



Westinghouse Government Services Company LLC  
a member of Washington Group International, Inc.

Electro-Mechanical Division  
1000 Cheswick Avenue  
Cheswick Pennsylvania 15024-1300  
(724) 275 5000

February 1, 2001

P&C-2001-04

Mr. Mark Roberts  
Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Dear Mr. Roberts:

As promised at an earlier meeting at the Electro-Mechanical Division, Cheswick, Pennsylvania, enclosed are the picture book and video of the EMD Cheswick Site D&D. Hopefully, this will help with the final review and issuance of the final NRC approval document.

If you have any questions, please contact me at 724-275-5030.

Sincerely,

WESTINGHOUSE GOVERNMENT SERVICES COMPANY LLC  
Electro-Mechanical Division

Charles Lim, Manager  
Environmental and Radiological Engineering Compliance

Enclosures – 1 Book and 1 Video

2001 FEB -6 PM 1:54  
RECEIVED  
REGION I

NM55 OGN004  
Template.

NM55 RGN004  
Template

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/7/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: Large Butler Building, Floor- Survey Unit F1

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
195	3569	3374	<sup>99</sup> Tc	23,400	14.4	469	916

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	361	166	1151	
2	332	137	950	
3	299	104	721	
4	342	147	1020	
5	950	755	5236	Hotspot averages away, but they'll re-scabble
6	583	388	2691	
7	442	247	1713	
8	434	239	1658	
9	397	202	1401	
10	446	251	1741	
11	382	187	1297	
12	338	143	992	
13	365	170	1179	
14	849	654	4536	
15	379	184	1276	
16	487	292	2025	
17	396	201	1394	
18	1014	819	5680	Hotspot averages away, but they'll re-scabble
19	319	124	860	
20	318	123	853	
21	387	192	1332	
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Signature: Steven A. Bastian

Date: 12/29/00

# 7-7-99 Chaswick (u)

Meter 137745 / Det 147859

Bkgnd - 302 cpm

Gross - 3559 cpm

Net - 3257 cpm

Source Activ. - 23400 dpm

Eff = 14%

5000 dpm > bkgnd = 700 cpm > bkgnd

Site  
check ↓

Bkgnd ~~542~~

187

189

210  
195 } Net - 3374 cpm

Gross Eff = 14.4%

3598

3558

3551

3569

Meter 132181 / Det. 146747

Bkgnd - 390 cpm

Gross - 3220 cpm

Net - 2830 cpm

Source Activ. - 23,400 dpm

Eff = 12%

5000 dpm > bkgnd = 600 cpm > bkgnd

$$\sigma R_n = \sqrt{\frac{R_g}{t_g} + \frac{R_b}{t_b}}$$

$$\frac{542}{1} \times \frac{141}{106420} \times \frac{3.7 \times 10^{10} \text{ dps}}{14} \times \frac{60420}{60420}$$

$$\frac{1.85 \text{ ES } \cancel{\text{Dec}}}{\cancel{\text{min}}} \times \frac{608}{\text{min}} = 1.11 \text{ E } 3 \text{ DPPH}$$

$$\frac{47488}{1.11 \text{ E } 7} = 13,1735$$

● Data Measurement Point  
 ○ Additional Measurement Point

Location: Large Butler Building, Floor  
Post decontaminating

Classification: Unaffected  
 Technician's Name: Shank

Date: 08/16/99  
 Model 43-68 #: 159019  
 Model 2221 #: 154207  
 Efficiency: 25%  
 Background CPM: 267

Comments: All readings in DPM; grids are 1M-X-1M.

# SURVEY UNIT F1



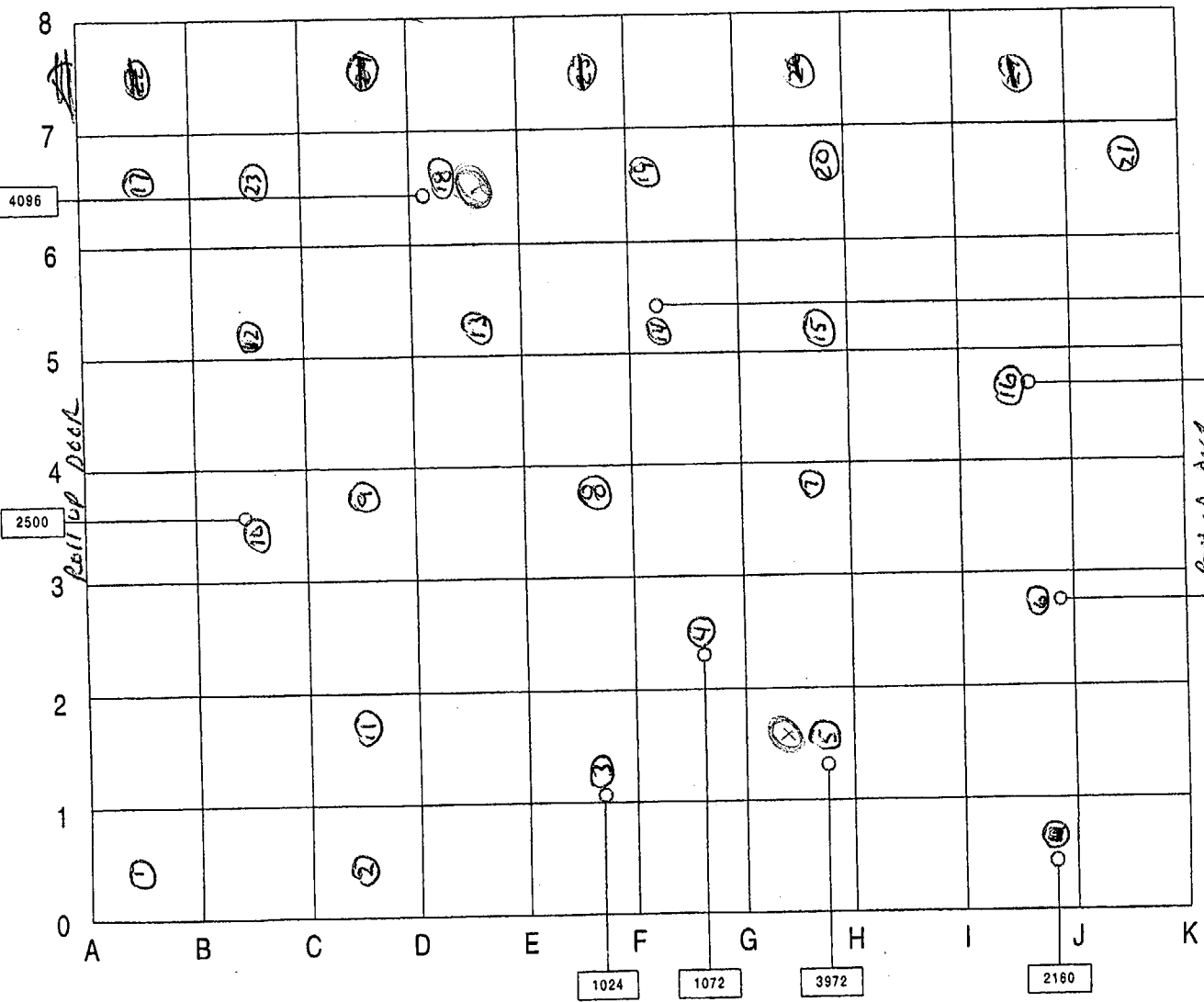
BK 9V 195CPM

(4) = DIRECT READINGS  
 A = SMEAR LOCATIONS

- (1) 387
- (2) 487
- (3) 455
- (4) 302
- (5) 350
- (6) 557
- (7) 458

N

- (1) 361
- (2) 332
- (3) 299
- (4) 342
- (5) 950
- (6) 523
- (7) 442
- (8) 434
- (9) 397
- (10) 446
- (11) 382
- (12) 338
- (13) 365
- (14) 849
- (15) 379
- (16) 487
- (17) 396
- (18) 1014
- (19) 319
- (20) 318





# Pennsylvania DEP Bureau of Radiation Protection Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/14/99

Meter Model and Serial Number: Ludlum 2241-2, SN- 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: Re-survey of Large Butler Bldg. Floor Hotspots

Count times: 1 minute

## Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	<sup>99</sup> Tc	23,400	14.6	543	1003

## Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	302	30	205	<MDA
2	300	28	191	<MDA
3	330	58	396	<MDA
4	342	70	479	<MDA
5	315	43	294	<MDA
6	330	58	396	<MDA
7	470	198	1354	<MDA
8	335	63	431	<MDA
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*Steven A. Bosterman* 12/29/00

Cheswick 7/14/99 Resurvey of 'Hotspot' in Large  
Butler Bldg.

Reading cpm

- ① 302
- ② 300
- ③ 330
- ④ 342,
- ⑤ 315
- ⑥ 330
- ⑦ 470  $\approx$  1400 dpm  $\rightarrow$  bkgnd
- ⑧ 335

W Cheswick - 7/14/99 Inst. Eff. Chk.

Ludlum Model 2241-2 Det Ludlum 44-116 S  
SN 137745 SN 147859

<u>Bkgnd (cpm)</u>	<u>Gross (cpm)</u>	<u>Net (cpm)</u>
262	3675	3423
280	3684	
<u>273</u>	<u>3725</u>	
272	3695	

$$\sigma_{Rn} = \sqrt{\quad}$$
$$= \pm 63 \text{ cpm}$$

$$\text{Eff} = \frac{3423 \text{ cpm}}{23,400 \text{ dpm}} = 14.6\%$$

$$\text{Threshld} = 0.146(5000) + 272 \approx 1002 \text{ cpm}$$

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/7/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: Large Butler Building, Floor- Survey Unit F2

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
195	3569	3374	<sup>99</sup> Tc	23,400	14.4	469	916

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	301	106	735	
2	272	77	534	
3	287	92	638	
4	318	123	853	
5	538	343	2379	
6	331	136	943	
7	288	93	645	
8	315	120	832	
9	396	201	1394	
10	377	182	1262	
11	435	240	1664	
12	304	109	756	
13	290	95	659	
14	291	96	666	
15	333	138	957	
16	304	109	756	
17	333	138	957	
18	377	182	1262	
19	289	94	652	
20	319	124	860	
21	290	95	659	
22	319	124	860	
23	322	127	881	
24	372	177	1228	
25	302	107	742	
26	350	155	1075	
27	321	126	874	
28	367	172	1193	
29	302	107	742	
30	304	109	756	
31	336	141	978	
32	336	141	978	
33				
34				
35				

Signature: \_\_\_\_\_

*Steve A. Bostrom*

Date: 12/29/00

● Data-Measurement Point  
○ Additional Measurement Point

Location: Large Butler Building, Floor  
Post-Decentammating

Classification: Unaffected

Technician's Name: Shank

Date: 4/6/16/98

Model: 43-68 # 159019

Model: 2221 # 154207

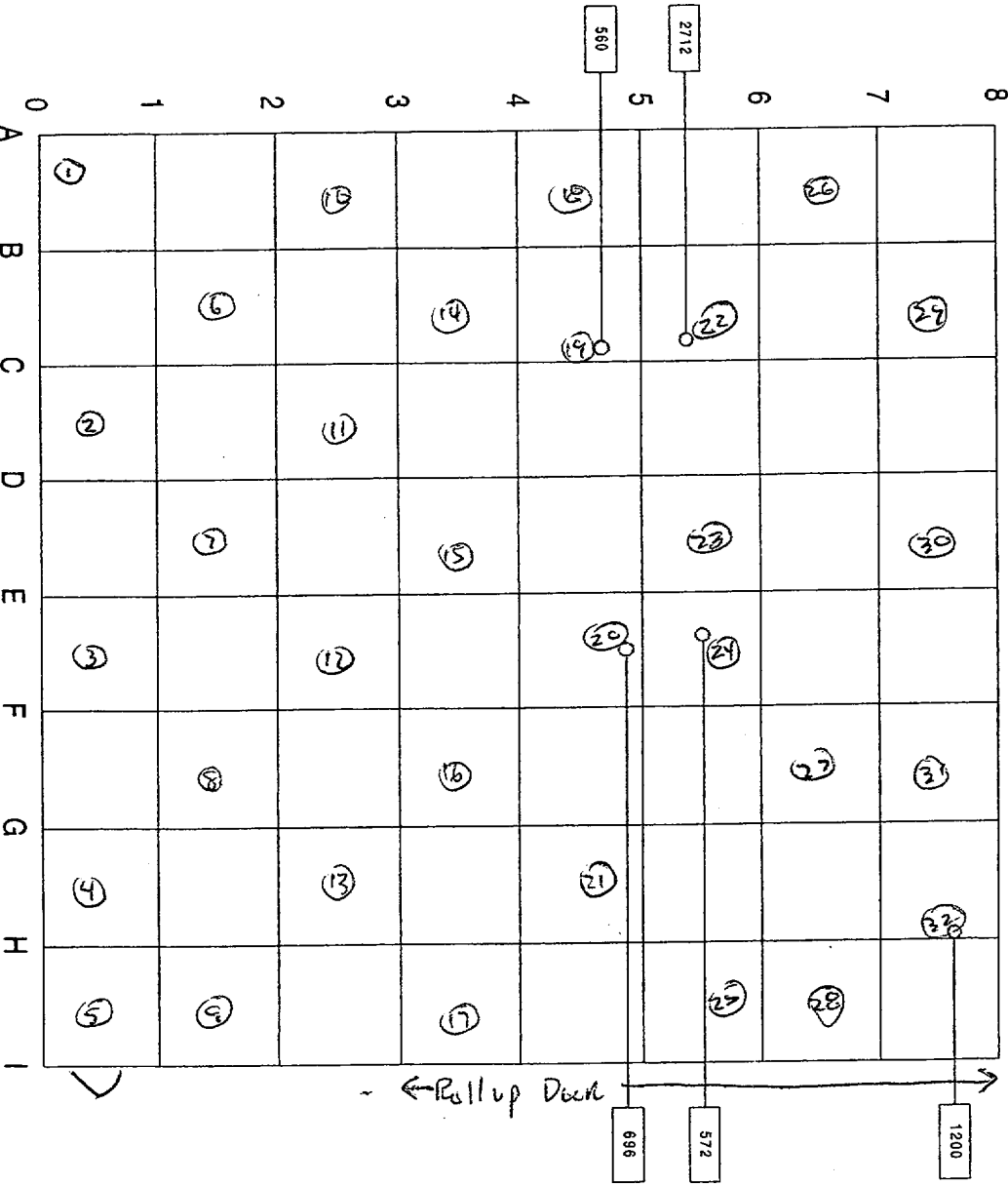
Efficiency: 35%

Background: CPM: 267

Comments: All readings in BPM grids are 1M-X-1M.

# SURVEY UNIT F2

- 21 290
- 22 319
- 23 322
- 24 322
- 25 342
- 26 354
- 27 321
- 28 367
- 29 302
- 30 304
- 31 336
- 32 336



CPM / 100 cm<sup>2</sup> FIXED

- 1 361
- 2 272
- 3 287
- 4 318
- 5 538
- 6 331
- 7 288
- 8 315
- 9 346
- 10 377
- 11 435
- 12 304
- 13 290
- 14 291
- 15 333
- 16 304
- 17 333
- 18 377
- 19 289
- 20 319

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/7/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: Large Butler Building, Floor- Survey Unit F3

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
195	3569	3374	<sup>99</sup> Tc	23,400	14.4	469	916

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	497	302	2094	
2	459	264	1831	
3	307	112	777	
4	300	105	728	
5	285	90	624	
6	484	289	2004	
7	435	240	1664	
8	400	205	1422	
9	377	182	1262	
10	264	69	479	
11	300	105	728	
12	263	68	472	
13	306	111	770	
14	366	171	1186	
15	339	144	999	
16				
17				
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34				
35				

Signature: \_\_\_\_\_

*Steven A. Bastianic*

Date: \_\_\_\_\_

12/29/00

# SURVEY UNIT F3

● Data Measurement Point  
 ○ Additional Measurement Point

Location: ~~Large Butler Building, Floor~~  
 Post Decontaminating  
 Classification: ~~Unaffected~~

Technician's Name: Shank

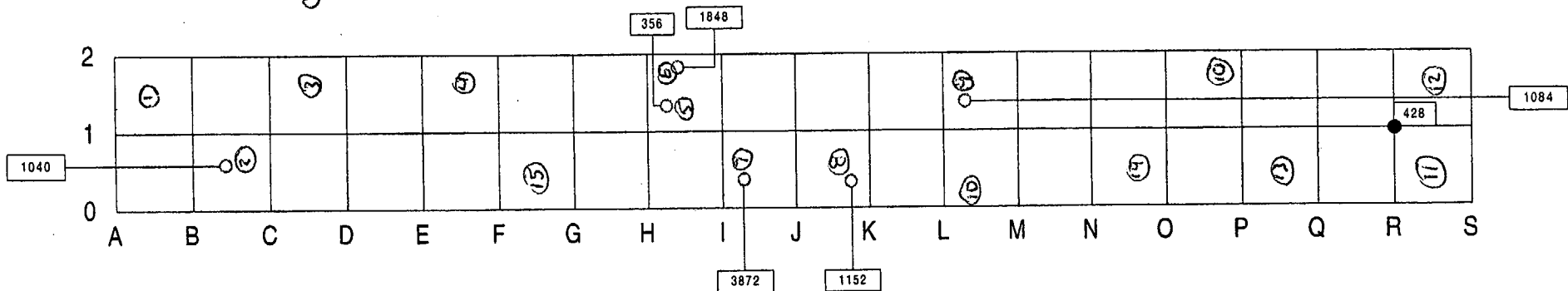
Date: 06/16/99  
 Model 43-68 #: 159019  
 Model 2221 #: 154207  
 Efficiency: 25%  
 Background CPM: 267

Comments: All readings in DPM; grids are 1M X 1M.

N

CPM/100 cm<sup>2</sup>

① 497 ② 459 ③ 307 ④ 300 ⑤ 265 ⑥ 484 ⑦ 435 ⑧ 400 ⑨ 377 ⑩ 264 ⑪ 306 ⑫ 263 ⑬ 366 ⑭ 366 ⑮ 339



② Cheswick 7-7-99

BK90 195 cpm

eff 14.4%

① - DIRECT READING

② - SPREAD LOCATIONS

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/7/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: Large Butler Building, Interior Walls

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
195	3569	3374	<sup>99</sup> Tc	23,400	14.4	469	916

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	224	29	201	<MDA
2	216	21	146	<MDA
3	224	29	201	<MDA
4	256	61	423	<MDA
5	222	27	187	<MDA
6	264	69	479	
7	226	31	215	<MDA
8	282	87	603	
9	248	53	368	<MDA
10	222	27	187	<MDA
11	271	76	527	
12	274	79	548	
13	242	47	326	<MDA
14	264	69	479	
15	331	136	943	
16	377	182	1262	
17	428	233	1616	
18	301	106	735	
19				Blocked by crates
20				Blocked by crates
21				Blocked by crates
22	188	-7	-49	<MDA Gross count less than background
23	214	19	132	<MDA
24	264	69	479	
25	247	52	361	<MDA
26	209	14	97	<MDA
27	213	18	125	<MDA
28	186	-9	-62	<MDA Gross count less than background
29	147	-48	-333	<MDA Gross count less than background
30	201	6	42	<MDA
31	231	36	250	<MDA
32	224	29	201	<MDA
33				
34				
35				See micro R survey data on attached raw data sheet

Signature: Steve A. Bostjanin

Date: 12/29/00



Interior  
Walls

Cheswick 2-2-88

CFM/100 cm<sup>2</sup>

① 224

② 216

③ 224

④ 256

⑤ 222

⑥ 264

⑦ 226

⑧ 282

⑨ 248

⑩ 222

⑪ 271

⑫ 274

⑬ 242

⑭ 264

⑮ 331

⑯ 377

⑰ 428

⑱ 301

⑲ Blocked  
by  
cretes

⑳ 188

㉑ 214

㉒ 264

㉓ 247

㉔ 209

REV A  
LBFGRI

③⑩ 201

③① 231

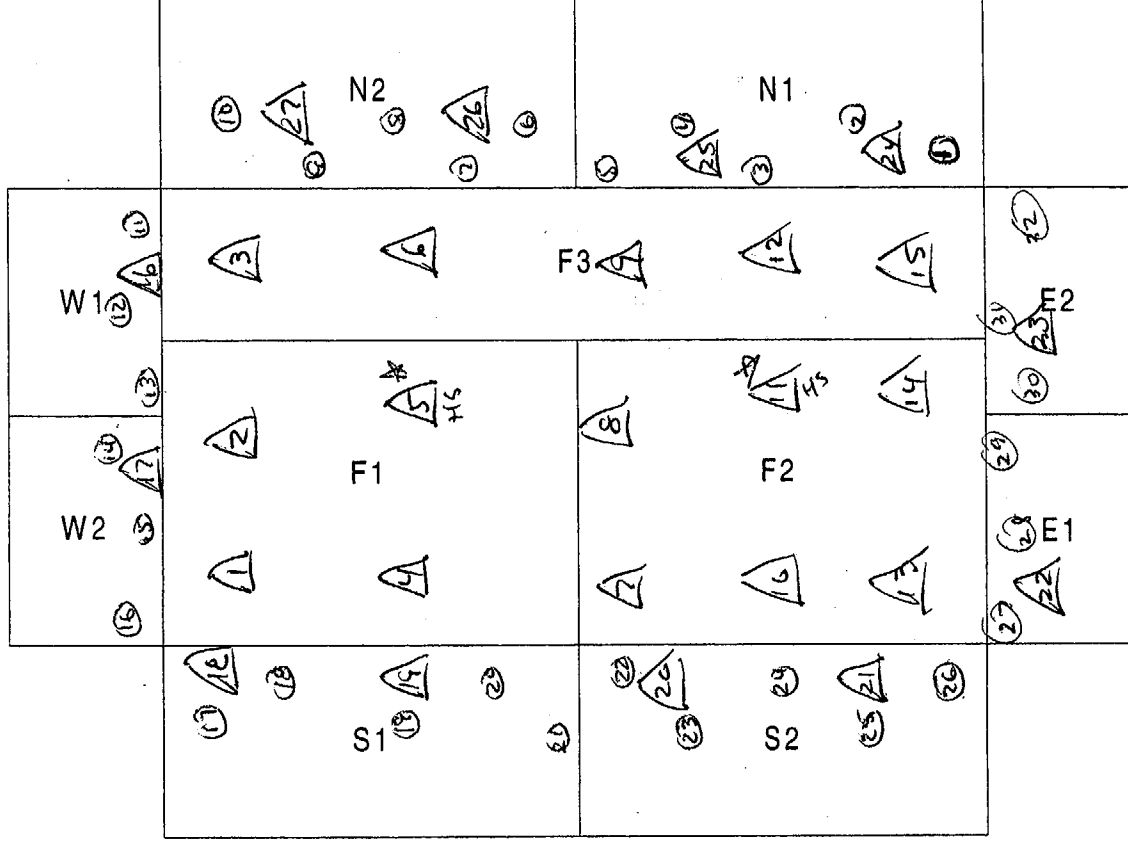
③② 224

②⑦ 213

②⑧ 186

②⑨ 147?

Location: Large Butler Building Floor  
Classification:  
Comments:



N

Micro P survey  
Meter Bico Micro Analyst B601k

Min - 5 mR/hr

Max - 23 mR/hr

Avg. - 10 mR/hr

(due to bags of waste from excavation  
in Bldg #9 pump repair facility,  
1.9E6 lbs 90% soil / 10% concrete)

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/7/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: Large Butler Building, Exterior Walls

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
195	3569	3374	<sup>99</sup> Tc	23,400	14.4	469	916

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	288	93	645	
2	253	58	402	<MDA
3	889	694	4813	Interference from soil in 'super-sacks'
4	1135	940	6519	Interference from soil in 'super-sacks'
5	411	216	1498	
6	380	185	1283	
7	246	51	354	<MDA
8	261	66	458	<MDA
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Signature: \_\_\_\_\_

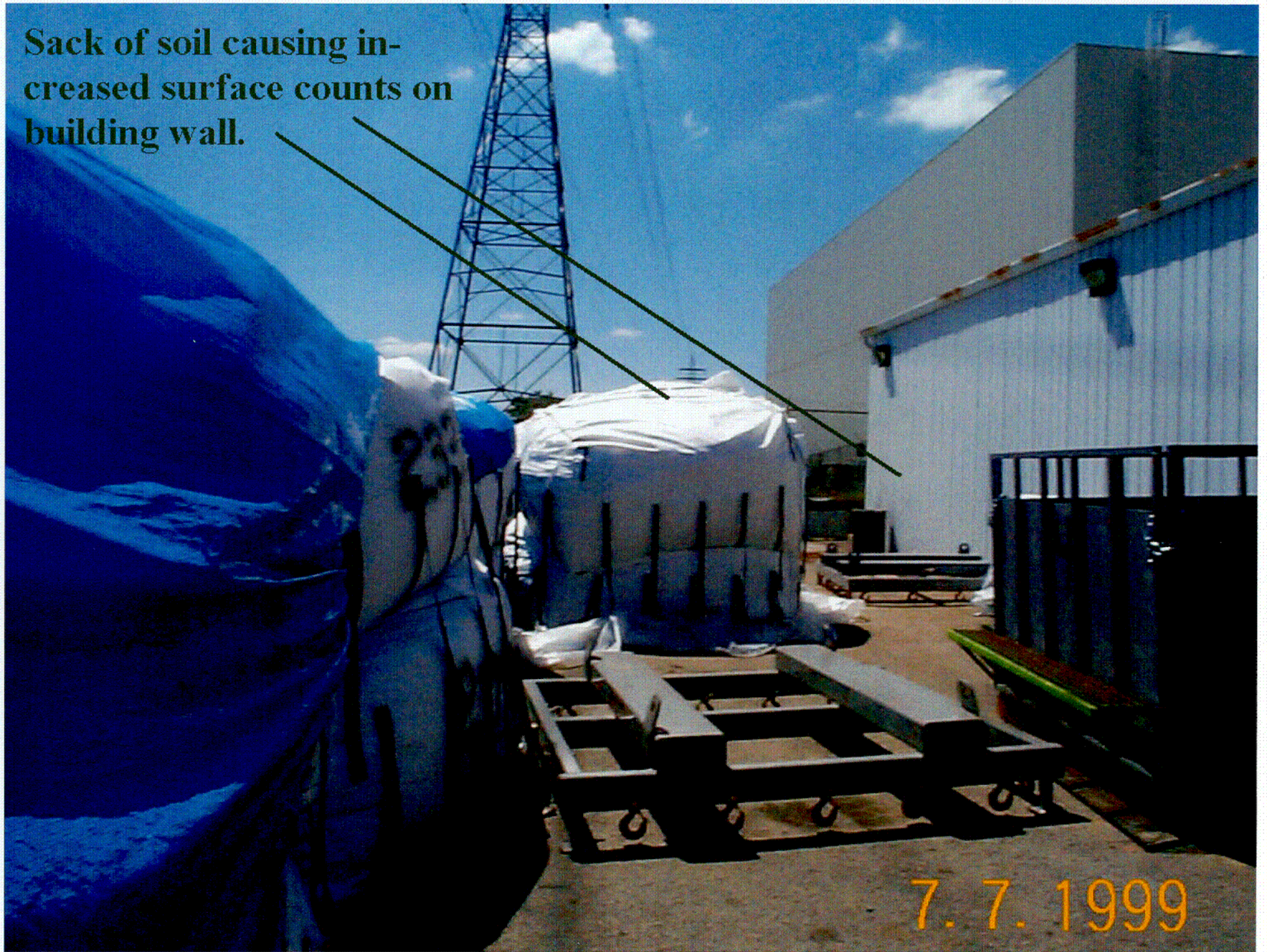
*Steven A. Bosterman*

Date: \_\_\_\_\_

12/29/00



Sack of soil causing in-  
creased surface counts on  
building wall.

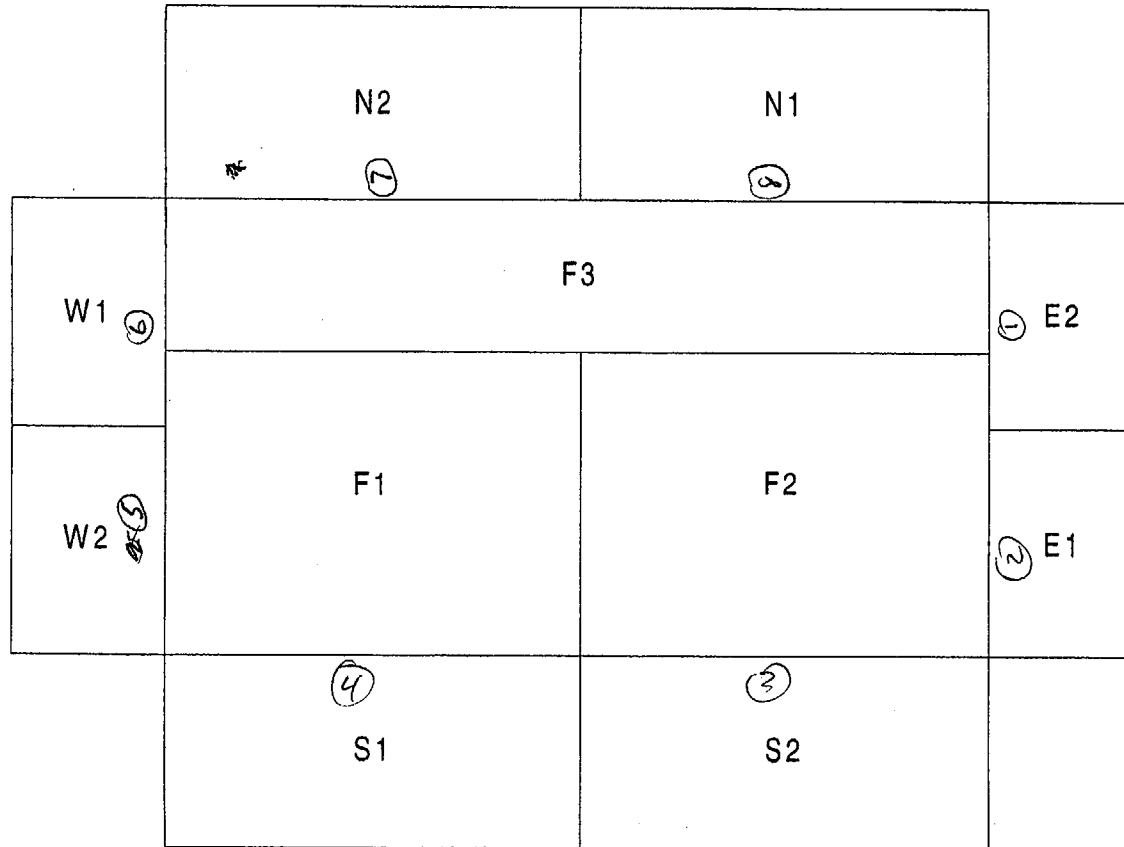


7. 7. 1999



Location: Large Butler Building Floor  
 Classification:  
 Comments:

N



Exterior Wall Survey 7/7/99

- ① 288
- ② 253
- ③ 889 (14th rib) } interference from waste
- ④ 1135
- ⑤ 411
- ⑥ 380
- ⑦ 246
- ⑧ 261

# Pennsylvania DEP Bureau of Radiation Protection Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/22/99

Meter Model and Serial Number: Eberline Beta Counter BC-4 Serial # 870

Removable Contamination Counts

Area/Building Surveyed: Large Butler Building, Floor and Interior Walls

Count times: Background – 10 min., Sample – 1 min.

## Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Bkgnd. Count Rate (cpm)	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm per wipe)
229	23	2324	2301	<sup>99</sup> Tc	23,400	9.8	196

## Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	27	4	41	<MDA
2	32	9	92	<MDA
3	32	9	92	<MDA
4	26	3	31	<MDA
5	28	5	51	<MDA
6	22	-1	-10	<MDA Gross count less than background
7	23	0	0	<MDA
8	17	-6	-61	<MDA Gross count less than background
9	26	3	31	<MDA
10	31	8	81	<MDA
11	26	3	31	<MDA
12	22	-1	-10	<MDA Gross count less than background
13	38	15	153	<MDA
14	28	5	51	<MDA
15	31	8	81	<MDA
16	19	-4	-41	<MDA Gross count less than background
17	25	2	20	<MDA
18	26	3	31	<MDA
19	29	6	61	<MDA
20	20	-3	-31	<MDA Gross count less than background
21	22	-1	-10	<MDA Gross count less than background
22	26	3	31	<MDA
23	21	-2	-20	<MDA Gross count less than background
24	27	4	41	<MDA
25	31	8	81	<MDA
26	23	0	0	<MDA
27	33	10	102	<MDA
28	42	19	193	<MDA
29	28	5	51	<MDA
30	27	4	41	<MDA
31	19	-4	-41	<MDA Gross count less than background
32				
33				
34				
35				

Signature: Steven A. Boettner

Date: 12/29/00

# Cheswick Swipe Counts cont

#	Location	Gross count <del>(gross)</del>
(14) #34	NW corner of Insp Rm	24
(15) #33	Top of elec. box in lunch Rm	25
(16) #32	SE corner of lunch Rm	22

## Large Butler Bldg

#	Swipe Locations (See survey map)	Gross count <del>(gross)</del> 1 min. cnt.
---	-------------------------------------	---

(1) #1	27
(2) #2	32
(3) #3	32
(4) #4	26
(5) #5	28
(6) #6	22
(7) #7	23
(8) #8	17
(9) #9	26
(10) #10	31
(11) #11	26
(12) #12	22
(13) #13	38
(14) #14	28
(15) #15	31
(16) #16	19
(17) #17	25
(18) #18	26
(19) #19	29
(20) #20	20

#	Location	Gross Count 1 min. cnt.
(21) #21		22
(22) #22	See survey map	26
(23) #23		21
(24) #24		27
(25) #25		31
(26) #26		23
(27) #27		33
(28) #28	N. Floor/Wall Junction	42
(29) #29	W "	28
(30) #30	S "	27
(31) #31	E "	19

Conclusion - no swipe samples in PRF, Admin. of  
 large Butler bldg → 1000 dpm above background  
 Max was PRF (1) #48 (79 cpm - 23 cpm) / 0.098 = 571 dpm

Location: Large Butler Building Floor  
 Classification:  
 Comments:

CHESWICK ③ 2-2-87

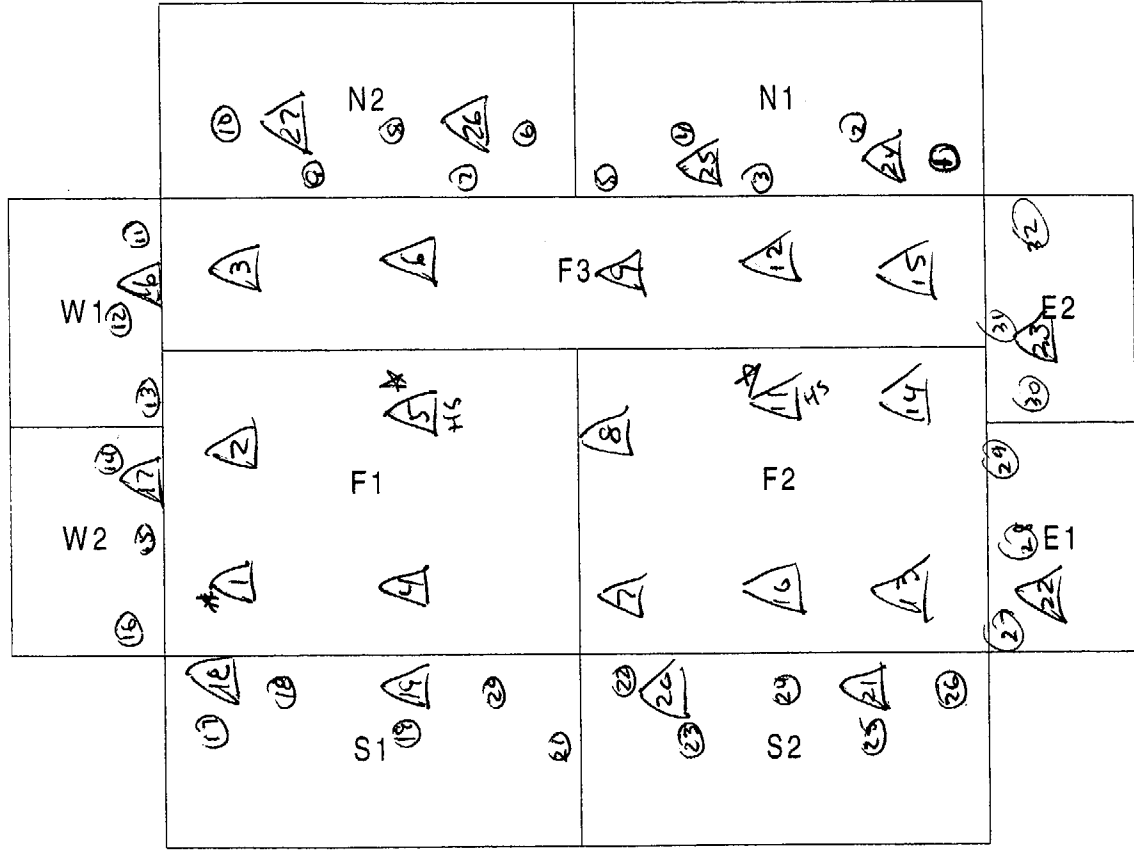
CPN/100m<sup>2</sup>

- ① 224
- ② 216
- ③ 224
- ④ 256
- ⑤ 222
- ⑥ 264
- ⑦ 226
- ⑧ 282
- ⑨ 248
- ⑩ 222
- ⑪ 271
- ⑫ 274
- ⑬ 242
- ⑭ 264
- ⑮ 331
- ⑯ 377
- ⑰ 428
- ⑱ 301
- ⑲ blocked by crates
- ⑳ 188
- ㉑ 214
- ㉒ 264
- ㉓ 247

209

REV A  
 LBBFGRID

- ㉔ 201
- ㉕ 213
- ㉖ 186
- ㉗ 224
- ㉘ 147?



N

Micro 2 survey  
 Meter Bero Micro Analyst B601k

Min - 5mR/hr

Max = 23mR/hr

Arg. ~ 10mR/hr

(due to bags of waste from excavation in Bldg #9 pump repair facility, 1.9E6 lbs 90% soil / 10% concrete)

\*Δ = smear location



Cheswick swipe counts 7/22/99

Instrument - Eberline Beta Counter BC-4 SN - 870

Bkgnd - 229 counts  $T_B = 10 \text{ min}$

$R_B = 22.9 \text{ cpm}$

Gross - ① 2348 ② 2311 ③ 2314 Avg - 2324 cpm

Net - 2301

Eff =  $\frac{2301 \text{ cpm}}{23,400 \text{ dpm}} = 9.8\%$

$\sigma_{RN} = \pm 48 \text{ cpm}$

### Pump Repair Facility

- ① - #48 - Survey Unit W-10 Grid F-0 ~~#48~~ Gross - 79 cpm  
② - #49 - W-10 Grid A-0 Gross - 23 cpm  
③ - #50 - Alcove E. Wall Hotspot Gross - 24 cpm  
④ - #51 - Alcove Floor Hotspot Gross - 31 cpm

### # Administration Bldg Location

		Result Gross (cpm) Counts
① #47	Wallplate Grid 1	Gross - 27 cpm
② #44	Breezeway Area 2 NW Corner	Gross - 20 cpm
③ #46	Breezeway 2nd Step hotspot	Gross - 30 cpm
④ #43	Breezy Area 1 NW corner	Gross - 21 cpm
⑤ #45	Breezy threshold (scabbled)	Gross - 20 cpm
⑥ #42	Threshold between HP Area & Breezy	- 3 <sup>3</sup>
⑦ #41	HP Area Drain Rim	- 20
⑧ #39	Mid Shower doorway top	- 20
⑨ #38	Mid Shower NW corner	29
⑩ #40	Top of restroom door	29
⑪ #37	Shower Room shelf	28
⑫ #36	Locker Rm excluded floor area	34
⑬ #35	Ladies Rm floor	28

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/14/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Lunchroom Floor

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	<sup>99</sup> Tc	23,400	14.6	543	1003

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	304	32	219	<MDA
2	308	36	246	<MDA
3	295	23	157	<MDA
4	283	11	75	<MDA
5	285	13	89	<MDA
6	338	66	451	<MDA
7	292	20	137	<MDA
8	326	54	369	<MDA
9	284	12	82	<MDA
10	320	48	328	<MDA
11	289	17	116	<MDA
12	278	6	41	<MDA
13	300	28	191	<MDA
14	315	43	294	<MDA
15	368	96	656	
16	350	78	533	<MDA
17	311	39	267	<MDA
18	299	27	185	<MDA
19	280	8	55	<MDA
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Signature: Steve Bosterman

Date: 7/14/99

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/14/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Lunchroom, South Wall

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	<sup>99</sup> Tc	23,400	14.6	543	1003

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	343	71	485	<MDA
2	343	71	485	<MDA
3	354	82	561	
4	280	8	55	<MDA
5	316	44	301	<MDA
6	314	42	287	<MDA
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Signature: \_\_\_\_\_

Steve Boettner

Date: \_\_\_\_\_

7/14/99

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/14/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Lunchroom, North Wall

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	<sup>99</sup> Tc	23,400	14.6	543	1003

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	252	-20	-137	<MDA gross count less than background
2	237	-35	-239	<MDA gross count less than background
3	234	-38	-260	<MDA gross count less than background
4	262	-10	-68	<MDA gross count less than background
5	273	1	7	<MDA
6	239	-33	-226	<MDA gross count less than background
7	246	-26	-178	<MDA gross count less than background window ledge
8	323	51	349	<MDA
9	261	-11	-75	<MDA gross count less than background
10	291	19	130	<MDA
11	255	-17	-116	<MDA gross count less than background
12	271	-1	-7	<MDA gross count less than background
13	288	16	109	<MDA
14	247	-25	-171	<MDA gross count less than background
15	288	16	109	<MDA
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Signature: Steve Bozinger

Date: 7/14/99

**Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Data Sheet**

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/14/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Lunchroom, East Wall

Count times: 1 minute

**Instrument Efficiency and Contamination Threshold Determination**

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	<sup>99</sup> Tc	23,400	14.6	543	1003

**Survey Data**

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	228	-44	-301	<MDA gross count less than background
2	281	9	62	<MDA
3	246	-26	-178	<MDA gross count less than background
4	312	40	273	<MDA
5	300	28	191	<MDA
6	306	34	232	<MDA
7	285	13	89	<MDA
8	274	2	14	<MDA
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Signature: Steve Bostjanin

Date: 7/14/99

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/14/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Lunchroom, West Wall

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	<sup>99</sup> Tc	23,400	14.6	543	1003

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	269	-3	-21	<MDA gross count less than background
2	290	18	123	<MDA
3	259	-13	-89	<MDA gross count less than background
4	248	-24	-164	<MDA gross count less than background
5	242	-30	-205	<MDA gross count less than background
6	284	12	82	<MDA
7	281	9	62	<MDA
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Signature: Steve Bostjanin

Date: 7/14/99

(W) Cheswick - 7/14/99 Inst. Eff. Chk.

Ludlum Model 2241-2 Det Ludlum 44-116 S  
SN 137745 SN 147859

<u>Bkgnd (cpm)</u>	<u>Gross (cpm)</u>	<u>Net (cpm)</u>
262	3675	3423
280	3684	
<u>273</u>	<u>3725</u>	
272	3695	

$$\sigma_{Rn} = \sqrt{\quad}$$
$$= \pm 63 \text{ cpm}$$

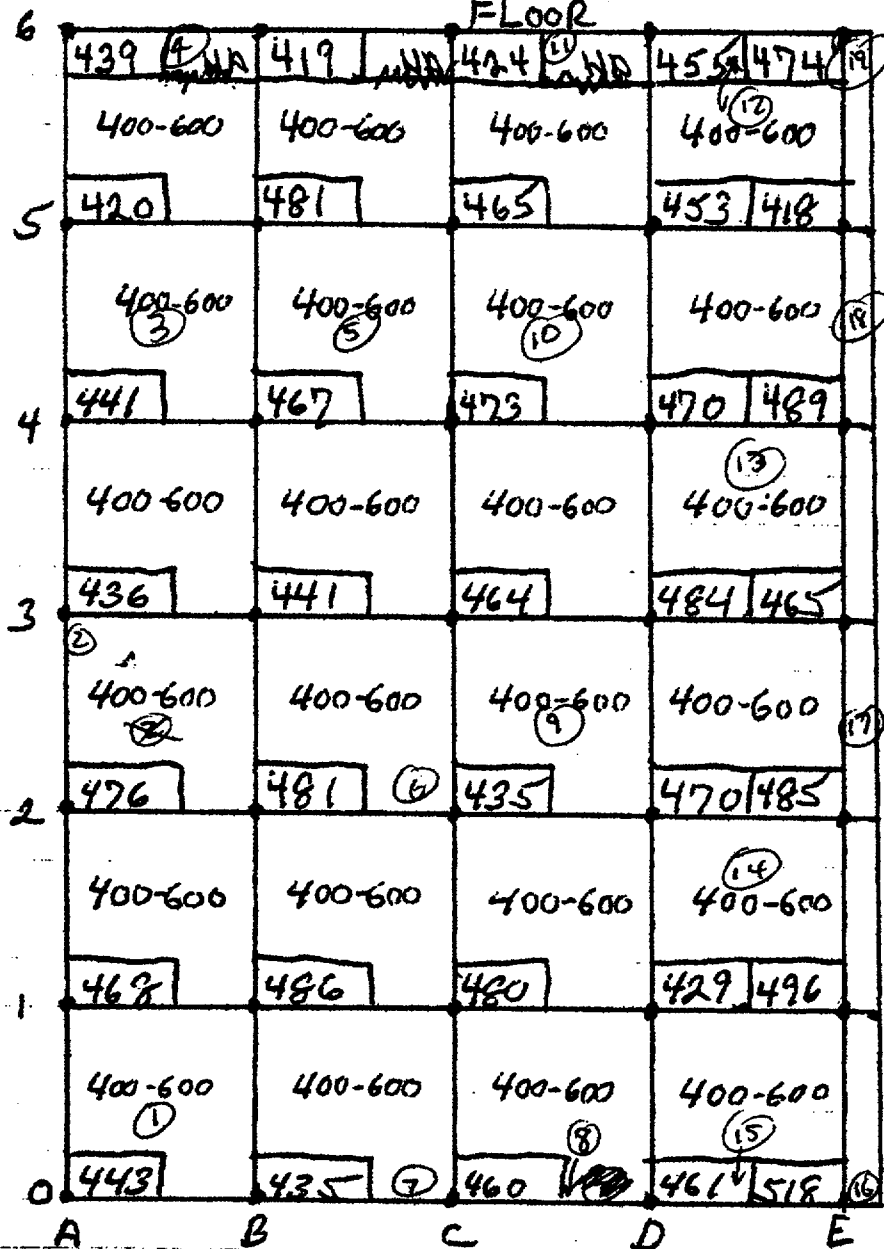
$$\text{Eff} = \frac{3423 \text{ cpm}}{23,400 \text{ dpm}} = 14.6\%$$

$$\text{Threshld} = 0.146(5000) + 272 \approx 1002 \text{ cpm}$$

↑  
N

# PRF ADMIN. LUNCH ROOM FLOOR

DATE



TAXOR SILVIO

DATA PT SCAR

2221# 84458 13834

43-68# 124497 12452

BK6 CPM 321 287

EFF. 25% 25%

(1) 304

(2) 308

(3) 295

(4) 283

(5) 285

(6) 338

(7) 292

(8) 326

(9) 284

(10) 320

(11) 289

(12) 278

(13) 300

(14) 315

(15) 368

(16) 350

(17) 311

(18) 299

(19) 280

low high mR/hr readings

~ 5 to 13 mR/hr.

Highest reading along east wall  
(due to contamination on other  
side of wall in pump repair  
facility?)



# PRF ADMIN LUNCHROOM

## WEST WALL

3	341 Z=400-600	442 Z=400-600	442 Z=400-600 (3)	409 Z=400-600	427 Z=400-600	441 424 Z=400-600	(1) 269 (2) 290 (3) 259
2	443 Z=400-600	366 Z=400-600 (1)	429 Z=400-600	439 Z=400-600 (5)	372 Z=400-600	380 387 Z=400-600	(4) 248 (5) 242 (6) 284 (7) 281
1	382 Z=400-600 (1)	390 Z=400-600	457 Z=400-600	448 Z=400-600	377 Z=400-600 (6)	340 361 Z=400-600 (7)	
0	340 A	340 B	364 C	356 D	358 E	349 345 F	G

## EAST WALL

3	441 Z=400-600	424 Z=400-600 (2)	419 Z=400-600	474 Z=400-600	422 Z=400-600	479 523 Z=400-600 (8)	(1) 228 (2) 281 (3) 246
2	385 Z=400-600 (2)	388 Z=400-600	455 Z=400-600 (9)	405 Z=400-600	467 Z=400-600 (7)	454 440 Z=400-600	(4) 212 (5) 300 (6) 306 (7) 285 (8) 274
1	412 Z=400-600	379 Z=400-600	386 Z=400-600	566 Z=400-600 (6)	427 Z=400-600	400 412 Z=400-600	
0	356 A	345 B	419 C	482 D	567 E	429 394 F	G

DATE 6-15-99

TECH TAYLOR SILVIO

FUNCT. DATA PT SCAN

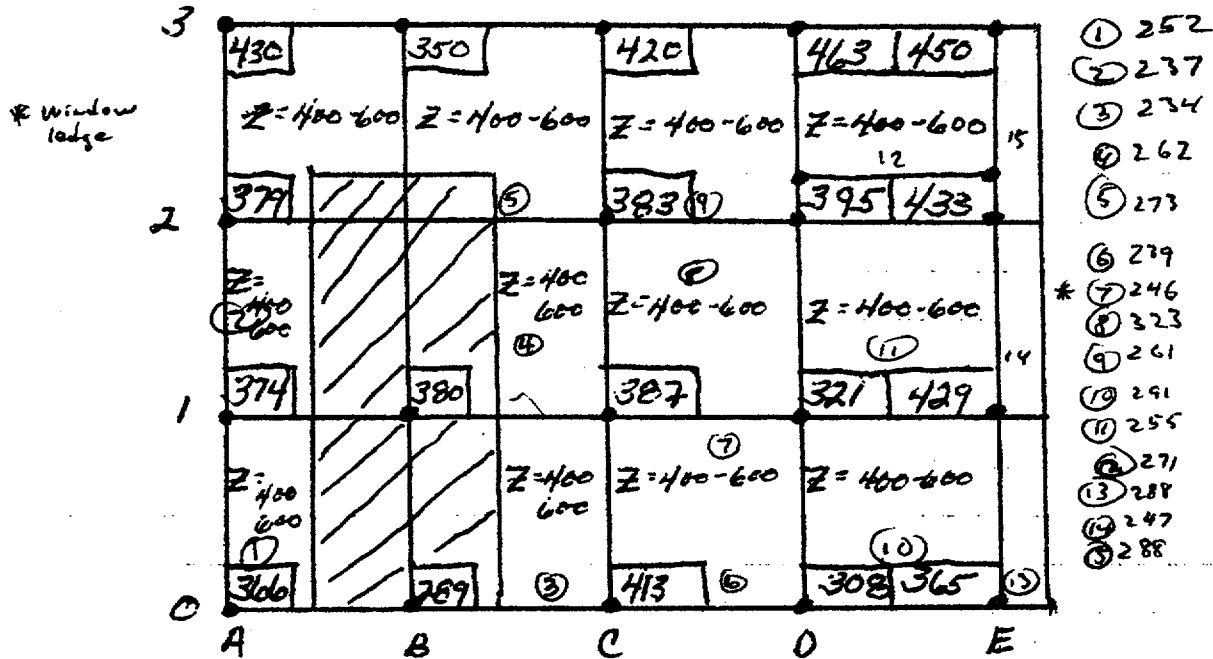
2221# 84458 138347

43-68# 124497 124522

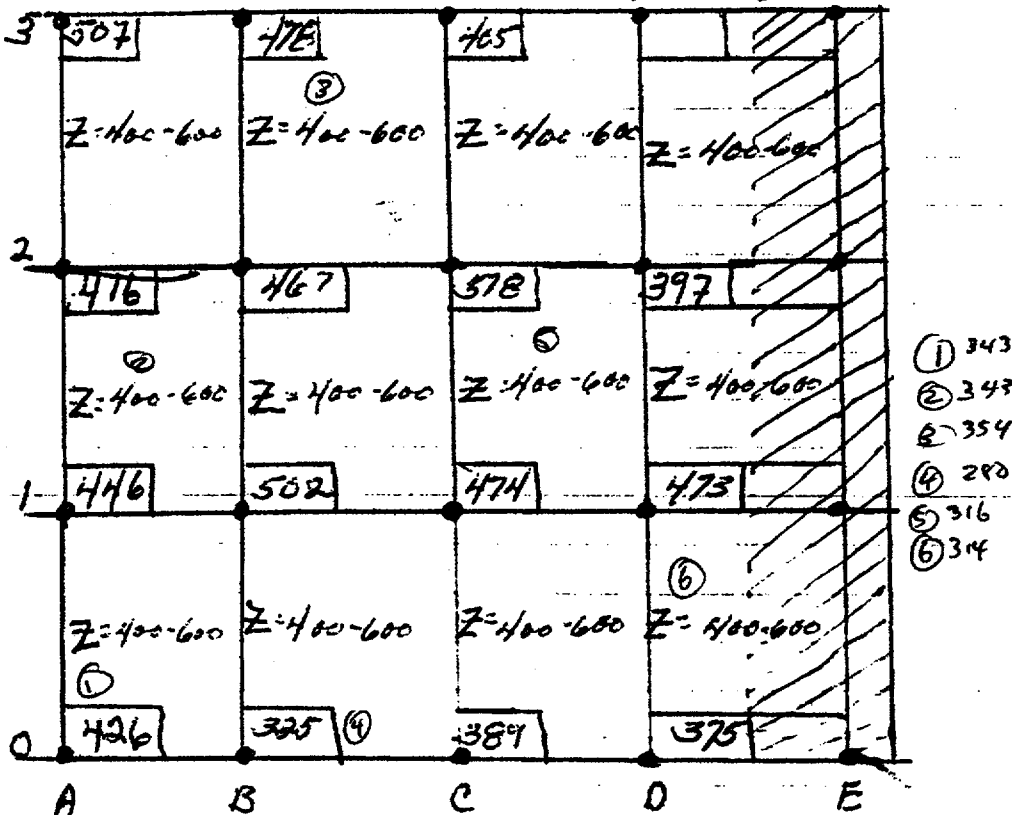
BK6CAM 321 287

# PRF Admin Lunch Room

## NORTH WALL



## South wall



Date - 6-15-99

Tec. - Taylor - Silvio

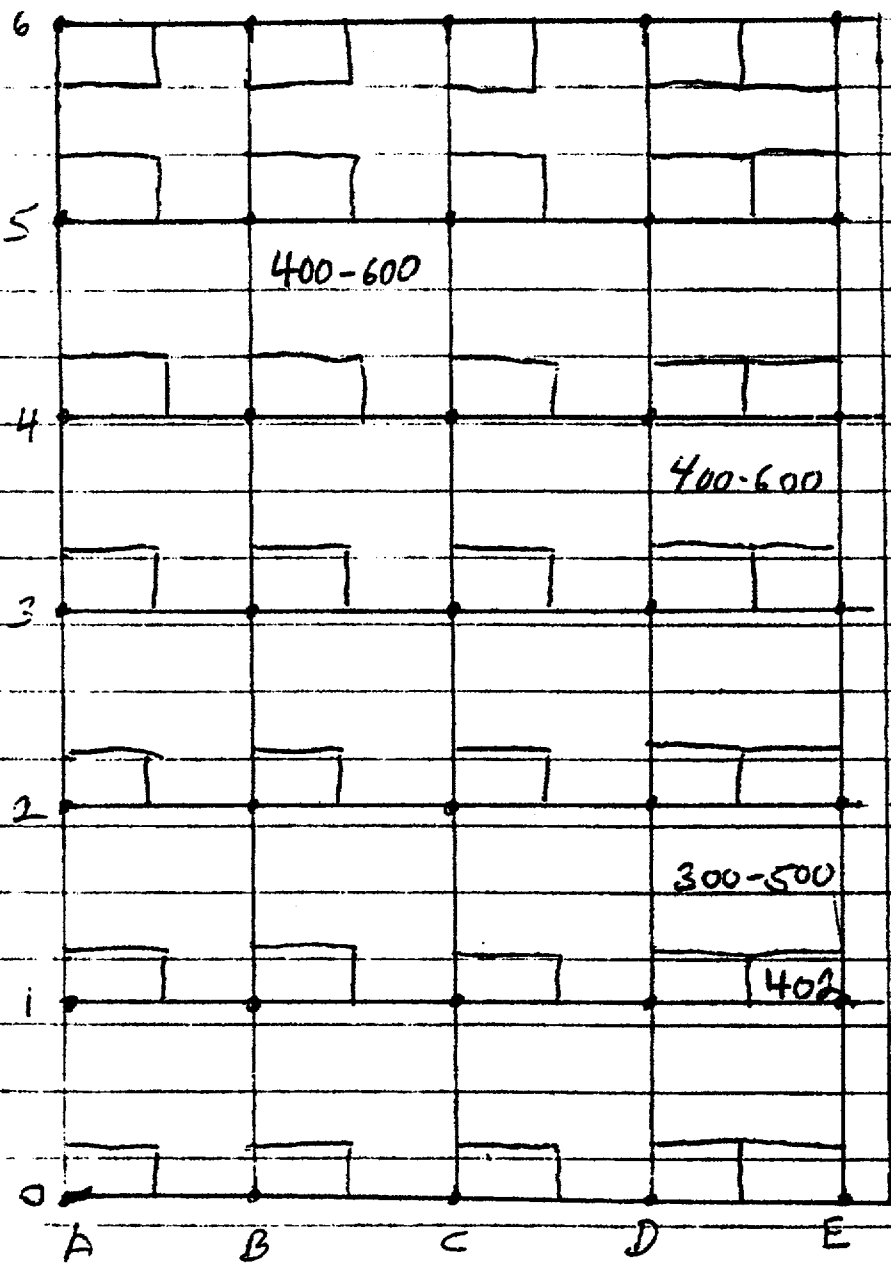
2221-84438-138347

43-68-124497-124522

Bkg - 321 - 287

Eff - 25%

# PRF ADMIN LUNCH ROOM CEILING



DATE: 6-15-99

TAYLOR SILVIO

DRAFT SCAN

2221# 84438 138347

43-68# 124497 124522

REV - 000 321 127

**Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Data Sheet**

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/14/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Inspection Area, Floor

Count times: 1 minute

**Instrument Efficiency and Contamination Threshold Determination**

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	<sup>99</sup> Tc	23,400	14.6	543	1003

**Survey Data**

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	323	51	349	<MDA
2	308	36	246	<MDA
3	353	81	554	
4	357	85	581	
5	318	46	314	<MDA
6	306	34	232	<MDA
7	339	67	458	<MDA
8	371	99	677	
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Signature: Steven A. Brodzinski

Date: 12/27/00

**Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Data Sheet**

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/14/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Inspection Area, Walls

Count times: 1 minute

**Instrument Efficiency and Contamination Threshold Determination**

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	<sup>99</sup> Tc	23,400	14.6	543	1003

**Survey Data**

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	355	83	567	north wall
2	363	91	622	north wall
3	364	92	629	north wall
4	279	7	48	<MDA north wall
5	314	42	287	<MDA north wall
6	271	-1	-7	<MDA gross count less than background south wall
7	329	57	390	<MDA south wall
8	343	71	485	<MDA south wall
9	372	100	684	south wall
10	245	-27	-185	<MDA gross count less than background south wall
11	377	105	718	west wall
12	351	79	540	<MDA west wall
13	293	21	144	<MDA west wall
14	368	96	656	west wall
15	274	2	14	<MDA east wall
16	265	-7	-48	<MDA gross count less than background east wall
17	310	38	260	<MDA window sill east wall
18	285	13	89	<MDA east wall
19	282	10	68	<MDA east wall
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Signature: Steven A. Bosterman

Date: 12/29/00

① Cheswick - 7/14/99 Inst. Eff. Chk.

Ludlum Model 2241-2 Det Ludlum 44-116 S  
SN 137745 SN 147859

<u>Bkgnd (cpm)</u>	<u>Gross (cpm)</u>	<u>Net (cpm)</u>
262	3675	3423
280	3684	
<u>273</u>	<u>3725</u>	
272	3695	

$$\sigma_{Rn} = \sqrt{\quad}$$
$$= \pm 63 \text{ cpm}$$

$$\text{Eff} = \frac{3423 \text{ cpm}}{23,400 \text{ dpm}} = 14.6\%$$

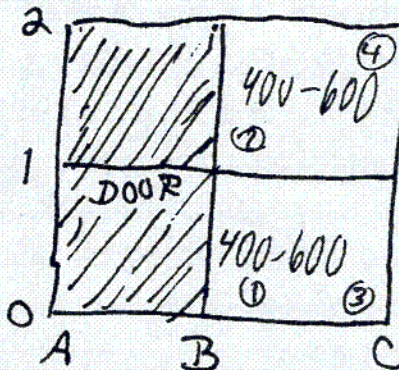
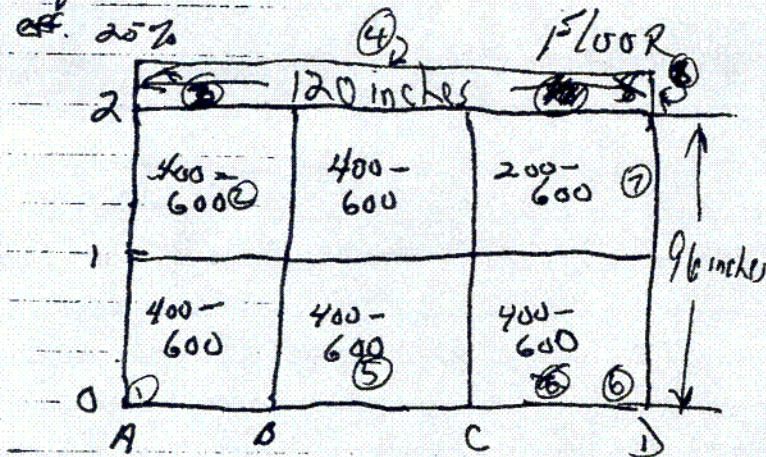
$$\text{Threshld} = 0.146(5000) + 272 \approx 1002 \text{ cpm}$$



6-14-99 Shank  
 Model 2221  
 S.N. 254207  
 Probe 43-68  
 S.D. PR159019  
 bkgd  
 off. 25%

# INSPECTION AREA

West Wall



- Floor
- ① 323 ⑥ 306
  - ② 308 ⑦ 339
  - ③ 353 ⑧ 371
  - ④ 357
  - ⑤ 318

North Wall

- ① 355 ② 363 ③ 364
- ④ 279 ⑤ 314

South Wall

- ① 271 ② 329 ③ 343
- ④ 372 ⑤ 245

West Wall

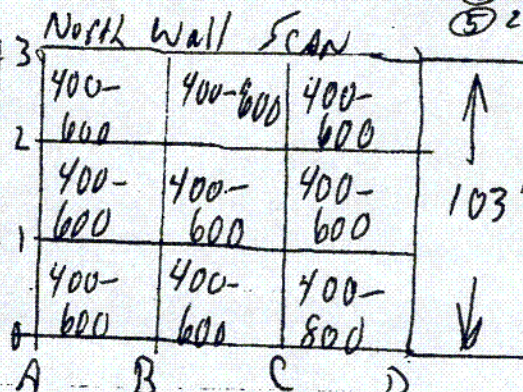
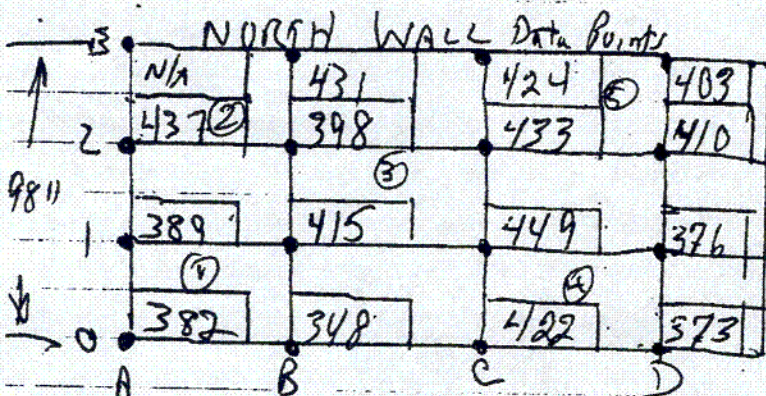
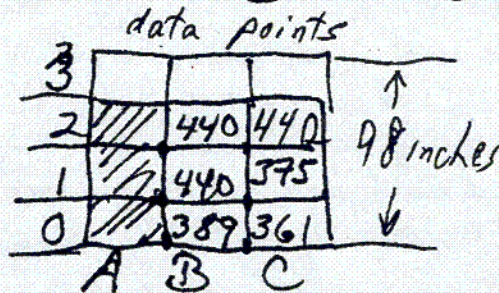
- ① 377 ② 351
- ③ 293 ④ 369

East Wall

- ① 274 ② 265
- ③ 310 ④ 295
- ⑤ 282

data points

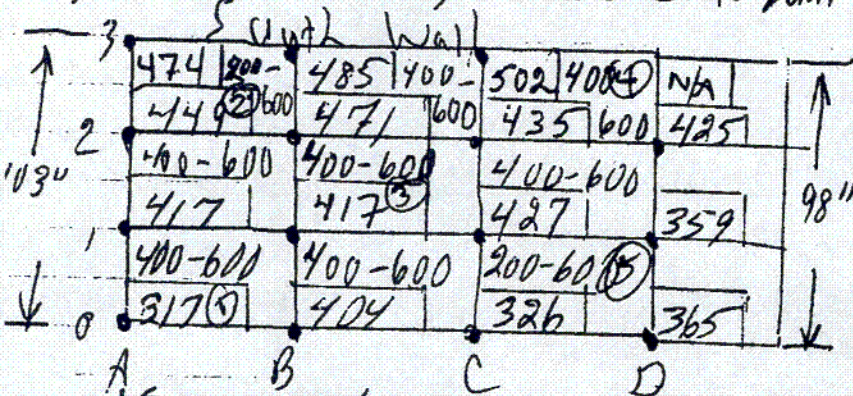
2	394	414	392	269
1	397	401	416	412
0	408	409	422	425
	A	B	C	D



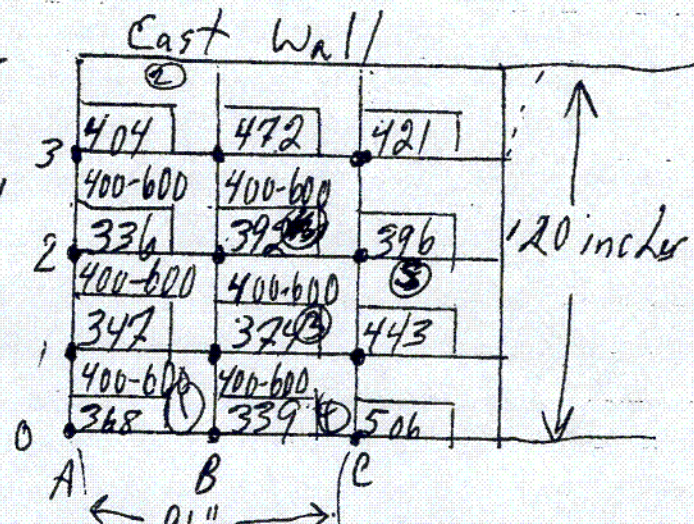
MR readings

8-14 MR/hr

A,3=N/A due to wall height < 100 inches @ this point



B,3=N/A due to wall height < 100 inches





# Inspection Area - Ceiling

6-15-99

6-15-99 Shank

Model 2221

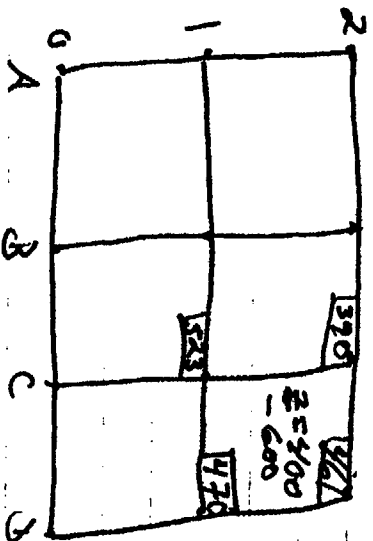
S.N. 154207

Probe: 43-68

S.N. 92157019

bgd. 248 cpm

eff 25%



N  
↑



**Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Data Sheet**

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/14/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Ladies Change Room, Floor

Count times: 1 minute

**Instrument Efficiency and Contamination Threshold Determination**

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	<sup>99</sup> Tc	23,400	14.6	543	1003

**Survey Data**

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	388	116	793	
2	344	72	492	<MDA
3	311	39	267	<MDA
4	355	83	567	
5	516	244	1668	5a - 1771 dpm, 5b - 2420 dpm (ok)
6	452	180	1230	
7	345	73	499	<MDA
8	333	61	417	<MDA
9	639	367	2509	
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Signature: Steven A. Bosterman

Date: 12/29/00

**Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Data Sheet**

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/14/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Ladies Change Room, Walls

Count times: 1 minute

**Instrument Efficiency and Contamination Threshold Determination**

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	<sup>99</sup> Tc	23,400	14.6	543	1003

**Survey Data**

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	342	70	479	<MDA north wall
2	372	100	684	north wall
3	342	70	479	<MDA north wall
4	280	8	55	<MDA north wall
5	347	75	513	<MDA north wall
6	267	-5	-34	<MDA east wall
7	338	66	451	<MDA east wall
8	390	118	807	east wall
9	294	22	150	<MDA east wall
10	336	64	438	<MDA east wall
11	331	59	403	<MDA south wall
12	373	101	690	south wall
13	357	85	581	south wall
14	372	100	684	south wall
15	359	87	595	south wall
16	382	110	752	west wall
17	371	99	677	west wall
18	440	168	1148	west wall
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Signature: Steven A. Bolognini

Date: 12/29/00

W Cheswick - 7/14/99 Inst. Eff. Ckt.

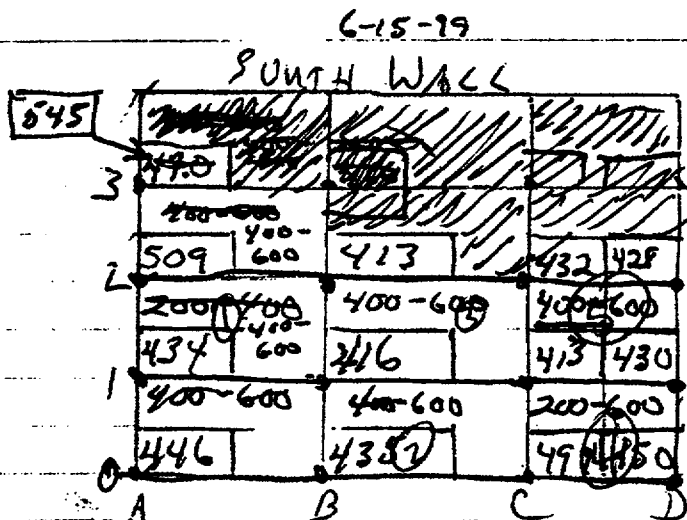
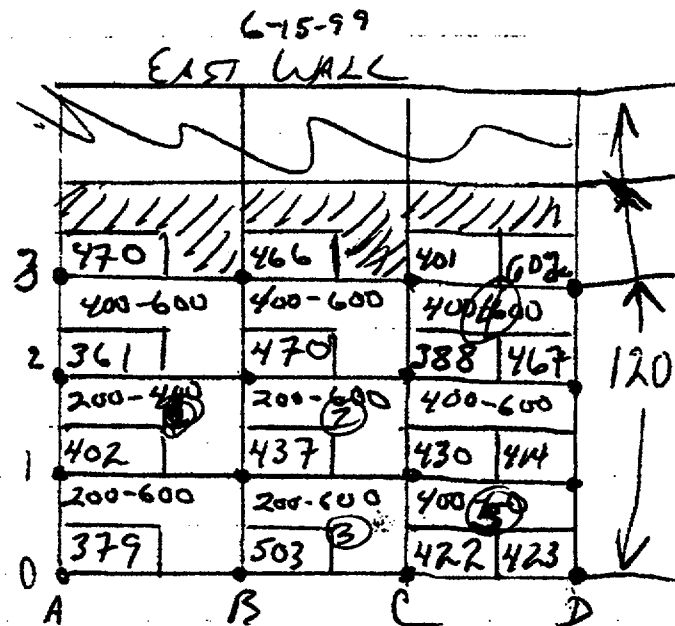
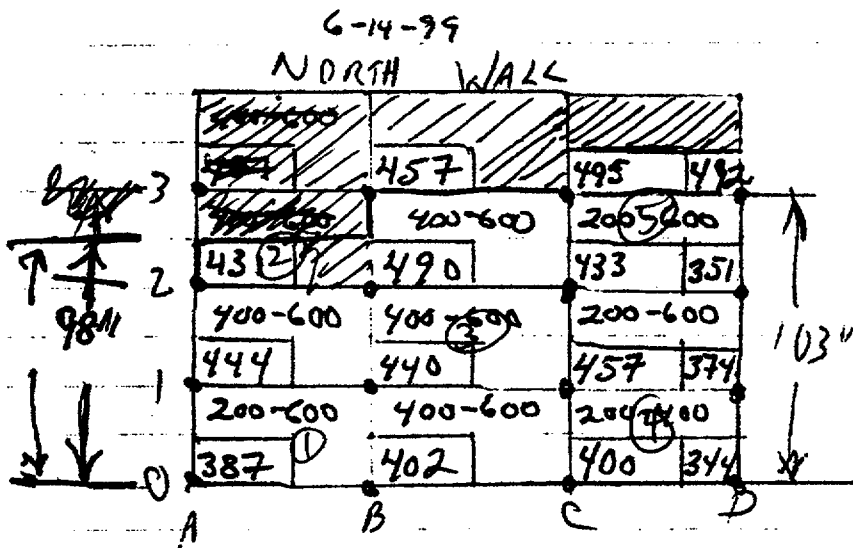
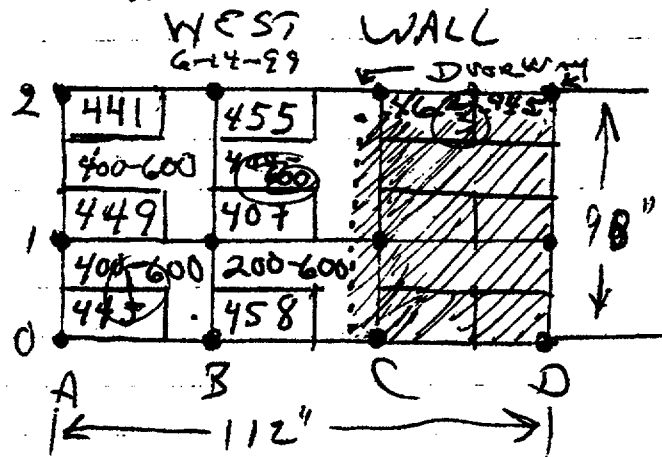
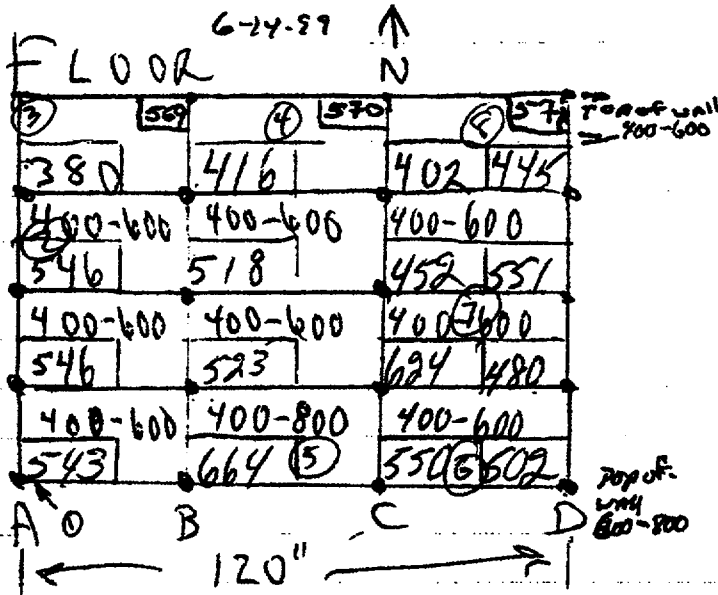
Ludlum Model 2241-2 Det Ludlum 44-116 S  
SN 137745 SN 147859

<u>Bkgnd (cpm)</u>	<u>Gross (cpm)</u>	<u>Net (cpm)</u>	$DR_0 = \sqrt{\quad}$
262	3675	3423	$= \pm 63 \text{ cpm}$
280	3684		
<u>273</u>	<u>3725</u>		
272	3695		

$$Eff = \frac{3423 \text{ cpm}}{23,400 \text{ dpm}} = 14.6\%$$

$$Thick 11 = 0.146 (5000) + 272 \pm 1002 \text{ cpm}$$

# LADIES CHANGE ROOM



\* A, 3 WALL Height is 103"  
balance of wall = 98"

6-14-99 Shank  
Model 2221

S.N. 154207

Probe 43-68

S.N. PR 159019

6/14/99

off 0.5%

6-15/99

245 cpm

# CEILING - Ladies Change Room 6-15-99 Shank

Model 2321

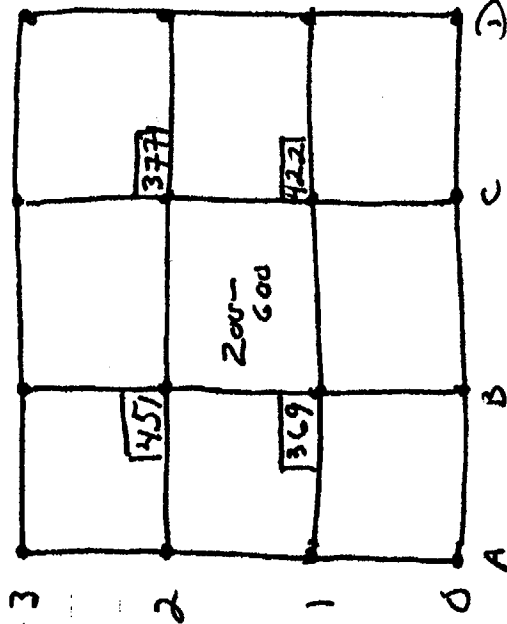
S.N. 154207

PROBE: 43-68

S.N. - 78159019

bkqd: 245 spm

eff: 25%



Floor	N.Wall	E.Wall	S.Wall	W.Wall
① 388	① 342	① 267	① 331	① 382
② 344	② 372	② 338	② 373	② 371
③ 311	③ 342	③ 390	③ 357	③ 440
④ 355	④ 280	④ 294	④ 372	
⑤ 516, 531, 626	⑤ 347	⑤ 336	⑤ 359	

⑥ 452 in front of toilet stall

⑦ 345

⑧ 333

⑨ 634 (floor drain)

1m wR/hr readings

10 - 15 wR/hr  
(20 wR/hr on floor)

**Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Data Sheet**

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/14/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Locker Room, Floor

Count times: 1 minute

**Instrument Efficiency and Contamination Threshold Determination**

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	<sup>99</sup> Tc	23,400	14.6	543	1003

**Survey Data**

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	349	77	526	<MDA
2	396	124	848	
3	304	32	219	<MDA
4	344	72	492	<MDA
5	424	152	1039	
6	292	20	137	<MDA
7	307	35	239	<MDA
8	1435	1163	7950	excluded area to be remediated during demo
9	342	70	479	<MDA
10	528	256	1750	excluded area to be remediated during demo
11	598	326	2229	excluded area to be remediated during demo
12	399	127	868	
13	316	44	301	<MDA
14	329	57	390	<MDA
15	373	101	690	
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31				
32				
33				
34				
35				

Signature: \_\_\_\_\_

*Steven A. Bastian*

Date: \_\_\_\_\_

12/29/00



Excluded floor area in  
PRF locker room



7. 15. 1999

C03



# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/14/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Locker Room, Walls

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
272	3695	3423	<sup>99</sup> Tc	23,400	14.6	543	1003

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	371	99	677	north wall
2	369	97	663	north wall
3	329	57	390	<MDA north wall
4	338	66	451	<MDA north wall
5	382	110	752	north wall
6	357	85	581	east wall
7	302	30	205	<MDA east wall
8	290	18	123	<MDA east wall
9	313	41	280	<MDA east wall
10	308	36	246	<MDA east wall
11	320	48	328	<MDA east wall
12	598	326	2229	east wall
13	266	-6	-41	<MDA gross count less than background east wall
14	368	96	656	east wall
15	526	254	1736	east wall
16	312	40	273	<MDA east wall
17	588	316	2160	south wall
18	266	-6	-41	<MDA gross count less than background south wall
19	291	19	130	<MDA south wall
20	403	131	896	south wall
21	285	13	89	<MDA south wall
22	300	28	191	<MDA west wall
23	330	58	396	<MDA west wall
24	336	64	438	<MDA west wall
25	327	55	376	<MDA west wall
26	347	75	513	<MDA west wall
27	382	110	752	west wall
28	347	75	513	<MDA west wall
29	323	51	349	<MDA west wall
30	392	120	820	west wall
31	338	66	451	<MDA west wall
32				
33				
34				
35				

Signature: Steven A. Bastian

Date: 12/29/00



①W Cheswick - 7/14/99 Inst. Eff. Chk.

Ludlum Model 2241-2 Det Ludlum 44-116 S  
SN 137745 SN 147859

<u>Bkgnd (cpm)</u>	<u>Gross (cpm)</u>	<u>Net (cpm)</u>
262	3675	3423
280	3684	
<u>273</u>	<u>3725</u>	
272	3695	

$$\sigma_{R_n} = \sqrt{\quad}$$
$$= \pm 63 \text{ cpm}$$

$$\text{Eff} = \frac{3423 \text{ cpm}}{23,400 \text{ dpm}} = 14.6\%$$

$$\text{Threshld} = 0.146(5000) + 272 \approx 1002 \text{ cpm}$$

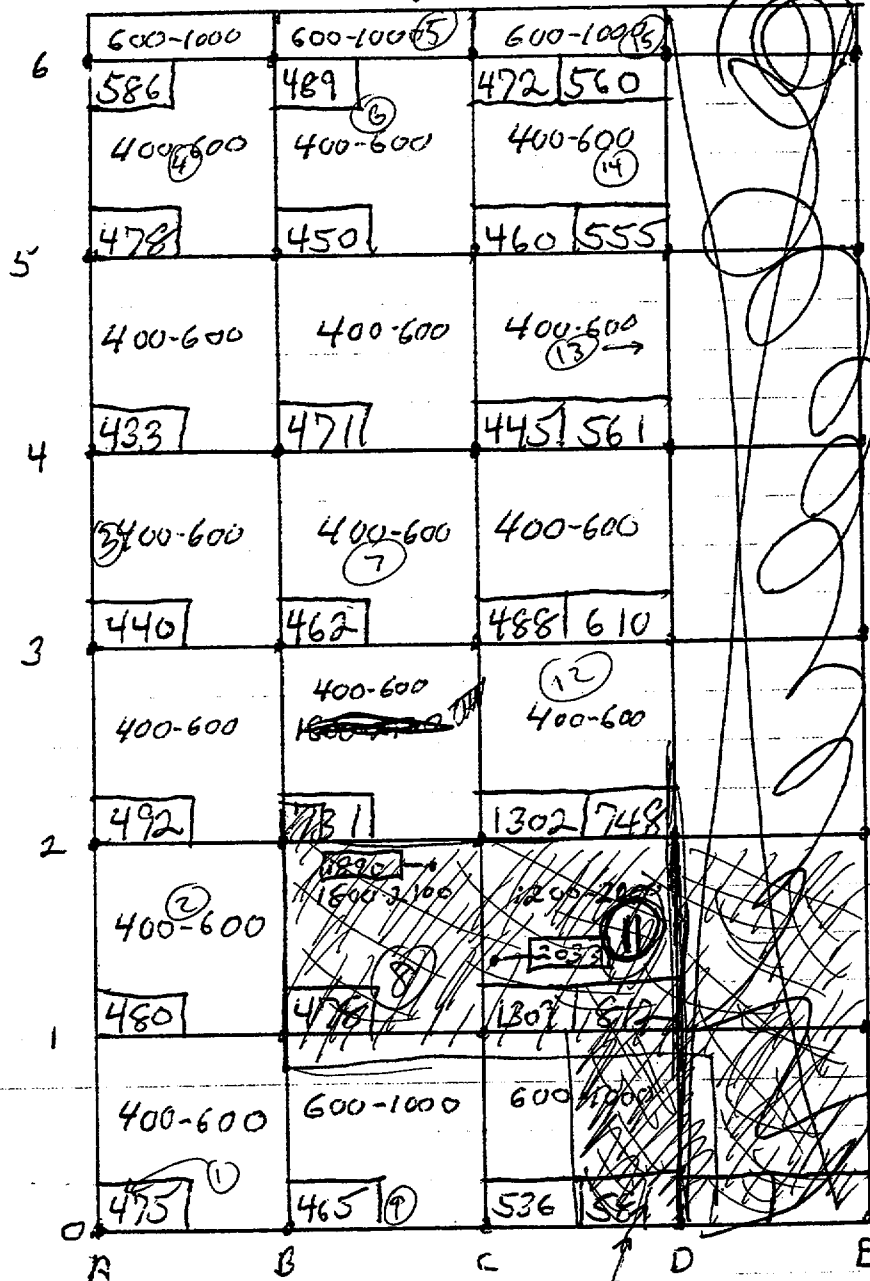
6-11-99

ASCD.  
PRF Admin  
Lock RR Room  
FLOOR

TRILOR  
DATAPT.

SILVIO  
SCAN

4368# 124497 142522  
2221# 84458 138347  
BLGCM 329 334



- ① 349
- ② 346
- ③ 309
- ④ 344
- ⑤ 424
- ⑥ 292
- ⑦ 307
- \*⑧ (1435)
- ⑨ 342
- \*⑩ (528)
- \*⑪ (598)
- ⑫ 399
- ⑬ 316
- ⑭ 329
- ⑮ 373

\*\*\* = excluded \*  
area  
(contamination under  
scabbled concrete)

1m  $\mu R/hr$  readings  
12-20  $\mu R/hr$   
(20  $\mu R/hr$  over excluded area)

N. Wall

- ① 371
- ② 369
- ③ 329
- ④ 338
- ⑤ 382

E. Wall

- ① 357
- ② 302
- ③ 290
- ④ 313
- ⑤ 308
- ⑥ 320
- ⑦ 598
- ⑧ 266
- ⑨ 368
- ⑩ 526
- ⑪ 312

S. Wall

- ① 588
- ② 266
- ③ 291
- ④ 403
- ⑤ 295

W. Wall

- ① 300
- ② 330
- ③ 336
- ④ 321
- ⑤ 347
- ⑥ 382
- ⑦ 347
- ⑧ 323
- ⑨ 392
- ⑩ 338

PRF Admin Locke Room

COUNTER: Ludlum 2929 Serial # 102015

BK 54

EFF. 014

CALL OUT: 4-22-00

POST NEEDLE GUN OFFLOOR

SMERH DPMVRLUE

①

30

②

LBK6

③

30

④

LBK6

⑤

78

⑥

43

⑦

LBK6

①

⑤

⑥

⑦

PRF ADMIN. LOCKER ROOM

DATE: 7-9-99

TECH. TYPAL

2221 # 84458

43-68 # 124497

POST NEGOTI GUNO

BK CPM 308

EFF. 25%

A	B	C	D
			776
			2800-3500
			3161
1	575	4469	2419
			2508
			2885
2	741	3571	931
3			
4			
5			
6			

PRF Admin Locker Room

7-8-99

Tech Taylor

Post Floor Tile Removal

2221 # 84458

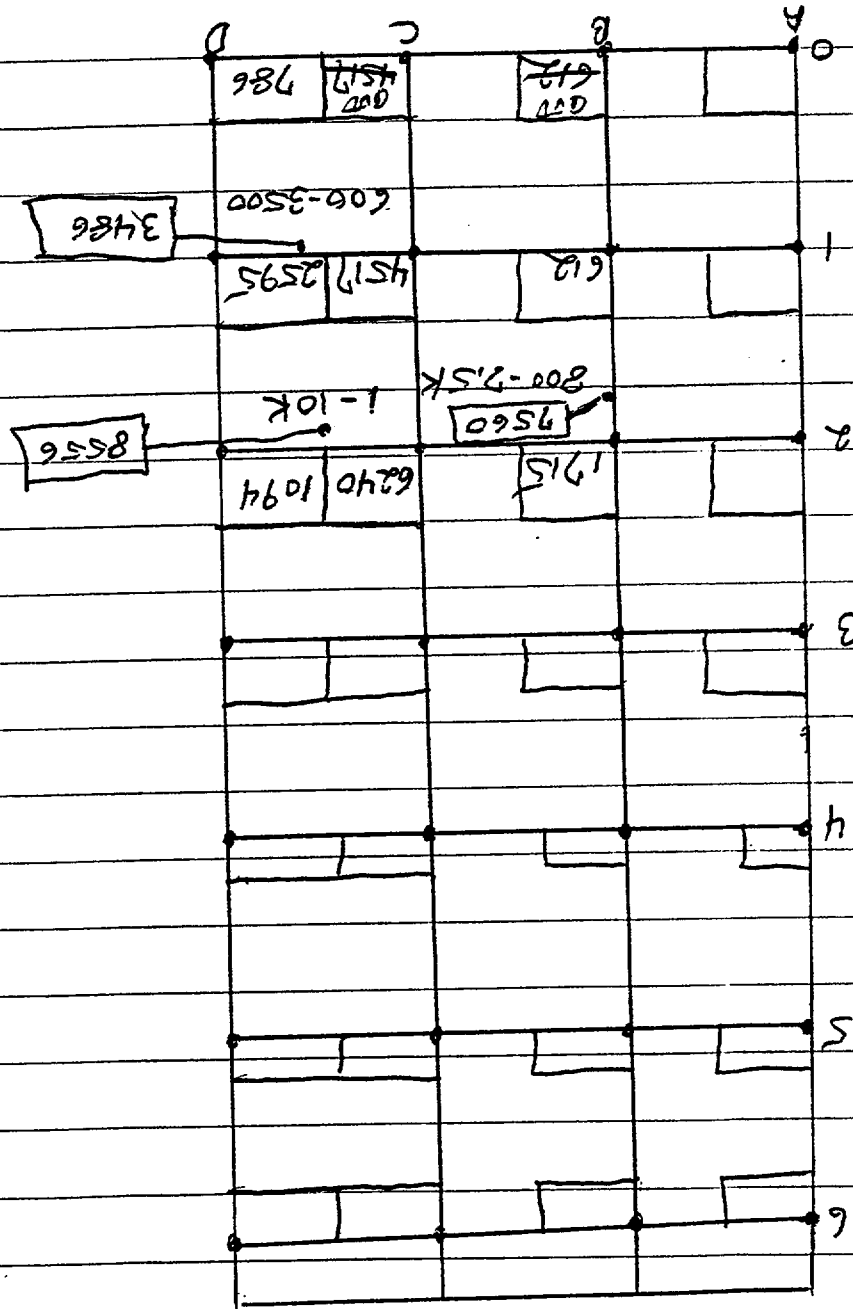
43-68# 124497

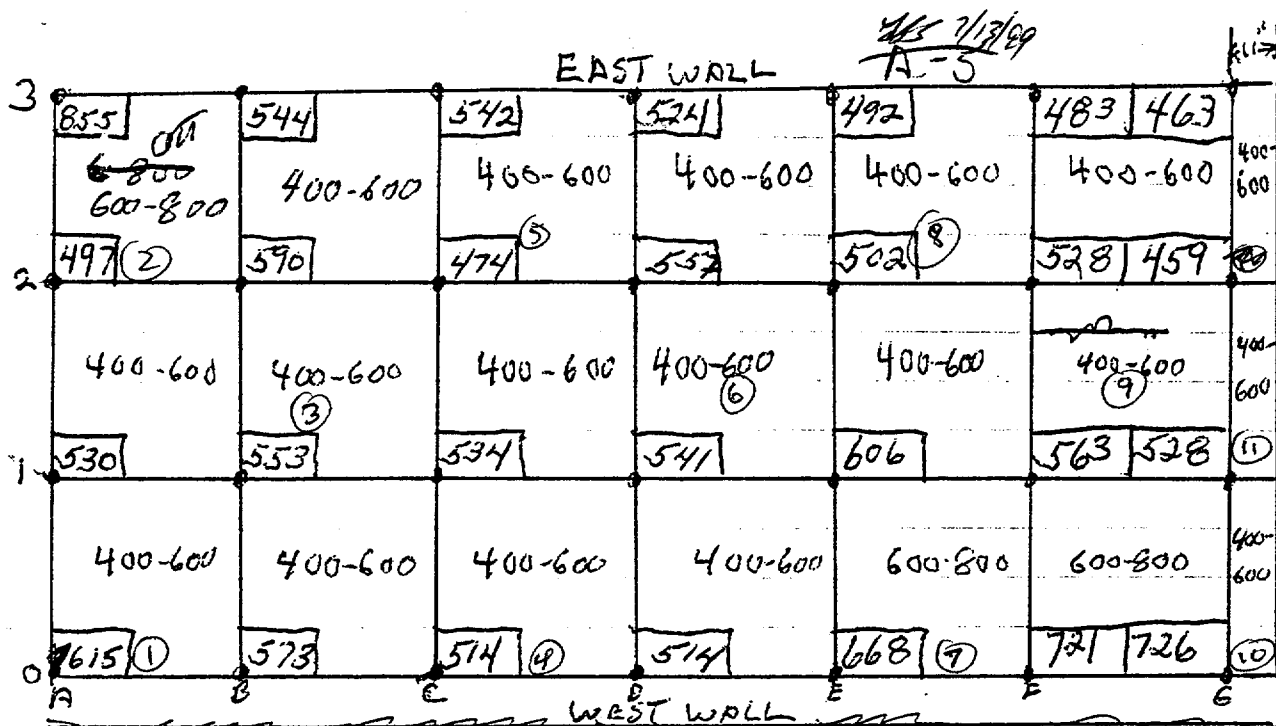
GR6 CPM 291

EFF. 25%

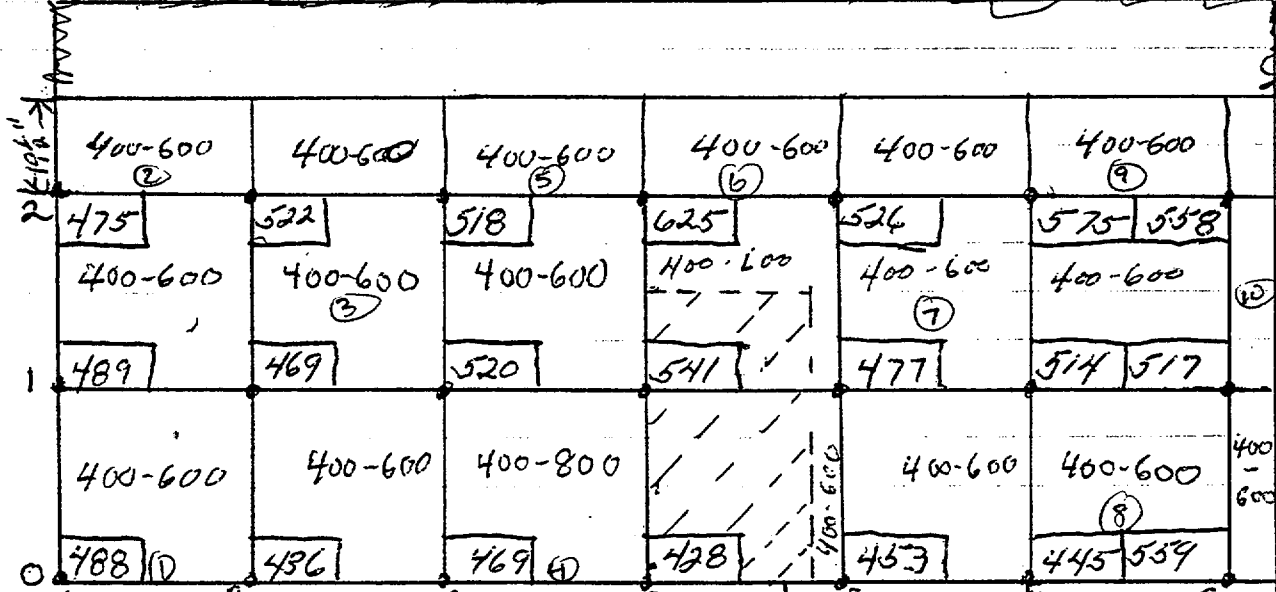
SURVEYED ONLY WHERE

FLOOR TILE WAS REMOVED

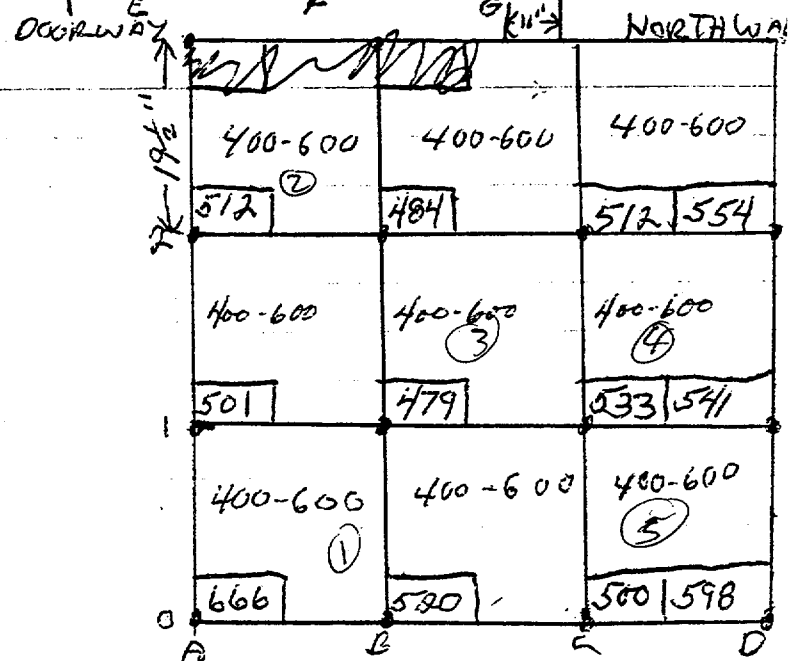
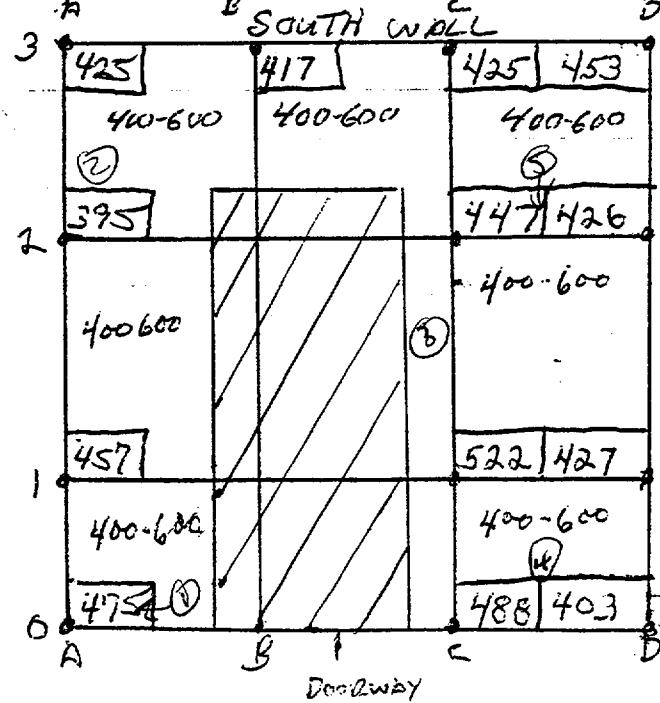




TAYLOR  
DATE PT.  
43.654 124497  
2221# 84458  
BL66M 329  
EFF. 25%

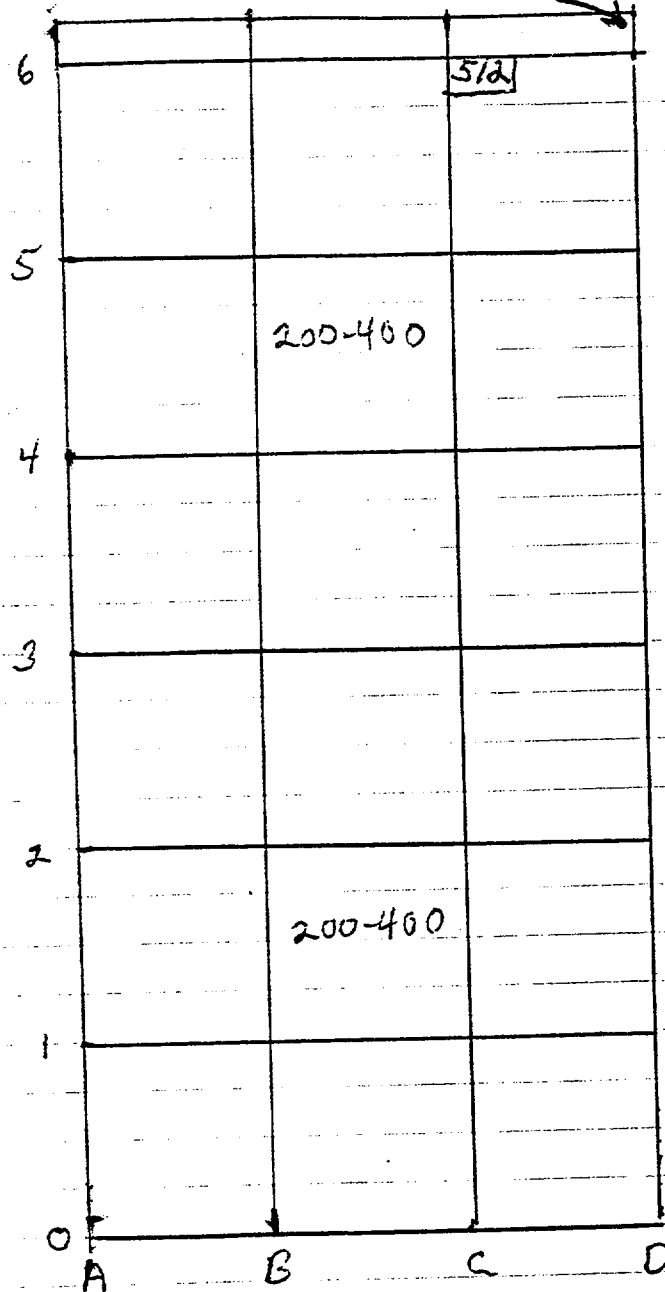


SILVIO  
SCAN  
142.522  
138347  
334  
25%



FRK MURKIN  
LOCKER ROOM CEILING

\* Beam 21.2K-2.2K



6-14-99

TAYLOR  
DATA PT.

SILVIO  
SCAN

2221#

84458

138347

43-68#

124497

124522

BKG CPM

329

334

EFF.

25%

25%

**Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Data Sheet**

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/15/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Shower/Wash/Rest Rooms, Floor

Count times: 1 minute

**Instrument Efficiency and Contamination Threshold Determination**

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	<sup>99</sup> Tc	23,400	14.2	535	961

**Survey Data**

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	551	302	2122	ledge between locker room and shower
2	591	342	2403	ledge between locker room and shower
3	502	253	1778	east wall of locker/shower doorway
4	512	263	1848	shower floor
5	515	266	1869	shower floor
6	525	276	1939	shower floor
7	510	261	1834	shower floor
8	530	281	1975	shower floor
9	275	26	183	<MDA stoop between shower & washroom
10	527	278	1954	washroom floor
11	535	286	2010	washroom floor
12	516	267	1876	washroom floor
13	534	285	2003	washroom floor
14	509	260	1827	restroom floor
15	530	281	1975	restroom floor
16	505	256	1799	restroom floor
17				
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19				
20				Note: elevated background due to ceramic tile
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34				
35				

Signature: Steve C. Boettner

Date: 12/29/00



# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/15/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Shower/Wash/Rest Rooms, Walls

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	<sup>99</sup> Tc	23,400	14.2	535	961

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	511	262	1841	shower room west wall
2	497	248	1743	shower room west wall
3	469	220	1546	shower room west wall
4	456	207	1455	shower room west wall
5	492	243	1708	shower room north wall
6	452	203	1426	shower room north wall
7	457	208	1462	shower room north wall
8	456	207	1455	shower room north wall
9	611	362	2544	shower room north wall
10	471	222	1560	shower room east wall
11	456	207	1455	shower room east wall
12	466	217	1525	shower room east wall
13	419	170	1195	shower room east wall
14	453	204	1434	shower room south wall
15	278	29	204	<MDA shower room south wall
16	462	213	1497	shower room south wall
17	504	255	1792	shower room south wall
18	443	194	1363	shower room south wall
19	455	206	1448	wash room south wall
20	480	231	1623	wash room south wall
21	450	201	1412	wash room south wall
22	433	184	1293	wash room south wall
23	447	198	1391	wash room north wall
24	468	219	1539	wash room north wall
25	468	219	1539	wash room north wall
26	289	40	281	<MDA wash room north wall
27	497	248	1743	wash room west wall
28	441	192	1349	wash room west wall
29	487	238	1672	wash room west wall
30	518	269	1890	wash room east wall
31	456	207	1455	wash room east wall
32	498	249	1750	wash room east wall
33	501	252	1771	wash room east wall
34	415	166	1166	restroom south wall
35	416	167	1174	restroom south wall

continued on page 2

Signature: Steven A. Bostrom

Date: 12/29/00

# Survey Data Continued

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments	
36	488	239	1679		restroom south wall
37	456	207	1455		restroom west wall
38	439	190	1335		restroom west wall
39	480	231	1623		restroom west wall
40	503	254	1785		restroom north wall
41	478	229	1609		restroom north wall
42	420	171	1202		restroom north wall
43	431	182	1279		restroom north wall
44	472	223	1567		restroom east wall
45	440	191	1342		restroom east wall
46	471	222	1560		restroom east wall
47	231	-18	-126	<MDA <BKGND	restroom stall, partition 1 south
48	257	8	56	<MDA	restroom stall, partition 1 north
49	252	3	21	<MDA	restroom stall, partition 2 south
50	253	4	28	<MDA	restroom stall, partition 2 north
51	250	1	7	<MDA	restroom stall, door 1
52	249	0	0	<MDA	restroom stall face at floor
53					
54					
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56					
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90					

7/15/99 Chaswick (W) Inst. Efficiency Ckt.

Ludlum 2241-2 SN 137245

Ludlum 44-116 SN 147559

<u>Rgnd</u>	<u>Gross</u>	<u>Net</u>
223	3567	3330
251	3538	
<u>272</u>	<u>3677</u>	
249	3579	

$$Eff = \frac{3336 \text{ cpm}}{23,400 \text{ dpm}} = 14.2\%$$



# PRF ADMIN BATH & SHOWER ROOM

## B-3 NORTH FLOOR

6-17-99

TAYLOR SILVIO

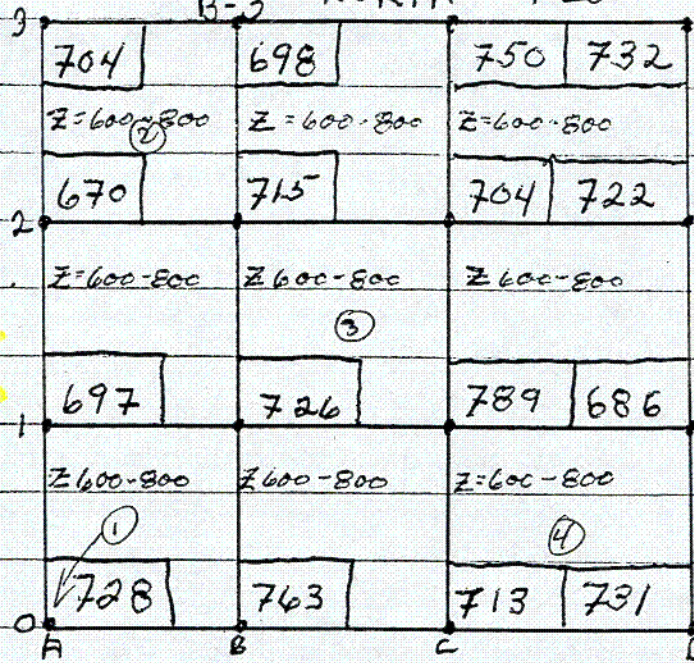
DATA PT SCAN

2221# 84458 13E347

43-68# 124497 142522

BK6CPM 303 301

EFF. 25% 25%

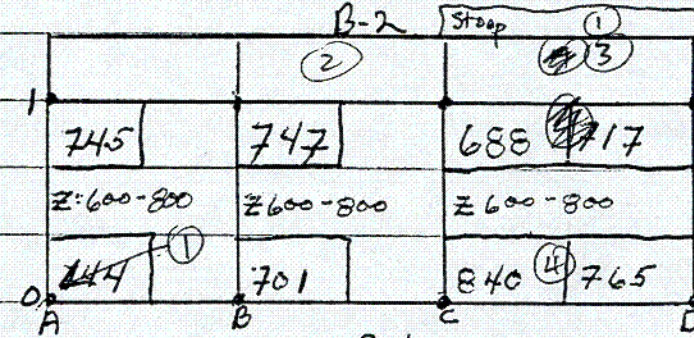


Ledge/Step between locker & shower  
557 (2) 591  
E. Wall 502

B-3 N. Floor

- ① 512
- ② 515
- ③ 525
- ④ 510
- ⑤ 530

B<sub>3</sub> 10-13  
mR/hr  
① 1 m

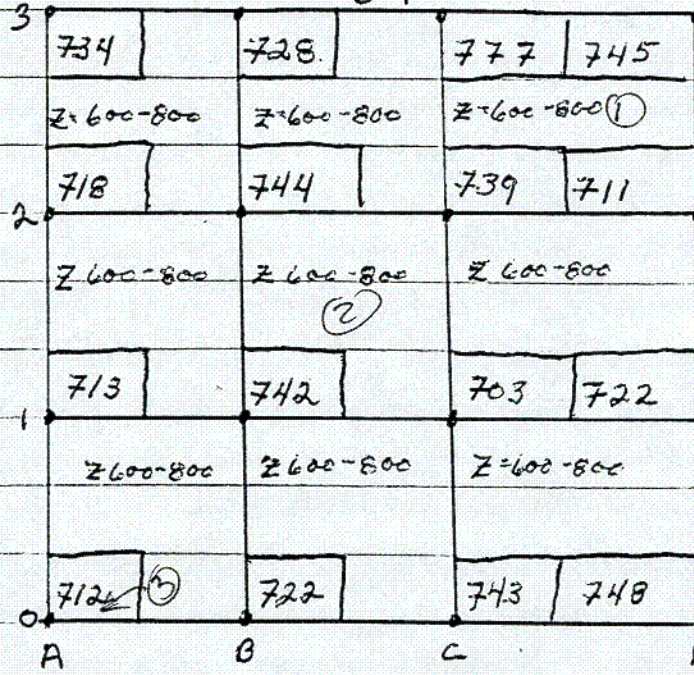


B<sub>2</sub>  
1 m high mR/hr  
10-15 mR/hr

→ Stoop ① 275

- ① 527
- ② 535
- ③ 516
- ④ 534

## B-1



B<sub>1</sub>  
1 m mR readings  
10-12 mR/hr

- ① 509
- ② 530
- ③ 505

South

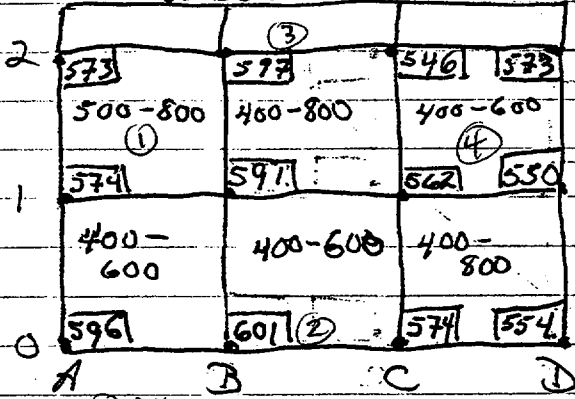


\*Note - higher bkgd due to ceramic tile

MR readings - 10 to 15 mR/hr

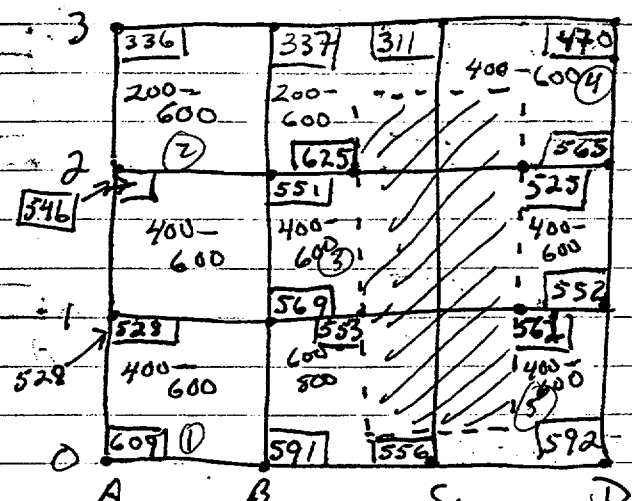
# SHOWER Room

## West Wall



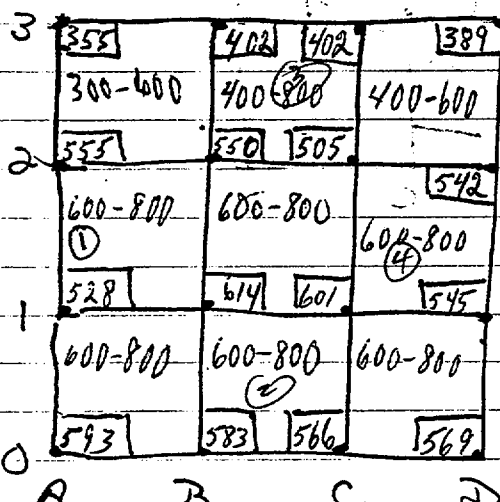
- ① 511
- ② 497
- ③ 469
- ④ 456

## North Wall

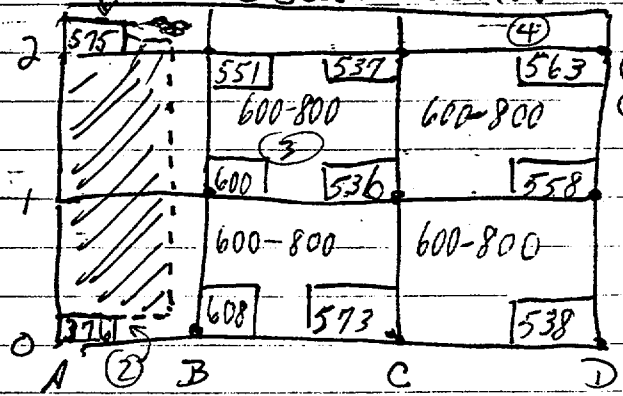


- ① 492
- ② 452
- ③ 457
- ④ 456
- ⑤ 611

## EAST Wall



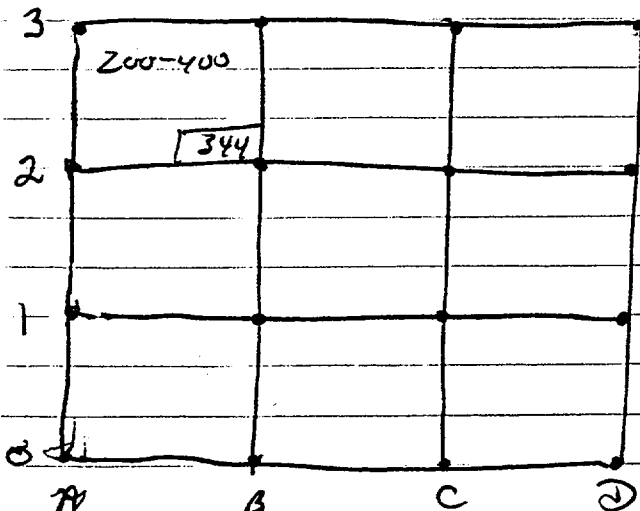
## South Wall



- ① 453
- ② 278
- ③ 462
- ④ 504
- ⑤ 443

DIAGONAL LINES DENOTES PASSWAY

## FLOOR CEILING



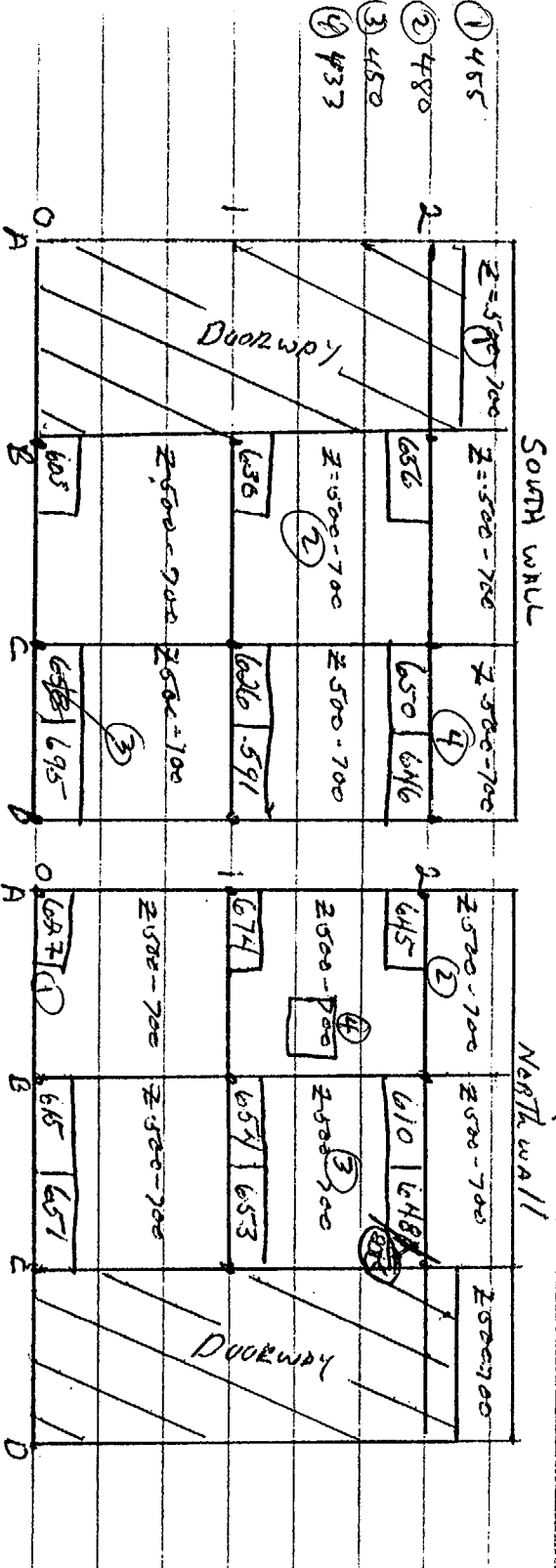
6-17-99 Shank  
Model 2221  
S.N. 154207  
Probe H3-68  
S.N. PR 159019  
bkgd 265  
eff 25%

# PRF Admin BATH & SHOWER

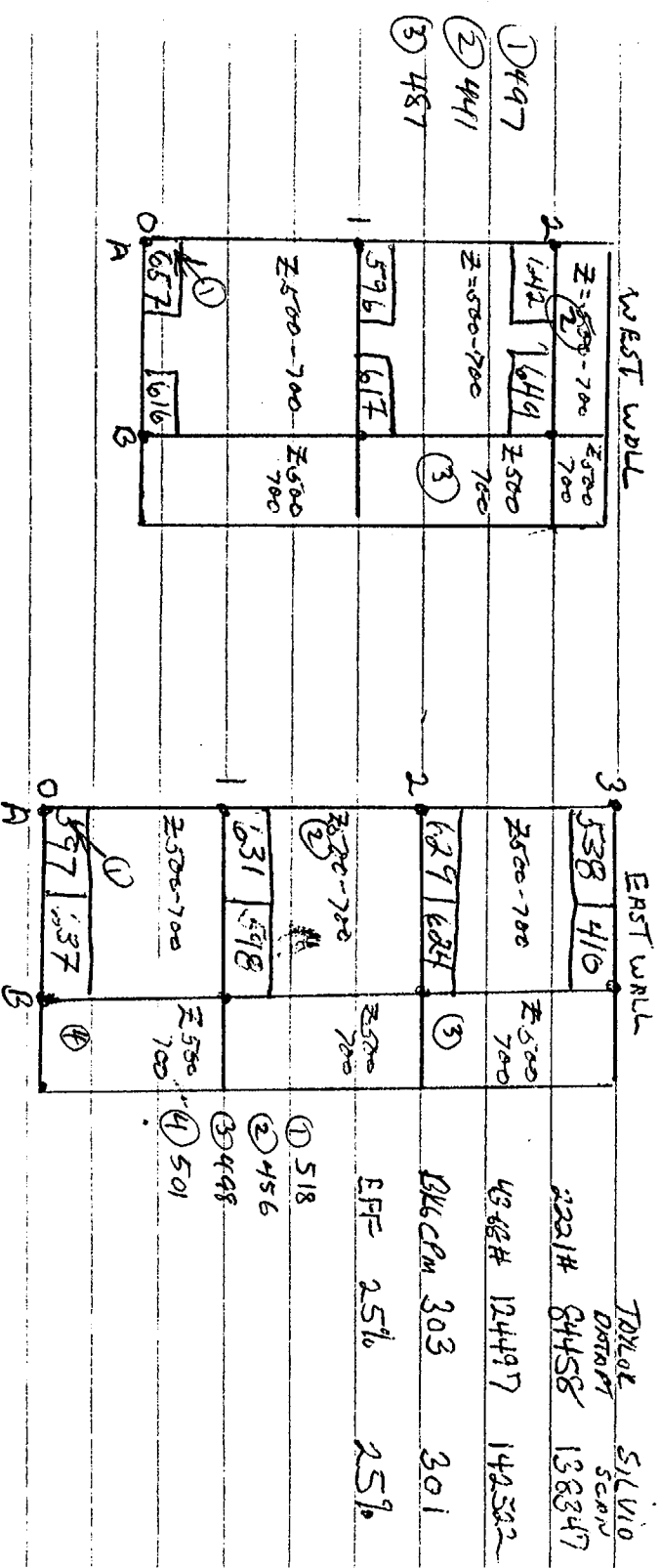
\*4-top of towel dispenser

B-2

- ① 447
- ② 468
- ③ 468
- \*④ 259



6-17.99



# B-1 SOUTH WALL

① 415	Z=400-600	Z=400-600	Z=400-600
② 416	347	645	646   627
③ 488	Z=400-600	Z=400-600	Z=400-600
	353	601	640   626
	Z=400-600	Z=500-700	Z=500-700
	407	653	650   619
	A	B	C D

# B-1 WEST WALL

Z=500-700	Z=400-600	Z=400-600
660	513	600   659
Z=500-700	Z=400-600	Z=400-600
634	595	648   602
Z=500-700	Z=400-600	Z=400-600
652	626	654   599
A	B	C D

- ① 456
- ② 439
- ③ 480

6-17-99

Taylor - Silvio

DATA - SCAN

# 2221-84458-138347

# 45-68-124497-142522

# B-1 NORTH WALL

Z=400-600	Z=400-600	Z=400-600
609	608   594	
Z=400-600	Z=400-600	DOOR
655	636   689	
Z=500-700	Z=400-600	OPENING
652	660   662	
A	B	C D

- ① 503
- ② 478
- ③ 420
- ④ 431

# B-1 EAST WALL

Z=200-400	Z=200-400	Z=400-600
398	382	357   406
Z=400-600	Z=400-600	Z=400-600
593	642	623   605
Z=500-700	Z=500-700	Z=500-700
653	625	633   633
Z=500-700	Z=500-700	Z=500-700
664	678	633   598
A	B	C D

BKg.-303-301

EFF. 25% - 25%

- ① 472
- ② 440
- ③ 471

PRF. Admin BATH + SHOWER ROOM WALLS

PRF ADMIN BATHROOM STALLS

6-17-99

PARTITION #1 @

TECH: TAYLOR

DATA POINT & SCAN

SAME INSTRUMENT

2221# 84458

43-68# 124497

BK6CPM 303

EFF. 25%

SOUTH

231

347

Z = 200-400

NORTH

257

342

Z = 300-400

PARTITION #2

SOUTH

252

326

Z = 200-400

NORTH

253

398

Z = 300-400

Door #1

250

370

Z = 300-400

Door #2

351

Z = 300-400

Stall face at floor  
249



# Pennsylvania DEP Bureau of Radiation Protection Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/15/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - H.P. control area, floor and walls

Count times: 1 minute

## Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	<sup>99</sup> Tc	23,400	14.2	535	961

## Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	288	39	274	<MDA HP control area floor
2	321	72	506	<MDA HP control area floor
3	296	47	330	<MDA HP control area floor
4	328	79	555	HP control area floor
5	365	116	815	HP control area floor
6	268	19	134	<MDA HP control area west wall
7	208	-41	-288	<MDA <BKGND HP control area west wall
8	236	-13	-91	<MDA <BKGND HP control area west wall
9	227	-22	-155	<MDA <BKGND HP control area west wall
10	306	57	401	<MDA HP control area north wall
11	278	29	204	<MDA HP control area north wall
12	278	29	204	<MDA HP control area north wall
13	277	28	197	<MDA HP control area east wall
14	264	15	105	<MDA HP control area east wall
15	262	13	91	<MDA HP control area east wall
16	308	59	415	<MDA HP control area east wall
17	277	28	197	<MDA HP control area south wall
18	207	-42	-295	<MDA <BKGND HP control area south wall
19	289	40	281	<MDA HP control area south wall
20	260	11	77	<MDA HP control area south wall
21	289	40	281	<MDA HP control area south wall
22				
23				
24				
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30				
31				
32				
33				
34				
35				

Signature: Steven A. Bosgumie

Date: 12/29/00

7/15/99 Chaswick @ Inst. Efficiency CLK.

Ludlum 2241-2 SN 137245  
Ludlum 44-116 SN 147859

<u>272</u>	249
251	3579
223	3533
<u>3567</u>	3330
Gross	Net

$$Eff = \frac{3336 \text{ cpm}}{23,400 \text{ dpm}} = 14.2\%$$

6-16-29  
 Shank MODEL 2001  
 S.N. 154207  
 Model 43-68  
 S.N. 154207  
 bkgd. 267  
 eff 25%

6-17-29  
 Shank  
 MODEL 2001  
 S.N. 154207  
 Model 43-68  
 S.N. 154207  
 bkgd 265  
 eff. 25%

~~W.P.~~  
 H.P. ~~Control~~  
 Admin. Bldg.

Area

N ↑

WEST WALL  
 \* window

3	301	302	235	247
	220-300	280-340	220-300	240-320
2	345	280	254	251
	200-400	200-400	200-400	200-400
1	280	284	251	262
0	267	292	269	293
	200-400	200-400	200-400	200-400
	A	B	C	D
	0	1	2	3

NORTH WALL

2	328	322	365
	200-400	300-440	260-440
1	327	352	335
	200-400	300-400	260-440
0	327	327	328
	200-400	300-400	260-440
	A	B	C
	0	1	2

DOOR

EAST WALL

3	305	304	319
	300-340	300-360	260-380
2	318	307	288
	260-340	320-340	240-300
1	301	284	316
	280-380	260-340	260-320
0	315	296	299
	200-400	200-400	200-400
	A	B	C
	0	1	2

SOUTH WALL

3	316	292	292	298	303
	200-300	280-340	280-340	240-400	312
2	303	297	297	297	303
	200-340	260-320	260-320	240-360	312
1	244	250	279	279	279
	200-340	260-320	260-320	240-360	279
0	279	270	270	270	270
	200-340	260-320	260-320	240-360	270
	A	B	C	D	E
	0	1	2	3	4

4	372	361	354	354	354
	300-500	340-440	320-420	360-800	360-800
3	407	362	371	371	371
	300-440	300-480	300-440	340-480	340-480
2	426	366	362	362	362
	300-440	340-440	300-480	300-600	300-600
1	435	379	370	370	370
	300-440	300-480	360-460	300-600	300-600
0	449	408	449	449	449
	300-440	300-480	360-460	300-600	300-600
	A	B	C	D	E
	0	1	2	3	4

(edge)

Top of shower room south wall  
 scan E=450-500

Data points top of wall

Column B - 433 cpm

" C - 438 cpm

" D - 446 cpm

" E - 566 cpm

Floor + ceiling 6-17-29



H.P. Control Area  
Admin. Bldg.

CEILING 6-17-99



1m mR readings  
9-14 mR/hr.

6-16-99  
Model 2221  
S.N. 154207  
Probe 43-68  
S.N. PR 159019  
bkgd. 267  
eff. 25%

6-17-99  
Model 2221  
S.N. 154207  
Probe: 43-68  
S.N. PR 159019  
bkgd. ~~267~~ 265  
eff. 25%

Floor	W. Wall	N. Wall	E. Wall	S. Wall
① 288	① 268	① 306	① 277	① 277
② 321	② 208	② 278	② 264	② 207
③ 296	③ 236	③ 278	③ 262	③ 289
④ 328	④ 227		④ 308	④ 260
⑤ 365				⑤ 289



# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/15/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Breezeway Area 1, Walls and Floor

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	<sup>99</sup> Tc	23,400	14.2	535	961

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	288	39	274	<MDA Breezeway Area 1 north wall
2	327	78	548	Breezeway Area 1 north wall
3	344	95	668	Breezeway Area 1 south wall
4	331	82	576	Breezeway Area 1 south wall
5	376	127	892	Breezeway Area 1 west wall
6	350	101	710	Breezeway Area 1 west wall
7	309	60	422	<MDA Breezeway Area 1 west wall
8	311	62	436	<MDA Breezeway Area 1 west wall
9	384	135	949	Breezeway Area 1 west wall
10	317	68	478	<MDA Breezeway Area 1 east wall
11	380	131	921	Breezeway Area 1 east wall
12	304	55	386	<MDA Breezeway Area 1 east wall
13	329	80	562	Breezeway Area 1 east wall
14	322	73	513	<MDA Breezeway Area 1 floor
15	614	365	2565	Breezeway Area 1 floor
16	521	272	1911	Breezeway Area 1 floor
17				
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32				
33				
34				
35				

Signature: Steven A. Bastian

Date: 12/29/00

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/15/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Breezeway Area 2, Walls and Floor

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	<sup>99</sup> Tc	23,400	14.2	535	961

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	570	321	2256	Admin Breezeway Area 2 floor
2	572	323	2270	Admin Breezeway Area 2 floor
3	504	255	1792	Admin Breezeway Area 2 floor
4	361	112	787	Admin breezeway Area 2 south wall
5	447	198	1391	Admin breezeway Area 2 south wall
6	380	131	921	Admin breezeway Area 2 south wall
7	447	198	1391	Admin Breezeway area 2 west wall
8	335	86	604	Admin Breezeway area 2 west wall
9	245	-4	-28	<MDA <BKGND Admin breezeway area 2 east wall
10	307	58	408	<MDA Admin breezeway area 2 east wall
11	389	140	984	Admin breezeway area 2 north wall
12	358	109	766	Admin breezeway area 2 north wall
13				
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33				
34				
35				

Signature: *Steven A. Bostrom*

Date: 12/29/00

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/15/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Breezeway Area 3, Walls and Floor

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	<sup>99</sup> Tc	23,400	14.2	535	961

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	328	79	555	Admin breezeway area 3 floor
2	324	75	527	<MDA Admin breezeway area 3 floor
3	279	30	211	<MDA Admin breezeway area 3 floor
4	331	82	576	Threshold from hall
5	279	30	211	<MDA Admin breezeway area 3 north wall
6	317	68	478	<MDA Admin breezeway area 3 north wall
7	334	85	597	Admin breezeway area 3 north wall
8	324	75	527	<MDA Admin breezeway area 3 north wall
9	226	-23	-162	<MDA <BKGND Admin breezeway area 3 east wall
10	216	-33	-232	<MDA <BKGND Admin breezeway area 3 east wall
11	228	-21	-148	<MDA <BKGND Admin breezeway area 3 east wall
12	317	68	478	<MDA Admin breezeway area 3 south wall
13	299	50	351	<MDA Admin breezeway area 3 south wall
14	312	63	443	<MDA Admin breezeway area 3 south wall
15	314	65	457	<MDA Admin breezeway area 3 west wall
16	310	61	429	<MDA Admin breezeway area 3 west wall
17				
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31				
32				
33				
34				
35				

Signature: *Steven G. Bastian*

Date: 12/29/00

7/15/99 Chaswick (2) Inst. Efficiency Ckt.

Ludlum 2249-2 SN 137245

Ludlum 44-116 SN 147859

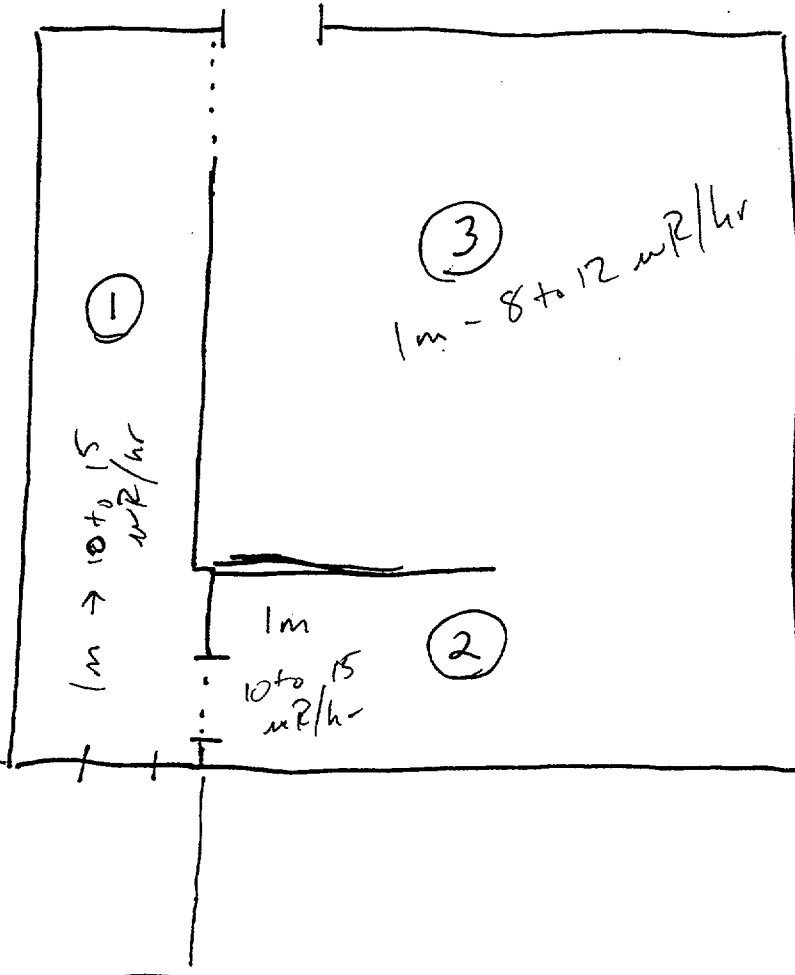
<u>Read</u>	<u>Gross</u>	<u>Net</u>
223	3567	3330
251	3538	
<u>272</u>	<u>3677</u>	
249	3579	

$$Eff = \frac{3336 \text{ cpm}}{23,400 \text{ dpm}} = 14.2\%$$



# PRF ADMIN BREEZWAY OVERVIEW BREEZWAY

↑  
N



## Area 3

N. Wall	E. Wall	S. Wall	W. Wall
① 279	① 226	① 317	① 314
② 317	② 216	② 299	② 310
③ 334	③ 228	③ 312	
④ 324			
Floor			
	① 328		
	② 324		
	③ 279		
Threshold from wall →	④ 331		

## Area 1

North Wall	S. Wall
① 281	① 344
② 327	② 331
W. Wall	E. Wall
① 376	① 317
② 350	② 380
③ 309	③ 309
④ 311	④ 329
⑤ 384	
Floor	
① 322	③ 521
② 614	

# PRF ADMIN BREEZWAY

①

## West Hall Way

West Wall					
2	478	483	507	471	488 459
	400-600	400-600	400-600	400-600	400-600
1	453	461	470	446	450 456
	400-600	400-600	400-600	400-600	400-600
0	468	457	457	457	582 455
	A	B	C	D	E F

Partial Grids

FLOOR		CEILING	
5	664 1570	NS	
	600-800	↑	
4	980 1804	4	
	600-800		
3	818 1649	3	
	600-800		
2	713 1694	2	
	600-800		400-600
1	673 1794	1	394
	600-800		
0	567 1613	0	
	A B		A B

## EAST WALL ①

2		482	455	428 434
		400-600	400-600	
1		429	432	462 438
		400-600	400-600	600-800
0		456	449	459 638
	A B	C D	E F	DOOR

← DOORWAY →

## South Wall

2	348	442
	400-600	
1	371	1447
	400-600	
0	454	1469
	A	B

Doorway

## North Wall (to door)

2	390	471
	400-600	
1	399	470
	400-600	
0	369	326
	A	B

DATE 6-23-99

Taylor - Silvio

DATA - SCAR

2221-84458 - 138347

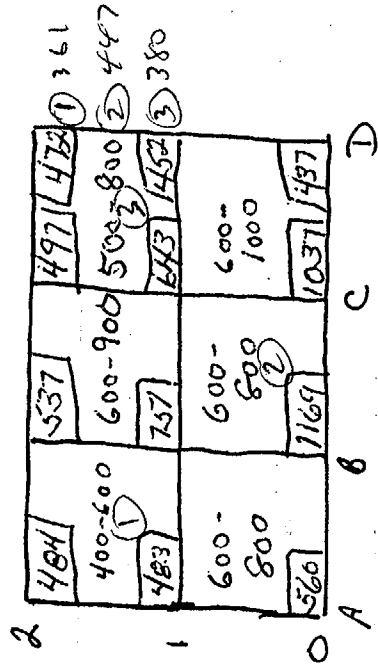
4368-124497 - 142522

BK 309 - 299

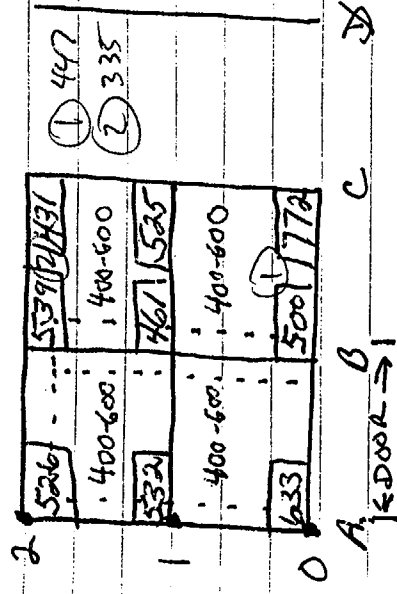
Fff, 25% - 25%

(2)

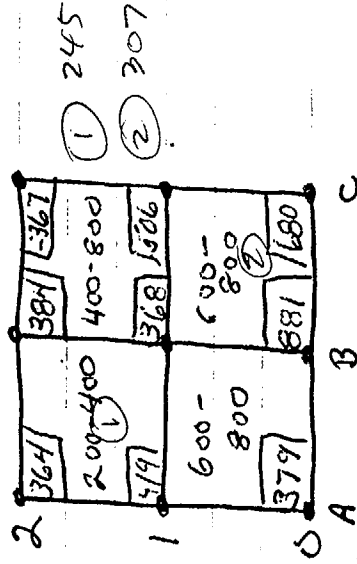
# South Wall



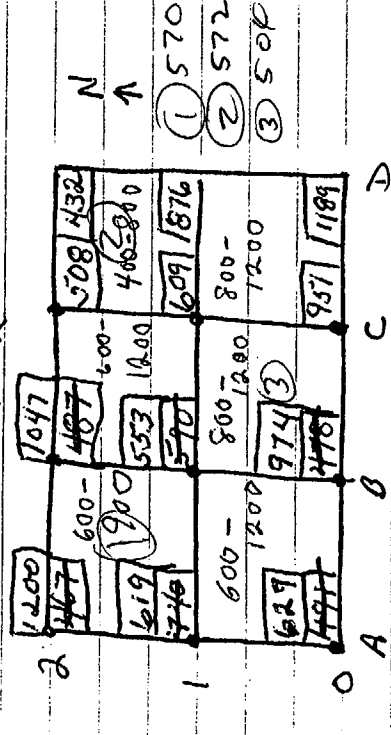
# West Wall



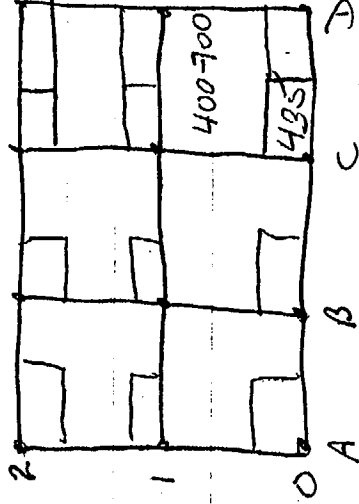
# EAST WALL (to Step off 1.26)



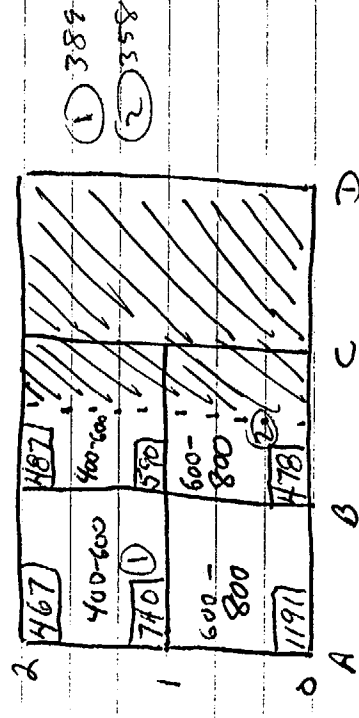
# Floor



# Ceiling



# North Wall



6-23-99

TAYLOR

SILVIO

1-DOORWAY

DATA PT.

SCAN

2221# 84458

138347

43-68# 124497

142522

BKG CPM 309

299

EFF. 25%

25%

R. SHANK 6-22-89

6-21-89  
MODEL 2221  
S.N. 154207  
PRIME 43-68  
S.N. PR159019  
bkgd 252 cpm  
eff. 25%

MODEL 2221  
S.N. 154207  
PRIME 43-68  
S.N. PR159019  
bkgd 246 cpm  
eff. 25%

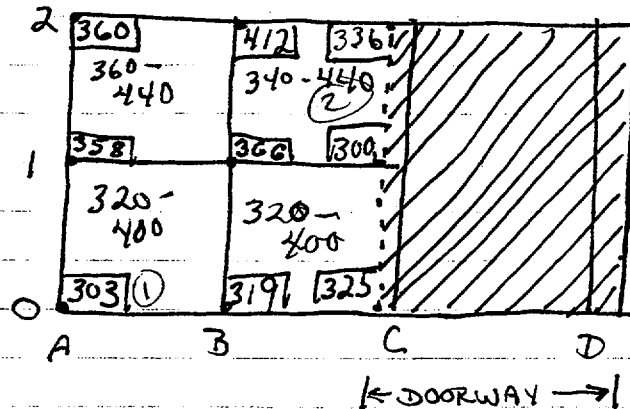
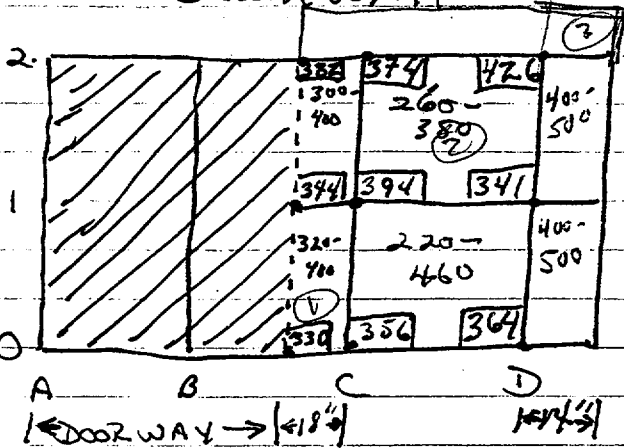
PRF ADMIN  
SOUTH, WEST, NORTH WALL ONLY  
BREEZWAY

(3)

6-21-89

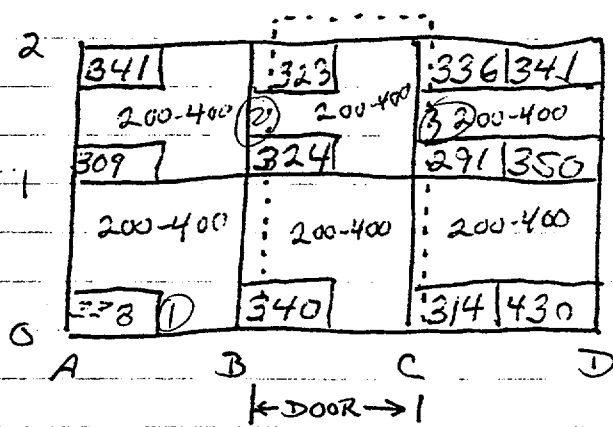
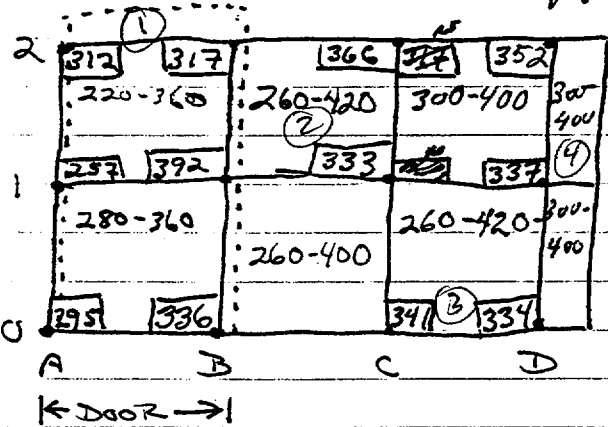
South Wall

West Wall



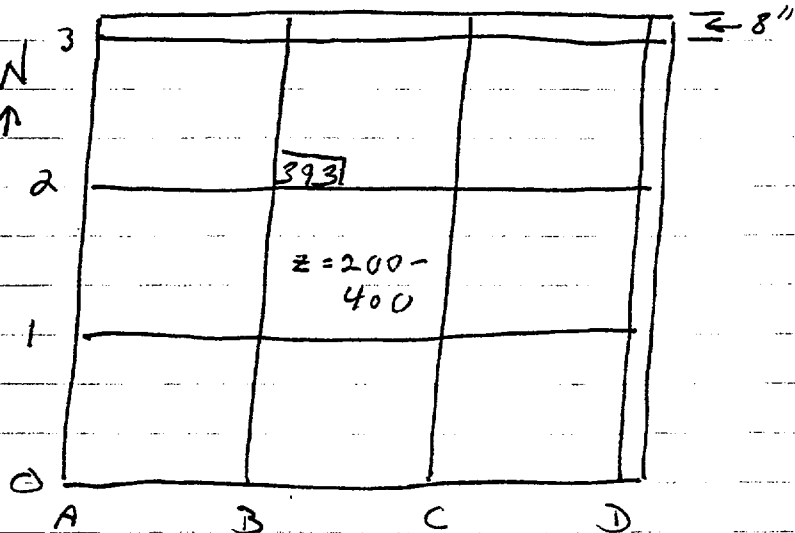
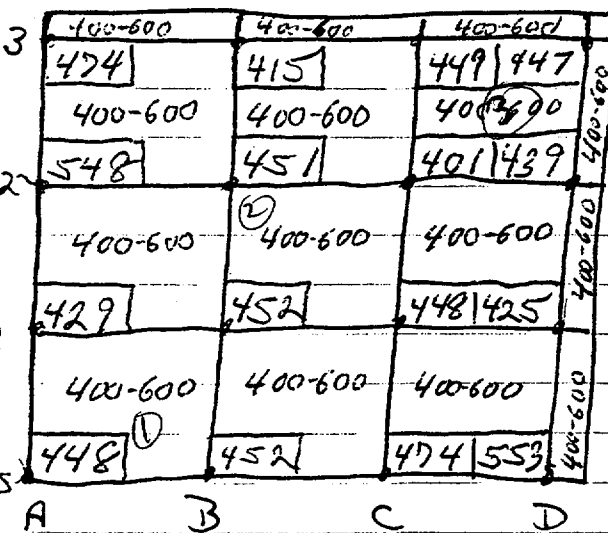
North Wall

East Wall



Floor

Ceiling



EAST WALL

FLOOR

CEILING

2221#

43-68#

TAYLOR

DATA PT

84458

124497

SILVIO

SCAN

154207

159019

16"

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/15/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Breezeway west-east hall, floor

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	<sup>99</sup> Tc	23,400	14.2	535	961

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	418	169	1188	
2	580	331	2326	
3	664	415	2916	
4	777	528	3710	
5	981	732	<b>5144</b>	2nd step, unscabbled meets hotspot criteria
6	889	640	4497	2nd step scabbled & adjacent to survey point 5
7	474	225	1581	
8	766	517	3633	
9	1110	861	<b>6050</b>	2nd step, 2nd scabbled reading meets hotspot criteria
10	1023	774	<b>5439</b>	recount of survey point 5
11	819	570	4005	
12	783	534	3752	
13	336	87	611	
14	551	302	2122	
15	494	245	1722	
16				
17				
18				
19				Survey points with elevated counts met hotspot criteria. Associated demo
20				debris disposed of as non-radwaste
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				

Signature: \_\_\_\_\_

*Steven G. Boettger*

Date: \_\_\_\_\_

12/29/00

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/15/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Breezeway west-east hall, walls

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	<sup>99</sup> Tc	23,400	14.2	535	961

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	356	107	752	north wall
2	386	137	963	north wall
3	316	67	471	<MDA north wall
4	244	-5	-35	<MDA <BKGND north wall
5	276	27	190	<MDA north wall
6	340	91	639	south wall
7	257	8	56	<MDA south wall
8	270	21	148	<MDA south wall
9	339	90	632	south wall
10	371	122	857	east wall
11	310	61	429	<MDA east wall
12	357	108	759	east wall
13	347	98	689	west wall
14				
15				
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34				
35				

Signature: Steve A. Boettner

Date: 12/29/00

7/5/79 Cheswick ② Inst. Efficiency Ckt.

Ludlum 2244-2 SN 137245  
Ludlum 44-1K SN 147559

<u>Read</u>	<u>Gross</u>	<u>Net</u>
223	3567	3330
251	3518	
<u>272</u>	<u>3677</u>	
249	3579	

$$Eff = \frac{3330 \text{ cpm}}{23,400 \text{ dpm}} = 14.2\%$$



THIS IS THE  
WEST-EAST HALL  
CONNECTING TO  
BUILDING 12.

1m  $\mu$ R readings - 12 to 25  $\mu$ P/hr  
(25  $\omega$  W.Wall)

Admin BREEZWAY

N $\uparrow$  FLOOR DATE 6-21-99

1st Step unscabbled	2	702	1082	1071	1223	757	657	763	823	1110
1st Step scabbled		900-1000	800-1200	800-1200	1-2K	1229	700-900	700-900		1110
2nd Step unscabbled	1	899	819	778	901	1857	777	581	610	1023
2nd Step scabbled		700-1300	700-1000	800-1200	900-1900	700-1200	700-900	700-900		819
		1257	854	927	990	1091	744	766	656	777
		A	B	C	D	E	F	G	H	777
										766

(14) edges to  
expansion joint  
(15) straddling  
expansion joint

(13) straddling expansion joint

\* EXPANSION JOINT

(9) 2nd Step  
2nd scabbled reading

(10) notch of (5)

(11) 2nd step scabbled

(12) edges to expansion joint

NORTH WALL

2	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	13 1/4"
	375	382	360	357	443	452	405	438
	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	
1	362	439	372	356	446	467	337	423
	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	
	400	476	400	396	446	571	412	434
	A	B	C	D	E	F	G	H
					Z 400-500	Z 400-500	Z 400-500	16 3/8"

SOUTH WALL DATE 6-21-99

2	Z 400-500	Z 400-500	Z 400-500	Z	Z	Z	Z	13 1/4"
	424	395	472	385	390	355	378	497
	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	
1	447	359	415	336	343	367	379	463
	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	Z 400-500	
	455	421	482	392	423	477	523	572
	A	B	C	D	E	F	G	H

Taylor, Silvio

6/21/99

DATE 6-21-99

222# 84458

436# 124497

23

62-2-379

• <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>

\_\_\_\_\_

\_\_\_\_\_

— 10 —

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\_\_\_\_\_

1000

\_\_\_\_\_

○

[illegible]

Figure 4. (continued)

5-2775 #166

100-443887-100

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# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/15/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Supervisor's Office/Conf. Room, floor & walls

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	<sup>99</sup> Tc	23,400	14.2	535	961

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	397	148	1040	floor
2	367	118	829	floor
3	348	99	696	floor
4	338	89	625	floor
5	383	134	942	floor
6	362	113	794	floor
7	325	76	534	<MDA floor
8	337	88	618	floor
9	334	85	597	floor
10	343	94	661	floor
11	391	142	998	floor
12	362	113	794	floor
13	382	133	935	floor
14	396	147	1033	floor
15	341	92	646	floor
16	380	131	921	floor
17	364	115	808	floor
18	368	119	836	floor
19	411	162	1138	floor
20	365	116	815	floor
21	408	159	1117	floor
22	350	101	710	floor
23	350	101	710	floor
24	340	91	639	south wall
25	340	91	639	south wall
26	314	65	457	<MDA north wall
27	297	48	337	<MDA north wall
28	353	104	731	west wall
29	347	98	689	west wall
30	312	63	443	<MDA west wall
31	322	73	513	<MDA west wall
32	308	59	415	<MDA east wall
33	254	5	35	<MDA east wall
34	317	68	478	<MDA east wall
35	314	65	457	<MDA east wall

Signature: Steven A. Boogerman

Date: 12/29/00

7/15/99 Cheswick @ Inst. Efficiency CLK.

Lullum 224-2 SN 137245  
Lullum 44-1K SN 147859

<u>223</u>	251	272	249
3567	3513	3637	3579
3330			

$$Eff = \frac{3336 \text{ cpm}}{23,400 \text{ dpm}} = 14.2\%$$



# PRF Admin SUPERVISORS OFFICE & conf. Room FLOOR

6-14-99

TAYLOR SILVIO  
DATA SCAN 11

2221#84458 136347

43-68#124497 142522

BK6CPM350 339

- ① 397 ⑪ 391
- ② 367 ⑫ 362
- ③ 348 ⑬ 382
- ④ 338 ⑭ 396
- ⑤ 383 ⑮ 341
- ⑥ 362 ⑯ 380
- ⑦ 325 ⑰ 369
- ⑧ 337 ⑱ 368
- ⑨ 334 ⑲ 411
- ⑩ 343 ⑳ 365
- ⑪ 391 ㉑ 408
- ⑫ 362 ㉒ 350

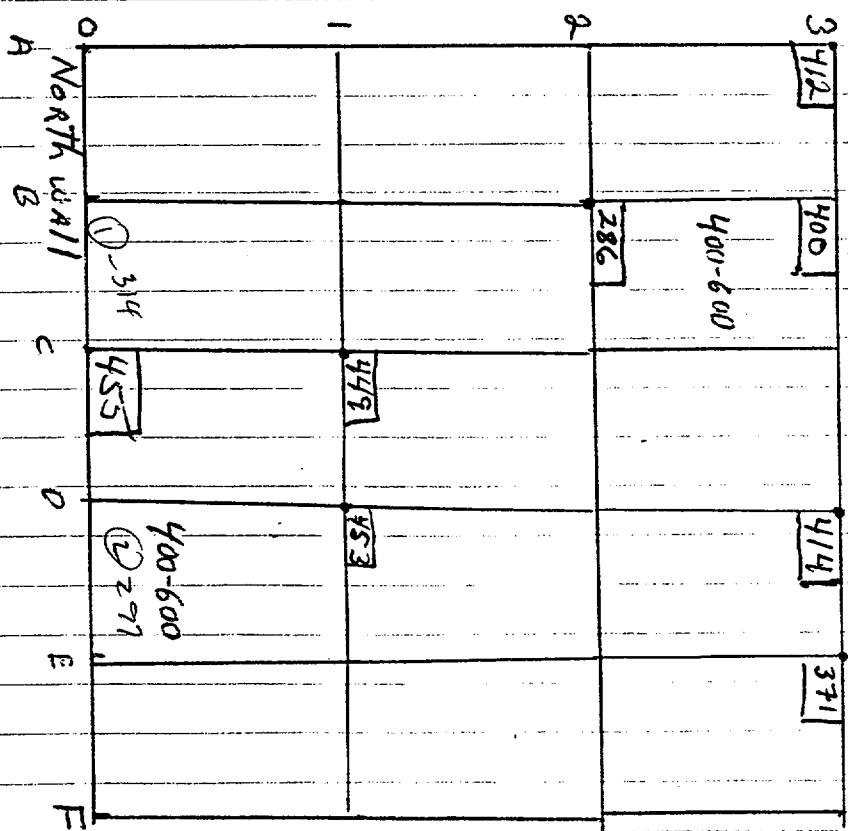
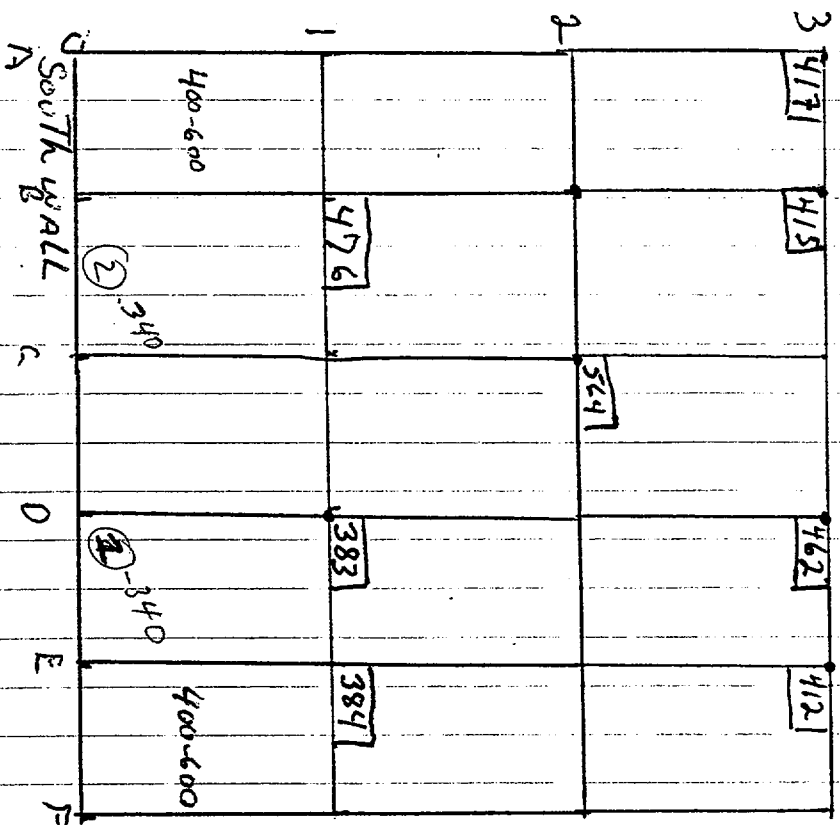
1200 on bottom  
WALL Frame  
(23) 350

1 m WR readings  
8 to 12 WR/hr.

	A	B	C	D	E	F
10	400-600 485 ⑥ 400-600 522	400-600 480 400-600 501	400-600 505 400-600 550	400-600 533 400-600 505	400-600 490/409 400-600 488/409	
9	400-600 521	400-600 522 ⑧	400-600 528	400-600 509	400-600 507/422	
8	400-600 576	400-600 505	400-600 498 ⑭	400-600 540 ⑫	400-600 533/461	
7	400-600 469	400-600 530	400-600 541	400-600 514	400-600 498/489	
6	400-600 500 ⑪	400-600 524 ⑨	400-600 487	400-600 503	400-600 547/446 ㉒	8100 ON E. WALL
5	400-600 555	400-600 522	400-600 501	400-600 529 ⑧	400-600 533/379	
4	400-600 541	400-600 508	400-600 513 ⑤	400-600 494	400-600 464/415	
3	400-600 534 ②	400-600 509 ⑩	400-600 511	400-600 547	400-600 532/496	
2	400-600 557	400-600 541	400-600 509	400-600 521 ⑨	400-600 511/418	
1	400-600 550	400-600 542	400-600 519 ③	400-600 495	400-600 537/528	
0	400-600 543 ①	400-600 561 ⑪	400-600 534	400-600 541	400-600 556/530 ㉑	

C06



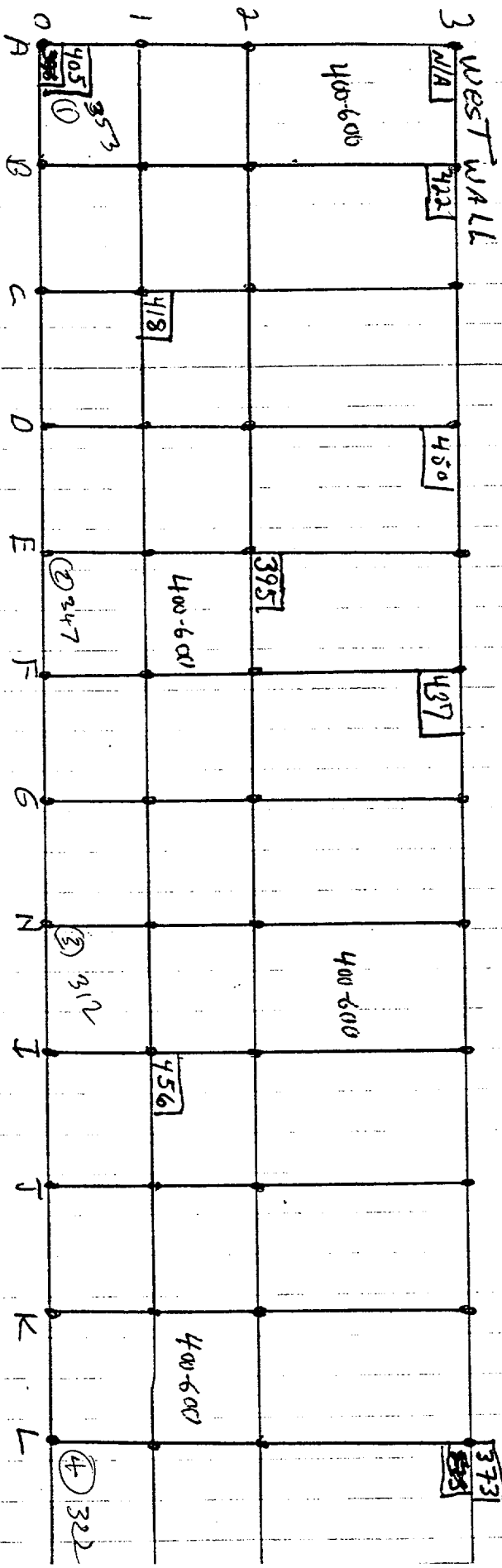


# PRF-ADMIN

Supervisors Offices + conf. Room

1

DATE - 6-14-99  
 TEL - Taylor - Silvio  
 43-68 - 124497 - 124622  
 2221 - 84458 - 138347  
 846 - 329 - 334  
 EFF - 25%





# Pennsylvania DEP Bureau of Radiation Protection Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/15/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: PRF Admin. Bldg. - Main hallway, floor and walls

Count times: 1 minute

## Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
249	3579	3330	<sup>99</sup> Tc	23,400	14.2	535	961

## Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	302	53	372	<MDA floor
2	295	46	323	<MDA floor
3	283	34	239	<MDA floor
4	298	49	344	<MDA floor
5	321	72	506	<MDA floor
6	297	48	337	<MDA floor
7	287	38	267	<MDA floor
8	297	48	337	<MDA floor
9	301	52	365	<MDA floor
10	264	15	105	<MDA floor
11	435	186	1307	floor
12	423	174	1223	floor
13	311	62	436	<MDA floor
14	339	90	632	floor
15	269	20	141	<MDA floor
16	282	33	232	<MDA west wall
17	288	39	274	<MDA west wall
18	298	49	344	<MDA west wall
19	291	42	295	<MDA west wall
20	335	86	604	west wall
21	313	64	450	<MDA west wall
22	293	44	309	<MDA west wall
23	293	44	309	<MDA west wall
24	306	57	401	<MDA west wall
25	254	5	35	<MDA west wall
26	255	6	42	<MDA west wall
27	292	43	302	<MDA west wall
28	283	34	239	<MDA west wall
29	396	147	1033	west wall
30	245	-4	-28	<MDA <BKGND west wall
31	348	99	696	west wall
32	285	36	253	<MDA west wall
33	374	125	878	west wall
34	264	15	105	<MDA west wall
35	260	11	77	<MDA

Continued on Survey Sheet Page 2 west wall

Signature: Steven G. Rothenstein

Date: 12/29/00

# Survey Data Continued

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments		
36	229	-20	-141	<MDA	<BKGND	west wall
37	220	-29	-204	<MDA	<BKGND	west wall
38	302	53	372	<MDA		west wall
39	310	61	429	<MDA		east wall
40	308	59	415	<MDA		east wall
41	273	24	169	<MDA		east wall
42	322	73	513	<MDA		east wall
43	297	48	337	<MDA		east wall
44	256	7	49	<MDA		east wall
45	331	82	576			east wall
46	309	60	422	<MDA		east wall
47	289	40	281	<MDA		east wall
48	376	127	892			east wall
49	354	105	738			east wall
50	353	104	731			east wall
51	418	169	1188			east wall
52	392	143	1005			east wall
53	338	89	625			east wall
54	312	63	443	<MDA		east wall
55	343	94	661			east wall
56	369	120	843			east wall
57	348	99	696			east wall
58	315	66	464	<MDA		east wall
59	337	88	618			east wall
60						
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90						

7/15/77 Cheswick ② Inst. Efficiency Ckt.

Ludlum 2241-2 SN 137245

Ludlum 44-116 SN 147559

<u>Read</u>	<u>Gross</u>	<u>Net</u>
223	3567	3330
251	3533	
<u>272</u>	<u>3677</u>	
249	3579	

$$Eff = \frac{3330 \text{ cpm}}{23,400 \text{ dpm}} = 14.2\%$$

# FLOOR

NORTH

TAYLOR SILVIO  
DATE - 6-16-99  
DATA PT. SCAN

2221# 84458 138347  
43-68# 124497 142522  
BK6cpm 303 284  
EFF. 25% 25%

Floor

Baseboard

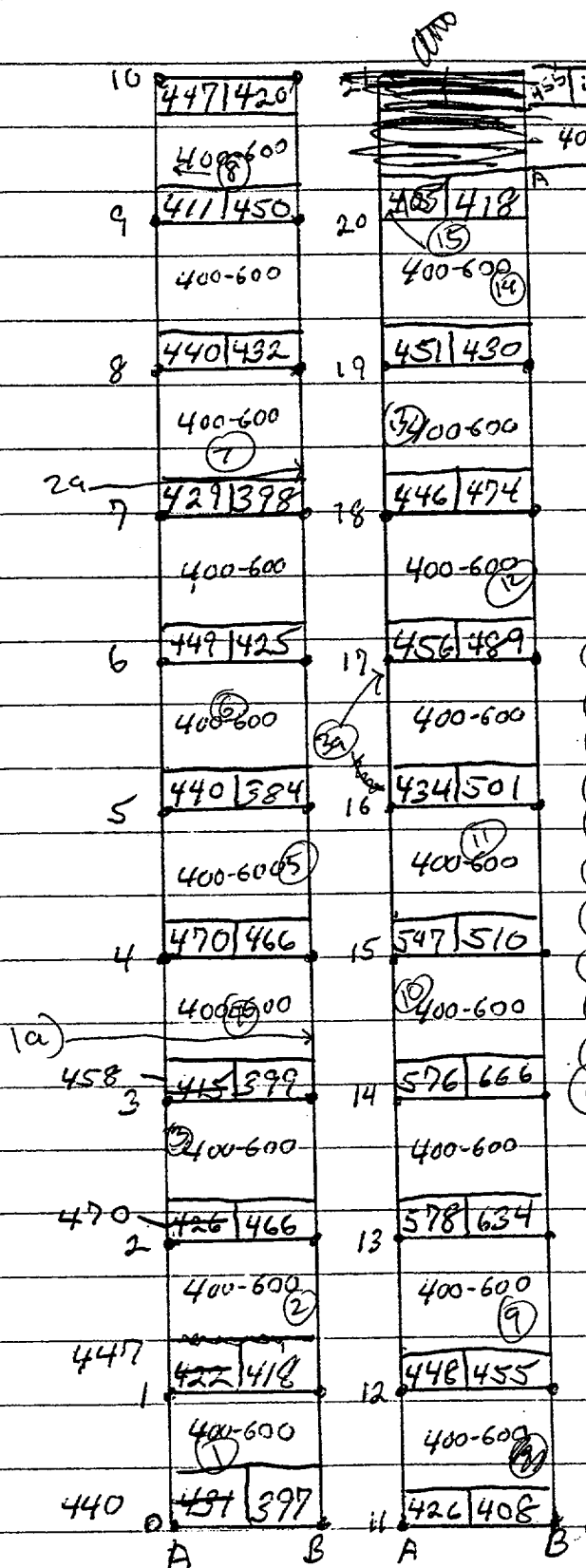
- ① 302
- ② 295
- ③ 283
- ④ 298
- ⑤ 321
- ⑥ 297
- ⑦ 287
- ⑧ 297
- ⑨ 301
- ⑩ 284
- ⑪ 435
- ⑫ 423
- ⑬ 311
- ⑭ 339
- ⑮ 269

1a) 267

2a) 269

3a) 363

1m WR readings  
9 to 16 WR/hr





# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/19/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: Pump Repair Facility, Bunker int.&ext. walls

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
248	3869	3621	<sup>99</sup> Tc	23,400	15.5	491	1022

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	506	258	1667	interior west wall
2	395	147	950	interior west wall
3	571	323	2087	interior west wall
4	587	339	2191	interior north wall
5	377	129	834	interior north wall
6	1378	1130	7302	int. north wall, bottom 3 blocks may be excluded
7	1231	983	6352	int.east wall,NW corner of floor exceeds fixed limits
8	443	195	1260	interior east wall
9	458	210	1357	interior east wall
10	456	208	1344	interior south wall
11	377	129	834	interior south wall
12	528	280	1809	interior south wall
13	750	502	3244	exterior west wall
14	468	220	1422	exterior west wall, scabbled block
15	537	289	1868	exterior west wall, scabbled block
16	704	456	2947	exterior west wall
17	6193	5945	38418	ext. S wall,at floor/wall juncture,contamination is on floor *
18	875	627	4052	exterior south wall
19	464	216	1396	exterior south wall
20	452	204	1318	exterior south wall
21	602	354	2288	exterior north wall
22	476	228	1473	exterior north wall
23	767	519	3354	exterior north wall
24	757	509	3289	exterior north wall
25	604	356	2301	exterior east wall
26	423	175	1131	exterior east wall
27	464	216	1396	exterior east wall
28	717	469	3031	exterior east wall
29				
30				* Wall has orange border around 1st 3 lower blocks
31				
32				bunker/PRF floor in new building to be surveyed for segregation into rad
33				and non-rad waste after demo of rest of bldg.
34				
35				15 to 20 uR/hr @ 1 m from bunker walls

Signature: Arthur A. Boatman

Date: 12/29/00

(W) Cheswick 7/19/99 Inst. Eff. Check  
Ludlow 2241-2 SN 137245 Det. Ludlow 44.116 SN 147859

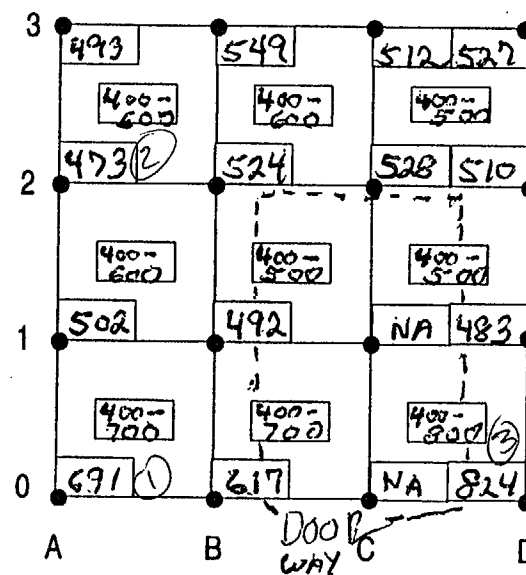
<u>Bkgnd.</u>	<u>Gross</u>	<u>Net</u>
240	3888	3621
259	3944	
<u>245</u>	<u>3774</u>	
248	3869	

$$\text{Eff} = \frac{3621 \text{cpm}}{23,400 \text{dpm}} = 15.5\%$$



● Data Measurement Point
○ Additional Measurement Point
Location: <u>BUNKER IN PRF (INTERIOR)</u>
Classification: Affected
Technician's Name: <u>TAYLOR</u>
Legend: Z= CPM range for 100% scan of grid block
Date: <u>6-24-79</u>
Model 43-68 #: <u>84458</u>
Model 2221 #: <u>124497</u>
Efficiency 25%
Background CPM <u>336</u>
Comments: All readings in CPM, grids are 1M x 1M.

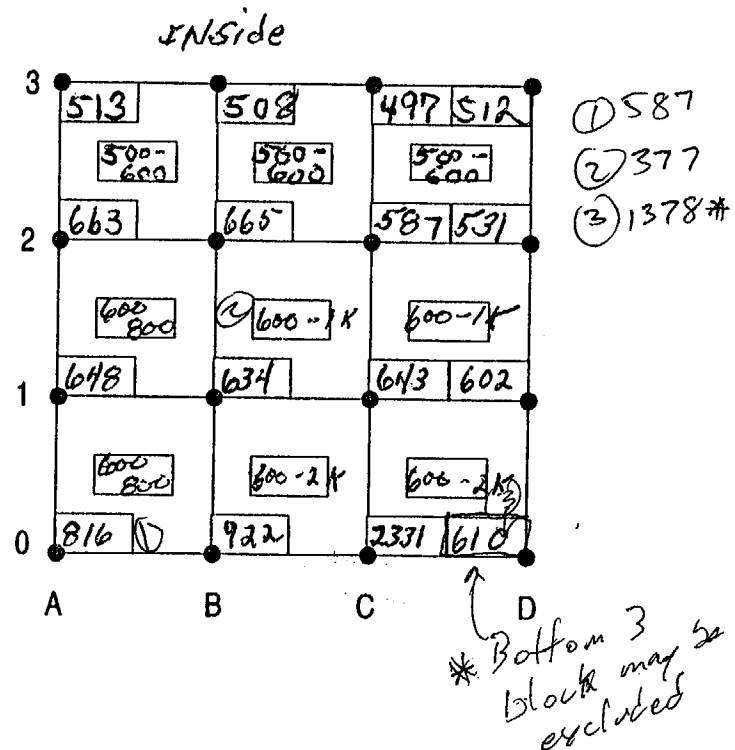
# SURVEY UNIT W1



- ① 506
- ② 395
- ③ 521

● Data Measurement Point
○ Additional Measurement Point
Location: <u>BUNKER IN PRE (INTERIOR)</u>
Classification: Affected
Technician's Name: <u>Shankwiler</u>
Legend: Z= CPM range for 100% scan of grid block
Date: <u>6-24-99</u>
Model 43-68 #: <u>142522</u>
Model 2221 #: <u>138347</u>
Efficiency 25%
Background CPM <u>316</u>
Comments: All readings in CPM, grids are 1M x 1M.

# SURVEY UNIT N1

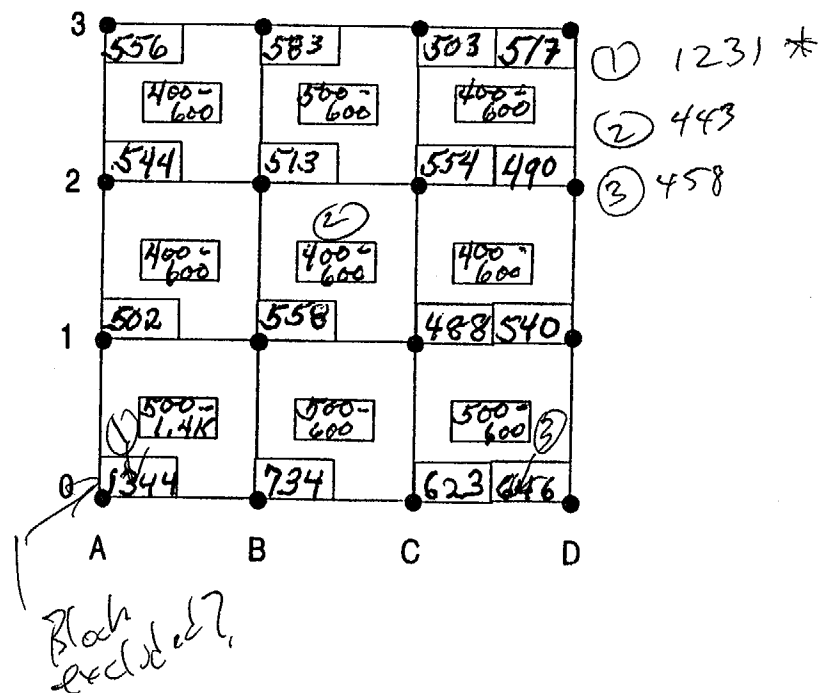


● Data Measurement Point
○ Additional Measurement Point
Location: <u>BUNKER IN PRF (INTERIOR)</u>
Classification: Affected
Technician's Name: <u>TAYLOR</u>
Legend: Z= CPM range for 100% scan of grid block
Date: <u>6-24-99</u> DATA & SCAN - SAME METER
Model 43-68 #: <u>84458</u>
Model 2221 #: <u>124497</u>
Efficiency <u>25%</u>
Background CPM <u>336</u>
Comments: All readings in CPM, grids are 1M x 1M.

# SURVEY UNIT E1

(NW Corner of floor excluded - exceeds fixed limit)

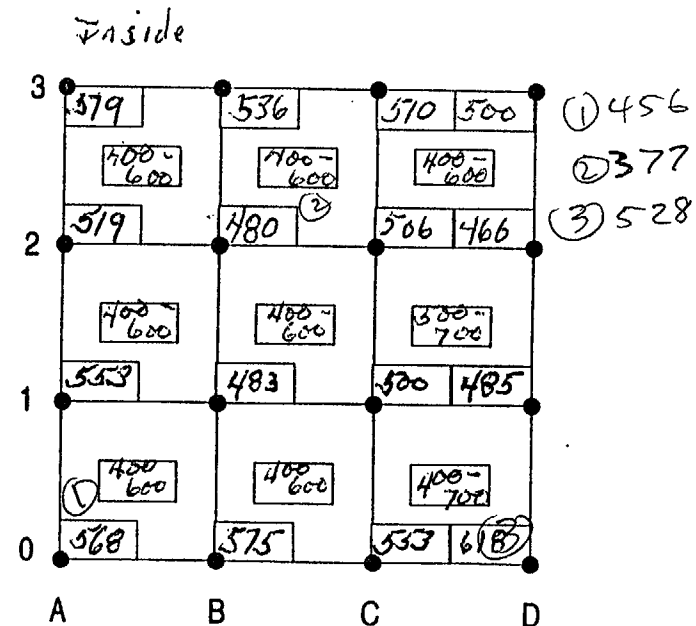
Inside



● Data Measurement Point  
 ○ Additional Measurement Point

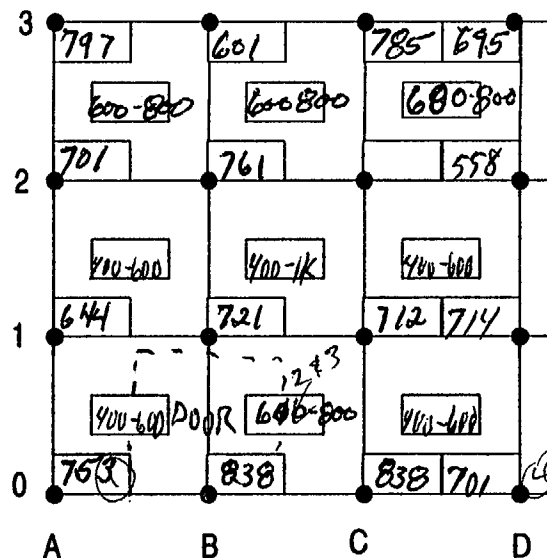
Location: BUNKER IN PRE (INTERIOR)  
 Classification: Affected  
 Technician's Name: TAYLOR  
 Legend: Z= CPM range for 100% scan of grid block  
 Date: 6-23-99 DATA-SCAN - SAME METER  
 Model 43-68 #: 84458  
 Model 2221 #: 1234187  
 Efficiency: 25%  
 Background CPM: 356  
 Comments: All readings in CPM, grids are 1M x 1M.

# SURVEY UNIT S1



● Data Measurement Point
○ Additional Measurement Point
Location: <u>BUNKER IN PRF (EXTERIOR)</u>
Classification: Affected
Technician's Name: <u>SLANKWILER</u>
Legend: Z= CPM range for 100% scan of grid block
Date: <u>6-24-99</u>
Model 43-68 #: <u>142522</u>
Model 2221 #: <u>138347</u>
Efficiency 25%
Background CPM <u>316</u>
Comments: All readings in CPM, grids are 1M x 1M.

# SURVEY UNIT W1



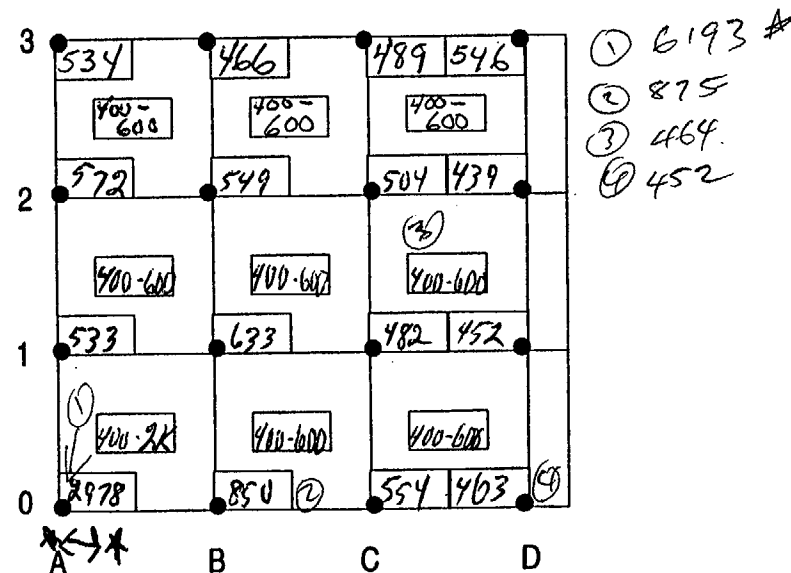
- ① 750
- ② 468 } scabbled block
- ③ 537 }
- ④ 704

● Data Measurement Point
○ Additional Measurement Point
Location: BUNKER IN PRF (EXTERIOR)
Classification: Affected
Technician's Name:
Legend: Z= CPM range for 100% scan of grid block
Date: 6-28-99
Model 43-68 #: 159109
Model 2221 #: 154207
Efficiency 25%
Background CPM 279
Comments: All readings in CPM, grids are 1M x 1M.

# SURVEY UNIT S1

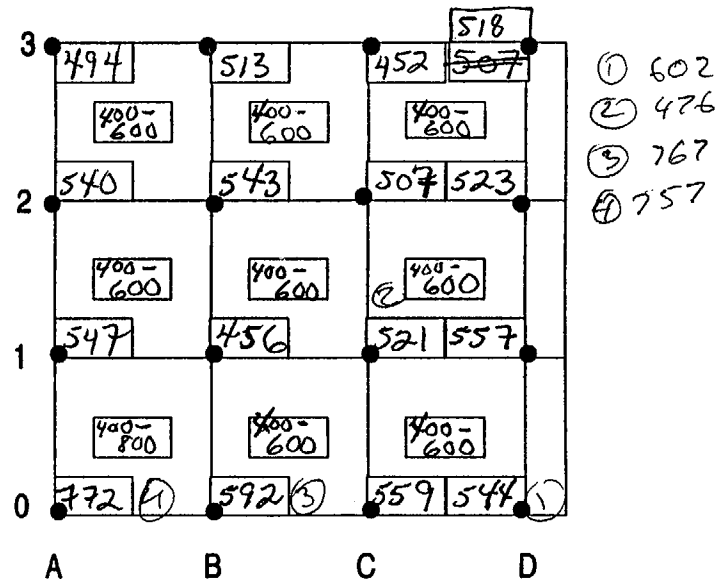
\* Floor is 5Kcpm @ ~~this point~~ <sup>pts</sup> in this area, giving elevated reading in A, D grid. All >600cpm reading during scan are at bottom of grid (Ø line)

Wall has orange border around 1st 3 lower block \*



● Data Measurement Point
○ Additional Measurement Point
Location: <u>BUNKER IN PRF (EXTERIOR)</u>
Classification: Affected
Technician's Name: <u>Shonkwiler</u>
Legend: Z= CPM range for 100% scan of grid block
Date: <u>6/24/99</u>
Model 43-68 #: <u>757204</u> <u>159019</u>
Model 2221 #: <u>154267</u>
Efficiency <u>25%</u>
Background CPM <u>279 cpm</u>
Comments: All readings in CPM, grids are 1M x 1M.

# SURVEY UNIT N1





# Bunker Extension E1

Shankweiler

6-24-99

Model 2001

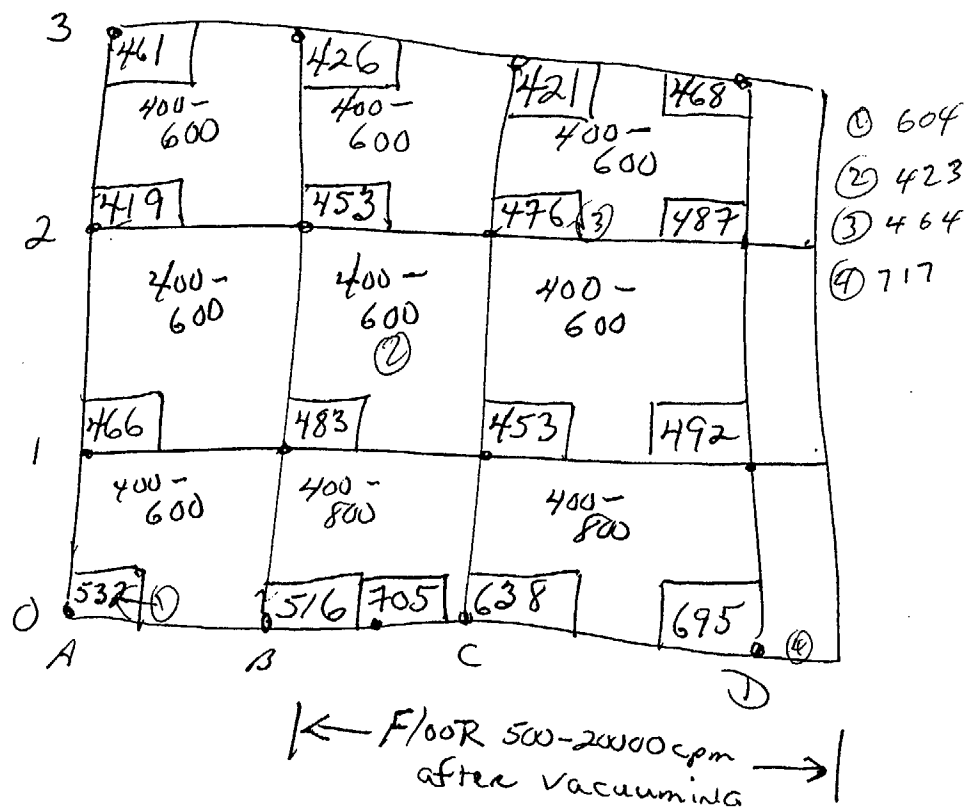
S.N. 154207

Probe 43-68

S.N. 159019

bkgd 279 cpm

eff. 25%



# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 7/19/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: Pump Repair Facility, New Bldg., walls

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
248	3869	3621	<sup>99</sup> Tc	23,400	15.5	491	1022

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	1937	1689	10915	survey unit W10 * * due to re-contamination
2	591	343	2217	survey unit W10 with dirt/dust. Will vac.
3	537	289	1868	survey unit W10
4	775	527	3406	survey unit W10
5	355	107	691	survey unit W10
6	403	155	1002	survey unit W10
7	930	682	4407	survey unit W10
8	769	521	3367	survey unit W7
9	371	123	795	survey unit W7
10	402	154	995	survey unit W7
11	671	423	2734	survey unit W7
12	293	45	291	<MDA survey unit W7
13	449	201	1299	survey unit W7
14	966	718	4640	survey unit W7
15	760	512	3309	survey unit W4
16	436	188	1215	survey unit W4
17	423	175	1131	survey unit W4
18	578	330	2133	survey unit W4
19	368	120	775	survey unit W4
20	347	99	640	survey unit W4
21	909	661	4272	survey unit W4
22	579	331	2139	survey unit W1
23	577	329	2126	survey unit W1
24	387	139	898	survey unit W1
25	417	169	1092	survey unit W1
26	507	259	1674	survey unit W1
27	375	127	821	survey unit W1
28	385	137	885	survey unit W1
29	447	199	1286	survey unit W1
30	604	356	2301	survey unit S4
31	323	75	485	<MDA survey unit S4
32	382	134	866	survey unit S4
33	472	224	1448	survey unit S4
34	372	124	801	survey unit S4
35	579	331	2139	survey unit S4 Continued on sheet 2

Signature: Steven A. Bosterman

Date: 12/29/00

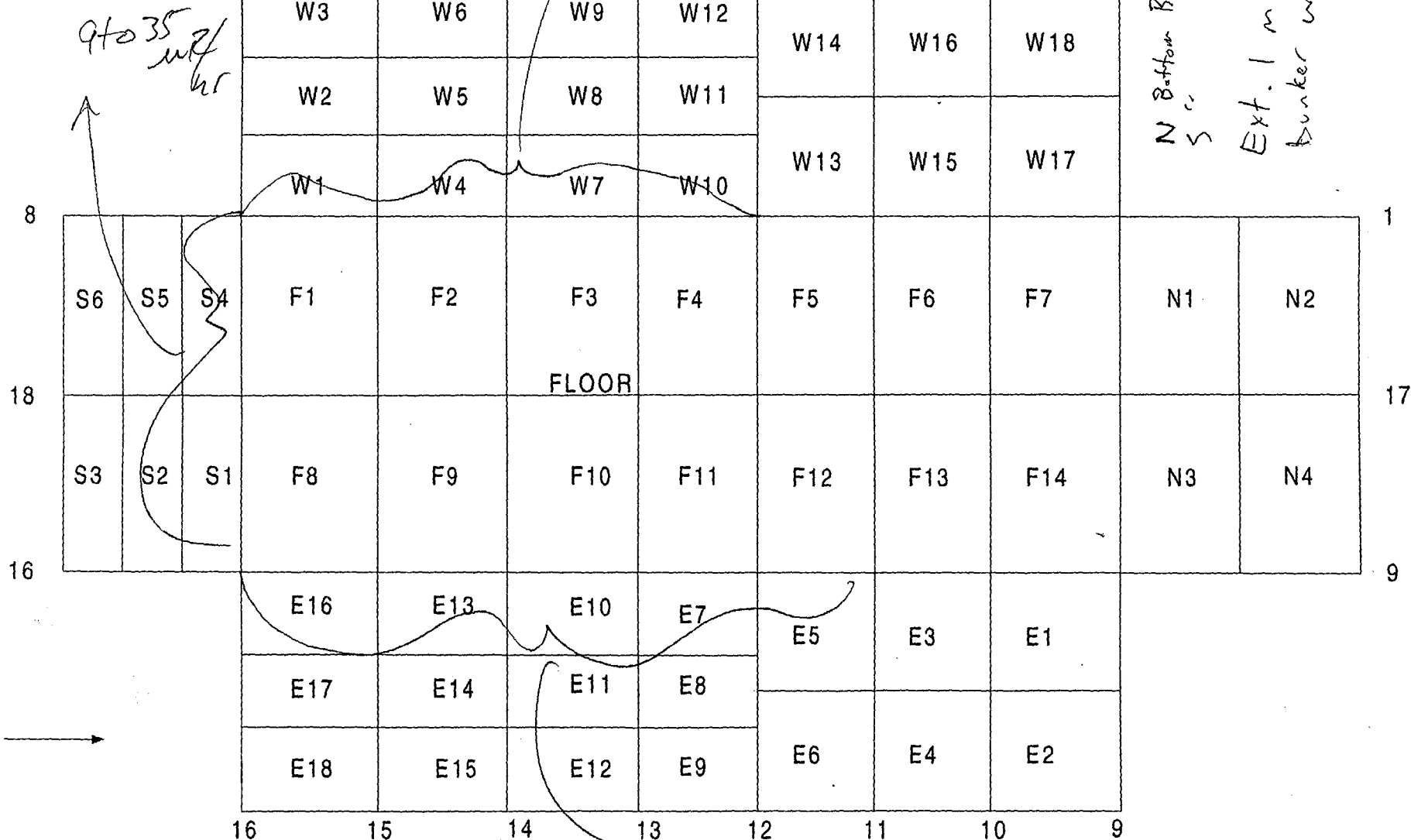
# Survey Data Continued

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
36	804	556	3593	survey unit S4
37	949	701	4530	survey unit S1
38	531	283	1829	survey unit S1
39	651	403	2604	survey unit S1
40	820	572	3696	survey unit S1
41	594	346	2236	survey unit S1
42	441	193	1247	survey unit S1
43	715	467	3018	survey unit S1
44	630	382	2469	survey unit E16
45	558	310	2003	survey unit E16
46	634	386	2494	survey unit E16
47	1104	856	5532	survey unit E16
48	504	256	1654	survey unit E16
49	1049	801	5176	survey unit E16
50	6603	6355	41068	survey unit E13, south wall
51	673	425	2746	survey unit E13, south wall
52	1127	879	5680	survey unit E13, south wall
53	4205	3957	25571	survey unit E13, east wall
54	566	318	2055	survey unit E13, east wall
55	2676	2428	15690	survey unit E13, east wall
56	1085	837	5409	survey unit E13, east wall
57	841	593	3832	survey unit E13, east wall
58	381	133	859	survey unit E13, east wall
59	595	347	2242	survey unit E13, north wall
60	387	139	898	survey unit E13, north wall
61	538	290	1874	survey unit E13, north wall
62	783	535	3457	survey unit E13, north wall
63	927	679	4388	survey unit E13
64	687	439	2837	survey unit E13
65	671	423	2734	survey unit E13
66	425	177	1144	survey unit E13
67	739	491	3173	survey unit E13
68	804	556	3593	survey unit E10
69	361	113	730	survey unit E10
70	424	176	1137	survey unit E10
71	704	456	2947	survey unit E10
72	672	424	2740	survey unit E10
73	484	236	1525	survey unit E10
74	619	371	2398	survey unit E10
75	430	182	1176	survey unit E10
76	747	499	3225	survey unit E10
77	1002	754	4873	survey unit E7
78	512	264	1706	survey unit E7
79				
80				hotspots in E13 and E16 due to floor
81				contamination. To be addressed with
82				slab/soil remediation.
83				
84				W survey units - 9 to 15 uR/hr @ 1 meter
85				S survey units - 9 to 35 uR/hr @ 1 meter
86				E survey unit - 9 to 35 uR/hr @ 1 meter except for
87				alcove area with hotspots - 250 uR/hr @ contact and
88				45 uR/hr @ 1 meter
89				
90				

Location: Pump Repair Facility

Classification: Affected

Comments: Numbers outside of blocks are column locators. Description inside the blocks indicate survey unit.



- Data Measurement Point
- Additional Measurement Point

Location: PUMP REPAIR FACILITY

Classification: Affected

Technician's Name: Shank

Legend: Z = CPM range for 100% scan of grid block

Date: 5-24-99

Model 43-68 #: 159019

Model 2221 #: 154207

Efficiency 25%

Background CPM 269

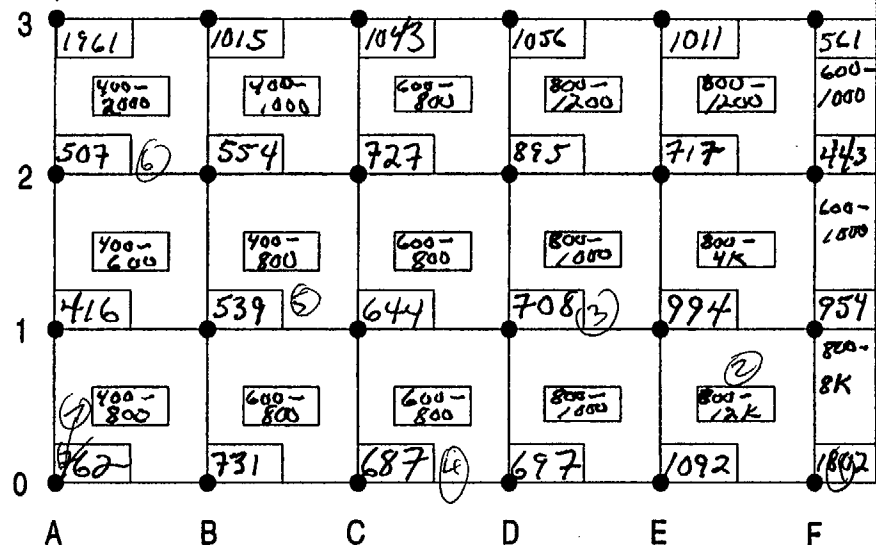
Comments: All readings are CPM, grids are 1m x 1m

## SURVEY UNIT W10

\* = swipe

column 5

column 4



- ① 1937
- ② 591
- ③ 537
- ④ 775
- ⑤ 355
- ⑥ 403
- ⑦ 930

(10,896 dpm)

171  
\* full grid

- Data Measurement Point
- Additional Measurement Point

Location: PUMP REPAIR FACILITY

Classification: Affected

Technician's Name: Shank

Legend: Z= CPM range for 100% scan of grid block

Date: 5-24-99

Model 43-68 #: 159019

Model 2221 #: 154207

Efficiency 25%

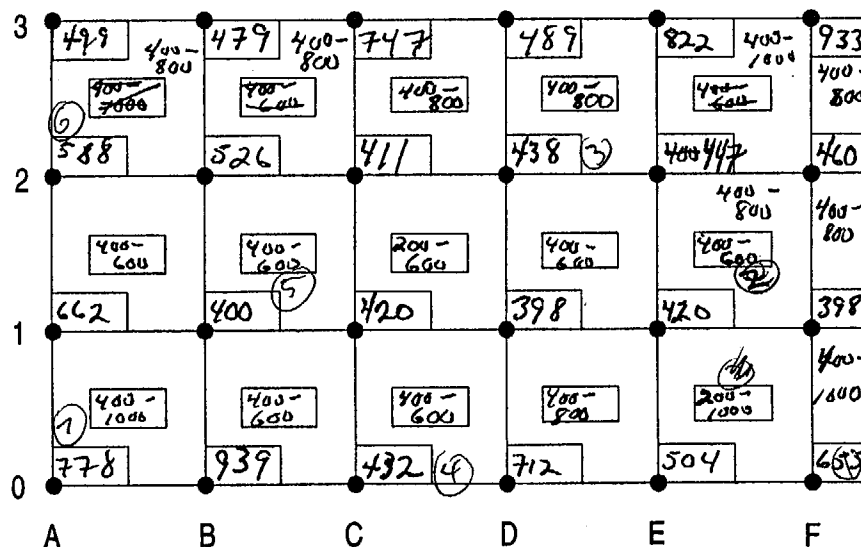
Background CPM 269

Comments: All readings are CPM, grids are 1m x1M

## SURVEY UNIT W7

column 6

column 5



- ① 769
- ② 371
- ③ 402
- ④ 671
- ⑤ 293
- ⑥ 449
- ⑦ 966

- Data Measurement Point
- Additional Measurement Point

Location: PUMP REPAIR FACILITY

Classification: Affected

Technician's Name: SILVIO, TAYLOR

Legend: Z= CPM range for 100% scan of grid block

Date: 5-21-99 SCAN DATA PT

Model 43-68 #: 124497 142522

Model 2221 #: 84458 138347

Efficiency 25%

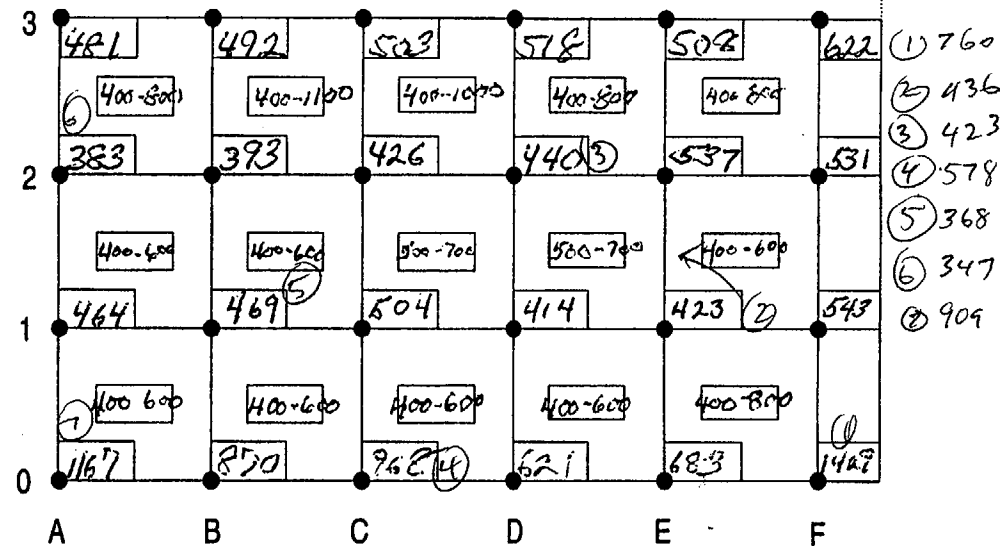
Background CPM 306 302

Comments: All readings are CPM, grids are 1m x1M

## SURVEY UNIT W4

column 7

column 6





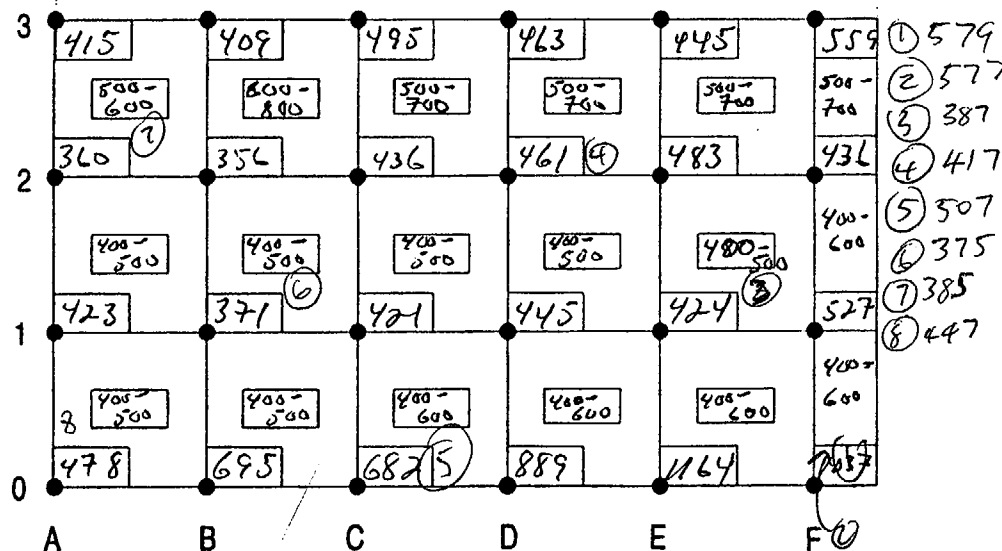
● Data Measurement Point  
 ○ Additional Measurement Point

Location: PUMP REPAIR FACILITY  
 Classification: Affected  
 Technician's Name:  
 Legend: Z= CPM range for 100% scan of grid block  
 Date:  
 Model 43-68 #:  
 Model 2221 #:  
 Efficiency 25%  
 Background CPM  
 Comments: All readings are CPM, grids are 1m x1M

## SURVEY UNIT W1

column 8

column 7



5-20-99

Taylor data pts.

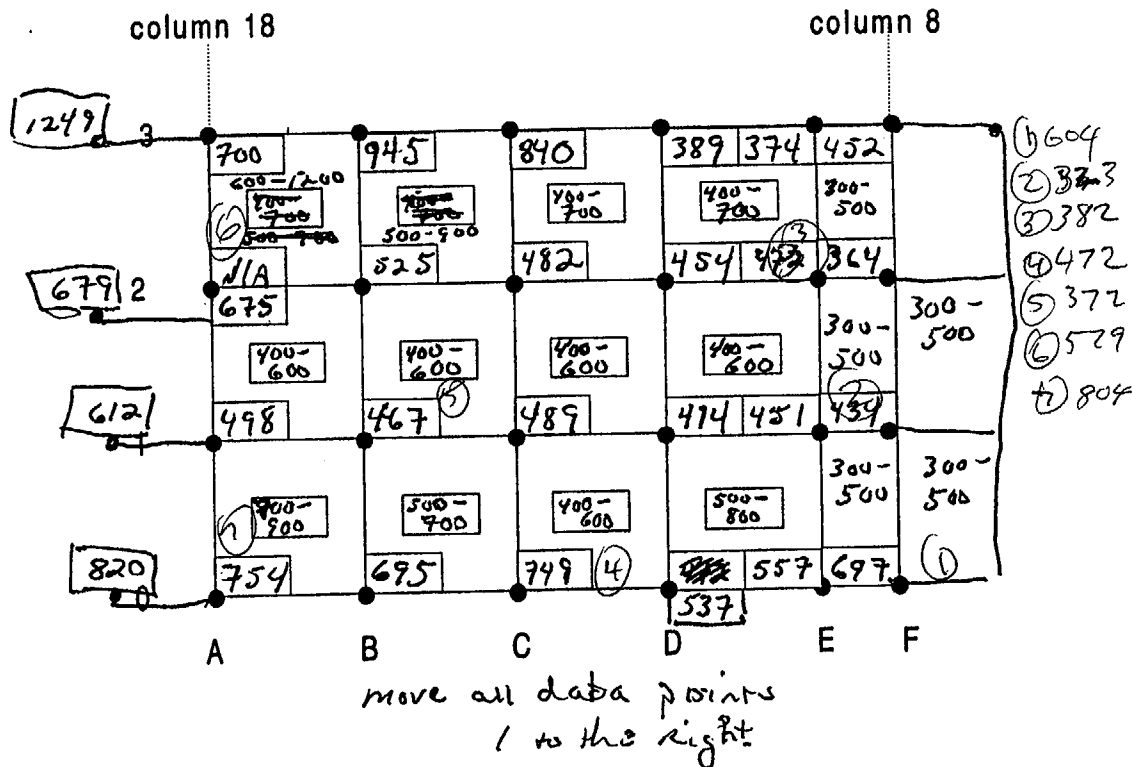
Silvio Scan

Model 2221  
 S.N. 138347  
 Probe 43-68  
 S.N. 142522  
 bkgd.  
 305  
 eff.  
 25%

Model 2221  
 S.N. 84458  
 Probe 43-68  
 S.N. 124497  
 bkgd.  
 265  
 eff.  
 25%

● Data Measurement Point
○ Additional Measurement Point
Location: <u>PUMP REPAIR FACILITY</u>
Classification: Affected
Technician's Name:
Legend: Z= CPM range for 100% scan of grid block
Date:
Model 43-68 #:
Model 2221 #:
Efficiency 25%
Background CPM
Comments: All readings in CPM, grids are 1M x 1M.

## SURVEY UNIT S4

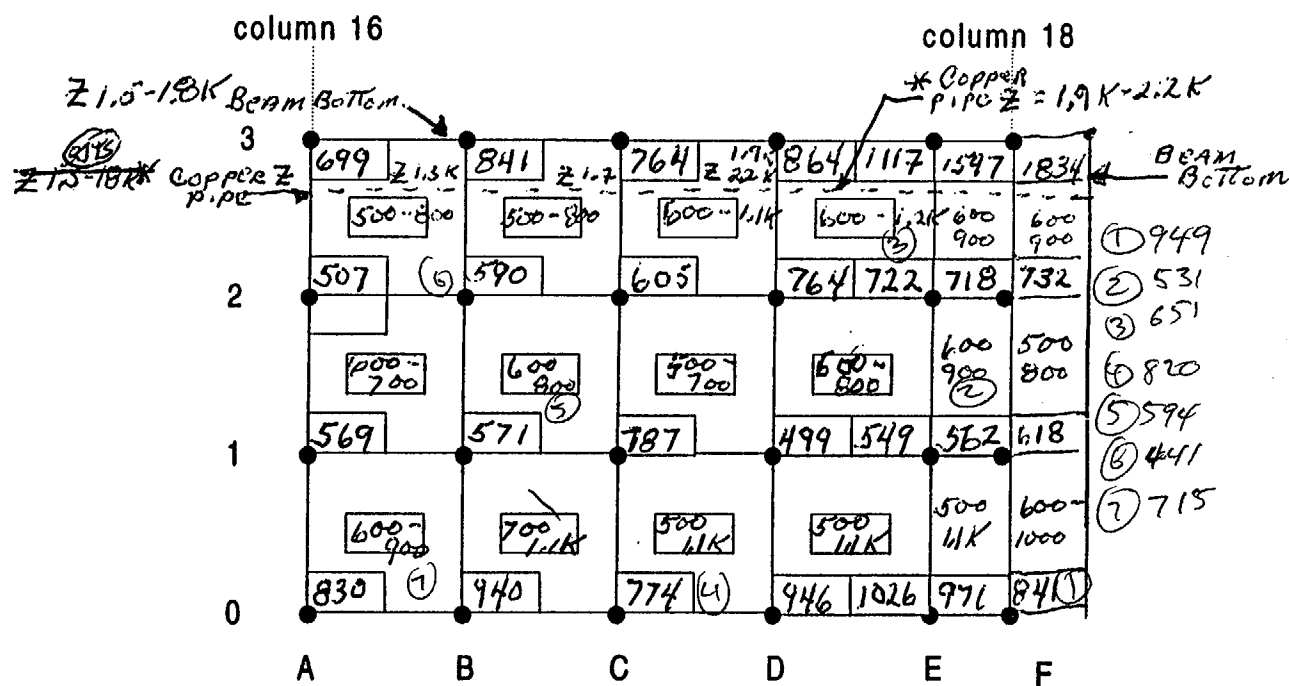


5-20-99  
Silus - Scan  
MODEL 2221  
S.N.: 84458  
Probe: 43-68  
S.N.: 124497  
bkgrd.: 265  
eff.: 25%

Taylor data pt.  
MODEL 2221  
S.N.: 138347  
Probe 43-68  
S.N.: 142522  
bkgrd.: 305  
eff.: 25%

● Data Measurement Point
○ Additional Measurement Point
Location: <u>PUMP REPAIR FACILITY</u>
Classification: Affected
Technician's Name: <u>Taylor</u>
Legend: Z= CPM range for 100% scan of grid block <u>DATA + SCAN</u>
Date: <u>6-23-97</u> <u>Taylor</u>
Model 43-68 #: 124497
Model 2221 #: 84458
Efficiency 25%
Background CPM <u>336</u>
Comments: All readings in CPM, grids are 1M x 1M.

## SURVEY UNIT S1



- Data Measurement Point
- Additional Measurement Point

Location: PUMP REPAIR FACILITY

Classification: Affected

Technician's Name: TAYLOR/SILVIO

Legend: Z= CPM range for 100% scan of grid block

Date: 5-24-99 DATA PT SCAN

Model 43-68 #: 124497 ~ 142522

Model 2221 #: 84458 - 188347

Efficiency 25%

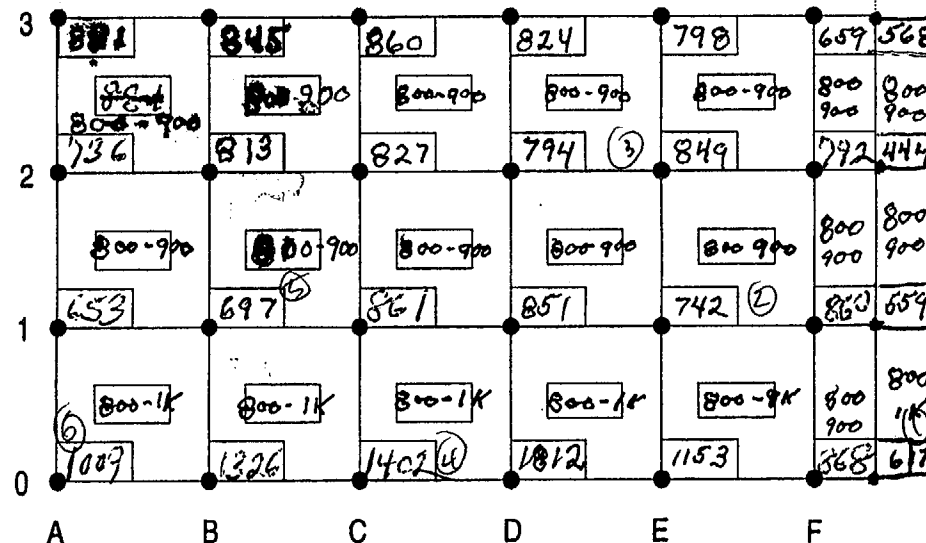
Background CPM 339 - 353

Comments: All readings are CPM, grids are 1m x1M

## SURVEY UNIT E16

column 15

column 16



- (1) 630
- (2) 558
- (3) 634
- (4) 1104 → 5522 dpm
- (5) 509
- (6) 1049 → 5167 dpm

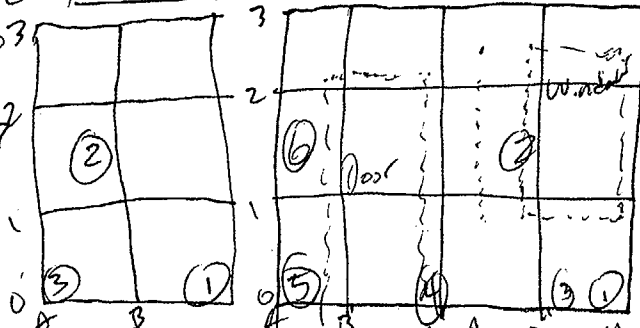
Entrance/Alcove

S. Wall

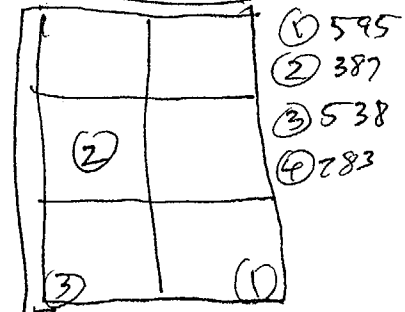
E. Wall

N. Wall

- ① 6603
- ② 673
- ③ 1127



- ① 4205 (4275)
- ② 566
- ③ 2676
- ④ 1085
- ⑤ 841
- ⑥ 381



- ① 595
- ② 387
- ③ 538
- ④ 283

reading on floor adjacent to wall hot spot = 7421

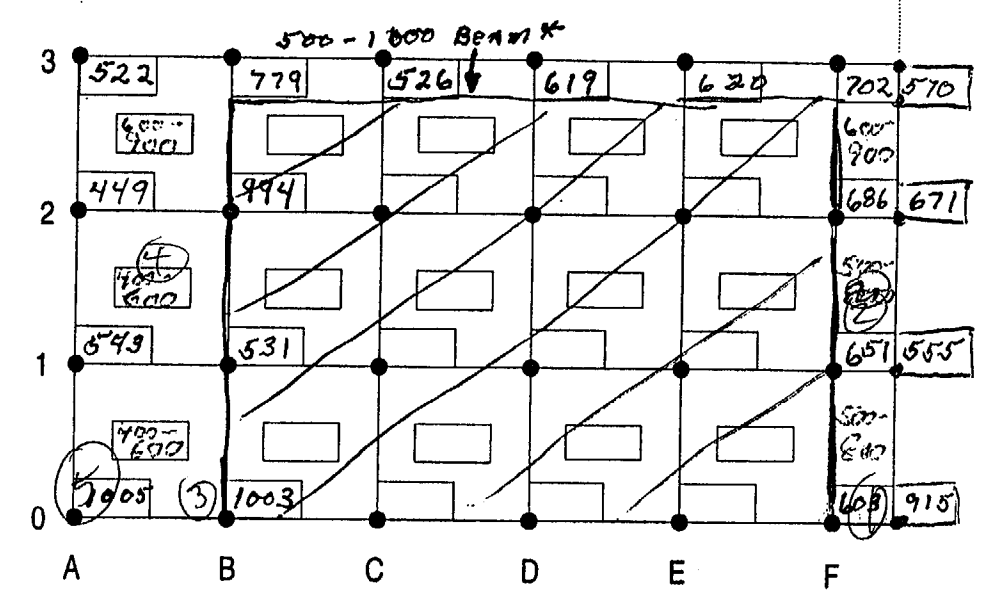
~250 nR/hr @ contact 45 nR/hr @ 1 meter

# SURVEY UNIT E13

Outside wall of old butter bldg.

column 14

column 15



- ① 927
- ② 687
- ③ 671
- ④ 425
- ⑤ 739

● Data Measurement Point  
○ Additional Measurement Point

Location: PUMP REPAIR FACILITY  
Classification: Affected  
Technician's Name: TRAYLOR, SILVIO  
Legend: Z= CPM range for 100% scan of grid block  
Date: 5-24-99 DATA PT SCAN  
Model 43-68 #: 124457-1383476  
Model 2221 #: 84458-142622  
Efficiency: 25%  
Background CPM: 339-359

Comments: All readings are CPM, grids are 1m x 1M

7/22/99  
Phone with W.  
Will re-survey  
Alcove walls  
prior to disposal  
(think h.)

- Comments: All readings are CPM, grids are 1m x 1M

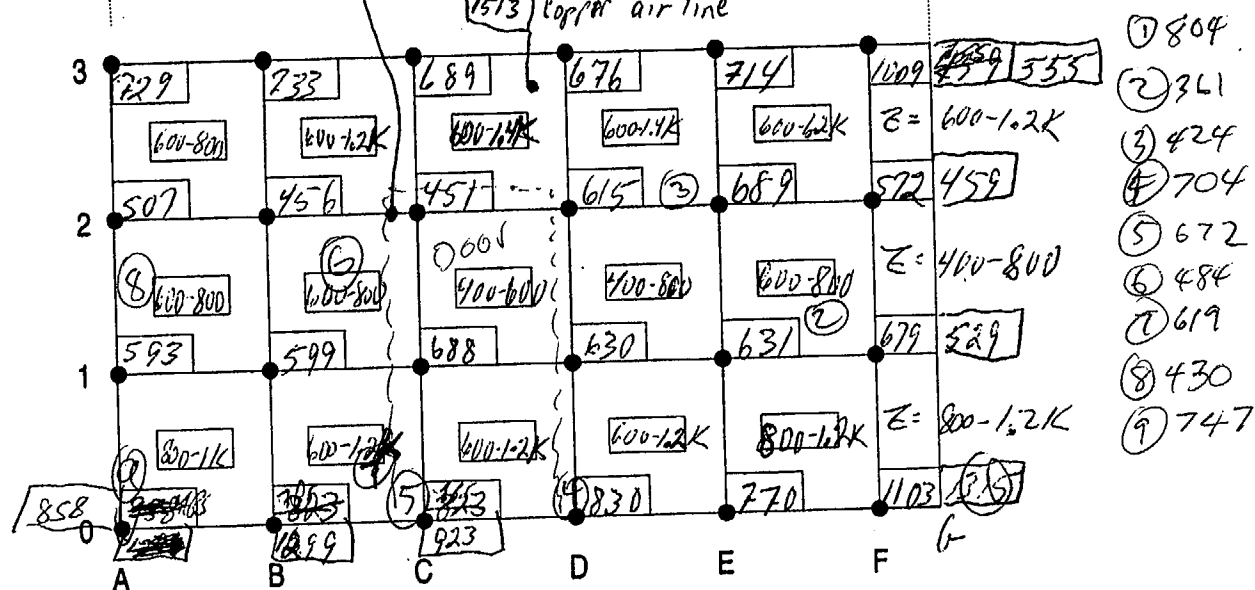
43-68 #159019  
222, #154207  
EFF 250%  
B46 255gpm

## column 13

1113 TOP OF DOOR FRAME

1513 Copper air line

column 14



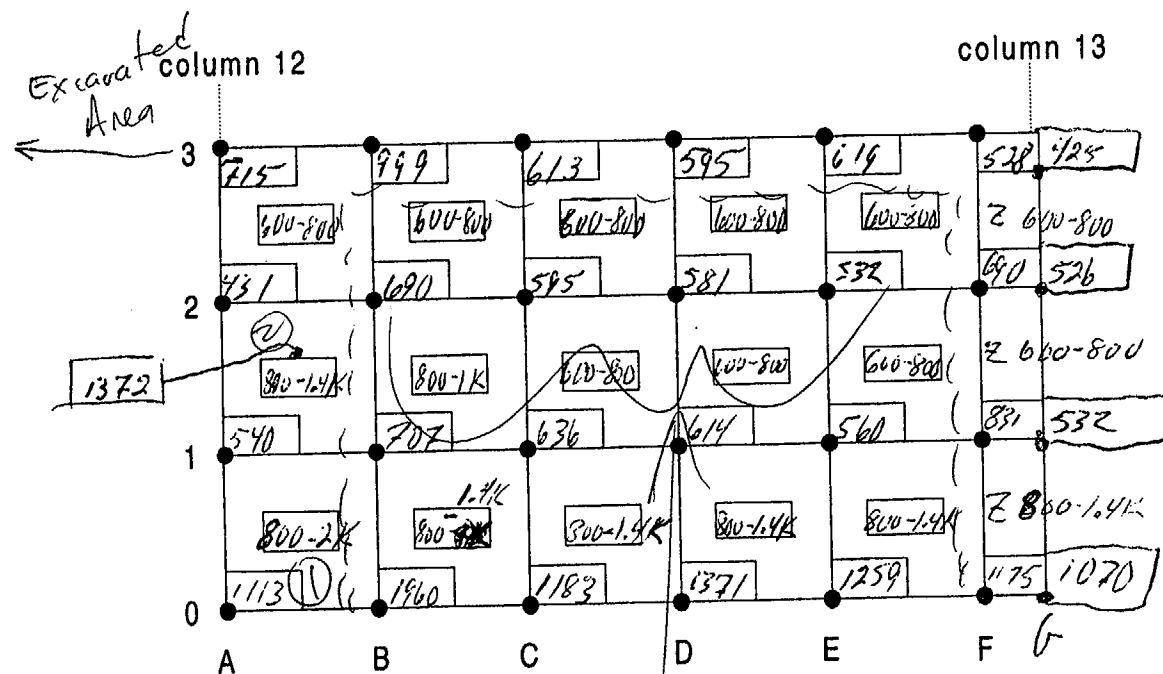
\*F-6 is full size grid

\* Z = 5 CAN

● Data Measurement Point  
 ○ Additional Measurement Point

Location: PUMP REPAIR FACILITY  
 Classification: Affected  
 Technician's Name: SHUNKWILER  
 Legend: Z= CPM range for 100% scan of grid block  
 Date: 29 MAY 99  
 Model 43-68 #: 159019  
 Model 2221 #: 154207  
 Efficiency 25%  
 Background CPM 255  
 Comments: All readings are CPM, grids are 1m x1M

## SURVEY UNIT E7



B, G ARE  
 BOUNDARY  
 LINES FOR ROLL-UP  
 DOOR

\* T=SCAN

\* F→G is full size grill

Roll Up Door -  
 Going Rad Waste  
 Did not survey

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 9/2/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: Small Butler Bldg. Floor

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
463	3833	3370	<sup>99</sup> Tc	23,400	14.4	714	1183

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	675	212	1472	
2	952	489	3395	
3	450	-13	-90	<MDA <BKGND
4	443	-20	-139	<MDA <BKGND
5	552	89	618	<MDA
6	617	154	1069	
7	799	336	2333	
8	456	-7	-49	<MDA <BKGND
9	438	-25	-174	<MDA <BKGND
10	626	163	1132	
11	536	73	507	<MDA
12	377	-86	-597	<MDA <BKGND
13	445	-18	-125	<MDA <BKGND
14	780	317	2201	
15	815	352	2444	
16	392	-71	-493	<MDA <BKGND
17	360	-103	-715	<MDA <BKGND
18	551	88	611	<MDA
19	426	-37	-257	<MDA <BKGND
20	583	120	833	
21	447	-16	-111	<MDA <BKGND
22	431	-32	-222	<MDA <BKGND
23	544	81	562	<MDA
24	388	-75	-521	<MDA <BKGND
25	613	150	1042	
26	484	21	146	<MDA
27	8010	7547	52404	known hotspot-to be addressed with slab/soil remediation
28	389	-74	-514	<MDA <BKGND
29	460	-3	-21	<MDA <BKGND
30	844	381	2646	
31	740	277	1923	
32	468	5	35	<MDA
33	528	65	451	<MDA
34	402	-61	-424	<MDA <BKGND
35	609	146	1014	cont. on page 2

Signature: Steven A. Boettger

Date: 12/29/00



# Survey Data Continued

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
36	609	146	1014	
37	516	53	368	<MDA
38	369	-94	-653	<MDA <BKGND
39	828	365	2534	
40	526	63	437	<MDA
41	609	146	1014	
42	813	350	2430	
43	848	385	2673	
44	586	123	854	
45	4687	4224	29330	known hotspot-to be addressed with slab/soil remediation
46	9225	8762	60840	known hotspot-to be addressed with slab/soil remediation
47	670	207	1437	
48	833	370	2569	
49	659	196	1361	
50	3809	3346	23233	due to known wall hotspot
51	889	426	2958	
52	424	-39	-271	<MDA <BKGND step off area from PRF
53	475	12	83	<MDA step off area from PRF
54	332	-131	-910	<MDA <BKGND step off area from PRF
55	556	93	646	<MDA step off area from PRF
56	512	49	340	<MDA step off area from PRF
57	652	189	1312	step off area from PRF
58				
59				
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**'Hotspot' on small butler  
building floor.**

9. 2. 1999



# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 9/2/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: Small Butler Bldg. Walls

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
463	3833	3370	<sup>99</sup> Tc	23,400	14.4	714	1183

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments			
1	1034	571	3965				north wall
2	599	136	944				north wall
3	816	353	2451				north wall
4	409	-54	-375	<MDA	<BKGND		north wall
5	437	-26	-181	<MDA	<BKGND		north wall
6	437	-26	-181	<MDA	<BKGND		north wall
7	386	-77	-535	<MDA	<BKGND		north wall
8	370	-93	-646	<MDA	<BKGND		north wall
9	453	-10	-69	<MDA	<BKGND		north wall
10	429	-34	-236	<MDA	<BKGND		south wall
11	349	-114	-792	<MDA	<BKGND		south wall
12	346	-117	-812	<MDA	<BKGND		south wall
13	532	69	479	<MDA			south wall
14	414	-49	-340	<MDA	<BKGND		south wall
15	383	-80	-555	<MDA	<BKGND		south wall
16	407	-56	-389	<MDA	<BKGND		south wall
17	428	-35	-243	<MDA	<BKGND		south wall
18	579	116	805				south wall
19	426	-37	-257	<MDA	<BKGND		east wall
20	352	-111	-771	<MDA	<BKGND		east wall
21	2075	1612	11193				east wall window-light bias from window
22	275	-188	-1305	<MDA	<BKGND		east wall
23	375	-88	-611	<MDA	<BKGND		east wall
24	277	-186	-1292	<MDA	<BKGND		east wall
25	296	-167	-1160	<MDA	<BKGND		east wall
26	314	-149	-1035	<MDA	<BKGND		east wall
27	325	-138	-958	<MDA	<BKGND		east wall
28	328	-135	-937	<MDA	<BKGND		east wall
29	341	-122	-847	<MDA	<BKGND		east wall
30	328	-135	-937	<MDA	<BKGND		east wall
31	436	-27	-187	<MDA	<BKGND		east wall
32	330	-133	-924	<MDA	<BKGND		east wall
33	355	-108	-750	<MDA	<BKGND		east wall
34	398	-65	-451	<MDA	<BKGND		east wall
35	445	-18	-125	<MDA	<BKGND		east wall

cont. on page 2

Signature: Steven A. Bostannic

Date: 12/29/00

# Survey Data Continued

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments	
36	686	223	1548		west wall
37	441	-22	-153	<MDA <BKGND	west wall
38	2106	1643	11408		west wall-due to PRF floor hot spot
39	471	8	56	<MDA	west wall
40	331	-132	-917	<MDA <BKGND	west wall
41	327	-136	-944	<MDA <BKGND	west wall
42	488	25	174	<MDA	west wall
43	375	-88	-611	<MDA <BKGND	west wall
44	581	118	819		west wall
45	401	-62	-431	<MDA <BKGND	west wall
46	375	-88	-611	<MDA <BKGND	west wall
47	717	254	1764		west wall
48	571	108	750		west wall-inside step off area from PRF
49	393	-70	-486	<MDA <BKGND	west wall-inside step off area from PRF
50	316	-147	-1021	<MDA <BKGND	west wall-inside step off area from PRF
51	546	83	576	<MDA	west wall-inside step off area from PRF
52	413	-50	-347	<MDA <BKGND	west wall-inside step off area from PRF
53					
54					
55					
56					
57					Exposure rates:
58					15 to 35 uR/hr @ 1 meter
59					35 uR/hr in SW corner by known
60					wall/floor hot spots
61					25 uR/hr in NW corner by known
62					wall/floor hot spots
63					
64					
65					
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Westinghouse Cheswick 9/2/99

Meter - Ludlum 2241-2 Serial # 137745 Defector Ludlum 44-116  
SN-147859

<u>Bkgnd (cpm)</u>	<u>Gross (cpm)</u>	<u>Net (cpm)</u>	<u>Eff</u> $\frac{3370}{23,400}$
430	3864	3370	= 14.4 %
483	3863		
<u>476</u>	<u>3773</u>		
463	3733		

Avg

(Interior)  
Westinghouse Cheswick Small Butte Bldg. 9/2/99

Floor (Survey Unit F.) 5000 dpm > Background  $\approx$  1183 cpm

From Floor?

By Painted wall  $\Sigma$

\* Known Hotspots

		N. Wall		E. Wall		W. Wall	
① 675	* ③ 7 8,010	① 1034	① 426	① 686			
② 952	(28) 389 (Crack next to hot spot)	② 599	② 352	⑤ 441			
③ 450	(29) 460	* ③ 816	③ 2075 (Window - light & debris?)	* ③ 2106			
④ 443	(30) 844	④ 409	④ 275	④ 421			
⑤ 552	(31) 740	⑤ 437	⑤ 375	⑤ 331			
⑥ 617	(32) 468	⑥ 437	⑥ 277	⑥ 327			
⑦ 799	(33) 528	⑦ 386	⑦ 296	⑦ 488			
⑧ 456	(34) 402	⑧ 370	⑧ 314	⑧ 376			
⑨ 438	(35) 609	⑨ 325	⑨ 325	⑨ 581			
⑩ 626	(36) 609	⑩ 328	⑩ 401	⑩ 401			
⑪ 536	(37) 516	⑪ 341	⑪ 375	⑪ 375			
⑫ 377	(38) 269	⑫ 453	⑫ 717				
⑬ 445	(39) 828	S. Wall					
⑭ 780	(40) 526	① 429	① 328				
⑮ 815	(41) 609	② 349	② 436				
⑯ 392	(42) 813	③ 346	③ 330				
⑰ 360	(43) 848	④ 532	④ 355				
⑱ 551	(44) 586	⑤ 414	⑤ 398				
⑲ 426	* (45) 4687	⑥ 383	⑥ 445				
⑳ 583	* (46) 9225	⑦ 407					
㉑ 447	(47) 670	⑧ 428					
㉒ 431	(48) 833	⑨ 574					
㉓ 544	(49) 659						
㉔ 388	(50) 3809 (Floor by wall "hotspot")						
㉕ 613	(51) 889						
㉖ 484							

Contaminated side of step area

Floor W. Wall

① 424	⑥ 652	⑩ 571
② 475	⑪ 393	
③ 332	⑫ 316	
④ 556	⑬ 546	
⑤ 512	⑭ 413	

Unit F2  
V

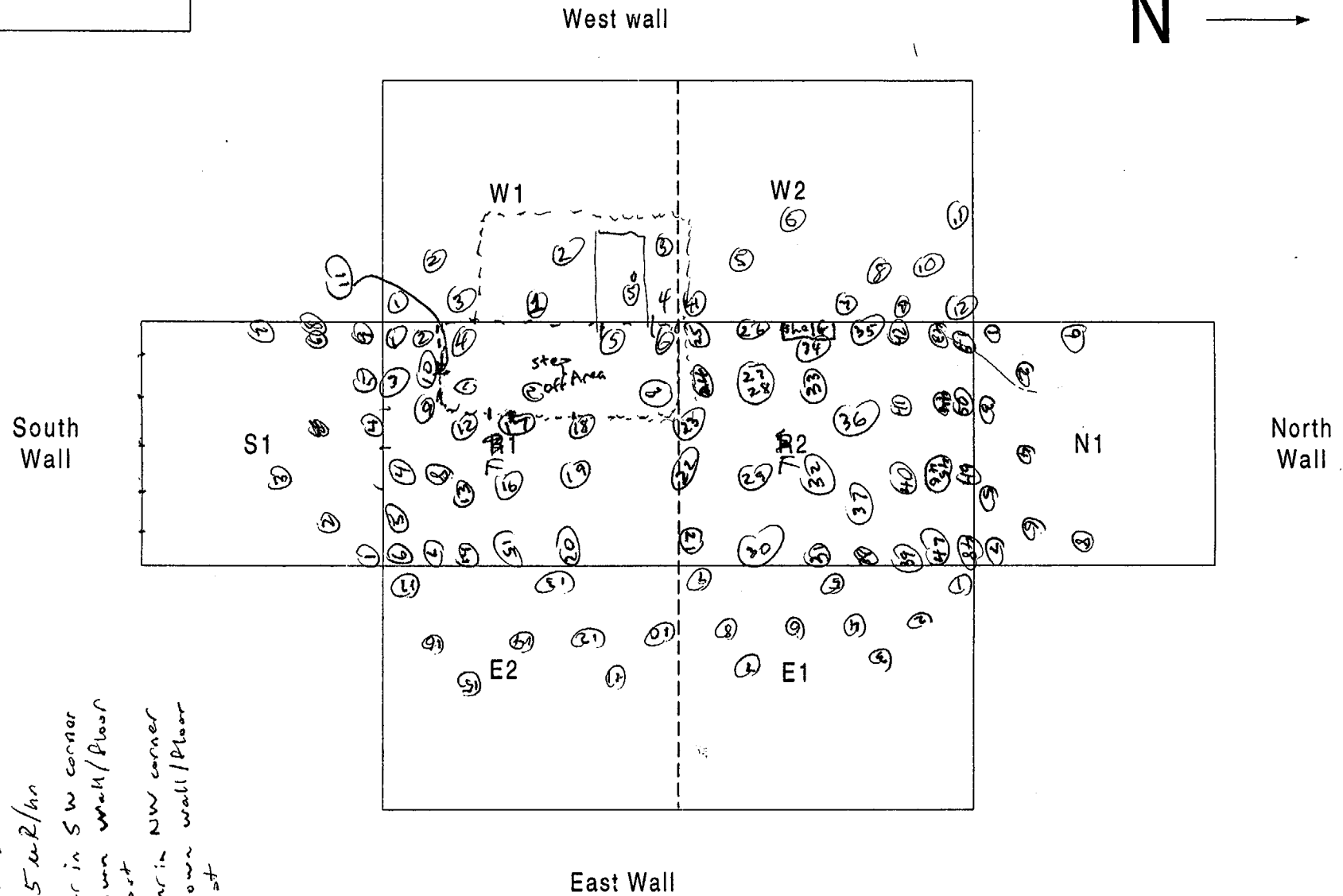
Note - (20) - (21) not to scale  
same spacing as other  
survey pts.

Location: SMALL BUTLER BUILDING  
EXTERIOR

Classification: Unaffected

Comments: Numbers inside the  
blocks are survey units.

N →



# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 9/2/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: Small Butler Bldg. Exterior Walls

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
463	3833	3370	<sup>99</sup> Tc	23,400	14.4	714	1183

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	850	387	2687	south wall
2	359	-104	-722	<MDA <BKGND south wall
3	342	-121	-840	<MDA <BKGND south wall
4	370	-93	-646	<MDA <BKGND south wall
5	675	212	1472	south wall
6	671	208	1444	north wall
7	2981	2518	17484	north wall-opposite interior hot spot
8	1820	1357	9422	not on wall-asphalt below wall-also due to interior hot spot
9	393	-70	-486	<MDA <BKGND north wall
10	466	3	21	<MDA north wall
11	696	233	1618	west wall
12	416	-47	-326	<MDA <BKGND west wall
13	534	71	493	<MDA west wall
14	339	-124	-861	<MDA <BKGND west wall
15	581	118	819	west wall
16	538	75	521	<MDA
17	347	-116	-805	<MDA <BKGND
18	490	27	187	<MDA
19	332	-131	-910	<MDA <BKGND
20	519	56	389	<MDA
21	316	-147	-1021	<MDA <BKGND
22	408	-55	-382	<MDA <BKGND
23	417	-46	-319	<MDA <BKGND
24	383	-80	-555	<MDA <BKGND
25				
26				Exposure rates:
27				SW corner-20 uR/hr
28				NW corner-35 uR/hr
29				Rest of exterior-10 to 15 uR/hr
30				
31				
32				
33				
34				
35				

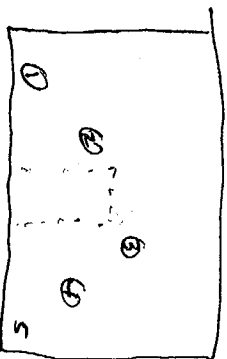
Signature: Steven A. Bostrom

Date: 12/29/00



9/2/93 Westing Cheshire Small Butler Exterior

S. Wall

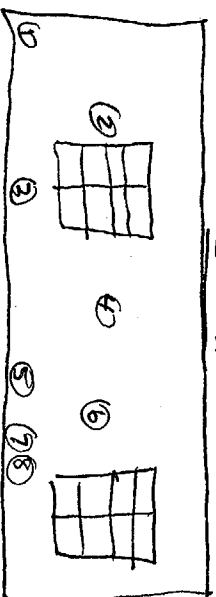


① 850 ② 370

③ 359 ④ 675

⑤ 342 ~~⑥~~

E. Wall

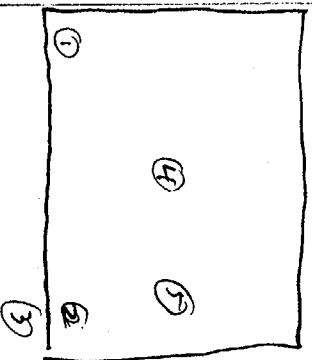


① 528 ② 332 ③ 408

④ 347 ⑤ 519 ⑥ 417

⑦ 490 ⑧ 314 ⑨ 383

N. Wall

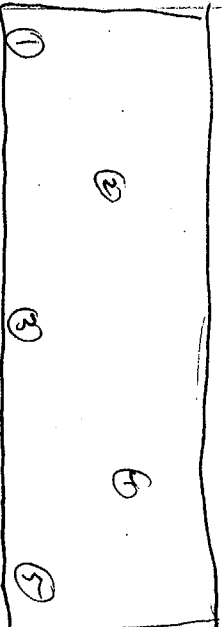


① 671

② 2781 Ext wall opposite internally marked hot spot

③ 1820 Ext. Asphalt adjacent to ②  
④ 393 ⑤ 466

W. Wall



① 636

② 414

③ 534

④ 339

⑤ 581

NR readings

SW corner 20 NR/h

NW corner 35 NR/h

All else 10-15 NR/h

# Pennsylvania DEP Bureau of Radiation Protection

## Facility Survey Data Sheet

Facility: Westinghouse Cheswick Electro-Mechanical Division

Date: 9/30/99

Meter Model and Serial Number: Ludlum 2241-2, SN - 137745

Detector Model and Serial Number: Ludlum 44-116(Beta Scintillator-100 cm<sup>2</sup>), SN-147859

Area/Building Surveyed: Demolished High Bay beams & concrete rubble

Count times: 1 minute

### Instrument Efficiency and Contamination Threshold Determination

Bkgnd. Count	Gross Count	Net Count	Check Source Nuclide	Source Activity (dpm)	Efficiency (%)	Minimum Detectable Activity (dpm)	5,000 dpm above bkgnd. (cpm)
281	2114	1833	<sup>99</sup> Tc	11,400	16.1	502	1085

### Survey Data

Survey Point	Meter Gross Count	Net Count	dpm above bkgnd. (dpm)	Comments
1	271	-10	-62	<MDA <BKGND Clean scrap beam pile
2	285	4	25	<MDA Clean scrap beam pile
3	224	-57	-355	<MDA <BKGND Clean scrap beam pile
4	263	-18	-112	<MDA <BKGND Clean scrap beam pile
5	229	-52	-323	<MDA <BKGND Clean scrap beam pile
6	230	-51	-317	<MDA <BKGND Clean scrap beam pile
7	265	-16	-100	<MDA <BKGND Clean scrap beam pile
8	221	-60	-373	<MDA <BKGND Clean scrap beam pile
9	294	13	81	<MDA Clean scrap beam pile
10	292	11	68	<MDA Clean scrap beam pile
11	245	-36	-224	<MDA <BKGND Clean scrap beam pile
12	314	33	205	<MDA Clean scrap beam pile
13	284	3	19	<MDA Clean scrap beam pile
14	261	-20	-124	<MDA <BKGND Clean scrap beam pile
15	679	398	2475	Clean scrap beam pile
16	611	330	2052	Clean scrap beam pile
17	383	102	634	Clean scrap beam pile
18	349	68	423	<MDA Clean scrap beam pile
19	525	244	1518	Clean scrap beam pile
20	315	34	211	<MDA Clean scrap beam pile
21	295	14	87	<MDA Clean scrap beam pile
22	222	-59	-367	<MDA <BKGND Clean scrap beam pile
23	333	52	323	<MDA Clean concrete rubble
24	339	58	361	<MDA Clean concrete rubble
25	349	68	423	<MDA Clean concrete rubble
26	172261	171980	1069597	Clean concrete rubble-probable hole in scintillator mylar; instrument
27				over responding on previously surveyed areas too; uR readings at point
28				where meter began over responding don't indicate this level of contamination
29				Survey terminated.
30				
31				Exposure rates: clean concrete rubble pile - 3 to 4 uR/hr
32				concrete in rolloff box - 3 to 5 uR/hr, around perimeter of beam pile
33				3 to 19 uR/hr @ 1m, 35 to 50 uR/hr @ contact. Elevated exposure rate
34				probably due to ground underneath pile in this area. Elevated readings
35				were noted in bldgs in this area prior to demo.

Signature: \_\_\_\_\_

*Steven A. Bortman*

Date: \_\_\_\_\_

12/29/00

Westinghouse Chewick 9/30/99  
Survey of High Bay Beams (After demolition)

Instrument Efficiency Check

Metar Ludlum 2241-2 SN 137745

Detector Ludlum 44-116 SN 147859

<u>Bkgnd</u>	<u>Gross</u>	<u>Net</u>
268	2071	1833
283	2155	
<u>291</u>	<u>2115</u>	
281-Avg	2114-Avg	

$$Eff = \frac{1833 \text{ cpm}}{11,400 \text{ dpm}} = 16.1\%$$

$$(5000 \text{ dpm}) 0.161 = 805 \text{ cpm} \quad 5000 \text{ dpm} \approx \text{bkgnd} = 805 \text{ cpm} + 281 \text{ cpm}$$

$$= 1086 \text{ cpm}$$

Clean Scrap Beam Pile - (to

<u>Reading #</u>	<u>Reading (cpm)</u>
(1) 271	(15) 679
(2) 285	(16) 611
(3) 224	(17) 383
(4) 263	(18) 349
(5) 229	(19) 525
(6) 230	(20) 315
(7) 265	(21) 295
(8) 221	(22) 222
(9) 294	
(10) 292	
(11) 245	
(12) 314	
(13) 284	
(14) 261	

Pile on Ground  
Clean Concrete Rubble  
(To Valley Landfill)

- (1) 333
- (2) 339
- (3) 349
- (4) 172261

Probable hole in

detector mylar. Instrument

also over-responding

on previously surveyed

areas. and readings at

point where meter began

over-responding do not

indicate this level of

contamination

Westing house Newark conf. 9/30/69  
NR/R readings

Clean concrete rubble pile 3-4 NR/R/hr

Clean concrete rubble in roll off box - 3.5 NR/R/hr

Around perimeter of clean scrap beam pile - 3-19 NR/R/hr in  
at surface of beam 25 to 50 NR/R/hr.

Elevated exposure rate is most likely from ground underneath  
pile in this area, This soil will be excavated

(This was one of small butler bldg & high bay where ~~the~~ <sup>elevated</sup>  
previous exposure rates were previously noted.



Structural steel from  
demolished PRF.

C08

9. 30. 1999



West Cheswick.

DEP (W)  
004  $\longleftrightarrow$  06-0108W-A  
↓  
 $1760 \pm 25$  pCi/kg  $^{60}\text{Co}$   
 $845 \pm 16$  pCi/kg  $^{137}\text{Cs}$

DEP (W)  
005  $\longleftrightarrow$  06-0087W-A  
↓  
 $912 \pm 23$  pCi/kg  $^{60}\text{Co}$   
 $7,010 \pm 44$  pCi/kg  $^{137}\text{Cs}$

Note:

The following sample results are not final survey data. They were intended to be used only as a comparison of the Antech Ltd. and DEP laboratories.

Steve Braggman 12/20/00



lp  
Sample ID : 9906-0087W

Acquisition date : 8-JUN-1999 20:10:53

Page : 1

ANTECH Ltd. Waltz Mill Lab

8-JUN-1999 21:11:15.47

# GAMMA Spectrometry Report

\*\*\*\*\*

Sample Title: 99-0336W EXT14-1A ✓ Antech Sample ID: 9906-0087W  
System File: DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_99060087W\_D\_500SSJSOILA\_2768.CNF;1  
Acquisition Time : 8-JUN-1999 20:10:53.60

Sample Quantity : 8.15070E+02 GRAM ✓ Sample Time : 27-MAY-1999 00:00:00  
Sample Matrix : SOIL Decay Time : 12 20:10:53.60  
Detector name : D Geometry : 500SSJ-SOIL-A  
Live time : 0 01:00:00.00 ✓ % Dead Time : 0.1%

Library File : DKA100:[GAMMA.SCUSR.LIB]BIG-5.NLB;  
Background File : DKA100:[GAMMA.SCUSR.ARCHIVE]BKG\_LONGBKG\_D\_2691.CNF;1  
Analysis File : DKA0:[gamma.scusr.asf]BIG-5.asf

Tolerance \*(FWHM): 0.85  
Abundance limit : 60.0  
Half life ratio : 12.0

Propagate errors? : Yes  
Systematic Error : 1.00  
Peak Sensitivity : 2.80

\*\*\*\*\*

## Brief Report

Nuclide	Activity pCi/GRAM	2-Sigma Error	
K-40	6.09	1.03	
CO-60	1.92	0.125	→ DEP Lab Result 0.912 pCi/g
CS-137	19.5	0.994	→ DEP Lab Result 7.010 pCi/g
TL-208	0.316	9.323E-02	
BI-212	1.42	0.778	
PB-212	0.930	0.153	
BI-214	1.75	0.154	
PB-214	1.55	0.214	
RA-226S	6.44	2.11	
AC-228	0.839	0.239	
TH-234	2.56	1.77	

Total Activity : 43.3

Approved by: [Signature]

Approval Date: 6/8/99

## Minimum Detectable Activity Report

Nuclide	Bckgnd Sum	Energy (keV)	MDA (pCi/GRAM)
MN-54	52.	834.83	8.5354E-02
CO-58	50.	810.75	9.0776E-02
AM-241	458.	59.54	2.0343E-01



!p  
Sample ID : 9906-0108W

Page : 1  
Acquisition date : 9-JUN-1999 15:18:17

ANTECH Ltd. Waltz Mill Lab

9-JUN-1999 15:48:38.92

### GAMMA Spectrometry Report

\*\*\*\*\*  
Sample Title: 99-0336W EXT12-3A ✓ Antech Sample ID: 9906-0108W  
System File: DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_99060108W\_C\_500SSJSOILA\_2792.CNF;1  
Acquisition Time : 9-JUN-1999 15:18:17.05

Sample Quantity : 9.49070E+02 GRAM ✓ Sample Time : 1-JUN-1999 00:00:00.  
Sample Matrix : SOIL Decay Time : 8 15:18:17.05  
Detector name : C ✓ Geometry : 500SSJ-Soil-A  
Live time : 0 00:30:00.00 ✓ % Dead Time : 0.1% *STV*

Library File : DKA100:[GAMMA.SCUSR.LIB]BIG-5.NLB;  
Background File : DKA100:[GAMMA.SCUSR.ARCHIVE]BKG\_LONGBKG\_C\_2548.CNF;1  
Analysis File : DKA0:[gamma.scusr.asf]BIG-5.asf

Tolerance \*(FWHM): 0.85 Propagate errors? : Yes  
Abundance limit : 60.0 Systematic Error : 1.00  
Half life ratio : 12.0 Peak Sensitivity : 2.80

### Brief Report

Nuclide	Activity pCi/GRAM	2-Sigma Error
K-40	9.45	1.15
CO-60	4.63	0.178
CS-137	3.85	0.262
TL-208	0.274	8.572E-02
PB-212	0.667	0.179
BI-214	0.730	0.135
PB-214	0.682	0.161
AC-228	0.729	0.215

→ DEP Lab Result 1.76 pCi/g  
→ DEP Lab Result 0.845 pCi/g

Total Activity : 21.0

Approved by: *Mark J. McLaughlin*

Approval Date: 6 / 9 / 99

### Minimum Detectable Activity Report

Nuclide	Bckgnd Sum	Energy (keV)	MDA (pCi/GRAM)
MN-54	143.	834.83	1.0878E-01
CO-58	122.	810.75	1.0636E-01
AM-241	292.	59.54	5.7239E-01

C11



Fixed:
HNO <sub>3</sub>
HCHO

DEP Laboratory  
Sample Submission Sheet

Lab Use Only

Lab Number: 1647

Date Received: 7/15/99

\* Collector ID.: Seq. No.: \* Date Collected:(MM-DD-YY) Time Collected: \* SAC or Suite Code:

5	5	1	0	0	0	4	0	7	0	7	9	9	1	5	3	0	R	A	D	6	6
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

\* Reason: \* Cost Center: \* Program: Legal Seal Number:

0	3	0	3	1	0	0	1	4
---	---	---	---	---	---	---	---	---

Seal Broken?

yes no

yes no

yes no

↓  
Gross γ  
for 137Cs &  
690 conc.

\* Matrix Code:

0	0	9
---	---	---

Custody Log Date: 7/17/99

Additional Information:

How Shipped:

U.S. Cargo

\*\*Radon Vial Number:

\*\*Radon Duplicate Number:

\*\*Radon Duplicate Date/Time:

Collector Name: Steve Bostjancic SWRO 400 Waterfront

Dr. Pgh 15222

Collector Phone Number: 412-442-5824

Received by:

Project Facility Monitoring Pt.	
Project Unit:	
Project ID:	
Primary Facility #	
Sub Facility #	
Monitoring Point ID#	
Monitoring Point Alias:	

Location Code:									
Air Volume:	1063.06 <del>1</del>								
Utility Code:	121.10 941.96 .9412 Kf								

County:	
Municipality:	
Quadrangle:	
Latitude:	
Longitude:	
Datum:	
Stream:	
River Mile :	
Location:	

Sampling Method:	
Medium Type:	
Medium:	

Homeowner's name:	
Address:	
Address:	
City:	
State:	
Zip Code:	
Phone Number:	
Well depth:	

Contact (open/close):	
1 Meter (open/close):	
3 Meters(open/close):	
Wipe (smear):	
Field Gamma Spec:	

Signature: Steve Bostjancic

\* Required information for ALL sample submissions.

\*\*Required information for RADON DUPLICATES.

Note - sample belongs to licensee.  
Please return to S. Bostjancic at DEPSWRO  
Thanks



# Radiation Analysis Results

Laboratory Number : 1649

Sample Number : 5510004

\*\*\*\*\*

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LLD	Sample Value	95% CE
54 Mn **	11.00	0.00	0.00
59 Fe **	26.00	0.00	0.00
58 Co **	11.00	0.00	0.00
60 Co	9.00	1760.00	25.00
65 Zn **	25.00	0.00	0.00
95 Zr **	19.00	0.00	0.00
95 Nb **	12.00	0.00	0.00
131 I **	16.00	0.00	0.00
134 Cs **	9.00	0.00	0.00
137 Cs	10.00	845.00	16.00
140 Ba **	45.00	0.00	0.00
140 La **	196.00	0.00	0.00
133 Ba **	11.00	0.00	0.00

\*\*\*\*\*

\*\* - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 07-19-1999

Reviewed By :

*[Signature]*  
7/19/99



# Radiation Analysis Results

Laboratory Number : 1649

Sample Number : 5510004

\*\*\*\*\*

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LLD	Sample Value	95% CE
--	---------	--------------	--------

54 Mn **	11.00	0.00	0.00
56 Fe **	26.00	0.00	0.00
58 Co **	11.00	0.00	0.00
60 Co	9.00	1760.00	25.00
66 Zn **	25.00	0.00	0.00
90 Zr **	19.00	0.00	0.00
95 Nb **	12.00	0.00	0.00
131 I **	16.00	0.00	0.00
134 Cs **	9.00	0.00	0.00
137 Cs	10.00	845.00	16.00
140 Ba **	45.00	0.00	0.00
140 La **	195.00	0.00	0.00
153 Ba **	11.00	0.00	0.00

\*\*\*\*\*

\*\* - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 07-19-1999

Reviewed By :

*[Signature]*  
7/19/99

Lab Use Only

Fixed:
HNO <sub>3</sub>
HCHO

DEP Laboratory  
Sample Submission Sheet

Lab Number: 1650  
Date Received: 7/15/99

\* Collector ID.: Seq. No.: \* Date Collected:(MM-DD-YY) Time Collected: \* SAC or Suite Code:

5	5	1	0	0	0	5	0	7	0	7	9	9	1	5	3	0	R	A	D	6	6
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

\* Reason: \* Cost Center: \* Program: Legal Seal Number: Seal Broken? Gross  $\gamma$  for <sup>137</sup>Cs and <sup>60</sup>Co conc.

0	3	0	3	1	0	0	1	4	yes	no
0	0	9							yes	no
									yes	no

Custody Log Date: 7/13/99

Additional Information:

How Shipped:

U.S. Cargo

\*\*Radon Vial Number:

\*\*Radon Duplicate Number:

\*\*Radon Duplicate Date/Time:

Collector Name: Steve Bostjancic SWRO 400 Waterfront

Dr. Pgh 15222

Collector Phone Number: 412-442-5824

Received by:

Project Facility Monitoring Pt.

Project Unit:

Project ID:

Primary Facility #

Sub Facility #

Monitoring Point ID#

Monitoring Point Alias:

Location Code:

Air Volume:

848.50 ft<sup>3</sup>

Utility Code:

120.79

727.71

727.71 kg

County:

Municipality:

Quadrangle:

Latitude:

Longitude:

Datum:

Stream:

River Mile:

Location:

Sampling Method:

Medium Type:

Medium:

Homeowner's name:

Address:

Address:

City:

State:

Zip Code:

Phone Number:

Well depth:

Contact (open/close):

1 Meter (open/close):

3 Meters (open/close):

Wipe (smear):

Field Gamma Spec:

Signature: Steve Bostjancic

\* Required information for ALL sample submissions.

\*\*Required information for RADON DUPLICATES.

Note - sample belongs to licensee.  
Please return to S. Bostjancic at DEP SWRO  
Thanks



# Radiation Analysis Results

Laboratory Number : 1650

Sample Number : 5510005

\*\*\*\*\*

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LLD	Sample Value	95% CE
54 Mn **	12.00	0.00	0.00
59 Fe **	26.00	0.00	0.00
58 Co **	11.00	0.00	0.00
60 Co	10.00	912.00	23.00
65 Zn **	27.00	0.00	0.00
95 Zr **	19.00	0.00	0.00
95 Nb **	13.00	0.00	0.00
131 I **	26.00	0.00	0.00
134 Cs **	10.00	0.00	0.00
137 Cs	13.00	7016.00	44.00
140 Ba **	65.00	0.00	0.00
140 La **	275.00	0.00	0.00
138 Ba **	17.00	0.00	0.00

\*\*\*\*\*

\*\* - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 07-19-1999

Reviewed By :

*[Signature]*  
7/19/99



# Radioactive Analytical Results

Laboratory Number : 1650

Sample Number : 5510005

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LLD	Sample Value	95% CE
54 Mn **	12.00	0.00	0.00
56 Fe **	26.00	0.00	0.00
58 Co **	11.00	0.00	0.00
60 Co	10.00	912.00	23.00
65 Zn **	27.00	0.00	0.00
66 Zr **	19.00	0.00	0.00
96 Nb **	13.00	0.00	0.00
131 I **	26.00	0.00	0.00
134 Cs **	10.00	0.00	0.00
137 Cs	13.00	7010.00	44.00
140 Ba **	65.00	0.00	0.00
140 La **	215.00	0.00	0.00
152 Eu **	17.00	0.00	0.00

\*\*\*\*\* This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 07-19-1999

Reviewed By :

*[Signature]*  
7/19/99



Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Summary Sheet

Facility/Site:

Westinghouse Cheswick

Date:

7/20/1999

Contact Person:

Wayne Bickerstaff

Phone #:

724-275-5323

At Westinghouse Cheswick to survey and sample bottom & sides of excavation under old portion of pump repair facility (see attached drawing and photo).

Equipment: Ludlum Model 2221 with Model 44-10 NaI detector; background ~ 7.3 kC/min  
: Bicron Micro-Analyst; background ~ 15  $\mu$ R/hr

Performed gamma survey of bottom and sides of excavation; collected four soil samples from bottom in areas where count rate was noticeably elevated above background (see attached sketch). Performed exposure rate survey with microR meter; general area exposure rate was 15 to 25  $\mu$ R/hr, although rates up to 100  $\mu$ R/hr were noted near an area of known contamination. (See sketch and attached lab reports.)

Name:

Steven A. Bostjancic

Signature:

*Steven A. Bostjancic* 12/27/00

Date:

12/27/2000

7/30/99 Cheeswick

Inst. Ld. 2221 SN 67413  
Dof Ld. 4410 SN 058053

Bkgd - outside PRF 5400 ft.  $\swarrow$  N

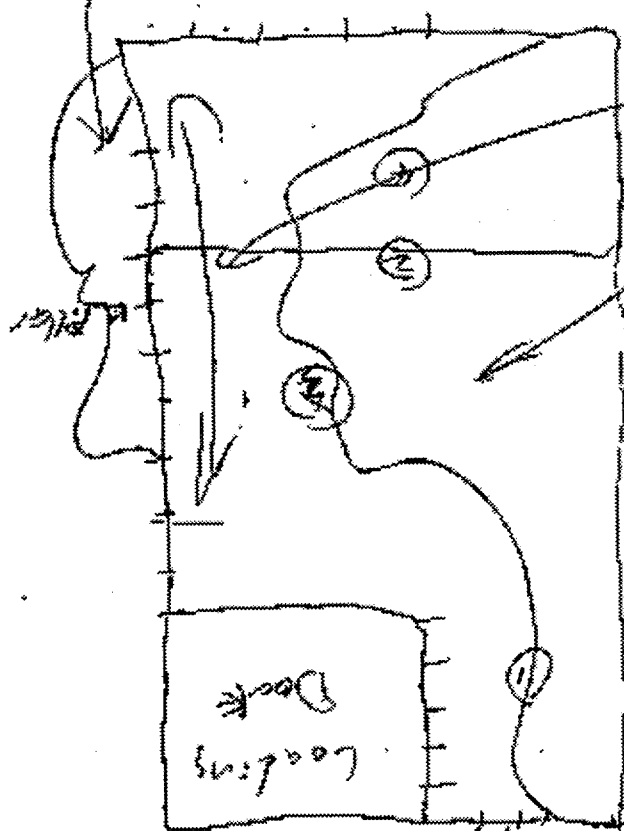
7254  
7470  
7366

Sample # 1 6,005 cpm  
Sample # 2 9816 cpm  
Sample # 3 10,172 cpm  
Sample # 4 11,708

In high WP readings  
in excavation  
15 to 25 m.p.h.  
45 to 100 m.p.h.

near contamination  
base of excavation

Contaminated  
soils on  
drift wall below  
~ 14,000 cpm



# Radiation Analysis Results

Laboratory Number : 1960

Sample Number : B510006

Unless otherwise noted all values reported are picocuries per received kilogram

95% LLD Sample Value 95% CE

94 Mn	18.00	0.00	0.00
56 Fe	51.00	0.00	0.00
58 Co	18.00	0.00	0.00
60 Co	15.00	141.00	18.00
65 Zn	34.00	0.00	0.00
66 Zn	37.00	0.00	0.00
92 Nb	32.00	0.00	0.00
137 I	448.00	0.00	0.00
134 Cs	12.00	0.00	0.00
137 Cs	13.00	27.00	13.00
140 Ba	419.00	0.00	0.00
90 K	113.00	8590.00	314.00
92 Rb	49.00	649.00	60.00
214 Pb	100.00	446.00	128.00

-- This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 09-10-1999

Revised By :

66/10/99

# Radon in Air and Soil

Laboratory Number : 1961

Sample Number : 5510007

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LLD	Sample Value	95% CE
54 Mn **	13.00	0.00	0.00
59 Fe **	44.00	0.00	0.00
60 Co **	16.00	0.00	0.00
60 Co	13.00	441.00	13.00
65 Zn **	30.00	0.00	0.00
90 Zr **	33.00	0.00	0.00
95 Nb **	29.00	0.00	0.00
131 I **	390.00	0.00	0.00
134 Cs **	12.00	0.00	0.00
137 Cs **	13.00	0.00	0.00
140 Ba **	375.00	0.00	0.00
40 K	106.00	8440.00	291.00
212 Pb	44.00	565.00	63.00
214 Pb	90.00	527.00	104.00

\*\* This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 09-10-1999

Reviewed By : *TPM*

9/10/99

# Radiation Analysts Results

Sample Number : 5510008

Laboratory Number : 1962

Unless otherwise noted all values reported are picocuries per received kilogram

95% CL

Sample Value

95% LTD

54 Mn **	26.00	0.00	0.00
55 Fe **	93.00	0.00	0.00
56 Fe **	33.00	0.00	0.00
60 Co	16.00	2410.00	60.00
65 Zn **	60.00	0.00	0.00
66 Zn **	60.00	0.00	0.00
90 Nb **	63.00	0.00	0.00
137 Cs **	629.00	0.00	0.00
134 Cs **	19.00	0.00	0.00
137 Cs	22.00	46.00	19.00
134 Cs **	460.00	0.00	0.00
40 K	122.00	10500.00	333.00
51 Cr	91.00	879.00	103.00
51 Cr	17.00	913.00	19.00

\* - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection

Printing Date : 09-10-1999

Reviewed By : Tm

9/10/99



# Radialion Analyses Results

Laboratory Number : 1963

Sample Number : 5510009

Unless otherwise noted all values reported are picocuries per received kilogram

	95% LID	Sample Value	95% CE
54 Mn **	24.00	0.00	0.00
59 Fe **	82.00	0.00	0.00
59 Co **	30.00	0.00	0.00
60 Co	18.00	1170.00	43.00
66 Zn **	53.00	0.00	0.00
68 Zr **	56.00	0.00	0.00
95 Nb **	48.00	0.00	0.00
131 I **	621.00	0.00	0.00
134 Cs **	19.00	0.00	0.00
137 Cs	22.00	613.00	30.00
140 Ba **	64.00	0.00	0.00
40 K	130.00	10300.00	377.00
212 Pb	82.00	907.00	109.00
214 Pb	154.00	571.00	165.00

\*\* - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Printing Date : 09-10-1999

Reviewed By : JPM

9/10/99



Soil surveyed and  
sampled on  
7/20/1999



7.15.1999



**Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Summary Sheet**

**Facility/Site:** Westinghouse Cheswick

**Date:** 11/10/1999 **Contact Person:** Wayne Bickerstaff **Phone #:** 724-275-5323

At site to survey and sample soils under the now demolished pump repair facility and administration building.

Equipment: Ludlum 2221s with 44-10 2x2 NaI detectors; background – 4.5 to 5.5 kC/min  
: Bicon Micro-analyst; background – 8 to 10  $\mu$ R/hr

Performed gamma survey of bottom and sides of excavation where buildings used to be. Maximum count rate noted was about 7 to 8 kC/min. Collected 4 soil samples (split with Westinghouse) in areas with highest count rates (see attached lab reports). Took exposure rate readings at 1 meter from excavation surfaces. Exposure rate ranged from 10 to 13  $\mu$ R/hr. No areas requiring additional decontamination were noted pending lab results.

**Name:** Steven A. Bostjancic **Signature:** *Steven A. Bostjancic* 12/27/00 **Date:** 12/27/2000

~~11/10/99~~

11/10/99

(W) Cheswick

Survey of soils under demolished bldg.

Metars - Ludlum 2221s with 44-10 2x2 NaI(Tl) detectors

4500-5500  
Bkgnd ~ ~~5000~~ cpm. Max readings noted ~ 74-cu cpm

Took 4 soil samples in areas with highest count rates  
(split with Westinghouse)

MR readings 10-13 mR/hr @ 1m

Sample ID: 5510 014 11/10/1999

Status: COMPLETED

Collector: Steven A Bostjancic  
Collected: 11/10/1999 10:00:00 AMCounty: Allegheny  
Municipality: Cheswick Boro

State: PA

-----  
WESTINGHOUSE ELEC CHESWICK PLT  
1000 CHESWICK AVE  
CHESWICK PA 15024-  
-----Facility/Permit ID: 37-05809-01 FIX ID: 543575  
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1  
Sub-Facility: 37-05809-01 FIX ID: 436114  
Name: WESTINGHOUSE GOV SER CO NRC LIC #1Location: NOT INDICATED  
Reason: Routine Sampling

North of Admin. entrance

Laboratory Sample ID: R1999002808  
Suite: RAD66  
Matrix: Soil

COMPLETED

\*\*\*\*\*  
A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

\*\*\*\*\*

Test	95% LLD	Sample Value	95% CE
BA 133**	7	0.0000 PCI/KG	0
BA 140**	354	0.0000 PCI/KG	0
CO 58**	10	0.0000 PCI/KG	0
CO 60	6	209.0000 PCI/KG	10
CS 134**	6	0.0000 PCI/KG	0
CS 137	6	85.0000 PCI/KG	6
FE 59**	30	0.0000 PCI/KG	0
I 131**	571	0.0000 PCI/KG	0



02/08/2000 12:05:54 AM

Laboratory Report For  
Radiation Protection

Page: 002

Sample ID: 5510 014 11/10/1999

Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
LA 140	0	0.0000 PCI/KG	0
MN 54**	7	0.0000 PCI/KG	0
NB 95**	20	0.0000 PCI/KG	0
ZN 65**	16	0.0000 PCI/KG	0
ZR 95**	19	0.0000 PCI/KG	0

\*\* - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

Sample ID: 5510 015 11/10/1999

Status: COMPLETED

Collector: Steven A Bostjancic  
Collected: 11/10/1999 10:05:00 AMCounty: Allegheny  
Municipality: Cheswick Boro

State: PA

-----  
WESTINGHOUSE ELEC CHESWICK PLT  
1000 CHESWICK AVE  
CHESWICK PA 15024-  
-----Facility/Permit ID: 37-05809-01 FIX ID: 543575  
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1  
Sub-Facility: 37-05809-01 FIX ID: 436114  
Name: WESTINGHOUSE GOV SER CO NRC LIC #1Location: NOT INDICATED  
Reason: Routine Sampling**North end of PRF**Laboratory Sample ID: R1999002809  
Suite: RAD66  
Matrix: Soil

COMPLETED

\*\*\*\*\*  
A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

\*\*\*\*\*

Test	95% LLD	Sample Value	95% CE
BA 133**	7	0.0000 PCI/KG	0
BA 140**	349	0.0000 PCI/KG	0
CO 58**	10	0.0000 PCI/KG	0
CO 60	6	278.0000 PCI/KG	12
CS 134**	6	0.0000 PCI/KG	0
CS 137	6	66.0000 PCI/KG	7
FE 59**	30	0.0000 PCI/KG	0
I 131**	588	0.0000 PCI/KG	0

02/08/2000 12:05:54 AM

Laboratory Report For  
Radiation Protection

Page: 002

Sample ID: 5510 015 11/10/1999

Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
LA 140	0	0.0000 PCI/KG	0
MN 54**	7	0.0000 PCI/KG	0
NB 95**	18	0.0000 PCI/KG	0
ZN 65**	17	0.0000 PCI/KG	0
ZR 95**	19	0.0000 PCI/KG	0

\*\* - This symbol indicates the reported sample value is lower than its  
corresponding lowest limit of detection.



Sample ID: 5510 016 11/10/1999

Status: COMPLETED

Collector: Steven A Bostjancic  
Collected: 11/10/1999 10:10:00 AMCounty: Allegheny  
Municipality: Cheswick Boro

State: PA

-----  
WESTINGHOUSE ELEC CHESWICK PLT  
1000 CHESWICK AVE  
CHESWICK PA 15024-  
-----Facility/Permit ID: 37-05809-01 FIX ID: 543575  
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1  
Sub-Facility: 37-05809-01 FIX ID: 436114  
Name: WESTINGHOUSE GOV SER CO NRC LIC #1Location: NOT INDICATED  
Reason: Routine Sampling**Under west PRF footer**Laboratory Sample ID: R1999002810  
Suite: RAD66  
Matrix: Soil

COMPLETED

\*\*\*\*\*

A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

\*\*\*\*\*

Test	95% LLD	Sample Value	95% CE
BA 133**	7	0.0000 PCI/KG	0
BA 140**	342	0.0000 PCI/KG	0
CO 58**	8	0.0000 PCI/KG	0
CO 60	6	67.0000 PCI/KG	9
CS 134**	5	0.0000 PCI/KG	0
CS 137	6	14.0000 PCI/KG	4
FE 59**	26	0.0000 PCI/KG	0
I 131**	547	0.0000 PCI/KG	0

02/08/2000 12:05:54 AM

Laboratory Report For  
Radiation Protection

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Sample ID: 5510 016 11/10/1999

Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
LA 140	0	0.0000 PCI/KG	0
MN 54**	6	0.0000 PCI/KG	0
NB 95**	18	0.0000 PCI/KG	0
ZN 65**	15	0.0000 PCI/KG	0
ZR 95**	18	0.0000 PCI/KG	0

\*\* - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.



Sample ID: 5510 017 11/10/1999

Status: COMPLETED

Collector: Steven A Bostjancic  
Collected: 11/10/1999 10:15:00 AMCounty: Allegheny  
Municipality: Cheswick Boro

State: PA

-----  
WESTINGHOUSE ELEC CHESWICK PLT  
1000 CHESWICK AVE  
CHESWICK PA 15024-  
-----Facility/Permit ID: 37-05809-01 FIX ID: 543575  
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1  
Sub-Facility: 37-05809-01 FIX ID: 436114  
Name: WESTINGHOUSE GOV SER CO NRC LIC #1Location: NOT INDICATED  
Reason: Routine Sampling**under men's locker room**Laboratory Sample ID: R1999002811  
Suite: RAD66  
Matrix: Soil

COMPLETED

\*\*\*\*\*  
A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

\*\*\*\*\*

Test	95% LLD	Sample Value	95% CE
BA 133**	8	0.0000 PCI/KG	0
BA 140**	400	0.0000 PCI/KG	0
CO 58**	10	0.0000 PCI/KG	0
CO 60	8	52.0000 PCI/KG	9
CS 134**	6	0.0000 PCI/KG	0
CS 137**	7	0.0000 PCI/KG	0
FE 59**	33	0.0000 PCI/KG	0
I 131**	642	0.0000 PCI/KG	0

02/08/2000 12:05:54 AM

Laboratory Report For  
Radiation Protection

Page: 002

Sample ID: 5510 017 11/10/1999

Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
LA 140	0	0.0000 PCI/KG	0
MN 54**	8	0.0000 PCI/KG	0
NB 95**	22	0.0000 PCI/KG	0
ZN 65**	19	0.0000 PCI/KG	0
ZR 95**	21	0.0000 PCI/KG	0

\*\* - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.



Soil surveyed and sampled on 11/10/1999





**Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Summary Sheet**

**Facility/Site:** Westinghouse Cheswick

**Date:** 1/14/2000      **Contact Person:** Wayne Bickerstaff      **Phone #:** 724-275-5323

At site to survey and sample soil underneath excavated catch basin that was part of the PRF drainage system.

Equipment: Ludlum 2221s with 44-10 2x2 NaI detectors; background ~8.5 kC/min.  
: Bicon Micro-analyst; background ~ 10 µR/hr.

Performed gamma survey on soils under removed catch basin and along excavation of gas line (see attached photo). One spot a few square inches in area was noted to have a count rate more than 3 times background, ~ 25 to 30 kC/min. We requested that the facility do additional decontamination of this area, which they did by excavating additional soil with a shovel until the count rate was indistinguishable from background. Collected a soil sample from another area of the trench which seemed to have a slightly elevated count rate (~ 9.5 kC/min). See attached lab report. Exposure rate measurements at 1 meter from bottom and sides ranged from 10 to 15 µR/hr.

**Name:** Steven A. Bostjancic, Roy Woods      **Signature:** *Steven A. Bostjancic 12/27/00*      **Date:** 12/27/2000

03/19/2000 12:06:48 AM

Laboratory Report For  
Radiation Protection

Page: 001

Sample ID: 5510 022 01/14/2000

Status: COMPLETED

Collector: Steven A Bostjancic  
Collected: 01/14/2000 01:44:00 PM

County: Allegheny  
Municipality: Cheswick Boro

State: PA

WESTINGHOUSE ELEC CHESWICK PLT  
1000 CHESWICK AVE  
CHESWICK PA 15024-

Facility/Permit ID: 37-05809-01 FIX ID: 543575  
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1  
Sub-Facility: 37-05809-01 FIX ID: 436114  
Name: WESTINGHOUSE GOV SER CO NRC LIC #1

Location: Under catch basin  
Reason: Routine Sampling

Gross count rate at area sampled was approximately background.

Appearance: Clay/soil

Laboratory Sample ID: R2000000541  
Suite: RAD66  
Matrix: Soil

COMPLETED

\*\*\*\*\*  
A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

\*\*\*\*\*

Test	95% LLD	Sample Value	95% CE
BA 133**	12	0.0000 PCI/KG	0
BA 140**	727	0.0000 PCI/KG	0
CO 58**	11	0.0000 PCI/KG	0
CO 60	6	722.0000 PCI/KG	14
CS 134	8	12.0000 PCI/KG	6
CS 137	9	5170.0000 PCI/KG	29



03/19/2000 12:06:48 AM

Laboratory Report For  
Radiation Protection

Page: 002

Sample ID: 5510 022 01/14/2000

Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
FE 59**	35	0.0000 PCI/KG	0
I 131**	1590	0.0000 PCI/KG	0
LA 140	0	0.0000 PCI/KG	0
MN 54**	8	0.0000 PCI/KG	0
NB 95**	22	0.0000 PCI/KG	0
ZN 65**	18	0.0000 PCI/KG	0
ZR 95**	22	0.0000 PCI/KG	0

\*\* - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.





Area surveyed and  
sampled on 1/14/2000

1. 14. 2000



**Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Summary Sheet**

**Facility/Site:** Westinghouse Cheswick

**Date:** 3/10/2000

**Contact Person:** Wayne Bickerstaff

**Phone #:** 724275-5323

Requested by facility to view excavation of a sanitary sewer line in the now demolished PRF area. Routine procedure has been to remove any defunct piping encountered whether it is contaminated or not. However, they are requesting permission to leave 3 2ft. sections of this pipe in place because it is below release limits and they are concerned that expanding the excavation to the extent necessary to remove the pipe will endanger the nearby phone pole and gas line (see attached photo showing proximity of pole to excavation). Their conclusion that the pipe is below release limits is based on the following survey results: 1) surveyed at both ends with 2x2 NaI detector – background is 12 kC/min, Inside pipe ends the count rates ranged from 12 to 15 kC/min. 2) Smearable result – 15 dpm/100 cm<sup>2</sup>, which is 2 counts over background. 3) Seven soil samples from under and around the pipe ends analyzed with the on-site Exploranium GR-256 MCA yielded 1300 to 1900 cpm whereas their threshold gross count rate for samples with potential contamination above release limits is  $\geq 2400$  cpm. I verified these readings on their sample log.

A section of this line that was bowed and leaking has been removed along with the associated contaminated soil.

Granted DEP's approval of their request pending final lab analysis of the soil samples.

**Name:** Steven A. Bostjancic

**Signature:**

*Steven A. Bostjancic 12/28/00*

**Date:** 12/28/2000



Photo taken 3/10/2000 showing  
proximity of phone pole to ex-  
cavation of sanitary drain line.



3.11.2000



**Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Summary Sheet**

**Facility/Site:** Westinghouse Cheswick

**Date:** 3/20/2000      **Contact Person:** Wayne Bickerstaff      **Phone #:** 724-275-5323

At site to perform survey of excavated pipe trench along Lemon Lane. Performed gamma and micro R survey of sections to east and west of facility parking lot driveway (see attached photos).

Equipment: Ludlum Model 2221 with Model 44-10 2x2 NaI detector; background 3.9kC/min.  
: Bicron Micro-Analyst; background 10-12  $\mu$ R/hr.

Maximum gross gamma count rate noted in east trench was 7 to 7.2 kC/min and exposure rate was 18 to 20  $\mu$ R/hr. Collected two soil samples (see attached lab reports). Noted count rate of 50 kC/min and exposure rate of 30  $\mu$ R/hr inside pipe at manhole end of trench (see attached photo). Asked facility to perform additional decontamination in this area or provide justification for leaving the contamination in place. They stated that they would evaluate the options and inform the DEP how they would proceed. Also surveyed portions of west trench but was unable to survey the entire length due to water pooling in the bottom. Readings noted were  $\leq 8.0$  kC/min and 13 to 15  $\mu$ R/hr.

**Name:** Steven A. Bostjancic      **Signature:**       **Date:** 12/29/2000



05/28/2000 12:06:27 AM

Laboratory Report For  
Radiation Protection

Page: 001

Sample ID: 5510 027 03/20/2000

Status: COMPLETED

Collector: Steven A Bostjancic  
Collected: 03/20/2000 10:00:00 AM

County: Allegheny  
Municipality: Cheswick Boro

State: PA

-----  
WESTINGHOUSE ELEC CHESWICK PLT  
1000 CHESWICK AVE  
CHESWICK PA 15024-  
-----

Facility/Permit ID: 37-05809-01 FIX ID: 543575  
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1  
Sub-Facility: 37-05809-01 FIX ID: 436114  
Name: WESTINGHOUSE GOV SER CO NRC LIC #1

Location: E. end of Lemon Lane pipe trench  
Reason: Self Monitoring

Laboratory Sample ID: R2000001048  
Suite: RAD66  
Matrix: Soil

COMPLETED

\*\*\*\*\*

A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

\*\*\*\*\*

Test	95% LLD	Sample Value	95% CE
BA 133**	7	0.0000 PCI/KG	0
BA 140**	385	0.0000 PCI/KG	0
CO 58**	9	0.0000 PCI/KG	0
CO 60	6	230.0000 PCI/KG	10
CS 134**	5	0.0000 PCI/KG	0
CS 137	6	98.0000 PCI/KG	6
FE 59**	27	0.0000 PCI/KG	0
I 131**	670	0.0000 PCI/KG	0
LA 140	0	0.0000 PCI/KG	0
MN 54**	7	0.0000 PCI/KG	0
NB 95**	17	0.0000 PCI/KG	0

05/28/2000 12:06:27 AM

Laboratory Report For  
Radiation Protection

Page: 002

Sample ID: 5510 027 03/20/2000

Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
ZN 65**	15	0.0000 PCI/KG	0
ZR 95**	17	0.0000 PCI/KG	0

\*\* - This symbol indicates the reported sample value is lower than its corresponding lowest limit of detection.

06/13/2000 01:26:48 PM

Laboratory Report For  
Radiation Protection

Page: 001

Sample ID: 5510 028 03/20/2000

Status: COMPLETED

Collector: Steven A Bostjancic  
Collected: 03/20/2000 10:15:00 AM

County: Allegheny  
Municipality: Cheswick Boro

State: PA

-----  
WESTINGHOUSE ELEC CHESWICK PLT  
1000 CHESWICK AVE  
CHESWICK PA 15024-  
-----

Facility/Permit ID: 37-05809-01 FIX ID: 543575  
Facility: WESTINGHOUSE GOV SER CO NRC LIC #1  
Sub-Facility: 37-05809-01 FIX ID: 436114  
Name: WESTINGHOUSE GOV SER CO NRC LIC #1

Location: Lemon Lane pipe trench 16 joint marks W of manhole  
Reason: Self Monitoring

Laboratory Sample ID: R2000001049  
Suite: RAD66  
Matrix: Soil

COMPLETED

\*\*\*\*\*

A sample value is an observed reading of a sample's radioactivity on a given date and time.

The Lowest Level of Detection (LLD) is the minimum sample value that can be detected with 95% confidence.

The Counting Error (CE) is a factor that when added to and subtracted from a sample value, defines a range that will with 95% confidence encompass the actual sample value.

\*\*\*\*\*

Test	95% LLD	Sample Value	95% CE
BA 133**	6	0.0000 PCI/KG	0
BA 140**	1210	0.0000 PCI/KG	0
CO 58**	13	0.0000 PCI/KG	0
CO 60	6	903.0000 PCI/KG	16
CS 134**	5	0.0000 PCI/KG	0
CS 137	6	37.0000 PCI/KG	6
FE 59**	48	0.0000 PCI/KG	0
I 131	0	0.0000 PCI/KG	0
LA 140	0	0.0000 PCI/KG	0
MN 54**	8	0.0000 PCI/KG	0
NB 95**	30	0.0000 PCI/KG	0

06/13/2000 01:26:48 PM

Laboratory Report For  
Radiation Protection

Page: 002

Sample ID: 5510 028 03/20/2000

Status: COMPLETED

Test	95% LLD	Sample Value	95% CE
ZN 65**	20	0.0000 PCI/KG	0
ZR 95**	25	0.0000 PCI/KG	0

\*\* - This symbol indicates the reported sample value is lower than its  
corresponding lowest limit of detection.









Areas surveyed on  
3/20/2000

3:20:2000

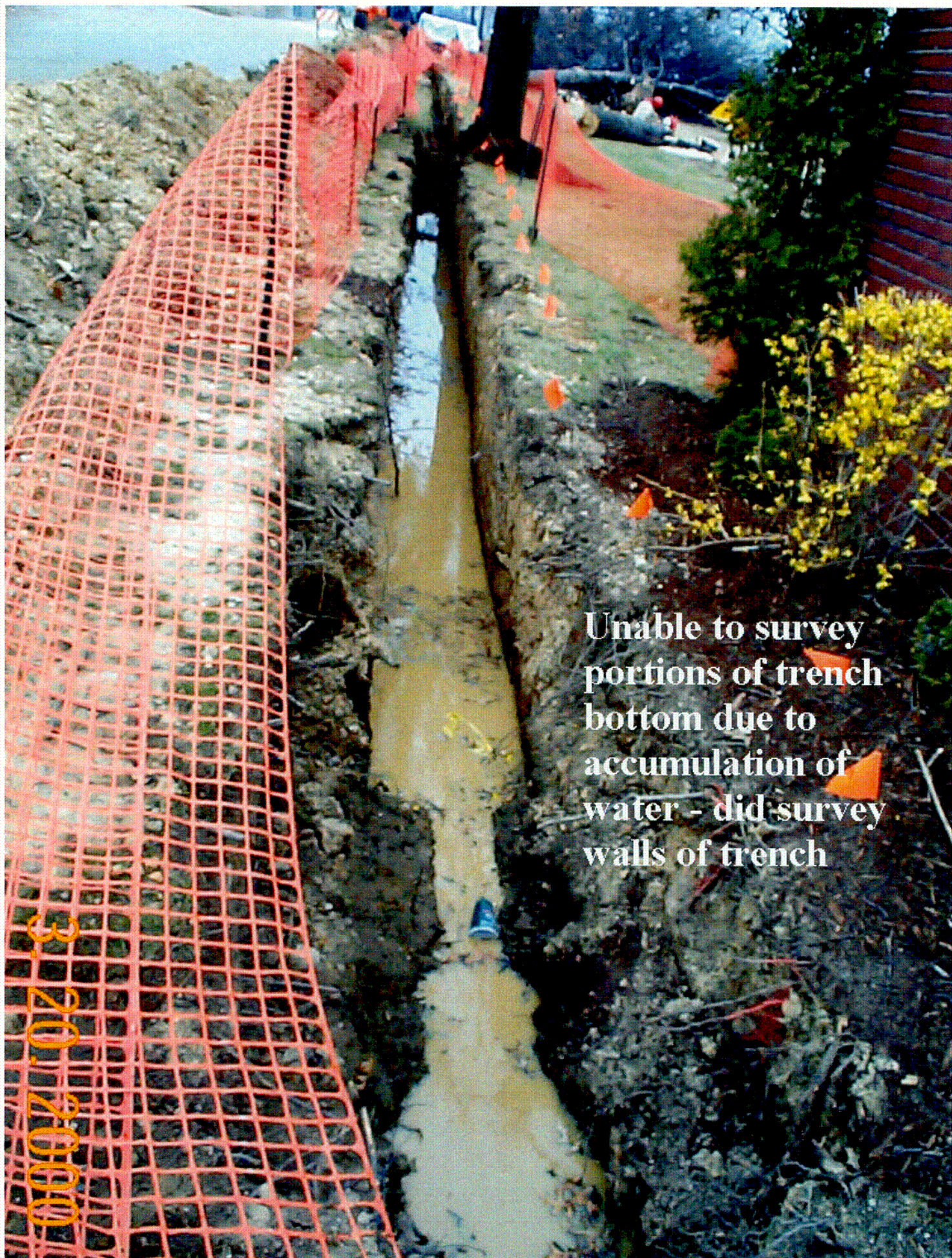


Pipe with elevated  
count rate and exposure  
rate noted 3/20/2000.



3. 20. 2000





Unable to survey  
portions of trench  
bottom due to  
accumulation of  
water - did survey  
walls of trench

3-20-2000



**Pennsylvania DEP Bureau of Radiation Protection  
Facility Survey Summary Sheet**

**Facility/Site:**

Westinghouse Cheswick

**Date:**

3/28/2000

**Contact Person:**

Wayne Bickerstaff

**Phone #:**

724-275-5323

At site to re-survey pipe in Lemon Lane trench which was noted to have an elevated count rate and exposure rate on 3/20/2000.

Equipment: Ludlum Model 2221 with Model 44-10 2x2 NaI detector; background – 3.7 kC/min.

: Bicron Micro-Analyst; background 5  $\mu$ R/hr.

: Exploranium GR-130 MiniSpec

Maximum gross count rate noted in end of pipe opening was 9.7 kC/min (down from 50 kC/min noted on 3/20/2000)  
Exposure rate inside pipe end was noted to be 15  $\mu$ R/hr (down from 30  $\mu$ R/hr noted on 3/20). Also performed gamma spec analysis at end of pipe with GR-130 (see attached photo). No nuclides were identified. Gave DEP approval to backfill trenches.

**Name:**

Steven A. Bostjancic

**Signature:**

*Steven A. Bostjancic 12/29/00*

**Date:**

12/29/2000



Gamma spec on PRF  
drainage pipe.



3.28.2000