ROOM 127

Room 127 contained both wet and dry gloveboxes used for scrap recovery. After glovebox removal the floor coating was removed and the entire room was vacu-blasted. Initial survey results after blasting indicated one spot on the floor of 2500 dpm/100 cm^2 direct and approximately 20% of the floor between 200 dpm/100 cm^2 and 500 dpm/100 cm^2. The entire floor and a few spots on the walls were reblasted before the final release survey was started. A number of pipe sleeves that were installed in room 127 floor had to be removed because of high gamma readings.

We used a Ludlum 2220 with a Ludlum 43-17 low energy gamma probe to identify all cracks and seams that might need decontamination. A Ludlum 2220 with a Ludlum 43-68, 43-4, or 43-27 was used with P-10 gas for all alpha release surveys. All smears were taken on Whatman smear paper and counted in a Hewlett-Packard 5560 A (low background) automatic sample counter.

William A. Rogers

W.A. Rogers

Pu PLANT RELEASE SURVEY PLAN

1. For initial decontamination all surfaces will be scanned with an Eberline PRM-6 with a Radeco alpha scintillation probe. Background will be maintained at less than 100 CPM(200 dpm). All areas greater than twice background will be marked and reading will be taken with a release survey instrument to document contamination levels and random large area smears will be taken.

2. After these initial areas are decontaminated, all floor surfaces and the base of each wall will be completely surveyed with a digital readout release instrument and a Ludlum large area gas proportional alpha detector and random smear samples will be taken. Release instrumentation shall have a minimum detectable level of at least 50 dpm/100 cm^2.

3. All hot spots greater than or equal to 100 dpm/100 cm^2 identified will be decontaminated.

4. A random survey with a release instrument will be taken on the walls and ceiling to try to identify any other problem areas.

5. If no problems are identified, each room will be gridded off into approximately 2 meter on a side square on the walls and floor and five readings will be taken in each grid. Readings shall be taken in the center and at the midpoint from the center to each corner.

6. Each ceiling has closely spaced rafters that will not be easily divided into 2 meter squares. Because of this, we will take readings on the bottom of each rafter at 2 meter intervals and one reading centered on the ceiling between rafters. Readings on each rafter will be staggered one meter.

7. These release readings will be documented on a map that is drawn to approximately scale measurements in meters.

8. Data provided on each map:

    1. Survey block numbers, identifiable on a scale drawings.

        a. room or area name or number.
        b. surface surveyed.
        c. type of measurement and units.

    2. Name of surveyor taking measurements, date of survey, and location.

3. Type, model number, calibration data, sensitivity limit, background, and source response of instruments used in survey.

4. When a block surveyed is below the sensitivity of the instrument, the fact that such a measurement was made should be included as significant data.

9. All release survey smears will be taken on Whatman smear paper and counted in the automatic sample counters. Each smear will cover approximately 100 cm^2.

10. There will be at least 30 survey blocks in each area to be released.

11. Piping and ductwork will be surveyed on all accessable sides at 2 meter intervals. If more than one line is running parallel in a pipe rack, readings shall be staggered at one meter intervals.

12. All readings taken that only cover part of a probe area will be corrected to dpm/100 cm^2.

13. No survey block will measure less than one meter on a side.

14. No survey block will measure more than 3 meters on a side.

15. All portable release survey instruments will be calibrated quarterly and all instruments in use will be source checked daily.

Table I-1. Acceptable surface contamination levels

Nuclides[a]	Average[b,c,f]	Maximum[b,d,f]	Removable[b,e,f]
U-nat, U-235, U-238, and associated decay products	5,000 dpm α/100 cm²	15,000 dpm α/100 cm²	1,000 dpm α/100 cm²
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm²	300 dpm/100 cm²	20 dpm/100 cm²
Th-nat, Th-232, Sr-90 Ra-223, Ra-224, U-232, I-126, I-131, I-133	1,000 dpm/100 cm²	3,000 dpm/100 cm²	200 dpm/100 cm²
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and other noted above.	5,000 dpm βγ/100 cm²	15,000 dpm βγ/100 cm²	1,000 dpm βγ/100 cm²

[a] Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

[b] As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

[c] Measurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each such object.

[d] The maximum contamination level applies to an area of not more than 100 cm².

[e] The amount of removable radioactive material per 100 cm² of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

[f] The average and maximum radiation levels associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/hr at 1 cm and 1.0 mrad/hr at 1 cm, respectively, measured through not more than 7 milligrams per square centimeter of total absorber.

AREA Room 127 — TYPE OF SURVEY ∝ DIRECT ~~SMEAR~~ — COMPLETION DATE 11-15-88 — SURVEY UNITS - cpm/500cm²

~~BACKGROUND~~ — TYPE OF INSTRUMENT Ludlum 2220/DET. 43-~~68~~27

Results of scan survey of floor + lower 2 meters of wall — SERIAL NUMBER 58318 + 48395 — H.P. SIGNATURE Knowlton + Powell — ~~AUTO-SAMPLE-COUNTER #~~:

N / W / E / S

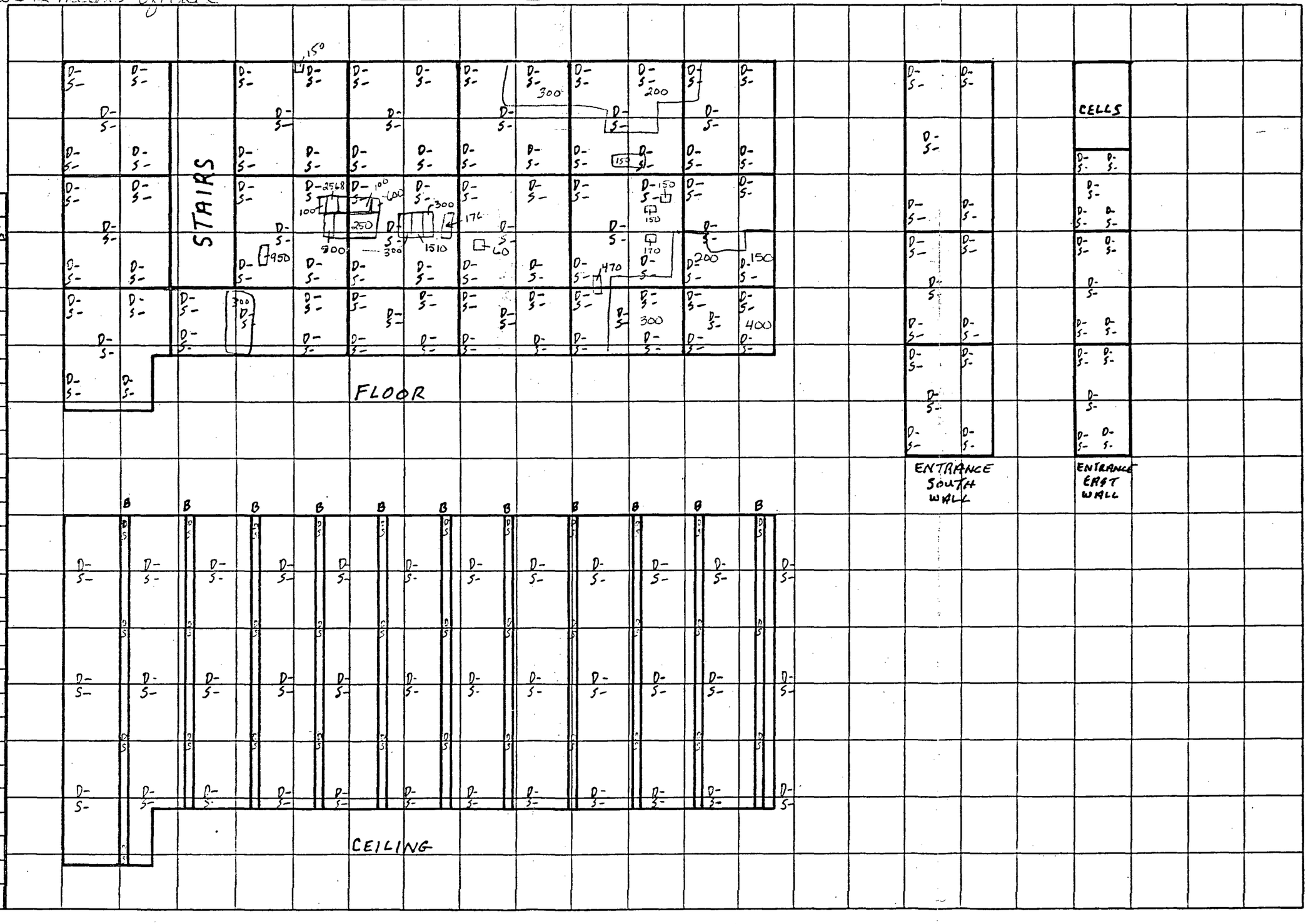
1.5cm = 1 Meter

D - DIRECT
S - SMEAR
B - BEAM

F – FLOOR
C – CEILING
N – NORTH WALL
S – SOUTH WALL
E – EAST WALL
W – WEST WALL

SOURCE #: VALUE: 0PM

INSTRUMENT			
	DATE	SOURCE C/M RESPONSE	BKGD C/M
58318	11-14-88 am	131 + 159	3
48395	am	170 + 185	1
58318	pm	143 + 156	3
48395	pm	190 + 200	2
58318	11-15-88 am	126 + 127	2
48395	am	181 + 186	2
58318	pm	142 + 158	3
48395	pm	187 + 192	2



N
W E
S

1.5cm = 1 Meter

AREA ROOM 127

~~FINAL GRID~~

Results of scan survey of floor + lower 1 meter of wall

TYPE OF SURVEY ∝ DIRECT ~~/ SMEAR~~

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-~~68~~ 27

SERIAL NUMBER 58302 + 48395

COMPLETION DATE 11-15-88

H.P. SIGNATURE KNorcott + JPowell

~~AUTO. SAMPLE COUNTER #~~

SURVEY UNITS - cpm/500cm² ~~DPM/100cm²~~ unless marked

D-DIRECT
S-SMEAR

F – FLOOR
C – CEILING
N – NORTH WALL
S – SOUTH WALL
E – EAST WALL
W – WEST WALL

SOURCE #:	VALUE:	DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
48395 11-14-88 am	131 + 159	3
58302 am	99 + 108	3
48395 pm	190 + 200	2
58302 pm	111 + 95	2
48395 11-15-88 am	181 + 186	2
48395 pm	187 + 192	2

NORTH WALL

c/ ledge
140 dpm/100cm² | 104 dpm/100cm²

SOUTH WALL

WEST WALL

EAST WALL

STORAGE CELLS

DOOR WAY TO 128

150

190

250

150

AREA Pu-PLANT - ROOM 127 — TYPE OF SURVEY ☑ DIRECT ☑ SMEAR — COMPLETION DATE 3-21-89 — SURVEY UNITS DPM/100cm²

FINAL GRID — TYPE OF INSTRUMENT Ludlum 2220/DET 43-68 — H.P. SIGNATURE W. A. Rogers

SERIAL NUMBER 37800-50068 — AUTO. SAMPLE COUNTER #: / SN 93600108

N / W / E / S

1.5cm = 1 Meter

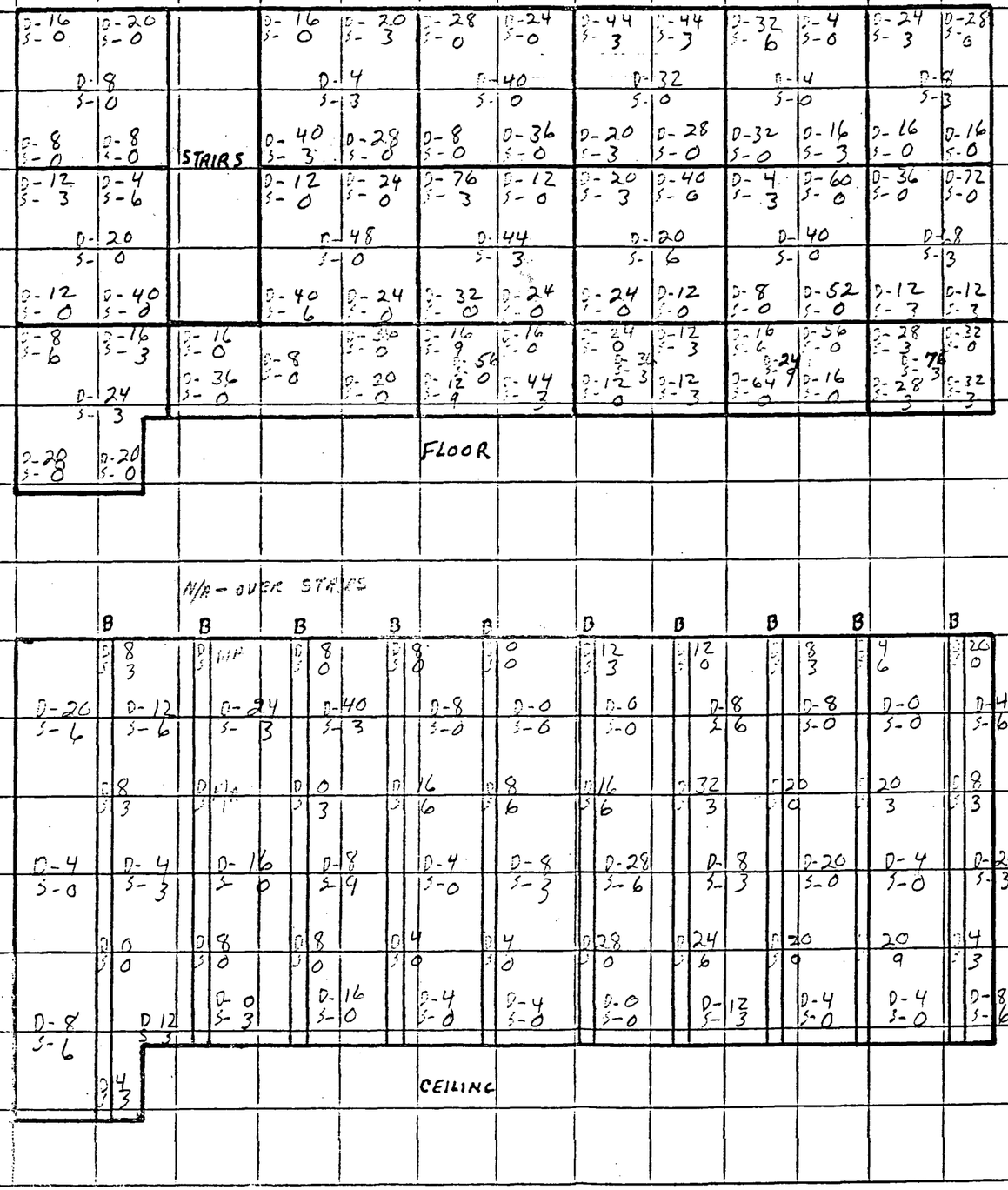
D - DIRECT
S - SMEAR
B - BEAM

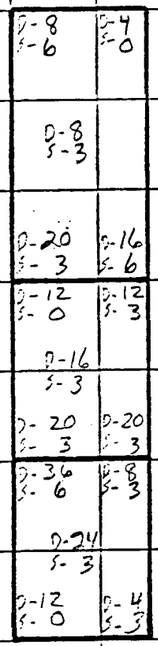
F - FLOOR
C - CEILING
N - NORTH WALL
S - SOUTH WALL
E - EAST WALL
W - WEST WALL

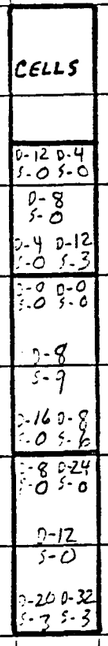
MDA 15.68 DPM/100cm² FIXED

SOURCE #: 6868 6916 VALUE: 1055 1078 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
11-21-88	242-243	2
11-21-88	276-296	2
11-21-88	239-249	1
11-21-88	278-305	1
11-22-88	246-268	1
11-22-88	269-310	1
11-22-88	242-220	0
11-22-88	296-304	1
3-16-89	251-257	1
3-17-89	263-255	1
	ASC #2	
12-1-88	30	.3
	ASC #1	
3-21-89	28	.3







DIRECT

3426 TOTAL DPM

182 READINGS

18.79 DPM/100cm² AVG

76 MAX DPM/100cm²

SMEAR

368 TOTAL DPM

182 SMEARS

2.02 DPM/100cm² AVG

9 MAX DPM/100cm²

AREA Re-PLANT - ROOM 127 — TYPE OF SURVEY α DIRECT & SMEAR — COMPLETION DATE 3-21-89 — SURVEY UNITS DPM/100cm²

FINAL GRID — TYPE OF INSTRUMENT LUCIUM 2220/DET. 43-68 — H.P. SIGNATURE W.C. Royce

SERIAL NUMBER 39000 / 43068 — AUTO. SAMPLE COUNTER #: / SN# 760010 4 #2 90-1 0115

N / W / E / S

1.5cm = 1 Meter

D - DIRECT
S - SMEAR

F - FLOOR
C - CEILING
N - NORTH WALL
S - SOUTH WALL
E - EAST WALL
W - WEST WALL

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 6868, 1816 VALUE: 1055, 1078 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGDS/M
11-21-88	242-243	2
11-21-88	276-296	2
11-21-88	239-249	1
11-21-88	278-305	1
11-22-88	246-268	1
11-22-88	269-310	1
11-22-88	242-220	0
11-22-88	296-304	1
3-16-89	246-242	1
3-16-89	226-239	1
	ASC#2	
12-1-88	30	.3
3-17-89	30	.2
	ASC#1	
3-21-89	29	.3

	D-8 S-0	D-0 S-0	D-12 S-0	D-16 S-3	D-4 S-0	D-4 S-0	D-24 S-12	D-36 S-0	D-12 S-3	D-4 S-6	D-8 S-0	D-8 S-0			D-24 S-9	D-20 S-3	D-20 S-0	D-32 S-0	D-0 S-0	D-40 S-0		
	D-8 S-0		D-16 S-9		D-4 S-3		D-12 S-3		D-12 S-3		D-4 S-0				D-8 S-6		D-16 S-6		D-24 S-9			
	D-16 S-3	D-16 S-9	D-8 S-3	D-4 S-0	D-0 S-9	D-16 S-3	D-4 S-6	D-12 S-0	D-16 S-0	D-12 S-3	D-8 S-3	D-24 S-6			D-16 S-6	D-4 S-0	D-12 S-3	D-40 S-3	D-32 S-0	D-0 S-0		
37800	D-24 S-3	D-12 S-0	D-0 S-0	D-16 S-0	D-0 S-9	D-0 S-0	D-8 S-3	D-8 S-8	D-20 S-0	D-12 S-0	D-12 S-3	D-20 S-3			D-32 S-6	D-12 S-3	D-16 S-6	D-32 S-3	D-4 S-6	D-28 S-3		
50068	D-8 S-0		D-8 S-2		D-4 S-9		D-8 S-0		D-8 S-3		D-0 S-3				D-8 S-6		D-20 S-10		D-16 S-0			
37800	D-4 S-0	D-20 S-0	D-20 S-0	D-20 S-0	D-4 S-2	D-0 S-0	D-12 S-3	D-4 S-0	D-8 S-3	D-24 S-0	D-4 S-0	D-12 S-0			D-16 S-3	D-32 S-0	D-20 S-0	D-8 S-0	D-4 S-6	D-20 S-0		
37800	D-4 S-9	D-24 S-3	D-24 S-0	D-12 S-0	D-20 S-0	D-4 S-0	D-16 S-0	D-24 S-9	D-16 S-3	D-24 S-3	D-4 S-3	D-16 S-3			D-8 S-3	D-16 S-0	D-40 S-0	D-8 S-0	D-0 S-6	D-24 S-6		
50068	D-8 S-3	D-12 S-3	D-24 S-0	D-8 S-0	D-4 S-0	D-20 S-0	D-24 S-3	D-20 S-0	D-16 S-0	D-20 S-2	D-20 S-9	D-36 S-0			D-20 S-0	D-20 S-0	D-8 S-3	D-12 S-3	D-12 S-0	D-16 S-0		
37800	140 MAX DPM/100cm² DIRECT				NORTH WALL				SOUTH WALL						WEST WALL							
	3662 TOTAL DPM 233 READINGS 15.72 DPM/100cm² AVG		D-36 S-6	D-12 S-0 D-8 S-6	D-0 S-9 D-140 S-0 D-20 S-3		D-12 S-0 D-0 S-0	D-16 S-3 D-104 S-0 D-16 S-6	D-16 S-3 D-12 S-0	D-24 S-0 D-12 S-0					D-0 S-3	D-12 S-0	D-0 S-0	D-12 S-0				
	SMEAR 504 TOTAL DPM						STORAGE CELLS								D-16 S-0		D-12 S-0					
	233 SMEARS 2.16 DPM/100cm² AVG DOORWAY		D-12 S-3	D-12 S-3 D-32 S-3	D-20 S-3 D-32 S-3		D-24 S-0	D-8 S-3 D-32 S-0		D-24 S-12 D-20 S-3 D-32 S-3					D-12 S-3	D-16 S-0	D-20 S-0	D-12 S-0				
	To 128		D-12 S-3	D-24 S-0	D-12 S-0		D-4 S-0	D-0 S-3	D-16 S-0	D-36 S-0					D-4 S-0	D-28 S-0	D-4 S-0	D-26 S-3				
12	MAX 8 DPM/100cm²		D-12 S-3	D-8 S-3			D-16 S-6		D-4 S-3						D-16 S-3		D-20 S-0					
			D-4 S-0	D-8 S-0	D-20 S-3		D-16 S-0	D-24 S-6	D-8 S-9	D-0-0 S-0					D-16 S-6	D-8 S-0	D-8 S-3	D-16 S-3				
			D-24 S-3	D-32 S-0	D-16 S-0		D-12 S-3	D-16 S-0	D-8 S-6	D-12 S-0					D-12 S-0	D-4 S-6	D-12 S-0	D-4 S-0				
			D-8 S-0	D-52 S-0			D-8 S-0		D-108 S-0						D-12 S-0		D-12 S-9					
			D-20 S-3	D-4 S-0	D-0 S-3		D-32 S-0	D-20 S-3	D-20 S-0	D-12 S-3					D-4 S-6	D-8 S-0	D-4 S-9	D-32 S-3				

N
W E
S

1.5cm = 1 Meter

AREA Pu-PLANT - ROOM 127

FINAL GRID

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER

COMPLETION DATE 10-25-89

H.P. SIGNATURE Claude M Thompson

SURVEY UNITS DPM/100cm²

AUTO. SAMPLE COUNTER #:

D - DIRECT
S - SMEAR

F - FLOOR
C - CEILING
N - NORTH WALL
S - SOUTH WALL
E - EAST WALL
W - WEST WALL

SOURCE #: VALUE: DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD S/M

* SECTION OF WALL REMOVED AFTER FINAL RELEASE SURVEY. DATA STILL INCLUDED IN SUMMARY.

NORTH WALL

SOUTH WALL

WEST WALL

EAST WALL

STORAGE CELLS

DOORWAY TO 128

AREA ROOM 127
TOP OF WALL STORAGE TANKS
FINAL GRID

TYPE OF SURVEY DIRECT & SMEAR
TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68
SERIAL NUMBER 37800

COMPLETION DATE 2-13-89
H.P. SIGNATURE W.C. Rogers
AUTO. SAMPLE COUNTER #: ISN 8360015

SURVEY UNITS DPM/100cm²

W N S E

4 cm = 1 Meter

F – FLOOR
C – CEILING
N – NORTH WALL
S – SOUTH WALL
E – EAST WALL
W – WEST WALL

MDA 7.84 DPM/100cm² FIXED

SOURCE #: 6816 VALUE: 1078 DPM

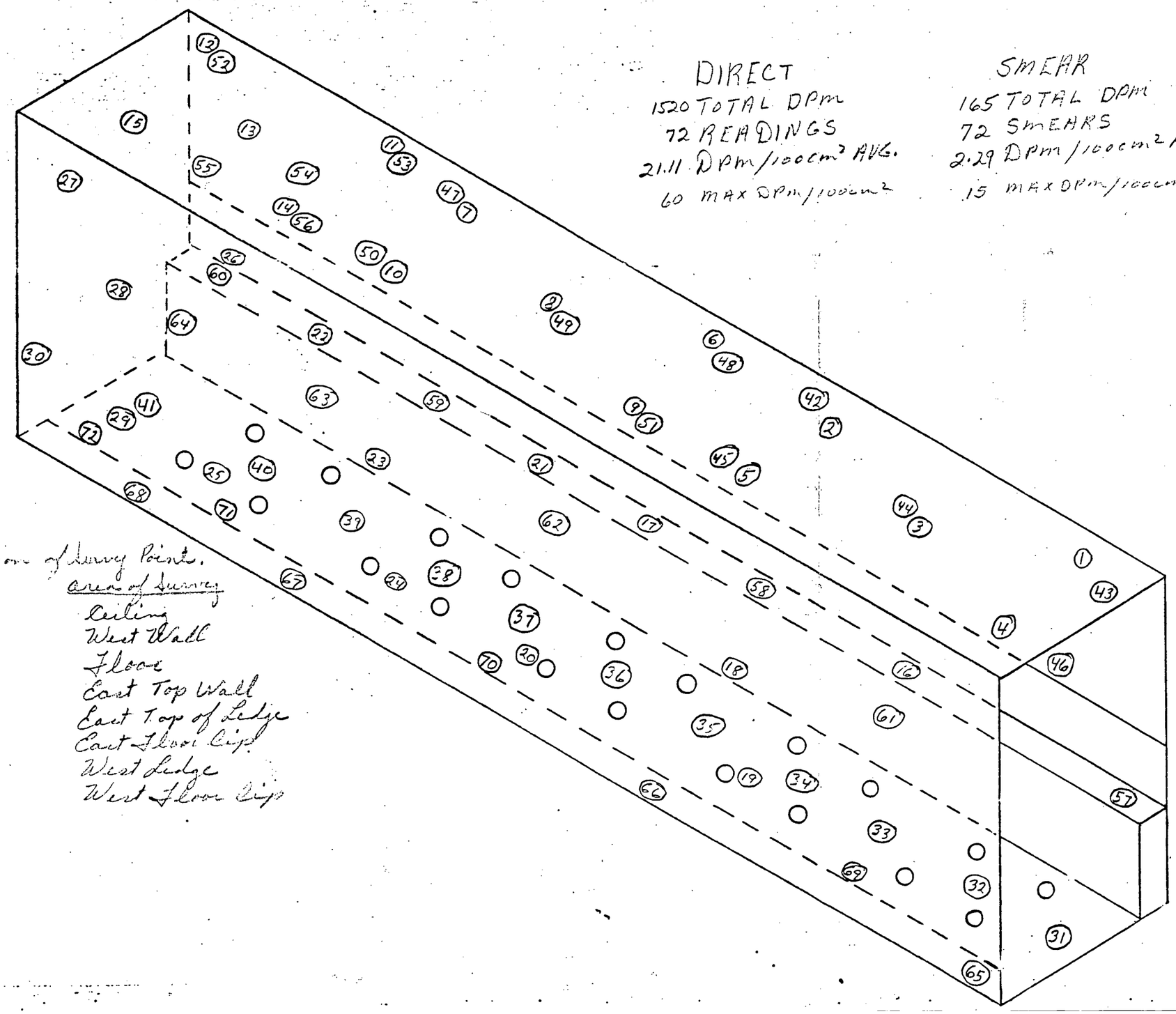
INSTRUMENT		
DATE	SOURCE C/m RESPONSE	BKGD C/m
2-10-89	240-261	0
2-10-89	240-278	0
	ASC #1	
2-13-89	33	2

DIRECT
1520 TOTAL DPM
72 READINGS
21.11 DPM/100cm² AVG.
60 MAX DPM/100cm²

SMEAR
165 TOTAL DPM
72 SMEARS
2.29 DPM/100cm² AVG
15 MAX DPM/100cm²

Location of Survey Points.

Survey	Area of Survey
1-15	Ceiling
16-30	West Wall
31-41	Floor
42-56	East Top Wall
57-60	East Top of Ledge
61-64	East Floor Lip
65-68	West Ledge
69-72	West Floor Lip



PLANT P11 AREA 127 TOP AF
SURVEYED BY RMH WALL STORAGE TANKS
INST. LUDLUM 2220 S/N 37900 DET. 43-68
SOURCE CK 240-261 BKG. 0
DATE: 2-10-89 SOURCE #: 6816 VALUE: 1070 DPM

ASC 0 1 SNR 26005
CTD. BY D. Jones
SOURCE CK. AVG. 33
BKG. 2
DATE: 2-13-89

READINGS IN DPM/100 cm²

SAMPLE 0 OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
1 Top Wall Storage Tanks Pen 127	4	16	0
2	3	12	15
3	5	20	0
4	5	20	0
5	5	20	0
6	2	8	0
7	5	20	3
8	3	12	3
9	7	28	0
10	5	20	6
11	4	16	0
12	3	12	3
13	6	24	6
14	6	24	6
15	5	20	0
16	6	24	0
17	7	28	6
18	2	8	0
19	7	28	0
20	10	40	3
21	5	20	0
22	10	40	6
23	7	28	6
24	9	36	0
25	2	8	3
26	6	24	3
27	3	12	0
28	2	8	0
29	3	12	0
30	3	12	0
31	10	40	6
32	8	32	6
33	10	40	3
34	3	12	3

PLANT P11 AREA 127 TOP AF
SURVEYED BY RHM WALL STORAGE TANKS
INST. LUDLUM 2220 S/N 37800 DET. 43-68
SOURCE CK 240-261 BKG. 0
DATE: 2-10-89 SOURCE #: 6816 VALUE: 1070 DPM

ASC 0 1 SNR 26005
CTD. BY D. Jones
SOURCE CK. AVG. 33
BKG. 2
DATE: 2-13-89

READINGS IN DPM/100 cm²

SAMPLE 0 OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
35	3	12	3
36	4	16	3
37	5	20	0
38	4	16	0
39	3	12	0
40	2	8	6
41	3	12	3
42	6	24	0
43	3	12	0
44	5	20	0
45	1	4	0
46	4	16	6
47	10	40	0
48	6	24	0
49	6	24	0
50	3	12	6
51	3	12	3
52	6	24	6
53	8	32	3
54	6	24	0
55	7	28	0
56	4	16	3
57	8	32	3
59	1	4	3
59	8	32	6
60	2	8	0
61	1	4	3
62	8	32	3
63	6	24	0
64	7	28	0
65	1	4	0
66	15	60	6
67	5	20	3
68	9	36	0

PLANT P11 AREA 127 TOP OF WALL STORAGE TANKS
SURVEYED BY RHM
INST. LUDLUM 2220 #37800 DET. 4368
SOURCE CK [illegible] BKG. 0
DATE: 2-10-89 SOURCE #: [illegible] VALUE: [illegible] DPM

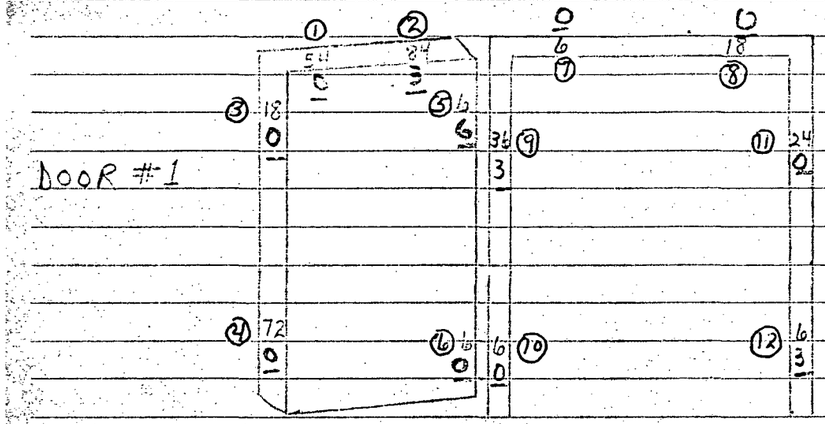
ASC # 1SK836001LS
CTD. BY Dennis Ford
SOURCE CK. AVG. 33
BKG. .2
DATE: 2-13-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
69	5	20	3
70	8	32	0
71	7	28	3
72	6	24	3

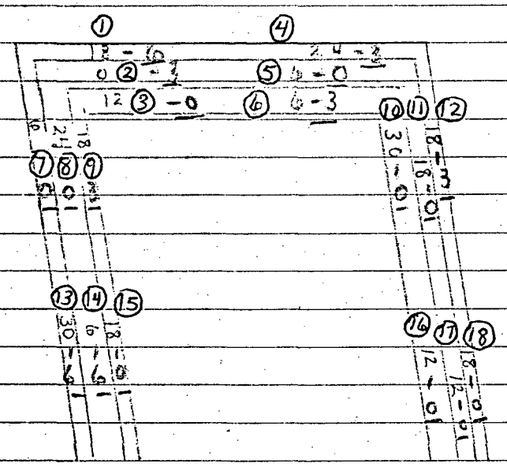
RM 127 DOOR #1

DOOR LEADING TO PRODUCTION HALLWAY



LUDLUM 2220
#50064, 43-4
SOURCE #6816
1078 dpm
SOURCE CK:
282-305, BKG.-1 (AM)
297-304, BKG.-1 (PM)

7-3-89
I.L.R



IDENFICATION NO.
CIRCLED.
SMEARS UNDERLINED

		DIRECT	SMEAR
	TOTAL DPM	612	48
MDA 16.63	READINGS	30	30
DPM/100cm²	DPM/100cm² AVG	20.4	1.6
FIXED	MAX DPM/100cm²	84	6

PLANT PH AREA Room 127 Door #1
SURVEYED BY I POWELL
INST. LUDLUM 2220 # 50064 DET. 43-4
SOURCE CK 282-305 / 297-304 BKG. 1-1
DATE: 7-3-89 SOURCE #6816 VALUE: 1078 DPM

ASC # 1-8360108
CTD. BY Jm Black
SOURCE CK. AVG. 31
BKG. .3
DATE: 7-7-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Door #1 Leading to Production Hallway	1	9	54	0
	2	14	84	3
	3	3	18	0
	4	14	72	0
	5	1	6	6
	6	1	6	0
	7	1	6	0
	8	3	18	0
	9	6	36	3
	10	4	24	0
	11	1	6	0
	12	1	6	3
Door Frame	1	3	18	6
	2	0	0	3
	3	2	12	0
	4	4	24	3
	5	1	6	0
	6	1	6	3
	7	1	6	0
	8	4	24	0
	9	3	18	3
	10	5	30	0
	11	3	18	0
	12	3	18	3
	13	5	30	6
	14	1	6	6
	15	3	18	0
	16	1	12	0
	17	1	12	0
	18	3	18	0

RM 127 DOOR #2

DOOR ON NORTH WELL LEADING TO YARD

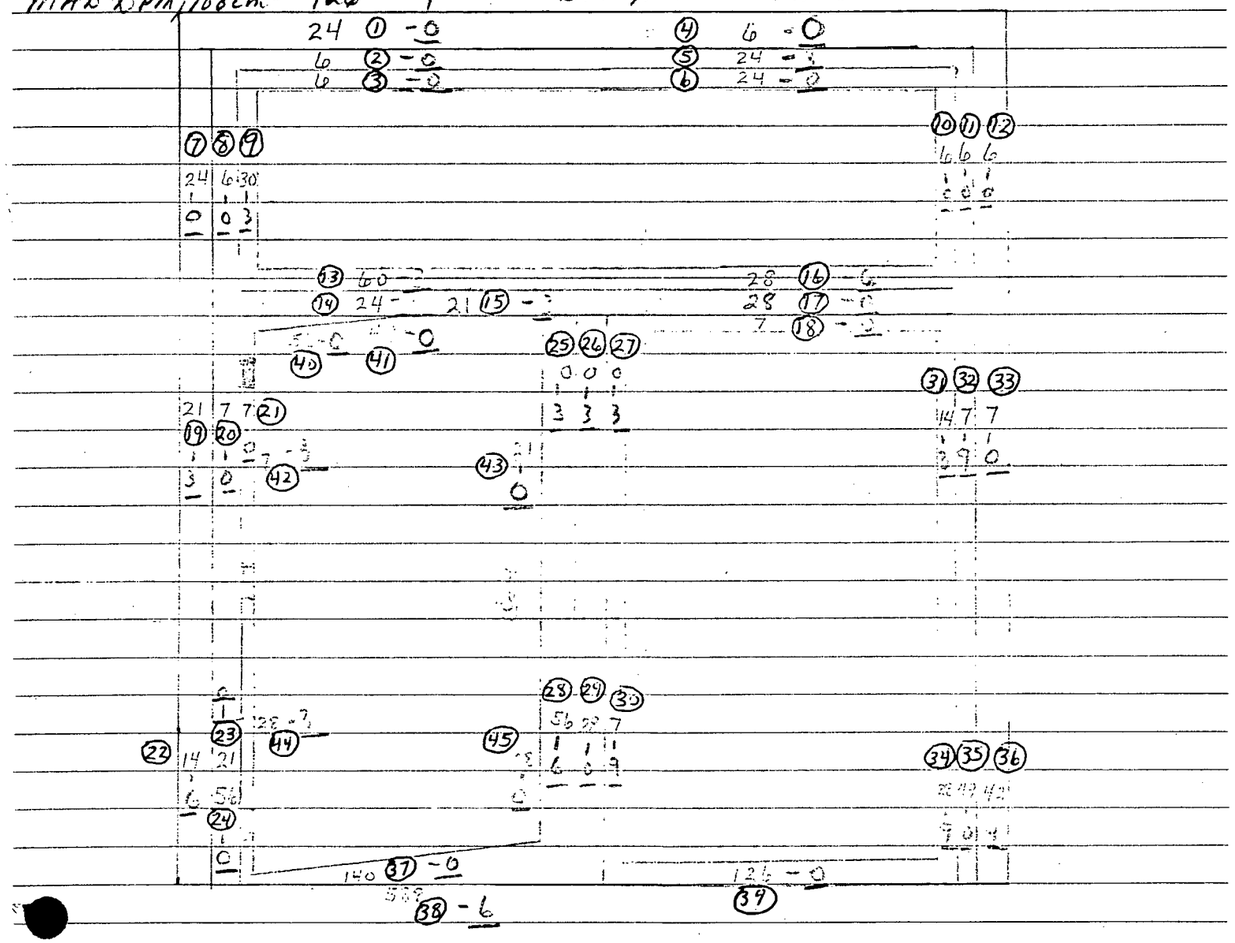
	Direct	Smear
TOTAL DPM	1,015	90
READINGS	43	43
DPM/100cm² AVG	23.60	2.09
MAX DPM/100cm²	126	9

#50064 43-4
LUDLUM 2220
SOURCE #6816 1078 dpm
SOURCE CK.: 297-304
BKG.-1(PM) 7-3-89

LUDLUM 2220
#58318 43-4
SOURCE #6868 1055 dpm
SOURCE CK.: 260-263
BKG.-3(AM) 7-5-89

IDENFICATION
NO. CIRCLED
SMEARS UNDERLINED

MEA 33.61
DPM/100cm² FIXED



Door #2 Treshold Removed #37 #38

PLANT P11 AREA Room 127 Door #2
SURVEYED BY I Powell
INST. LUDLUM 2220 # 58318 50064 DET. 43-4 43-4
SOURCE CK 260-263 297-304 BKG. 3-1
DATE: 7-5-89 7-3-89 SOURCE #: 6868 6816 VALUE: 1055 1078 DPM

ASC # 1-83600108
CTD. BY Jim Black
SOURCE CK. AVG. 31
BKG. .3
DATE: 7-7-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Room 127 Door #2 On North Well	1	4	24	0
Leading To Yard	2	1	6	0
Multiplied X 6	3	1	6	0
	4	1	6	0
	5	4	24	3
	6	4	24	0
	7	4	24	0
	8	1	6	0
	9	5	30	3
	10	1	6	0
	11	1	6	0
	12	1	6	0
	13	10	60	3
	14	4	24	3
Multiplied X 7	15	3	21	3
	16	4	28	6
	17	4	28	0
	18	1	7	0
	19	3	21	3
	20	1	7	0
	21	1	7	0
	22	2	14	6
	23	3	21	0
	24	8	56	0
	25	0	0	3
	26	0	0	3
	27	0	0	3
	28	8	56	6
	29	4	28	0
	30	1	7	9
	31	2	14	3
	32	1	7	9
	33	1	7	0
	34	4	28	9

PLANT P11 AREA Unit 127 Dam #2

SURVEYED BY [illegible]

INST. LUDLUM 2220 S/N 50044 DET. 43-4

SOURCE CK 297-304 BKG. 1

DATE: 7-3-89 SOURCE #: 681 EVALUE: 1078 DPM

ASC # 1-07200109

CTD. BY [illegible]

SOURCE CK: AVG. 71

BKG. .3

DATE: 7-7-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
From 127 Dam #2 on Work Well	35	7	49	0
Ladder To Yard	36	6	42	9
✓ Removed	37	20	140	0
Removed	38	84	588	6
	39	18	126	0
Multiple 0 X 7	40	8	56	0
	41	7	49	0
	42	1	7	2
	43	3	21	0
	44	4	28	3
	45	4	28	0

RM 127 PIPE SURVEY PAGE OF

LINE NUMBER #926 DATE 7-14-89

INSTRUMENT LUDLUM 2220 SERIAL NUMBER #52834

DETECTOR 43-4 OPERATOR ILP

SOURCE NUMBER AND VALUE #112, 1113 dpm

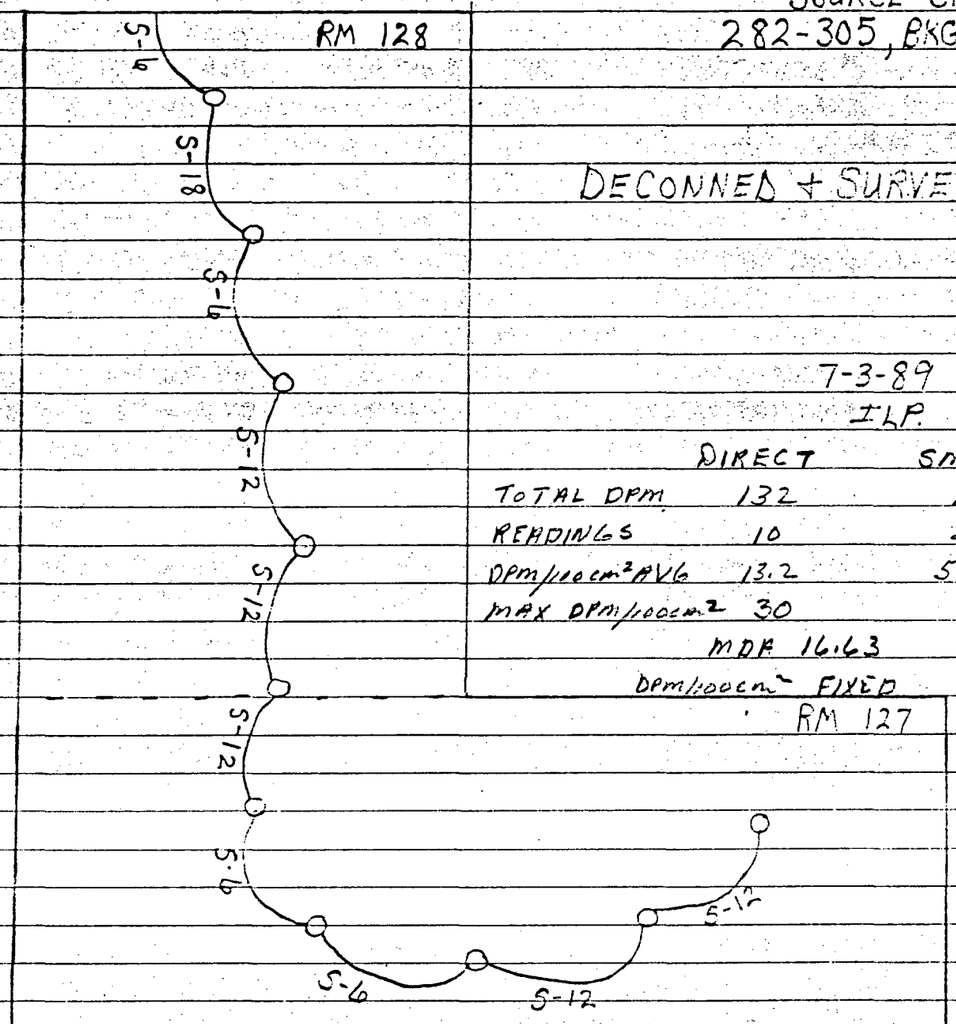
SOURCE RESPONSE AND BACKGROUND AM

SOURCE RESPONSE AND BACKGROUND PM 301-269, BKG-2

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION	Direct cpm	Direct dpm/100cm²	Smearable dpm/100cm²
FROM PRO. HALL	CONDUIT	1IN	0 METERS			
WALL			T	2	24	3
			B	1	12	3
			1 METER			
			T	5	60	0
			B	5	60	3
TO S.W. WALL						
MOA					Direct	Smear
47.04 dpm/100cm²			Total DPM		156	9
			# of readings		4	4
			Ave DPM/100cm²		39	2.25
			Max. DPM/100cm²		60	3

SMEARS ON CABLE TO LIGHTS

LUDLUM 2220
#50064, 43-4
SOURCE # 6816
1078 dpm
SOURCE CK.;
282-305, BKG-1 (AM)



DECONNED + SURVEYED

7-3-89
ILP

	DIRECT	SMEAR
TOTAL DPM	132	117
READINGS	10	20
DPM/100cm² AVG	13.2	5.85
MAX DPM/100cm²	30	18

MDA 16.63
DPM/100cm² FIXED

RM 127

PLANT Pu AREA RM 127
SURVEYED BY ILP
INST. LUDLUM 2220 # 50064 DET. 43-4
SOURCE CK 282-305 BKG. 1 (PM)
DATE: 6-30-89 SOURCE # 6816 VALUE: 1078 DPM

ASC # 1-93100LS
CTD. BY J M Black
SOURCE CK. AVG. 31
BKG. .2
DATE: 7-3-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
LIGHT FIXTURES			
(1)			
OUT	5	30	0
IN	0	0	3
(2)			
OUT	2	12	3
IN	3	18	3
(3)			
OUT	3	18	0
IN	1	6	6
(4)			
OUT	4	24	0
IN	1	6	0
(5)			
OUT	1	6	0
IN	2	12	0