-02	pCi/g	U
		Gamma Spec.	492.34 g	K-40	7.981E+00	9.988E-01	3.087E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 10/21/2004 - 10/25/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/30/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-19B	STPA158	GFPC	2.11 g	Sr-90	3.28E-01	2.22E-01	6.40E-01	pCi/g	
		Gamma Spec.	490.73 g	Co-60	-2.685E-02	2.054E-02	2.852E-02	pCi/g	U
		Gamma Spec.	490.73 g	Cs-137	-7.887E-03	1.761E-02	2.704E-02	pCi/g	U
		Gamma Spec.	490.73 g	K-40	9.317E+00	1.068E+00	3.131E-01	pCi/g	
DS-20A	STPA159	GFPC	2.03 g	Sr-90	-1.29E-01	1.83E-01	6.65E-01	pCi/g	
		Gamma Spec.	489.84 g	Co-60	-7.227E-03	2.273E-02	3.911E-02	pCi/g	U
		Gamma Spec.	489.84 g	Cs-137	-8.107E-03	2.040E-02	3.682E-02	pCi/g	U
		Gamma Spec.	489.84 g	K-40	7.538E+00	9.933E-01	2.687E-01	pCi/g	
DS-20B	STPA160	GFPC	2.11 g	Sr-90	-1.20E-02	1.93E-01	6.40E-01	pCi/g	
		Gamma Spec.	510.79 g	Co-60	-2.940E-02	2.401E-02	3.465E-02	pCi/g	U
		Gamma Spec.	510.79 g	Cs-137	-3.679E-03	2.093E-02	3.354E-02	pCi/g	U
		Gamma Spec.	510.79 g	K-40	1.636E+01	1.504E+00	2.906E-01	pCi/g	

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Report Date: 11/24/2004  
Customer ID: SC-00001  
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Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

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Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/30/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

### RESULTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-21A	STPA161	GFPC	2.15 g	Sr-90	-2.15E-01	1.51E-01	6.28E-01	pCi/g	
		Gamma Spec.	492.28 g	Co-60	8.160E-03	2.052E-02	4.132E-02	pCi/g	U
		Gamma Spec.	492.28 g	Cs-137	-1.464E-02	1.983E-02	3.460E-02	pCi/g	U
		Gamma Spec.	492.28 g	K-40	5.686E+00	8.243E-01	2.315E-01	pCi/g	
DS-21B	STPA162	GFPC	2.05 g	Sr-90	2.52E-02	1.89E-01	6.59E-01	pCi/g	
		Gamma Spec.	500.7 g	Co-60	-6.726E-03	1.586E-02	2.679E-02	pCi/g	U
		Gamma Spec.	500.7 g	Cs-137	8.722E-03	1.737E-02	3.007E-02	pCi/g	U
		Gamma Spec.	500.7 g	K-40	6.271E+00	7.966E-01	1.879E-01	pCi/g	
DS-22A	STPA163	GFPC	2.13 g	Sr-90	3.82E-01	2.16E-01	6.34E-01	pCi/g	
		Gamma Spec.	488.18 g	Co-60	-1.098E-02	2.037E-02	3.541E-02	pCi/g	U
		Gamma Spec.	488.18 g	Cs-137	-3.341E-03	2.040E-02	3.776E-02	pCi/g	U
		Gamma Spec.	488.18 g	K-40	6.010E+00	9.304E-01	3.566E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/24/2004  
Customer ID: SC-00001  
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Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 10/21/2004 - 10/25/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/30/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-22B	STPA164	GFPC	2.15 g	Sr-90	2.51E-02	1.86E-01	6.28E-01	pCi/g	
		Gamma Spec.	502.91 g	Co-60	-1.140E-02	1.866E-02	2.997E-02	pCi/g	U
		Gamma Spec.	502.91 g	Cs-137	3.829E-03	1.639E-02	2.757E-02	pCi/g	U
		Gamma Spec.	502.91 g	K-40	8.294E+00	9.601E-01	2.087E-01	pCi/g	
DS-23A	STPA165	GFPC	2.02 g	Sr-90	2.74E-02	2.04E-01	6.69E-01	pCi/g	
		Gamma Spec.	484.51 g	Co-60	-9.124E-03	1.801E-02	3.255E-02	pCi/g	U
		Gamma Spec.	484.51 g	Cs-137	-1.694E-02	1.918E-02	3.322E-02	pCi/g	U
		Gamma Spec.	484.51 g	K-40	6.087E+00	8.926E-01	2.805E-01	pCi/g	
DS-23B	STPA166	GFPC	2.10 g	Sr-90	-2.46E-01	1.72E-01	6.43E-01	pCi/g	
		Gamma Spec.	501.48 g	Co-60	-1.432E-03	1.933E-02	3.390E-02	pCi/g	U
		Gamma Spec.	501.48 g	Cs-137	-8.177E-03	1.900E-02	2.942E-02	pCi/g	U
		Gamma Spec.	501.48 g	K-40	1.074E+01	1.154E+00	3.063E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/24/2004  
Customer ID: SC-00001  
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Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/21/2004 - 10/25/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 11/30/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**SULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-24A	STPA167	GFPC	2.06 g	Sr-90	1.73E-01	2.04E-01	6.55E-01	pCi/g	
		Gamma Spec.	507.23 g	Co-60	-1.507E-02	2.039E-02	3.381E-02	pCi/g	U
		Gamma Spec.	507.23 g	Cs-137	7.222E-03	1.868E-02	3.692E-02	pCi/g	U
		Gamma Spec.	507.23 g	K-40	5.866E+00	8.330E-01	2.321E-01	pCi/g	
DS-24B	STPA168	GFPC	2.02 g	Sr-90	-1.18E-02	1.89E-01	6.68E-01	pCi/g	
		Gamma Spec.	495.71 g	Co-60	-9.713E-03	1.980E-02	3.243E-02	pCi/g	U
		Gamma Spec.	495.71 g	Cs-137	-1.724E-02	1.771E-02	2.502E-02	pCi/g	U
		Gamma Spec.	495.71 g	K-40	9.115E+00	1.022E+00	2.684E-01	pCi/g	
DS-25A	STPA169	GFPC	2.15 g	Sr-90	5.97E-02	1.85E-01	6.28E-01	pCi/g	
		Gamma Spec.	502.87 g	Co-60	-5.499E-04	1.826E-02	3.545E-02	pCi/g	U
		Gamma Spec.	502.87 g	Cs-137	9.198E-03	1.735E-02	3.560E-02	pCi/g	U
		Gamma Spec.	502.87 g	K-40	4.989E+00	7.441E-01	1.352E-01	pCi/g	

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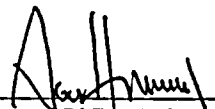
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

RESULTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DS-25B	STPA170	GFPC	2.12 g	Sr-90	2.19E-01	2.16E-01	6.37E-01	pCi/g	
		Gamma Spec.	503.81 g	Co-60	-5.931E-03	1.522E-02	2.601E-02	pCi/g	U
		Gamma Spec.	503.81 g	Cs-137	-9.895E-03	1.872E-02	2.859E-02	pCi/g	U
		Gamma Spec.	503.81 g	K-40	8.158E+00	9.493E-01	1.929E-01	pCi/g	

ATL warrants that these analytical results were obtained in accordance with ATL Radioanalytical Laboratory Procedures and Quality Assurance Program. ATL makes no other warranty, expressed or implied, including fitness for any particular purpose.

 11/24/04  
Zhibo (David) Lin - Radiochemist

 11/24/04  
Jou Hwang, PhD - Laboratory Manager

**APPENDIX G**  
**NON-FSS SOIL SAMPLING**



## **APPENDIX G – NON-FSS SOIL SAMPLING**

Appendix G contains the analytical results from soil samples collected in addition to the final status survey samples. These samples are from the following areas:

- Waste Water Treatment Building (1999)
- Service Area Drain Line
- Cell Operations Trench
- Pump Room Sump
- Tank 411

The Waste Water Treatment Building (WWTB) samples are from a 1999 post-remediation sampling event and the information is summarized in two tables and a figure showing the WWTB. The results from the other samples are summarized in Table G-1 and the analytical reports are also provided. The Service Area Drain Line sample results (DL-xx) are provided in three ATL analytical reports dated August 4, August 24, and September 10, 2004. The Cell Operations Trench sample results (T-xx) are provided in an ATL analytical report dated December 17, 2004. The analytical results of the Pump Room Sump sample (PR Sump) is provided in an ATL analytical report dated November 8, 2004 and the results of the resin sample is provided in an ATL report dated July 20, 2004.

## Quehanna Decommissioning

## WWTB INTERIOR

## Sr-90 Concentration in Soil

Depth (ft)	G-0.5	J/I-0.5	D/E-1	H/G-2	D/E-3	K3
0 - 0.5	170		160		8	<MDC
0.5 - 1						<MDC
1 - 1.5						<MDC
1.5 - 2	170				8	<MDC
2 - 2.5						<MDC
2.5 - 3						<MDC
3 - 3.5						<MDC
3.5 - 4	33					
4 - 4.5						
4.5 - 5						
5 - 5.5						
5.5 - 6	11	<MDC	<MDC		<MDC	<MDC
6 - 6.5		<MDC	<MDC		<MDC	<MDC
6.5 - 7		<MDC	<MDC	19.4	<MDC	<MDC
7 - 7.5	13.5	<MDC	<MDC	19.4	<MDC	<MDC
7.5 - 8	13.5	<MDC	<MDC	<MDC	<MDC	<MDC
8 - 8.5	13.5	<MDC	<MDC	<MDC	<MDC	<MDC
8.5 - 9	13.5	<MDC	<MDC	<MDC	<MDC	<MDC
9 - 9.5	<MDC	<MDC	<MDC	<MDC	<MDC	<MDC
9.5 - 10	<MDC	<MDC	<MDC	<MDC	<MDC	<MDC
10 - 10.5	<MDC	<MDC	<MDC	<MDC	<MDC	<MDC
10.5 - 11	<MDC	<MDC	5 (3.9)	<MDC	<MDC	<MDC
11 - 11.5	<MDC	<MDC	5 (3.9)	<MDC	3.3 (0.1)	3.9
11.5 - 12	<MDC	<MDC	5 (3.9)	<MDC	3.3 (0.1)	3.9
12 - 12.5	<MDC	<MDC	<MDC	<MDC	3.3 (0.1)	3.9
12.5 - 13	<MDC	<MDC	<MDC	<MDC	<MDC	
13 - 13.5	<MDC	<MDC	<MDC	<MDC	<MDC	
13.5 - 14	<MDC	<MDC	3.5	<MDC	<MDC	
14 - 14.5	5 (1.3)	<MDC	3.5	<MDC	<MDC	<MDC
14.5 - 15	5 (1.3)	<MDC	3.5	<MDC	<MDC	<MDC
15 - 15.5	5 (1.3)	<MDC	<MDC	4.9	<MDC	<MDC
15.5 - 16	5 (1.3)		<MDC	4.9	<MDC (<MDC)	5.7 (0.9)
16 - 16.5	<MDC		<MDC	4.9	<MDC (<MDC)	5.7 (0.9)
16.5 - 17	<MDC		4.3 (<MDC)	5.7 (<MDC)	<MDC (<MDC)	5.7 (0.9)
17 - 17.5	<MDC		4.3 (<MDC)	5.7 (<MDC)	<MDC (<MDC)	
17.5 - 18	<MDC	<MDC (1.1)	4.3 (<MDC)	5.7 (<MDC)		
18 - 18.5		<MDC (1.1)	4.3 (<MDC)	5.7 (<MDC)		
18.5 - 19		<MDC (1.1)				
19 - 19.5		<MDC (1.1)				

## NES Field Results (DUKE Analytical Results in Parentheses)

## Notes:

1. Results in pCi/g
2. NES MDC = 3.3 pCi/g
3. DUKE MDC average = 0.08 pCi/g
4. \* Approximations based on previous samples from a generalized area

## Quehanna Decommissioning

WWTB EXTERIOR

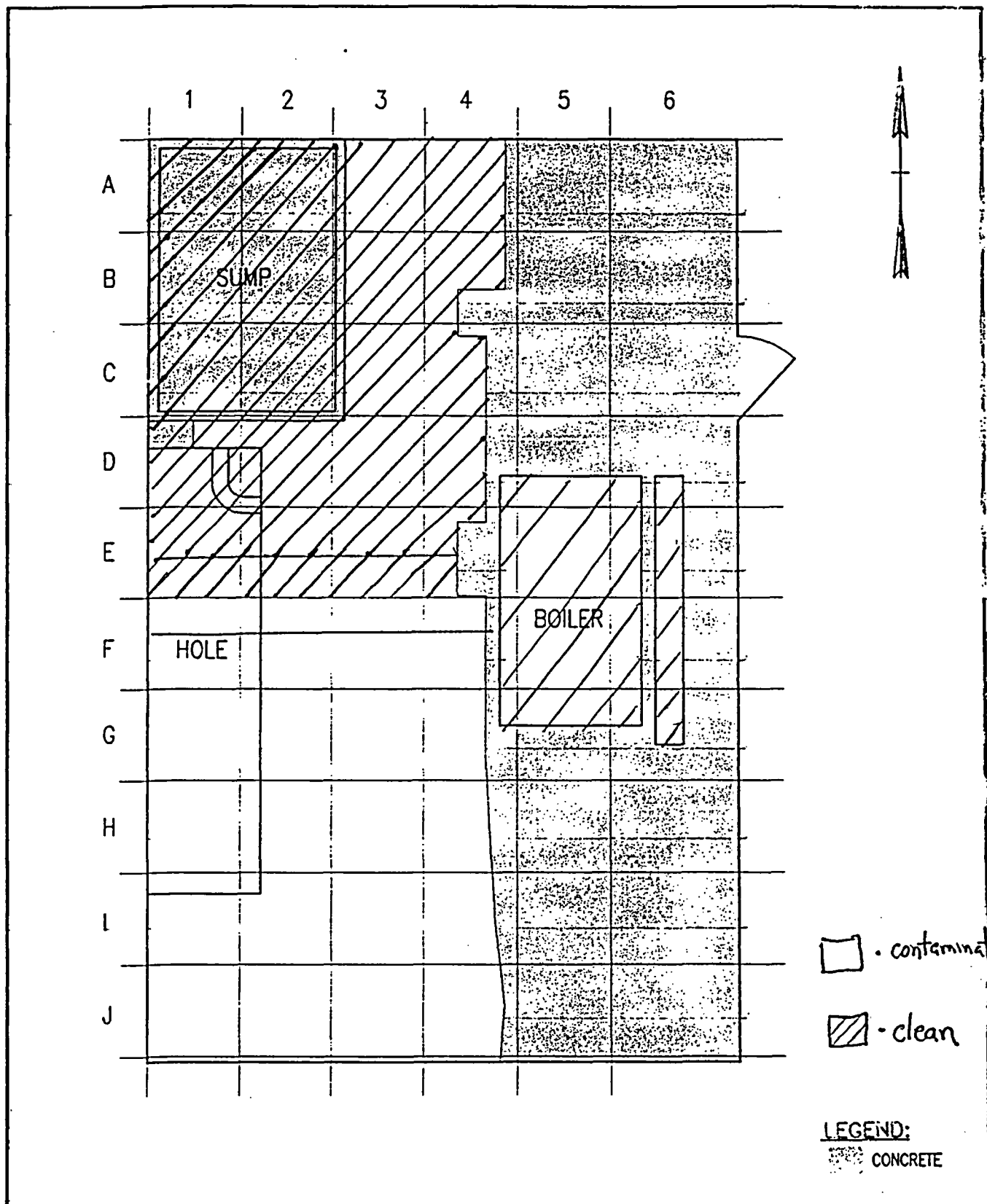
## Sr-90 Concentration in Soil

<u>Depth (ft)</u>	<u>B0+3</u>	<u>G0+1</u>	<u>A3N4</u>	<u>K0+2</u>	<u>A0N20</u>	<u>A0Diag-3/4</u>	<u>OPHBOS</u>
0 - 0.5	<MDC		<MDC	<MDC	<MDC	<MDC	<MDC
0.5 - 1	<MDC		<MDC	<MDC	<MDC	<MDC	<MDC
1 - 1.5	<MDC		<MDC	<MDC	<MDC	<MDC	<MDC
1.5 - 2	<MDC		<MDC	<MDC	<MDC	<MDC	<MDC
2 - 2.5	<MDC		<MDC	<MDC	<MDC		
2.5 - 3	<MDC		<MDC	<MDC	<MDC		
3 - 3.5	<MDC		<MDC	<MDC	<MDC		
3.5 - 4	<MDC		<MDC	<MDC	<MDC		
4 - 4.5	<MDC		<MDC	<MDC	<MDC	<MDC	
4.5 - 5	<MDC		<MDC	<MDC	<MDC	<MDC	
5 - 5.5	<MDC		<MDC	<MDC	<MDC	<MDC	
5.5 - 6	<MDC	<MDC	<MDC	<MDC	<MDC	<MDC	
6 - 6.5	<MDC	<MDC	<MDC		<MDC	<MDC	
6.5 - 7	<MDC	<MDC	<MDC		<MDC	<MDC	
7 - 7.5	<MDC	<MDC	<MDC		<MDC	<MDC	
7.5 - 8	<MDC	5.7	<MDC		<MDC	<MDC	
8 - 8.5	<MDC	5.7	<MDC	5.1 (1.4)	<MDC	<MDC	
8.5 - 9	<MDC	5.7	<MDC	5.1 (1.4)	<MDC	<MDC	
9 - 9.5	<MDC	5.7	<MDC	5.1 (1.4)	<MDC	<MDC	
9.5 - 10	<MDC	5.9 (3.2)	<MDC	5.1 (1.4)	<MDC	<MDC	
10 - 10.5	<MDC	5.9 (3.2)	<MDC	<MDC	<MDC	<MDC	
10.5 - 11	<MDC	5.9 (3.2)	4.4 (0.1)	<MDC	<MDC	<MDC	
11 - 11.5	<MDC	5.9 (3.2)	4.4 (0.1)	<MDC	<MDC	<MDC	
11.5 - 12	<MDC	<MDC	4.4 (0.1)	<MDC	<MDC	<MDC	
12 - 12.5	<MDC	<MDC	4.4 (0.1)	<MDC	<MDC	<MDC	
12.5 - 13	<MDC	5.5	4.4 (0.1)	<MDC	<MDC	<MDC	
13 - 13.5	<MDC	5.5	<MDC		<MDC	<MDC	
13.5 - 14	<MDC	5.5	<MDC			<MDC	
14 - 14.5	5.1 (0.1)	5.5	<MDC			<MDC	
14.5 - 15	5.1 (0.1)	3.8 (0.1)	<MDC			<MDC	
15 - 15.5	5.1 (0.1)	3.8 (0.1)	<MDC			<MDC	
15.5 - 16	5.1 (0.1)	3.8 (0.1)	<MDC			<MDC	
16 - 16.5	<MDC	3.8 (0.1)	<MDC		<MDC	<MDC	
16.5 - 17	<MDC	<MDC	<MDC		<MDC	<MDC	
17 - 17.5	<MDC	<MDC	<MDC		<MDC	<MDC	
17.5 - 18	<MDC		<MDC		<MDC	<MDC	
18 - 18.5	<MDC				<MDC		
18.5 - 19	<MDC				<MDC		
19 - 19.5	<MDC				<MDC		
19.5 - 20	<MDC				<MDC		
20 - 20.5	3.4 (1.2)						
20.5 - 21	3.4 (1.2)						
21 - 21.5	3.4 (1.2)						
21.5 - 22	3.4 (1.2)						

NES Field Results (DUKE Analytical Results in Parentheses)

Notes:

1. Results in pCi/g
2. NES MDC = 3.3 pCi/g
3. DUKE MDC average = 0.08 pCi/g




DOCUMENT CONTROL NO.	PROJECT	QUEHANNA D & D KARTHAUS, PA	 Solertech NES, Inc. 44 Shafter Rock Road Danbury, CT 06810 (203) 796-5000	PROJECT # 3035
REVISION NO.	DRAWING	WASTEWATER TREATMENT BUILDING		FIELD NO. 3035.1 SCALE: 1"=5' DATE: 2/4/99 BY: AD CHK:
				FIGURE # 1

Table 1 Analytical Results- Subsurface Samples Interior

Grid Location and Depth	pCi/g +/- 1 Sigma	MDA	Comments
D/E-1 (10.5'-12')	3.91 +/- 0.100	0.076	NW corner of excavation
D/E-1 (17'-18.5')	0.042 +/- 0.025	0.082	NW corner of excavation
D/E-3 (11.5'-12.5')	0.131 +/- 0.026	0.081	NE corner of excavation
D/E-3 (16'-18')	0.050 +/- 0.020	0.065	NE corner of excavation
K-3 (16'-17.5')	0.089 +/- 0.028	0.089	SE corner of excavation
J/I-0.5 (18'-19.5')	1.070 +/- 0.049	0.081	SW corner of excavation
G-0.5 (14'-16')	1.300 +/- 0.052	0.087	W wall center of excavation
H/G-2 (17'-18.5')	0.049 +/- 0.019	0.063	Center of excavation

Table 2 Analytical Results- Subsurface Samples Exterior

Exterior Location	pCi/g (+/- 1 Sigma)	MDA	Comments
K0+2 (9'-10')	1.43 +/- 0.049	0.075	SW corner of building
G0+1 (10.5'-11.5')	3.15 +/- 0.092	0.078	Center of West wall
GO+1 (15'-16.5')	0.131 +/- 0.024	0.074	Center of W. Wall
BO+3 (14.5'-16')	0.139 +/- 0.024	0.075	W. of dewater well @ W. Wall
BO+3 (21'-22')	1.160 +/- 0.046	0.086	W. of dewater well @ W. Wall
A3N4 (11'-13')	0.127 +/- 0.024	0.076	N. of sump @ N. wall

As part of the verification process, field soil screening techniques using the on site Protean WPC-9550 provided a gross indication of the presence of Sr-90 that remained in the excavation. Tables 3 and 4 provide a summary of this field screening results, along with the analytical results as listed above. Figure 1 provides the specific interior and exterior soil sample locations associated with deep subsurface sample collection.

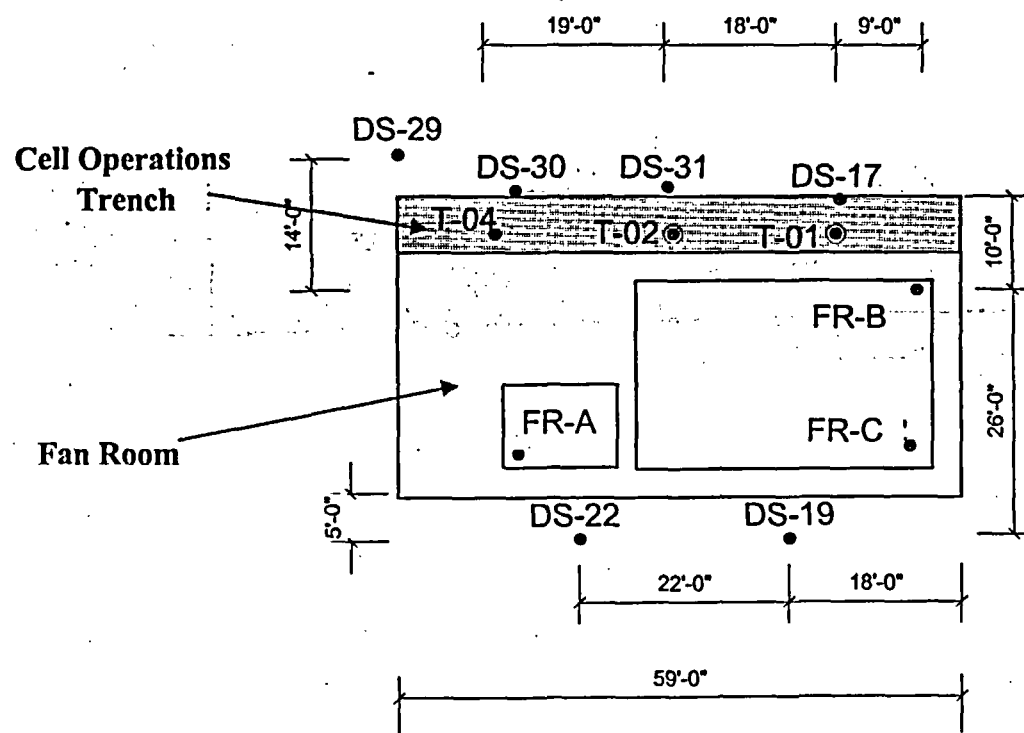
~~Handwritten note: The purpose of this document is to show the location of the sample sites.~~

**TABLE G-1**  
**SUMMARY OF NON-FSS SOIL SAMPLES**

Sample Identification	Concentrations (pCi/g)						ATL Report Date
	Sr-90			Co-60			
	Activity	Sigma	MDA	Activity	Sigma	MDA	
T-01A	2.58	0.38	0.60	0.00	0.01	0.03	12/17/04
T-01B	4.27	0.50	0.53	0.00	0.02	0.02	12/17/04
T-02A	0.84	0.23	0.52	0.02	0.02	0.05	12/17/04
T-02B	0.68	0.26	0.63	0.02	0.03	0.05	12/17/04
T-04A	0.82	0.27	0.60	0.00	0.02	0.03	12/17/04
PR-SUMP	-0.10	0.22	0.67	0.03	0.02	0.03	11/8/04
DL-01	0.29	0.21	0.57	0.02	0.02	0.03	8/4/04
DL-02	0.25	0.20	0.57	0.00	0.02	0.04	8/24/04
DL-03	4.35	0.52	0.57	0.04	0.03	0.06	8/24/04
DL-04	0.51	0.20	0.58	0.00	0.02	0.03	8/24/04
DL-05	0.72	0.21	0.57	0.01	0.02	0.03	8/24/04
DL-06	1.64	0.29	0.57	0.01	0.02	0.04	8/24/04
DL-07	2.30	0.34	0.57	0.00	0.02	0.03	8/24/04
DL-08	2.57	0.39	0.58	0.00	0.02	0.03	8/24/04
DL-09	0.72	0.24	0.57	0.00	0.02	0.03	8/24/04
DL-10	0.04	0.18	0.57	0.01	0.02	0.03	8/24/04
DL-11	0.45	0.22	0.57	0.01	0.02	0.04	8/24/04
DL-12	0.58	0.23	0.57	0.06	0.03	0.05	8/24/04
DL-13	2.36	0.38	0.57	0.05	0.03	0.06	8/24/04
DL-14	0.08	0.20	0.58	0.00	0.02	0.02	8/24/04
DL-15	0.10	0.18	0.57	0.00	0.02	0.03	8/24/04
DL-16	0.04	0.17	0.58	0.01	0.01	0.03	8/24/04
DL-17	23.40	1.90	0.58	0.14	0.04	0.08	8/24/04
DL-3 W	0.53	0.23	0.57	0.01	0.02	0.03	9/10/04
DL-3 N	1.81	0.34	0.57	0.01	0.02	0.04	9/10/04
DL-3 S	1.04	0.28	0.58	0.00	0.02	0.03	9/10/04
DL-3 B	0.99	0.29	0.57	0.00	0.02	0.04	9/10/04
DL-17 W	2.74	0.40	0.57	0.00	0.02	0.04	9/10/04
DL-17 E	2.46	0.38	0.58	0.04	0.03	0.05	9/10/04
DL-17 N	14.10	1.27	0.57	0.12	0.04	0.08	9/10/04
DL-17 S	1.47	0.33	0.57	0.04	0.02	0.04	9/10/04
DL-17 B	0.41	0.23	0.57	0.00	0.02	0.03	9/10/04
Resin I	0.28	0.22	0.57	0.24	0.08	0.06	7/20/04
Tank 411-01	-0.25	-0.23	0.57	0.01	0.02	0.05	7/8/04
Tank 411-02	0.07	0.19	0.57	0.00	0.02	0.05	7/8/04

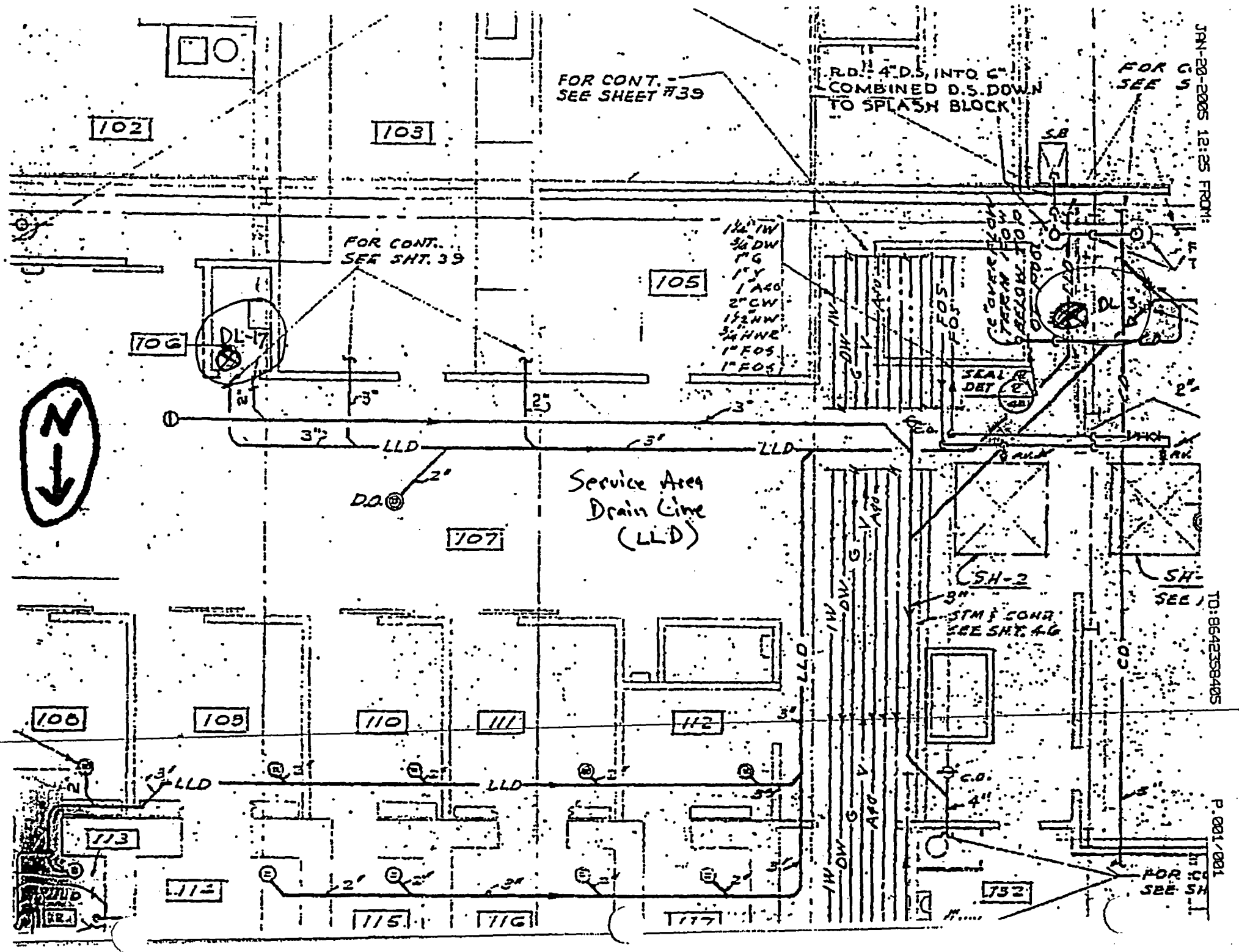
**Notes:**

- (1) The 3 areas greater than the release criteria were DL-03, DL-17, and DL-17N.
- (2) DL-03 was determined to be > the release criteria using field analytical techniques.
- (3) DL-03 and DL-17 locations were resampled after remediation.
- (4) There is no DL-3E because of the gamma pool.
- (5) DL-17N was remediated to DL-16 area, which was known to be free of contamination.



Soil samples from locations FR-A, FR-B, and FR-C formed the composite sample FR-01.

Document Control No.	
REVISION NO.	
DRAWING	PROJECT
QUEHANNA DECOMMISSIONING KARTHANS, PENNSYLVANIA 115 REACTOR ROAD	
Cell Operations Trench and Fan Room Sample Locations	
SCIENTECH, Inc. 143 WEST STREET NEW HAVEN, CT 06511	
PROJECT NO: 23529-0501	
FILE NAME:	
SCALE: N.T.S.	DATE: 07/12/2004
By:	CK:
FIGURE:	





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**REPORT OF ANALYTICAL RESULTS**

Report Date: 09/10/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Mike Taylor  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 08/26/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 09/27/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DL-17 S	STPA086	GFPC	1.9991 g	Sr-90	1.47E+00	3.27E-01	5.74E-01	pCi/g	
		Gamma Spec.	506.17 g	Co-60	4.129E-02	2.169E-02	4.255E-02	pCi/g	U
		Gamma Spec.	506.17 g	Cs-137	1.125E-01	2.913E-02	5.753E-02	pCi/g	U
		Gamma Spec.	506.17 g	K-40	5.503E+00	7.382E-01	1.752E-01	pCi/g	
DL-17 B	STPA087	GFPC	2.0127 g	Sr-90	4.14E-01	2.32E-01	5.70E-01	pCi/g	
		Gamma Spec.	505.33 g	Co-60	-6.478E-03	1.896E-02	3.263E-02	pCi/g	U
		Gamma Spec.	505.33 g	Cs-137	7.981E-03	2.214E-02	4.208E-02	pCi/g	U
		Gamma Spec.	505.33 g	K-40	4.360E+00	8.335E-01	1.902E-01	pCi/g	
DL-3 W	STPA088	GFPC	2.0067 g	Sr-90	5.33E-01	2.25E-01	5.72E-01	pCi/g	
		Gamma Spec.	505.11 g	Co-60	1.325E-02	1.909E-02	3.161E-02	pCi/g	U
		Gamma Spec.	505.11 g	Cs-137	7.268E-03	1.808E-02	3.088E-02	pCi/g	U
		Gamma Spec.	505.11 g	K-40	7.337E+00	8.600E-01	2.483E-01	pCi/g	

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301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/25/2004 - 11/06/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/31/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
FR-01	STPA217	GFPC	2.35 g	Sr-90	1.01E-01	1.99E-01	5.74E-01	pCi/g	
		Gamma Spec.	457.94 g	Co-60	-8.873E-03	2.091E-02	3.558E-02	pCi/g	U
		Gamma Spec.	457.94 g	Cs-137	3.886E-03	2.236E-02	4.180E-02	pCi/g	U
		Gamma Spec.	457.94 g	K-40	1.055E+01	1.229E+00	2.481E-01	pCi/g	
T-01A	STPA218	GFPC	2.26 g	Sr-90	2.58E+00	3.80E-01	5.98E-01	pCi/g	
		Gamma Spec.	503.25 g	Co-60	1.534E-03	1.485E-02	2.797E-02	pCi/g	U
		Gamma Spec.	503.25 g	Cs-137	-3.993E-03	1.596E-02	2.514E-02	pCi/g	U
		Gamma Spec.	503.25 g	K-40	6.604E+00	9.112E-01	2.730E-01	pCi/g	
T-01B	STPA219	GFPC	2.53 g	Sr-90	4.27E+00	4.95E-01	5.34E-01	pCi/g	
		Gamma Spec.	506.87 g	Co-60	-4.783E-03	1.811E-02	2.478E-02	pCi/g	U
		Gamma Spec.	506.87 g	Cs-137	1.056E-02	1.742E-02	3.047E-02	pCi/g	U
		Gamma Spec.	506.87 g	K-40	6.119E+00	7.860E-01	2.595E-01	pCi/g	

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## REPORT OF ANALYTICAL RESULTS

Report Date: 12/17/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Rob Ellison  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 10/25/2004 - 11/06/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 12/31/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

### RESULTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
T-02A	STPA220	GFPC	2.59 g	Sr-90	8.36E-01	2.29E-01	5.21E-01	pCi/g	
		Gamma Spec.	503.6 g	Co-60	1.617E-02	2.469E-02	4.710E-02	pCi/g	U
		Gamma Spec.	503.6 g	Cs-137	2.175E-01	4.307E-02	2.632E-02	pCi/g	
		Gamma Spec.	503.6 g	K-40	6.638E+00	9.507E-01	1.842E-01	pCi/g	
T-02B	STPA221	GFPC	2.15 g	Sr-90	6.81E-01	2.58E-01	6.28E-01	pCi/g	
		Gamma Spec.	508.15 g	Co-60	2.387E-02	2.508E-02	4.981E-02	pCi/g	U
		Gamma Spec.	508.15 g	Cs-137	1.000E-01	3.407E-02	2.498E-02	pCi/g	
		Gamma Spec.	508.15 g	K-40	6.784E+00	9.380E-01	3.163E-01	pCi/g	
T-04A	STPA222	GFPC	2.24 g	Sr-90	8.17E-01	2.65E-01	6.02E-01	pCi/g	
		Gamma Spec.	506.18 g	Co-60	1.682E-03	1.685E-02	3.008E-02	pCi/g	U
		Gamma Spec.	506.18 g	Cs-137	1.794E-02	1.704E-02	3.122E-02	pCi/g	U
		Gamma Spec.	506.18 g	K-40	6.601E+00	8.731E-01	2.478E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 11/08/2004  
 Customer ID: SC-00001  
 Customer: SCIENTECH

Sampler's Name: Rob Ellison  
 Project Number: 23530  
 Project Name: Quehanna D&D Project  
 Scientech PO Number: N-28111

Sample Date: 10/12/2004 - 10/14/2004  
 Matrix: Soil/Sediment  
 Requested Analyses: Sr-90 and Gamma Spec.  
 Report Level: QA-I  
 Report Due: 11/15/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
Cell 5-3	STPA119	GFPC	2.0168 g	Sr-90	4.78E+01	3.77E+00	6.69E-01	pCi/g	
		Gamma Spec.	486.00 g	Co-60	3.436E-03	2.098E-02	3.606E-02	pCi/g	U
		Gamma Spec.	486.00 g	Cs-137	1.979E-01	5.157E-02	3.737E-02	pCi/g	
		Gamma Spec.	486.00 g	K-40	7.736E+00	8.732E-01	2.797E-01	pCi/g	
PR Sump	STPA120	GFPC	2.0020 g	Sr-90	-1.04E-01	2.16E-01	6.74E-01	pCi/g	
		Gamma Spec.	479.31 g	Co-60	2.516E-02	1.793E-02	2.553E-02	pCi/g	U
		Gamma Spec.	479.31 g	Cs-137	7.060E-03	1.540E-02	2.678E-02	pCi/g	U
		Gamma Spec.	479.31 g	K-40	3.133E+00	5.905E-01	2.534E-01	pCi/g	
CW-001	STPA121	GFPC	2.0811 g	Sr-90	-2.56E-01	1.78E-01	6.48E-01	pCi/g	
		Gamma Spec.	452.11 g	Co-60	-1.420E-02	2.181E-02	3.504E-02	pCi/g	U
		Gamma Spec.	452.11 g	Cs-137	1.987E-01	4.833E-02	2.687E-02	pCi/g	
		Gamma Spec.	452.11 g	K-40	1.922E+00	7.932E-01	3.007E-01	pCi/g	

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301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 08/04/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Mike Taylor  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 07/21/2004 8:00 am  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.


Report Level: QA-I  
Report Due: 08/19/2004

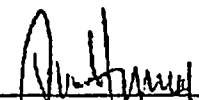
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DL-01	STPA060	GFPC	2.0087 g	Sr-90	2.89E-01	2.07E-01	5.71E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	1.617E-02	1.532E-02	3.053E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	1.895E-02	1.687E-02	3.114E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	8.144E+00	9.529E-01	2.075E-01	pCi/g	

ATL warrants that these analytical results were obtained in accordance with ATL Radioanalytical Laboratory Procedures and Quality Assurance Program. ATL makes no other warranty, expressed or implied, including fitness for any particular purpose.

 8/4/04  
Zhibo (David) Lin - Radiochemist

 8/4/04  
Jou Hwang, PhD - Laboratory Manager

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301-947-4455  
301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 08/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Mike Taylor  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 07/23/2004 - 08/11/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 09/10/2004  
Comments:

Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.  
Sample densities for STPA078 & STPA079 are higher than the gamma calibration standard by more than 10%, the quantitative results from Gamma Spec. are not NIST traceable. However, no Co-60 & Cs-137 energy lines are found from spectra analysis.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DL-02	STPA062	GFPC	2.0087 g	Sr-90	2.54E-01	2.01E-01	5.69E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	3.912E-03	2.264E-02	4.187E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	1.483E-03	2.484E-02	4.559E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	1.099E+01	1.242E+00	2.892E-01	pCi/g	
DL-03	STPA063	GFPC	2.0087 g	Sr-90	4.35E+00	5.18E-01	5.71E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	4.458E-02	2.938E-02	6.030E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	3.058E-02	3.316E-02	3.173E-02	pCi/g	
		Gamma Spec.	505.80 g	K-40	5.765E+00	8.763E-01	2.031E-01	pCi/g	
DL-04	STPA064	GFPC	2.0087 g	Sr-90	5.10E-01	1.97E-01	5.76E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	3.952E-03	1.675E-02	2.905E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	6.690E-03	1.580E-02	2.723E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	6.865E+00	8.555E-01	2.352E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 08/24/2004  
 Customer ID: SC-00001  
 Customer: SCIENTECH

Sampler's Name: Mike Taylor  
 Project Number: 23530  
 Project Name: Quehanna D&D Project  
 Sciencetech PO Number: N-28111

Sample Date: 07/23/2004 - 08/11/2004  
 Matrix: Soil/Sediment  
 Requested Analyses: Sr-90 and Gamma Spec.  
 Report Level: QA-I  
 Report Due: 09/10/2004  
 Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

Sample densities for STPA078 & STPA079 are higher than the gamma calibration standard by more than 10%, the quantitative results from Gamma Spec. are not NIST traceable. However, no Co-60 & Cs-137 energy lines are found from spectra analysis.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DL-05	STPA065	GFPC	2.0087 g	Sr-90	7.16E-01	2.13E-01	5.66E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	1.387E-02	2.138E-02	3.209E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	-1.385E-02	2.173E-02	3.773E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	6.685E+00	9.413E-01	3.430E-01	pCi/g	
DL-06	STPA066	GFPC	2.0087 g	Sr-90	1.64E+00	2.86E-01	5.74E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	1.397E-02	1.972E-02	3.997E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	1.820E-02	1.976E-02	4.045E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	6.605E+00	8.677E-01	1.646E-01	pCi/g	
DL-07	STPA067	GFPC	2.0087 g	Sr-90	2.30E+00	3.36E-01	5.73E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	-3.457E-03	1.590E-02	2.520E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	1.989E-02	1.906E-02	3.450E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	6.726E+00	8.397E-01	2.220E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 08/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Mike Taylor  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 07/23/2004 - 08/11/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 09/10/2004

Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.  
Sample densities for STPA078 & STPA079 are higher than the gamma calibration standard by more than 10%, the quantitative results from Gamma Spec. are not NIST traceable. However, no Co-60 Cs-137 energy lines are found from spectra analysis.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DL-08	STPA068	GFPC	2.0087 g	Sr-90	2.57E+00	3.86E-01	5.76E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	4.831E-03	1.695E-02	2.963E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	4.276E-03	1.798E-02	3.018E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	6.888E+00	8.599E-01	2.721E-01	pCi/g	
DL-09	STPA069	GFPC	2.0087 g	Sr-90	7.20E-01	2.40E-01	5.71E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	-2.450E-03	1.852E-02	3.003E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	1.346E-03	1.476E-02	2.441E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	5.983E+00	8.367E-01	3.037E-01	pCi/g	
DL-10	STPA070	GFPC	2.0087 g	Sr-90	3.79E-02	1.81E-01	5.70E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	8.851E-03	1.511E-02	2.804E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	3.594E-03	1.538E-02	2.591E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	1.967E+00	5.695E-01	1.359E-01	pCi/g	



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**REPORT OF ANALYTICAL RESULTS**

Report Date: 08/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Mike Taylor  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 07/23/2004 - 08/11/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 09/10/2004  
Comments:

Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.  
Sample densities for STPA078 & STPA079 are higher than the gamma calibration standard by more than 10%, the quantitative results from Gamma Spec. are not NIST traceable. However, no Co-60 & Cs-137 energy lines are found from spectra analysis.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DL-11	STPA071	GFPC	2.0087 g	Sr-90	4.52E-01	2.23E-01	5.73E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	7.731E-03	2.099E-02	3.655E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	-1.837E-02	2.062E-02	3.511E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	2.407E+00	7.833E-01	3.154E-01	pCi/g	
DL-12	STPA072	GFPC	2.0087 g	Sr-90	5.76E-01	2.32E-01	5.70E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	6.189E-02	2.801E-02	5.256E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	5.953E-03	1.738E-02	2.954E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	6.565E+00	8.562E-01	2.354E-01	pCi/g	
DL-13	STPA073	GFPC	2.0087 g	Sr-90	2.36E+00	3.80E-01	5.74E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	5.209E-02	2.901E-02	6.029E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	-8.843E-03	2.109E-02	3.768E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	7.012E+00	9.469E-01	2.852E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 08/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Mike Taylor  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 07/23/2004 – 08/11/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 09/10/2004  
Comments: Flag U – The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

Sample densities for STPA078 & STPA079 are higher than the gamma calibration standard by more than 10%, the quantitative results from Gamma Spec. are not NIST traceable. However, no Co-60 & Cs-137 energy lines are found from spectra analysis.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DL-14	STPA074	GFPC	2.0087 g	Sr-90	7.57E-02	2.03E-01	5.77E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	-1.098E-03	1.503E-02	2.457E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	-9.871E-04	1.379E-02	2.225E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	5.450E+00	7.495E-01	1.924E-01	pCi/g	
DL-15	STPA075	GFPC	2.0087 g	Sr-90	9.70E-02	1.83E-01	5.72E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	-4.401E-03	1.851E-02	3.112E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	-8.959E-05	1.968E-02	3.723E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	5.773E+00	9.127E-01	3.009E-01	pCi/g	
DL-16	STPA076	GFPC	2.0087 g	Sr-90	3.58E-02	1.70E-01	5.75E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	7.941E-03	1.420E-02	2.640E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	8.249E-03	1.632E-02	2.835E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	6.000E+00	7.956E-01	2.484E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 08/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Mike Taylor  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 07/23/2004 - 08/11/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 09/10/2004  
Comments:

Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

Sample densities for STPA078 & STPA079 are higher than the gamma calibration standard by more than 10%, the quantitative results from Gamma Spec. are not NIST traceable. However, no Co-60 & Cs-137 energy lines are found from spectra analysis.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DL-17	STPA077	GFPC	2.0087 g	Sr-90	2.34E+01	1.91E+00	5.80E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	1.370E-01	3.974E-02	7.715E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	5.120E-01	6.932E-02	2.792E-02	pCi/g	
		Gamma Spec.	505.80 g	K-40	4.731E+00	8.377E-01	2.514E-01	pCi/g	
Block 67 (167)	STPA078	GFPC	2.0087 g	Sr-90	-1.87E-01	1.73E-01	5.74E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	6.791E-03	5.584E-03	1.097E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	5.791E-03	6.232E-03	1.160E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	5.363E-01	1.718E-01	7.456E-02	pCi/g	
Block 68 (183)	STPA079	GFPC	2.0087 g	Sr-90	-2.73E-02	2.11E-01	5.73E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	6.935E-03	1.236E-02	2.094E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	1.228E-03	1.079E-02	1.802E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	9.921E-01	2.967E-01	1.362E-01	pCi/g	

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## REPORT OF ANALYTICAL RESULTS

Report Date: 09/10/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Mike Taylor  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 08/26/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 09/27/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

## RESULTS

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DL-17 W	STPA083	GFPC	2.0038 g	Sr-90	2.74E+00	3.97E-01	5.73E-01	pCi/g	
		Gamma Spec.	505.75 g	Co-60	3.568E-03	2.177E-02	3.993E-02	pCi/g	U
		Gamma Spec.	505.75 g	Cs-137	6.253E-02	2.678E-02	3.053E-02	pCi/g	
		Gamma Spec.	505.75 g	K-40	4.864E+00	8.270E-01	2.328E-01	pCi/g	
DL-17 E	STPA084	GFPC	1.9932 g	Sr-90	2.46E+00	3.77E-01	5.76E-01	pCi/g	
		Gamma Spec.	505.51 g	Co-60	4.070E-02	2.393E-02	4.784E-02	pCi/g	U
		Gamma Spec.	505.51 g	Cs-137	1.772E-01	4.198E-02	3.058E-02	pCi/g	
		Gamma Spec.	505.51 g	K-40	6.860E+00	8.701E-01	2.481E-01	pCi/g	
DL-17 N	STPA085	GFPC	2.0054 g	Sr-90	1.41E+01	1.27E+00	5.72E-01	pCi/g	
		Gamma Spec.	489.96 g	Co-60	1.224E-01	3.929E-02	7.815E-02	pCi/g	U
		Gamma Spec.	489.96 g	Cs-137	5.106E-01	7.368E-02	3.291E-02	pCi/g	
		Gamma Spec.	489.96 g	K-40	7.459E+00	9.424E-01	2.595E-01	pCi/g	

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**REPORT OF ANALYTICAL RESULTS**

Report Date: 09/10/2004  
Customer ID: SC-00001  
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Sampler's Name: Mike Taylor  
Project Number: 23530  
Project Name: Quehanna D&D Project  
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Sample Date: 08/26/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 09/27/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DL-3 N	STPA089	GFPC	2.0131 g	Sr-90	1.81E+00	3.42E-01	5.70E-01	pCi/g	
		Gamma Spec.	473.34 g	Co-60	1.022E-02	2.006E-02	4.001E-02	pCi/g	U
		Gamma Spec.	473.34 g	Cs-137	2.626E-02	2.387E-02	4.790E-02	pCi/g	U
		Gamma Spec.	473.34 g	K-40	2.665E+00	8.706E-01	3.661E-01	pCi/g	
DL-3 S	STPA090	GFPC	1.9957 g	Sr-90	1.04E+00	2.81E-01	5.75E-01	pCi/g	
		Gamma Spec.	495.87 g	Co-60	1.625E-03	1.786E-02	3.015E-02	pCi/g	U
		Gamma Spec.	495.87 g	Cs-137	1.314E-02	1.751E-02	3.112E-02	pCi/g	U
		Gamma Spec.	495.87 g	K-40	9.742E+00	9.369E-01	1.959E-01	pCi/g	
DL-3 B	STPA091	GFPC	2.0045 g	Sr-90	9.89E-01	2.93E-01	5.72E-01	pCi/g	
		Gamma Spec.	505.04 g	Co-60	1.725E-03	1.892E-02	3.527E-02	pCi/g	U
		Gamma Spec.	505.04 g	Cs-137	2.481E-02	2.295E-02	4.570E-02	pCi/g	U
		Gamma Spec.	505.04 g	K-40	5.832E+00	8.588E-01	3.296E-01	pCi/g	

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## REPORT OF ANALYTICAL RESULTS


Report Date: 09/10/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

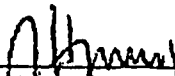
Sampler's Name: Mike Taylor  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 08/26/2004  
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Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 09/27/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

## RESULTS

ATL warrants that these analytical results were obtained in accordance with ATL Radioanalytical Laboratory Procedures and Quality Assurance Program. ATL makes no other warranty, expressed or implied, including fitness for any particular purpose.

 9/10/04  
Zhibo (David) Lin - Radiochemist

 9/10/04  
Jou Hwang, PhD - Laboratory Manager

**ATL International, Inc.  
Radioanalytical Laboratory**

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301-947-4455  
301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 07/20/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Jorge Ciurlizza  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 07/07/2004 11:00  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 08/05/2004  
Comments: Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
Resin I	STPA053	GFPC	2.0022 g	Sr-90	2.79E-01	2.21E-01	5.73E-01	pCi/g	
		Gamma Spec.	65.90 g	Co-60	2.439E-01	7.602E-02	6.263E-02	pCi/g	
		Gamma Spec.	65.90 g	Cs-137	2.887E-02	3.886E-02	6.849E-02	pCi/g	U
		Gamma Spec.	65.90 g	K-40	4.333E+00	9.928E-01	4.144E-01	pCi/g	

ATL warrants that these analytical results were obtained in accordance with ATL Radioanalytical Laboratory Procedures and Quality Assurance Program. ATL makes no other warranty, expressed or implied, including fitness for any particular purpose.

 7/20/04  
Zhibo (David) Lin - Radiochemist

 7/20/04  
Jou Hwang, PhD - Laboratory Manager

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301-947-4455  
301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 07/08/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Mark Nicholson  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Scientech PO Number: N-28111

Sample Date: 06/21/2004 12:00 PM – 06/22/2004 12:00 PM

Matrix: Soil/Sediment

Requested Analyses: Sr-90 and Gamma Spec.

Report Level: QA-I

Report Due: 07/22/2004

Comments: Flag U – The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
Tank 411-01	STPA046	GFPC	2.0115 g	Sr-90	-2.47E-01	-2.29E-01	5.70E-01	pCi/g	
		Gamma Spec.	506.46 g	Co-60	6.270E-03	2.416E-02	4.930E-02	pCi/g	U
		Gamma Spec.	506.46 g	Cs-137	3.738E-02	3.462E-02	7.201E-02	pCi/g	U
		Gamma Spec.	506.46 g	K-40	7.481E+00	1.208E+00	2.656E-01	pCi/g	
Tank 411-02	STPA047	GFPC	2.0139 g	Sr-90	7.09E-02	1.90E-01	5.70E-01	pCi/g	
		Gamma Spec.	505.37 g	Co-60	-1.102E-03	2.446E-02	4.639E-02	pCi/g	U
		Gamma Spec.	505.37 g	Cs-137	-9.197E-03	3.180E-02	5.883E-02	pCi/g	U
		Gamma Spec.	505.37 g	K-40	8.110E+00	1.429E+00	4.611E-01	pCi/g	
Pond-01	STPA048	GFPC	1.9877 g	Sr-90	-2.67E-02	-2.05E-01	5.77E-01	pCi/g	
		Gamma Spec.	90.78 g	Co-60	-6.335E-02	4.195E-02	6.624E-02	pCi/g	U
		Gamma Spec.	90.78 g	Cs-137	5.354E-02	5.691E-02	5.120E-02	pCi/g	
		Gamma Spec.	90.78 g	K-40	7.666E+00	1.183E+00	4.026E-01	pCi/g	



**APPENDIX H**  
**OTHER ITEMS SURVEYED OR SAMPLED**

#### **APPENDIX H – OTHER ITEMS SURVEYED OR SAMPLED**

Appendix H contains the results of additional surveys that were conducted at the Quehanna site in support of the final status survey task. These surveys were conducted on the following:

- Roof ventilation
- Tank 411
- Source storage shafts

This appendix also provides a page from an ATL analytical report giving the results of the two concrete core samples from Block 67 and Block 68.

Surveyor: Chris Higgins

Print

Reviewer: Joe Trowbridge

Print

12/4/2004

Date

12/4/2004

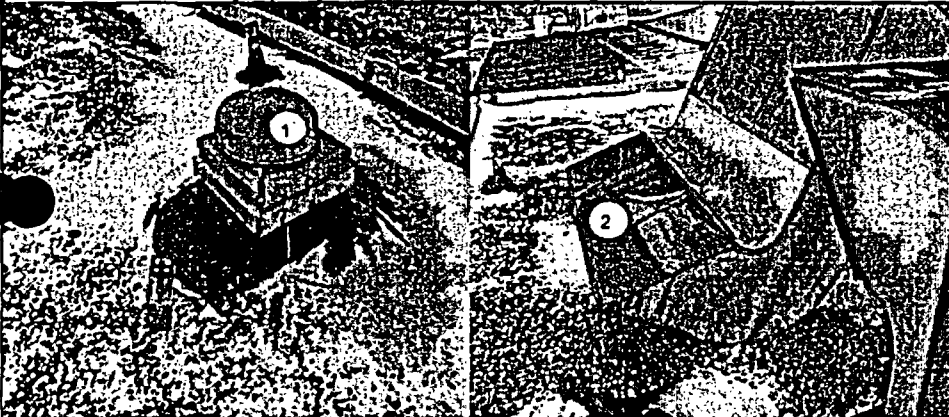
Date

## Survey Meters

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 26%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0 cpm  
 MDA 11 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 45%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.7 cpm  
 MDA 13 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # 2360  
 Meter / Probe Serial # 202433/208664  
 Cal Due 3/22/2005  
 Efficiency 46%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time N/A  
 Background Time N/A  
 BKG 135 cpm  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: VentsPURPOSE: Scoping / Release

Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA

Frisked 100% with no detectable activity above background.

$$MDA = \frac{\frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}}{\left( \text{eff.} \times \frac{\text{probe area}}{100\text{cm}^2} \right)}$$

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
1	Smear 1	12/04/04	8:14:49	Vent	Contamination Survey	12/04/04	8:14:49	1.000	1.00
2	Smear 2	12/04/04	8:13:29	Vent	Contamination Survey	12/04/04	8:13:29	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-04-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date:

12-04-04

Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0 cpm %Eff: 26.28 LLD: 10.72 dpm				Bkg: 0.7 cpm %Eff: 44.67 LLD: 12.36 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
1	Smear 1	12/04/04	8:14:49	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36
2	Smear 2	12/04/04	8:13:29	0.00	0.00	0.00	10.72	0.00	-0.70	-1.57	12.36

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-04-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 12-04-04

Surveyor: Mark Nicholson  
Print

Reviewer: Chris Higgins  
Print

*Mark Nicholson*  
Sign

*Chris Higgins*  
Sign

6/24/2004  
Date

6/24/2004  
Date

## Survey Meters

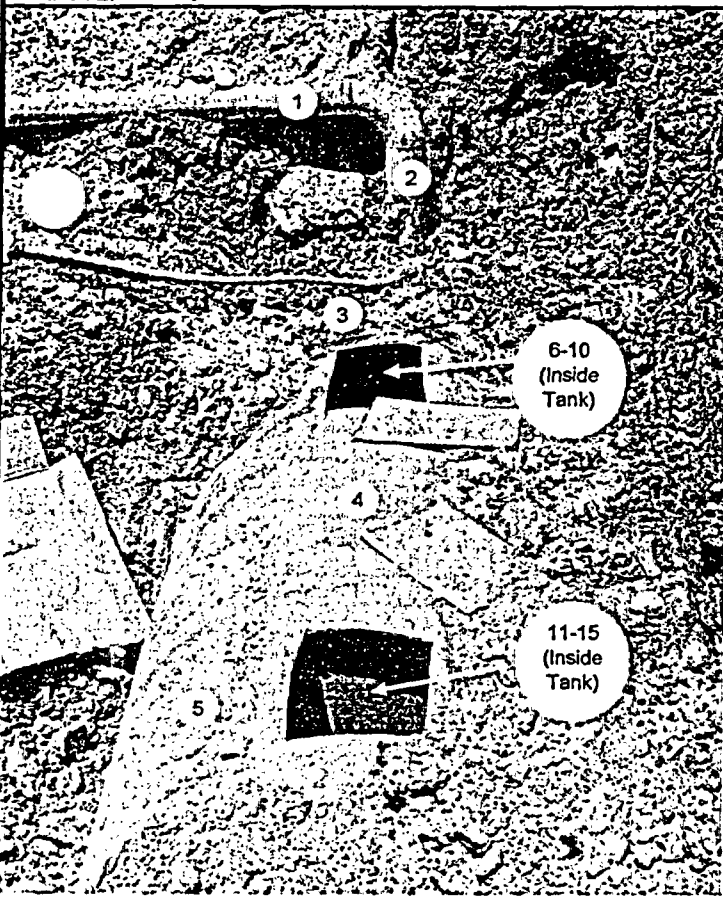
Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 29%  
Type  $\alpha, \beta \gamma$   $\alpha$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.1 cpm  
MDA 13 dpm/100cm<sup>2</sup>  
Guideline 20 dpm/100cm<sup>2</sup>  
Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
Meter / Probe Serial # 11P-1015  
Cal Due 4/29/2005  
Efficiency 45%  
Type  $\alpha, \beta \gamma$   $\beta \gamma$   
Sample Time 1 min.  
Background Time 30 min.  
BKG 0.6 cpm  
MDA 12 dpm/100cm<sup>2</sup>  
Guideline 200 dpm/100cm<sup>2</sup>  
Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # See Below  
Meter / Probe Serial # NA  
Cal Due NA  
Efficiency NA  
Type  $\alpha, \beta \gamma$   $\beta \gamma$   
Sample Time NA  
Background Time NA  
BKG NA  
MDA NA  
Guideline NA  
Action Level NA

LOCATION: Tank 411

PURPOSE: Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA
9	<MDA	<MDA
10	<MDA	<MDA
11	14	<MDA
12	16	<MDA
13	<MDA	<MDA
14	<MDA	<MDA
15	<MDA	<MDA

Model 2360 w/ 43-93  
No detectable

Model 2350-1 w/ 44-2  
No detectable

Note:  
Water sample taken: <MDA

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
( $e\alpha \times 100\text{cm}^2$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where:  $R_b$  = background counting rate $T_b$  = background counting time $T_s$  = sample count time

AI = action level

## Survey Cover Sheet

Surveyor: Chris Higgins

Print

Reviewer: Joe Trowbridge

Print

Sign

Sign

12/16/2004

Date

12/16/2004

Date

## Survey Meters

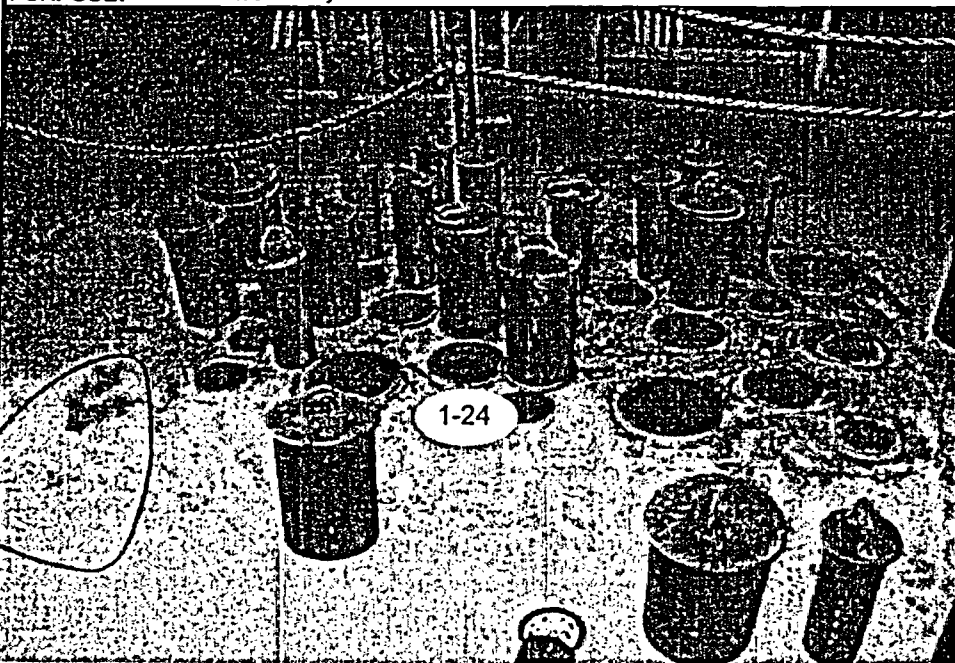
Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 24%  
 Type  $\alpha, \beta, \gamma$   $\alpha$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG .03 cpm  
 MDA 14 dpm/100cm<sup>2</sup>  
 Guideline 20 dpm/100cm<sup>2</sup>  
 Action Level 20 dpm/100cm<sup>2</sup>

Meter Model # WPC-9550  
 Meter / Probe Serial # 11P-1015  
 Cal Due 4/29/2005  
 Efficiency 45%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time 1 min.  
 Background Time 30 min.  
 BKG 0.5 cpm  
 MDA 12 dpm/100cm<sup>2</sup>  
 Guideline 200 dpm/100cm<sup>2</sup>  
 Action Level 200 dpm/100cm<sup>2</sup>

Meter Model # 2221  
 Meter / Probe Serial # 172022/168910  
 Cal Due 1/28/2005  
 Efficiency 24%  
 Type  $\alpha, \beta, \gamma$   $\beta, \gamma$   
 Sample Time N/A  
 Background Time N/A  
 BKG 62 cpm  
 MDA N/A  
 Guideline N/A  
 Action Level N/A

LOCATION: Source Storage Shafts

PURPOSE: Final Status Survey



Smear #	dpm/100cm <sup>2</sup>	
	$\beta, \gamma$	$\alpha$
1	<MDA	<MDA
2	<MDA	<MDA
3	<MDA	<MDA
4	<MDA	<MDA
5	<MDA	<MDA
6	<MDA	<MDA
7	<MDA	<MDA
8	<MDA	<MDA
9	<MDA	<MDA
10	<MDA	<MDA
11	<MDA	<MDA
12	<MDA	<MDA
13	<MDA	<MDA
14	<MDA	<MDA
15	<MDA	<MDA
16	<MDA	<MDA
17	<MDA	<MDA
18	<MDA	<MDA
19	<MDA	<MDA
20	<MDA	<MDA
21	<MDA	<MDA
22	<MDA	<MDA
23	13	<MDA
24	<MDA	<MDA

Frisked 100% with no detectable activity above background.

$$MDA = \frac{2.71}{T_s} + 3.29 \sqrt{\frac{R_b}{T_b} + \frac{R_b}{T_s}}$$

probe area  
(eff.  $\times \frac{100\text{cm}^2}{100\text{cm}^2}$ )

$$AI = R_b + ((\text{guideline}) (\text{eff.}))$$

$$\text{dpm} / 100\text{cm}^2 = \frac{\text{gross cpm} - \text{bkg cpm}}{(\text{efficiency})}$$

where: Rb = background counting rate

Tb = background counting time

Ts = sample count time

AI = action level

Smears		Count Mins: 1				Sample Collected			Fraction
PIC WPC-9550 Instr No 1		Count Started							
Carrier No.	Sample ID	Date	Time	Location ID	Comment	Date	Time	DF	of Sample
56	Smear 1	12/16/04	12:38:54	Source Stroage Shafts	Final Status Survey	12/16/04	12:38:54	1.000	1.00
57	Smear 2	12/16/04	12:37:34	Source Stroage Shafts	Final Status Survey	12/16/04	12:37:34	1.000	1.00
58	Smear 3	12/16/04	12:36:14	Source Stroage Shafts	Final Status Survey	12/16/04	12:36:14	1.000	1.00
59	Smear 4	12/16/04	12:34:54	Source Stroage Shafts	Final Status Survey	12/16/04	12:34:54	1.000	1.00
60	Smear 5	12/16/04	12:33:34	Source Stroage Shafts	Final Status Survey	12/16/04	12:33:34	1.000	1.00
61	Smear 6	12/16/04	12:32:15	Source Stroage Shafts	Final Status Survey	12/16/04	12:32:15	1.000	1.00
62	Smear 7	12/16/04	12:30:55	Source Stroage Shafts	Final Status Survey	12/16/04	12:30:55	1.000	1.00
63	Smear 8	12/16/04	12:29:35	Source Stroage Shafts	Final Status Survey	12/16/04	12:29:35	1.000	1.00
64	Smear 9	12/16/04	12:28:15	Source Stroage Shafts	Final Status Survey	12/16/04	12:28:15	1.000	1.00
65	Smear 10	12/16/04	12:26:55	Source Stroage Shafts	Final Status Survey	12/16/04	12:26:55	1.000	1.00
66	Smear 11	12/16/04	12:25:35	Source Stroage Shafts	Final Status Survey	12/16/04	12:25:35	1.000	1.00
67	Smear 12	12/16/04	12:24:15	Source Stroage Shafts	Final Status Survey	12/16/04	12:24:15	1.000	1.00
68	Smear 13	12/16/04	12:22:55	Source Stroage Shafts	Final Status Survey	12/16/04	12:22:55	1.000	1.00
69	Smear 14	12/16/04	12:21:36	Source Stroage Shafts	Final Status Survey	12/16/04	12:21:36	1.000	1.00
70	Smear 15	12/16/04	12:20:15	Source Stroage Shafts	Final Status Survey	12/16/04	12:20:15	1.000	1.00
71	Smear 16	12/16/04	12:18:56	Source Stroage Shafts	Final Status Survey	12/16/04	12:18:56	1.000	1.00
72	Smear 17	12/16/04	12:17:36	Source Stroage Shafts	Final Status Survey	12/16/04	12:17:36	1.000	1.00
73	Smear 18	12/16/04	12:16:16	Source Stroage Shafts	Final Status Survey	12/16/04	12:16:16	1.000	1.00
74	Smear 19	12/16/04	12:14:56	Source Stroage Shafts	Final Status Survey	12/16/04	12:14:56	1.000	1.00
75	Smear 20	12/16/04	12:13:36	Source Stroage Shafts	Final Status Survey	12/16/04	12:13:36	1.000	1.00
76	Smear 21	12/16/04	12:12:17	Source Stroage Shafts	Final Status Survey	12/16/04	12:12:17	1.000	1.00
77	Smear 22	12/16/04	12:10:57	Source Stroage Shafts	Final Status Survey	12/16/04	12:10:57	1.000	1.00
78	Smear 23	12/16/04	12:09:37	Source Stroage Shafts	Final Status Survey	12/16/04	12:09:37	1.000	1.00
79	Smear 24	12/16/04	12:08:17	Source Stroage Shafts	Final Status Survey	12/16/04	12:08:17	1.000	1.00

Technician (print): Rob Ellison

Technician (sign): 

Date: 12-16-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): 

Date: 12-16-04



Smears		Count Mins: 1		Alpha				Beta			
PIC WPC-9550 Instr No 1		Count Started		Bkg: 0.03 cpm %Eff: 23.94 LLD: 13.87 dpm				Bkg: 0.43 cpm %Eff: 44.6 LLD: 11.01 dpm			
Carrier No.	Sample ID	Date	Time	cpm	Net cpm	dpm	MDA	cpm	Net cpm	dpm	MDA
56	Smear 1	12/16/04	12:38:54	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
57	Smear 2	12/16/04	12:37:34	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
58	Smear 3	12/16/04	12:36:14	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
59	Smear 4	12/16/04	12:34:54	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
60	Smear 5	12/16/04	12:33:34	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
61	Smear 6	12/16/04	12:32:15	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
62	Smear 7	12/16/04	12:30:55	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
63	Smear 8	12/16/04	12:29:35	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
64	Smear 9	12/16/04	12:28:15	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
65	Smear 10	12/16/04	12:26:55	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
66	Smear 11	12/16/04	12:25:35	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
67	Smear 12	12/16/04	12:24:15	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
68	Smear 13	12/16/04	12:22:55	0.00	-0.03	-0.14	13.87	3.00	2.57	5.75	11.01
69	Smear 14	12/16/04	12:21:36	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
70	Smear 15	12/16/04	12:20:15	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
71	Smear 16	12/16/04	12:18:56	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
72	Smear 17	12/16/04	12:17:36	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
73	Smear 18	12/16/04	12:16:16	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
74	Smear 19	12/16/04	12:14:56	0.00	-0.03	-0.14	13.87	0.00	-0.43	-0.97	11.01
75	Smear 20	12/16/04	12:13:36	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
76	Smear 21	12/16/04	12:12:17	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01
77	Smear 22	12/16/04	12:10:57	0.00	-0.03	-0.14	13.87	1.00	0.57	1.27	11.01
78	Smear 23	12/16/04	12:09:37	0.00	-0.03	-0.14	13.87	6.00	5.57	12.48	11.01
79	Smear 24	12/16/04	12:08:17	0.00	-0.03	-0.14	13.87	2.00	1.57	3.51	11.01

Technician (print): Rob Ellison

Technician (sign): *Rob Ellison*

Date: 12-16-04

Reviewed By (print): Joe Trowbridge

Reviewed By (sign): *Joe Trowbridge*

Date: 12-16-04

**ATL International, Inc.  
Radioanalytical Laboratory**

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301-947-4455  
301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 08/24/2004  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Mike Taylor  
Project Number: 23530  
Project Name: Quehanna D&D Project  
Sciencetech PO Number: N-28111

Sample Date: 07/23/2004 - 08/11/2004  
Matrix: Soil/Sediment  
Requested Analyses: Sr-90 and Gamma Spec.  
Report Level: QA-I  
Report Due: 09/10/2004  
Comments:

Flag U - The radionuclide is not identified from spectrum, the reported activity is calculated from key-line background.

Sample densities for STPA078 & STPA079 are higher than the gamma calibration standard by more than 10%, the quantitative results from Gamma Spec. are not NIST traceable. However, no Co-60 & Cs-137 energy lines are found from spectra analysis.

**RESULTS**

Field ID	ATL ID	Analytical Method	Analyzed SMP Quantity	Parameter	Result	Error	MDA	Unit	Flag
DL-17	STPA077	GFPC	2.0087 g	Sr-90	2.34E+01	1.91E+00	5.80E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	1.370E-01	3.974E-02	7.715E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	5.120E-01	6.932E-02	2.792E-02	pCi/g	
		Gamma Spec.	505.80 g	K-40	4.731E+00	8.377E-01	2.514E-01	pCi/g	
Block 67 (167)	STPA078	GFPC	2.0087 g	Sr-90	-1.87E-01	1.73E-01	5.74E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	6.791E-03	5.584E-03	1.097E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	5.791E-03	6.232E-03	1.160E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	5.363E-01	1.718E-01	7.456E-02	pCi/g	
Block 68 (183)	STPA079	GFPC	2.0087 g	Sr-90	-2.73E-02	2.11E-01	5.73E-01	pCi/g	
		Gamma Spec.	505.80 g	Co-60	6.935E-03	1.236E-02	2.094E-02	pCi/g	U
		Gamma Spec.	505.80 g	Cs-137	1.228E-03	1.079E-02	1.802E-02	pCi/g	U
		Gamma Spec.	505.80 g	K-40	9.921E-01	2.967E-01	1.362E-01	pCi/g	

**APPENDIX I**  
**RESULTS OF THE STATISTICAL ANALYSIS**

## **APPENDIX I – RESULTS OF THE STATISTICAL ANALYSIS**

Appendix I contains the results of the Wilcoxon Rank Sum Tests for six of the Quehanna site final status survey units (DECON-1-A, FAN-1A, FAN-1-B, RB-1-B, RB-1-C, and ROAD-3-A). In each of these survey units, the difference between the gross activity of smallest reference area measurement and at least one survey unit measurement exceeded 1,000 dpm/100 cm<sup>2</sup> (these measurements are shaded). Each page in this appendix provides the fixed-point survey measurements from survey unit in gross counts per minute (cpm) and the reference area fixed-point measurements for the applicable surface being surveyed (i.e., concrete floor). The Wilcoxon Rank Sum test is performed by listing the reference area measurements and the survey unit measurements together and then adjusting the combined data set by adding the release criteria (239.5 cpm) to the reference area measurements. The adjusted data set is then sorted in descending order and the values are ranked with the highest value given the rank of "1." Next the sum of the adjusted reference area ranks is calculated. This value is referred to as "Wr" and it is compared to the "Critical value" which is determined from Table I.4 in MARSSIM based on the number of reference area measurements and the number of survey unit measurements. If Wr is less than the critical value, the null hypothesis (Ho) is rejected. The null hypothesis is that the survey unit is contaminated at a level greater than the release criteria. In all cases, Ho was rejected.

SU	Part	Material	El	Es	BkgB	N	GBeta
DECON-1-A	Floor	Concrete	0.479	0.5	139	1	227 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	2	233 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	3	212 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	4	325 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	5	293 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	6	245 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	7	225 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	8	268 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	9	299 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	10	253 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	11	378 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	12	291 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	13	251 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	14	261 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	15	386 cpm
DECON-1-A	Floor	Concrete	0.479	0.5	139	16	351 cpm

Release criteria = 239.5 cpm

Reference Area  
# of points (n) = 16

Survey Unit  
# of points (m) = 16

# WILCOXON RANK SUM TEST

Data		Data	
ref	163	su	227
ref	169	su	233
ref	161	su	212
ref	149	su	325
ref	161	su	293
ref	163	su	245
ref	168	su	225
ref	147	su	268
ref	139	su	299
ref	170	su	253
ref	159	su	378
ref	162	su	291
ref	151	su	251
ref	161	su	261
ref	179	su	386
ref	168	su	351

Mean = 161 281  
Stdev = 10 54  
k = 1.645 1.645

data	adj data	number	rank	ref area ranks
ref	179	406	1	1
ref	170	397	2	2
ref	169	396	3	3
ref	168	395	4	4
ref	168	395	5	5
ref	163	390	6	6
ref	163	390	7	7
ref	162	389	8	8
ref	161	388	9	9
ref	161	388	10	10
ref	161	388	11	11
ref	159	386	12	12
su	386	386	13	0
ref	151	378	14	14
su	378	378	15	0
ref	149	376	16	16
ref	147	374	17	17
ref	139	366	18	18
su	351	351	19	0
su	325	325	20	0
su	299	299	21	0
su	293	293	22	0
su	291	291	23	0
su	268	268	24	0
su	261	261	25	0
su	253	253	26	0
su	251	251	27	0
su	245	245	28	0
su	233	233	29	0
su	227	227	30	0
su	225	225	31	0
su	212	212	32	0

Sum of ref. Ranks = 143 (Wr)  
alpha = 0.01  
Critical value = 325 (from MARSSIM Table I.4)  
Test results = Reject Ho (Wr < Critical value)

Ho: The survey unit median exceeds the reference area median by more than the DCGL

Wilcoxon Rank Sum Test for DECON-1-A

SU	Part	Material	El	Es	BkgB	N	GBeta
FAN-1-A	Floor	Concrete	0.479	0.075	45	1	266 cpm
FAN-1-A	Floor	Concrete	0.457	0.075	45	2	147 cpm
FAN-1-A	Floor	Concrete	0.457	0.075	45	3	139 cpm
FAN-1-A	Floor	Concrete	0.479	0.075	45	4	128 cpm
FAN-1-A	Floor	Concrete	0.479	0.075	45	5	214 cpm
FAN-1-A	Floor	Concrete	0.479	0.075	45	6	137 cpm
FAN-1-A	Floor	Concrete	0.479	0.075	45	7	159 cpm
FAN-1-A	Floor	Concrete	0.479	0.075	45	8	286 cpm
FAN-1-A	Floor	Concrete	0.479	0.075	45	9	142 cpm
FAN-1-A	Floor	Concrete	0.479	0.075	45	10	134 cpm
FAN-1-A	Floor	Concrete	0.479	0.075	45	11	159 cpm
FAN-1-A	Floor	Concrete	0.479	0.075	45	12	140 cpm
FAN-1-A	Floor	Concrete	0.479	0.075	45	13	139 cpm
FAN-1-A	Floor	Concrete	0.479	0.075	45	14	129 cpm
FAN-1-A	Floor	Concrete	0.479	0.075	45	15	147 cpm

Release criteria = 239.5 cpm

Reference Area  
# of points (n) = 16

Survey Unit  
# of points (m) = 15

# WILCOXON RANK SUM TEST

Data		Data	data	adj data	number	rank	ref area ranks
ref	163	su	266	ref	179	445	1
ref	169	su	147	ref	170	436	2
ref	161	su	139	ref	169	435	3
ref	149	su	128	ref	168	434	4
ref	161	su	214	ref	168	434	5
ref	163	su	137	ref	163	429	6
ref	168	su	159	ref	163	429	7
ref	147	su	286	ref	162	428	8
ref	139	su	142	ref	161	427	9
ref	170	su	134	ref	161	427	10
ref	159	su	159	ref	161	427	11
ref	162	su	140	ref	159	425	12
ref	151	su	139	ref	151	417	13
ref	161	su	129	ref	149	415	14
ref	179	su	147	ref	147	413	15
ref	168		147	ref	139	405	16
			286	su	286	286	17
			266	su	266	266	18
			214	su	214	214	19
			159	su	159	159	20
			159	su	159	159	21
			147	su	147	147	22
			147	su	147	147	23
			142	su	142	142	24
			140	su	140	140	25
			139	su	139	139	26
			139	su	139	139	27
			137	su	137	137	28
			134	su	134	134	29
			129	su	129	129	30
			128	su	128	128	31

Mean = 161  
Stdev = 10  
k = 1.645

164  
50  
1.645

Sum of ref. Ranks = 136 (Wr)  
alpha = 0.01  
Critical value = 314 (from MARSSIM Table I.4)  
Test results = Reject Ho (Wr < Critical value)

Ho: The survey unit median exceeds the reference area median by more than the DCGL

Wilcoxon Rank Sum Test for FAN-1-A

SU	Part	Material	B	Es	BkgB	N	GBeta
FAN-1-B	Floor	Concrete	0.457	0.075	45	1	136 cpm
FAN-1-B	Floor	Concrete	0.457	0.075	45	2	201 cpm
FAN-1-B	Floor	Concrete	0.457	0.075	45	3	154 cpm
FAN-1-B	Floor	Concrete	0.457	0.075	45	4	172 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	5	125 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	6	154 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	7	158 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	8	135 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	9	173 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	10	139 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	11	275 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	12	158 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	13	174 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	14	135 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	15	157 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	16	185 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	17	198 cpm
FAN-1-B	Floor	Concrete	0.479	0.075	45	18	240 cpm

Release criteria = 239.5 cpm

Reference Area  
# of points (n) = 16

Survey Unit  
# of points (m) = 18

# WILCOXON RANK SUM TEST

	Data		Data		data	adj data	number	rank	ref area ranks
ref	163	su	136	ref	179	315	1	1	1
ref	169	su	201	ref	170	306	2	2	2
ref	161	su	154	ref	169	305	3	3	3
ref	149	su	172	ref	168	304	4	4	4
ref	161	su	125	ref	168	304	5	5	5
ref	163	su	154	ref	163	299	6	6	6
ref	168	su	158	ref	163	299	7	7	7
ref	147	su	135	ref	162	298	8	8	8
ref	139	su	173	ref	161	297	9	9	9
ref	170	su	139	ref	161	297	10	10	10
ref	159	su	275	ref	161	297	11	11	11
ref	162	su	158	ref	159	285	12	12	12
ref	151	su	174	ref	151	287	13	13	13
ref	161	su	135	ref	149	285	14	14	14
ref	179	su	157	ref	147	283	15	15	15
ref	168	su	185	ref	139	275	16	16	16
		su	198	su	275	275	17	17	0
		su	240	su	240	240	18	18	0
		su		su	201	201	19	19	0
Mean =	161		171	su	198	198	20	20	0
Stdev =	10		39	su	185	185	21	21	0
k =	1.645		1.645	su	174	174	22	22	0
				su	173	173	23	23	0
				su	172	172	24	24	0
				su	158	158	25	25	0
				su	158	158	26	26	0
				su	157	157	27	27	0
				su	154	154	28	28	0
				su	154	154	29	29	0
				su	139	139	30	30	0
				su	136	136	31	31	0
				su	135	135	32	32	0
				su	135	135	33	33	0
				su	125	125	34	34	0

Sum of ref. Ranks = 136 (Wr)

alpha = 0.01

Critical value = 347 (from MARSSIM Table I.4)

Test results = Reject Ho (Wr < Critical value)

Ho: The survey unit median exceeds the reference area median by more than the DCGL

Wilcoxon Rank Sum Test for FAN-1-B

Survey Unit	Part	Material	El. Elev	Test Est	Bkg B	Use Name	GBeta
RB-1-B	Floor	Concrete	0.479	0.5	139	1	311 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	2	331 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	3	321 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	4	331 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	5	342 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	6	268 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	7	383 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	8	311 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	9	373 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	10	315 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	11	262 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	12	355 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	13	355 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	14	382 cpm
RB-1-B	Floor	Concrete	0.479	0.5	139	15	330 cpm

Release criteria = 239.5 cpm

Reference Area  
# of points (n) = 16

Survey Unit  
# of points (m) = 15

# WILCOXON RANK SUM TEST

Data		Data		data	adj data	number	rank	ref area ranks
ref	163	su	311	ref	179	490	1	1
ref	169	su	331	ref	170	481	2	2
ref	161	su	321	ref	169	480	3	3
ref	149	su	331	ref	168	479	4	4
ref	161	su	342	ref	168	479	5	5
ref	163	su	268	ref	163	474	6	6
ref	168	su	383	ref	163	474	7	7
ref	147	su	311	ref	162	473	8	8
ref	139	su	373	ref	161	472	9	9
ref	170	su	315	ref	161	472	10	10
ref	159	su	262	ref	159	470	11	11
ref	162	su	355	ref	159	470	12	12
ref	151	su	355	ref	151	462	13	13
ref	161	su	382	ref	149	460	14	14
ref	179	su	330	ref	147	458	15	15
ref	168			ref	139	450	16	16
				su	383	383	17	0
				su	382	382	18	0
				su	373	373	19	0
				su	355	355	20	0
				su	355	355	21	0
				su	342	342	22	0
				su	331	331	23	0
				su	331	331	24	0
				su	330	330	25	0
				su	321	321	26	0
				su	315	315	27	0
				su	311	311	28	0
				su	311	311	29	0
				su	268	268	30	0
				su	262	262	31	0

Mean = 161 331  
Stdev = 10 36  
k = 1.645 1.645

Sum of ref. Ranks = 136 (Wr)  
alpha = 0.01  
Critical value = 314 (from MARSSIM Table I.4)  
Test results = Reject Ho (Wr < Critical value)

Ho: The survey unit median exceeds the reference area median by more than the DCGL

Wilcoxon Rank Sum Test for RB-1-B



Survey Unit	Part	Material	El	Es	BkgB	N	GBeta
RB-1-C	Floor	Concrete	0.479	0.5	139	1	309 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	2	261 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	3	361 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	4	282 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	5	285 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	6	300 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	7	252 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	8	390 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	9	353 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	10	364 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	11	384 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	12	324 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	13	333 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	14	199 cpm
RB-1-C	Floor	Concrete	0.479	0.5	139	15	309 cpm

Release criteria = 239.5 cpm

Reference Area  
# of points (n) = 16

Survey Unit  
# of points (m) = 15

#### WILCOXON RANK SUM TEST

Data		Data		data	adj data	number	rank	ref area ranks
ref	163	su	309	ref	179	488	1	1
ref	169	su	261	ref	170	479	2	2
ref	161	su	361	ref	169	478	3	3
ref	149	su	282	ref	168	477	4	4
ref	161	su	285	ref	168	477	5	5
ref	163	su	300	ref	163	472	6	6
ref	168	su	252	ref	163	472	7	7
ref	147	su	390	ref	162	471	8	8
ref	139	su	353	ref	161	470	9	9
ref	170	su	364	ref	161	470	10	10
ref	159	su	384	ref	161	470	11	11
ref	162	su	324	ref	159	468	12	12
ref	151	su	333	ref	151	460	13	13
ref	181	su	199	ref	149	458	14	14
ref	179	su	309	ref	147	456	15	15
ref	168			ref	139	448	16	16
				su	390	390	17	0
				su	384	384	18	0
				su	364	364	19	0
				su	361	361	20	0
				su	353	353	21	0
				su	333	333	22	0
				su	324	324	23	0
				su	309	309	24	0
				su	309	309	25	0
				su	300	300	26	0
				su	285	285	27	0
				su	282	282	28	0
				su	261	261	29	0
				su	252	252	30	0
				su	199	199	31	0

Mean = 161 314  
Stdev = 10 53  
k = 1.645 1.645

Sum of ref. Ranks = 136 (Wr)  
alpha = 0.01  
Critical value = 314 (from MARSSIM Table I.4)  
Test results = Reject Ho (Wr < Critical value)

Ho: The survey unit median exceeds the reference area median by more than the DCGL.

Wilcoxon Rank Sum Test for RB-1-C

SU	Part	Material	El	Es	BkgB	N	GBeta
ROAD-3-A	Floor	Concrete	0.479	0.5	666	1	645 cpm
ROAD-3-A	Floor	Concrete	0.479	0.5	666	2	678 cpm
ROAD-3-A	Floor	Concrete	0.479	0.5	666	3	669 cpm
ROAD-3-A	Floor	Concrete	0.479	0.5	666	4	653 cpm
ROAD-3-A	Floor	Asphalt	0.479	0.5	400	5	573 cpm
ROAD-3-A	Floor	Asphalt	0.479	0.5	400	6	651 cpm
ROAD-3-A	Floor	Asphalt	0.479	0.5	400	7	629 cpm
ROAD-3-A	Floor	Asphalt	0.479	0.5	400	8	610 cpm
ROAD-3-A	Floor	Asphalt	0.479	0.5	400	9	600 cpm
ROAD-3-A	Floor	Asphalt	0.479	0.5	400	10	565 cpm
ROAD-3-A	Floor	Asphalt	0.479	0.5	400	11	881 cpm
ROAD-3-A	Floor	Asphalt	0.479	0.5	400	12	593 cpm
ROAD-3-A	Floor	Asphalt	0.479	0.5	400	13	633 cpm
ROAD-3-A	Floor	Concrete	0.479	0.5	666	14	468 cpm
ROAD-3-A	Floor	Concrete	0.479	0.5	666	15	441 cpm

Release criteria = 239.5 cpm

Reference Area (asphalt) Survey Unit  
# of points (n) = 16 # of points (m) = 15

#### WILCOXON RANK SUM TEST

Data		Data		data		adj data		number	rank	ref area ranks
ref	458	su	645	ref	478	1123	1	1	1	1
ref	462	su	678	ref	462	1107	2	2	2	2
ref	441	su	669	ref	458	1103	3	3	3	3
ref	441	su	653	ref	453	1098	4	4	4	4
ref	437	su	573	ref	450	1095	5	5	5	5
ref	400	su	651	ref	443	1088	6	6	6	6
ref	402	su	629	ref	441	1086	7	7	7	7
ref	443	su	610	ref	441	1086	8	8	8	8
ref	422	su	600	ref	437	1082	9	9	9	9
ref	426	su	565	ref	437	1082	10	10	10	10
ref	424	su	661	ref	426	1071	11	11	11	11
ref	437	su	593	ref	424	1069	12	12	12	12
ref	478	su	633	ref	422	1067	13	13	13	13
ref	403	su	468	ref	403	1048	14	14	14	14
ref	453	su	441	ref	402	1047	15	15	15	15
ref	450			ref	400	1045	16	16	16	16
				su	678	678	17	17	0	0
				su	669	669	18	18	0	0
				su	661	661	19	19	0	0
				su	653	653	20	20	0	0
				su	651	651	21	21	0	0
				su	645	645	22	22	0	0
				su	633	633	23	23	0	0
				su	629	629	24	24	0	0
				su	610	610	25	25	0	0
				su	600	600	26	26	0	0
				su	593	593	27	27	0	0
				su	573	573	28	28	0	0
				su	565	565	29	29	0	0
				su	468	468	30	30	0	0
				su	441	441	31	31	0	0
Mean =	436		605							
Stdev =	22		70							
k =	1.645		1.645							

Mean = 436 605  
Stdev = 22 70  
k = 1.645 1.645

Sum of ref. Ranks = 136 (Wr)  
alpha = 0.01  
Critical value = 314 (from MARSSIM Table 1.4)  
Test results = Reject Ho (Wr < Critical value)

Ho: The survey unit median exceeds the reference area median by more than the DCGL.

Wilcoxon Rank Sum Test For ROAD-3-A