

Advanced Medical Systems, Inc.

121 North Eagle Street • Geneva, Ohio 44041
466-4671 FAX (216) 466-0186

R2

97891

March 8, 1995

Mr. John A. Grobe, Chief
Nuclear Materials Inspection
Section II
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

Dear Mr. Grobe:

Enclosed, please find two (2) copies of Advanced Medical Systems, Inc.'s W.H.U.T. Room Survey which is a part of our License Renewal.

If you have any questions, please contact me.

Sincerely,



DAVID CESAR
Treasurer

DC/cs
Enclosures

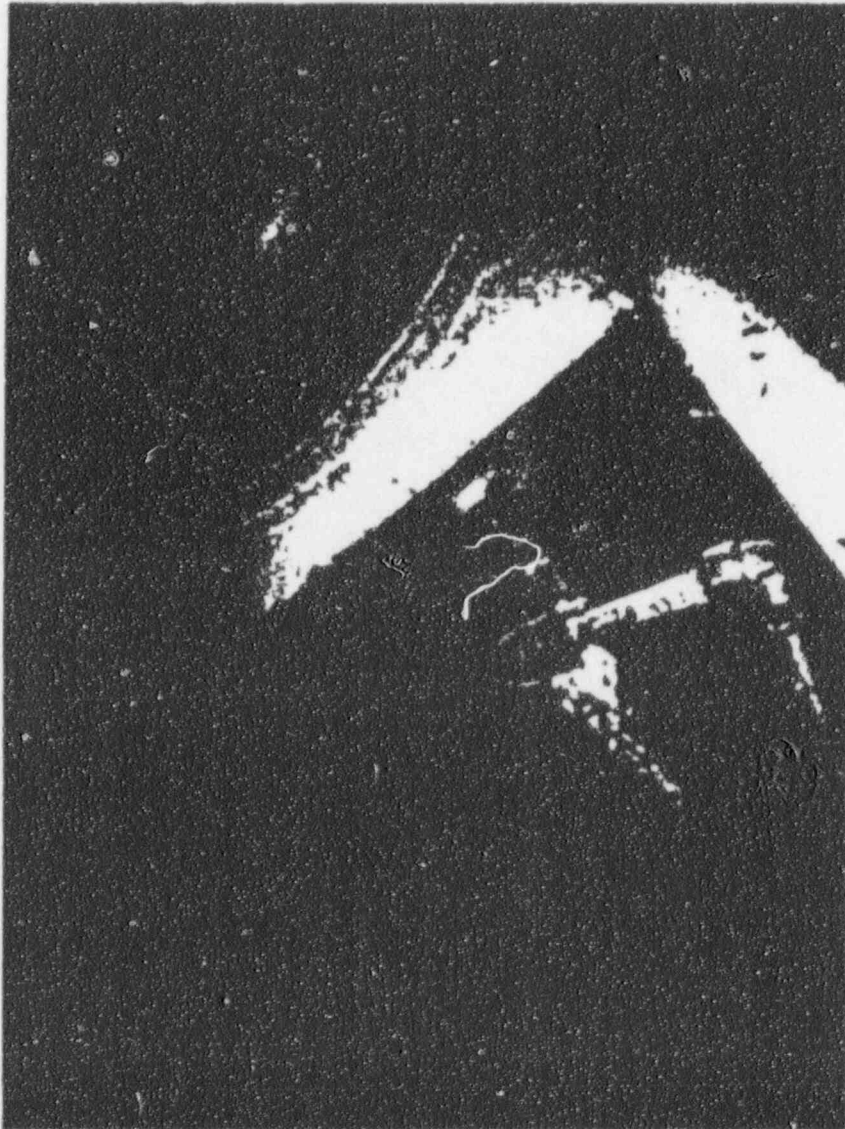
B/88

9702060291 970127
PDR FOIA
ENGLISH96-444 PDR

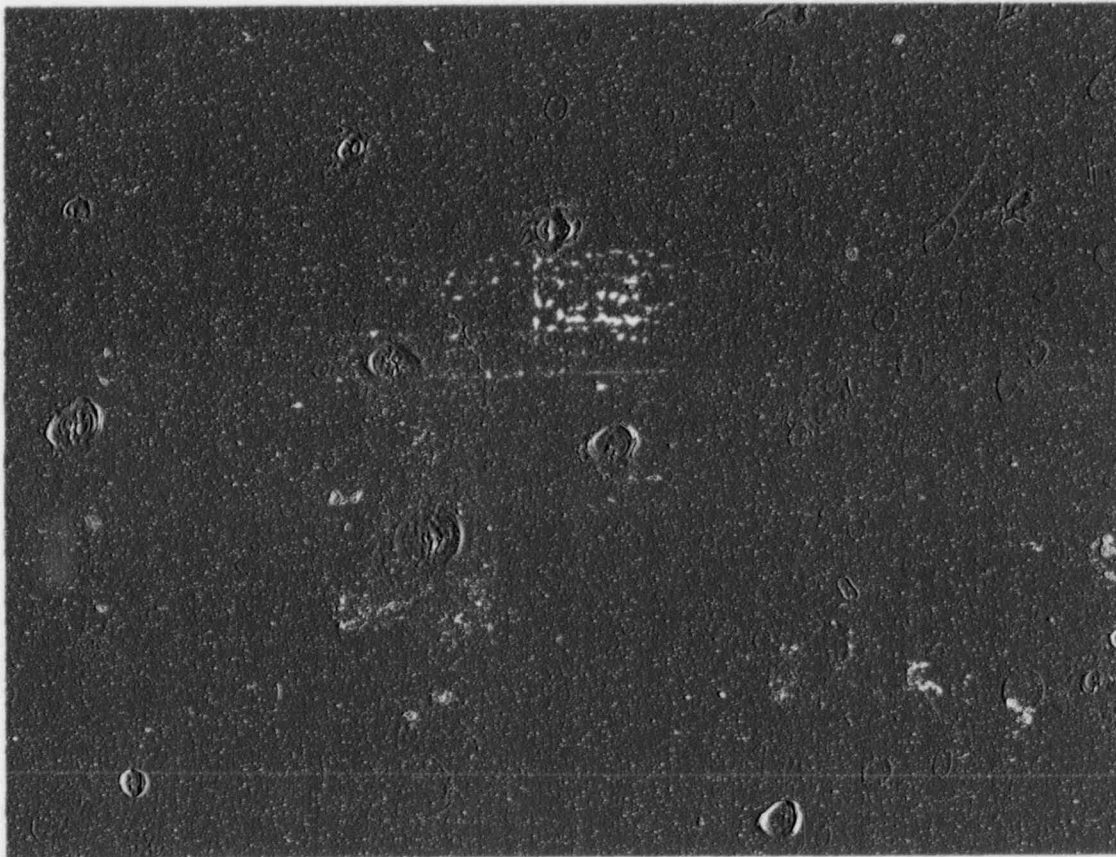


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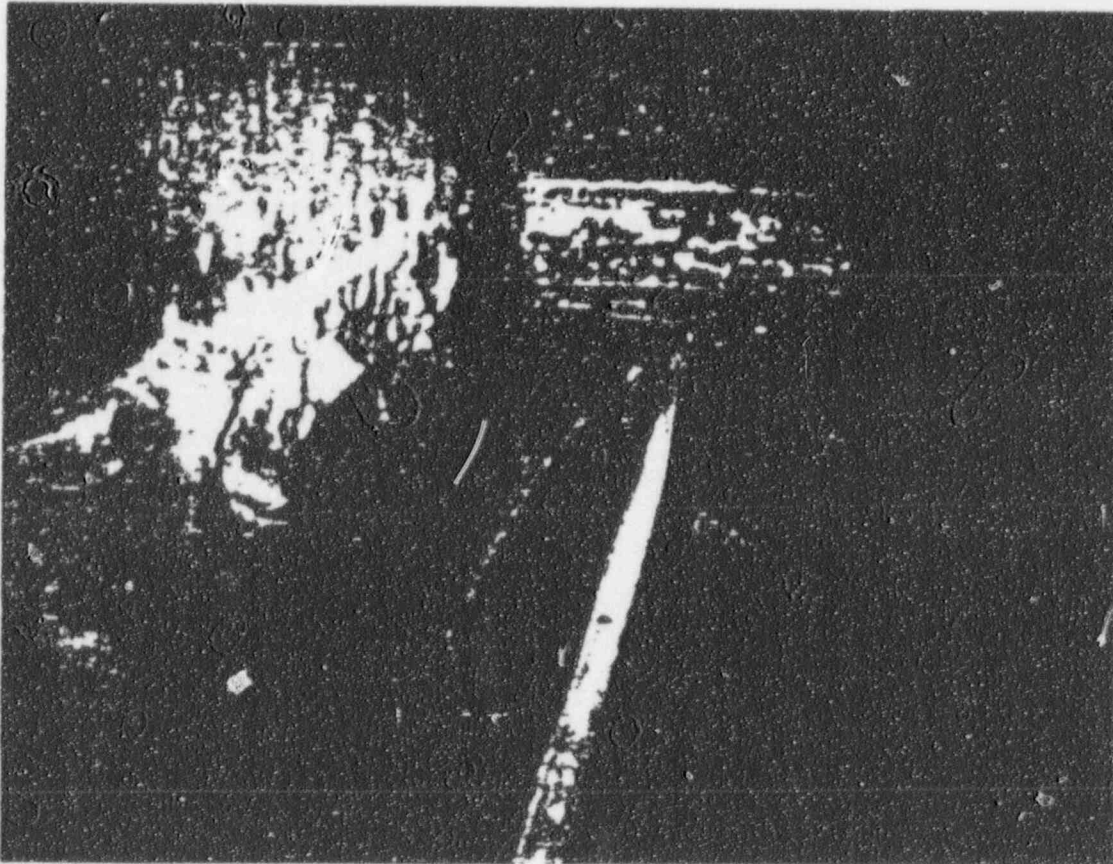
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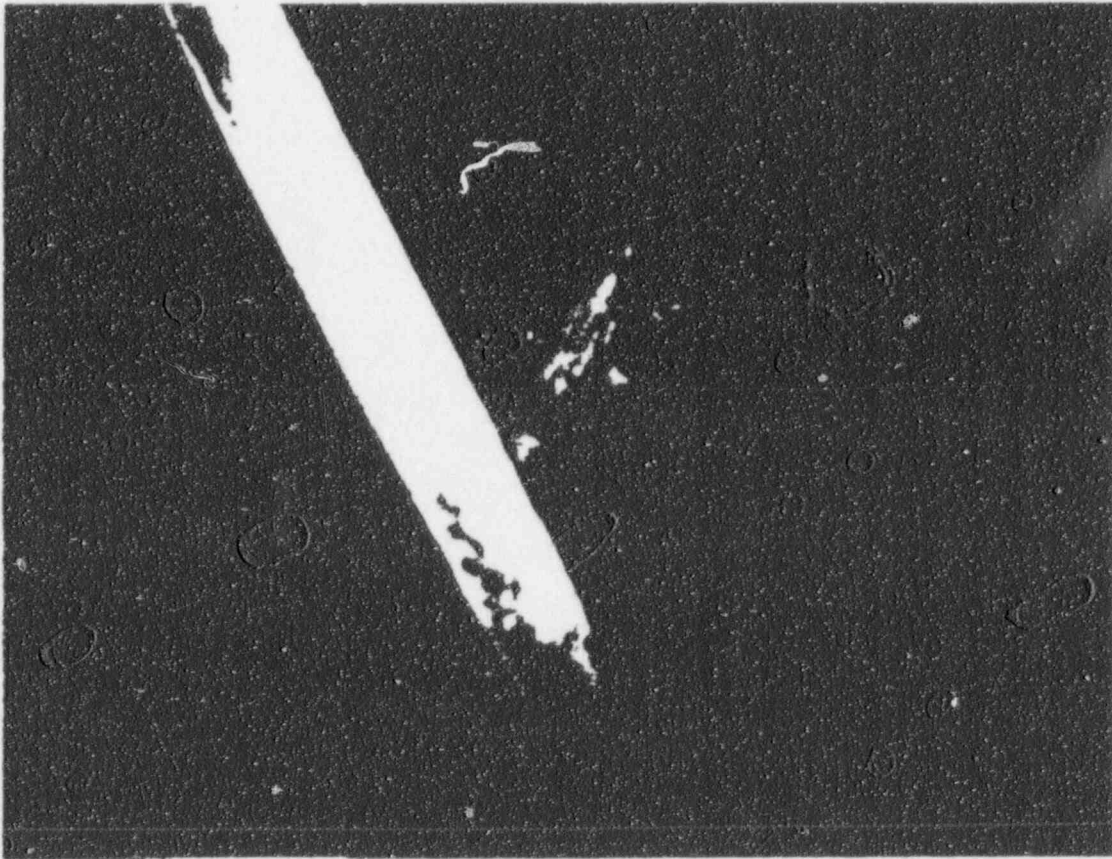
VIEW UNDER 100 GALLON STORAGE TANK EXHIBITING 6" STALACTITE FROM TANK DRAIN
LEAKAGE. LOOKING NORTH FROM PENETRATION S2.



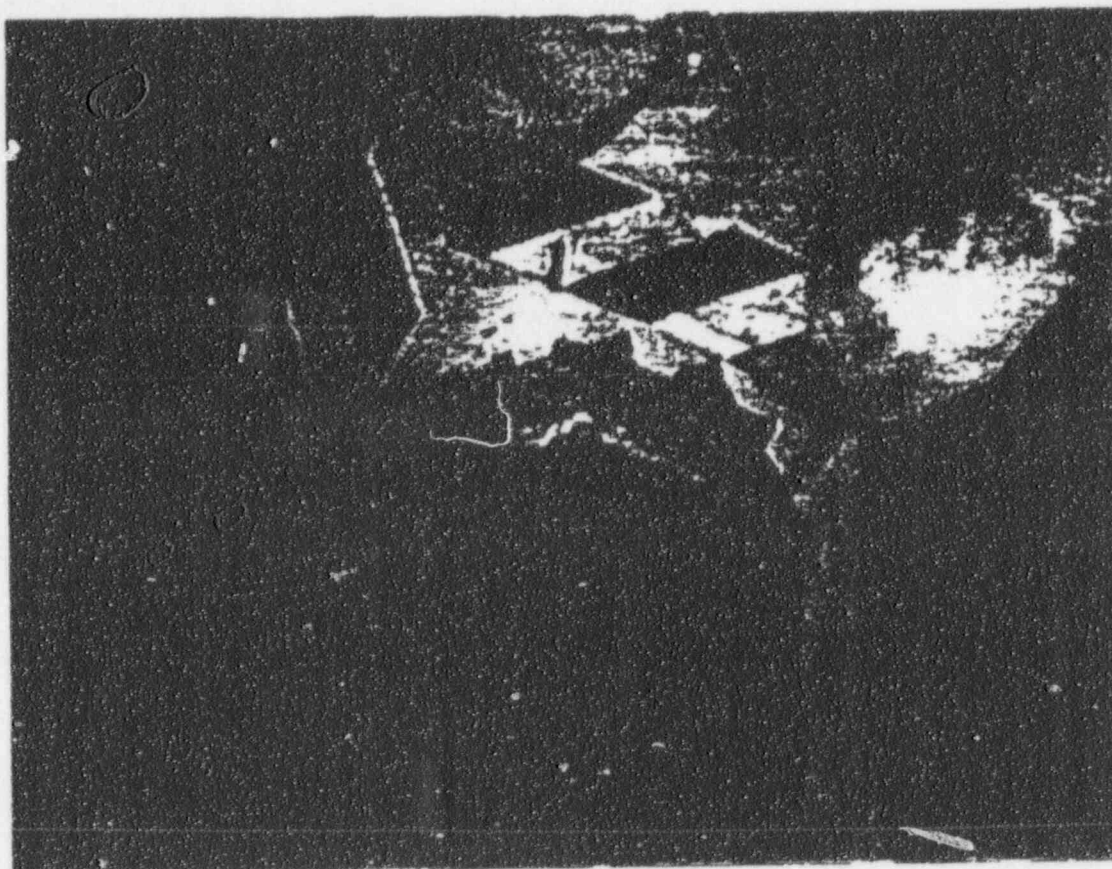
VIEW OF BERM AT THE ENTRANCE OF THE WHUT ROOM DOOR PENETRATION S2 INDICATING
WATER DISTRIBUTION ON FLOOR.



VIEW OF THE FLOOR AND 500 GALLON TANK SUPPORT FROM PENETRATION B2.



VIEW OF THE 2 COLUMN ION EXCHANGE SYSTEM FROM PENETRATION S2 DISPLAYING 45°
CONNECTION AND UNION.



SOIL SAMPLE FROM ADVANCED MEDICAL SYSTEMS, INC., BASEMENT AREA
EAST CORE BORE "A".

APPENDIX A

WASTE HOLD-UP TANK
INTEGRITY VERIFICATION ANALYSIS



ADVANCED MEDICAL SYSTEM
WORK PLAN

AMS-WP-00

REVISION 0

WASTE HOLD-UP TANK
INTEGRITY VERIFICATION ANALYSIS

REVIEWED BY:

Project Manager

Date

APPROVED BY:

AMS Representative

Date

PROPRIETARY INFORMATION: This document is the property of the Scientific Ecology Group, Inc., P.O. Box 2530, 1560 Bear Creek Road, Oak Ridge, TN 37831-2530, and furnished with the understanding that the information herein will be held in confidence and will not be duplicated, used, or disclosed either in whole or part without the written permission of the Scientific Ecology Group, Inc.



ADVANCED MEDICAL SYSTEM
WORK PLAN

AMS-WP-00
REVISION 0

WASTE HOLD-UP TANK
INTEGRITY VERIFICATION ANALYSIS

REVIEWED BY:

Richard D. Leisner
Project Manager

11/15/94
Date

APPROVED BY:

AMS Representative

Date

PROPRIETARY INFORMATION: This document is the property of the Scientific Ecology Group, Inc., P.O. Box 2530, 1560 Bear Creek Road, Oak Ridge, TN 37831-2530, and furnished with the understanding that the information herein will be held in confidence and will not be duplicated, used, or disclosed either in whole or part without the written permission of the Scientific Ecology Group, Inc.

ADVANCED MEDICAL SYSTEMS, REV. 4

January 18, 1995

This package of procedures has been prepared for the Advanced Medical Systems project. Please use procedure REDS-PDC-104, *Acknowledgement of Document Understanding*, to record the briefing of all necessary personnel on these procedures. The procedures included in this package are as follows (changes or additions are shaded):

	PROC. NO.	TITLE	REVISION
1.	REDS-CHM-101	Sample Identification and Chain-of-Custody	2
2.	REDS-CHR-106	Surface Soil Sampling	0
3.	REDS-CHR-107	Subsurface Soil Sampling	0
4.	REDS-CHR-108	Surface Soil Surveys and the Collection of Water, Sediment, Vegetation and Surface Soil Samples	2
5.	REDS-DEC-301	Decontamination of Tools, Area and Equipment	0
6.	REDS-DEC-302	Control and Use of Radiological Containments	1
7.	REDS-DEC-303	Decontamination Techniques - Selection and Precautions	1
8.	REDS-INST-100	Radiation Protection Instrumentation Program	2
9.	REDS-INST-101	Issue, Control and Accountability of Radiation Protection Instrumentation	1
10.	REDS-INST-104	Calibration and Test Requirements for Radiation Protection Instrumentation	0
11.	REDS-INST-204	Operation of Eberline RO-7 High Range Ion Chamber	0
12.	REDS-INST-207	Operation of Eberline Ion Chamber Model RO-2/RO-2A	1
13.	REDS-INST-216	Operation of F&J LV-1 and HV-1 Air Samplers	0
14.	REDS-OPS-201	Radiation Work Permits	1
15.	REDS-OPS-304	Analysis and Evaluation of Air Samples	2
16.	REDS-PDC-104	Acknowledgement of Document Understanding	0
17.	REDS-RSP-103	HEPA Ventilation Operation	0

There may be references to procedures not included in this package. If review of these references is required, they are available at the SEG RE&DS home office, Oak Ridge, TN. Please contact Dave Hall, Manager, Decommissioning Contract Services.

APPENDIX C
SAMPLING RESULTS

APPENDIX C
SAMPLING RESULTS

le No: 94058543

Environmental Soil / SEG / AMS-A-000-006
11/28/94 833.2 grams (KW)

Analysis Information:

Start time 28-NOV-94 10:39:16
Live time 1800
Dead time .25%
EG&G Ortec Model: GMX-33195P SN: 29-TN10256
500 ml Marinelli Beaker on Detector End Cap
Main analysis library: SEG.LIB
Peak rejection level 30.000%
Activity scaling factor 2.7050E+01/ 8.3320E+02 = 3.2465E-02
Decay correct to date NO

Nuclide Summary:

NUCLIDE	ACTIVITY pCi/gram	COUNTING
AG-110M <	4.12E-02	
AM-241 <	5.29E-02	
AM-241 <	4.06E-02	
AM-241 <	1.95E-01	
CO-57 <	1.71E-02	
CO-58 <	3.62E-02	
CO-60	3.4848E-01	5.87%
CR-51 <	2.52E-01	
CS-134 <	3.03E-02	
CS-137 <	3.79E-02	
FE-59 <	5.58E-02	
I-131 <	2.60E-02	
K-40	1.1819E+01	4.58%
KN-54 <	3.93E-02	
NB-94 <	3.88E-02	
NB-95 <	4.23E-02	
RN-220	7.2911E-01	4.84%
RN-222	6.6660E-01	5.90%
RU-103 <	1.53E-02	
RU-106 <	3.00E-01	
SB-125 <	1.17E-01	
SN-113 <	4.20E-02	
TH-232	7.2282E-01	7.86%
J-235	6.2095E-02	23.64%
J-238	1.1677E+00	15.90%
ZN-65 <	1.13E-01	
ZR-95 <	1.29E-01	

ACTIVITY 1.5515750E+01 pCi/gram

Technician:

K. Holman

Date:

11-28-94

le No: 94058544

Enviromental Soil / SEG / AMS-A-006-010
11-21-94 (k Wright) 843.9 gr

Analysis Information:

Start time 28-NOV-94 10:06:43
Live time 1800
Dead time .28%
EG&G Ortec Model: GMX-33195P SN: 29-TN10256
500 ml Marinelli Beaker on Detector End Cap
Main analysis library: SEG.LIB
Peak rejection level 30.000%
Activity scaling factor 2.7050E+01/ 8.4390E+02 = 3.2054E-02
Decay correct to date NO

Nuclide Summary:

NUCLIDE	ACTIVITY pCi/gram	COUNTING
AG-110M <	5.19E-02	
AM-241 <	6.48E-02	
CT 241- <	5.00E-02	
14 <	2.39E-01	
CU 67 <	2.44E-02	
CO-58 <	4.68E-02	
CO-60	1.0195E-01	20.93%
CR-51 <	2.37E-01	
CS-134 <	3.91E-02	
CS-137 <	4.73E-02	
FE-59 <	9.01E-02	
I-131 <	4.43E-02	
K-40	2.0455E+01	3.51%
MN-54 <	4.66E-02	
NB-94 <	4.07E-02	
NB-95 <	4.38E-02	
RN-220	1.2203E+00	3.67%
RN-222	6.1268E-01	4.97%
RU-103 <	2.24E-02	
RU-106 <	4.57E-01	
SB-125 <	9.71E-02	
SN-113 <	4.28E-02	
TH-232	1.1291E+00	7.33%
J-235 #	1.0943E-01	16.84%
J-238	1.1278E+00	18.65%
ZN-65 <	8.72E-02	
ZR-95 <	1.57E-01	

All peaks for activity calculation had bad shape.

ACTIVITY 2.4756440E+01 pCi/gram

Technician: *J. Harten*Date: 11/28/94

File No: 94058545

Environmental Soil / SEG / AMS-B-000-012
11-22-94 713.4 gr (K.Wright)

Analysis Information:

Start time 28-NOV-94 10:06:40
Live time 1800
Dead time .28%
Oxford Model: CNVDS30-15190 SN: 7976
500 ml Marinelli Beaker on Detector End Cap
Main analysis library: SEG.LIB
Peak rejection level 30.000%
Activity scaling factor 2.7050E+01/ 7.1340E+02 = 3.7917E-02
Decay correct to date NO

Nuclide Summary:

NUCLIDE	ACTIVITY pCi/gram	COUNTING
AG-110M <	1.06E-01	
AM-241 <	1.69E-01	
Ca 41 <	1.19E-01	
Ca 44 <	2.43E-01	
CO-57 <	2.96E-02	
CO-58 <	8.42E-02	
CO-60 <	1.79E-01	
CR-51 <	6.37E-01	
CS-134 <	1.70E-01	
CS-137 <	1.00E-01	
FE-59 <	1.60E-01	
I-131 <	8.10E-02	
K-40	3.1190E+01	3.85%
MN-54 <	1.15E-01	
NB-94 <	1.05E-01	
NB-95 <	9.83E-02	
RN-220	1.4372E+00	4.98%
RN-222	8.8725E-01	5.99%
RU-103 <	5.99E-02	
RU-106 <	7.64E-01	
SB-125 <	1.52E-01	
SN-113 <	5.05E-02	
TH-232	1.5321E+00	10.45%
J-235 <	1.15E-01	
J-238 <	1.66E+00	
ZN-65 <	2.72E-01	
ZR-95 <	3.05E-01	

ACTIVITY 3.5047040E+01 pCi/gram

Technician: *[Signature]*Date: 11/28/94

le No: 94058546

Environmental Soil / SEG / AMS-C-000-006
11/28/94 689.8 grams (KW)

Analysis Information:

Start time 28-NOV-94 10:39:15
Live time 1800
Dead time .25%
Oxford Model: CNVDS30-15190 SN: 7976
500 ml Marinelli Beaker on Detector End Cap
Main analysis library: SEG.LIB
Peak rejection level 30.000%
Activity scaling factor 2.7050E+01/ 6.8980E+02 = 3.9214E-02
Decay correct to date NO

Nuclide Summary:

NUCLIDE	ACTIVITY pCi/gram	COUNTING
AG-110M <	1.07E-01	
AM-241 <	1.68E-01	
As 11' <	1.07E-01	
4 <	5.03E-01	
CO-57 <	3.15E-02	
CO-58 <	1.31E-01	
CO-60	1.6396E+00	4.10%
CR-51 <	4.47E-01	
CS-134 <	1.81E-01	
CS-137 <	1.16E-01	
FE-59 <	3.28E-01	
I-131 <	9.88E-02	
K-40 <	4.78E+00	
IN-54 <	1.03E-01	
IB-94 <	1.39E-01	
IB-95 <	1.03E-01	
RN-220	1.3910E+00	5.88%
RN-222	8.6964E-01	6.65%
RU-103 <	9.30E-02	
RU-106 <	6.68E-01	
SB-125 <	1.32E-01	
SN-113 <	6.35E-02	
TH-232 <	8.48E-01	
J-235	1.5930E-01	24.72%
J-238 <	1.7E+00	
IN-65 <	2.1E-01	
IR-95 <	3.38E-01	

ACTIVITY 4.0595890E+00 pCi/gram

Technician:

K. Holman

Date:

11-28-94

* U-238 peaks present; But not added.

File No: 94058547

Environmental Soil / SEG / AMS-C-000-012
11/28/94 655.3 grams (KW)

Analysis Information:

Start time 28-NOV-94 11:21:04
Live time 1800
Dead time .17%
Oxford Model: CNVDS30-15190 SN: 7976
500 ml Marinelli Beaker on Detector End Cap
Main analysis library: SEG.LIB
Peak rejection level 30.000%
Activity scaling factor 2.7050E+01/ 6.5530E+02 = 4.1279E-02
Decay correct to date NO

Nuclide Summary:

NUCLIDE	ACTIVITY pCi/gram	COUNTING
AG-110M <	8.59E-02	
AM-241 <	2.39E-01	
41 <	1.17E-01	
44 <	2.71E-01	
CO-57 <	3.85E-02	
CO-58 <	1.05E-01	
CO-60 <	1.90E-01	
CR-51 <	7.52E-01	
CS-134 <	1.78E-01	
CS-137 <	1.33E-01	
FE-59 <	2.02E-01	
I-131 <	7.97E-02	
K-40 <	3.3778E+01	3.86%
KN-54 <	1.37E-01	
NB-94 <	8.23E-02	
NB-95 <	9.31E-02	
RN-220 <	1.5730E+00	5.03%
RN-222 <	8.7181E-01	6.84%
RU-103 <	4.35E-02	
RU-106 <	7.49E-01	
SB-125 <	1.51E-01	
SN-113 <	7.49E-02	
TH-232 <	1.4689E+00	8.86%
J-235 <	1.5593E-01	24.08%
J-238 <	2.01E+00	
ZN-65 <	2.09E-01	
ZR-95 <	3.36E-01	

ACTIVITY 3.7847520E+01 pCi/gram

Technician:

K. Holman

Date:

11-28-94

* U-238 Peaks present but not added.

File No: 94058548

Environmental Water / SEG / AMS-B-LIQ-012
11-22-94 (K. Wright) 20 ml (KOJ)

Analysis Information:

Start time 28-NOV-94 09:32:43
Live time 1800
Dead time .12%
Oxford Model: CNVDS30-15190 SN: 7976
2" Planchet Placed on Center of Detector End Cap
Main analysis library: SEG.LIB
Peak rejection level 30.000%
Activity scaling factor 2.7050E-05/ 2.0000E+01 = 1.3525E-06
Decay correct to date NO

Nuclide Summary:

NUCLIDE	ACTIVITY uCi/ml	COUNTING
---------	--------------------	----------

AG-110M <	7.46E-07	
AM-241 <	1.11E-06	
41 <	7.75E-07	
14 <	2.64E-06	
CO-57 <	2.50E-07	
CO-58 <	6.42E-07	
CO-60 <	1.45E-06	
CR-51 <	4.13E-06	
CS-134 <	7.11E-07	
CS-137 <	6.29E-07	
FE-59 <	1.14E-06	
I-131 <	3.99E-07	
K-40 <	2.35E-05	
KN-54 <	5.22E-07	
NB-94 <	4.98E-07	
NB-95 <	7.97E-07	
KN-220 <	9.84E-07	
KN-222 <	1.72E-06	
RU-103 <	7.31E-07	
RU-106 <	4.49E-06	
SB-125 <	1.61E-06	
SN-113 <	8.67E-07	
TH-232 <	4.08E-06	
I-235 <	9.38E-07	
I-238 <	6.76E-06	
IN-65 <	1.30E-06	
IR-95 <	1.66E-06	

ACTIVITY 0.0000000E+00

uCi/ml

Technician:

Keith O. Jeter

Date:

11/28/94

Scientific Ecology Group, Inc.

Oak Ridge, TN

EG&G ORTEC OMNIGAM (143)

13.02.15 01-DEC-94 22:03:14 Page 1

Sample No: 94059585

Liquid sample / AMS-A-LIQ-010/CUS/Hole A
12-1-94 500 ml PH=8 (KW)

Analysis Information:

Start time 01-DEC-94 20:06:01
Live time 1800
Dead time .30%
EG&G Ortec Model: GMX-33195P SN: 29-TN10256
500 ml Marinelli Beaker on Detector End Cap
Main analysis library: SEG.LIB
Peak rejection level 30.000%
Activity scaling factor 2.7050E-05/ 5.0000E+02 = 5.4100E-08
Decay correct to date NO

Nuclide Summary:

NUCLIDE	ACTIVITY uCi/ml	COUNTING
AG-110M <	4.34E-08	
AM-241 <	2.75E-08	
CE-141 <	2.73E-08	
-144 <	1.23E-07	
-57 <	1.24E-08	
CO-58 <	3.06E-08	
CO-60 <	7.9908E-08	13.30%
CR-51 <	1.42E-07	
CS-134 <	3.29E-08	
CS-137 <	4.41E-08	
FE-59 <	9.56E-08	
I-131 <	1.39E-08	
K-40 <	5.43E-07	
MN-54 <	4.90E-08	
NB-94 <	2.44E-08	
NB-95 <	4.62E-08	
RN-220 <	5.02E-08	
RN-222 <	5.14E-08	
RU-103 <	1.82E-08	
RU-106 <	2.00E-07	
SB-125 <	5.29E-08	
SN-113 <	3.52E-08	
TH-232 <	1.68E-07	
U-235 <	3.80E-08	
U-238 <	5.03E-07	
ZN-65 <	6.55E-08	
ZR-95 <	7.15E-08	

TOTAL ACTIVITY 7.9908010E-08 uCi/ml

Technician: Paul E. EwertDate: 12-1-94

ple No: 94059585

Liquid Sample / AMS-A-LIQ-010/CUS/Hole "A"
1-30-95 PH =6

Analysis Information:

Start time 30-JAN-95 12:39:02
Live time 7200
Dead time 1.15%
Oxford Model: CPVDS30-29195 SN: 2443
500 ml Marinelli Beaker on Detector End Cap
Main analysis library: SEG1.LIB
Peak rejection level 30.000%
Activity scaling factor 2.7050E-05/ 5.0000E+02 = 5.4100E-08
Decay correct to date NO

Nuclide Summary:

NUCLIDE	ACTIVITY uCi/ml	COUNTING
AG-110M <	1.98E-08	
AM-241 <	1.64E-07	
C 41 <	1.90E-08	
C 44 <	5.46E-08	
CO-57 <	1.03E-08	
CO-58 <	7.24E-09	
CO-60	4.9713E-08	15.72%
CR-51 <	9.77E-08	
CS-134 <	1.58E-08	
CS-137 <	1.85E-08	
FE-59 <	2.70E-08	
K-40 <	2.57E-07	
MN-54 <	8.06E-09	
NB-94 <	1.56E-08	
NB-95 <	1.48E-08	
RN-220 <	3.36E-08	
RN-222 <	3.81E-08	
RU-103 <	1.47E-08	
RU-106 <	1.83E-07	
SB-125 <	4.17E-08	
SN-113 <	1.49E-08	
TH-232 <	7.62E-08	
U-238 <	1.04E-06	
ZN-65 <	2.61E-08	
ZR-95 <	1.98E-08	

TOTAL ACTIVITY 4.9712860E-08 uCi/ml

Technician:

K. Harris

Date:

Jan. 30, 1995

Scientific Ecology Group, Inc.

Oak Ridge, TN

EG ORTEC OMNIGAM (143)

I3.02.15 01-DEC-94 22:00:48

Page 1

Sample No: 94059586

Liquid Sample / AMS-B-LIQ-012/CUS/Hole 3
12-1-94 500 ml PH=6 (KW)

Analysis Information:

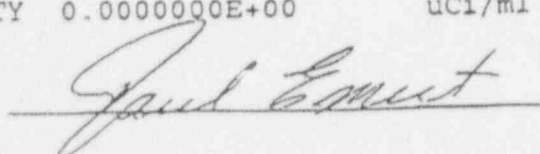
Start time 01-DEC-94 20:06:00
Live time 1800
Dead time .30%
Oxford Model: CNVDS30-15190 SN: 7976
500 ml Marinelli Beaker on Detector End Cap
Main analysis library: SEG.LIB
Peak rejection level 30.000%
Activity scaling factor 2.7050E-05/ 5.0000E+02 = 5.4100E-08
Decay correct to date NO

Nuclide Summary:

NUCLIDE	ACTIVITY uCi/ml	COUNTING
AG-110M <	6.41E-08	
AM-241 <	1.94E-07	
-141 <	1.08E-07	
144 <	4.41E-07	
U-57 <	6.69E-08	
CO-58 <	5.35E-08	
CO-60 <	1.22E-07	
CR-51 <	2.75E-07	
CS-134 <	4.72E-08	
CS-137 <	8.56E-08	
FE-59 <	1.16E-07	
I-131 <	7.48E-08	
K-40 <	1.33E-06	
MN-54 <	5.48E-08	
NB-94 <	4.90E-08	
NB-95 <	4.54E-08	
RN-220 <	1.21E-07	
RN-222 <	1.68E-07	
RU-103 <	3.66E-08	
RU-106 <	6.06E-07	
SB-125 <	1.92E-07	
SN-113 <	9.59E-08	
TH-232 <	2.27E-07	
U-235 <	9.15E-08	
U-238 <	1.83E-06	
ZN-65 <	1.31E-07	
ZR-95 <	1.25E-07	

TOTAL ACTIVITY 0.0000000E+00 uCi/ml

technician:



Date:

12-1-94

ple No: 94059587

Liquid sample /AMS-C-LIQ-012/CUS/Hole C
12-1-94 25.77 ml PH=5.5 (KW)

Analysis Information:

Start time 01-DEC-94 20:51:36
Live time 1800
Dead time .29%
EG&G Ortec Model: GMX-33195P SN: 29-TN10256
2" Planchet Placed on Center of Detector End Cap
Main analysis library: SEG.LIB
Peak rejection level 30.000%
Activity scaling factor 2.7050E-05/ 2.5770E+01 = 1.0497E-06
Decay correct to date NO

Nuclide Summary:

NUCLIDE	ACTIVITY uCi/ml	COUNTING
AG-110M <	5.13E-07	
AM-241 <	3.80E-07	
41 <	2.42E-07	
44 <	1.25E-06	
CO-57 <	1.23E-07	
CO-58 <	3.83E-07	
CO-60 <	8.84E-07	
CR-51 <	1.41E-06	
CS-134 <	4.59E-07	
CS-137 <	4.65E-07	
FE-59 <	6.74E-07	
I-131 <	2.63E-07	
K-40 <	6.88E-06	
MN-54 <	4.12E-07	
NB-94 <	4.30E-07	
NB-95 <	4.43E-07	
RN-220 <	5.77E-07	
RN-222 <	5.19E-07	
RU-103 <	2.18E-07	
RU-106 <	4.22E-06	
SB-125 <	1.22E-06	
SN-113 <	4.31E-07	
TH-232 <	1.22E-06	
U-235 <	4.10E-07	
U-238 <	4.15E-06	
ZN-65 <	1.04E-06	
ZR-95 <	1.09E-06	

ACTIVITY 0.0000000E+00 uCi/ml

Technician:

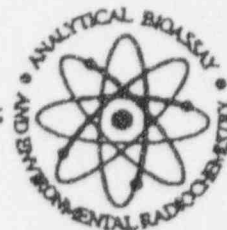


Date:

12-1-94

OAK RIDGE ANALYTICAL SERVICES, INC.

739 Emory Valley Road, Oak Ridge, TN 37830-7017
Voice: (615) 482-1010 • Fax: 481-0454



Report of Analysis for Scientific Ecology Group

Purchase Order Number TN90304TTW

Sample ID	Isotope	Activity (pCi/L)	Uncertainty (pCi/L)	MDA (pCi/L)
95005119	Co-60	2.511E+03	1.088E+03	2.386E+02

Reported By

AMS-C-LIQ-012 / CUS / HOLEC" REANALYSED

95005119.TXT

VMS Nuclide Identification Report V2.9 Generated 1-FEB-1995 10:31:06

Configuration : SYSSYSDEVICE:(GAMMA.SOUSR.ARCHIVE)SMP_95005119_GAMMA1_GLASS
 Analyses by : PEAK V16.4,PEAKEFF V2.2,ENBACK V1.5,NID V3.1,MINACT V2.5
 Sample date : 5-JAN-1995 00:00:00 Acquisition date : 29-JAN-1995 20:46:44
 Sample ID : 95005119 Sample quantity : 3.50000E-02 L
 Detector name : GAMMA1 Detector geometry: GLASS JAR
 Elapsed live time: 1 00:00:00.00 Elapsed real time: 1 00:00:23.77 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 2.00 keV Half life ratio : 8.00
 Errors propagated: Yes Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Library Energy
 Abundance limit : 75.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
K-40	8.549E+03	4.483E+03	1.568E+03	2.462E+02	5.451
CO-60	2.511E+03	1.088E+03	2.386E+02	4.732E+01	10.526
CE-141	1.211E+03	8.826E+02	7.830E+02	4.031E+02	1.547
BI-212	5.356E+03	4.296E+03	4.402E+03	2.089E+03	1.217

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	1.074E+03		1.777E+03	3.022E+03	1.208E+03	0.355
CR-51	1.231E+03		2.228E+03	3.873E+03	5.720E+02	0.318
MN-54	-1.641E+02		2.989E+02	3.626E+02	4.498E+02	-0.453
CO-57	4.650E+00		1.731E+02	2.800E+02	1.610E+02	0.017
CO-58	-1.937E+02		2.694E+02	4.052E+02	2.355E+02	-0.478
FE-59	5.670E+01		5.001E+02	8.355E+02	2.060E+02	0.068
ZN-65	3.340E+02		4.680E+02	7.563E+02	4.372E+02	0.442
GE-68	-4.698E+03		7.042E+03	1.025E+04	7.151E+03	-0.458
NB-94	1.299E+02		2.043E+02	3.349E+02	1.865E+02	0.388
NB-95	-2.968E+01		3.188E+02	5.440E+02	1.764E+02	-0.055
ZR-95	1.519E+01		6.263E+02	7.838E+02	2.835E+02	0.019
RU-103	1.774E+02		2.506E+02	4.218E+02	1.712E+02	0.421
RU-106	-9.364E+02		1.775E+03	2.884E+03	1.425E+03	-0.325
AG110M	6.725E+01		1.978E+02	3.351E+02	2.195E+02	0.201
SB-125	-4.246E+02		4.683E+02	7.344E+02	2.820E+02	-0.578
BA-133	-2.749E+02		2.028E+02	3.331E+02	3.752E+01	-0.825
CS-134	-1.665E+02		2.015E+02	3.139E+02	1.331E+02	-0.530
CS-137	6.002E+00		2.043E+02	3.506E+02	2.359E+02	0.017
CE-144	3.195E+02		1.384E+03	2.228E+03	1.209E+03	0.143
TL-208	2.540E+03		1.233E+03	1.158E+03	4.896E+02	2.193

95005119.TXT

BI-211	2.706E+03	1.028E+03	1.783E+03	2.098E+02	1.518
PB-211	-1.636E+02	6.846E+03	1.783E+03	2.098E+02	-0.092
PB-212	1.892E+03	7.317E+02	5.969E+02	2.080E+02	3.171
BI-214	8.437E+02	3.549E+02	6.179E+02	7.217E+01	1.365
PB-214	1.190E+03	6.717E+02	7.692E+02	3.403E+02	1.547
RN-219	1.570E+02	1.097E+03	1.895E+03	5.552E+02	0.083

Combined Activity-MDA Report (continued)

Page : 2

Sample ID : 95005119

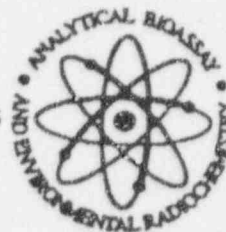
Acquisition date : 29-JAN-1995 20:46:44

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
RN-220	-5.417E+04		1.437E+05	2.409E+05	1.007E+05	-0.225
RA-223	6.399E+02		8.614E+02	1.472E+03	4.358E+02	0.435
RA-224	-1.225E+04		5.453E+03	5.566E+03	1.918E+03	-2.202
RA-226	2.086E+04		1.013E+04	7.753E+03	3.384E+03	2.690
TH-227	-5.496E+03		2.257E+03	1.820E+03	6.422E+02	-3.020
AC-228	3.741E+03	+	4.434E+03	1.668E+03	1.881E+03	2.243
PA-231	-1.865E+03		5.132E+03	8.742E+03	1.430E+03	-0.213
PA-234	-4.543E+03		3.403E+03	9.356E+02	6.365E+02	-4.856
TH-234	4.945E+04		3.633E+04	1.197E+04	8.687E+03	4.132
U-234	3.202E+05		4.871E+05	7.007E+05	2.578E+05	0.457
U-235	1.232E+03		6.025E+02	4.700E+02	2.056E+02	2.621
AM-241	-1.207E+03		1.060E+03	1.430E+03	3.416E+02	-0.844

OAK RIDGE ANALYTICAL SERVICES, INC.

739 Emory Valley Road, Oak Ridge, TN 37830-7017
Voice: (615) 482-1010 • Fax: 481-0454



February 28, 1995

Mr. Rick Grisham
Science and Ecology Group
FAX 376-6247

Dear Mr. Grisham:

I have reviewed the results and am forwarding the following:

1. Glass jar geometry is the most appropriate geometry.
2. Only .035l was provided for the analysis and this has created some problems.
3. The uncertainties are very large as well and this is an artifact of the sample size.
4. As I recall, the sample not only was small but was not homogeneous. If the "activity" is located in the sediment this compiled with a small sample size could cause anomalous readings.
5. Any inhomogeneity in a small sample will "magnify" the results.

If I can provide any additional information please let me know.

Sincerely,



Cary A. Burchfield, Ph. D.

LAB/lat

Sample No: 94059588

Liquid Sample / AMBWA0010/CUS/Hole B Split
12-1-94 500 ml PH=6 (KW)

Analysis Information:

Start time 01-DEC-94 20:05:58
Live time 1800
Dead time .30%
Oxford Model: CPVDS30-29195 SN: 2443
500 ml Marinelli Beaker on Detector End Cap
Main analysis library: SEG.LIB
Peak rejection level 30.000%
Activity scaling factor 2.7050E-05/ 5.0000E+02 = 5.4100E-08
Decay correct to date NO

Nuclide Summary:

NUCLIDE	ACTIVITY uCi/ml	COUNTING
AG-110M <	6.15E-08	
AM-241 <	4.14E-07	
41 <	4.51E-08	
44 <	1.21E-07	
CO-57 <	2.70E-08	
CO-58 <	3.40E-08	
CO-60 <	8.56E-08	
CR-51 <	2.20E-07	
CS-134 <	2.52E-08	
CS-137 <	5.73E-08	
FE-59 <	1.08E-07	
I-131 <	3.23E-08	
K-40 <	4.91E-07	
KN-54 <	4.31E-08	
NB-94 <	3.06E-08	
NB-95 <	2.69E-08	
RN-220 <	7.10E-08	
RN-222 <	9.39E-08	
RU-103 <	3.44E-08	
RU-106 <	2.97E-07	
SB-125 <	7.44E-08	
SN-113 <	5.21E-08	
TH-232 <	1.18E-07	
J-235 <	4.87E-08	
J-238 <	3.34E-06	
ZN-65 <	8.77E-08	
ZR-95 <	1.06E-07	

ACTIVITY 0.00000000E+00 uCi/ml

Technician: Paul E. MuntDate: 12-1-94

SAMPLE IDENTIFICATION AND
CHAIN-OF-CUSTODY

REDS-CHM-101
REVISION 2

ATTACHMENT 6.1
CHAIN OF CUSTODY RECORD
(example)

Collected by: Kevin Wright		for: Advanced Medical Systems				
Site Contact: Bob Meschter on Kevin Wright		Address: 1020 London Rd. Cleveland, Ohio 44110				
Phone: 216-692-3270						
Sample Number	Sample Location	Collection Date	Collection Time	Remarks		
058543	AMS-A-000-006	Soil sample Hole 'A' 0"-6"	11-21-94	N/A	See below	Need Hplc Analysis.
058544	AMS-A-006-010	Soil sample Hole 'A' 6"-10"	11-21-94	N/A	for correlation	
058545	AMS-B-000-012	Soil sample Hole 'B' 0"-12"	11-22-94	N/A	between the	
058546	AMS-C-000-006	Soil sample Hole 'C' 0"-6"	11-22-94	N/A	assigned AMS	
058547	AMS-C-006-012	Soil sample Hole 'C' 6"-12"	11-22-94	N/A	number and	
058548	AMS-B-LIQ-012	Liquid from Hole 'B' 0"-12"	11-22-94	N/A	the SEG number.	
AMS #	SEG #					
AMS-A-000-006	AMOSL 0001					
AMS-A-006-010	AMOSL 0002					
AMS-B-000-012	AMOSL 0003					
AMS-C-000-006	AMOSL 0004					
AMS-C-006-012	AMOSL 0005					
AMS-B-LIQ-012	AMOWA 0001					

CUSTODY LOG

Name	Date/Time	Name	Date/Time
Collected by K. Wright	11-21-94/W/A	Relinquished by K. Wright	Sent by UPS re SEG 11-22-94 1600
Accepted by Keith D. Peter	11/28/94 0530	Relinquished by J	
Accepted by		Relinquished by	
Accepted by		Relinquished by	
Accepted by		Relinquished by	

SAMPLE IDENTIFICATION AND
CHAIN-OF-CUSTODY

REDS-CHM-101
REVISION 2

ATTACHMENT 6.1
CHAIN OF CUSTODY RECORD
(example)

Collected by: <i>Kevin Wright</i> for: <i>Advanced Medical Systems</i>				
Site Contact: <i>Bob Meschter or Kevin Wright</i>		Address: <i>1020 London Rd. Cleveland, Ohio 44110</i>		
Phone: <i>216-692-3270</i>				
Sample Number	Sample Location	Collection Date	Collection Time	Remarks
9585-AMS-A-LIQ-010	Hole 'A' Liquid Sample	11-29-94	N/A	HPGe analysis required.
9586-AMS-B-LIQ-012	Hole 'B' Liquid Sample	11-29-94	N/A	
9587-AMS-C-LIQ-012	Hole 'C' Liquid Sample	11-29-94	N/A	
9588-AMBWA0010	Hole 'B' Split Sample for QC	11-30-94	N/A	
Sample #	Cross Reference			
AMS #	SEG #			
AMS-A-LIQ-010	AMBWA 0007			
AMS-B-LIQ-012	AMBWA 0008			
AMS-C-LIQ-012	AMBWA 0009			

CUSTODY LOG

Name	Date/Time	Name	Date/Time
Collected by <i>Kevin Wright</i>	<i>11-29-94 1630</i>	Relinquished by	
Accepted by <i>Christie G. Smith</i>	<i>12/1/94 1430</i>	Relinquished by <i>Christie G. Smith</i>	<i>12/2/94 1310</i>
Accepted by		Relinquished by	
Accepted by		Relinquished by	
Accepted by		Relinquished by	

APPENDIX D
SURVEY RESULTS

PAGE 1 OF 3

e: 11-19-94

Inst. RO-2/LM-177 S/N 6087/47703

cal. date 1-18-95 / 4-18-95

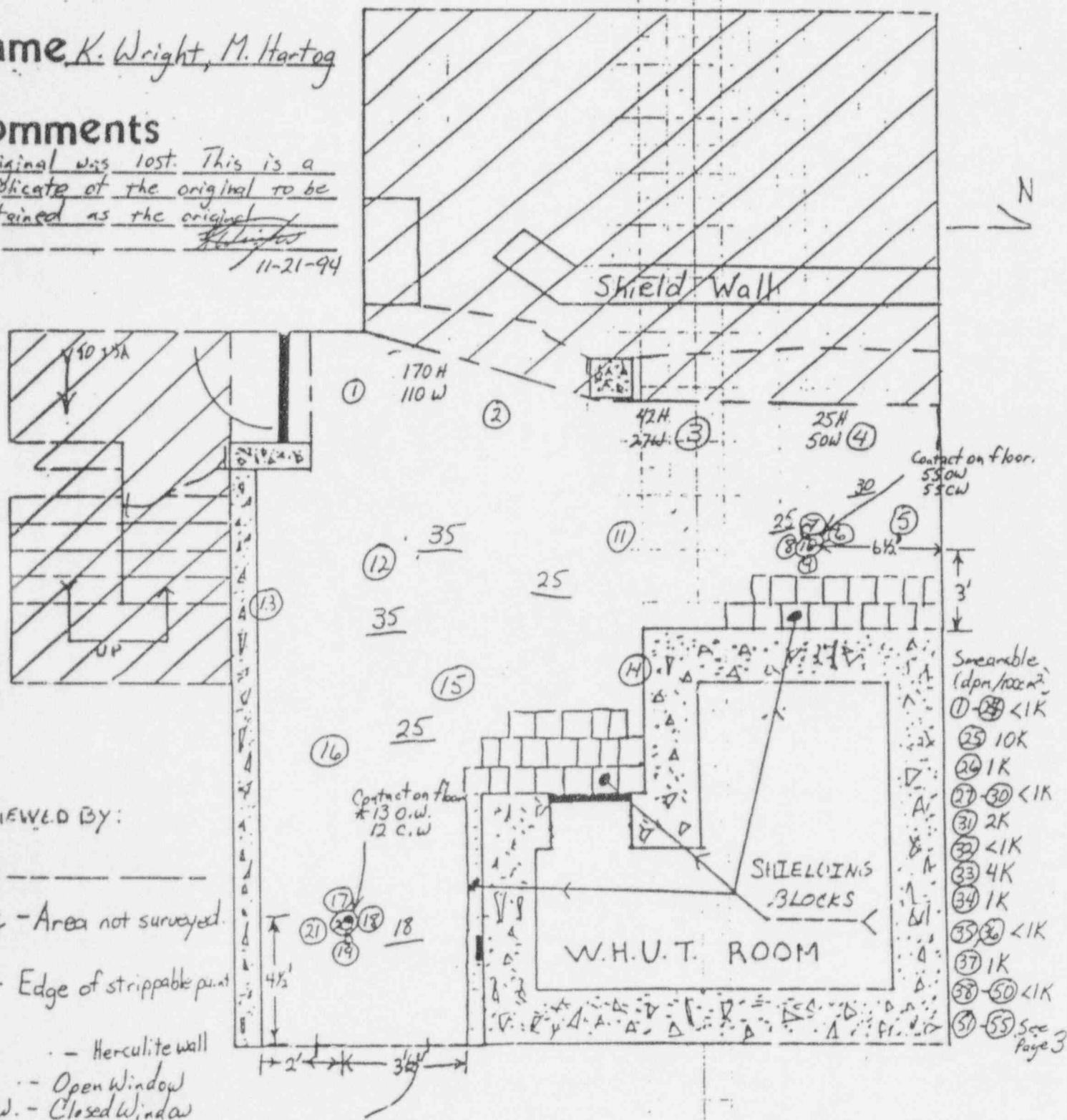
ime 1400

lame K. Wright, M. Hartog

omments

Original was lost. This is a duplicate of the original to be retained as the original ✓

11-21-94



DATE 1-17-77

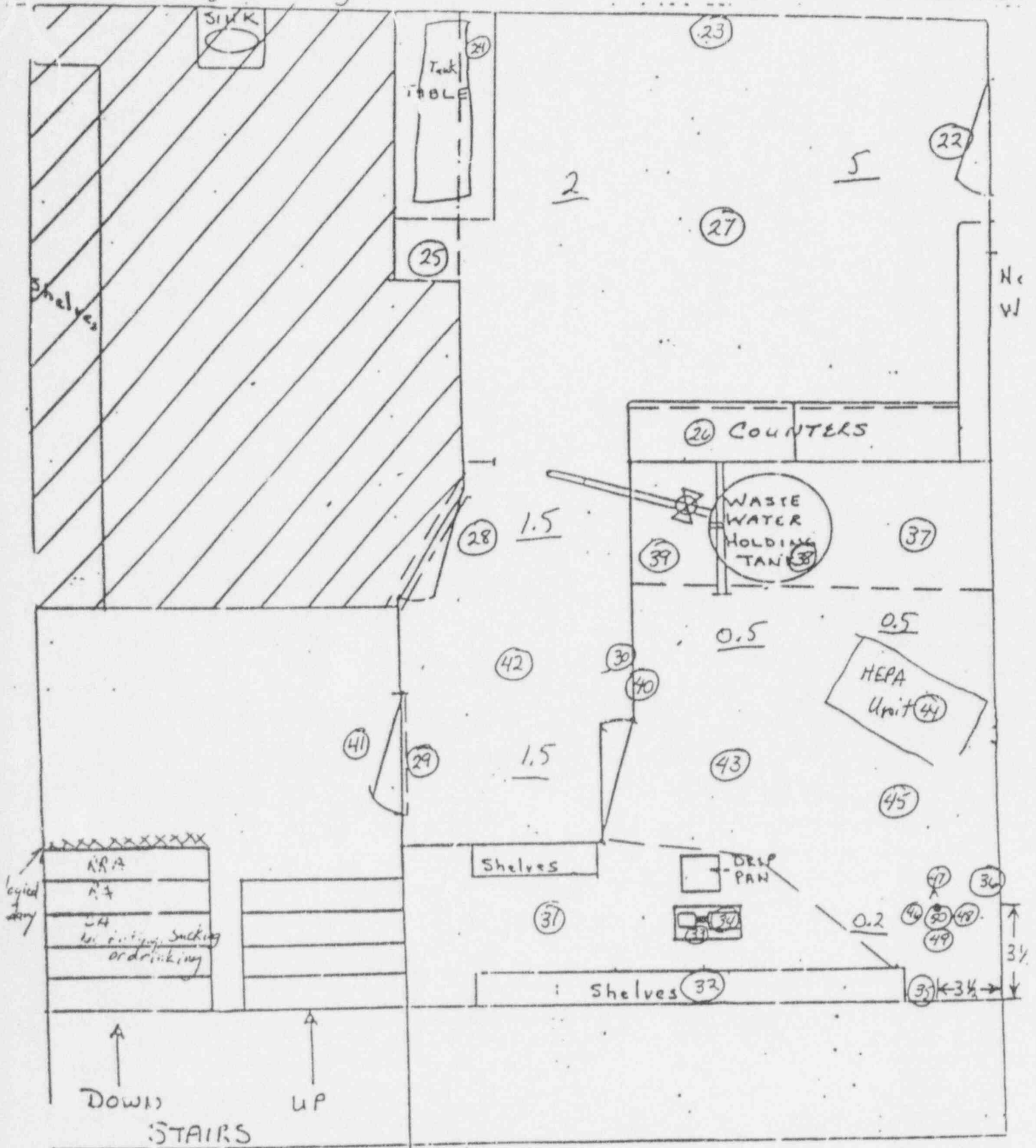
Type of survey list-pointing, pre-cutting

TIME 1400

Inst RO-2/LM-177 Comments _____

TECH K. Wright, M. Hartog

S/N 6087/47703 Reviewed by _____



3 of 3
page 1 of 1

BKG. 22 CPM

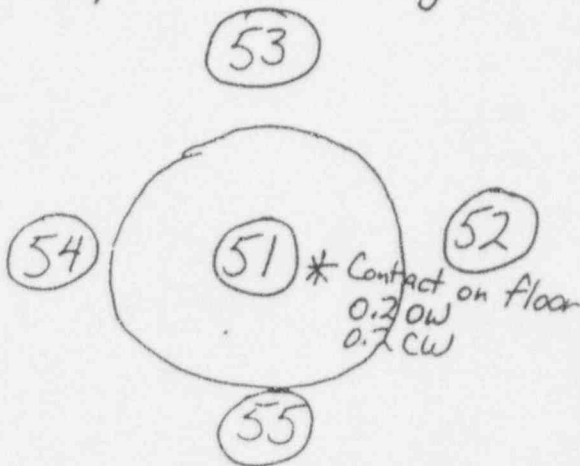
C_{cell} 10 %

AREA/ITEM SURVEYED Hole 'A' Front Basement - Tank Room

Avg. smear area 100 cm²

DRAWING

Hole 'A' location after
strippable coating was cut
away for cement coring.



$$LLD = 2.71 + 3.3 \sqrt{\frac{C_D}{13} + \frac{C_b}{T_b}}$$

$$LLD = 18.57 \text{ gpm} \text{ or } 185.7 \text{ dpm}$$

Comments Pre-cut survey of floor prior
to coring for soil samples.

Reviewed by _____

TV FORM

Time: 1100

Name; M. Hartog

Inst; RO2/LM-177

S/N; 6087/41296 Cal. Date; ^{Due}7-18-95/4-18-95

Comments; All smears taken are 100cm² area

All dose rates taken are contact on wall
or ^{on 11-29-94} ~~fit~~ floor @ wall unless otherwise noted.

or ~~fill~~ floor @ wall unless otherwise noted.

open space w/ single black $\frac{1}{2}$ width
column underneath

Legend; * = contact dose
 x = general area waist level

x = general area @ 6' high

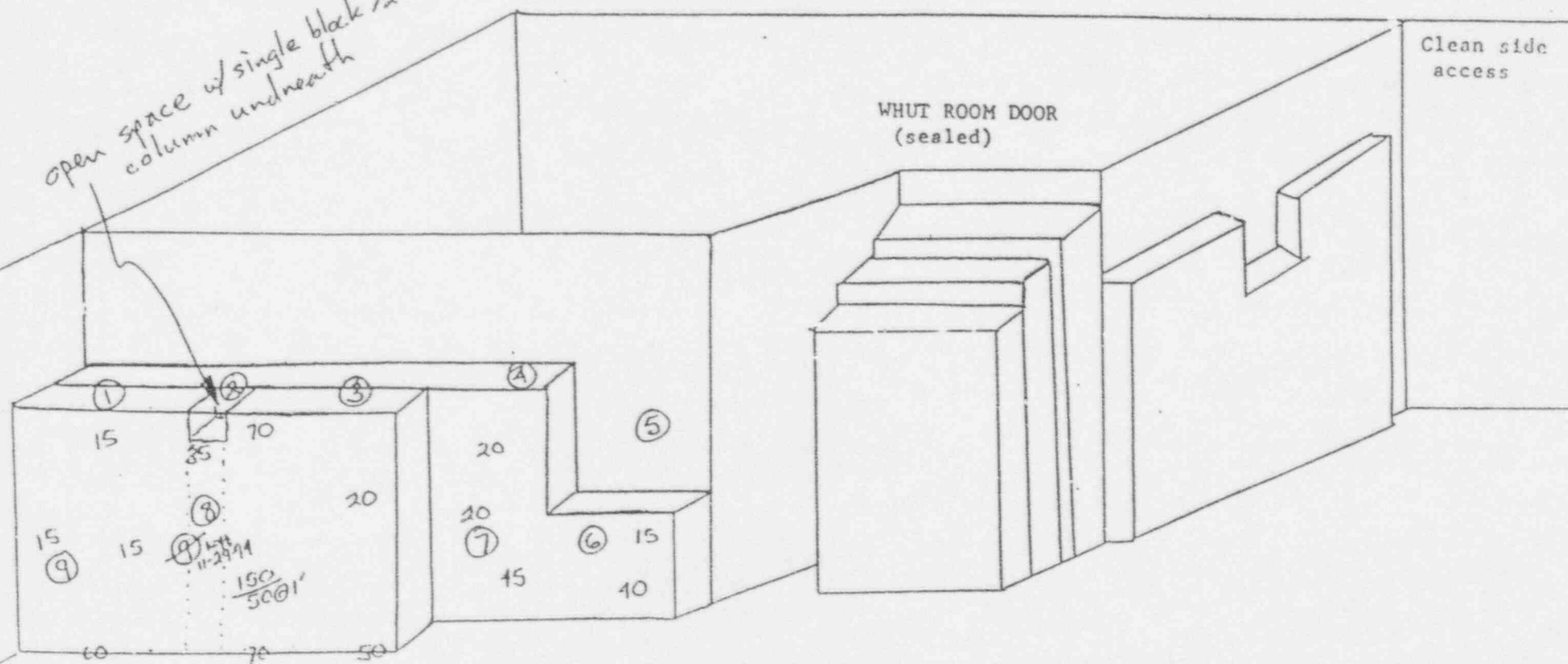
⑤

Reviewed By: Robert Mervin

Smears:

1	7K
2	20K
3	1K
4	4K
5	1K

6	1K
7	<1K
8	2K
9	1.5K
10	1.5K



Date; 11-94

Time; 1500

Name; M. Harlog / wsh

Inst; RO-2

S/N; 6087 Cal. Date; 1-18-95

Comments; Penetrations & Vent opening plugged
w/ Pb & grouted closed. Area over old
penetrations on wall & blocks covered w/
herculite in holes cut to expose old penetrations

Legend;

* = contact dose

x = general area waist level

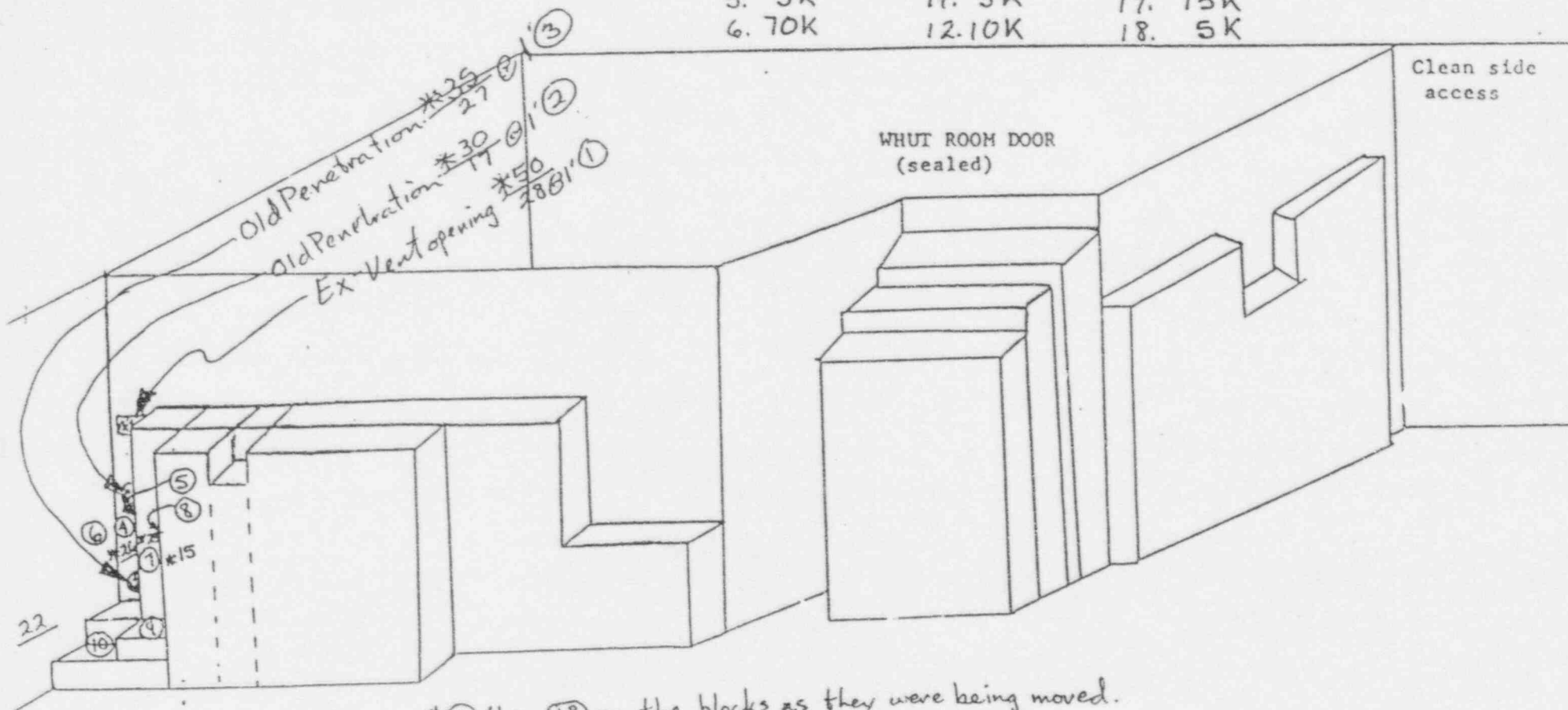
x = general area @ 6' high

0

Reviewed By; R Marchetti

Contamination Levels ($K = \times 1000$) Lvl's in dpm/100cm²

1. 3K	7. 5K	13. 100K
2. 1K	8. 10K	14. 50K
3. 2K	9. 10K	15. 100K
4. 20K	10. 100K	16. 10K
5. 5K	11. 5K	17. 15K
6. 70K	12. 10K	18. 5K



Smears #11 thru 18 on the blocks as they were being moved.

Date; -14

Time; 12:00

Name; Kevin Wright

Inst; RO-2

S/N; 6087, 41296

Cal. Date; 1-18-95, 4-18-95

Comments; F1 - Pipe restuffed with lead wool, Hoses placed around pipe. Reviewed By;

B1+B2 - Former cement plug (6" x 8") replaced in hole. Edges have lead wool/caulk. Two to 3" of mortar seal the front of the plug. Shield bricks were replaced (2-1-cym.s).

S1 - 2 vent bricks and 4-1/2" lead squares were replaced. 1" x 2" of mortar on top of lead squares.

F2 - Caulked one thin sheet of metal. Shield bricks (1-layer) replaced.

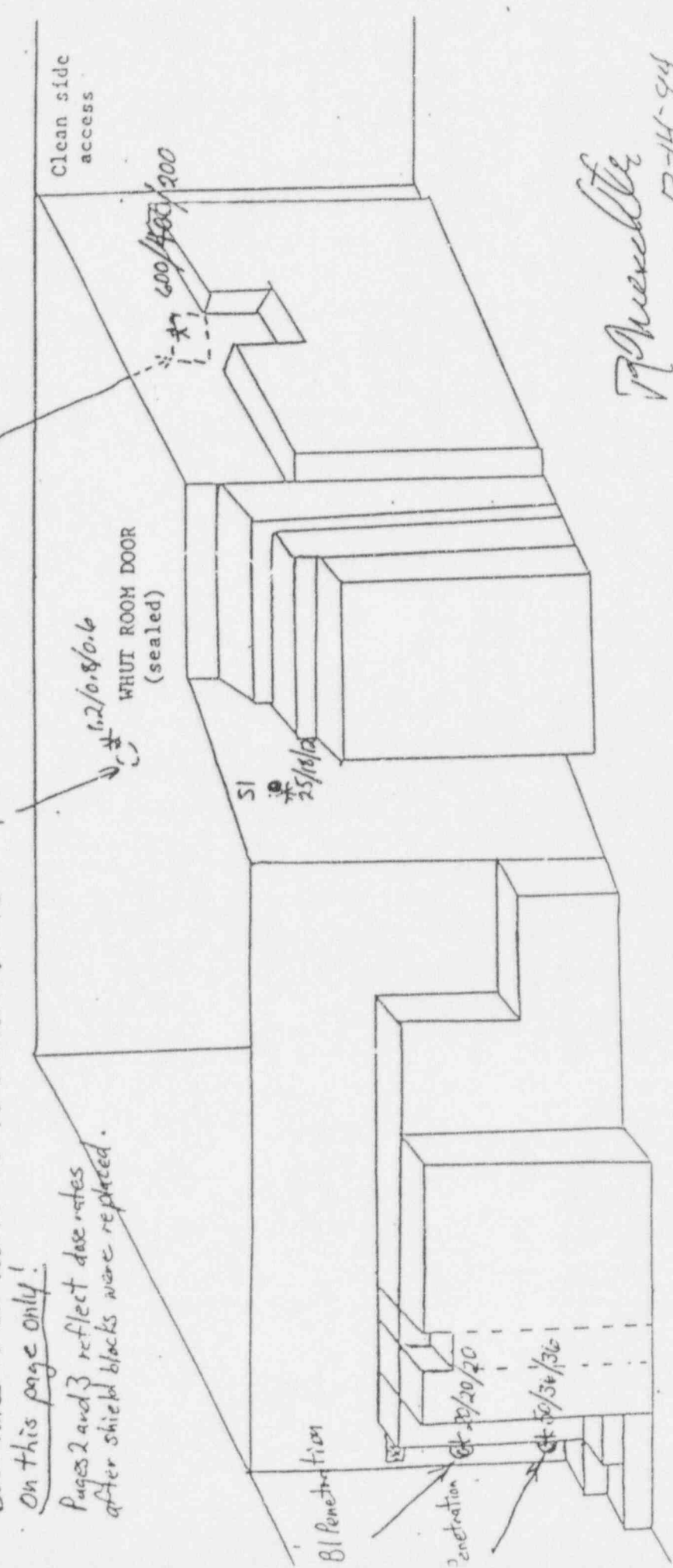
Dose rates reflect ressealed but unshielded (bricks) values
On this page only!

Pages 2 and 3 reflect dose rates after shield blocks were replaced.

Resealing WHUT Room Penetrations.

*#/# = Contact dose rate / 1' Dose Rate / 1' Dose.
*# = contact dose
x# = general area waist level
x = general area @ 6' high
@ Dose Rates are in mR/hr

Legend;



J. Pharell
12-14-94

BASEMENT

PAGE 2 OF 3

date: 12-14-94

Inst. KO-2, L-177 S/N 6087 41296

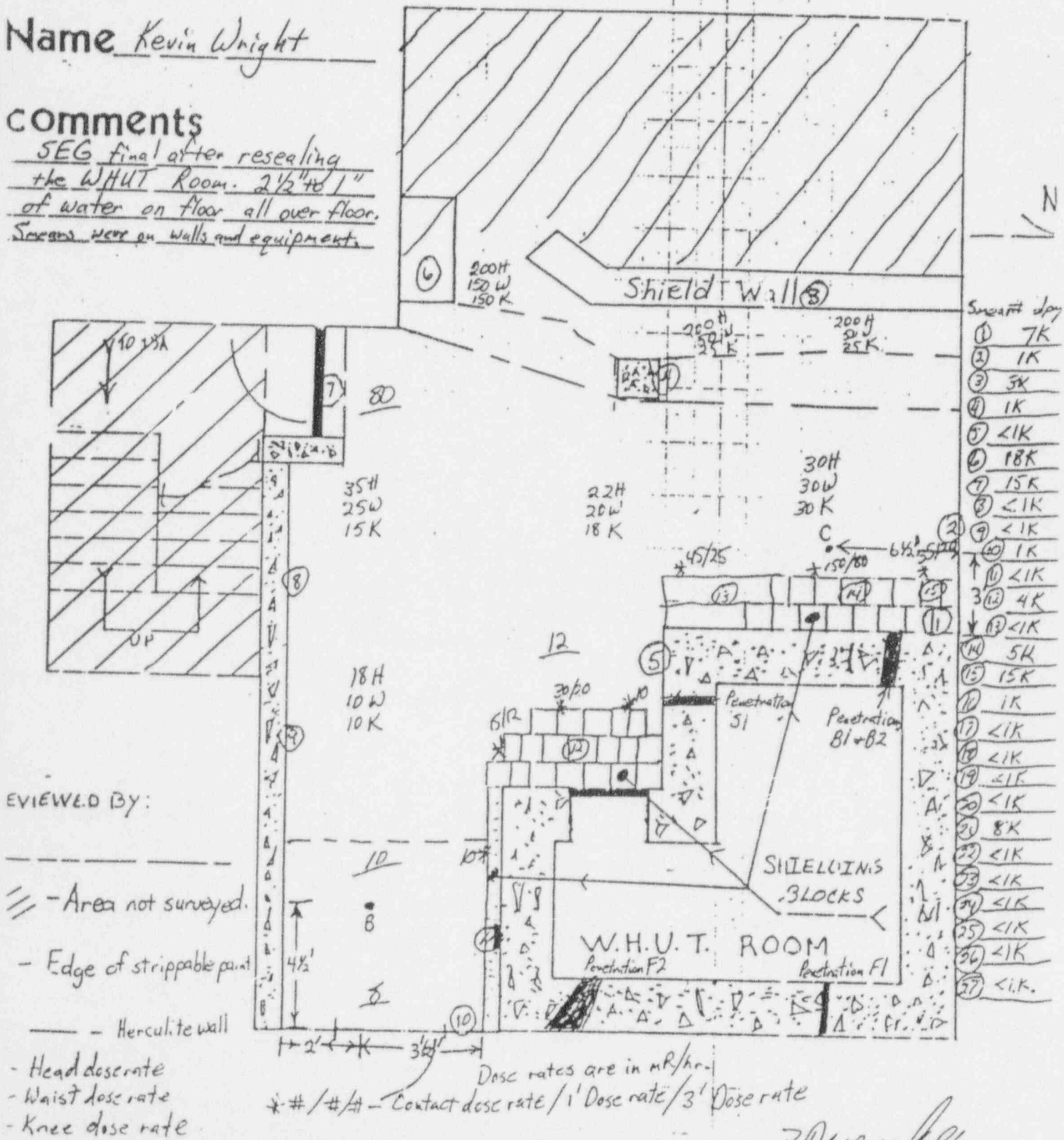
Time 1200

cal. date 1-18-75 4-18-75

Name Kevin Wright

comments

SEG final after resealing
the WHUT Room. 2 1/2" to 1"
of water on floor all over floor.
Seams were on walls and equipment.



TECH Kevin Wright

Type of survey SEG final after Resealing WHUT Room

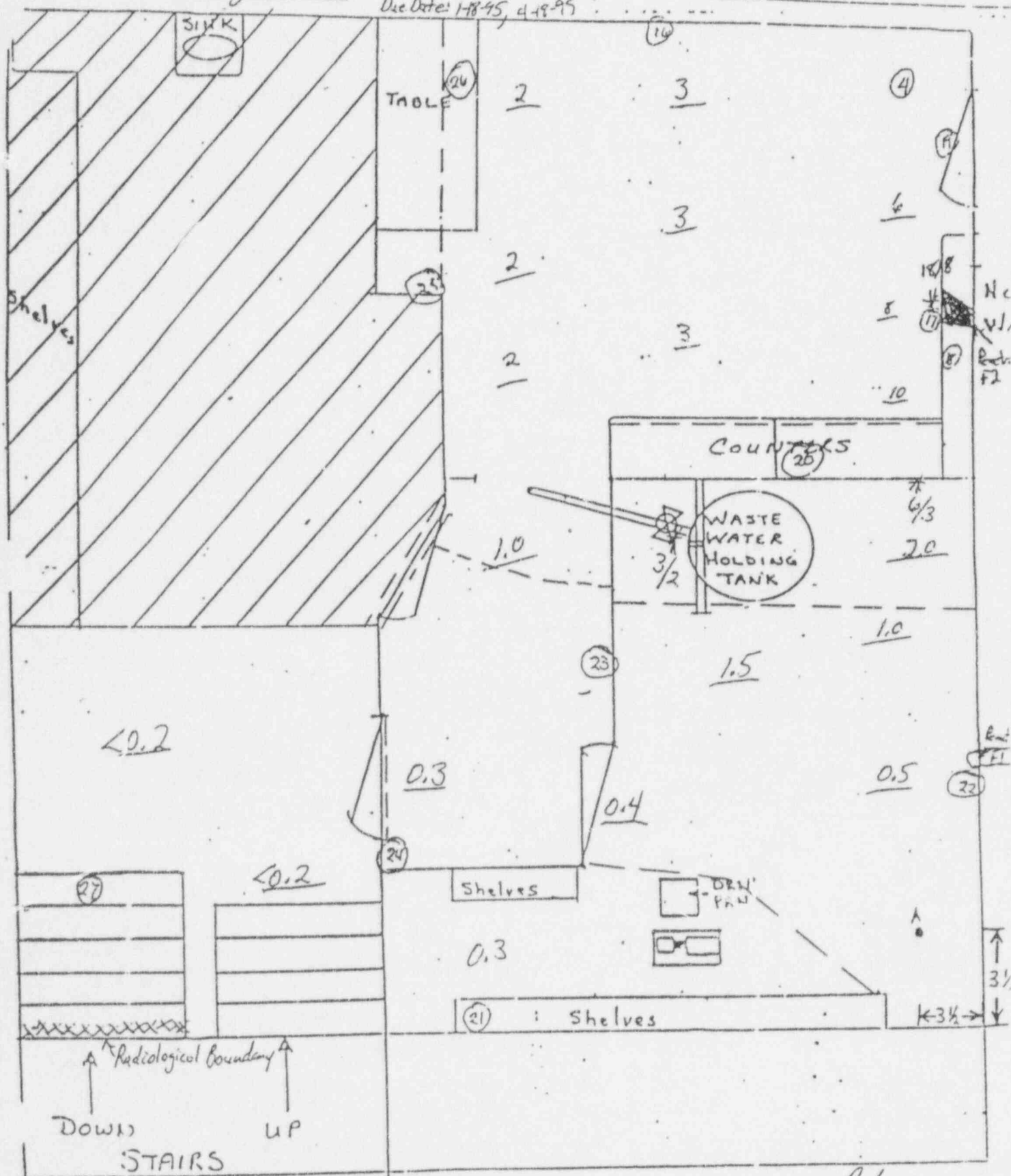
Inst Lo-2, 4177

Comments See Page 2

S/N 6087. 41296.

Reviewed by

Due Date: 1-18-95, 4-18-95



17 Mueller
12-14-94

APPENDIX E

VIDEO TAPE

Advanced Medical Systems, Inc.

Waste Hold-Up Tank Room Survey

March 1995

Revision 1



SCIENTIFIC ECOLOGY GROUP, INC.

Radiological Engineering & Decommissioning Services


SCIENTIFIC ECOLOGY GROUP, INC.
WASTE HOLD-UP TANK ROOM SURVEY

for

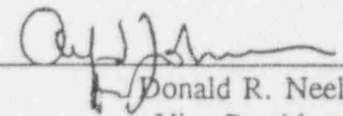
DEWIGHT A. MILLER, ATTORNEY AT LAW

for

ADVANCED MEDICAL SYSTEMS, INC.

Reviewed by:  Date 3-7-95
Rick Grisham
Radiological Engineer

Reviewed by:  Date 3-7-95
David M. Hall
Manager
Decommissioning Contract Services

Approved by:  Date 3-7-95
Donald R. Neely
Vice President
Radiological Engineering and
Decommissioning Services

Prepared By:

The SCIENTIFIC ECOLOGY GROUP, INC.
1560 Bear Creek Road
Oak Ridge, Tennessee 37831

REVISION 0
MARCH 1995

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Figure 2-4 Partial Floor Plan of the AMS Occupied Area on the First Floor
Figure 2-5 Floor Plan of the AMS Occupied Area on the Second Floor
Figure 2-6 Floor Plan of the AMS Occupied Area on the Basement Floor

1.0 INTRODUCTION

This survey report has been prepared by Scientific Ecology Group, Inc., (SEG) for Dewight A. Miller, Attorney at Law for the Advanced Medical Systems, Inc. (AMS), Geneva, OHIO, to confirm and document the results of the Waste Hold-Up Tank (WHUT) room integrity verification analysis.

The WHUT room integrity survey consisted of two separate tasks. The first task to be performed was to sample the soil and the groundwater around the perimeter of the WHUT room foundation. This required the collection of three soil samples and three water samples through the floor slab. The second task to be performed was an inspection of the interior of the WHUT room. This required access through four penetrations, two in the west WHUT room wall and third access point through the south wall for visual inspection of the interior of the WHUT room and the fourth in the south labyrinth wall for a waist level visual inspection of the tanks and ion exchange columns.

Background information related to the project is contained in Section 2.0, Background. Section 3.0, Methodology, discusses the general approach to performing the project tasks, and Section 4.0, Findings, summarizes the results of the sampling, visual inspection, and the radiological surveys. Included as part of this report are photographs taken from the videotape of the WHUT room inspection and the videotape itself.

2.0 BACKGROUND

2.1 History

Advanced Medical Systems, is located in an industrial/residential neighborhood on the east side of Cleveland, Ohio (Figure 1). The facility is located in the northeastern end of a large warehouse/manufacturing building, formerly owned by the Picker Corporation. Figure 2 shows a plot plan of the property. The main floor (Figures 3 and 4) includes an office area, an isotope area, a hot cell, a shielded work room, a storage area, and several unoccupied areas. The second floor (Figure 5) includes additional unoccupied office space, mechanical equipment room, and the exhaust ventilation room. The basement (Figure 6) includes a former dry waste storage area, a liquid waste handling room, and a former liquid waste storage tank room.

The hot cell and supporting structures were added, by Picker Corporation, to their London Road facility in 1958 which is now owned and operated by AMS and licensed by the Nuclear Regulatory Commission (NRC).

The WHUT room, located in the basement of the London Road facility, collected waste from the hot cell via a floor drain. In 1989, a survey of the WHUT room indicated radiation levels exceeding 1000 R/hr. The NRC granted permission for AMS to seal the WHUT room until activity decay would permit remediation of the room.

2.2 Facility Description

The facility consists of a hot cell, a laboratory, a controlled ventilation system and a controlled liquid waste system. The "isotope area" is a small part of the building located on London Road. The cell and its two (2) support rooms are stacked with the cell located on top of the WHUT room and the ventilation room on the top of the cell. These three (3) rooms are structurally interconnected and support the remainder of the building. The waste generated from the facility is exclusively CO-60 oxide.

The basement area consists of 3 main areas (Figure 6), area east (air sampling room, isodose curve room, stairwell), area west (dry waste storage room) with the WHUT room located between the two. The controlled liquid waste system has been removed. A door and small hall exist between the area east and west while the north wall abuts undisturbed soil. Stairs in areas east and west supply entry and exit points to the basement.

The WHUT room is located directly beneath the Hot Cell. The WHUT room was designed to hold radioactive liquid wastes generated from the Hot Cell and the isotope area. A 100 gallon tank received waste water from a cell sink and floor drain and a 500 gallon tank was designed to receive overflow from the smaller tank and liquid waste from the showers, sinks and drains in the laboratory. Located in the room is a 2 column ion exchange system. There is no drain in the room. All surfaces are poured concrete unpainted and a small dike is located in the entrance to prevent the migration of liquid to other areas of the basement the event of a spill. Various pipes and conduit that penetrated the walls have been removed and sealed with lead rope, lead wool, concrete and silicone. No light or power exists in the room and the room is ventilated by an exhaust duct with the tank vents connected to the controlled ventilation system.

2.3 Radiological Conditions

The radiological condition of the WHUT room is provided by data from a 1989 radiological survey. The survey records indicated dose rates in the excess of 1000 R/hr. The floor had approximately 1-inch of sediment uniformly distributed throughout the room that had a talcum powder consistency. A major spill had occurred sometime prior to 1988. Ambient dose rates at the entrance way were expected to be 5 R/hr and increasing to 300 R/hr within 3-4 ft. into the room. Dose rates were postulated to increase toward the ceiling area of the room. Dose rates outside the WHUT room were reported to be from 0.5mR/hr to 170 mR/hr general area. Loose contamination levels were estimated to be 5000dpm/100cm² outside the WHUT room mRad smearable inside the WHUT room.

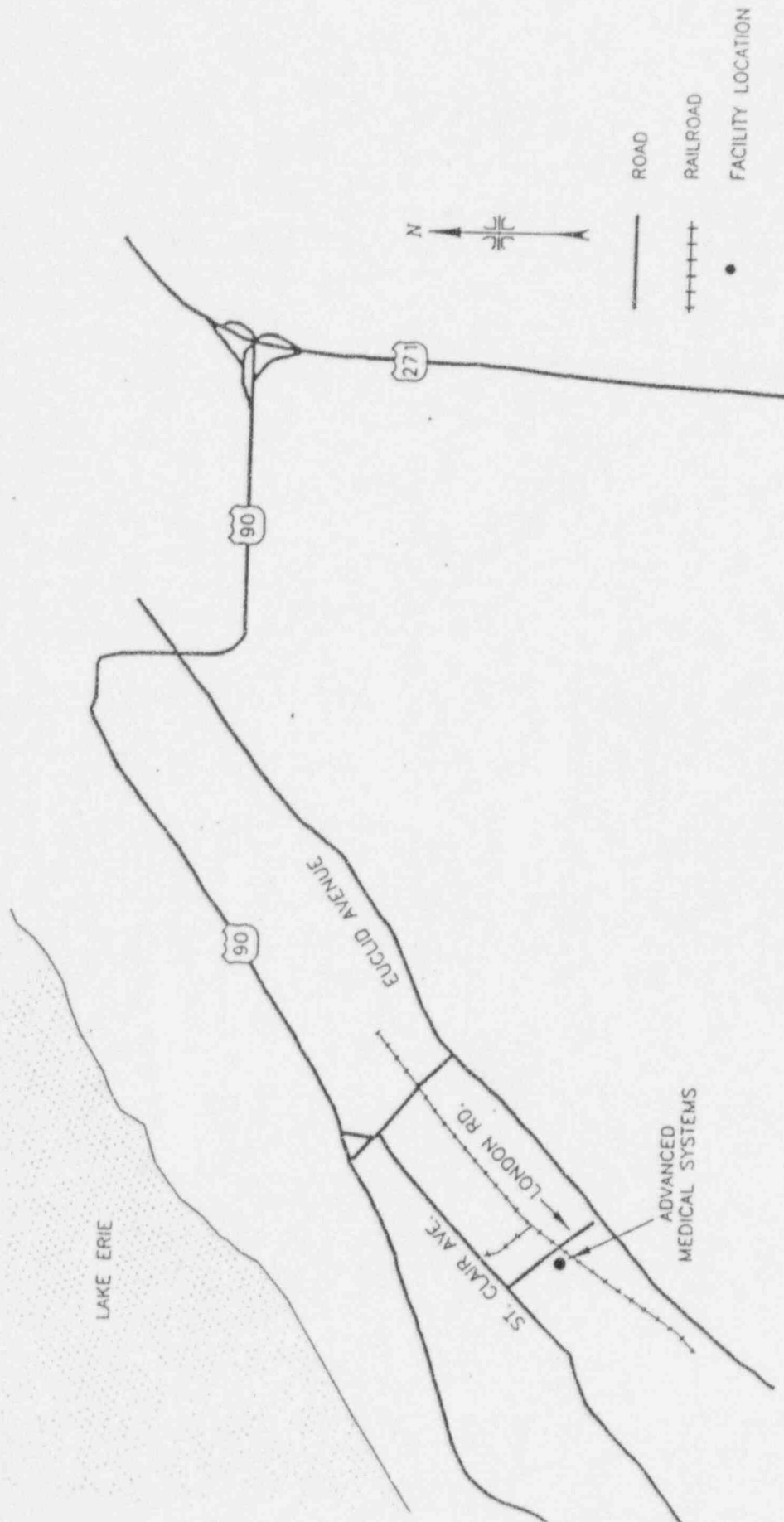


FIGURE 2-1
AREA INDICATING THE LOCATION OF THE AMS FACILITY

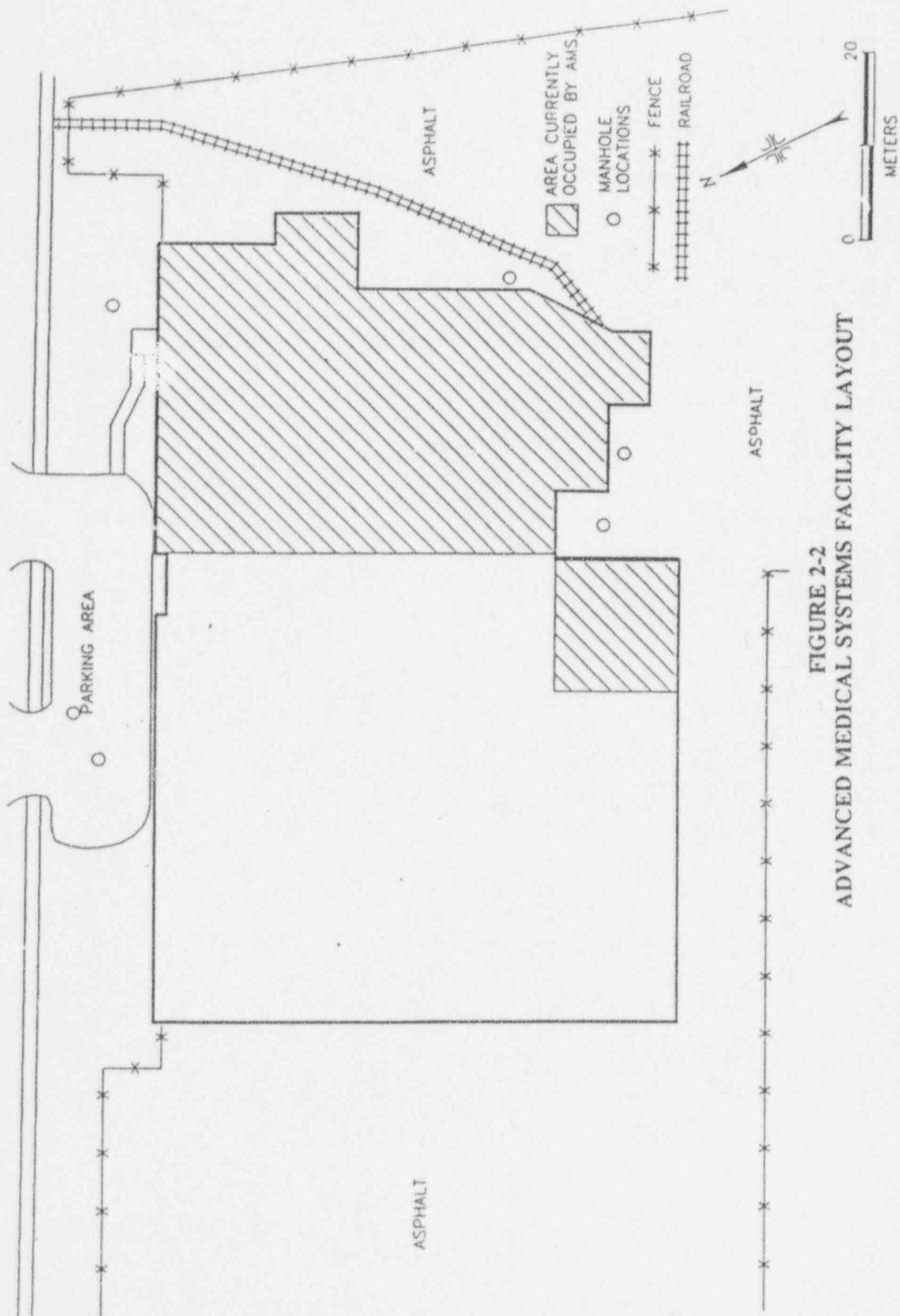


FIGURE 2-2
ADVANCED MEDICAL SYSTEMS FACILITY LAYOUT

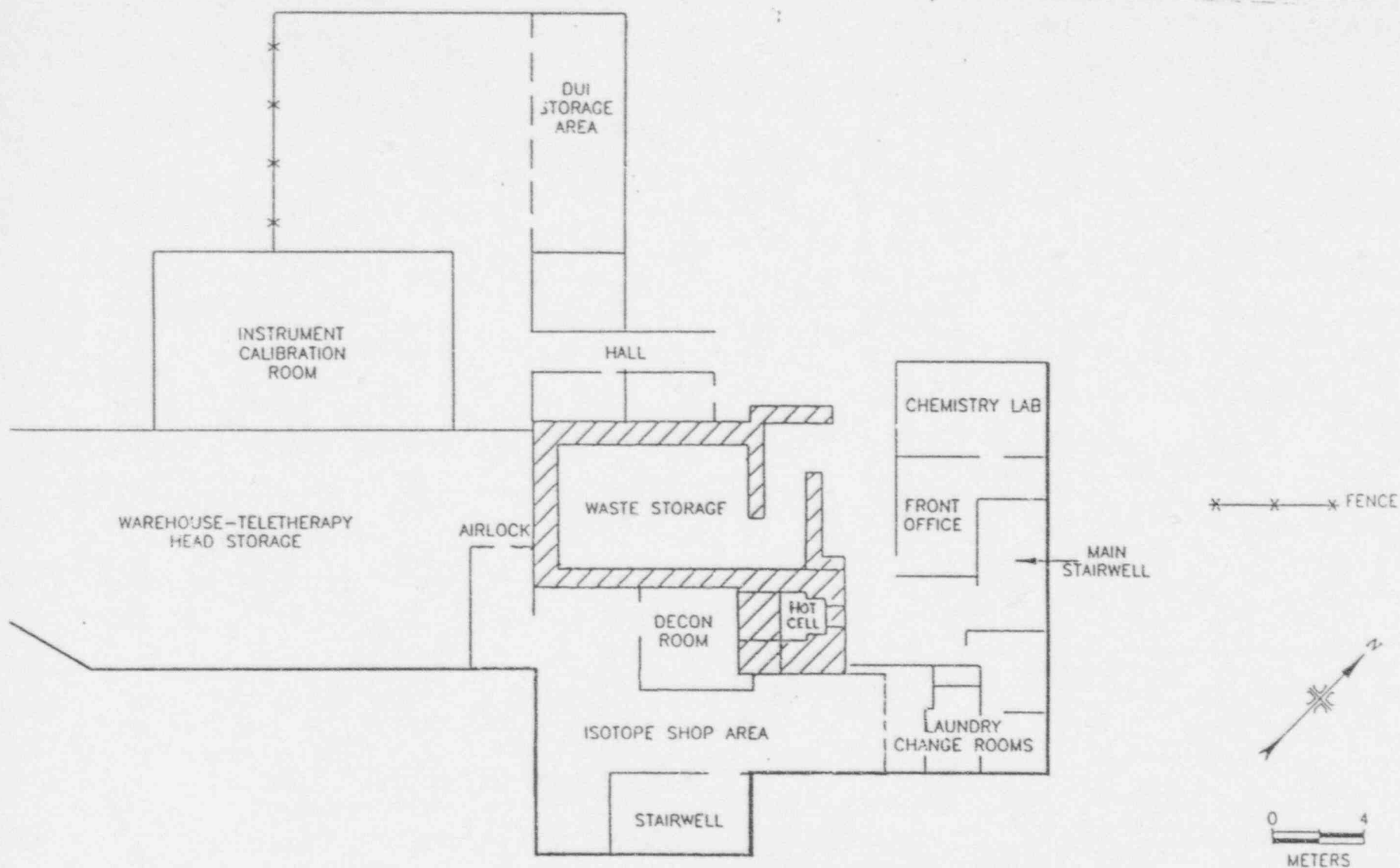


FIGURE 2-3
PARTIAL FLOOR PLAN OF THE AMS OCCUPIED AREA ON THE FIRST FLOOR

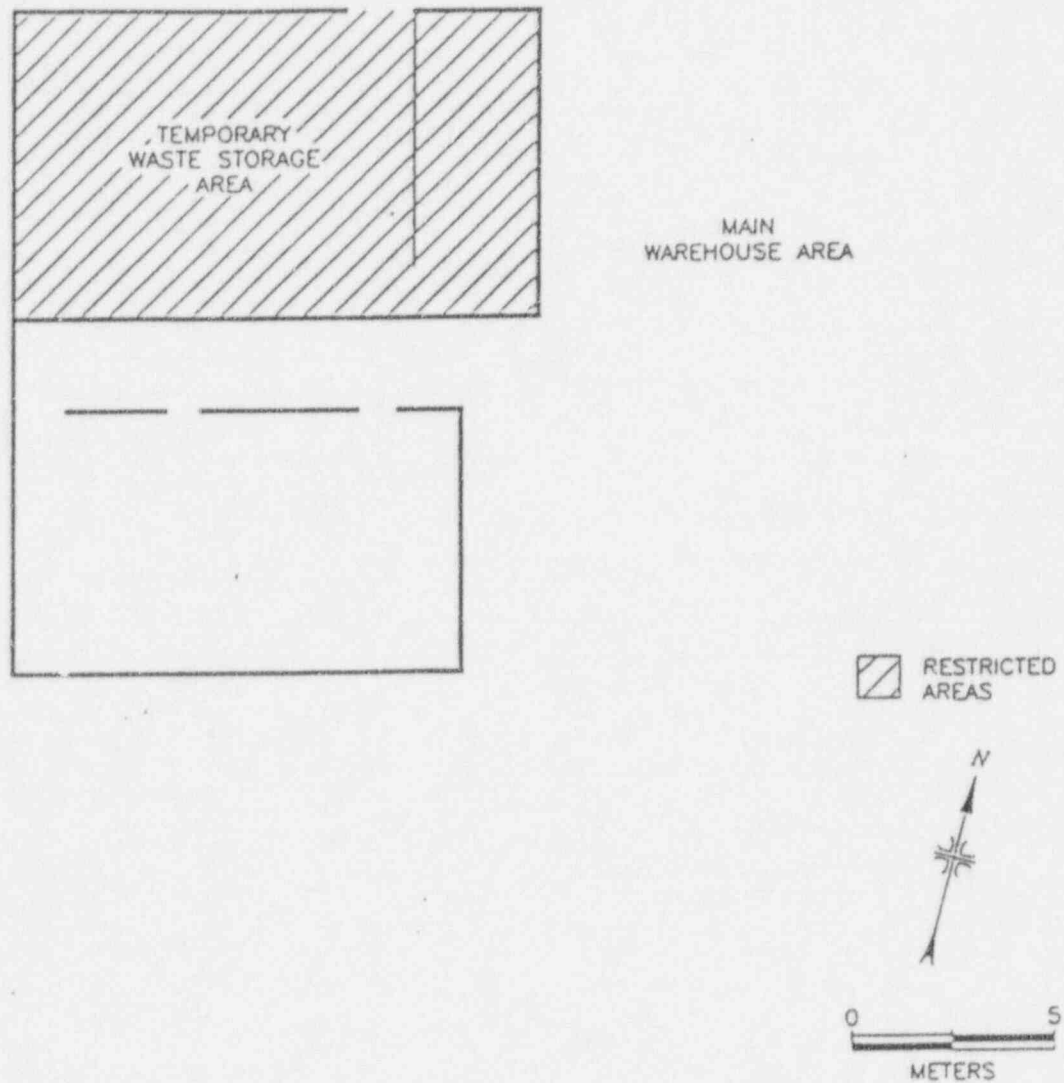


FIGURE 2-4
PARTIAL FLOOR PLAN OF THE AMS OCCUPIED AREA ON THE FIRST FLOOR

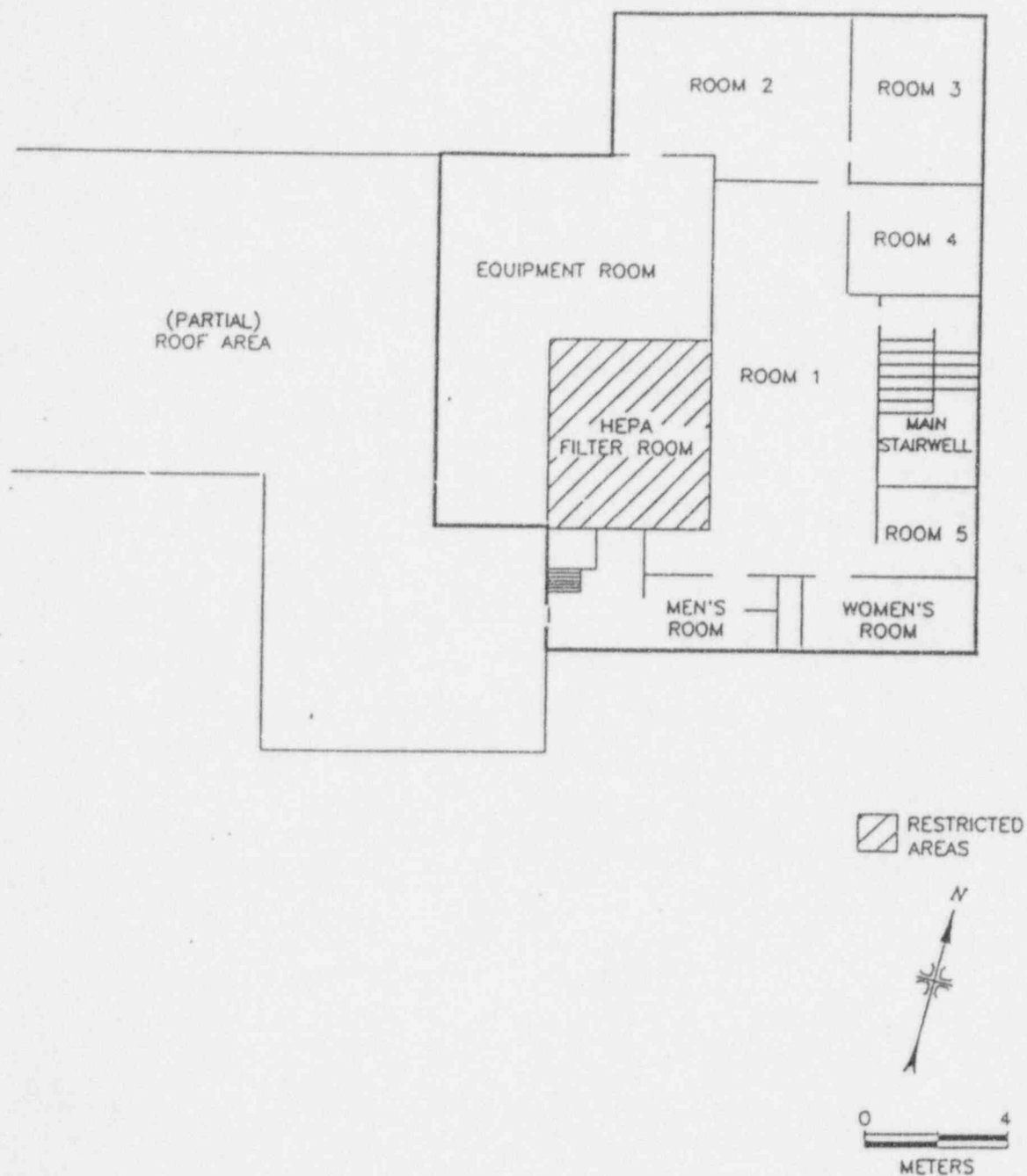


FIGURE 2-5
FLOOR PLAN OF THE AMS OCCUPIED AREA ON THE SECOND FLOOR

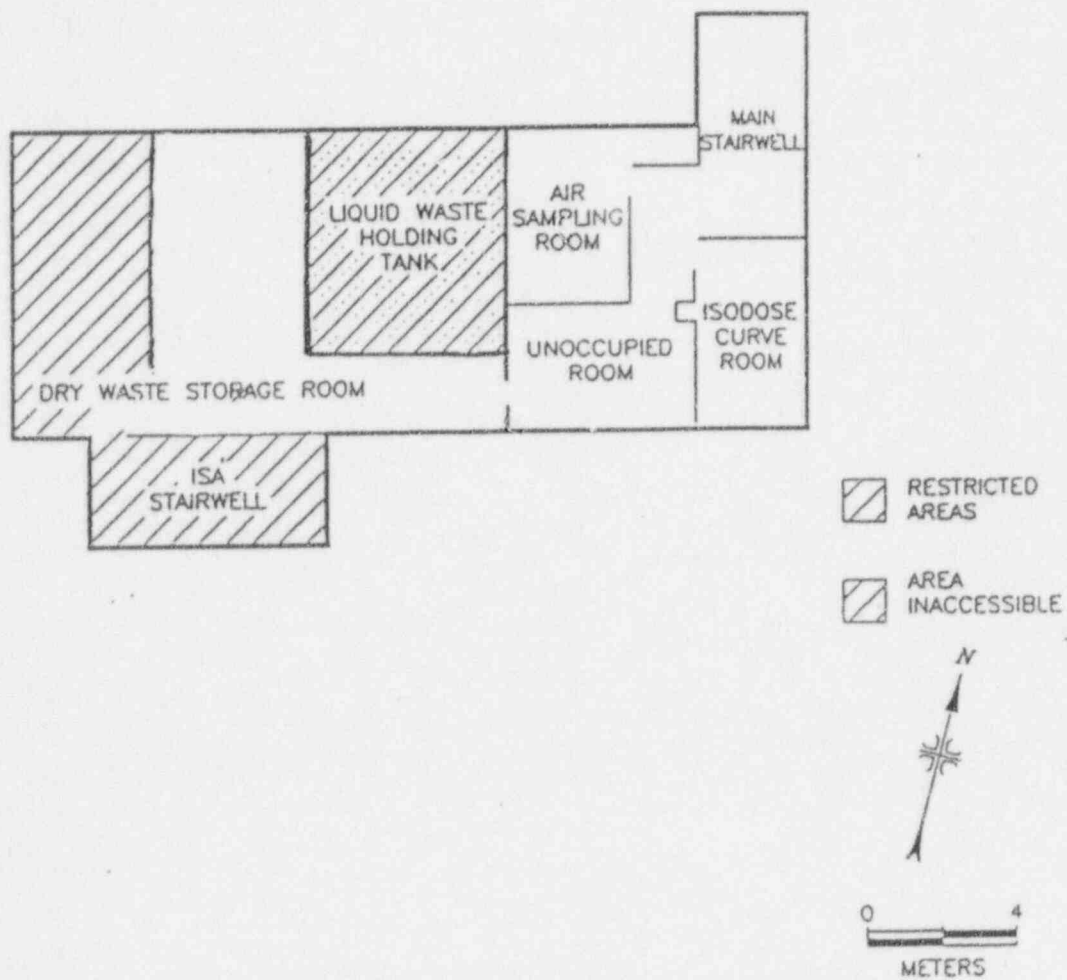


FIGURE 2-6
FLOOR PLAN OF THE AMS OCCUPIED AREA ON THE BASEMENT FLOOR

3.0 METHODOLOGY

Dewight A. Miller, Attorney at Law for Advanced Medical Systems, Inc. contracted with Scientific Ecology Group, Inc. to evaluate the integrity of the WHUT room through the sampling and analysis of soils below the perimeter of the WHUT room and a visual inspection of the room.

SEG provided a Work Plan for the integrity verification survey. The objectives of the plan were to:

- Comply with federal regulations and AMS license conditions.
- Keep exposure to As Low As Reasonable Achievable (ALARA).
- Evaluate WHUT room integrity by sampling subsurface soils and groundwater, performing a visual inspection of the room, and performing a limited radiological survey of the room.
- Prepare a report to document the results of the evaluation.

3.1 Preparation

To plan the WHUT room integrity verification survey, SEG developed a work plan to coordinate SEG activities and meet the AMS license and procedure requirements. The work plan was based upon characterization data and cell operational history provided by AMS.

3.1.1 Work Plan

The work plan (AMS-WP-00, Waste Hold-up Tank Integrity Verification Analysis) identifies the responsibilities, safety precautions, equipment needed, prerequisites and technical approach for each of the tasks, soil sampling, visual inspection and radiological survey. The work plan is included as Appendix A.

3.1.2 Staffing

The SEG on-site staff included Radiological Engineer and Senior Health Physics Technician. Off-site assistance was provided by a Radiological Engineer and technical staff at the SEG Oak Ridge facility.

3.1.3 Equipment

Equipment required for the project was provided by and shipped from SEG's Oak Ridge facility. This included instrumentation, one RO-7 radiation meter and one RO-2 for radiological for recording survey data.

A 2000 cfm HEPA unit was prepared for a backup ventilation system in the event a sealed enclosure would be needed to complete specific sampling activities and a possible failure of the WHUT room ventilation system during inspection.

Soil sampling equipment, auger, sample tube and attachments were utilized to collect the necessary samples needed for analysis.

A 2-inch x 2-inch x 6-inch Water Pic camera with audio visual screen was chosen for the visual inspection because of its unique design. The camera was small enough to slide through the existing penetrations and eliminating unnecessary core boring through the 3 ft. thick WHUT room walls.

3.1.4 Procedures

SEG provided procedures to support the project. Procedure topics included: instrumentation, sample analysis, decontamination, etc. Appendix B contains a list of SEG procedures used during the project.

3.1.5 Training

AMS staff provided the training to SEG personnel to meet AMS site access.

3.2 Soil Sampling

A strippable coating was applied to the east and west floor areas of the basement to control loose contamination and lowering airborne concentrations. Herculite in high traffic areas was used to provide further protection over highly contaminated concrete floors, and to prevent contamination migration.

Sampling locations (Attachment 1) were selected in areas of the basement where radiation levels were both ALARA and which would provide data relevant to determining if radioactivity was migrating from the WHUT room into the subsurface soils or groundwater. A roto-hammer with a 4-inch bit was used for boring the basement floor. This method allowed for a 6-inch deep dry cut through the concrete floor, which was beneficial in preventing cross contamination of soil samples. Pre-selected hold points were established to collect survey data to ensure cross contamination to underlying soil was prevented. One inch of soil from each hole was removed from the top of each sample for cross contamination concerns. Attachment 2 shows the results of smear samples taken during the sampling to verify that cross contamination did not take place. A three inch split spoon sampler was used to collect the soil samples. Collected soil samples were sealed and relinquished to AMS. All samples were shipped by AMS personnel to SEG in Oak Ridge for processing and analysis.

After twenty four hours water had filled all of the sample holes. Ground water samples were collected, sealed and relinquished to AMS and shipped to the SEG lab.

Each sample hole was filled with crushed rock and pumice. The middle 3 to 5 inches were filled with a mixture of "Top and Bond" adhesive cement and rock. The next 3 to 4 inches above the mixture was filled solely with "Top and Bond". After curing about 24 hours, a 1 inch cap of concrete was used to bring the hole flush with the basement floor.

3.3 WHUT Room Inspection

The visual inspection of the WHUT room was to be performed using a remote camera inserted through four penetrations into the room. Areas of the WHUT room of concern were the 100 gallon tank, the 500 gallon overflow tank, and the ion exchange columns.

Historical data provided by AMS lead to the identification of the penetrations that would be selected for the radiological survey and visual inspections. Penetrations identified are listed in Attachment 3, WHUT Room Penetrations. The list represents penetrations seen during evaluation. No attempt was made to map all penetrations. Two penetrations (B1 and B2) were chosen on the west wall in order to survey and perform a visual of the 500 gallon tank. A third penetration (S1) was opened by SEG personnel to provide for a visual inspection and radiological survey on the 100 gallon tank and ion exchange column. A fourth penetration was cut by SEG, through the 1 ft. thick labyrinth wall to provide a waist level visual of the room. A graphical representation of the penetrations chosen are seen in Attachment 4, WHUT Room Diagram.

3.3.1 Visual Inspection

The visual inspection was performed through penetrations B1, B2, S1, and S2 labyrinth. The visual inspection was complicated by the three foot thick WHUT room walls which limited camera movement. The camera was not equipped with pan and tilt ability. The camera was removed and relocated at different angles on the extension pole to complete the full visual inspection of the room. Several minutes of video were recorded and are included in this report.

3.3.2 Radiological Survey

The radiological survey was performed using a high range meter (RO-7). A high range probe was mounted to a 18-foot extension pole and inserted through penetrations and radiation readings were recorded in 1-foot increments across the room, west to east in penetrations B1 and B2, and south to north in penetration S1. Attachment 4 provides a graphical representation of the collected survey data in relationship to the internal WHUT room components.

4.0 FINDINGS

4.1 Soil and Groundwater Sampling

Soil and groundwater samples were analyzed by SEG using gamma spectroscopy. The results of the analysis are summarized in Table 4-1.

The Hole "C" groundwater sample was analyzed by Oak Ridge Analytical Laboratory. The laboratory analyst stated there is a large uncertainty in the sample results, with a bias toward high results, due to the non-homogeneous nature and small size of the sample. The laboratory comment are included in Appendix C.

**TABLE 4-1
HOLE SAMPLE RESULTS**

	Soil (pCi/g)	Groundwater (μ Ci/ml)
Hole "A"		
0 to 6 inches	$0.348 \pm 5.87\%$	
6 to 10 inches	$0.102 \pm 20.93\%$	$4.97\text{E-}8 \mu\text{Ci/ml} \pm 15.7\%$
Hole "B"		
0 to 12 inches	<0.179	$<7.2\text{E-}8 \mu\text{Ci/ml}$
Hole "C"		
0 to 6 inches	$1.640 \pm 4.10\%$	
6 to 12 inches	<0.133	$2.5\text{E-}6 \mu\text{Ci/ml}$

Soil sample Co-60 limit for environmental remediation: 8 pCi/gram*

10CFR20, Table 2, Column 2, Limit for Co-60 in effluent water: $3 \times 10^{-6} \mu\text{Ci/ml}$

*USNRC Report published in the Federal Register, Volume 57, No. 34, Page 6, 136 dated Thursday, February 20, 1992.

4.2 Visual Inspection

The visual inspection indicates that a spill took place at one point during past operations of the cell. Heavy corrosion on the existing equipment and discoloration on the walls indicate water levels ranged from 8-inches to 24-inches in depth. There is a sludge like material unevenly distributed on the floor which at the present time is covered with about 1/2-inch of water. Both the 100 and 500 gallon tanks have brown discolorations around the inlet flanges and fan out along the external tank surfaces. There is a 6-inch stalactite hanging from the ion exchanger piping under the 100 gallon tank and it could not be determined whether the 45 degree connection with a union is opened or closed. Large debris (barrels, boxes, pipes, sheets of plastic, etc.) cover the floor area in the room. A video tape was made of the room

and included as Appendix E. Still photographs from the video are included in Attachment 5.

4.3 Radiological Survey

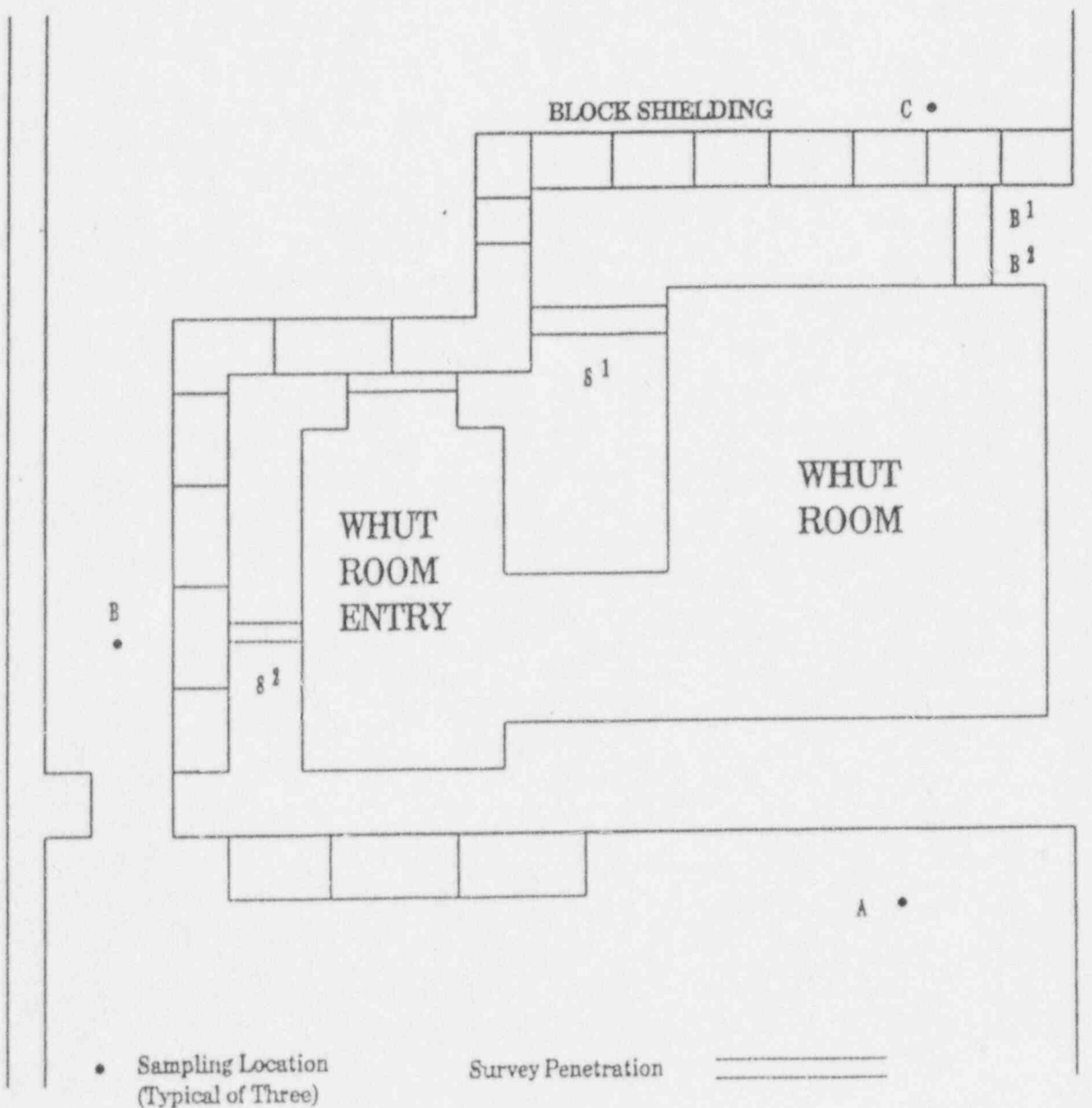
The inlet pipe and loop seal to the 100 gallon tank appear to be the highest radiation source term in the WHUT room. The radiation levels are estimated to be higher than 750 R/hr. The rest of the main drain header and the 100 gallon tank also have significant radiation source terms. The drain header surveys may not be accurate due to other source terms in the area. Dose rates 2 feet from the 100 gallon tank are 10 to 30 R/hr higher than other areas in the room. This would suggest the 100 gallon tank may have contact dose rates greater than the 70 R/hr measured in the survey. The floor appears to contribute from 2 to 20 R/hr to the room dose rates. This is difficult to determine since a portion of the source term is under water and dose rates due to the floor source term will be significantly higher when dry. Dose rates near the 500 gallon tank and the ion exchanger do not appear to be significant in comparison to other contributors in the room. Estimated source term size from largest to smallest would be:

- The 100 gallon tank
- Floor debris
- The drain header and associated piping
- The 500 gallon tank
- The ion exchanger

Attachment 4 is a diagram of the WHUT room with dose rate data identified.

ATTACHMENT 1
SAMPLE AND PENETRATION LOCATIONS

ATTACHMENT 1
SAMPLE AND PENETRATION LOCATIONS



ATTACHMENT 2
CORING INFORMATION

ATTACHMENT 2 CORING INFORMATION

Smears During Coring (dpm/100 cm ²)						
Sample Hole	A		B		C	
Smear Location	Floor	Bit	Floor	Bit	Floor	Bit
Under stripable coating - PC	ND-100	ND	N/A	N/A	20-1030	ND
After decon under coating - PC	N/A	N/A	N/A	N/A	450	N/A
After 4" core - DC	ND-50	30	ND-80	210	50-930	50
After 6" core - DC	N/A	N/A	ND-70	20	30-130	40
After 8" core - DC	N/A	N/A	ND-80	70	ND-40	10
After breaking through fill - AC	20-120	20	ND-70	40	ND-30	40
After first sample - AC	ND-60	ND	ND-40	ND	ND	260

Smear Analyzer: AMS well counter # 04896, Calibration Due: 1-8-95.

Normal LLD values for the well counter were: 170 to 210 dpm/100 cm².

PC - Prior to Coring

DC - During Coring

AC - After Coring

N/A - Not Applicable

ND - Count rate was less than or equal to background count rate

Core Data		
	Top of Core	Rest of Core
A	400 CCPM	100 CCPM
B	2000 CCPM	1000 CCPM
C	1.5 mR/hr, 2 mRad/hr	N/A

Top of core readings were taken on the side of the core which was formerly the basement floor. CCPM readings were taken with a calibrated Ludlum Model 177 frisker and a standard G-M pancake probe. Dose rate readings were taken with RO-2 # 6087, Calibration Due 1-18-95.

ATTACHMENT 3
WHUT ROOM PENETRATIONS

ATTACHMENT 3
WHUT ROOM PENETRATIONS

Wall Location	Type	Condition	Number	Estimated Size	Contact Reading (mR/hr)	
East	Isoshop Drain Line	Pipe	F1	5 inch diameter	20 open	1.2 closed
South	Unknown	Empty	S1	4 inch diameter		25 closed
West	Ventilation	Duct	None	6 x 18 inches		50 closed
West	Empty	Empty	B1	10 inch diameter	200 open	30 closed
West	Empty	Empty	B2	10 inch diameter	200 open	35 closed
West	Empty	Empty	None	10 inch diameter		N/A
West	500 gal. tank vent	Pipe	None	5 inch diameter		N/A
West	Unknown	*	None	1 inch diameter		500 closed
West	100 gal. tank vent	Pipe	None	5 inch diameter		N/A
West	Drain Header	Pipe	None	5 inch diameter		32000 closed

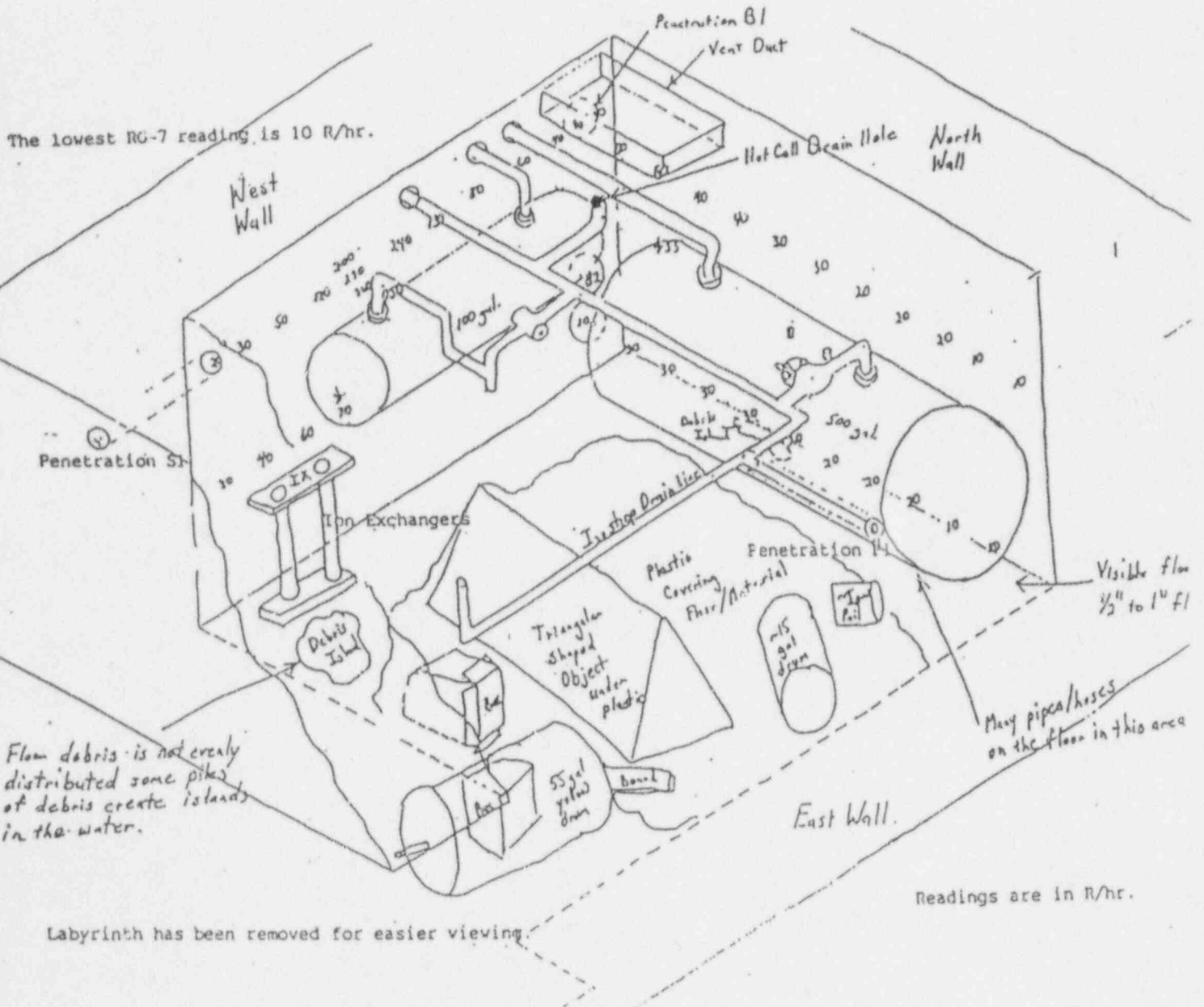
* No external indication of plugging. Located about three feet below the 100 gal. tank vent penetration.

ATTACHMENT 4

WHUT ROOM DIAGRAM
RADIATION DOSE RATES

ATTACHMENT 4
WHUT ROOM DIAGRAM

The lowest RG-7 reading is 10 R/hr.



ATTACHMENT 5

PHOTOGRAPHS

March 3, 1995

ADVANCED MEDICAL SYSTEMS, INC.

STATUS OF WORK ITEMS

Inspection Issues

Status of Temporary Restraining Order regarding sewer discharges

- * TRO issued in federal court 12/14 which retains plug, but allows the discharge of all (non-contaminated) waters.
- * Four 3000 gallon tanks have been filled from pumping the manhole. A fifth empty 3000 gallon tank and an empty 2500 gallon tank is onsite.
- * Manhole water level is being monitored twice and basement water is being monitored once every day. The distance from the manhole bottom to the basement floor slab is 23 inches. Examples of the level on certain days over the last several months are listed below:

Date	Manhole	Basement
12/12	53 inches (high in December)	2 inches
--Pumped to Tanks--		
1/13	0 inches (empty after pumping)	2 inches
1/16	67 inches (3 1/2 inches of rain)	18 inches
1/17	70 inches	19 inches
1/19	84 inches	19 inches
1/23	94 inches (high in January)	19 inches
1/25	87 inches	20 1/2 inches
--Pumped to Tanks--		
1/27	83 inches	21 inches
1/31	80 inches	22 inches
--Pumped to Tanks (to 64")--		
2/1	71 inches	22 1/4 inches
2/8	68 3/4 inches	23 inches
2/15	61 inches	24 inches
2/22	59 1/2 inches	24 3/4 inches
2/24	62 inches	25 inches
--Minor precipitation and melt--		
2/26	61 inches	25 1/8 inches
2/27	68 inches	25 1/4 inches
2/28	74 3/4 inches	25 1/2 inches
3/1	77 1/2 inches	25 3/4 inches
--Pumped to Tanks (to 74")--		
3/2	76 inches	26 inches
--Pumped to Tanks (to 74")--		
3/3	75 inches	26 inches
--Pumped to Tanks (to 67")--		
--Current differential between ground and basement water is 26 inches.--		

2/79

The licensee has developed a plan that to address: (1) the structural integrity of the building; (2) the control of ground water; (3) the clean up of existing contaminated waters; and (4) the isolation of contaminated piping. The licensee appears to have secured the services of an industrial hazardous waste processor to incinerate the processed waste water. An Order is drafted requiring water processing.

WHUT room analysis complete has been forwarded to us this week. We have not yet received it.

Front plug milling - Alaron and its subcontractor, a Chicago based engineering firm who is familiar with nuclear work, have been awarded the contract to mill out front plug (two month time line after they start work). Rig fabrication to began 2/24 and milling will begin approximately 4/1.

Shipment of GE 500 cask with approximately 12,000 Ci of contaminated non-leak tested sources is on hold - cask is bolted and stored in overpack in isotope warehouse. Alaron proposal is \$75,000 to ship cask (normal form). SEG and Vectra are also making proposals for repackaging and shipment. This is a lower priority for AMS than the front plug milling and water operations. The motivation for lower priority is strictly financial. J. L. Shepard remains interested in the material.

NRC structural assessment of AMS ongoing. First site visit 10/12. No significant issues identified. Second site visit late January - no new cracks were visible through the water. Visual observations and analysis will need to be re-performed following the water removal to assure that the water did not cause problems. Final visit necessary and will be scheduled when water subsides.

10 CFR 2.206 Requests

- * March 1993 - AMS to Pay for Remediation - Stein (OGC) has lead and is drafting Commission options paper -- no significant movement.
- * August 1994 - Sewer Discharge Radiation Monitor - DeCicco drafting response - We are supporting -- no significant movement.

Emergency Planning

Mayor of Cleveland Ad Hoc Task Force on Emergency Planning regarding AMS progressing. Grobe met with Task Force in December and with task force leader in January and February. Slawinski attended Task Force meeting in February. Subcommittee including AMS, State, County and City continues to meet on a regular basis. City and State comfortable with AMS cooperation and progress on issues. AMS performed inventory of dispersible material for emergency planning purposes (does not include WHUT room, hot cell or source garden per agreement between the parties on the Task Force). State did dose projections for various scenarios - no offsite hazard. Licensee cleared warehouse of radiological hazards and is restructuring fire alarm zones and panels to be consistent with contaminated areas.

County has petitioned the State to allow them to become an active regulatory body in emergency planning. Grobe to meet with State Emergency Response Committee on March 27 (next full meeting) to discuss AMS.

SEG will be submitting a proposal to develop an emergency exercise scenario. Expect the drill could be accomplished during the third calendar quarter in conjunction with wrap up of Cleveland Ad Hoc Task Force. Schedule is being controlled by City of Cleveland Fire Department. There will likely be several smaller drills before the exercise.

Licensing Issues

Renewal received (dated 1/30/95). Region III team established for review. NMSS review of decommissioning plan and financial instrument (\$1.8M) complete. Financial instrument good, cost estimate low. Emergency plan review in headquarters ongoing. Expect deficiency letter to be issued by mid-March for license renewal and decommissioning plan. Emergency plan deficiency letter will be later in March.

Hearing on renewal requested by NEORSD. OGC attorneys assigned (Zobler and Bordenick). Hearing requests also in from Cleveland, Cuyahoga County and Earth Day Coalition. NEORSD and Cleveland will likely have standing. NRC internal interfaces established and familiarization briefing conducted 1/12. Region III supporting NMSS.

NEORSD Legal Issues

NEORDS/AMS Lawsuit - Federal lawsuit filed. NRC/Region III involvement not expected at this time. No currently scheduled court action on lawsuit.

Federal temporary restraining order issued allowing the plug to remain in the AMS sewer, but moot on whether AMS may discharge clean water to the sewers.

AMS Facility Status

Hot cell radiological conditions:

Hot cell general area - 8 to 15 R/hr

Front plug general area - 10 R/hr

Several isolated hot areas ranging up to 35 R/hr (396 R/hr on contact with chuck)

Contamination into the millions of dpm per 100 cm²

Inventory Reduction Program

Current Inventory

≈70,000 Curies in sealed and bulk sources

≈15,000 Curies in GE-500 cask awaiting shipment to J. L. Shepard

≈200 Curies in WHUT room

≈50 Curies in solid low level waste

≈10 Curies in facility contamination (cell, ventilation room, etc)

Shipments in 1993

18,000 Curies Co-60 transferred to J. L. Shepard

6,500 Curies Cs-137 transferred to J. L. Shepard

3,000 Curies Co-60 transferred to Neutron Products, Inc.

Shipments in 1994

None

Shipments in 1995

None. (12,000 Curies Co-60 pending shipment)

Radwaste Volume Reduction

AMS is soliciting a proposal from SEG to perform radwaste volume reduction

Staffing at London Road Facility:

Bob Meschter - RSO since August 1994

Steve Haddock - Experienced isotope handler

Chris Reed - Experienced radiation control technician (Perry)

3/6/95

AMS TALKING POINTS

for

CARL PAPERIELLO

There are three issues that warrant mention by senior agency management:

1. We are concerned with your lack of progress regarding: (1) the removal and cleaning of the contaminated water in the basement; and (2) the installation of a ground water control system.

We recognize that you have encountered many difficulties as you have attempted to develop solutions to the water problems. We also recognize that your plans for controlling ground water in and around your facility are nearing completion.

Nevertheless, we find it unacceptable that the facility remains at risk from ground water pressure and water intrusion and we are into the spring precipitation season.

We expect a prompt and effective resolution of these problems in order to minimize the risk of the spread of contamination into the ground surrounding the building.

2. We are also dissatisfied with your lack of progress regarding the transfer of your current inventory of sealed sources and bulk cobalt-60.

We understand that you fully intend to transfer these materials to third parties and that outside organizations remain interested in receiving the material.

However, you have not transferred any material in well over one year and a shipment has been ready for transfer for several months.

Reducing your inventory will result in a greatly reduced radiological hazard at your facility and reduced risk to the public and environment. We expect prompt action regarding this matter.

3. Finally, we are concerned with the amount of time it is taking to complete your hazards analysis of the Waste Hold Up Tank room. The field work for that project was conducted months ago and the hazards analysis results are critical to our review of your renewal application.

B/81

There seems to be little management oversight and control over schedule regarding this project evidenced by the continuing slippage of deadlines for completing the analysis.



Northeast Ohio Regional Sewer District

INTERNAL CORRESPONDENCE

TO: Tom Lenhart,
Legal Department

DATE: March 6, 1995

FROM: Richard Connelly, *RC*
Manager - WQIS

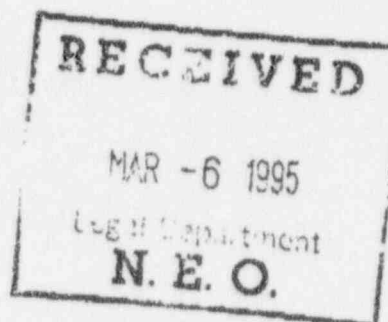
SUBJECT: Communities Served
By NEORSO

The following communities are served by NEORSO:

Beachwood	Bedford
Bedford Heights	Berea
Boston Heights	Bratenahl
Brecksville	Broadview Heights
Brook Park	Brooklyn
Brooklyn Heights	Cleveland
Cleveland Heights	Cuyahoga Heights
East Cleveland	Garfield Heights
Gates Mills	Highland Heights
Highland Hills	
(formerly Warrensville Twp.)	Independence
Lakewood	Lindale
Lyndhurst	Macedonia
Maple Heights	Mayfield Heights
Mayfield Village	Middleburg Heights
Newburgh Heights	North Randall
North Royalton	Northfield
Northfield Center Twp.	Oakwood
Olmsted Falls	Orange
Parma	Parma Heights
Pepper Pike	Richfield
Richmond Heights	Riveredge Twp.
Sagamore Hills	Seven Hills
Shaker Heights	South Euclid
Strongsville	University Heights
Valley View	Walton Hills
Warrensville Heights	

TOTAL: 52

RNC:jah
95213201/3



Post-it® brand fax transmittal memo 7671		# of pages
To: <i>Tom Lenhart</i>	From: <i>R. Connelly</i>	
Co.	Co.	
Dept. <i>Legal</i>	Phone	
Fax	Fax	

B/8 2

Paul Goldberg:

During the February 27, 1995, meeting with the Northeast Ohio Regional Sewer District (NEORSO), a question was raised regarding what NRC licensees (in possession of cobalt-60) are or were serviced by the NEORSO. Several years ago a search was conducted by zip codes which provided a listing of licensees who possessed cobalt-60 from 1975 until present. In order to perform a search prior to 1975, a listing of towns is needed. The following page is a listing of communities served by the NEORSO.

If the search takes some time to conduct (greater than 30 days), please either contact me so I can inform the NEORSO or please contact the NEORSO directly (Tom Lenhart or Rich Connelly).

If you have any questions feel free to contact me at (708) 829-9869 (E-mail - MFK).

Thanks,

Michael Kurth
Region III

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

of pages **2**

To: Paul Goldberg	From: Mike Kurth
Dept./Agency: LLWM	Phone #: 708 329 9869
Fax #: 301 415-5397	Fax #: 708 515-1259

NSN 7540-01-117-1462 5010-107 GENERAL SERVICES ADMINISTRATION

FAX FORM
ADVANCED MEDICAL SYSTEMS, INC.121 North Eagle Street
Geneva, OH 44041
Phone: (216) 466-4671
FAX: (216) 466-0186TO: JOHN A. GROBE, CHIEF
NUCLEAR MATERIALS INSPECTION
SECTION II - USNRC, REGION IIIFROM: DAVID CESAR *D. Cesar*
TREASURER

FAX NO.: /515-1259

DATE: MARCH 6, 1995

PAGE 1 OF 1

I have received assurance from S.E.G. that the W.H.U.T. Room report will be overnighted to me on Tuesday, March 7, 1995. I should receive it on Wednesday, March 8. I will then overnight the report to you. You should receive it by Thursday, March 9.

DC/cs

B184



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION III
801 WARRENVILLE ROAD
LISLE, ILLINOIS 60532-4351

March 2, 1995

Advanced Medical Systems, Inc.
ATTN: David Cesar
Treasurer
121 North Eagle Street
Geneva, OH 44041

Dear Mr. Cesar:

This refers to the special safety inspection conducted by Dr. John House and Messrs. Wayne Slawinski and Keith Andre of this office on December 12-13, 1994 and January 18, 1995, to review certain aspects of your NRC licensed activities authorized by NRC Byproduct Material License No. 34-19089-01. This also refers to the January 18, 1995 meeting with you and your representatives and myself and Mr. James Caldwell of the NRC Region III office, regarding current water problems at your facility.

The inspection was prompted by your London Road facility's water control problems and was conducted to: (1) observe ongoing facility water intrusion problems and ground/surface water control activities; (2) perform radiochemical analyses and limited filtration studies of wastewater samples; and (3) observe licensee contractor efforts in conducting a radiological assessment of the Waste Holdup Tank (WHUT) room in the basement of your facility.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of observations, water sampling and analyses, and interviews with personnel.

No violations were identified during the course of this inspection. However, concerns with ground and surface water control and its potential effect on the integrity of your building's foundation were noted. The lack of timely and effective long-term solutions to the water problems was also identified as a concern.

We have continued to monitor your facility water problems since these problems arose in December 1994, including daily communications with you or your staff upon escalation of these problems on January 16, 1995. To confirm your specific commitments to address these ongoing concerns, we issued a Confirmatory Action Letter (CAL No. RIII-94-008) on December 15, 1994. Due to changes in the status of your facility and its escalating water problems, the CAL was revised on February 1, 1995.

As you know, we are currently evaluating your January 27, 1995 Action Plan for dealing with these water problems and the remediation of the contaminated sewer discharge system. This evaluation includes your consultant's proposal for wastewater processing, forwarded by letter dated February 2, 1995. You

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②

Advanced Medical Systems, Inc.

-2-

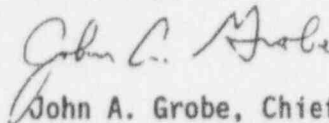
will be informed by separate correspondence regarding the results of our review. Consequently, no response to these matters is required at this time.

We will continue to monitor your facility's water problems and evaluate the effectiveness of your remedial actions via periodic inspections at your London Road facility.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosed report will be placed in the NRC Public Document Room.

We will gladly discuss any questions you have concerning this inspection.

Sincerely,



John A. Grobe, Chief
Nuclear Materials Inspection Section 2

License No. 34-19089-01
Docket No. 030-16055

Enclosure: Inspection Report
No. 030-16055/95001(DRSS)

See Attached Distribution

RECEIVED
EXECUTIVE DIRECTOR'S OFFICE

MAR 6 1995

NORTHEAST OHIO REGIONAL
SEWER DISTRICT

**IEM**

Integrated Environmental Management, Inc.

Grobe

9040 Executive Park Drive, Suite 205
Knoxville, TN 37923
Phone: (615) 531-9140
Fax: (615) 531-9130

1680 East Gude Drive, Suite 305
Rockville, MD 20850
Phone: (301) 762-0502
Fax: (301) 762-0638

March 8, 1995

Mr. John A. Grobe
Nuclear Materials Inspection Section 2
United States Nuclear Regulatory Commission
801 Warrenville Road
Lisle, Illinois 60523-4351

Re: License No. 34-19089-01

Dear Mr. Grobe:

On March 7, 1995, I had a brief conversation with Mr. Wayne Slawinski regarding the procedures for water treatment/discharge at the Advanced Medical Systems, Inc. (AMS) facility on London Road. The purpose of this letter is to clarify certain commitments in David Cesar's March 2, 1995 application to mend the referenced license number and in Supplement 2 to the application (March 3, 1995).

Confirmatory Sampling: The concentration of ^{60}Co in the treated water will be confirmed by Quanterra, Inc., prior to discharge into the collapsible storage containers.

Release Criterion for Soils: The Application to Amend the referenced license contained a typographical error in reference to the release criteria for ^{60}Co in soils in Attachment 2. The first sentence in the section entitled "Solid Waste Management" is amended to read: "Soils excavated or removed during remediation activities that contain ^{60}Co in concentrations less than eight (8) pCi/gram will be disposed of by conventional means at the discretion of the contractor personnel." In the March 3, 1995 letter from C. D. Berger to J. A. Grobe, footnote (5) is amended to read: "If the solids contain detectable ^{60}Co , they will be retained at AMS. If no detectable ^{60}Co is identified, the solids will be disposed of pursuant to the manufacturer's instructions."

Operation of the Evaporation System: It is anticipated that the evaporation system referenced in the March 3, 1995 letter from C. D. Berger to J. A. Grobe will be sufficiently interlocked to permit continuous (e.g., 24 hours per day) operation without continuous surveillance by AMS personnel. However, the actual procedure for monitoring and surveillance will not be prepared until after the

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system is purchased and performance requirements are evaluated. At that time, the processing period will be specified.

Water Treatment: The water that currently exists in the above-ground storage tanks will be processed "in place" with submersible process equipment. The treated water will then be sampled. When the results indicate that the ^{60}Co concentration meets the release criteria, the water will be pumped to one of the collapsible storage containers. When empty, the outside tanks will be transported to the sample tank farm inside of the AMS building where they will be used as sample tanks for processing. At this time, the process equipment will be set up in a diked process area of sufficient size to contain incidental spills (e.g., up to 50 gallons).¹ The sample tank farm area will be equipped with a diversion route back to the basement of the building for excess water since it does not appear that there will be sufficient space to set up a containment volume that is 1.5 times the volume of the largest sample tank (e.g., 3,000 gallons).

Please contact me at (301) 762-0502 if you have any questions or if I can provide you with additional technical information. Thank you in advance for your assistance and your prompt review of the AMS application. I am looking forward to timely and successful completion of this project.

Sincerely,



Carol D. Berger, C.H.P.

cc: D. Cesar, AMS
D. Miller, Esq., Stavole & Miller
A. Duff, NRRPT, AWK Consulting Engineers
File 94009

¹ The only sizeable volume of water located in this area is in the pressure vessel, which does not require a dike.



Northeast Ohio Regional Sewer District

3826 Euclid Avenue • Cleveland, Ohio 44115-2504

216 • 881 • 6600

FAX: 216 • 881 • 9703

March 8, 1995

Dr. Carl J. Paperillo
Director, Nuclear Materials Safety and Safeguards
U.S. Nuclear Regulatory Commission
One White Flint North
15545 Rockville Pike
Rockville, MD 20852

Dear Dr. Paperillo:

Thank you for your hospitality during the meeting between your staff and the representatives of Advanced Medical Systems, Inc. (AMS).

As a result of that meeting, the Nuclear Regulatory Commission (NRC) may be considering the exercise of preemptive jurisdiction with respect to the contaminated water that has collected in and around its building. Certain facts must be borne in mind regarding the factual predicate of any such "health and safety emergency" finding.

1. **The NRC and AMS have had more than four months to address the question of how to dispose of water at the AMS facility.**

Since October 21, 1994, both the NRC and AMS were on notice that the Northeast Ohio Regional Sewer District would no longer accept wastewater from this facility. At that time, the NRC and AMS should have instituted one or more alternative disposal methods authorized under NRC regulations. For example, AMS could have instituted the evaporation of their wastes.

Evaporation should have been an obvious alternative to both the NRC and AMS, since that particular method has been used at this very facility to reduce the volume of their worst contaminated liquid wastes. See, e.g., Feb. 8, 1988 Letter of T.J. Hebert, AMS General Manager, to B.S. Mallett and G. McCann, USNRC Region III, a copy of which is attached hereto as Exhibit "A".

As discussed by Ms. Carol Berger at the Feb. 22, 1995 meeting with the Ohio Environmental Protection Agency (OEPA), the NRC and AMS at the OEPA offices, Ms. Berger

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3/90

made it abundantly clear that there were no technical impediments to evaporation of the wastes at the AMS facility. In fact, she called it a great long-term solution. John Grobe, Wayne Slawinsky and Michael Weber of the NRC were present at this meeting and can confirm Ms. Berger's statements.

At that time she stated that the evaporators she was familiar with could handle only a few gallons per hour. While this is contrary to information collected from the evaporation industry, her comments nonetheless underscore the absence of any "emergency" at this facility other than one of AMS's own creation. For example, at an extremely conservative level of 5 gallons per hour, 3,600 gallons could have been disposed of in just one of the months that passed since AMS began collecting water. A rate of only 33 1/3 gallons per hour would have disposed of the entire accumulation of 24,000 gallons at AMS in a single month.

That time is available to AMS to conduct such evaporation is obvious from the testimony of Dwight Miller at the March 7, 1995 meeting between the NRC and AMS at the NRC's Two White Flint Headquarters. As stated by Mr. Miller, 20,000 gallons accumulated at the facility were the result of a single weekend's rainfall being piped through a "previously unknown 32" standpipe". Leaving aside questions of how a 32" tall standpipe could have remained undiscovered through the many NRC inspections of this facility, it is clear that if one pipe can fill the basement in one weekend, the same size pipe could transfer the water to tanks for treatment in one weekend.

Hence, to consider this an "emergency" would require you to ignore the dictionary meaning of the word.

2. The NRC has allowed AMS to ignore multiple directives to pump out the facility basement.

At a meeting between the NRC and AMS held February 6, 1995, at the Region III headquarters in Lisle, Illinois, William L. Axelson, Director of Radiation Safety and Safeguards, directed AMS as follows:

Just to make it all clear, they -- I mean, from a radiological concern, it's the water in the basement that is many, many orders of magnitude higher than what else is in the pump pit or in a manway. And although this material isn't necessarily ground water hazard, if the contamination in that basement gets in the ground water, it's going to create a bigger problem, in terms of cleanup and other characterization.

My concern, I think, is to get that water cleaned up. Whether or not it can be discharged is another issue, but to get it out of the basement and cleaned up to an acceptable level, while not sequencing and choreography into such a point that you don't cross-contaminate and minimize contamination of ground water. But that source term in the basement needs to be cleaned up. I

just want to make sure of that. I think we all agree on that. And that's something that has to be given the appropriate priority.

Transcript of Feb. 6, 1995 Hearing, excerpts of which are attached hereto as Exhibit "B", pages 60-61.

At the Feb. 22, 1995 meeting at OEPA headquarters, it was made clear that AMS had not removed the water from the basement of their facility. John Grobe reiterated that AMS should begin pumping to tanks immediately.

As was made clear by the testimony presented by AMS at the March 7, 1995 meeting with NRC, AMS has still not removed the water they have collected in their basement.

3. AMS has failed to even apply for permits that would allow them to evaporate the water in and around their facility.

At the March 7 meeting between the NRC and AMS, AMS contended that local permitting requirements were roadblocks to implementing alternative wastewater disposal methods. As you can confirm with the respective staffs of the federal and Ohio Environmental Protection Agencies, AMS has never submitted any application for a permit to install any evaporation equipment of any kind at their facility, nor have they applied for any permitting that may be required for direct discharge of their wastewater to the waters of the United States or of Ohio.

In any event, and as you can confirm from Mr. Grobe, Mr. Slawinsky and Mr. Weber of the NRC, it was made clear at the Feb. 22 meeting held at OEPA that no permit to install (PTI) at all would be required for AMS to pump their wastewater into tanks, no PTI would likely be required for the evaporator that would address AMS's needs, nor would there be serious permitting problems posed by a one-time discharge to Lake Erie.

AMS cannot legitimately complain that an "emergency" is created by the time it would take to secure any such permitting when they have not even begun the process to obtain it.

4. The NEORSD continues to be subject to interference because of Cobalt-60.

It appeared at the March 7 meeting that AMS was of the opinion that the NRC was going to somehow exempt the NEORSD from the nuclear materials regulations passed by Congress. At this meeting, no NRC officials confirmed such a plan, nor would an NRC exemption shelter the NEORSD from, for example, EPA regulations or civil litigation based upon the risk-based analysis presented by the EPA in the draft Part 196 regulations.

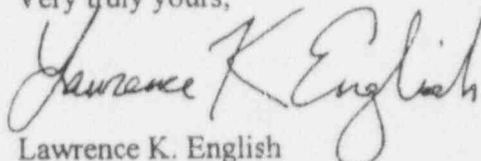
Moreover, the assertion that NRC would indeed provide such an exemption runs counter to the actual experience the NEORSD has had with the NRC. For example, as recently as December 28, 1994, the NRC requested further study be conducted -- at NEORSD expense -- of areas that had been studied three separate times by NRC inspectors. See Dec. 28, 1994 Letter of

J.E. Glenn, Chief of Low-Level Waste and Decommissioning Projects Branch, to E.J. Odeal, Executive Director, NEORSD. That is, the NRC is in its fourth year of requesting the NEORSD to spend money on a problem created by the NRC and AMS. That is, NEORSD is in the fourth year of requesting the NRC to reform its policy that allows NRC licensees to shift the cost of low-level radioactive waste dumped to wastewater treatment plants and to their ratepayers.

The NEORSD has the right to take reasonable steps to keep its facilities free of substances that can interfere with its processes, whether or not the agency that should have acted failed to act. If necessary, NEORSD will demonstrate before a hearing panel under 10 CFR 20.202(a)(3) or in federal court that the current water problems of AMS are of their own creation as the result of inaction and may be remediated by methods other than release to the sanitary sewer system. Any other description of the situation is a deliberate misrepresentation of the true development of this accumulation of contaminated wastewater.

If you have any questions regarding the foregoing, please call me or Tom Lenhart at (216) 881-6600.

Very truly yours,



Lawrence K. English
Assistant General Counsel

att.

cc: Senator John Glenn
Erwin J. Odeal
William B. Schatz
Sara J. Fagnilli
Thomas E. Lenhart
Barry Koh, Ph.D.
Richard Connelly
✓ John Grobe
Joe DeCicco
Henry Billingsley, II
Dwight Miller
Frank DiPiero
Martha McCorkle
Jacqueline Mallett

EXHIBIT "A"



Advanced Medical Systems, Inc.

121 North Eagle Street • Geneva, Ohio 44041
(216) 466-4671 TWX 810-4272 183

February 8, 1988

U. S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Attention: Bruce S. Mallett
George McCann

Re: License No. 34-19089-01

Gentlemen:

The AMS/NSS Decontamination Plan dated October 16, 1987 (last revision), approved by the NRC, presents one unresolved issue. This issue involves the proposed isolation of the Waste Water Hold Up Room. NSS had proposed the isolation of this room in lieu of decontamination. The isolation procedures would be conducted in order to prevent any danger to the environment or public health and safety. The NRC stated during a conference telephone call between T. J. Hebert, AMS; James Elkins, NSS; and Bruce Mallett, et al NRC, on October 22, 1987 that they would consider the isolation proposal pending further information and discussion.

NSS has proposed a brief, attached to the letter, which outlines the reasons why this area should be isolated, the methods used in isolation, and the procedures for monitoring the area after isolation.

Also attached to the AMS Decontamination Plan are letters from Dr. Allen Brodsky (AMS Consultant) which states his opinion in reference to the risk benefit ratio associated with the decontamination of the Waste Water Hold Up Room.

AMS does not intend to have any future use for the Waste Water Hold Up Room following the completion of the facility's decontamination. This discontinued use will not adversely affect the AMS operations of the Hot Cell and isotope handling facility. The use of water as a cleaning agent will be discontinued in favor of more current methodologies. The limited volume of water generated in the hot cell to test source leakage will be confined to the hot cell. As generated, this water will be evaporated or solidified and handled as solid waste. Waste water generated at the clean change (locker room) area for personal hygiene will be monitored and released to the city sewer system according to Regulation 10CFR, Part 20.303. The discharge from the clean change area was previously rerouted from the area to be isolated.

AMS has in place an NRC approved decommissioning plan which involves the active contribution to a trust fund designated solely for the purpose of financing the facility's decommissioning. The isolated Waste Water Hold Up Room would be decontaminated and/or decommissioned at the time of the facility's closure. A copy of the decommissioning plan and trust agreement are attached.

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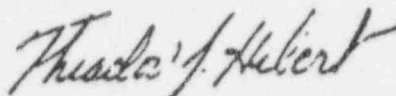
END

8805100065 XA

ATTACHMENT A

Should you have any questions associated with your review of this proposal, please contact me at (216) 466-4671.

Sincerely,

A handwritten signature in cursive script, reading "Theodor J. Hebert".

Theodor J. Hebert
General Manager

TJH/gjr

Attachment

EXHIBIT "D"

BEFORE THE UNITED STATES
NUCLEAR REGULATORY COMMISSION

NUCLEAR REGULATORY COMMISSION)
PUBLIC MEETING WITH)
ADVANCED MEDICAL SYSTEMS, INC.) Docket 030-16055
IN RE THE MATTER OF:) License 34-19089-01
WATER MANAGEMENT)

COPY

REPORT OF PROCEEDINGS the Public Meeting of
the above-entitled cause, before the Nuclear
Regulatory Commission, held on Monday, the 6th day of
February, A.D., 1995, at the hour of 1:00 o'clock
P.M., at Region III, Nuclear Regulatory Commission,
801 Warrenville Road, Lisle, Illinois.

NUCLEAR REGULATORY COMMISSION MEMBERS PRESENT:

MR. WILLIAM L. AXELSON,
Director, Radiation Safety and Safeguards;
MR. JAMES CALDWELL,
Deputy Director;
DR. DONALD CHERY, JR.,
Senior Hydrologist, Division of Waste
Management;
MR. FRED COMBS,
Chief of the Operations Branch, Industrial and
Medical Nuclear Safety;
MS. ANGELA DAUGINAS,
Public Affairs;
MR. JACK GROBE,

County Court Reporters, Inc.

219 NAPERVILLE ROAD
WHEATON, IL 60187
(708) 653-1622

DuPage Reporting Service, Inc. Court Reporting Services
Youker Court Reporters

OAK BROOK OFFICE
(708) 654-1121

KANE COUNTY OFFICE
(708) 897-8852

1
2 APPEARANCES (Continued):

3 MS. CYNTHIA JONES,
4 Operations Branch, Division of Industrial,
5 Medical Nuclear Safety;
6 MR. MICHAEL KURTH,
7 Decommissioning Section;
8 MR. KEVIN NULL,
9 Materials Licensing;
10 MR. ROBERT SHEWMAKER,
11 Senior Civil Structural Engineer, Division of
12 Waste Management;
13 MR. WAYNE SLAWINSKI,
14 Nuclear Regulatory Commission, Health
15 Physicist;
16 MR. MICHAEL WEBER,
17 NRC Region III Inspector.

18
19 ALSO PRESENT:

20 MR. BRUCE BERSON, Attorney,
21 Appeared on behalf of NRC.
22

1 discharging water that is clean from everybody's
2 standpoint in the world, I mean, 20, 30, 40,
3 picocuries per liter.

4 If we could, if we had an alternative
5 source to get rid of the water, we've looked at some
6 of that. I'd like to try that. We're not out here to
7 pick a fight. We want to get this water out of our
8 basement, and we want to move it as fast as we
9 possibly can. And if we can, as I say, enlist your
10 assistance, we'd like to do it.

11 MR. AXELSON: Well, we've worked with the Ohio EPA
12 on many other cases, Chem-Tron. So, perhaps, we need
13 to set up a meeting soon with the appropriate other
14 bodies to discuss this issue. And that's something I
15 think we'll take back.

16 MR. GROBE: As I mentioned already, those
17 conversations are already ongoing today. Any other
18 questions regarding the water processing?

19 MR. AXELSON: Just to make it all clear, they -- I
20 mean, from a radiological concern, it's the water in
21 the basement that is many, many orders of magnitude
22 higher than what else is in the pump pit or in a

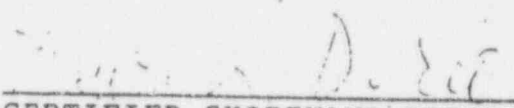
1 manway. And although this material isn't necessarily
2 ground water hazard, if contamination in that basement
3 gets in the ground water, it's going to create a
4 bigger problem, in terms of cleanup and other
5 characterization.

6 My concern, I think, is to get that
7 water cleaned up. Whether or not it can be discharged
8 is another issue, but to get it out of the basement
9 and cleaned up to an acceptable level, while not
10 sequencing and choreography into such a point that you
11 don't cross-contaminate and minimize contamination of
12 ground water. But that source term in the basement
13 needs to be cleaned up. I just want to make sure of
14 that. I think we all agree on that. And that's
15 something that has to be given the appropriate
16 priority.

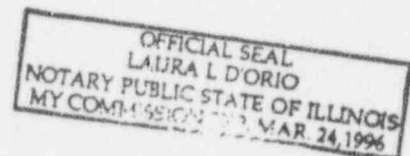
17 MR. GROBE: Oka, Let's move on to remediation of
18 the contaminated piping and manhole. You described
19 four proposals. One issue that wasn't clear. Your
20 second proposal included remediation of the lateral
21 and decontamination of some other piping. But it
22 wasn't clear, from your cost estimates, as to whether

1 STATE OF ILLINOIS)
2 COUNTY OF DU PAGE) SS.
3
4

5 I, LAURA L. D'ORIO, C.S.R., Notary
6 Public duly qualified and commissioned for the State
7 of Illinois, County of DuPage, do hereby certify that
8 I reported in shorthand the proceedings had at the
9 hearing of the above-entitled cause, and that the
10 foregoing transcript is a true, correct and complete
11 report taken at the time and place hereinabove set
12 forth.
13
14
15

16 
17 CERTIFIED SHORTHAND REPORTER
18 NOTARY PUBLIC

19 My Commission expires:
20 March 24, 1996
21
22



**IEM**

Integrated Environmental Management, Inc.

Grobe

9040 Executive Park Drive, Suite 205
Knoxville, TN 37923
Phone: (615) 531-9140
Fax: (615) 531-9130

1680 East Gude Drive, Suite 305
Rockville, MD 20850
Phone: (301) 762-0502
Fax: (301) 762-0638

March 10, 1995

Mr. John A. Grobe
Nuclear Materials Inspection Section 2
United States Nuclear Regulatory Commission
801 Warrenton Road
Lisle, Illinois 60523-4351

Re: License No. 34-19089-01

Dear Mr. Grobe:

As follow-up to our telephone conversation on Thursday, March 9, 1995, enclosed is additional information pertaining to the water treatment project at the Advanced Medical Systems, Inc. (AMS) facility on London Road. The purpose of this letter is to provide additional clarification to the March 2, 1995 application to amend the referenced license number, Supplement 2 to the application (March 3, 1995), and my letter to you dated March 8, 1995.

Specifications for the Collapsible Storage Tanks: The collapsible storage tanks are Type R Petro-Flex Tanks manufactured by ATL. Similar tanks are in use at nuclear utilities such as Detroit Edison, Commonwealth Edison, Yankee Atomic, Boston Edison, Martin Marietta Energy Systems, and a variety of other locations. The tanks to be installed at the AMS facility will have a capacity of 25,000 gallons each. The nominal tank dimensions when empty are 24.5 ft x 37 ft. The nominal tank dimensions when full are 21.75 ft x 34 ft. x 5.5 ft. Attachment 1 contains the material specifications.

Location of Collapsible Storage Tanks: Attachment 2 contains a drawing of the AMS facility. The storage tanks will be positioned, as shown, inside of the warehouse. The warehouse floor is a "slab on grade".

Potential for Structural Damage in the Event of Storage Tank Rupture: The collapsible storage tanks will be surrounded by shelving and other components in the warehouse. These items will, in the unlikely event of a tank rupture, absorb much of the spill's "energy". Furthermore, the water exiting a ruptured tank would flow in all directions, and would spread quickly over the entire warehouse floor. (Note again that the filled tanks are only 5.5 feet tall.) Finally, the containment walls surrounding the storage tanks (and the walls surrounding the

*B/91***RECEIVED****MAR 13 1995****REGION III***9503210454 (10)*

⁶⁰Co stored at AMS) are protected by exterior surfaces and interior framing walls that are certainly capable of withstanding the pressure of a small wave of water. Nonetheless, the AMS structural engineer will be asked to evaluate the potential for structural damage anywhere within the building in the event of a catastrophic rupture of a storage tank.

Evaporator Specifications: AMS continues to evaluate options and permitting requirements for four different evaporator systems. The design and specifications of the preferred system will be forwarded to you as part of an application to amend the referenced license to permit the treated water in the storage tanks to be evaporated. AMS understands that the amendment currently under consideration by the USNRC will not include the evaporation step.

Submersible Treatment System: Attachment 3 contains procedures for the submersible water treatment system that will be used to treat the water currently stored in above-ground storage tanks outside of the AMS facility. Additional descriptive information was provided to Mr. Wayne Slawinski and Mr. John House in a March 9, 1995 conference call.

Please contact me at (301) 762-0502 if you have any questions or if I can provide you with additional technical information. Thank you in advance for your assistance and your prompt review of the AMS application. I am looking forward to timely and successful completion of this project.

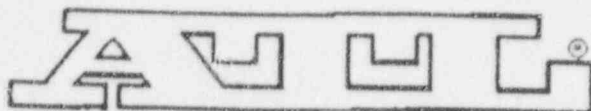
Sincerely,



Carol D. Berger, C.H.P.

cc: D. Cesar, AMS
D. Miller, Esq., Stavole & Miller
A. Duff, NRRPT, AWK Consulting Engineers
File 94009

ATTACHMENT 1
STORAGE TANK MATERIAL SPECIFICATIONS

**AERO TEC LABORATORIES INC.****Technical
Data Sheet****ATL TYPE R 725 B MATERIAL SPECIFICATIONS**

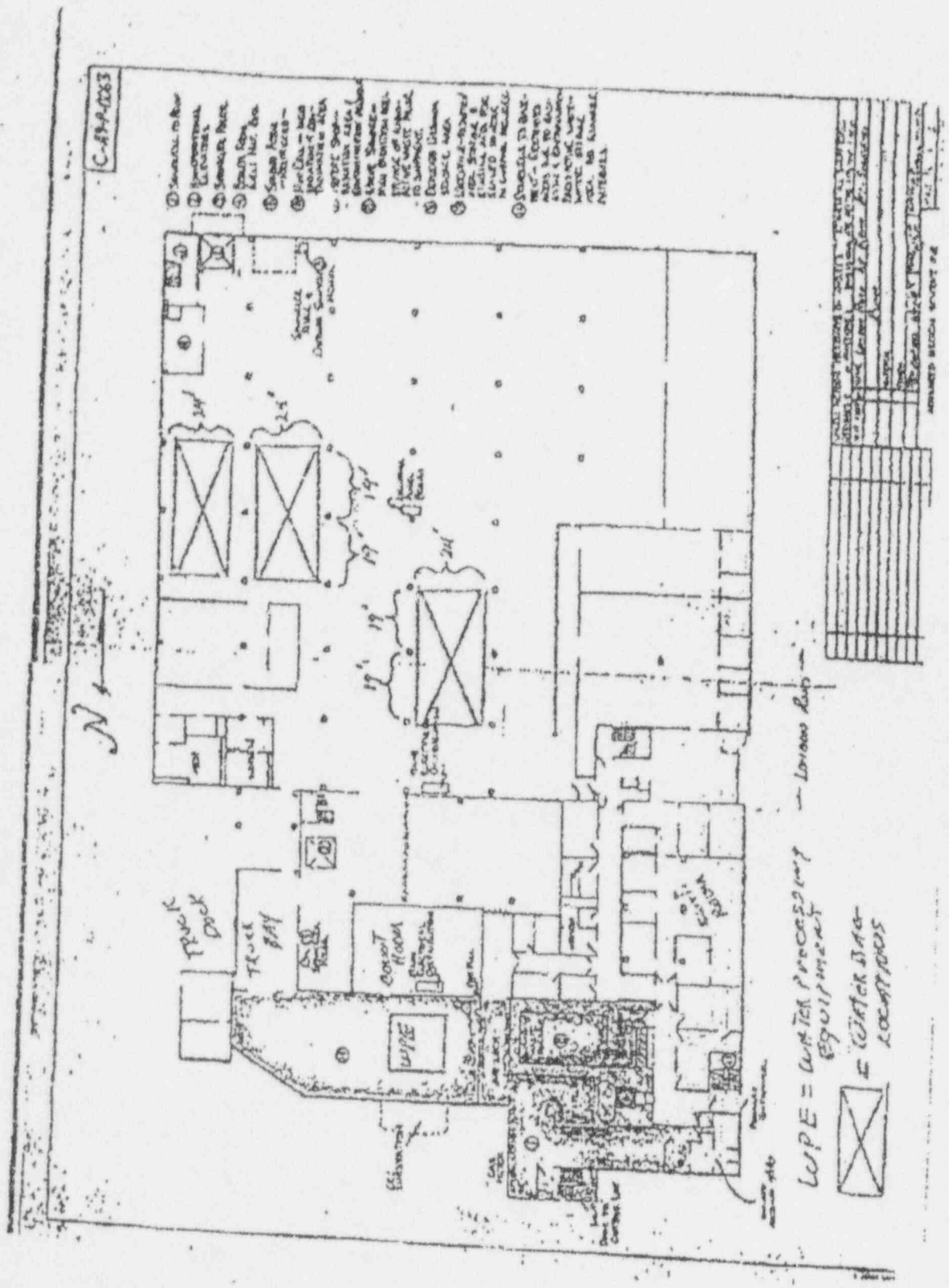
Coating	-	Modified PVC Elastomer
Reinforcement	-	Nylon Fabric
Tensile Strength	-	700 lb./in.
Tear Strength	-	110 lbs.
Puncture Strength	-	260 lb.
Weight	-	36 oz. sq. yd.
Thickness	-	.044 in.

U.S. Corporate Headquarters:
Spear Road Industrial Park
Ramsey, New Jersey 07446
TEL: 201-825-1400
TLX: 842730 ATLINC
FAX: 201-825-1882

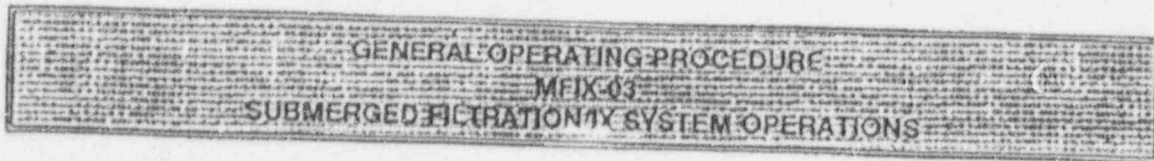
European Operations:
37 Clarke Road
Mount Farm Industrial Estate
Bletchley, Milton Keynes MK1 1LG England
TEL: (0908) 270580
FAX: (0908) 270581

"INNOVATION THROUGH INVOLVEMENT"

ATTACHMENT 2
LOCATION OF COLLAPSIBLE STORAGE TANKS



ATTACHMENT 3
SUBMERSIBLE TREATMENT SYSTEM PROCEDURE



INFORMATION COPY

Issued To:


Ms. Carol Berger
Integrated Environmental
Management, Inc.
Suite 205
9040 Executive Pk Dr
Knoxville, TN 37923

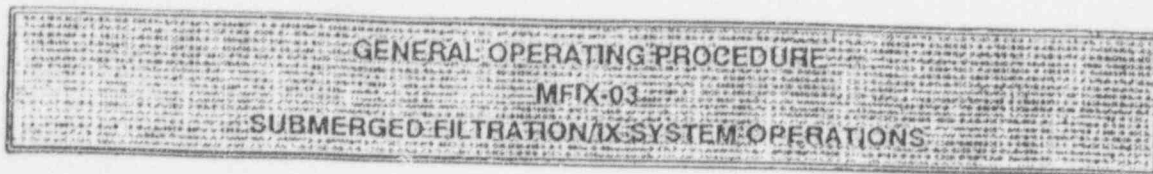
Transmittal Date:

March 10, 1995

Prepared by:

DIVERSIFIED TECHNOLOGY SERVICES
2680 WESTCOTT BLVD
KNOXVILLE, TN 37931

Services		3/6/95	Purchasing		
Technical			Administration		
Engineering			Quality Assurance		
Rev: 0			4 Pages		3/10/95



1.0 SCOPE

1.1 PURPOSE

The purpose of this procedure is to provide detailed instructions for the safe and efficient use of Diversified Technologies (DT) Submerged Mobile Filtration/IX (MFX) System.

1.2 APPLICABILITY

This procedure will normally be used by a Diversified Representative trained and qualified in accordance with Diversified's current QIP 20-09, Operator Training Procedure.

2.0 REFERENCE

2.1 Diversified Technologies Contract File; Site Contract.

3.0 REQUIREMENTS

3.1 Prerequisites

3.1.1 This procedure will be read in its entirety before proceeding with the next step.

3.1.2 The Utility will designate a Representative(s) to interface with DT personnel.

3.2 Utilities Requirements.

3.2.1 Electrical Service: 110v, 10 amp

3.3 Safeguards

3.3.1 NOTIFY Utility Rep to prior to any logic or system changes.

3.3.2 All Cam-lock connections must be safety-tied or wrapped prior to pressurization



of any system component(s).

3.3.3 As a minimum, eye protection will be worn while working within three feet of any pressurized system component.

3.3.4 Do not connect or disconnect any portable lines during system operation.

3.3.5 Do not break any pressure point without first verifying absence of pressure indicated on any pressure gauge(s) not isolated from the pressure point being broken.

4.0 OPERATING PROCEDURES

4.1 System operations

4.1.1 NOTIFY Project Manager for verbal permission to process waste water.

4.1.2 STAGE the submersible pump and IX vessel at the opening of the poly tank.

4.1.3 CONNECT a hose from the submersible pump discharge to the inlet of the IX vessel.

4.1.4 CONNECT a hose to the IX vessel discharge.

4.1.5 LOWER the pump into the poly tank with a lanyard.

4.1.6 LOWER the IX vessel into the poly tank.

4.1.7 TIE-OFF the discharge hose to prevent hose whip.

4.1.8 PLUG-IN the pump to electrical service.

4.1.9 START the pump and allow the water to recirculate through the cleanup system.

Note: If water analysis or processing results indicate the need for sub-micron filtration, the filter unit can be submerged in the tank and feed with the discharge from the IX vessel.

4.1.10 SECURE the pump and sample the water after 5 hours of continuous running.

Note: If the water is not decontaminated to a sufficiently low level, repeat the procedure starting at 4.1.9.

4.2 Clean Water Transfer

Upon confirmation of water cleanup through sample analysis, transfer clean water from the poly tank to the collapsible storage tanks by performing the following steps.

- 4.2.1 CONNECT a transfer hose from the discharge of the IX vessel to the inlet of the collapsible tank.

Note: This hose will run across the clean ground outdoors. Though the water has been sampled and shown to be "clean" prior to transfer, normal procedural controls should be exercised to prevent spills/leak during the transfer operations.

- 4.2.2 START the pump to transfer the water.

- 4.2.3 SECURE the pump when suction is lost.

- 4.2.4 REMOVE the pump and IX vessel from the poly tank taking care to wipe down external water from the equipment in preparation for dropping the equipment into the next poly tank.

Note: A survey of the IX vessel should be conducted prior to handling to assess the dose rate from activity which may have accumulated on the IX resin.

4.3 Media Change Out

If sample results indicate that the resin is expended, swap the IX vessel for a new one. The spent resin is allowed to remain in the FRP (fiber glass reinforced plastic) vessel for storage at the site.

Note: Care should be taken to carefully wipe down the spent IX vessel when removed from poly tank to preclude the spread of contamination since the water in the poly tank may not have been fully decontaminated. In general, very low levels of contamination is present in the outdoor poly tanks and should not represent a significant contamination threat though normal precautions should be exercised.

5.0 RECORDS

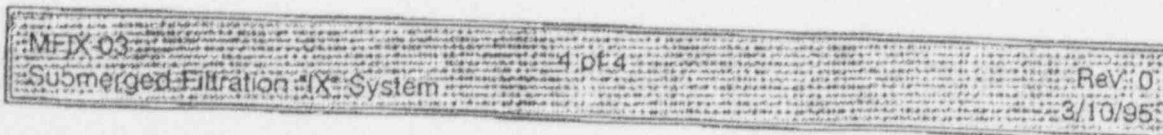
- 5.1 Pertinent information, including times, dates, actions and contents of communications are commonly noted in Diversified's Daily Log though no records are required under this procedure. Some of the records which may be applicable to this procedure include:

5.1.1 Diversified's Daily Log.

- 5.1.1.1 One copy of Daily Log is kept on site. This Log is an internal, proprietary Diversified document, though Utility may request to review it.

- 5.1.1.2 A second copy of the Daily Log is retained at Diversified Corporate.

FINAL PAGE - END OF PROCEDURE



(File)
LBP-95-03

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judge
Marshall E. Miller, Presiding Officer

OFFICE
DOCKET

Administrative Judge
Dr. Harry Foreman, Special Assistant

SERVED MAR 13 1995

In the Matter of

ADVANCED MEDICAL SYSTEMS, INC.
Cleveland, Ohio

Docket No. 30-16055-ML-Ren

ASLBP No. 95-707-02-ML-Ren

(Source Material License
No. 34-19089-01)

March 13, 1995

MEMORANDUM AND ORDER

I. BACKGROUND

In this proceeding, Advanced Medical Systems, Inc. seeks timely renewal of Material License No. 34-19089-01 for its facility located at 1020 London Road, Cleveland, Ohio. The Licensee seeks continued permission from the NRC to possess various quantities of radioactive materials for use in its manufacture of medically related devices.

As a result of the NRC's pending licensing action, four parties have petitioned for hearings on the renewal

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request.¹ On January 27, 1995, a single presiding officer was appointed to rule on the hearing petitions and to preside over a hearing if one is to be held. Under the Commission's regulations, any hearing would be conducted under 10 C.F.R. Part 2, Subpart L, informal hearing procedures.

II. REGULATORY STANDARDS

Under the provisions of 10 C.F.R. § 2.1205(a), any person whose interest may be affected by a proceeding for the renewal of a license may file a request for a hearing. A request for a hearing filed by a person other than an applicant must describe in detail (1) the interest of the requestor in the proceeding; (2) how that interest may be affected by the results of the proceeding, including the reasons why the requestor should be permitted a hearing; (3) the requestor's areas of concern about the licensing activity that is the subject matter of the proceeding; and (4) the circumstances establishing that the request for a hearing is timely.

In ruling on a request for a hearing, the presiding officer must determine that the specified areas of concern are germane to the subject matter of the proceeding.² The

¹Under the provisions of 10 C.F.R. § 2.1205(f), the Staff has elected to participate as a party to this proceeding.

²10 C.F.R. § 2.1205(g).

issues the requestor wants to raise regarding the licensing action must fall within the range of matters properly subject to challenge in the proceeding,³ and the statements of concern must be pleaded with enough specificity to allow a presiding officer the ability to ascertain whether what the requestor seeks to litigate is truly relevant to the subject matter of the proceeding.⁴

The presiding officer also must determine that the requestor meets the judicial standards for standing and consider, among other factors, the nature of the requestor's right to be made a party to the proceeding; the nature and extent of the requestor's property, financial or other interests in the proceeding; and the possible effect of any order that may be entered in the proceeding upon the requestor's interest.⁵

To be admitted as a party in an NRC proceeding, a petitioner must allege "a concrete and particularized injury that is fairly traceable to the challenged action."⁶ A

³Statement of Considerations, Informal Hearing Procedures for Materials Licensing Adjudications, 54 Fed. Reg. 8269, 8273 (February 28, 1989).

⁴*Sequoyah Fuels Corporation* (Source Materials License No. Sub-1010), LBP-94-39, 40 NRC 314, 315-316 (1994).

⁵10 C.F.R. § 2.1205(a).

⁶*Babcock and Wilcox Company* (Pennsylvania Nuclear Services Operations, Parks Township, Pennsylvania), LBP-94-4, 39 NRC 47, 49 (1994), citing *Transnuclear, Inc.* (Export of 93.15% Enriched Uranium), CLI-94-01, 39 NRC 1, 5 (1994).

prospective party must show that it could suffer an "injury in fact" because of the proposed licensing action and that its interest is within the "zone of interests" to be protected by statutes under which the requestor seeks to challenge the licensing action.⁷ In this case, a requestor must allege an injury in fact within the zone of interests protected by the Atomic Energy Act of 1954, as amended ("AEA"),⁸ or the National Environmental Policy Act of 1969, as amended ("NEPA").⁹

There are three components to the "injury in fact" requirement -- injury, cause and remedial benefit. The asserted injury must be "distinct and palpable" and "particular and concrete" as opposed to being "conjectural, hypothetical or abstract." The injury need not already have occurred, but when future harm is asserted, it must be "threatened or certainly impending" and "real and immediate." There must also be a causal nexus between the asserted injury and the challenged action. To establish injury in fact in

⁷Sacramento Municipal Utility District (Rancho Seco Nuclear Generating Station), CLI-92-2, 35 NRC 47, 56 (1992); Babcock and Wilcox (Apollo, Pennsylvania Fuel Fabrication Facility - Decommissioning Plan), LBP-93-4, 37 NRC 72, 80, appeal dismissed, CLI-93-9, 37 NRC 190 (1993).

⁸42 U.S.C. 2011-2284.

⁹42 U.S.C. 4321-4347.

this case, the requestor bears the burden of establishing that the injuries it alleges will occur to its interests protected by the AEA or the NEPA.¹⁰

III. ANALYSIS

Four requestors have petitioned for a hearing on the AMS license renewal application: the Earth Day Coalition, Cleveland, Ohio ("Coalition");¹¹ the Northeast Ohio Regional Sewer District, Cleveland, Ohio ("District");¹² the City of Cleveland, Ohio ("City");¹³ and the Cuyahoga Emergency Management Assistance Center, County of Cuyahoga, Ohio ("CEMAC").¹⁴ AMS has filed Answers to each petition.¹⁵

¹⁰Apollo, LBP-93-4, 37 NRC at 81, citing *Cleveland Electric Illuminating Co. (Perry Nuclear Power Plant, Unit 1)*, LBP-92-4, 35 NRC 114, 120 (1992).

¹¹Earth Day Coalition, Request for Hearing (December 28, 1994).

¹²Northeast Ohio Regional Sewer District, Request for Hearing (December 29, 1994).

¹³City of Cleveland, Ohio, Request for Hearing (January 13, 1995).

¹⁴Cuyahoga County Local Emergency Planning Committee, Request for A Hearing; Petition to Intervene (January 27, 1995).

¹⁵Answer of Advanced Medical Systems, Inc. to Request of the Northeast Ohio Regional Sewer District (January 12, 1995); to Request of the City of Cleveland (January 12, 1995); to Request of the Earth Day Coalition (January 27, 1995); to Request of the Cuyahoga Emergency Management Assistance Center (February 27, 1995).

For reasons not fully explained, Counsel for AMS did not have a complete service list for this proceeding until

A. Northeast Ohio Regional Sewer District

Requestor District states that the AMS facility is within the service area of the District's waste water collection and treatment system. Citing past discharges of radioactive wastes from the facility into the District's sewer lines, the District states that it has significant financial interest in the future regulation and control of radioactive material at the AMS facility.¹⁶ The District also cites a potential for its own facilities to discharge radioactive wastes into the general environment of Lake Erie if its facilities become contaminated from accidental releases from the AMS facility.

The District alleges that, because of the configuration of its sewer system, any radioactive releases from the AMS

he was informed of this fact by the Senior Attorney for the Atomic Safety and Licensing Board Panel on February 22, 1995. Because of this shortcoming, the Presiding Officer was unable to determine if all entities involved with this proceeding had received the AMS filings. AMS re-served its four Answers and by motion asked the Presiding Officer to have its Answers considered timely. Motion of Advanced Medical Systems, Inc. as to Time for Service (February 27, 1995).

¹⁶By way of background, the District has filed three petitions for enforcement actions against AMS pursuant to 10 C.F.R. § 2.206, two of which are still pending. See 59 Fed. Reg. 47959 (September 19, 1994) and 58 Fed. Reg. 19282 (April 13, 1993). Even though these two petitions are pending and raise some of the same issues raised in its hearing petition, the District is not precluded from requesting a hearing with respect to the AMS renewal application. See Georgia Power Co. (Vogtle Electric Generating Plant, Units 1 and 2), LBP-93-5, 37 NRC 96, 98 n.2, *aff'd* CLI-93-26, 38 NRC 25 (1993).

facility would affect a great portion of its system and its waste water treatment plants. The District states that its financial interest in this proceeding is as least as great as its property interests. It alleges that it has incurred costs well over one million dollars as a result of prior AMS discharges and that a sudden large release could be devastating to its operations. Moreover, the District is concerned for the health and safety of the employees who maintain its system.

The District states that its primary concern is the ability of AMS to maintain proper control over its radioactive material in light of the record of past problems at the AMS facility. A second concern involves the lack of an emergency plan for the AMS facility. The District alleges that since radioactive material that may be released in a fire or other disaster would ultimately be washed into the sewer system, there should be a realistic assessment of the potential for releases under various accident scenarios. A third concern involves the adequacy of the amount of financial assurance AMS has posted for decommissioning of the facility. A fourth concern involves the ability of AMS to provide for remediation of offsite releases if such releases occur.

The District's petition for hearing was filed within 30 days of the submission of the AMS license renewal

application and is therefore timely under the provisions of 10 C.F.R. § 2.1205. All of the four concerns enumerated by the District appear germane to the subject matter of this proceeding -- the renewal of the AMS license to possess radioactive materials at its Geneva, Ohio facility. The District has properly alleged that its sewer system, which services the AMS facility, could be directly impacted by accidental radioactive discharges or during efforts to control accidents at the site. It has also properly alleged that its interests would be threatened by deficiencies in emergency planning and the lack of financial assurance for the site if the license were renewed with deficiencies in those areas. It has standing to become a party to this proceeding. The Northeast Ohio Regional Sewer District's request for a hearing is therefore granted.¹⁷

¹⁷The AMS Answer to the District's Petition, as with its Answers to the other three Petitions, generally presents arguments which address the merits of the areas of concern raised by the Requestors. However, the areas of concern are not contentions, as contentions are understood in a construction or operating license proceeding, and need not be argued on the merits by an opposing party at the inception of the proceeding, but rather, at the time of its written presentation. See 10 C.F.R. § 2.1233(c) and (d). Subpart L practice requires a petitioner to allege areas of concern merely to demonstrate to the Presiding Officer that the issues it seeks to raise are somehow linked to the licensing action. The threshold for pleading an area of concern is very low -- whether it is germane to the subject matter of the proceeding. See Statement of Considerations, Informal Hearing Procedures for Materials Licensing Adjudications, 54 Fed. Reg. 8269 (February 28, 1989); Sequoyah Fuels Corporation (Source Materials License No. Sub-1010), 40 NRC 314, 315-316 (1994). None of the AMS Answers address whether the areas of concern raised by the

B. The City of Cleveland

Requestor City states that the AMS facility is located within the jurisdiction of the City, and is located adjacent to both residential housing and commercial businesses. The City's primary interest in the proceeding is to ensure the health and safety of the citizens within its jurisdiction. An accidental release of radioactive material could pose a major threat to the health and well-being of those citizens. The City also states that it has an interest in protecting the health and safety of fire, police, emergency medical and other city personnel who would be called upon to act if there were an accident at the AMS facility. The City is also interested in the economic well-being of the areas surrounding the AMS facility due to alleged past releases of radioactive materials and the condition of the AMS facility itself.

The City asserts that its interests will be affected by the license renewal because, it alleges, the AMS facility is already contaminated and its decontamination or decommissioning will potentially affect Cleveland residents, businesses and city employees. Any potential releases of radioactivity would affect these groups more than others

Requestors are germane in the context of the license renewal application. Moreover, the AMS Answers fail to address whether each Requestor has established the requisite standing to request a hearing.

since they live and work in proximity to the AMS facility. The City also claims both present and future financial interests in the licensing of AMS because the financial burden of planning for an emergency at the facility and providing training for emergency personnel has fallen on the City. It states that it has been forced to form a Task Force of governmental agencies to come up with an adequate emergency response plan for the AMS site. In summation, the City claims that the effect of granting a renewal license without including sufficient terms and conditions to safeguard the City's citizens would leave the City with the "lion's share" of the responsibility for dealing with existing and future problems at AMS.

The City adopts as its areas of concern the nine issues outlined by the NRC Staff's letter to AMS, dated December 22, 1994, which details deficiencies the Staff found in the AMS renewal application. The City, however, fails to enumerate what these concerns are, with the exception of two.¹⁸ It states that these two -- Item Number Seven in the Staff's letter regarding the emergency plan for the AMS facility, and

¹⁸The NRC Staff has elected to be a party to this proceeding under the provisions of 10 C.F.R. § 2.1205(f). While the Staff did not expressly list its areas of concern in its Notice of Participation, it implicitly stated its concerns by attaching the December 22, 1994 letter from John A. Grobe, Chief, Nuclear Materials Inspection, Section 2, to Advanced Medical Systems which detailed nine specific deficiencies in the AMS license renewal application.

Item Number Eight in the same letter regarding decommissioning funding and financial assurance -- are of the most immediate concern. The concerns allege inadequacies involving onsite emergency preparedness and insufficiencies in funding for accidental contamination both on and offsite.

The City has included with its petition for hearing the affidavits of two City Attorneys attesting to the dates upon which the City received actual notice of the AMS renewal application. The City's request was filed within 30 days of its having received actual notice of the application. Under the provisions of 10 C.F.R. § 2.1205(c), the request is timely. The two concerns enumerated by the City, regarding the inadequacy of the AMS emergency response plan and the insufficiencies in decommissioning funding and financial assurance, are germane to the proceeding. The City has standing to request a hearing because its interest could be directly affected if the license were renewed and there were deficiencies in those areas. The City of Cleveland's request for a hearing is granted.

C. Cuyahoga Emergency Management Assistance Center

The third of the requestors, Cuyahoga County Local Emergency Planning Committee, presents an unusual question.

The timely¹⁹ petition was forwarded to the NRC on "Cuyahoga Emergency Management Assistance Center" letterhead, but the text of the petition describes the concerns of the Cuyahoga County Local Emergency Planning Committee ("LEPC"). While the letter states that LEPC is the agency with primary responsibility for emergency planning within Cuyahoga county, it goes on to state that LEPC will be seeking a variance from the Ohio State Emergency Planning Commission to formally add the AMS facility to the list of facilities subject to LEPC jurisdiction. Moreover, the letter states that it is not certain that LEPC can obtain jurisdiction over the AMS facility. Without some link to the AMS facility which serves as a basis for a potential concrete or particularized injury to LEPC, LEPC has failed to establish that it has standing to request a hearing.

However, even if LEPC has failed to demonstrate that it has met the judicial concepts of standing, it can participate in the hearing under the provisions of 10 C.F.R. § 2.1211(b). That provision permits a representative of an interested state, county, municipality or an agency thereof to

¹⁹The petition states that it was filed within 30 days of LEPC's receiving actual notice of the AMS license renewal request.

participate in a Subpart L proceeding and to make written and oral presentations in accordance with 10 C.F.R. §§ 2.1233 and 2.1235. Therefore, LEPC will be allowed to participate as a representative of an interested county under and to the extent allowed by the provisions of 10 C.F.R. § 2.1211(b) upon submission to the Presiding Officer (and service upon the parties) of an affidavit of a Cuyahoga County official attesting that LEPC is representing the County's interests in this matter. Such affidavit shall be served on the Presiding Officer within 30 days of the date of this Order.

D. Earth Day Coalition

Requestor Earth Day Coalition submitted a one-page letter as its request for hearing listing several concerns related to the pending renewal application. Among those concerns are the present contamination of the AMS facility, the possible contamination of the sewer system servicing the AMS facility, the lack of emergency planning and the potential for a major accident at the AMS facility. While the concerns listed by the Coalition appear germane to the subject matter of this proceeding, it has failed to set forth the necessary facts to establish that it has standing to intervene as required by the Commission's regulations. The Coalition merely states that it is a "non-profit

environmental education and advocacy organization located in Cleveland . . . [whose] interest in this hearing is not commercial or financial . . . [but] strictly in public education and information and environmental issues."

The Coalition fails to allege any injury, concrete, particularized or otherwise, that may accrue to it as an organization as a result of the license renewal. The Commission has long held that a mere institutional interest in providing information to the public is insufficient to establish standing in its proceedings.²⁰ The Coalition could have alleged injury to at least one of its members in order to derive standing in its own right. However, the Coalition failed to describe any injury accruing to one of its members, and further failed to provide an affidavit from a member authorizing the organization to represent him or her in the proceeding, which are the two elements necessary for organizational standing on behalf of a member.²¹

The Earth Day Coalition has not established standing to participate as a party to this proceeding. Its hearing request is therefore denied.

²⁰*Transnuclear, Inc.* (Export of 93.15% Enriched Uranium), CLI-94-01, 39 NRC 1, 5 (1994).

²¹*See Northern States Power Co.* (Pathfinder Atomic Plant), LBP-89-30, 30 NRC 311, 314 (1989).

IV. ORDER

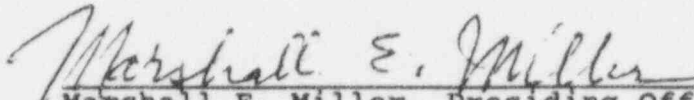
For all the foregoing reasons and upon consideration of the entire record in this proceeding, it is, this tenth day of March, 1995

ORDERED

1. The petition for hearing of the Northeast Ohio Regional Sewer District is **granted**;
2. The petition for hearing of the City of Cleveland is **granted**;
3. The petition for hearing of the Cuyahoga County Local Emergency Planning Committee is **denied** in part. Upon submission to the Presiding Officer (and service upon the parties) of an affidavit of a Cuyahoga County official attesting that LEPC is representing the County's interests in this matter, LEPC will be allowed to participate in the hearing as the representative of an interested county under and to the extent allowed by the provisions of 10 C.F.R. § 2.1211(b). The affidavit must be served on the Presiding Officer within 30 days of the date of this Order;
4. The petition for hearing of Earth Day Coalition is **denied**.

In accordance with the provisions of 10 C.F.R. § 2.1205(n), the denial of the hearing request of Earth Day Coalition and the partial denial of the hearing request of

the Cuyahoga County Local Emergency Planning Committee may be appealed to the Commission within ten days after this Order is served.


Marshall E. Miller, Presiding Officer
ADMINISTRATIVE JUDGE

Daytona Beach, Florida

March 13, 1995

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

ADVANCED MEDICAL SYSTEMS, INC.
Cleveland, Ohio
(Renewal of Material License No.
34-19089-01)

Docket No.(s) 30-16055-ML-REN

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LB M&O (LBP-95-03) have been served upon the following persons by U.S. mail, first class, except as otherwise noted and in accordance with the requirements of 10 CFR Sec. 2.712.

Office of Commission Appellate
Adjudication
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Washington, DC 20555

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Atomic Safety and Licensing Board
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Administrative Judge
Marshall E. Miller
Presiding Officer
ASLBP
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Docket No.(s)30-16055-ML-REN
LB M&O (LBP-95-03)

Michael S. Kalstrom
Secretary, Cuyahoga County LEPC
Cuyahoga Emergency Management
Assistance Center
1255 Euclid Avenue, Room 102
Cleveland, OH 44115

Chris Trepal
Earth Day Coalition
3606 Bridge Avenue
Cleveland, OH 44113

Thomas E. Lenhart
Assistant General Counsel
Northeast Ohio Regional Sewer District
3826 Euclid Avenue
Cleveland, OH 44115

Dated at Rockville, Md. this
13 day of March 1995


Office of the Secretary of the Commission

File

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judge
Marshall E. Miller, Presiding Officer

Administrative Judge
Dr. Harry Foreman, Special Assistant

SERVED MAR 13 1995

In the Matter of

ADVANCED MEDICAL SYSTEMS, INC.
Cleveland, Ohio

Docket No. 30-16055-ML-Ren

ASLBP No. 95-707-02-ML-Ren

(Source Material License
No. 34-19089-01)

March 13, 1995

NOTICE OF HEARING

Notice is hereby given that, by Memorandum and Order dated March 10, 1995, the Presiding Officer in this proceeding has granted the hearing requests of the Northeast Ohio Regional Sewer District (dated December 29, 1994) and the City of Cleveland, Ohio (dated January 13, 1995), and has conditionally granted the participation of the Cuyahoga County Local Emergency Planning Committee in a hearing regarding the license renewal application of Advanced Medical Systems, Inc. for its facility located at 1020 London Road in Cleveland, Ohio. Advanced Medical Systems, Inc. seeks continued permission from the Nuclear Regulatory

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Commission to possess various quantities of radioactive materials for use in its manufacture of medically related devices. The hearing will involve the sufficiency of the renewal application.

This proceeding will be conducted under the Commission's Informal Hearing Procedures for Adjudications in Materials and Operator Licensing Proceedings, set forth in 10 C.F.R. Part 2, Subpart I. Further details appear in Statement of Considerations, Informal Hearing Procedures for Materials Licensing Adjudications, 54 Fed. Reg. 8269 (February 28, 1989) and the March 10, 1995 Memorandum and Order referenced above. Documents relating to this proceeding are available for public inspection and copying at the Commission's Public Document Room, Gelman Building, 2120 L St. N.W., Washington, D.C.

Advanced Medical Systems, Inc., the Northeast Ohio Regional Sewer District, the City of Cleveland, and the NRC Staff are parties to this proceeding. The Cuyahoga County Local Emergency Planning Committee may participate in this proceeding under the provisions of 10 C.F.R. § 2.1211(b) upon submission to the Presiding Officer (and service on the parties) of an affidavit of a Cuyahoga County official attesting that the Local Emergency Planning Committee is representing the County's interest in this matter. If admitted as a representative of an interested county, the

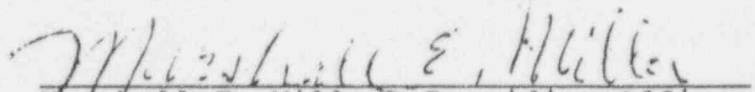
Local Emergency Planning Committee's participation shall be limited to the extent allowed by 10 C.F.R. § 2.1211(b).

In accordance with 10 C.F.R. § 2.1205(i)(4), any person whose interest may be affected by this proceeding may, within 30 days of publication of this Notice, file a petition for leave to intervene. Such petition must identify (1) the interest of the petitioner in the proceeding, (2) how that interest may be affected by the results of the proceeding, with particular reference to the factors set out in 10 C.F.R. § 2.1205(g), (3) the petitioner's areas of concern about the licensing activity which must be germane to the subject matter of the proceeding, and (4) the circumstances establishing that the petition is timely and that the petitioner has the requisite standing to intervene in the hearing.

Each petition must be submitted to the Secretary of the Commission, ATTN: Chief, Docketing and Services Branch, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555. Copies should be served upon the Presiding Officer; the Special Assistant; the Assistant General Counsel for Hearings and Enforcement; the Senior Attorney, Atomic Safety and Licensing Board Panel; and the Executive Director for Operations, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555. Copies should also be served on the Licensee,

through its attorney, Henry E. Billingsley, II, Arter and Hadden, 1100 Huntington Building, 925 Euclid Avenue, Cleveland, Ohio 44115; and the other parties through Thomas E. Lenhart, Assistant General Counsel, Northeast Ohio Regional Sewer District, 3826 Euclid Avenue, Cleveland, Ohio 44115; and Martha R. McCorkle, Assistant Director of Law, City of Cleveland Department of Law, Room 106, City Hall, 601 Lakeside Avenue, Cleveland, Ohio 44114. Pursuant to 10 C.F.R. § 2.1205(j)(2), any party may file an answer to a petition to intervene within 10 days of service of such petition (15 days in the case of the NRC Staff).

Pursuant to 10 C.F.R. § 2.1211(a), any member of the public who is not a party to this proceeding may make a written statement in order to express his or her views of the issues involved in this license renewal proceeding. These statements are not evidence and do not become part of the decisional record under 10 C.F.R. § 2.1251(c). Written statements should be submitted to the Secretary of the Commission, ATTN: Chief, Docketing and Services Branch, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555.


Marshall E. Miller, Presiding Officer
ADMINISTRATIVE JUDGE

Daytona Beach, Florida

March 13, 1995

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

ADVANCED MEDICAL SYSTEMS, INC.
Cleveland, Ohio
(Renewal of Material License No.
34-19089-01)

Docket No.(s) 30-16055-ML-REN

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LB NOTICE OF HEARING have been served upon the following persons by U.S. mail, first class, except as otherwise noted and in accordance with the requirements of 10 CFR Sec. 2.712.

Office of Commission Appellate
Adjudication
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Robert Pierce
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Docket No.(s)30-16055-ML-REN
LB NOTICE OF HEARING

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Dated at Rockville, Md. this
13 day of March 1995


Office of the Secretary of the Commission