Outside Of Pu-Plant Building and Pu-Plant Yard

The Pu-plant yard was maintained as a clean but restricted access area, during production and decon of this facility. During production at the Pu-plant we blended Natural U or depleted U with Pu nitrate to make our final product. When we started our release surveys in this area, we quickly identified spots that exceeded transuranic release limits. Because of the close proximaty to the Uranium plant (figure #1), and the average wind speed and direction (figure #2) in this area, we suspected contamination from the U-plant Using alpha pulse height analysis, we counted a depleted U sample (figure #3), a Natural U sample (figure #4), a 4% enriched U standard (figure #5), and a LSA standard of typical FFTF product from inside the plant (figure #6).

Table 1-1 from Regulatory Guide 1.86 gives the acceptable surface contamination levels for Pu^{239} and U-Natural, U^{235}, or U^{238}.

	Average	Maximum	Removable
Transuranic	100 dpm/100cm^2	300 dpm/100cm^2	20 dpm/100cm^2
U-Nat, U-235, U-238	5000 dpm/100 cm^2	15,000 dpm/100cm^2	1000 dpm/100cm^2

With this information base, we started collecting samples. Figure #7 is a sample of the inside surface of the Pu-plant stack metal taken approximately 10 feet below the top of the stack. In this plot the Pu^{239} and AM^{241} peaks are easily identifiable and the pulse height is in the correct ratio (Pu^{239} is approximately twice the height of the AM^{241}).

Figure #8 is a sample of the Pu-plant stackhouse roof flashing. This plot shows enriched U with the possibility of a Pu^{-239} and an AM^{-241} peak. We decided to send a sample of this flashing to the Tech Center for analysis. The results (figure #9) indicate that 1.0165% of the activity on this flashing is due to transuranic material. All of this flashing was removed and drummed as LSA trash.

Instead of trying to grid survey the entire outside walls of this building, we decided to survey only the bottom two meters of each wall. We designated 10 data points to be taken in each section of these walls to give us a representative sample of the contamination levels . This survey indicated no problems on the south, west, or north walls, but extensive contamination was found on the east wall below the inlets for the supply fans and the access stairs for the supply fanroom. We then expanded our survey above the two meter level on this section of the east wall and found a deck plate on the top landing of these stairs that read approximately 100,000 $dpm/100cm^2$ direct and 100 $dpm/100cm^2$ smearable. We performed an alpha pulse height analysis on this smear (figure #11). The results indicated enriched U on this deck plate. The original supply fanroom entrance landing had been extended to the South to install a caged ladder to the upper level of the Pu-plant roof. This deck plate was removed and placed in LSA trash. There is a rust streak down the East side of the building from this deck plate and a rust stain on the sidewalk from this deck plate. Hydrochloric acid was used to remove a sample from this sidewalk for alpha pulse height analysis (figure #12). This sample also indicated enriched U. The elevated contamination levels on the east wall were caused by this deck plate and the inlet air to the Pu-plant supply fans.

The roof of all three sections of the Pu-plant have been repaired by removing the rock, removing loose sections of roofing and replacing, retaring, and rerocking these sections:

1. South Low bay Area - 1986
2. Center High bay area - 1977
3. North Low bay area - 1987

We performed a low-energy gamma scan with a Ludlum 2220 and a Ludlum 44-17 detector. This detector has a 2mm thick by 2" diameter NaI crystal and was calibrated to detect from approximately 10 kev to 70 kev. No reading taken on this roof were twice background.

We surveyed around the flashing on the center high bay area. This survey indicated:

	DIRECT	SMEAR
1. Average DPM/100cm^2	141	2.40
2. Max. DPM/100cm^2	260	9

No decon was attempted on this flashing.

It is our position that the large majority of the contamination identified on equipment in the Pu-plant yard and on the building, fencing, lights, sidewalks, and trailers is enriched Uranium contamination from the U-plant. We have taken the following results from the Tech Center:

1. Stack flashing	(Fig. #9)	1.065%	Transuranic
2. East fence North corner	(Fig. #13)	.077%	Transuranic
3. West fence North corner	(Fig. #14)	.604%	Transruanic
4. I-beam above 10K tanks	(Fig. #15)	.058%	Transuranic
		1.804 - 4 = 0.451%	
		= 0.5% Transurani	

These 4 samples results were averaged to apply a correction factor for dpm alpha/100cm^2 for transuranic material. We are applying the unity principle to determine compliance with the uranium and plutonium release limits. Using this method we believe this area meets release limits.

W. A. Rogers

W. A. Rogers

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.

Regulatory Guide 1.86

Alpha Pulse Height - FFTF Pu

5.5 Mev Peak			Relative % of 5.5 Peak
Am^{241} .0027 g/g	× 3.24 Ci/g	= 0.028836 Ci	76.82
Pu^{238} .0005 g/g	× 17.4 Ci/g	= 0.008700 Ci	23.18
		0.037536 Ci	100.00

5.1 Mev Peak			Relative % o 5.1 Peak
Pu^{239} .2647 g/g	× .061H Ci/g	= 0.053092 Ci	66.91
Pu^{240} .1162 g/g	× .226 Ci/g	= 0.026261 Ci	33.09
		0.079353 Ci	100.00

4.9 Mev Peak			Relative % of 4.9 Peak
Pu^{241} .0077 g/g	× .00468 Ci/g Alpha	= 0.000036 Ci	83.72
Pu^{242} .002 g/g	× .0039 Ci/g	= 0.000007 Ci	16.28
		0.000043 Ci	100.0

Total Specific Activity of FFTF Pu = 0.987508 Ci/g

Rounded

Alpha activity = 11.84 % of total activity

5.5 Mev peak = 3.80 % of total activity

5.1 Mev peak = 8.04 % of total activity

4.9 Mev peak = 0.004 % of total activity

Total Alpha activity of FFTF Pu = 0.116932 Ci/g

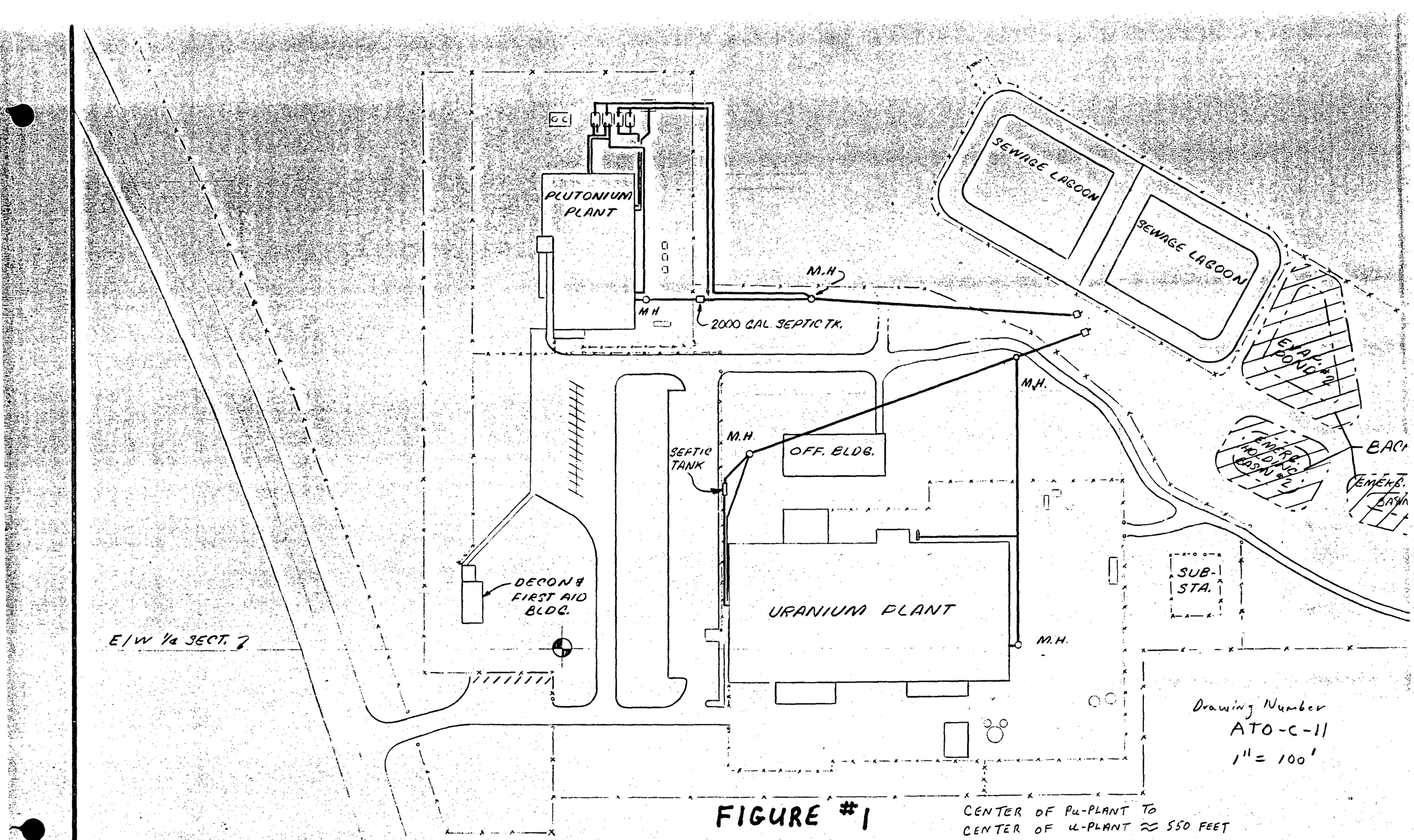
5.5 Mev. Peak (Am^{241} & Pu^{238}) = 32.10 % of Alpha activity

5.1 Mev. Peak (Pu^{239} & Pu^{240}) = 67.86 % of alpha activity

4.9 Mev. Peak (Pu^{241} & Pu^{242}) = 0.04 % of alpha activity

The isotopic analysis provided in the March 21, 1989 correspondence to NRC concerning the Option #2 Amendment lists Pu^{239} results on bore hole soil samples from the Pu-plant yard. The Pu^{239} results given by the Tech Center is based on the 5.1 Mev peak which is actually a total of Pu^{239} plus Pu^{240} and represents 67.86 % of the total alpha activity (Pu + Am) and only 8.04 % of the total specific activity (alpha plus beta).

A. W. Norwood



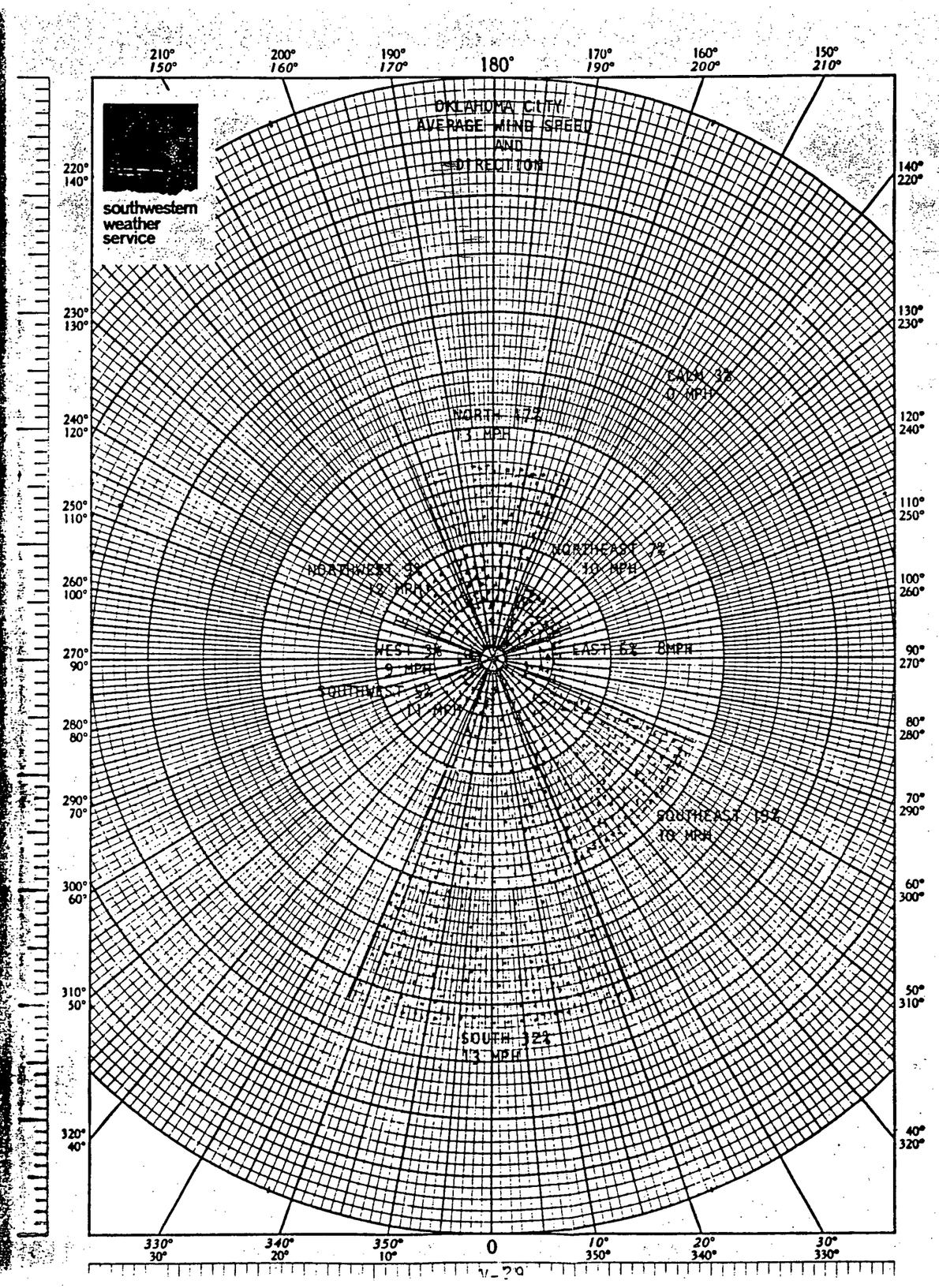
Drawing Number
AT0-C-11
1" = 100'

FIGURE #1

CENTER OF Pu-PLANT TO CENTER OF U-PLANT ≈ 550 FEET

FIGURE #2

AVERAGE WIND SPEED AND DIRECTION
FROM WILL ROGERS WORLD AIRPORT
1974



AREA DEPLETED U SAMPLE TYPE OF SURVEY ALPHA PULSE HEIGHT COMPLETION DATE 10-17-89 SURVEY UNITS

FIGURE #3

TYPE OF INSTRUMENT _____ H.P. SIGNATURE Claude M Thompson

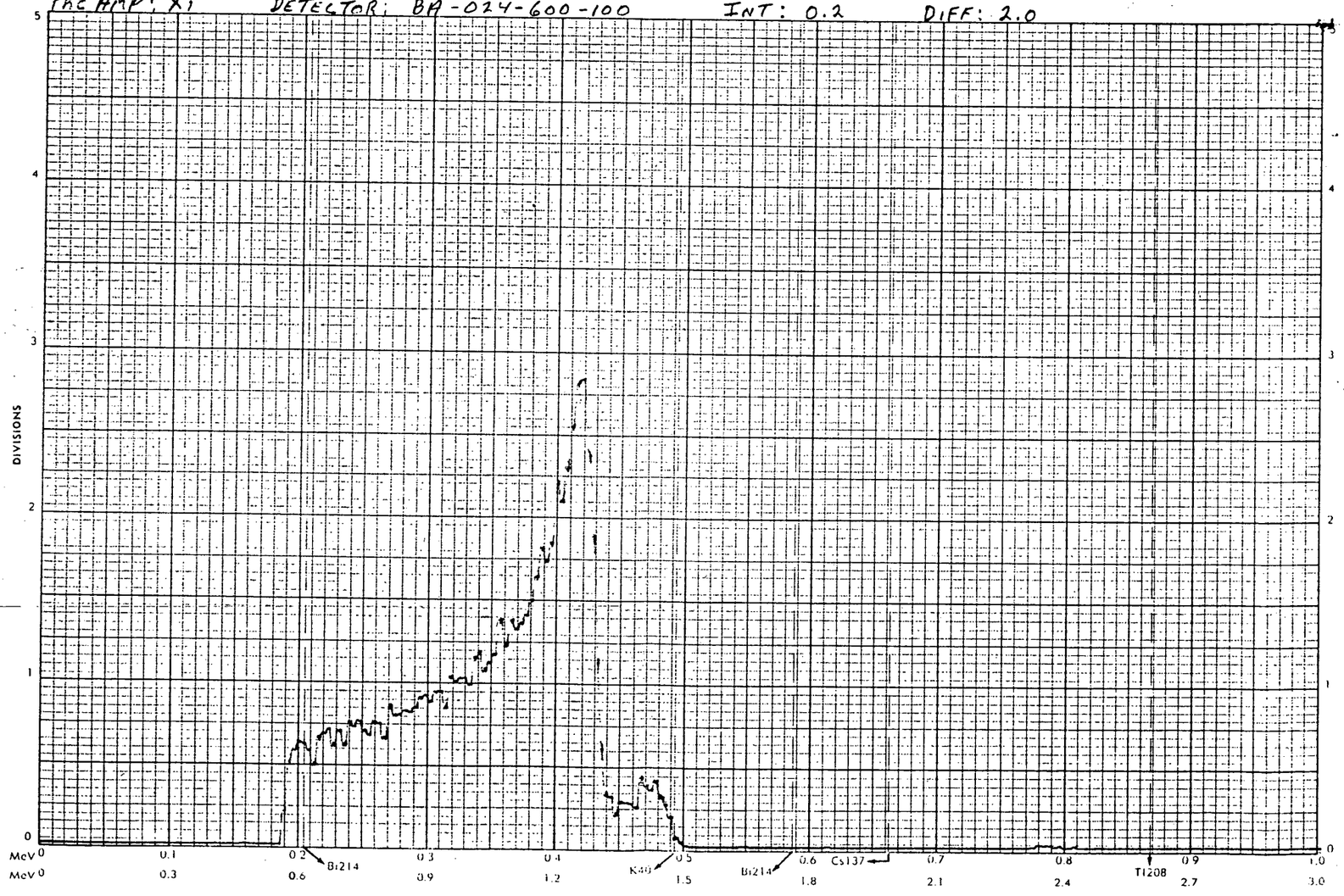
SERIAL NUMBER _____

SPECTRAL PLOT NM-3867

UNIT	XTAL SIZE	XTAL S/N	HOLE NUMBER	DEAD TIME %	OPERATOR	DATE
α PHA					CT	10-17-89
GG #1 (CPS)	GG #2 (CPS)	DC GAM (MV)	DEPTH	TIME (MIN)	HIGH VOLTAGE	AREA 1300 DPM
				50	+80 BIAS	DEPLETED U SAMPLE
GAIN	MeV	COUNTS PER DIVISION (LOWER)	COUNTS PER DIVISION (UPPER)	INTEGRAL Ch to Ch	CHANNELS FULL SCALE ☐ 256 ☐ 512 ☒ 1024	SEC TWP RNG
4 4 4.30	10 FULL SCALE	200				

REMARKS

PREAMP: X1 DETECTOR: BA-024-600-100 INT: 0.2 DIFF: 2.0



AREA Nat U Check Source Figure # 4 TYPE OF SURVEY Alpha Pulse Height COMPLETION DATE 9-25-89 SURVEY UNITS

TYPE OF INSTRUMENT _____ H.P. SIGNATURE W. A. Rogers

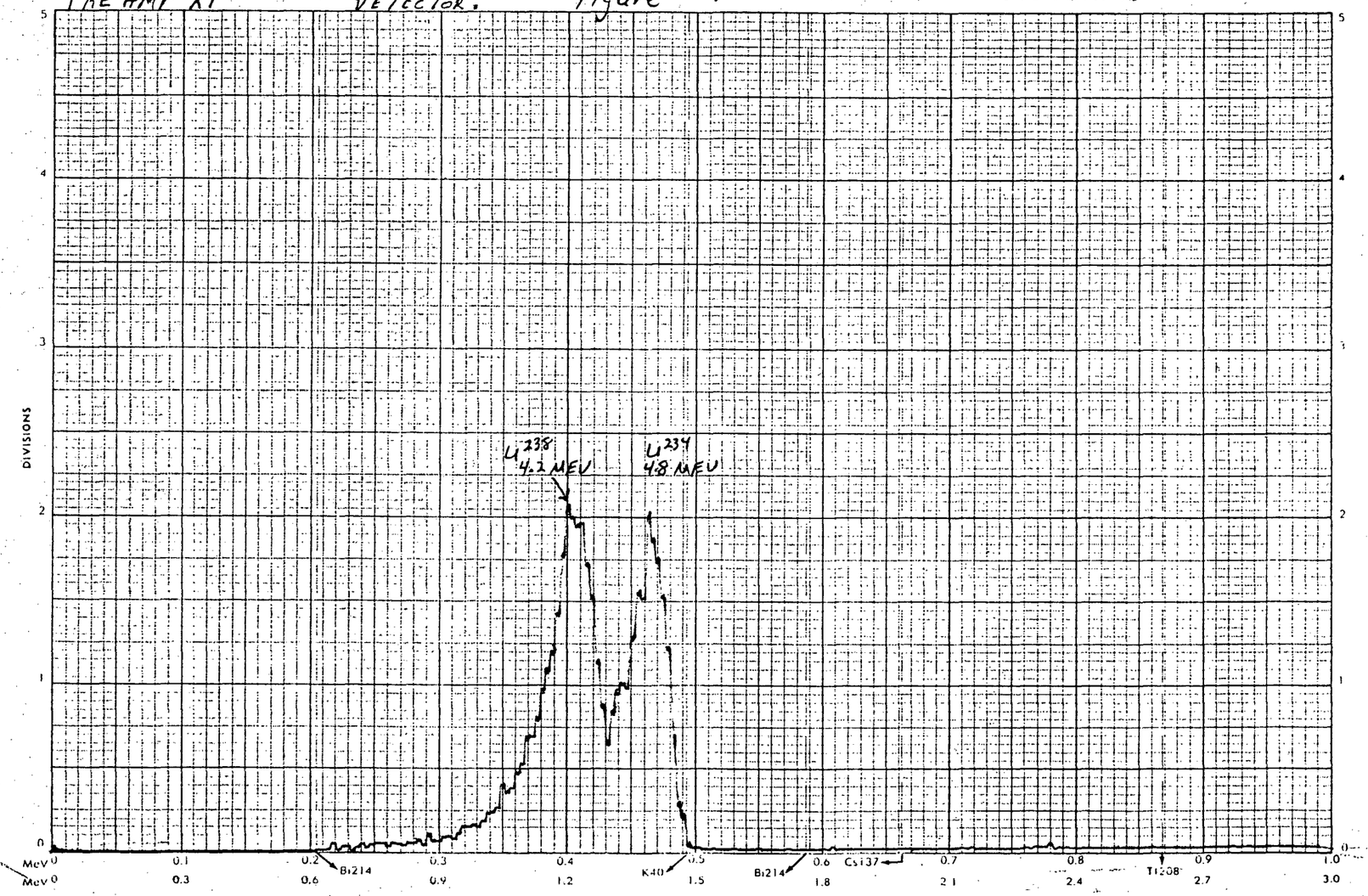
SERIAL NUMBER _____

SPECTRAL PLOT AM-3867

UNIT	XTAL SIZE	XTAL S/N	HOLE NUMBER	DEAD TIME %	OPERATOR	DATE
α PHA					[illegible]	9-25-89
GG #1 (CPS)	GG #2 (CPS)	DC GAIN (MV)	DEPTH	TIME (MIN)	HIGH VOLTAGE	AREA 741 DPM
				50	+ 70 BIAS	NAT U CK SOURCE
GAIN	MeV	COUNTS PER DIVISION (LOWER)	COUNTS PER DIVISION (UPPER)	INTEGRAL Ch to Ch	CHANNELS FULL SCALE ☐ 256 ☐ 512 ☒ 1024	SEC TWP RNG
8 & 4.32	10 FULL SCALE	200				

REMARKS

PREAMP X1 DETECTOR: Figure # 4 256 MARKERS



Note!

Peaks shifted .2 to the left.

Peaks ≈ same height

AREA 4% ENRICHED U STD TYPE OF SURVEY ALPHA PULSE HEIGHT COMPLETION DATE 9-25-89 SURVEY UNITS

FIGURE #5

TYPE OF INSTRUMENT

SERIAL NUMBER

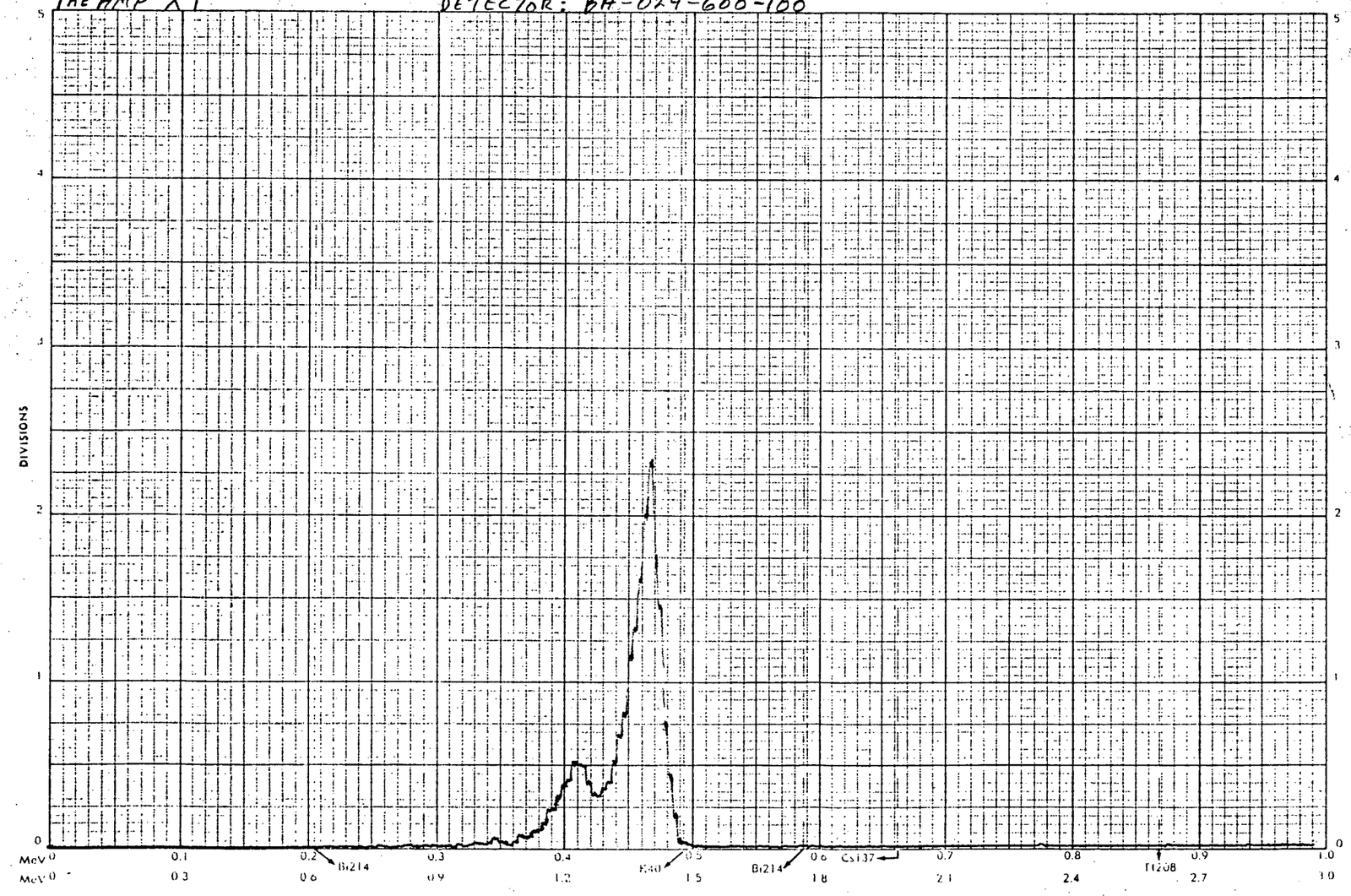
H.P. SIGNATURE Claude M Thompson

SPECTRAL PLOT NM-3067

UNIT	XTAL SIZE	XTAL S/N	HOLE NUMBER	DEAD TIME %	OPERATOR	DATE
α PHA					CS	9-25-89
GG #1 (CPS)	GG #2 (CPS)	GG GAIN (MV)	DEPTH	TIME (MIN)	HIGH VOLTAGE	AREA 1300 DOM 4% ENRICHED U STD.
				10	+70 BIAS	
GAIN	MCV	COUNTS PER DIVISION (LOWER)	COUNTS PER DIVISION (UPPER)	INTEGRAL Ch to Ch	CHANNELS FULL SCALE ☐ 256 ☐ 512 ☐ 1024	SEC TWP RNG
8 & 4.32	10 Full SCALE	200				

REMARKS

PREAMP X1 DETECTOR: BA-024-600-100



NOTE!

PEAK SHIFTED ≈ .1 TO THE LEFT

4.8 PEAK ≈ 3.5 TIMES HEIGHT OF 4.2 PEAK

AREA LSA STD. SMEAR TYPE OF SURVEY ALPHA PULSE HEIGHT COMPLETION DATE 9-26-89 SURVEY UNITS

FIGURE #6

TYPE OF INSTRUMENT

SERIAL NUMBER

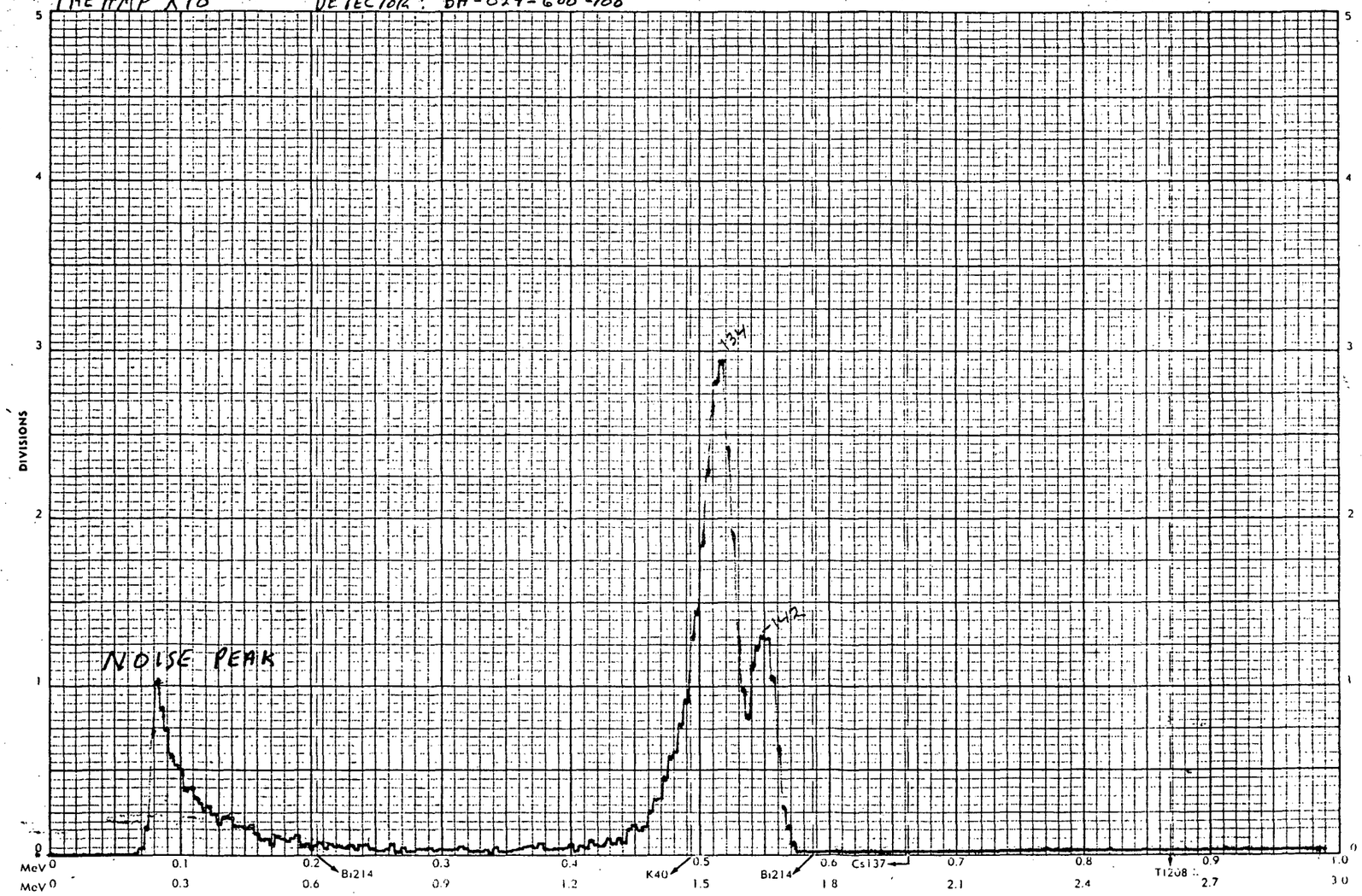
H.P. SIGNATURE Claude M Thompson

SPECTRAL PLOT KM-3867

UNIT	XTAL SIZE	XTAL S/N	HOLE NUMBER	DEAD TIME %	OPERATOR	DATE
L PHA						9-26-89
GG #1 (CPS)	GG #2 (CPS)	DC GAM (MV)	DEPTH	TIME (MIN)	HIGH VOLTAGE	AREA 753 DPM
				50	+70 BIAS	LSA STD SMEAR
GAIN	MEV	COUNTS PER DIVISION (LOWER)	COUNTS PER DIVISION (UPPER)	INTEGRAL Ch to Ch	CHANNELS FULL SCALE	SEC TWP RNG
4 + 3.65	10 FULL SCALE	200			☒ 256 ☐ 512 ☐ 1024	

REMARKS

PREAMP X10 DETECTOR: BA-024-600-100



AREA Pu-PLANT STACK METAL

FIGURE #7

TYPE OF SURVEY ALPHA PULSE HEIGHT

TYPE OF INSTRUMENT _____

SERIAL NUMBER _____

COMPLETION DATE 10-18-89

H.P. SIGNATURE Clark M Thompson

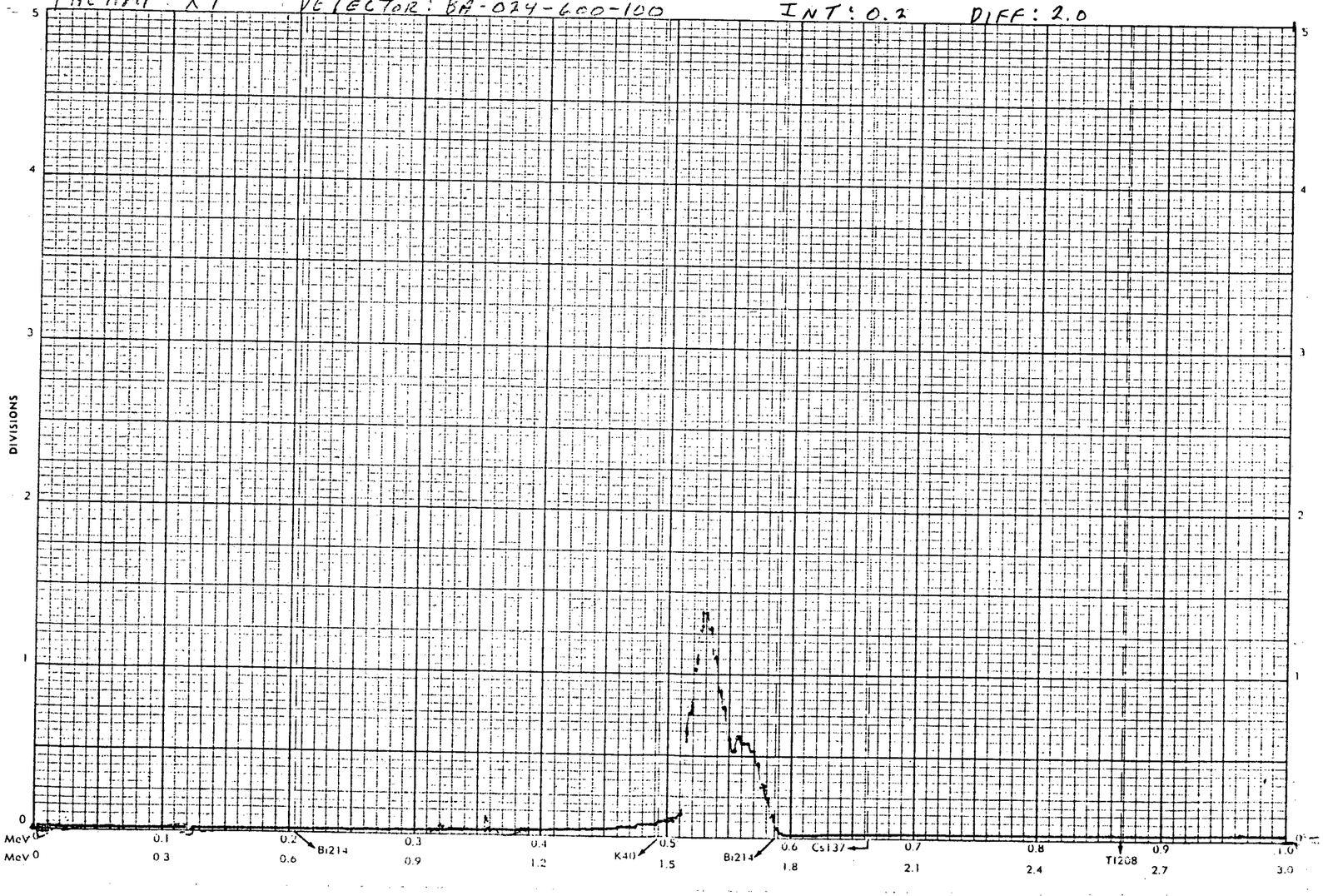
SURVEY UNITS

SPECTRAL PLOT RM-3667

UNIT	XTAL SIZE	XTAL S/N	HOLE NUMBER	DEAD TIME %	OPERATOR	DATE
α PHA					EC	10-17,18-89
GG #1 (CPS)	GG #2 (CPS)	DC GAIN (MV)	DEPTH	TIME (MIN)	HIGH VOLTAGE	AREA 54 OPM
				1005	+80 BIAS	Pu STACK METAL
GAIN	MCV	COUNTS PER DIVISION (LOWER)	COUNTS PER DIVISION (UPPER)	INTEGRAL	CHANNELS FULL SCALE	SEC / TWP / RNG
4 1 4.30	10 FULL SCALE	500		Ch to Ch	☐ 256 ☐ 512 ☒ 1024	

REMARKS

PREAMP: X 1 DETECTOR: BA-024-600-100 INT: 0.2 DIFF: 2.0



NOTE

≈ 0.2 SHIFT TO THE RIGHT.

AREA Pu-PLANT STACK FLASHING TYPE OF SURVEY ALPHA PULSE HEIGHT COMPLETION DATE 10-17-89 SURVEY UNITS

FIGURE #8

TYPE OF INSTRUMENT _____ H.P. SIGNATURE Claude W Thompson

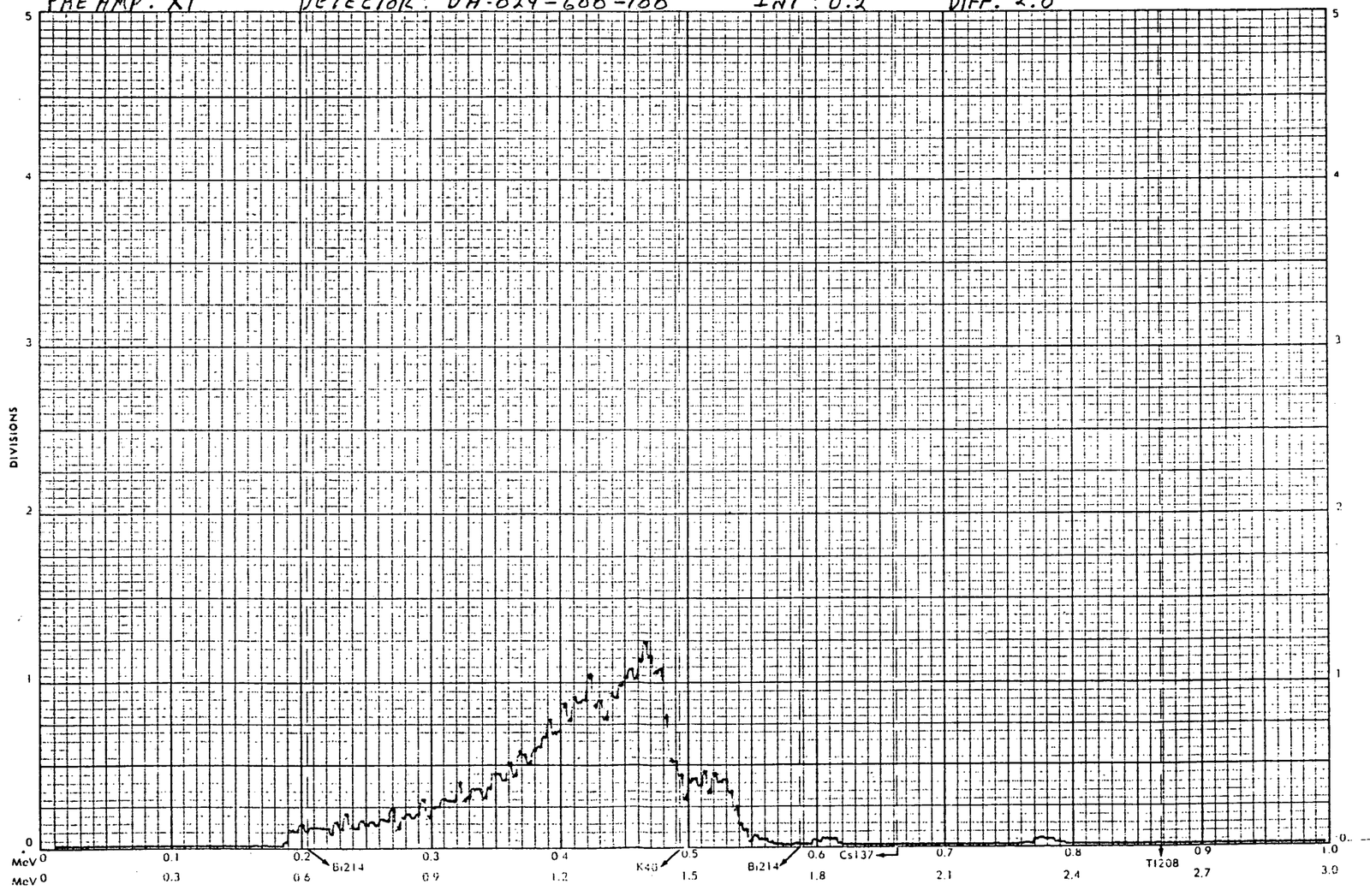
SERIAL NUMBER _____

SPECTRAL PLOT KM-3667

UNIT	XTAL SIZE	XTAL S/N	HOLE NUMBER	DEAD TIME %	OPERATOR	DATE
α PHA						10-16,17-89
GG #1 (CPS)	GG #2 (CPS)	DC GAM (MV)	DEPTH	TIME (MIN)	HIGH VOLTAGE	AREA 51 DPM
				1470	+80 BIAS	Pu STACK FLASHING
GAIN	MCV	COUNTS PER DIVISION (LOWER)	COUNTS PER DIVISION (UPPER)	INTEGRAL Ch to Ch	CHANNELS FULL SCALE ☐ 256 ☐ 512 ☒ 1024	SEC TWP RNG
4 x 4.30	10 FULL SCALE	200				

REMARKS

PREAMP: X1 DETECTOR: BA-024-600-100 INT: 0.2 DIFF: 2.0



23-Aug-1989

AREA Pu-PLANT STACK HOUSE FLASHING TYPE OF SURVEY _____

FIGURE #9

TYPE OF INSTRUMENT _____

SERIAL NUMBER _____

AFE/PROJECT NUMBER: 84007
DATE RECEIVED: 7-11-89

SAMPLE ID: 973604
COMPLETION DATE: 8-23-89

LOCATION: Cimarron
SUBMITTED BY: R. Fine

SAMPLE NAME: RF \CIM\11-JUL-89\ \ \ \ \Sheet Metal (Stack house Flashing)
SAMPLE DESCRIPTION: Metal

NOTES: 1717-JRJ-24P68

Pu-239	0.0024+-0.0003 pCi/cm2	U238	0.088+-0.006 pCi/cm2
Th-228	0.0002+-0.0001 pCi/cm2	U-234	0.266+-0.01 pCi/cm2
Th-232	0.0001+-0.0001 pCi/cm2		

All constituents soluble unless otherwise specified:
i=insoluble constitutent, t=total constitutent
* Gross Alpha greater than 15 pCi/l. Radiometric analyses will be run and the results reported later.

****
* APPROVED: D. Keck 8/25/89 JRJ Dick Gill *
* DISTRIBUTION: J.C. STAUTER, D.M. KECK, _____ *
* _____ *
****

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This/these samples are scheduled for disposal after 30 days.
If you want the samples retained or returned, please advise.

Pu-239 .24 ÷ 67.86 X 100 X 2.2 = 0.8 d/m per 100 cm² Transuranic

U-238 +U-234 35.4 X 2.2 = 77.9 d/m per 100 cm² Uranium

78.7

0.8 ÷ 78.7 = 1.0165 % Transuranic

268 d/m X .010165 = 2.72 d/m per 100 cm² Transuranic

268 d/m per 100 cm² with portable survey meter.

AREA Pu-PLANT STACK HOUSE ROCKS TYPE OF SURVEY _____

FIGURE #10 TYPE OF INSTRUMENT _____

SERIAL NUMBER _____

31-May-1989

AFE/PROJECT NUMBER: 84007
DATE RECEIVED: 5-09-89

SAMPLE ID: 953250
COMPLETION DATE: 5-31-89

LOCATION: Cimarron
SUBMITTED BY: R. Fine

SAMPLE NAME: RF \CIM\08-MAY-89\ \ \ \ \CS-130
SAMPLE DESCRIPTION: Rock

NOTES: 1717-JRJ-24P5,6 From Top of Pu stack house

Alpha	7.2 pCi/g	Pu-239	0.61+-0.01 pCi/g
Beta	6.7 pCi/g	U-234	1.43+-0.02 pCi/g
Pu-238	0.067+-0.004 pCi/g	U-238	0.46+-0.01 pCi/g

All constituents soluble unless otherwise specified:
i=insoluble constitutent, t=total constitutent
* Gross Alpha greater than 15 pCi/l. Radiometric analyses will be run and the results reported later.

****

* APPROVED: D. Keck 5/31/89 [signature] *

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* _____ *

****

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≈ 26 % Transuranic Activity

Alpha survey of roof before rock removal

40 dpm/100 cm² direct

AREA MCC LANDING SMEAR

FIGURE #11

TYPE OF SURVEY ALPHA PULSE HEIGHT

TYPE OF INSTRUMENT _____

SERIAL NUMBER _____

COMPLETION DATE 10-18-89

H.P. SIGNATURE Claude M Thompson

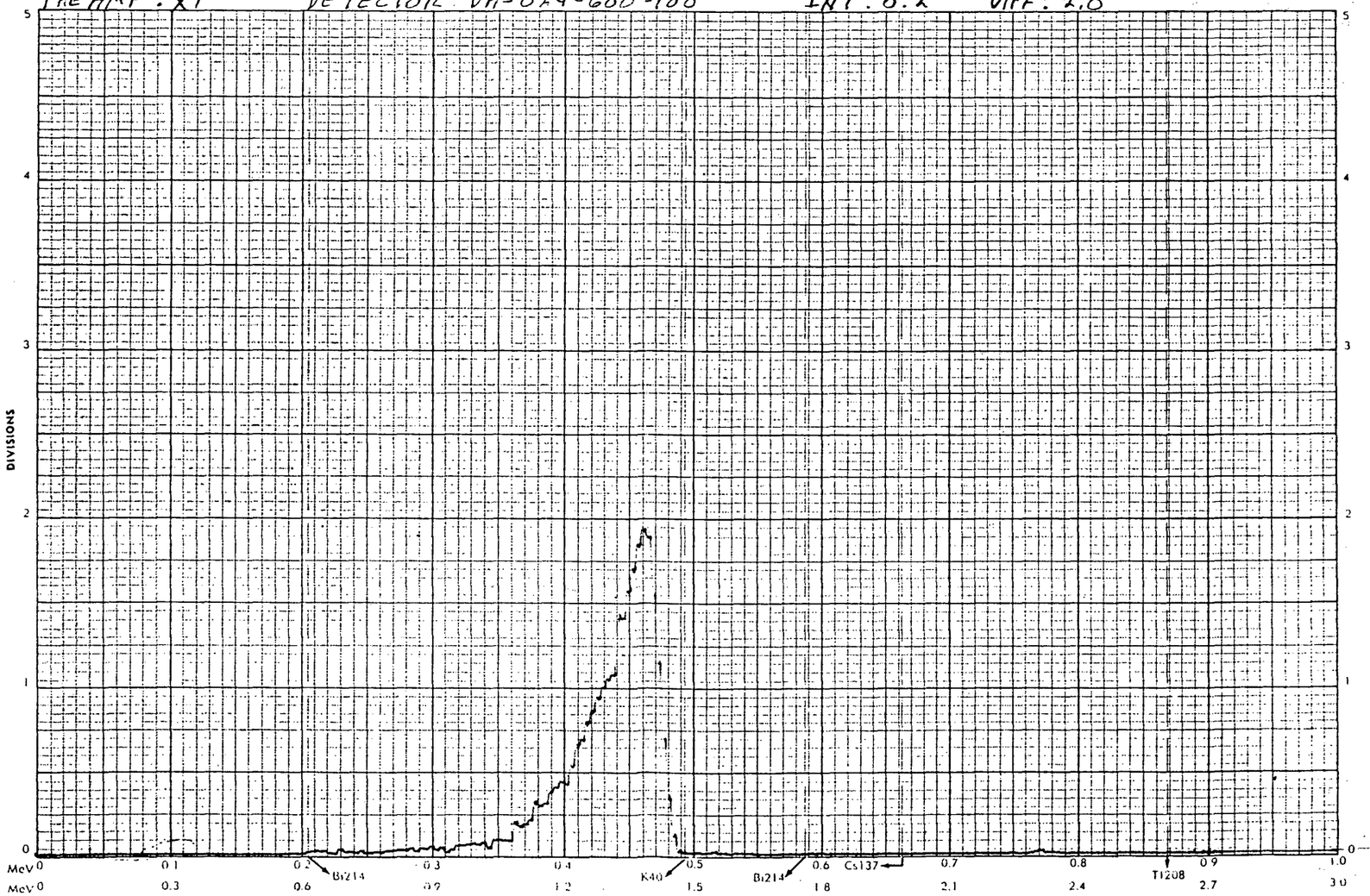
SURVEY UNITS

SPECTRAL PLOT KM-3867

UNIT	XTAL SIZE	XTAL S/N	HOLE NUMBER	DEAD TIME %	OPERATOR	DATE
α PHA						10-18-89
GG #1 (CPS)	GG #2 (CPS)	DC GAM (MV)	DEPTH	TIME (MIN)	HIGH VOLTAGE	AREA 95 DPM
				240	+80 BIAS	MCC LANDING SMEAR
GAIN	MCV	COUNTS PER DIVISION (LOWER)	COUNTS PER DIVISION (UPPER)	INTEGRAL Ch to Ch	CHANNELS FULL SCALE ☐ 256 ☐ 512 ☒ 1024	SEC TWP RNG
4 + 4.15	10 FULL SCALE	200				

REMARKS

PREAMP: X1 DETECTOR: BA-024-600-100 INT: 0.2 DIFF: 2.0



NOTE

≃ .1 SHIFT TO THE LEFT

AREA Pu-PLANT EAST SIDEWALK TYPE OF SURVEY ALPHA PULSE HEIGHT COMPLETION DATE 10-14-89 SURVEY UNITS

FIGURE #12

TYPE OF INSTRUMENT _____

SERIAL NUMBER _____

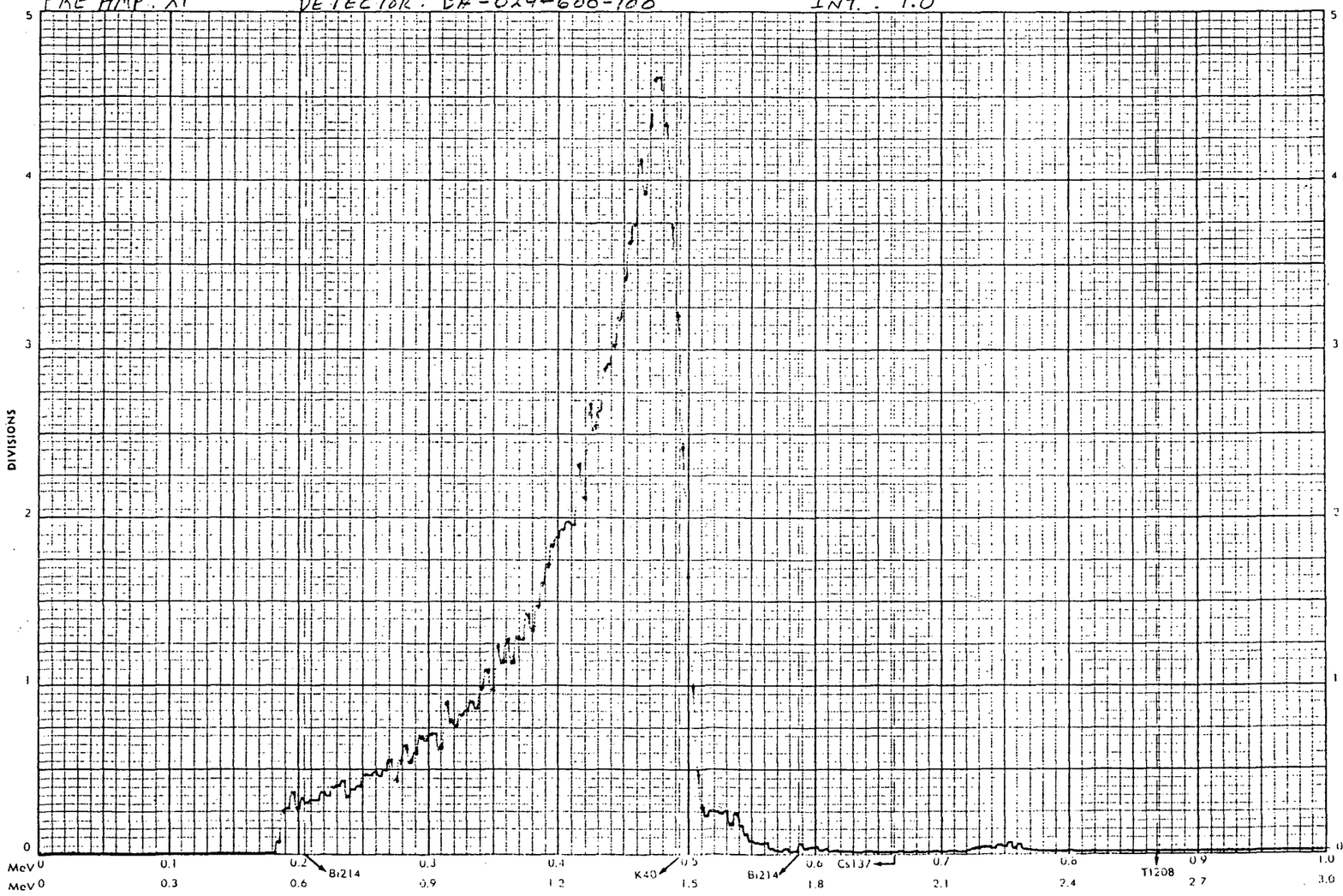
H.P. SIGNATURE Claude M Thompson

SPECTRAL PLOT EM-3867

UNIT	XTAL SIZE	XTAL S/N	HOLE NUMBER	DEAD TIME %	OPERATOR	DATE
α PHA					C+	10-13,14-89
GG #1 (CPS)	GG #2 (CPS)	DC GAIN (MV)	DEPTH	TIME (MIN)	HIGH VOLTAGE	AREA ACID WASH 90 DAM Pu EAST SIDEWALK
				1680	+80 BIAS	
GAIN	MCV	COUNTS PER DIVISION (LOWER)	COUNTS PER DIVISION (UPPER)	INTEGRAL	CHANNELS FULL SCALE	SEC TWP RNG
8 x 2.80	10 FULL SCALE	200		Ch to Ch	☐ 256 ☐ 512 ☒ 1024	

REMARKS

PRE AMP: X1 DETECTOR: BA-024-600-100 INT.: 1.0



AREA Pu-PLANT EAST FENCE

FIGURE #13

TYPE OF SURVEY _____

TYPE OF INSTRUMENT _____

SERIAL NUMBER _____

8-Sep-19E

AFE/PROJECT NUMBER: 84007
DATE RECEIVED: 8-30-89

SAMPLE ID: 983708
COMPLETION DATE: 9-08-89

LOCATION: Cimarron
SUBMITTED BY: R. Fine

SAMPLE NAME: RF \CIM\29-AUG-89\ \ \ \ \#1 EAST FENCE N END
SAMPLE DESCRIPTION: Fence parts

NOTES: 1717-JRJ-24P76
Alpha pulse height
125 Cm2 total area

Pu-239	0.0013+-0.0003 pCi/Cm2	U-234	1.9+-0.03 pCi/Cm2
U238	0.57+-0.01 pCi/Cm2	U-235	0.035+-0.004 pCi/Cm2

All constituents soluble unless otherwise specified:
i=insoluble constitutent, t=total constitutent
* Gross Alpha greater than 15 pCi/l. Radiometric analyses will be run and the results reported later.

****
* *
* APPROVED: D. Keck 9/11/89 *
* *
* DISTRIBUTION: J.C. STAUTER, D.M. KECK, _____ *
* _____ *
* *
****

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If you want the samples retained or returned, please advise.

Pu-239 .13 ÷ 67.86 X 100 X 2.2 = 0.42 d/m per 100 cm² Transuranic

U-238 + U 234 247 X 2.2 = 543.4 d/m per 100 cm² Uranium

543.82

0.42 ÷ 543.82 = 0.08 % Transuranic

600 dpm/100 cm² X 0.0008 = 0.48 dpm/100 cm² Transuranic

600 dpm/100 cm² with portable survey meter

8-Sep-198

AREA Pu-PLANT WEST FENCE

FIGURE #14

TYPE OF SURVEY _____

TYPE OF INSTRUMENT ____

SERIAL NUMBER _____

AFE/PROJECT NUMBER: 84007
DATE RECEIVED: 8-30-89

SAMPLE ID: 983709
COMPLETION DATE: 9-08-89

LOCATION: Cimarron
SUBMITTED BY: R. Fine

SAMPLE NAME: RF \CIM\29-AUG-89\ \ \ \ \#2 WEST FENCE N END
SAMPLE DESCRIPTION: Fence parts

NOTES: NBR same as 983708
Alpha pulse height
125 Cm2-total area

Pu-239	0.0032+-0.0009 pCi/Cm2	U-234	0.59+-0.01 pCi/Cm2
U238	0.17+-0.01 pCi/Cm2	U-235	0.018+-0.002 pCi/Cm2

All constituents soluble unless otherwise specified:
i=insoluble constitutent, t=total constitutent
* Gross Alpha greater than 15 pCi/l. Radiometric analyses will be run and the results reported later.

APPROVED: D. Keck 9/11/89

DISTRIBUTION: J.C. STAUTER, D.M. KECK, _____

KERR-MCGEE CORPORATION Technology Division
Proprietary Information of the Company TO BE KEPT CONFIDENTIAL
This/these samples are scheduled for disposal after 30 days.
If you want the samples retained or returned, please advise.

Pu-239 .32 ÷ 67.86 X100 X 2.2 = 1.04 dpm per 100 cm² Transuranic

U-238 + U-234 76 X 2.2 = $\frac{167.2}{168.24}$ dpm per 100 cm² Uranium

1.04 ÷ 168.24 = 0.62 % Transuranic

286.5 dpm/100 cm² X .0062 = 1.78 dpm/100 cm² Transuranic

286.5 dpm/100 cm² with portable survey meter

AREA Pu-PLANT I-BEAM

FIGURE #15

TYPE OF SURVEY _____

TYPE OF INSTRUMENT ____

SERIAL NUMBER _____

20-Sep-1989

AFE/PROJECT NUMBER: 84007 SAMPLE ID: 993715
DATE RECEIVED: 9-01-89 COMPLETION DATE: 9-20-89

LOCATION: Cimarron
SUBMITTED BY: R. Fine

SAMPLE NAME: RF \CIM\31-AUG-89\ \ \ \ \I-Beam
SAMPLE DESCRIPTION: Soils

NOTES: NBR same as 993714
I-Beam Total area 617 cm2

Pu-239	0.0003+-0.0001 pCi/cm2	U-238	0.114+-0.003 pCi/cm2
U-234	0.64+-0.006 pCi/cm2		

All constituents soluble unless otherwise specified:
i=insoluble constitutent, t=total constitutent
* Gross Alpha greater than 15 pCi/l. Radiometric analyses will be run and the results reported later.

APPROVED: [signature] 9/20/89 GRG LSS

DISTRIBUTION: J.C. STAUTER, D.M. KECK, _____

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Proprietary Information of the Company TO BE KEPT CONFIDENTIAL
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If you want the samples retained or returned, please advise.

Pu^{239} - .03 ÷ .6786 × 2.2 = 0.097 dpm/100 cm²

$U^{238} + U^{234}$ - 75.4 × 2.2 = 165.88 / 165.977 dpm/100 cm²

.097 ÷ 165.977 = 0.00058

= 0.058 % Transuranic

756 dpm/100 cm² with portable survey meter.

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.

N / W / E / S

AREA Pa-PLANT GUARD SHACK OUTSIDE WALLS

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 4-19-89

H.P. SIGNATURE Claude M. Thompson

AUTO. SAMPLE COUNTER #: 2 SN 83600108

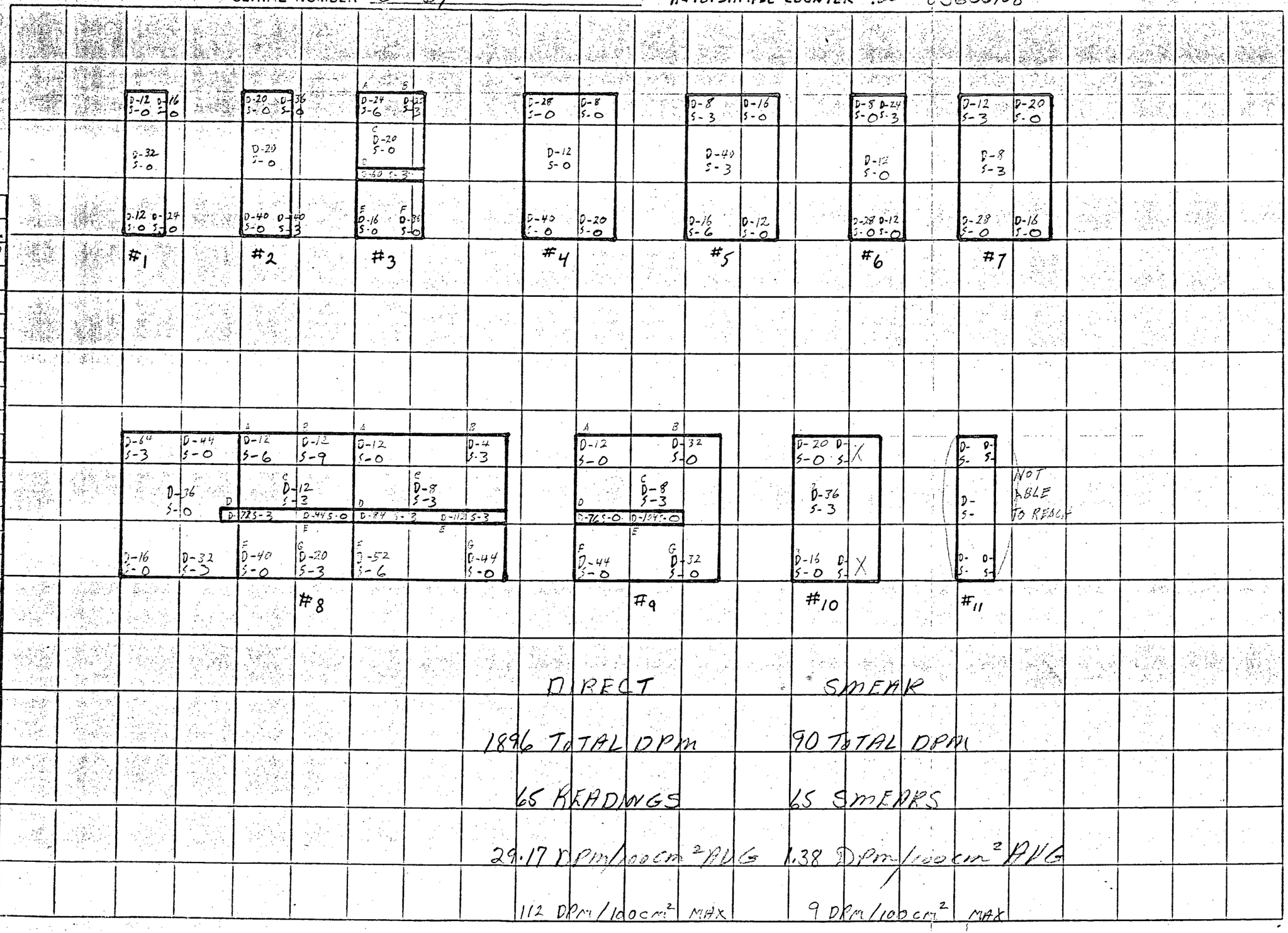
SURVEY UNITS DPM/100cm² WAR

1.5cm = 1 Meter MDA 11.09 DPM/100cm²

F – FLOOR FIXED
C – CEILING D- DIRECT
N – NORTH WALL S- SMEAR
S – SOUTH WALL
E – EAST WALL
W – WEST WALL

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/m RESPONSE	BKGD C/m
4-18-89	214-201	0-PM
	ASC #2	
4-19-89	24	.1



DIRECT

1896 TOTAL DPM

65 READINGS

29.17 DPM/100cm² AVG

112 DPM/100cm² MAX

SMEAR

90 TOTAL DPM

65 SMEARS

1.38 DPM/100cm² AVG

9 DPM/100cm² MAX

AREA PU PLANT - SOUTH WALL OUTSIDE WALLS #1

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / #768

SERIAL NUMBER 50069

COMPLETION DATE 4-11-89

H.P. SIGNATURE Charles M Thompson

SURVEY UNITS DPM/100 cm² avgR

AUTO SAMPLE COUNTER # 1 SN 8360015

N
W E
S
1.5cm = 1 Meter

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

MDA 13.68 DPM/100cm² FIXED

SOURCE # 7272 VALUE 850 DPM

INSTRUMENT

DATE	SOURCE RESPONSE	BKGD.
4-10-89	190-218	2
4-10-89	202-194	0
4-11-89	195-199	2
	ASC # 1	
4-11-89	33	12

DIRECT

3831 TOTAL DPM

74 READINGS

51.84 DPM/100cm² AVG

100 DPM/100cm² MAX

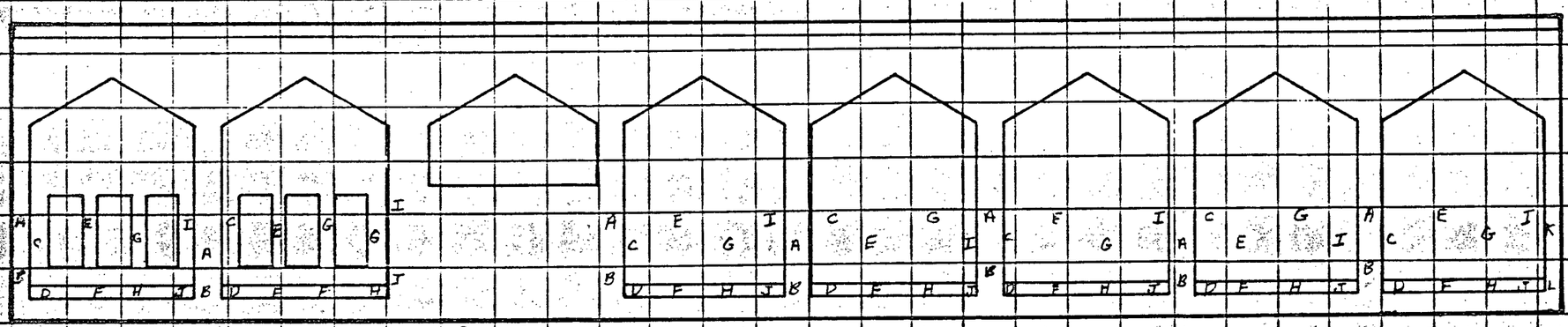
SMEAR

TOTAL DPM 177

SMEARS 74

DPM/100 cm² AVG 2.39

DPM/100 cm² MAX 9



INSTRUMENT LUDLUM 2220 DATE 4-11-89 HP SIGNATURE Jim Handley 4-10/190,218,2

DETECTOR 43-68 - SERIAL # 50069 SOURCE RESPONCE + BKGD AM 4-11/195,199,2

SOURCE NUMBER AND VALUE 7272- 850 DPM SOURCE RESPONCE + BKGD PM 4-10/208,194,0

SURVEY #	DIRECT	SMEAR	SURVEY #	DIRECT	SMEAR	SURVEY #	DIRECT	SMEAR
#1-A	6 - 24	3	G	1 - 4	0			
B	9 - 36	0	H	3 - 12	3			
C	16 - 64	0	I	17 - 68	0			
D	21 - 84	3	J	25 - 100	3			
E	10 - 40	0	#6-A	13 - 52	0			
F	7 - 28	0	B	19 - 76	9			
G	7 - 28	0	C	12 - 48	0			
H	13 - 52	3	D	24 - 96	3			
I	7 - 28	0	E	19 - 76	6			
J	6 - 24	3	F	25 - 100	9			
#2-A	14 - 56	0	G	8 - 32	3			
B	10 - 40	0	H	15 - 60	3			
C	14 - 56	0	I	13 - 52	6			
D	15 - 60	0	J	11 - 44	6			
E	10 - 40	9	#7-A	11 - 44	3			
F	17 - 68	0	B	11 - 44	3			
G	4 - 16	6	C	12 - 48	6			
H	14 - 56	0	D	12 - 48	3			
I	12 - 48	0	E	13 - 52	9			
J	6 - 24	0	F	16 - 64	6			
K	8 - 32	6	G	17 - 68	3			
L	5 - 20	0	H	17 - 68	6			
#4-A	9 - 36	3	I	11 - 44	0			
B	4 - 16	0	J	12 - 48	6			
C	6 - 24	0	#8-A	20 - 80	3			
D	23 - 92	6	B	9 - 36	3			
E	12 - 48	3	C	11 - 44	3			
F	20 - 80	3	D	13 - 52	0			
G	12 - 48	0	E	18 - 72	3			
H	21 - 84	3	F	18 - 72	0			
I	12 - 48	3	G	9 - 36	0			
J	20 - 80	0	H	17 - 68	6			
#5-A	11 - 44	3	I	22 - 88	0			
B	9 - 36	0	J	23 - 92	3			
C	11 - 44	3	K	11 - 44	3			
D	24 - 96	0	L	13 - 52	0			
E	4 - 16	0						
F	9 - 36	3						

AREA Pu-PLANT - OUTSIDE
WEST WALL - SOUTH ½ - #6

TYPE OF SURVEY ✓ DIRECT ✓ SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

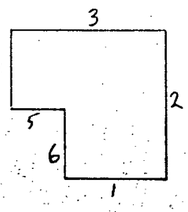
SERIAL NUMBER 500169

COMPLETION DATE 4-18-89

H.P. SIGNATURE Claude M. Thompson

AUTO. SAMPLE COUNTER #: 2 SN 83 00108

SURVEY UNITS DPM/100 cm² NaR



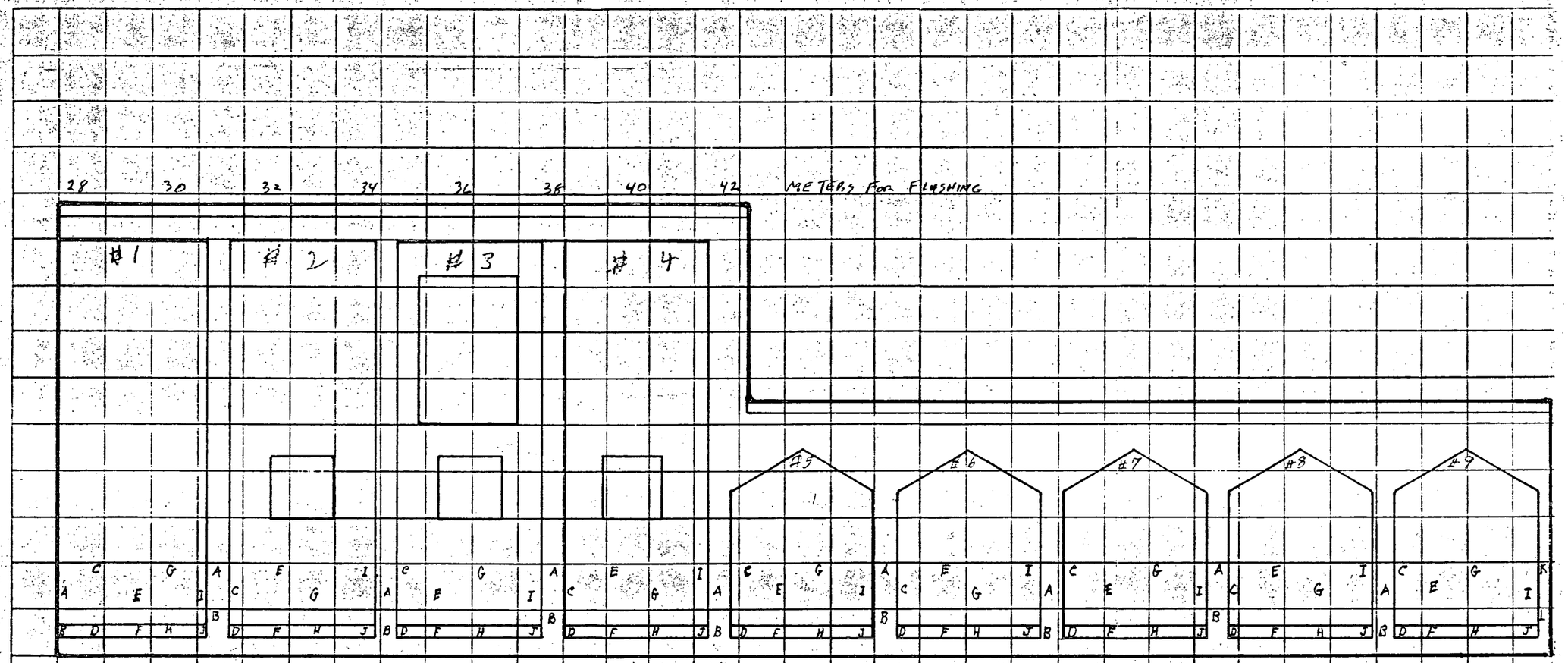
N
W E
S
1 cm = 1 Meter

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

MDA 15.68 DPM/100 cm²
FIXED

SOURCE #: 7272 VALUE: 858 DPM

INSTRUMENT		
DATE	SOURCE C/m RESPONSE	BKGD. C/m
4-16-89	190 - 218	2
4-10-89	208 - 194	0
4-11-89	195 - 199	2
	ASC #	
4-18-89	31	1



DIRECT

4,448 TOTAL DPM

92 READINGS

48.35 DPM/100 cm² AVG

132 DPM/100 cm² MAX

SMEAR

165 TOTAL DPM

92 SMEARS

1.79 DPM/100 cm² AVG

9

INSTRUMENT-LUDLUM 2220 DATE 4-17-89 HP SIGNATURE Jim Handley

DETECTOR-43-68 - SERIAL-50069 SOURCE RESPONCE + BKGD AM-1-177-208

SOURCE NUMBER AND VALUE-7272-850 DPM SOURCE RESPONCE + BKGD PM 0-179-202

SURVEY #	DIRECT	SMEAR	SURVEY #	DIRECT	SMEAR	SURVEY #	DIRECT	SMEAR
6	West Wall		South	Section		E	13 - 52	0
1-A	8 - 32	0	H	19 - 76	3	F	17 - 68	0
B	10 - 40	6	I	15 - 60	0	G	20 - 80	3
C	6 - 24	0	J	5 - 20	0	H	19 - 76	0
D	13 - 52	9	5-A	12 - 48	6	I	11 - 44	0
E	5 - 20	3	B	16 - 64	3	J	12 - 48	0
F	25 - 100	0	C	6 - 24	0	9-A	8 - 32	3
G	1 - 4	0	D	15 - 60	0	B	17 - 68	0
H	16 - 64	3	E	17 - 68	0	C	13 - 52	0
I	10 - 40	6	F	11 - 44	0	D	19 - 76	3
J	18 - 72	3	G	11 - 44	0	E	17 - 68	0
2-A	3 - 12	6	H	6 - 24	0	F	33 - 132	3
B	5 - 20	0	I	5 - 20	0	G	9 - 36	6
C	15 - 60	0	J	19 - 76	0	H	13 - 52	0
D	14 - 56	0	6-A	15 - 60	0	I	16 - 64	6
E	4 - 16	0	B	13 - 52	3	J	16 - 64	3
F	5 - 20	6	C	13 - 52	0	K	12 - 48	0
G	10 - 40	3	D	21 - 84	0	L	8 - 32	0
H	12 - 48	6	E	11 - 44	0			
I	11 - 44	3	F	16 - 64	3			
J	10 - 40	6	G	9 - 36	3			
3-A	10 - 40	0	H	16 - 64	0			
B	11 - 44	0	I	9 - 36	0			
C	12 - 48	3	J	9 - 36	0			
D	24 - 96	0	7-A	17 - 68	3			
E	16 - 64	6	B	10 - 40	3			
F	5 - 20	3	C	5 - 20	3			
G	13 - 52	6	D	15 - 60	3			
H	8 - 32	0	E	6 - 24	0			
I	9 - 36	0	F	14 - 56	9			
J	8 - 32	0	G	12 - 48	0			
4-A	11 - 44	3	H	9 - 36	0			
B	7 - 28	3	I	14 - 56	0			
C	11 - 44	3	J	13 - 52	6			
D	16 - 64	6	8-A	7 - 28	0			
E	5 - 20	0	B	5 - 20	6			
F	22 - 88	3	C	8 - 32	0			
G	12 - 48	0	D	14 - 56	0			

N / W / E / S

1 cm = 1 Meter

AREA Pu-PLANT OUTSIDE WEST WALL-NORTH ½ - #4 & #5

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 4-18-89

H.P. SIGNATURE Claude W. Thompson

AUTO. SAMPLE COUNTER #: 2 SN 83600108

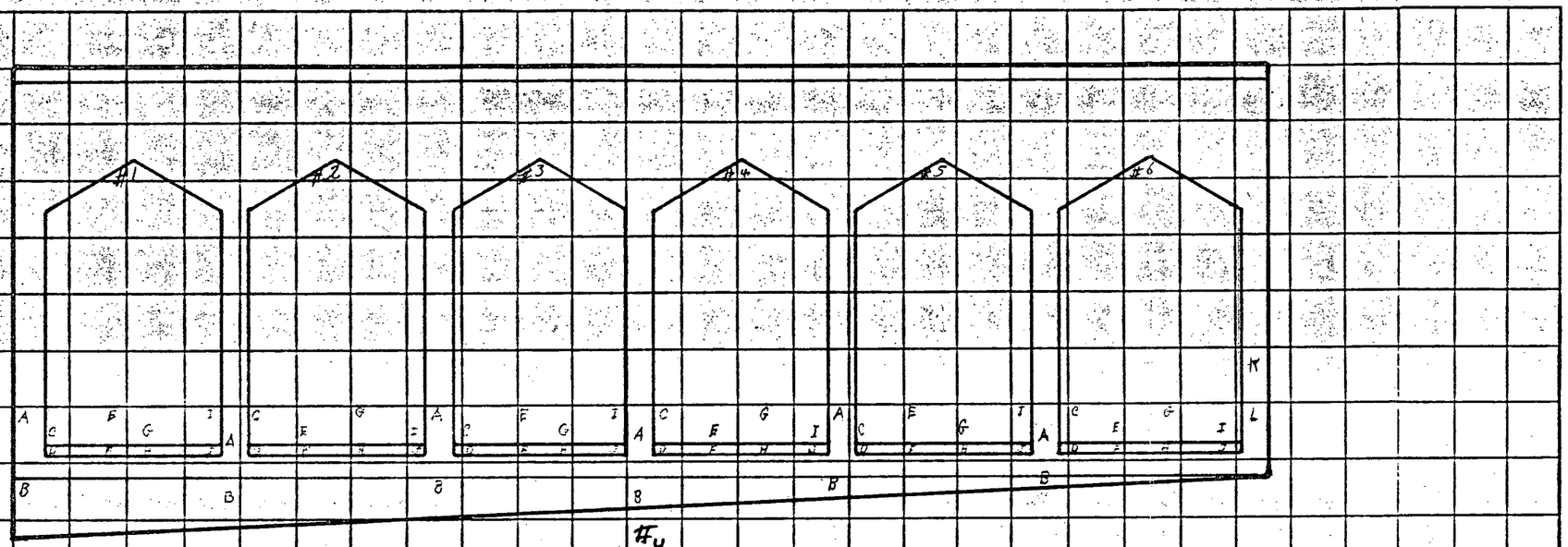
SURVEY UNITS DPM/100cm² WAR

3 / 4 / 2 / 5 6 / 1

F – FLOOR MDA 15.6
C – CEILING DPM/100cm²
N – NORTH WALL FIXED
S – SOUTH WALL
E – EAST WALL
W – WEST WALL

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD. C/M
4-10-89	190-218	2
4-10-89	208-194	0
4-11-89	195-199	2
	ASC #2	
4-18-89	31	1



DIRECT

3,368 TOTAL DPM

74 READINGS

45.5 DPM/100cm² AVG.

112 DPM/100 cm² MAX

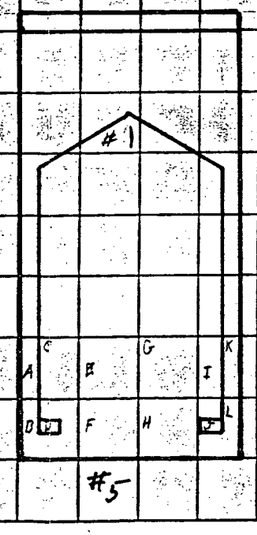
SMEAR

TOTAL DPM 132

SMEARS 74

DPM/100cm² AVG 1.78

9



INSTRUMENT LUDLUM-2220 DATE-4-17-89 HP SIGNATURE Jim Hanley

DETECTOR 43-68 - SERIAL -50069 SOURCE RESPONCE + BKGD AM-1-177-208

SOURCE NUMBER AND VALUE-727-2-850-DPM SOURCE RESPONCE + BKGD PM 0-179-202

SURVEY #	DIRECT	SMEAR	SURVEY #	DIRECT	SMEAR	SURVEY #	DIRECT	SMEAR
4	West Wall		North Section					
1-A	8 — 32	0	H	15 — 60	0			
B	13 — 52	0	I	5 — 20	0			
C	13 — 52	6	J	9 — 36	3			
D	9 — 36	3	5— A	7 — 28	9			
E	7 — 28	0	B	11 — 44	0			
F	15 — 60	3	C	10 — 40	0			
G	7 — 28	9	D	17 — 68	0			
H	28 — 112	3	E	12 — 48	0			
I	9 — 36	3	F	19 — 76	3			
J	17 — 68	0	G	7 — 28	0			
2- A	7 — 28	0	H	14 — 56	0			
B	11 — 44	0	I	9 — 36	0			
C	10 — 40	6	J	14 — 56	0			
D	19 — 76	0	6— A	6 — 24	3			
E	6 — 24	0	B	7 — 28	6			
F	4 — 16	0	C	3 — 12	3			
G	12 — 48	0	D	18 — 72	0			
H	15 — 60	0	E	6 — 24	0			
I	4 — 16	0	F	20 — 80	3			
J	13 — 52	0	G	4 — 16	6			
3- A	9 — 36	3	H	23 — 92	3			
B	11 — 44	0	I	8 — 32	0			
C	14 — 56	0	J	12 — 48	3			
D	11 — 44	0	K	10 — 40	0			
E	9 — 36	3	L	7 — 28	0			
F	22 — 88	3	West Wall Deck Floor			5		
G	5 — 20	3	1- A	20 — 80	0			
H	15 — 60	3	B	10 — 40	3			
I	9 — 36	6	C	15 — 60	9			
J	14 — 56	6	D	19 — 76	0			
4- A	8 — 32	0	E	11 — 44	0			
B	6 — 24	3	F	15 — 60	3			
C	2 — 8	0	G	15 — 60	3			
D	13 — 52	0	H	9 — 36	0			
E	6 — 24	0	I	14 — 56	0			
F	14 — 56	0	J	7 — 28	3			
G	8 — 32	3	K	6 — 24	0			
			L	10 — 40	3			

N
W E
S

1.8cm = 1 Meter

AREA Pu-PLANT - OUTSIDE NORTH WALL - #3

TYPE OF SURVEY ∂ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 4-18-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: 2-83600108

SURVEY UNITS DPM/100cm² WAR

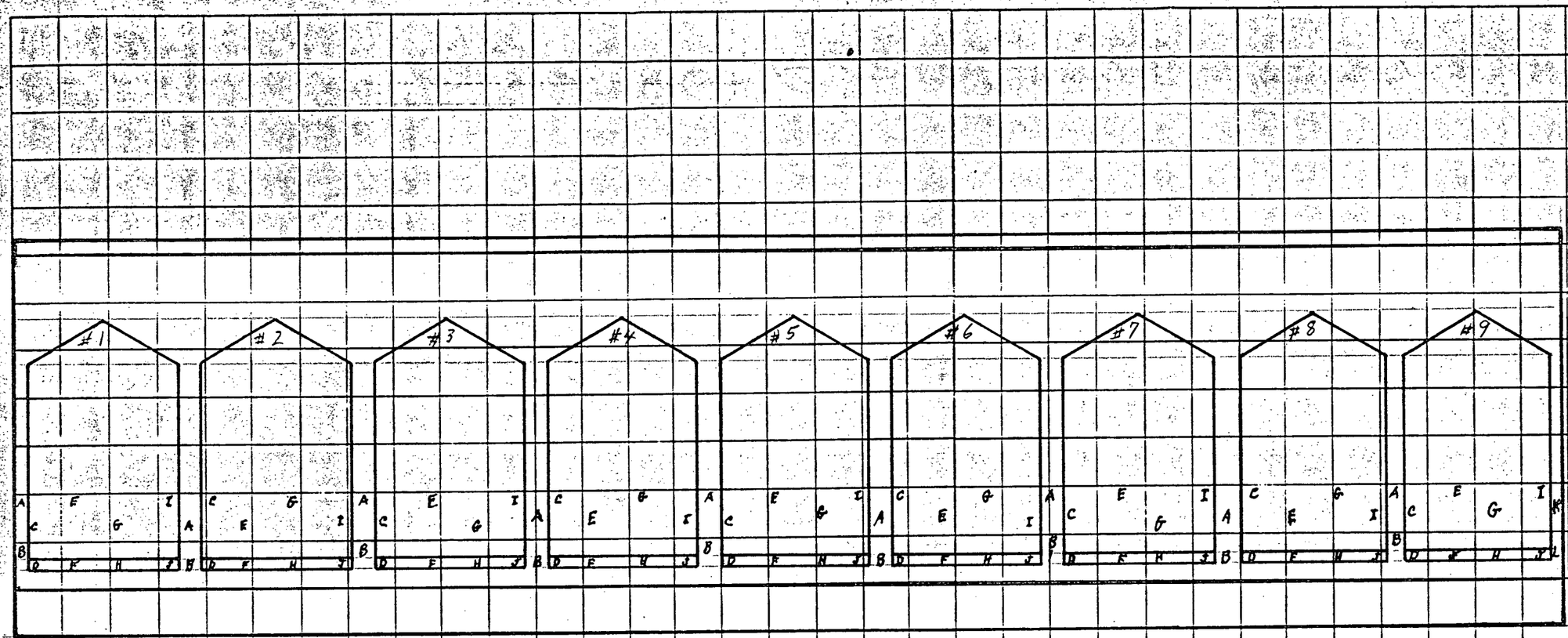
3 4 2 5 6 1

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

MDA 15.68 DPM/100cm²
FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD. C/M
4-10-89	190-218	2
4-10-89	208-194	0
4-11-89	195-199	2
	ASC #2	
3-17-89	30	.2
3-18-89	31	.1



DIRECT	SMEAR
3268 TOTAL DPM	213 TOTAL DPM
92 READINGS	92 SMEARS
40.96 DPM/100cm² AVG	232 DPM/100cm² AVG
244 DPM/100cm² MAX	9

INSTRUMENT-LUDLUM-2220 - DATE 4-14-87 HP SIGNATURE Jim Hancock

DETECTOR 43-68 - Serial - 50069 SOURCE RESPONCE + BKGD AM

SOURCE NUMBER AND VALUE - 7272 - 850 DPM SOURCE RESPONCE + BKGD PM - 2-178-217

SURVEY #	DIRECT	SMEAR	SURVEY #	DIRECT	SMEAR	SURVEY #	DIRECT	SMEAR
#1-A	13 - 52	0	I	11 - 44	0	G	8 - 32	0
B	8 - 32	6	J	10 - 40	0	H	11 - 44	0
C	15 - 60	0	#5- A	21 - 84	0	I	9 - 36	3
D	11 - 44	3	B	6 - 24	0	J	3 - 12	0
E	7 - 28	0	C	7 - 28	0	#9- A	8 - 32	0
F	30 - 120	0	D	6 - 24	3	B	11 - 44	3
G	3 - 12	0	E	13 - 52	0	C	10 - 40	3
H	15 - 60	9	F	29 - 116	3	D	7 - 28	3
I	13 - 52	0	G	17 - 68	9	E	12 - 48	3
J	8 - 32	0	H	21 - 84	3	F	5 - 20	3
#2- A	6 - 24	3	I	5 - 20	3	G	13 - 52	6
B	6 - 24	0	J	10 - 40	0	H	4 - 16	6
C	8 - 32	0	#6- A	5 - 20	0	I	7 - 28	6
D	12 - 48	0	B	4 - 16	0	J	5 - 20	0
E	12 - 48	3	C	12 - 118	3	K	11 - 44	9
F	21 - 84	3	D	6 - 24	0	L	15 - 60	9
G	10 - 40	3	E	4 - 16	0			
H	14 - 56	6	F	11 - 44	0			
I	9 - 36	0	G	3 - 12	6			
J	7 - 28	0	H	20 - 80	0			
#3- A	6 - 24	3	I	6 - 24	6			
B	8 - 32	0	J	8 - 32	0			
C	9 - 36	9	#7- A	6 - 24	9			
D	16 - 64	0	B	9 - 36	9			
E	10 - 40	0	C	5 - 20	3			
F	61 - 244	3	D	2 - 8	0			
G	7 - 28	6	E	5 - 20	0			
H	12 - 48	3	F	17 - 68	3			
I	2 - 8	3	G	6 - 24	0			
J	13 - 52	3	H	19 - 76	6			
#4- A	8 - 32	3	I	7 - 28	6			
B	8 - 32	3	J	6 - 24	0			
C	7 - 28	3	#8- A	11 - 44	0			
D	8 - 32	3	B	6 - 24	0			
E	7 - 28	0	C	7 - 28	3			
F	8 - 32	0	D	4 - 16	6			
G	13 - 52	0	E	5 - 20	0			
H	9 - 36	0	F	13 - 52	0			

NORTH WALL 3

AREA P4-PLANT- OUTSIDE EAST WALL - #2

TYPE OF SURVEY & DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

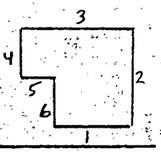
SERIAL NUMBER 50069

COMPLETION DATE 4-13-89

H.P. SIGNATURE Claude M. Thompson

AUTO. SAMPLE COUNTER #: 2 SN 83600108

SURVEY UNITS DPM/100CM² NAR



N
W E
S

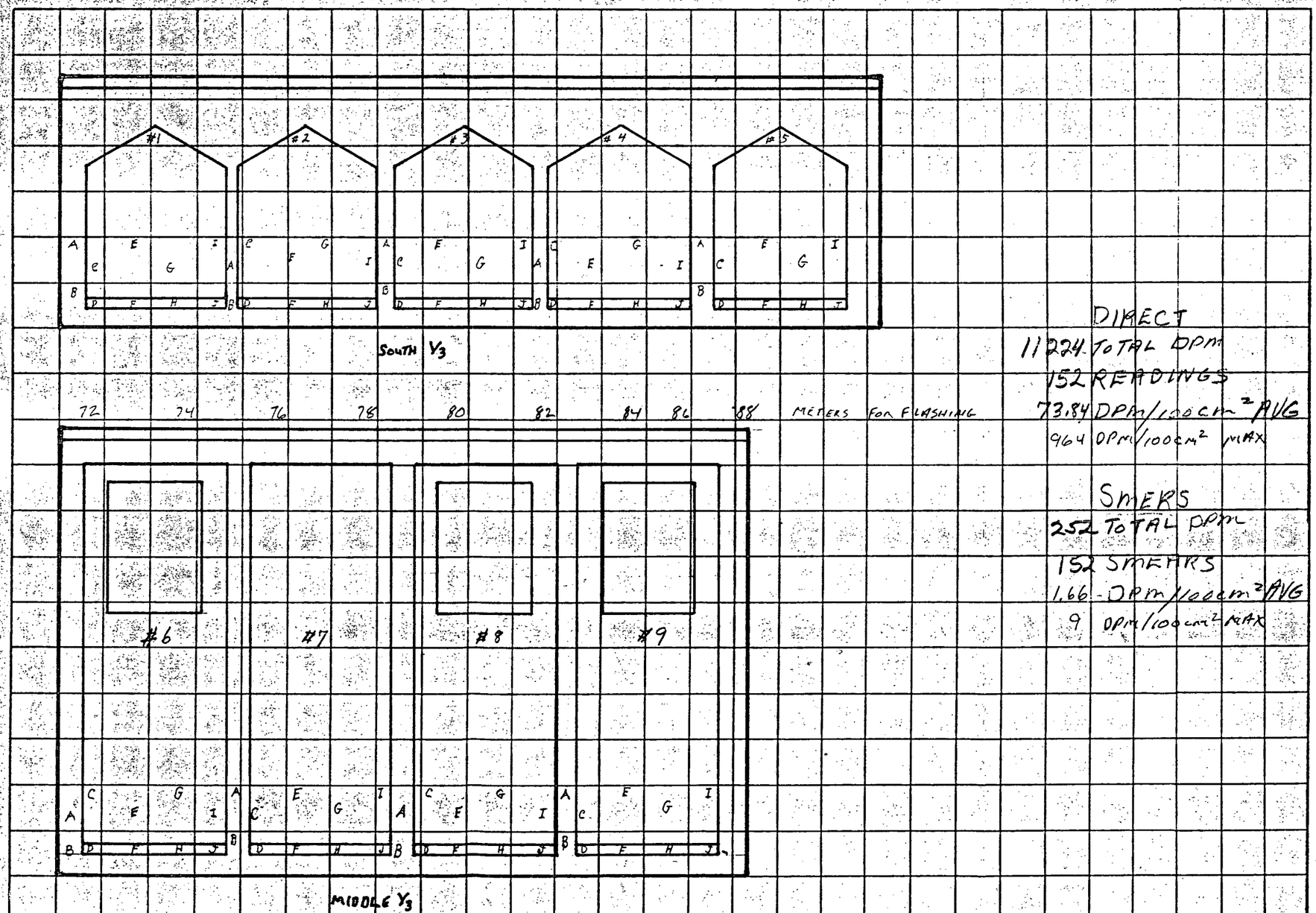
8 cm = 1 Meter

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

MDA 15.68 DPM/100CM² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD. C/M
4-10-89	190-218	2
4-10-89	208-194	0
4-11-89	195-199	2
	ASC #	
4-13-89	27	2



DIRECT

11224 TOTAL DPM

152 READINGS

73.84 DPM/100CM² AVG

964 DPM/100CM² MAX

SMEARS

252 TOTAL DPM

152 SMEARS

1.66 DPM/100CM² AVG

9 DPM/100CM² MAX

N
W E
S

AREA Pu-PLANT - OUTSIDE EAST WALL - #2

TYPE OF SURVEY α DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

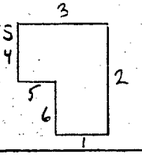
SERIAL NUMBER 50069

COMPLETION DATE 4-13-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: 2 SN 836 00168

SURVEY UNITS DPM/100cm² WAR



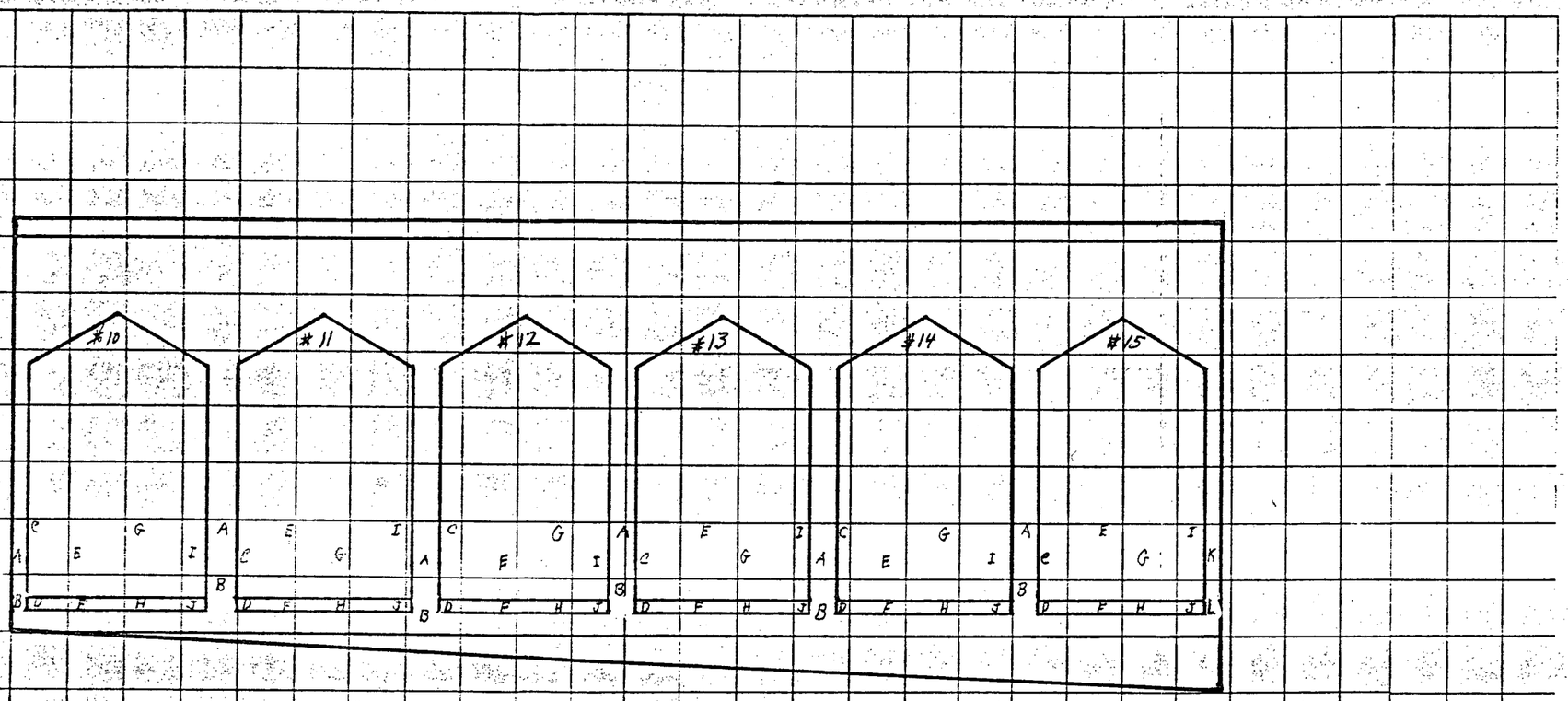
8 cm = 1 Meter

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

MDA 15.68 DPM/100cm² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
4-10-89	190 - 218	2
4-10-89	208 - 194	0
4-11-89	195 - 199	2
	ASC #	



INSTRUMENT-LUDLUM-2220 DATE-4-13-89 HP SIGNATURE Jim Handley

DETECTOR-43-68- Serial-50069 SOURCE RESPONCE + BKGD AM-2-184-190

SOURCE NUMBER AND VALUE-7272-850-DPM- SOURCE RESPONCE + BKGD PM-0-194-200

SURVEY#	DIRECT	SMEAR	SURVEY#	DIRECT	SMEAR	SURVEY#	DIRECT	SMEAR
A	9-36	3	I	6-24	3	G	5-20	0
B	17-68	0	J	22-88	9	H	28-112	3
C	10-40	0	5-A	5-20	0	I	6-24	6
D	6-24	6	B	6-24	0	J	28-112	0
E	6-24	6	C	11-44	0	9-A	5-20	0
F	6-24	0	D	7-28	0	B	10-40	0
G	9-36	3	E	11-44	0	C	13-52	9
H	15-60	0	F	14-56	9	D	10-40	3
I	7-28	0	G	22-88	0	E	11-44	0
J	14-56	0	H	12-48	0	F	24-96	3
2-A	4-16	3	I	4-16	3	G	12-48	3
B	6-24	6	J	16-64	6	H	156-624	3
C	10-40	3	6-A	10-40	0	I	2-8	0
D	7-28	0	B	6-24	3	J	11-44	9
E	10-40	0	C	9-32	3	10-A	7-28	9
F	12-48	9	D	10-40	0	B	7-28	0
G	6-24	3	E	4-16	0	C	3-12	3
H	13-52	3	F	147-588	3	D	12-48	0
I	4-16	0	G	6-24	6	E	0-0	0
J	17-68	0	H	114-456	3	F	3-12	0
3-A	16-64	3	I	14-56	0	G	12-48	0
B	5-20	3	J	30-120	0	H	5-20	3
C	2-8	0	7-A	95-380	3	I	6-24	3
D	6-24	3	B	90-360	0	J	21-84	0
E	11-44	0	C	111-444	0	11-A	7-28	0
F	10-40	0	D	241-964	3	B	5-20	6
G	2-8	3	E	29-116	3	C	4-16	0
H	5-20	6	F	180-720	3	D	13-52	0
I	10-40	3	G	26-104	0	E	12-48	0
J	14-56	0	H	113-452	0	F	18-72	0
4-A	4-16	0	I	33-132	0	G	10-40	0
B	6-24	0	J	57-204	0	H	10-40	3
C	5-20	6	8-A	10-40	0	I	4-16	3
D	10-40	0	B	13-52	3	J	17-68	0
E	13-52	0	C	4-16	0			
F	11-44	0	D	18-72	3			
G	12-48	3	E	3-12	0			
H	24-96	6	F	37-148	0			

12

INSTRUMENT LUDLUM-2220 DATE 4-17-89 HP SIGNATURE Jim Handley

DETECTOR 43-68 Serial-50069 SOURCE RESPONCE + BKGD AM-2-182-193

SOURCE NUMBER AND VALUE 7272-850DPM SOURCE RESPONCE + BKGD PM

SURVEY#	DIRECT	SMEAR	SURVEY#	DIRECT	SMEAR	SURVEY#	DIRECT	SMEAR
12-A	7-28	3	I	7-28	3			
B	5-20	0	J	19-76	0			
C	7-28	0	K	11-44	0			
D	15-60	0	L	9-36	0			
E	7-28	0						
F	13-52	0						
G	6-24	0						
H	13-52	0						
I	9-36	0						
J	11-44	0						
13-A	8-32	6						
B	2-8	0						
C	7-28	6						
D	15-60	0						
E	5-20	3						
F	12-48	0						
G	12-48	0						
H	17-68	0						
I	4-16	0						
J	11-44	0						
14-A	14-56	3						
B	9-36	3						
C	7-28	3						
D	12-48	3						
E	8-32	3						
F	8-32	0						
G	6-24	6						
H	15-60	0						
I	10-40	0						
J	10-40	0						
15-A	8-32	6						
B	6-24	0						
C	10-40	3						
D	10-40	3						
E	9-36	0						
F	13-52	0						
G	6-24	0						
H	12-48	3						

EAST

WALL

2

N / W / E / S

AREA Pu-PLANT - OUTSIDE
EAST WALL - MIDDLE SECTION
FINAL GRID

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 48395

COMPLETION DATE 4-25-89

H.P. SIGNATURE Claudia Thompson

SURVEY UNITS DPM/100cm² WAR

AUTO. SAMPLE COUNTER #: #2 83600108, #1 83600115

1.5cm = 1 Meter

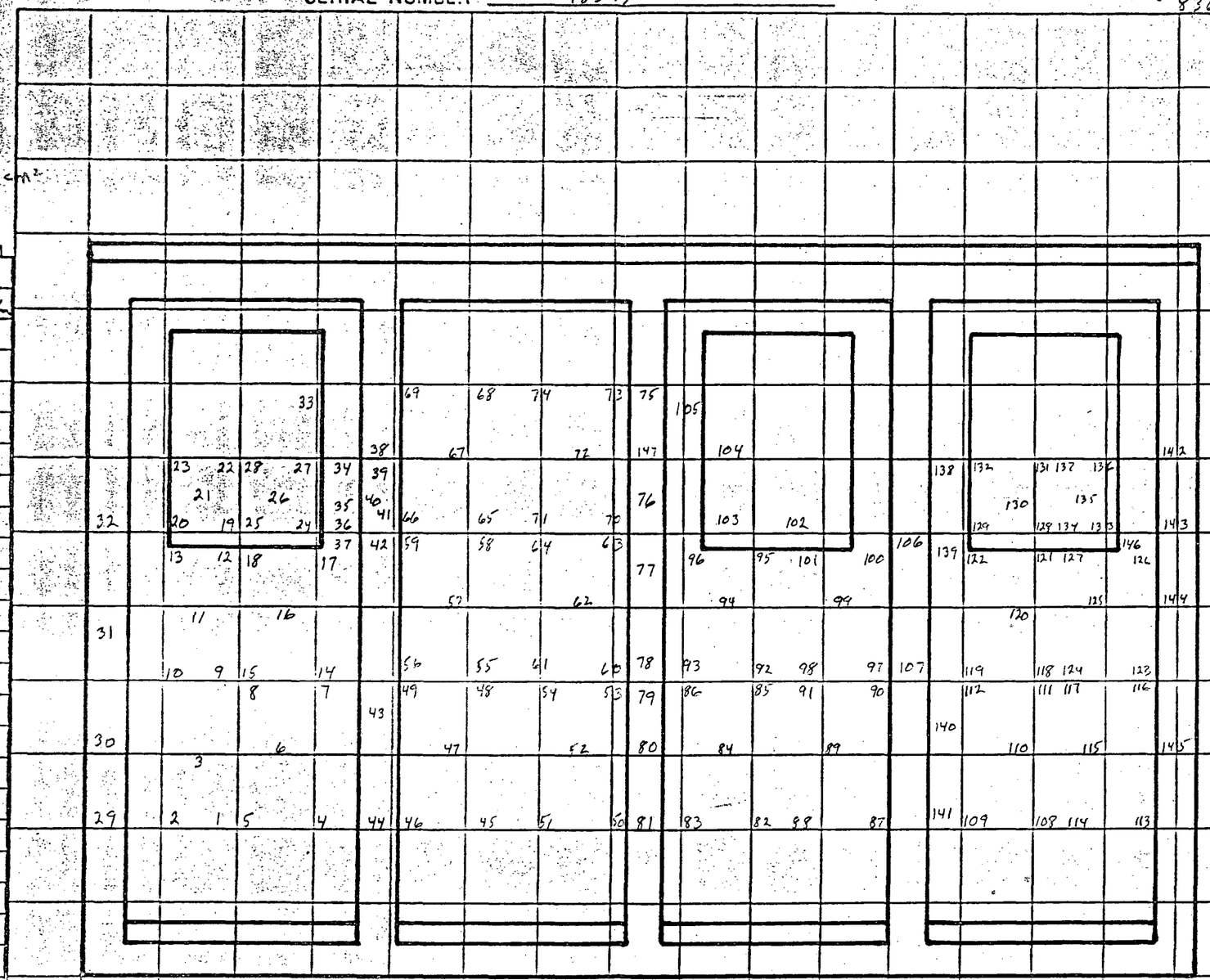
D - DIRECT
S - SMEAR

F - FLOOR
C - CEILING
N - NORTH WALL MDA
S - SOUTH WALL 19.20 dpm/100cm²
E - EAST WALL Fixed
W - WEST WALL

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
4-21-89	198,179	3
4-21-89	214,199	1
4-24-89	210,190	1
4-24-89	190,172	3
4-25-89	184,171	3
	ASC #2	
4-24-89	30	.1
	ASC #1	
4-25-89	31	.2

	DIRECT	SMEAR
TOTAL DPM	16,112	666
# READINGS	147	147
AVG. DPM/100cm²	109.61	4.53
MAX DPM/100cm²	171.2	105



PLANT Pu AREA Outside East wall

SURVEYED BY McTain & Hatfield mobile section

INST. LUDLUM 2220 # 48395 DET. 43-68

SOURCE CK 191 AUG BKG. 3

DATE: 4-21,24,25-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # #2 83600108/#1 83600115

CTD. BY D. Ford

SOURCE CK. AVG. 31

BKG. 2

DATE: 4-24,25-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
survey point numbers		1	11	44	3
		2	12	48	3
		3	3	12	3
		4	44	176	3
		5	43	172	6
		6	43	172	6
		7	13	52	6
	DIRECT SMEAR	8	33	132	3
TOTAL DPM	16,112 666	9	15	60	0
# READINGS	147 147	10	18	72	3
AVG. DPM/100 cm^2	109.61 4.53	11	18	72	6
MAX. DPM/100 cm^2	1712 105	12	26	144	0
		13	32	128	0
		14	55	220	3
		15	46	184	6
		16	49	196	6
		17	50	200	3
		18	47	188	0
		19	19	76	6
		20	21	84	9
		21	20	80	0
		22	34	136	0
		23	22	88	0
		24	54	216	6
		25	21	84	6
		26	19	76	3
		27	54	216	0
		28	22	88	6
		29	2	8	3
		30	14	56	0
		31	15	60	3
		32	23	92	6
		33	28	112	6
		34	6	24	6

PLANT Pu AREA Outside - East Wall
SURVEYED BY McLain & Hetzler middle section
INST. LUDLUM 2220 # 48395 DET. 43-68
SOURCE CK 191 AUG BKG. 3
DATE: 4-21,24,25-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 83600108 - 83600115 (#2 - #1)
CTD. BY D Foral
SOURCE CK. AVG. 31
BKG. 2
DATE: 4-24,25-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Survey Points	35	23	92	6
	36	50	200	0
	37	20	80	3
	38	23	92	6
	39	6	24	0
	40	20	80	6
	41	9	36	9
	42	18	72	3
	43	428	1712	105
	44	256	1024	9
	45	15	60	3
	46	116	464	6
	47	35	140	3
	48	7	28	0
	49	107	428	3
	50	18	72	0
	51	11	44	9
	52	20	80	0
	53	11	44	3
	54	8	32	3
	55	7	28	3
	56	38	152	21
	57	13	52	6
	58	2	8	6
	59	157	628	60
	60	9	36	3
	61	1	4	0
	62	2	8	0
	63	12	48	3
	64	13	52	0
	65	15	60	6
	66	93	372	0
	67	10	40	6
	68	12	48	0

PLANT Pu AREA Outside - East wall
SURVEYED BY McLain & Hetzler middle section
INST. LUDLUM 2220 # 48395 DET. 43-68
SOURCE CK 191 AUG BKG. 3
DATE: 4-21,24,25-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 83600108, 83600115 (#2, #1)
CTD. BY D. Foral
SOURCE CK. AVG. 31
BKG. 2
DATE: 4-24,25-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Survey Points	69	12	48	9
	70	8	32	0
	71	3	12	3
	72	9	36	3
	73	11	44	3
	74	9	36	3
	75	17	68	0
	76	6	24	3
	77	12	48	3
	78	9	36	3
	79	8	32	3
	80	8	32	3
	81	7	28	3
	82	8	32	0
	83	8	32	3
	84	7	28	0
	85	8	32	6
	86	6	24	3
	87	0	0	9
	88	7	28	3
	89	3	12	0
	90	4	16	0
	91	13	52	3
	92	16	64	0
	93	6	24	3
	94	12	48	3
	95	22	88	0
	96	14	56	0
	97	4	16	0
	98	11	44	3
	99	10	40	9
	100	13	52	9
	101	11	44	6
	102	13	52	3

PLANT Pu AREA On Tk 6 - East Wall
SURVEYED BY McLain + Hatfield Middle section
INST. LUDLUM 2220 * # 48395 DET. 43-68
SOURCE CK 191 AUG BKG. 3
DATE: 4-21, 24, 25-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 83600108 (#2), 83600115 (#1)
CTD. BY D. Ford
SOURCE CK. AVG. 31
BKG. .2
DATE: 4-24, 25-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Surrey Points	103	14	56	3
	104	17	68	0
	105	16	64	3
	106	10	40	3
	107	3	12	9
	108	15	60	6
	109	5	20	6
	110	9	36	0
	111	51	204	6
	112	9	36	6
	113	6	24	0
	114	34	136	3
	115	13	52	3
	116	11	44	9
	117	60	240	6
	118	71	284	0
	119	7	28	9
	120	16	64	9
	121	116	464	0
	122	9	36	9
	123	10	40	0
	124	55	220	0
	125	15	60	3
	126	15	60	3
	127	160	640	3
	128	9	36	3
	129	9	36	0
	130	30	120	3
	131	22	88	3
	132	31	124	0
	133	25	100	0
	134	27	108	3
	135	20	80	3
	136	32	128	3

PLANT Pu AREA On Tk 6 - East Wall C
SURVEYED BY McLain + Hatfield Middle section
INST. LUDLUM 2220 * # 48395 DET. 43-68
SOURCE CK 191 AUG BKG. 3
DATE: 4-21, 24, 25-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 83600108 (#2), 83600115 (#1)
CTD. BY D. Ford
SOURCE CK. AVG. 31
BKG. .2
DATE: 4-24, 25-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Surrey Points	137	31	124	6
	138	13	52	6
	139	11	44	0
	140	9	36	3
	141	12	48	0
	142	12	48	3
	143	11	44	0
	144	11	44	0
	145	16	64	6
	146	97	388	9
	147	11	44	3

Pa-Plant Motor Control Stairs

		Direct	Smear
Readings			
	Total DPM	50,514	291
	# Readings	147	147
	AVG DPM/100cm²	343.63	1.98
	MAX DPM/100cm²	1248	9
	MDA = 57.61 DPM/100cm²		
1 Step & Landings	Total DPM	13,182	210
	# Readings	122	122
	AVG DPM/100cm²	108.05	1.72
	MAX DPM/100cm²	356	9
	MDA = 11.09 DPM/100cm²		
Combined	Total DPM	63,696	501
	# Readings	269	269
	AVG DPM/100cm²	236.79	1.86
	MAX DPM/100cm²	1248	9

MDA = 57.61 DPM/100cm²

PLANT Pu AREA OUTSIDE MCC STAIRS
SURVEYED BY TM Price FIRST FLIGHT
INST. LUDLUM 2220 # 48395 DET. 43-68
SOURCE CK AM 198/179 BKG. 3
DATE: 4-21-89 SOURCE #: 7272 VALUE: 850DPM

ASC # 2 83600108
CTD. BY D. Ford
SOURCE CK. AVG. 30
BKG. 1
DATE: 4-24-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
lower Flight step #1	left	0	0	3
	right	2	8	0
Before removal step #2	L	5	20	0
of nonskid	R	3	12	0
BEFOR NON SKID step #3	L	3	12	6
REMOVED	R	1	4	9
step #4	L	3	12	0
	R	7	28	0
step #5	L	0	0	0
	R	5	20	3
#6	L	3	12	0
	R	2	8	0
#7	L	4	16	3
	R	3	12	3
#8	L	7	28	0
	R	11	44	0
#9	L	1	4	6
	R	6	24	3
#10	L	9	36	0
	R	10	40	0
#11	L	4	16	0
	R	2	8	0
#12	L	5	20	0
	R	14	56	3
#13	L	2	8	0
	R	6	24	3
First Landing Facing Bldg.	1	35	140	3
	2	32	128	0
DIRECT SMEAR	3	37	148	3
TOTAL DPM 2432 102	4	67	268	6
# READINGS 60 60	5	46	184	0
AVG DPM/100cm2 40.53 1.70				

PLANT Pu AREA Outside MCC Stairs
SURVEYED BY TM Price second flight
INST. LUDLUM 2220 # 48395 DET. 43-68
SOURCE CK 198/179 BKG. 3/1 PM 214/199
DATE: 4-21-89 SOURCE #: 7272 VALUE: 850DPM

ASC # 2 83600108
CTD. BY D Ford
SOURCE CK. AVG. 30
BKG. 1
DATE: 4-24-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Second Flight step #1	LEFT	9	36	3
	RIGHT	3	12	3
Before removal #2	L	1	4	3
of nonskid	R	6	24	0
BEFOR NONSKID REMOVED #3	L	3	12	0
	R	3	12	0
#4	L	1	4	0
	R	3	12	0
#5	L	5	20	3
	R	7	28	3
#6	L	6	24	0
	R	8	32	0
#7	L	5	20	0
	R	6	24	3
#8	L	8	32	3
	R	6	24	3
#9	L	6	24	3
	R	4	16	0
#10	L	5	20	3
	R	8	32	0
#11	L	3	12	9
	R	6	24	3
#12	L	6	24	0
	R	9	36	0
#13	L	6	24	0
	R	4	16	0
Top Landing Facing Hills	1	10215	40,860	15
	2	12196	48,784	12
Sectors removed	3	8	32	6
	4	90	360	0
	5	38	152	0

PLANT Pu AREA OUTSIDE STAIRS

SURVEYED BY MCLAIN

INST. LUDLUM 2220 #150069 DET. 43-68

SOURCE CK 88/84 BKG. 0

DATE: 8-11-89 SOURCE #: 1832 VALUE: 343 DPM

ASC # 2 83600108

CTD. BY J Black

SOURCE CK. AVG. 25

BKG. 1

DATE: 8-11-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION				DIRECT CPM	DIRECT DPM	SMEAR
STAIRS TO MOTOR CONTROL			1	53	212	6
left to Right				36	144	0
AFTER HAND SKID REMOVED			2	48	192	3
				36	144	0
			3	31	124	3
	Direct	Smear		48	192	3
Total DPM	10,750	108	4	53	212	0
# Readings	62	62		42	168	0
AVG DPM/100cm²	173.39	1.72	5	50	200	0
MAX DPM/100cm²	356	9		41	164	0
			6	54	216	3
				40	160	0
			7	44	176	0
				43	172	3
			8	64	254	0
				36	144	3
			9	53	212	6
				42	168	0
			10	55	220	9
				74	296	0
			11	38	152	6
				47	188	0
			12	57	228	0
				48	192	3
			13	36	144	3
				44	156	3
Platform at middle			1	42	168	3
			2	41	164	0
			3	58	232	3
			4	43	172	3
			5	42	168	3

PLANT Pu AREA OUTSIDE STAIRS

SURVEYED BY MCLAIN

INST. LUDLUM 2220 #150069 DET. 43-68

SOURCE CK 88/84 BKG. 0

DATE: 8-11-89 SOURCE #: 1832 VALUE: 342 DPM

ASC # 2 83600108

CTD. BY J Black

SOURCE CK. AVG. 25

BKG. 1

DATE: 8-11-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Stairs to motor control	14	34	136	6
		30	120	0
	15	33	132	0
		33	132	0
	16	23	92	0
		48	192	3
	17	33	132	0
		42	168	0
	18	32	128	0
		53	212	0
	19	41	164	3
		28	112	0
	20	33	132	0
		45	180	9
	21	30	120	3
		38	162	3
	22	35	140	0
		34	136	0
	23	45	170	3
		27	108	0
	24	32	128	3
		20	80	6
	25	32	128	0
		33	132	0
	26	37	148	0
		46	184	0
Two platforms	1	86	344	0
	2	89	356	0
	3	62	248	0
	4	53	212	3
	5	47	188	0

PLANT P11 AREA outside Pool Structure

SURVEYED BY A.H.T.L. Wm Landings

INST. LUDLUM 2220 # 58318 DET. 43-4

SOURCE CK 187-197 BKG. 0

DATE: 4-24-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 83600108

CTD. BY K Marsan

SOURCE CK. AVG. 97

BKG. 13

DATE: 4-26-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
2ND FLITE East Rail 1st Vertical			
DIRECT SMEAR Top	39	468	0
Total DPM 5054 291 Lower	16	192	3
# Readings 147 147 Top Rail	15	180	0
AVG DPM/100cm² 343.63 1.98 Middle	21	252	6
MAX DPM/100cm² 1248 9 Channel Iron	39	468	0
2ND VERTICAL			
Top	27	324	0
Lower	23	276	0
Top Rail	16	192	0
Middle	16	192	3
Channel Iron	47	564	0
Top & Middle Rail Between 2ND & 3rd			
Verticals Top	16	192	0
middle	5	60	0
Channel Iron	43	516	6
3rd Vertical			
Top	69	828	0
Lower	13	156	6
Top & Middle Rail Between 3rd & 4th			
Verticals Top	23	276	3
Middle	14	168	6
Channel Iron	18	216	3
4th Vertical			
Top	62	744	0
Lower	57	684	3
END			
2ND FLITE WEST RAIL Top	19	228	0
Top & Middle Rails middle	15	180	0
Between 1st & 2ND Verticals Channel Iron	37	444	9

PLANT P11 AREA outside East Landing

SURVEYED BY A.H.T.L. Wm Landings

INST. LUDLUM 2220 # 58318 DET. 43-4

SOURCE CK 187-197 BKG. 0

DATE: 4-24-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 83600108

CTD. BY K Marsan

SOURCE CK. AVG. 97

BKG. 13

DATE: 4-26-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
2ND VERTICAL West Top	8	96	0
LOWER	3	36	3
Top RAIL	12	144	0
middle	9	108	3
Channel Iron	17	204	0
3rd Vertical			
Top Rail	16	192	0
Middle	11	132	3
Channel Iron	20	240	0
4th Vertical			
Top Rail	21	252	3
Middle	14	168	3
Channel Iron	11	132	0
END			
2nd Landing Rails North Top-R	34	408	0
Vertical of S/E Rail Lower middle	34	408	3
Top Vert	86	1032	3
Lower	77	876	3
South Vertical of S/E Rail Lower			
Top R	27	324	0
Middle	26	312	3
Top Vert	94	1128	9
Lower	104	1248	6
North Vertical of S/E Rail Lower			
Top R	38	456	0
Middle	26	312	3
Top Vert	43	516	0
Lower	73	876	3
South Vertical of S/E Rail Lower			
Top Rail	35	420	0
Middle	31	372	0
Top Vert	75	900	0
Lower	73	876	3

PLANT PH AREA outside East Stair & Landing
SURVEYED BY A Hurley & V McLain
INST. LUDLUM 2220 # 58318 DET. 43-4
SOURCE CK 187-197 BKG. 0
DATE: SOURCE #: 7277 VALUE: 850 DPM

ASC # 2ND 03600109
CTD. BY K Morgan
SOURCE CK. AVG. 24
BKG. 3
DATE: 4-26-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
North End of South Rail Top R	33	396	3
Middle	69	828	0
Top West	48	576	3
Lower	63	756	9
South Rail East Vertical			
Top R	43	[illegible]	3
Middle	60	720	6
Top West	32	384	3
Lower	77	924	3
West Vertical			
Top R.	23	276	9
Middle	48	576	0
Top Vert.	31	372	3
Lower	24	336	0
1st Slide East Rail			
Lower V.	N/A		
Top Vert.	13	156	0
Top Rail	41	492	2
Mid. Rail	53	636	2
Channel Iron	49	588	3
2ND Vertical			
Top	41	492	3
Lower	15	180	3
Top Rail	24	288	6
Middle	24	288	0
Channel Iron	43	516	0
Top & Middle Rails Between 2ND &			
3rd Vertical Top	20	240	0
middle	62	744	3
Channel Iron	76	912	0

PLANT PH AREA outside East Stair & Landings
SURVEYED BY A Hurley & V McLain
INST. LUDLUM 2220 # 58318 DET. 43-4
SOURCE CK 187-197 BKG. 0
DATE: 4-24-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SW 03600108
CTD. BY K Morgan
SOURCE CK. AVG. 27
BKG. 3
DATE: 4-26-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
3rd Vertical Top	24	288	6
Lower	11	132	3
Top & Middle Rails Between 3rd & 4th			
Vertical Top	19	228	0
Middle	29	336	0
Channel Iron	43	516	0
4th Vertical			
Top	41	492	9
Lower	29	348	9
Top Rail	19	228	3
Middle	28	336	0
1st Slide West Rail			
Top Vert.	N/A		
Lower	32	384	3
Top Rail	35	420	0
Middle	42	504	3
Channel Iron	24	288	3
2ND Vertical			
Top	33	396	6
Lower	10	120	0
Top Rail	25	300	0
Middle	22	264	3
Channel Iron	11	132	3
Top & Middle Rails Between 2ND & 3rd			
Vertical Top	28	336	3
Middle	87	1044	3
Channel Iron	13	156	0
Third Vertical West Rail			
Top	14	168	0
Lower	14	168	6

PLANT PU AREA outside east Stairs + Landing

SURVEYED BY A Hutchison & V McClain

INST. LUDLUM 2220 # 58318 DET. 43-4

SOURCE CK 187-192 BKG. 0

DATE: SOURCE #: 727 VALUE: 850 DPM

ASC # 2 SN 8360108

CTD. BY K Moran

SOURCE CK. AVG. 27

BKG. 3

DATE: 4-26-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
Top + Middle Rail Between 3 & 4			
43 Vertical Top	N/A		
Middle	21	252	0
Channel Iron	51	612	0
4 H Vertical			
Top	19	228	0
Middle	28	336	0
Channel Iron	43	516	0
Vertical			
Top	41	492	3
Center	29	348	3
END			
1st Landing East Rail Top R	24	288	0
middle	42	504	0
Top Vert	77	924	0
Lower	60	720	3
NORTH RAIL N/E END			
Top R	27	324	3
middle	19	228	3
Top Vert	40	480	6
Lower	56	672	0
Center			
Top R	41	492	3
middle	31	372	0
North West End			
Top R	19	228	3
middle	24	288	6
Top Vert.	15	180	0
Lower	26	312	0
West Rail			
Top R.	23	276	0
middle	19	228	3
Top Vert.	7	84	0
Lower	6	72	3
END			

PLANT ____ AREA outside east Stairs + Landing

SURVEYED BY A Hutchison & V McClain

INST. LUDLUM 2220 # 58318 DET. 43-4

SOURCE CK 184-171 BKG. 3

DATE: 4-25-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 8360108

CTD. BY K Moran

SOURCE CK. AVG. 27

BKG. 3

DATE: 4-26-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION cts x 6 = DPM	DIRECT CPM	DIRECT DPM	SMEAR
Rod Carrier Ladder North Rail	15	90	3
Rail Joint Bottom to Top	6	36	0
	6	36	0
	6	36	0
South Rail			
	15	90	0
	7	42	0
	6	36	3
	28	168	0
	40	240	0
Horizontal Hoop #1 Bottom of Rail			
W	14	84	0
S	5	30	0
#2			
W	N/A		—
S	0	0	0
#3			
N	1	6	0
S	10	60	0
#4			
	23	138	0
	6	36	0
South Vertical Hoop at Cage Pickings Bottom to Top			
	0	0	0
	6	36	0
	1	6	3
EAST	5	30	6
	7	42	0
	1	6	3
NORTH	0	0	3
	0	0	0
	3	18	3

AREA Pu-PLANT - OUTSIDE
SIDEWALKS, PADS & DRIVEWAY

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET.

SERIAL NUMBER ____________

COMPLETION DATE ____________

H.P. SIGNATURE ____________

AUTO. SAMPLE COUNTER #:

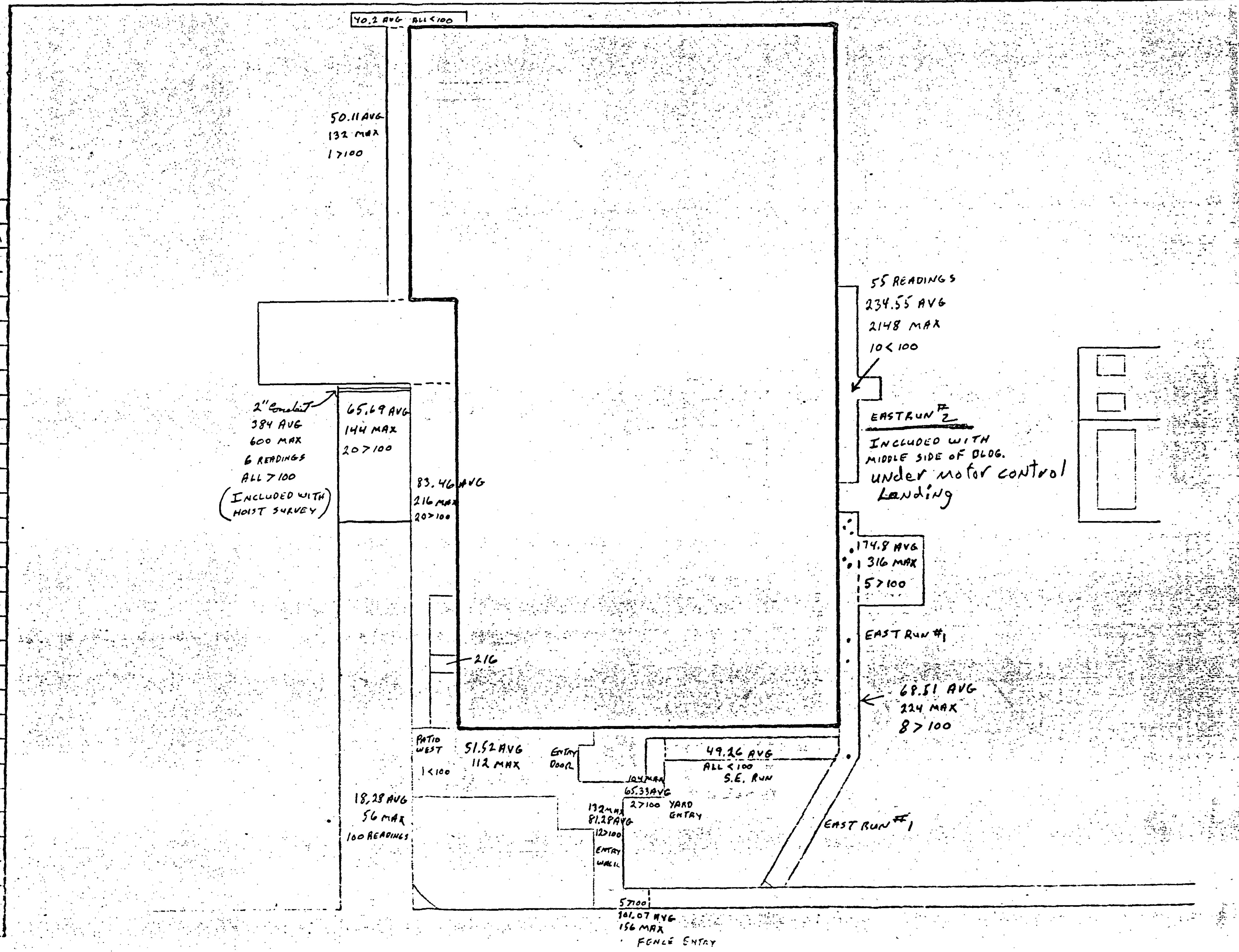
SURVEY UNITS
DPM/100cm²

N / W — E / S

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

SOURCE #: VALUE: DPM

INSTRUMENT		
DATE	SOURCE RESPONSE C/M	BKGD. C/M



East Run #2

PLANT Pu AREA Sidewalk

SURVEYED BY H Heffner + V M Lainhart

INST. LUDLUM 2220 # 150069 DET. 43-68

SOURCE CK 186/218 BKG. 2

DATE: 5/8/89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 83600115

CTD. BY D Ford

SOURCE CK. AVG. 28

BKG. .3

DATE: 5-10-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
Net Grid East Run #2 South end			
1	45	180	0
2	58	232	3
3	52	208	3
4	44	176	3
5	61	244	0
#2			
1 DIRECT	63	252	0
2 Total DPM 12,900	50	200	0
3 # Readings 55	58	232	0
4 AVG DPM/100cm² 234.55	43	172	0
5 MAX DPM/100cm² 2148	50	200	0
#3 MAX			
1 1568 DPM/100cm² FIXED	51	204	6
2	66	264	0
3 SMEAR	73	292	3
4 Total DPM 141	86	344	3
5 # Readings 55	121	484	0
#4 AVG DPM/100cm² 256			
1 MAX DPM/100cm² 9	85	340	9
2	165	660	0
3	153	612	9
4	125	500	3
5	537	2148	0
#5			
1	19	76	3
2	51	204	6
3	57	228	3
4	42	168	6
5	49	196	6
#6			
1	64	256	3
2	50	200	6
3	30	120	0

East Run #2

PLANT Pu AREA Sidewalk

SURVEYED BY H Heffner + V M Lainhart

INST. LUDLUM 2220 # 150069 DET. 43-68

SOURCE CK 186/218 BKG. 2

DATE: 5/8/89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 83600115

CTD. BY D Ford

SOURCE CK. AVG. 28

BKG. .3

DATE: 5-10-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
#6 Grid			
4	61	244	3
5	44	176	0
#7			
1	53	212	9
2	38	152	0
3	51	204	3
4	51	204	0
5	58	232	0
#8			
1	42	168	3
2	35	140	3
3	21	84	3
4	19	76	3
5	27	108	0
#9			
1	32	128	3
2	37	148	0
3	35	140	3
4	30	120	3
5	31	124	9
#10			
1	20	80	3
2	18	72	3
3	19	76	6
4	17	68	3
5	27	108	0
#11 by East Production Hall Exit			
1	26	104	0
2	30	120	0
3	15	60	3
4	18	72	3
5	22	88	0
END			

AREA Pu-PLANT - OUTSIDE
SIDEWALKS, PADS & DRIVEWAY

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET.

SERIAL NUMBER

COMPLETION DATE

H.P. SIGNATURE W. A. Pogue

AUTO. SAMPLE COUNTER #:

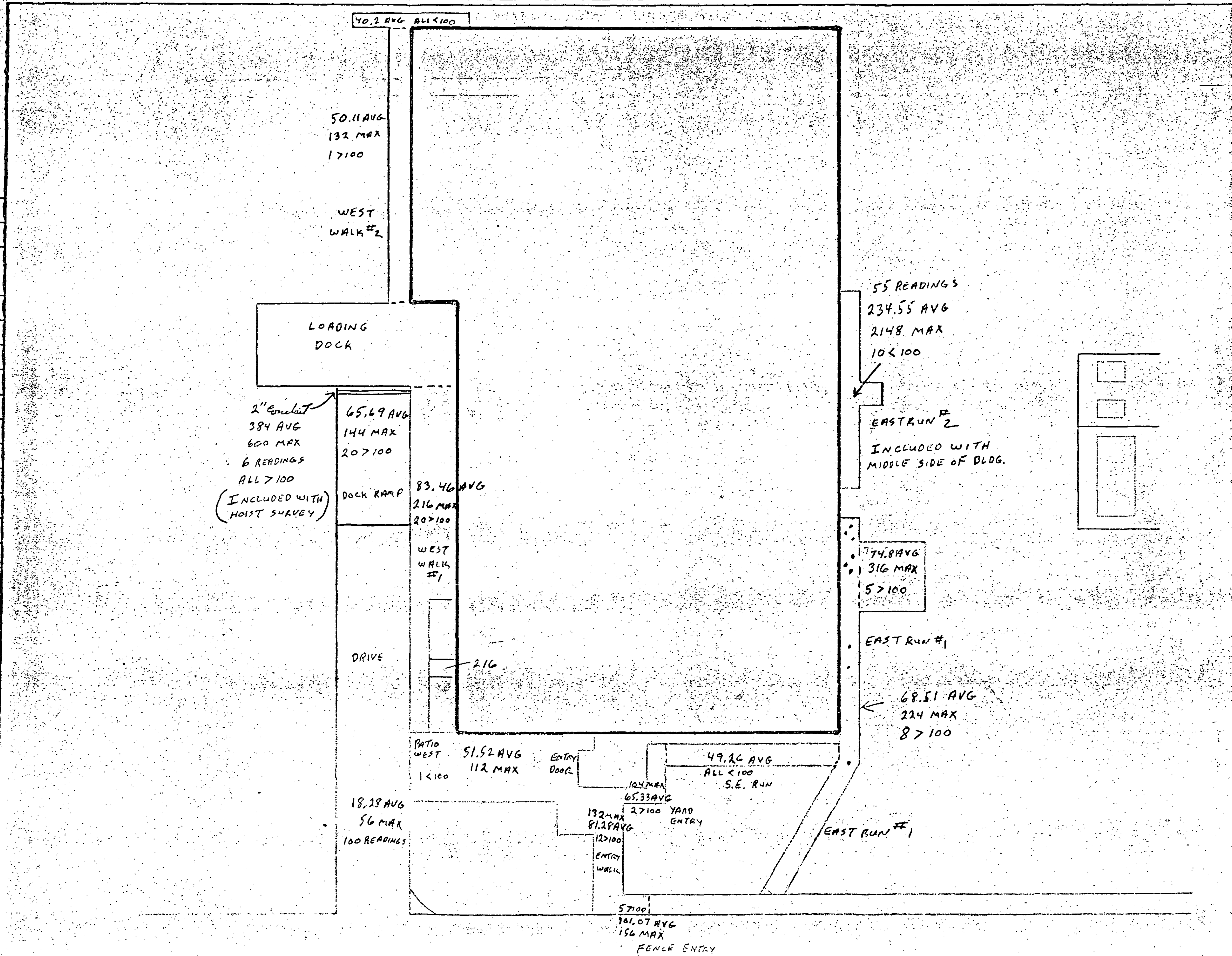
SURVEY UNITS DPM/100cm²

N / W / E / S

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

SOURCE #: VALUE: DPM

INSTRUMENT		
DATE	SOURCE RESPONSE C/M	BKGD. C/M



PLANT P1 AREA P1 Plant Entry

SURVEYED BY L Hall & V McClain

INST. LUDLUM 2220 # 150069 DET. 4368

SOURCE CK 914/173 BKG. 0

DATE: 5/10/89 Source #: 7272 VALUE: 85 DPM

ASC # 3 Sigma for 100

CTD. BY L Hall

SOURCE CK. AVG. 33

BKG. 12

DATE: 5-11-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
P1 Plant Entry Walk 10 Grids			
#1 Grid			
1	32	128	3
2	28	112	0
3	23	92	0
4	25	100	0
5	30	120	9
#2			
1	16	64	3
2	24	96	3
3	17	68	0
4	9	36	0
5	12	48	3
#3			
1	33	132	3
2	27	108	0
3	21	84	0
4	22	88	0
5	21	84	3
#4			
1	14	56	0
2	12	48	0
3	13	52	3
4	13	52	9
5	16	64	6
#5			
1	18	72	3
2	24	96	0
3	17	68	0
4	31	124	3
5	23	92	3

	Direct	Smears
Total DPM	43,838	1,275
# Readings	782	783
DPM/100cm²	56.05	1.63
MDA DPM/100cm²	224	9

MDA = 19.20 dpm/100cm²
Fixed

UNIT Pu AREA Pu Plant Entry
SURVEYED BY A Hethcot / V McClain
INST. Ludlum 2220 # 50069 DET. 43-68
SOURCE CK 214/173 BKG. 0
DATE: 5/10/89 Source #: 272 VALUE: 850 DPM

ASC # 2 93600108
CTD. BY J Plank
SOURCE CK. AVG. 27
BKG. 2
DATE: 5-11-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
Pu Plant Entry Walk			
#6 Grid			
1	29	116	3
2	19	76	0
3	14	56	3
4	17	68	0
5	19	76	3
#7			
1	29	116	6
2	15	60	0
3	20	80	0
4	23	92	0
5	28	112	0
#8			
1	24	96	0
2	16	64	0
3	21	84	3
4	14	56	0
5	16	64	6
#9			
1	18	72	3
2	17	68	0
3	15	60	0
4	13	52	0
5	18	72	0
#10			
1	16	64	0
2	19	76	0
3	29	116	3
4	19	76	0
5	27	108	3
End		End	

UNIT Pu AREA Fenced Walk Entry
SURVEYED BY A Hethcot / V McClain
INST. Ludlum 2220 # 50069 DET. 43-68
SOURCE CK 214/173 BKG. 0
DATE: 5/10/89 Source #: 272 VALUE: 850 DPM

ASC # 2 SN 93600108
CTD. BY J Plank
SOURCE CK. AVG. 33
BKG. 2
DATE: 5-11-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
Fence Walk Entry 3 Grids			
#1 Grid			
1	34	136	0
2	22	88	0
3	21	84	3
4	20	80	3
5	16	64	6
#2			
1	31	124	0
2	18	72	3
3	31	124	3
4	22	88	3
5	22	88	0
#3			
1	34	136	3
2	25	100	6
3	39	156	0
4	21	84	9
5	23	92	6
Pu Yard Entry 6 Grids			
#1			
1	21	84	3
2	15	60	3
3	26	104	0
4	19	76	0
5	24	96	3
#2			
1	20	80	0
2	20	80	0
3	19	76	0
4	23	92	0
5	17	68	3

PLANT Pu AREA Pu Yard Entry
SURVEYED BY A Hitchcock & V McCain
INST. LUDLUM 2220 S/N 50069 DET. 43-68
SOURCE CK 214/173 BKG. 0
DATE: 5/10/89 SOURCE #: 7272 VALUE: 850 DPM

ASG # 183600115
CTD. BY Dennis Ford
SOURCE CK. AVG. 30
BKG. 2
DATE: 5-11-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
#3 Pu YARD ENTRY			
1	13	52	0
2	26	104	3
3	21	84	0
4	21	84	0
5	20	80	0
#4			
1	16	64	0
2	11	44	3
3	15	60	3
4	14	56	3
5	10	40	0
#5			
1	14	56	0
2	15	60	0
3	18	72	0
4	9	36	0
5	9	36	3
#6			
1	18	72	0
2	7	28	0
3	13	52	0
4	5	20	0
5	11	44	0
End	END		

PLANT Pu AREA Pu Entry Patio West
SURVEYED BY A Hitchcock & V McCain
INST. LUDLUM 2220 S/N 50069 DET. 43-68
SOURCE CK 214/173 BKG. 0
DATE: 5/10/89 SOURCE #: 7272 VALUE: 850 DPM

ASG # 183600115
CTD. BY D. Ford
SOURCE CK. AVG. 30
BKG. 2
DATE: 5-11-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
#1 Patio West			
1	28	112	0
2	13	52	3
3	24	96	0
4	21	84	0
5	14	56	0
End	END		
Plant Entry Door 4 Grids			
#1			
1	15	60	0
2	13	52	0
3	9	36	0
4	8	32	0
5	2	8	3
#2			
1	14	56	6
2	8	32	3
3	12	48	3
4	11	44	0
5	16	64	0
#3			
1	7	28	3
2	9	36	9
3	11	44	0
4	9	36	3
5	6	24	0
#4			
1	17	68	0
2	15	60	3
3	7	28	0
4	10	40	0
5	23	92	0
End	END		

PLANT Pu AREA SIDEWALK EAST RUN #1

SURVEYED BY A. Hetzler

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 198-207 BKG. 3

DATE: 5-5-89 SOURCE #: 7272 VALUE: 8500 DPM

ASC # 2 83600108

CTD. BY D. Ford

SOURCE CK. AVG. 33

BKG. .2

DATE: 5-11-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
EAST RUN #1 Grid #1	1	N/A	—	—
Counted West to East	2	N/A	—	—
	3	N/A	—	—
	4	N/A	—	—
	5	4	16	0
Grid #2	1	7	28	0
	2	12	48	6
	3	4	16	0
	4	4	16	3
	5	7	28	6
Grid #3	1	5	20	9
	2	6	24	0
	3	9	36	3
	4	7	28	3
	5	9	36	3
Grid #4	1	7	28	0
	2	12	48	0
	3	8	32	0
	4	20	80	0
	5	18	72	0
Grid #5	1	17	68	0
	2	21	84	0
	3	16	64	6
	4	15	60	3
	5	20	80	3

PLANT Pu AREA SIDEWALK EAST RUN #1

SURVEYED BY A. Hetzler

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 198-207 BKG. 3

DATE: 5-5-89 SOURCE #: 7272 VALUE: 8500 DPM

ASC # 2 83600108

CTD. BY D. Ford

SOURCE CK. AVG. 33

BKG. .2

DATE: 5-11-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
EAST RUN #1 Grid #6	1	26	104	3
	2	17	68	3
	3	17	68	0
	4	15	60	0
	5	15	60	0
Grid #7	1	17	68	0
	2	16	64	3
	3	17	68	3
	4	23	92	0
	5	21	84	6
Grid #8	1	8	32	3
	2	9	36	3
	3	19	76	0
	4	22	88	0
	5	14	56	0
Grid #9	1	17	68	0
	2	14	56	0
	3	21	84	3
	4	16	64	0
	5	20	80	0
Grid #10	1	25	100	0
	2	22	88	0
	3	21	84	0
	4	15	60	6
	5	22	88	0

PLANT Pu AREA SIDEWALK EAST RUN #1

SURVEYED BY A. Hetzler

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 198-207 BKG. 3

DATE: 5-5-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 83600108

CTD. BY D. Ford

SOURCE CK. AVG. 33

BKG. .2

DATE: 5-11-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
EAST RUN #1 Grid #11	1	34	136	3
	2	20	80	0
	3	20	80	3
	4	19	76	0
	5	16	64	3
Grid #12	1	17	68	0
	2	21	84	0
	3	21	84	0
	4	22	88	0
	5	11	44	3
Grid #13	1	15	60	0
	2	14	56	0
	3	13	52	0
	4	12	48	3
	5	22	88	3
Grid #14	1	9	36	3
	2	32	128	3
	3	21	84	3
	4	19	76	0
	5	56	224	0
Grid #15	1	33	132	0
	2	39	156	0
	3	20	80	0
	4	13	52	0
	5	25	100	6

PLANT Pu AREA SIDEWALK S.E. RUN

SURVEYED BY A. Hetzler

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 198-207 BKG. 3

DATE: 5-5-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 83600115

CTD. BY J Black

SOURCE CK. AVG. 30

BKG. .2

DATE: 5-11-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
S.E. RUN Grid #1	1	6	24	3
counted south to North	2	12	48	6
	3	19	76	0
	4	10	40	3
	5	5	20	0
Grid #2	1	10	40	3
	2	8	32	0
	3	16	64	0
	4	7	28	6
	5	8	32	9
Grid #3	1	18	72	9
	2	12	48	3
	3	16	64	0
	4	22	88	9
	5	3	12	0
Grid #4	1	14	56	3
	2	11	44	0
	3	13	52	3
	4	10	40	3
	5	10	40	3
Grid #5	1	8	32	3
	2	9	36	3
	3	21	84	3
	4	13	52	0
	5	14	56	3
Grid #6	1	19	76	0
	2	7	28	3
	3	11	44	0
	4	16	64	0
	5	15	60	3

PLANT Pu AREA SIDEWALK S.E. Run

SURVEYED BY A. Hetzler

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 198-202 BKG. 3

DATE: 5-5-89 SOURCE #: 7272 VALUE: 8500PM

ASC # 1 83600115

CTD. BY J Black

SOURCE CK. AVG. 30

BKG. 2

DATE: 5-11-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
S.E. Run Grid #7	1	18	72	0
	2	6	24	9
	3	9	36	0
	4	16	64	0
	5	17	68	0
Grid #8	1	10	40	3
	2	16	64	3
	3	12	48	0
	4	14	56	0
	5	13	52	0
Grid #9	1	9	36	0
	2	8	32	6
	3	11	44	3
	4	20	80	0
	5	4	16	3
Grid #10	1	13	52	0
	2	16	64	0
	3	13	52	3
	4	5	20	0
	5	13	52	3
Grid #11	1	10	40	0
	2	15	60	0
	3	12	48	0
	4	21	84	3
	5	18	72	0
Grid #12	1	11	44	3
	2	N/A	—	—
	3	N/A	—	—
	4	N/A	—	—
	5	9	36	3

PLANT Pu AREA West Walk #1 Grids Splash Blk & Small Blk

SURVEYED BY V Mc Coy / A Hetzler

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 198/176 AM BKG. 0

DATE: 5/11/89 SOURCE #: 7272 VALUE: 8500PM

ASC # 1 83600115

CTD. BY D Ford

SOURCE CK. AVG. 33

BKG. 1

DATE: 5-12-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
#1 of 15 Grids SW Bldg corner			
1	16	64	3
3	7	28	0
5	11	44	0
#2			
2	11	44	0
3	17	68	0
4	16	64	0
#3			
1	11	44	6
3	12	48	6
5	21	84	0
#4			
2	10	40	3
3	10	40	6
4	16	64	0
#5			
1	9	36	3
3	12	48	0
5	20	80	0
Splash BLK			
1	54	216	0
Small BLK			
1	21	84	3
#6			
1	22	88	6
2	16	64	0
3	30	120	0
4	29	116	0
5	31	124	3
#7			
1	18	72	0
2	20	80	0
3	20	80	3

ANT Pu AREA West Walk #1 Grids

SURVEYED BY Vincent Whitlow

INST. LUDLUM 2220 #50069 DET. 43-68

SOURCE CK 198-126 BKG. 0

DATE: 5/11/89 SOURCE #: 7272 VALUE: 85000 DPM

ASC # 1 83600115

CTD. BY D. Ford

SOURCE CK. AVG. 33

BKG. .1

DATE: 5-12-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
#7 of 15 Grids			
4	24	96	0
5	15	60	3
#8			
1	33	132	6
2	20	80	0
3	21	84	6
4	30	120	0
5	16	64	6
#9			
1	24	96	3
2	13	52	0
3	12	48	0
4	39	156	0
5	22	88	3
#10			
1	32	128	3
2	24	96	3
3	20	80	3
4	27	108	0
5	12	48	0
#11			
1	27	108	0
2	19	76	0
3	8	32	0
4	12	48	0
5	11	44	3
#12			
1	26	104	6
2	30	120	3
3	20	80	0
4	28	112	3
5	19	76	6

ANT Pu AREA West Walk #1 Grids

SURVEYED BY Vincent Whitlow

INST. LUDLUM 2220 #50069 DET. 43-68

SOURCE CK 198-126 BKG. 0

DATE: 5/11/89 SOURCE #: 7272 VALUE: 85000 DPM

ASC # 1 83600115

CTD. BY D. Ford

SOURCE CK. AVG. 33

BKG. .1

DATE: 5-12-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
#13 of 15 Grids			
1	27	108	6
2	20	80	0
3	25	100	0
4	20	80	0
5	18	72	0
#14			
1	23	92	0
2	16	64	3
3	25	100	3
4	25	100	0
5	29	116	0
#15			
1	21	84	3
2	23	92	0
3	30	120	0
4	24	96	0
5	28	112	0
End	End		

ANT PU AREA WestwALK #2
SURVEYED BY W.Hatfield / W.Fain
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 203/182 BKG. 2
DATE: 5/15/89 SOURCE #: T27a VALUE: 850 cpm
PM 211/188 BKg 2

ASC # 2 83600108
CTD. BY D Ford
SOURCE CK. AVG. 30
BKG. 3
DATE: 5-15-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
#1 of 19 Grids Begin at Southend By Dock			
1	22	88	0
2	13	52	0
3	19	76	0
4	33	132	3
5	8	37	0
#2			
1	23	92	6
2	9	36	0
3	9	36	0
4	10	40	0
5	11	44	0
#3			
1	16	64	0
2	14	56	0
3	14	56	0
4	16	64	0
5	9	36	0
#4			
1	17	68	0
2	11	44	0
3	8	32	3
4	10	40	0
5	11	44	3
#5			
1	24	96	3
2	7	28	0
3	6	24	0
4	12	48	3
5	7	28	0
#6			
1	13	52	0
2	10	40	3
3	15	60	0

ANT PU AREA WestwALK #2
SURVEYED BY W.Hatfield / W.Fain
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 203/182 BKG. 2
DATE: 5/15/89 SOURCE #: T27 VALUE: 8500 cpm
PM 211/188 BKg 2

ASC # 2 83600108
CTD. BY D. Ford
SOURCE CK. AVG. 30
BKG. 3
DATE: 5-15-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
#6 of 19 Grids			
4	17	68	0
5	9	36	0
#7			
1	12	48	3
2	11	44	0
3	14	56	0
4	10	40	3
5	6	24	3
#8			
1	14	56	0
2	17	68	0
3	4	16	0
4	16	64	3
5	8	32	0
#9			
1	18	72	3
2	7	28	0
3	16	64	0
4	11	44	0
5	7	28	0
#10			
1	9	36	0
2	12	48	0
3	7	28	3
4	11	44	0
5	9	36	3
#11			
1	13	52	0
2	13	52	0
3	9	36	0
4	16	64	3
5	14	56	0

ANT Pu AREA West Walk #2
SURVEYED BY A.Hilbert V.McSain
I. ST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 203/182 BKG. 2
DATE: 5/15/89 SOURCE #: 7272 VALUE 850 DPM

ASC # 2 83600108
CTD. BY D. Forel
SOURCE CK. AVG. 30
BKG. 3
DATE: 5-15-89

PM 211/188 Bkg 2

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
#12 of 19 Grids			
1	9	36	0
2	5	20	0
3	12	48	0
4	16	64	0
5	17	68	3
#13			
1	13	52	0
2	8	32	0
3	8	32	3
4	22	88	0
5	19	76	0
#14			
1	9	36	0
2	9	36	3
3	17	68	6
4	14	56	3
5	9	36	0
#15			
1	9	36	0
2	11	44	0
3	11	44	3
4	8	32	3
5	15	60	0
#16			
1	16	64	0
2	9	36	0
3	16	64	3
4	8	32	0
5	9	36	0
#17			
1	16	64	0
2	17	68	0
3	7	28	3

ANT Pu AREA West Walk #2
SURVEYED BY A.Hilbert V.McSain
I. ST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 203/182 BKG. 2
DATE: 5/15/89 SOURCE #: 7272 VALUE 850 DPM

ASC # 2 83600108
CTD. BY D. Forel
SOURCE CK. AVG. 30
BKG. 3
DATE: 5-15-89

PM 211/188 Bkg 2

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
#17 of 19 Grids			
4	18	72	0
5	10	40	3
#18			
1	15	60	3
2	11	44	3
3	10	40	3
4	16	64	0
5	11	44	0
#19			
1	17	68	3
2	10	40	0
3	10	40	3
4	21	84	3
5	15	60	0
END	END		

PLANT Pu AREA North Walk

SURVEYED BY Hatfield & Weiss

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 203/182 BKG. 2

DATE: 5/15/89 SOURCE #: 72T2 VALUE: 850 dpm

PM 211/188 BKG 2

ASC # 1 83600115

CTD. BY D Ford

SOURCE CK. AVG. 34

BKG. .2

DATE: 5-15-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
#1 of 4 Grids (Begin at West End)			
1	2	8	3
2	10	40	0
3	15	60	0
4	9	36	3
5	8	32	6
#2			
1	15	60	3
2	5	20	3
3	21	84	6
4	9	36	0
5	15	60	6
#3			
1	4	16	3
2	10	40	0
3	7	28	0
4	11	44	0
5	10	40	0
#4			
1	11	44	6
2	12	48	0
3	8	32	0
4	12	48	3
5	7	28	0
END	END		

PLANT Pu AREA Pu Yard Drive

SURVEYED BY W. Weiss & Hatfield

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 182/200 BKG. 2

DATE: 5/10/89 SOURCE #: 72T2 VALUE: 850 DPM

ASC # 1 83600115

CTD. BY D Ford

SOURCE CK. AVG. 30

BKG. .2

DATE: 5-11-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
#1 of 20 Grids SE corner			
1	6	24	0
2	6	24	0
3	0	0	0
4	4	16	0
5	1	4	3
#2			
1	4	16	0
2	3	12	0
3	0	0	0
4	8	32	0
5	1	4	0
#3			
1	0	0	0
2	6	24	0
3	5	20	0
4	1	4	0
5	3	12	0
#4			
1	8	32	3
2	4	24	3
3	0	0	0
4	0	0	0
5	1	4	3
#5			
1	0	0	0
2	0	0	0
3	4	16	0
4	5	20	0
5	1	4	0

ANT Pu AREA Pu Yard Drive
SURVEYED BY W. Ericson & W. Hetzler
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 182/200 BKG. 2
DATE: 5/10/89 Source #: 7272 VALUE: 8500 DPM

ASC # 1 83600115
CTD. BY D. Ford
SOURCE CK. AVG. 30
BKG. 2
DATE: 5-11-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
6th Grid of 20			
1	2	8	0
2	0	0	0
3	0	0	3
4	0	0	0
5	4	16	0
#7			
1	4	16	6
2	3	12	0
3	12	48	3
4	7	28	0
5	2	8	6
#8			
1	2	8	3
2	1	4	3
3	4	16	0
4	5	20	3
5	6	24	0
#9			
1	3	12	0
2	3	12	6
3	1	4	3
4	0	0	0
5	4	16	0
#10			
1	7	28	0
2	5	20	9
3	3	12	6
4	3	12	3
5	1	4	0

ANT Pu AREA Pu Yard Drive
SURVEYED BY W. Ericson & W. Hetzler
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 182/200 BKG. 2
DATE: 5/10/89 Source #: 7272 VALUE: 8500 DPM

ASC # 1 83600115
CTD. BY D. Ford
SOURCE CK. AVG. 30
BKG. 2
DATE: 5-11-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
#11 of 20 Grids			
1	7	28	0
2	5	20	0
3	5	20	0
4	4	16	0
5	6	24	3
#12			
1	7	28	3
2	2	8	0
3	4	16	0
4	3	12	0
5	2	8	0
#13			
1	3	12	0
2	5	20	3
3	5	20	0
4	6	24	0
5	5	20	3
#14			
1	5	20	3
2	4	16	6
3	5	20	0
4	3	12	3
5	5	20	0
#15			
1	8	32	3
2	9	36	3
3	5	20	0
4	7	28	0
5	6	24	0

ANT PU AREA PU Yard Drive

SURVEYED BY V McEwen & W Taylor

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 182/200 BKG. 2

DATE: 5/10/89 Source #: 7272 VALUE: 8500 DPM

ASC # 1 83600115

CTD. BY D. Ford

SOURCE CK. AVG. 30

BKG. 2

DATE: 5-11-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
#16 of 20 Grids			
1	8	32	0
2	7	28	3
3	8	32	0
4	10	40	0
5	4	16	0
#17			
1	6	24	0
2	7	28	3
3	8	32	0
4	4	16	0
5	14	56	6
#18			
1	5	20	3
2	6	24	0
3	8	32	0
4	5	20	0
5	8	32	0
#19			
1	6	24	6
2	8	32	0
3	9	36	3
4	7	28	0
5	2	8	0
#20			
1	6	24	0
2	2	8	3
3	11	44	0
4	10	40	0
5	7	28	3
End	End		

ANT PU AREA Dock Ramp Grids

SURVEYED BY V McEwen & W Taylor

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 198/196 BKG. 0 PMO

DATE: 5/11/89 Source #: 7272 VALUE: 8500 DPM

5/15/89 203/182 2 BKG

ASC # 2 83600108

CTD. BY J Black

SOURCE CK. AVG. 30

BKG. 2

DATE: 5-12-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
#1 of 14 Grids Begin SE Corner Face South			
1	17	68	0
2	15	60	0
3	20	80	6
4	13	52	0
5	8	32	0
#2			
1	17	68	3
2	16	64	3
3	9	36	0
4	8	32	0
5	23	92	0
#3			
1	22	88	6
2	25	100	9
3	17	68	3
4	16	64	0
5	16	64	0
#4			
1	13	52	3
2	17	68	0
3	13	52	0
4	21	84	3
5	16	64	0
#5			
1	23	92	3
2	19	76	0
3	14	56	0
4	29	116	3
5	15	60	0
#6			
1	18	72	0
2	24	96	0
3	23	92	3

ANT PU AREA Dock Ramp Grids
SURVEYED BY V McLain & W Hefflefinger
INST. LUDLUM 2220 S/N 50069 DET. 43-68
SOURCE CK. — BKG. —
DATE: 5/11/89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 83600108
CTD. BY J Black
SOURCE CK. AVG. 30
BKG. 2
DATE: 5-12-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
#6 of 14 Grids			
4	14	56	6
5	25	100	0
#7			
1	25	100	3
2	15	60	9
3	29	116	3
4	27	108	6
5	11	44	3
#8			
1	20	80	0
2	26	104	3
3	19	76	0
4	23	92	0
5	25	100	0
#9			
1	35	140	0
2	11	44	0
3	25	100	0
4	24	96	0
5	11	44	3
#10			
1	17	68	6
2	24	96	0
3	20	80	9
4	18	72	3
5	19	76	0
#11			
1	15	60	0
2	21	84	0
3	14	56	3
4	19	76	0
5	17	68	0

ANT PU AREA Dock Ramp Grids
SURVEYED BY V McLain & W Hefflefinger
INST. LUDLUM 2220 S/N 50069 DET. 43-68
SOURCE CK. 98/176 BKG. 0
DATE: 5/11/89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 83600108
CTD. BY J Black
SOURCE CK. AVG. 30
BKG. 2
DATE: 5-12-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
#12 of 14 Grids			
1	15	60	0
2	15	60	3
3	14	56	3
4	22	88	0
5	20	80	3
#13			
1	27	108	0
2	9	36	3
3	11	44	3
4	16	64	3
5	27	108	0
#14			
1	20	80	3
2	15	60	3
3	16	64	0
4	21	84	0
5	13	52	0
END	END		
West Dock Ramp Wall From 0m South End to 6m North			
0m	7	28	0
1m	6	24	0
2m	6	24	0
3m	9	36	3
4m	7	28	3
5m T	8	32	3
B	8	32	0
6m T	10	40	0
B	12	48	0

ANT P.J AREA Ramp Wall Top

SURVEYED BY V.M. Eaves & W. Hayden

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 198/176 BKG. 0

DATE: 5/11/89 SOURCE #: 7272 VALUE: 8500 dpm

ASC # 2 83600108

CTD. BY J Black

SOURCE CK. AVG. 30

BKG. 12

DATE: 5-12-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
East Ramp Wall Top south to North			
0m	9	36	3
2m	13	52	6
4m	13	52	3
6m	20	80	3
8m	26	104	3
10m	25	100	3
12m	24	96	9
14m	36	144	0
West Ramp Wall Top South to North			
0m	16	64	0
2m	28	112	3
4m	19	76	0
6m	25	100	0
8m	16	64	6
10m	17	68	0
12m	14	56	6
14m	11	44	0
East Dock Ramp Wall From 0m south end to 6m North			
0m	9	36	3
1m	12	47	3
2m	22	88	3
3m	22	88	0
4m	20	80	0
5m T	10	40	0
B	16	64	0
6m T	17	68	0
B	17	68	0

ANT P.J AREA Dock Ramp Wall Grids

SURVEYED BY V.M. Eaves & W. Hayden

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 198/176 Am BKG. 0

DATE: 5/11/89 SOURCE #: 7272 VALUE: 8500 dpm

ASC # 2 83600108

CTD. BY J Black

SOURCE CK. AVG. 30

BKG. 12

DATE: 5-12-89

From 0 meter Mark on East wall South to North then West, then South to 0 meter Mark on West wall

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
East Ramp Wall Grid #1 of 10			
1	17	68	0
2	8	32	3
3	14	56	3
4	17	68	0
5	22	88	6
#2			
1	19	76	0
2	13	52	3
3	14	56	0
4	19	76	0
5	12	48	6
#3			
1	16	64	9
2	19	76	0
3	10	40	3
4	20	80	0
5	23	92	0
#4			
1	18	72	3
2	20	80	6
3	12	48	6
4	19	76	0
5	28	112	3
#5 North Wall			
1	9	36	3
2	13	52	3
3	14	56	0
4	9	36	6
5	18	72	3

PLANT Pu AREA Dock Ramp Ball Grids
SURVEYED BY W. Lain + Hatfield
INST. LUDLUM 2220 S/N 50069 DET. 43-68
SOURCE CK 198/176 BKG. 0
DATE: 5/11/89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 83600108
CTD. BY J Black
SOURCE CK. AVG. 30
BKG. 2
DATE: 5-12-89

5/15/89 AM 203/182 BKG 2

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
#6 (North) of 10 Grids (in				
	1	33	132	6
	2	11	44	0
	3	9	36	6
	4	28	112	0
	5	22	88	0
#7 (West)				
	1	11	4	6
	2	13	52	3
	3	9	36	0
	4	6	24	0
	5	12	48	0
#8				
	1	15	60	0
	2	8	32	0
	3	9	36	3
	4	7	28	0
	5	12	48	0
#9				
	1	4	16	0
	2	9	36	0
	3	10	40	3
	4	9	36	0
	5	14	56	0
#10				
	1	10	40	9
	2	6	24	6
	3	11	44	0
	4	7	28	0
	5	24	96	3
End		END		

PLANT Pu AREA Loading Dock
SURVEYED BY Hatfield + McLain
INST. LUDLUM 2220 S/N 50069 DET. 43-68
SOURCE CK 195-184 BKG. 2
DATE: 5-19-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 83600115
CTD. BY D. Ford
SOURCE CK. AVG. 34
BKG. 3
DATE: 5-22-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Loading Dock Grid #1	1	10	40	3
North Face	2	17	68	0
	3	14	56	0
	4	11	44	0
	5	12	48	0
Grid #2	1	6	24	0
	2	13	52	0
	3	12	48	3
	4	N/A	—	3
	5	5	20	3
Grid #3	1	7	28	0
	2	9	36	3
	3	8	32	3
	4	10	40	3
	5	5	20	0
Grid #4	1	8	32	0
	2	5	20	3
	3	9	36	3
	4	7	28	0
	5	6	24	0

PLANT Pu AREA West Walk + Dock

SURVEYED BY Hetzler + McFain

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 195-184 BKG. 2

DATE: 5-19-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 83600115

CTD. BY D. Ford

SOURCE CK. AVG. 34

BKG. .3

DATE: 5-22-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
West Walk #2 Grid #1	1	6	24	0
Ramp Face	2	12	48	0
	3	6	24	0
	4	10	40	0
	5	10	40	0
Under Trailer Grid #2		—	—	—
Grid #3	1	14	56	3
	2	8	32	0
	3	3	12	3
	4	10	40	3
	5	9	36	0
Grid #4	1	8	32	0
	2	8	32	0
	3	2	8	0
	4	3	12	3
	5	1	4	6
Grid #5	1	6	24	3
	2	3	12	6
	3	5	20	0
	4	8	32	0
	5	4	16	3
Grid #6	1	16	64	3
	2	9	36	0
	3	19	76	3
	4	8	32	0
	5	6	24	0

PLANT Pu AREA West Walk + Dock

SURVEYED BY Hetzler + McFain

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 195-184 BKG. 2

DATE: 5-19-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 1 83600115

CTD. BY D. Ford

SOURCE CK. AVG. 34

BKG. .3

DATE: 5-22-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
West Walk #2 Grid #7	1	25	100	3
Ramp Face	2	10	40	0
	3	9	36	0
	4	8	32	0
	5	12	48	0
Grid #8	1	12	48	0
	2	13	52	0
	3	17	68	0
	4	14	56	6
	5	14	56	3
Grid #9	1	15	60	6
	2	14	56	3
	3	15	60	6
	4	17	68	0
	5	6	24	0
9 meters		10	40	0
10 "		12	48	0
11 "		20	80	3
12 "		N/A	—	—

PLANT Pu AREA West Walk + Dock

SURVEYED BY Hetzler + McLain

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 199-210 BKG. 2

DATE: 5-24-89 SOURCE #: 7272 VALUE: 850DPM

ASC # 2 83600108

CTD. BY J Black

SOURCE CK. AVG. 29

BKG. .3

DATE: 5-24-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
West loading Dock Face	0m	B	5	20	0
alternate T+B @ 1 meter	1	T	24	96	3
start north corner	2	B	8	32	0
	3	T	24	96	3
	4	B	11	44	0
	5	T	30	120	3
	6	B	25	100	9
	7	T	13	52	3
	8	B	12	48	9
South loading dock Face	0m	B	9	36	0
start west corner	1	T	8	32	0
	2	T	40	160	6
	3	T	21	84	3
	4	T	19	76	0
	5	T	13	52	0
	6	T	17	68	0
	7	T	19	76	3
	7	B	24	96	0

West face of Westwall

PLANT Pu AREA Loading Dock Ramp

SURVEYED BY Hetzler + McLain

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 199/210 BKG. 2 AM

DATE: 5/24/89 SOURCE #: 7272 VALUE: 850DPM

ASC # 1 93600115 4

CTD. BY [illegible]

SOURCE CK. AVG. 34

BKG. .3

DATE: 5-22-89 4

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
Begin North end			
0M T	9	36	6
0M B	12	48	0
1M B	13	52	3
0.M T	9	36	0
2m B	4	16	0
4m T	7	28	6
5m B	9	36	0
6m T	7	28	0
7m B	4	16	0
8m T	4	16	0
9m B	4	16	3
10m T	2	8	0
11m B	3	12	3
12m	10	40	0
13m	7	28	0
14m	7	28	3
15m	8	32	0

AREA Pu-PLANT - OUTSIDE
UPPER LEVELS

TYPE OF SURVEY d DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 4-24-89

H.P. SIGNATURE Claude M Thompson

SURVEY UNITS DPM/100cm² WGA

AUTO. SAMPLE COUNTER#: 2 SN 83600108
#1 SN 83600115

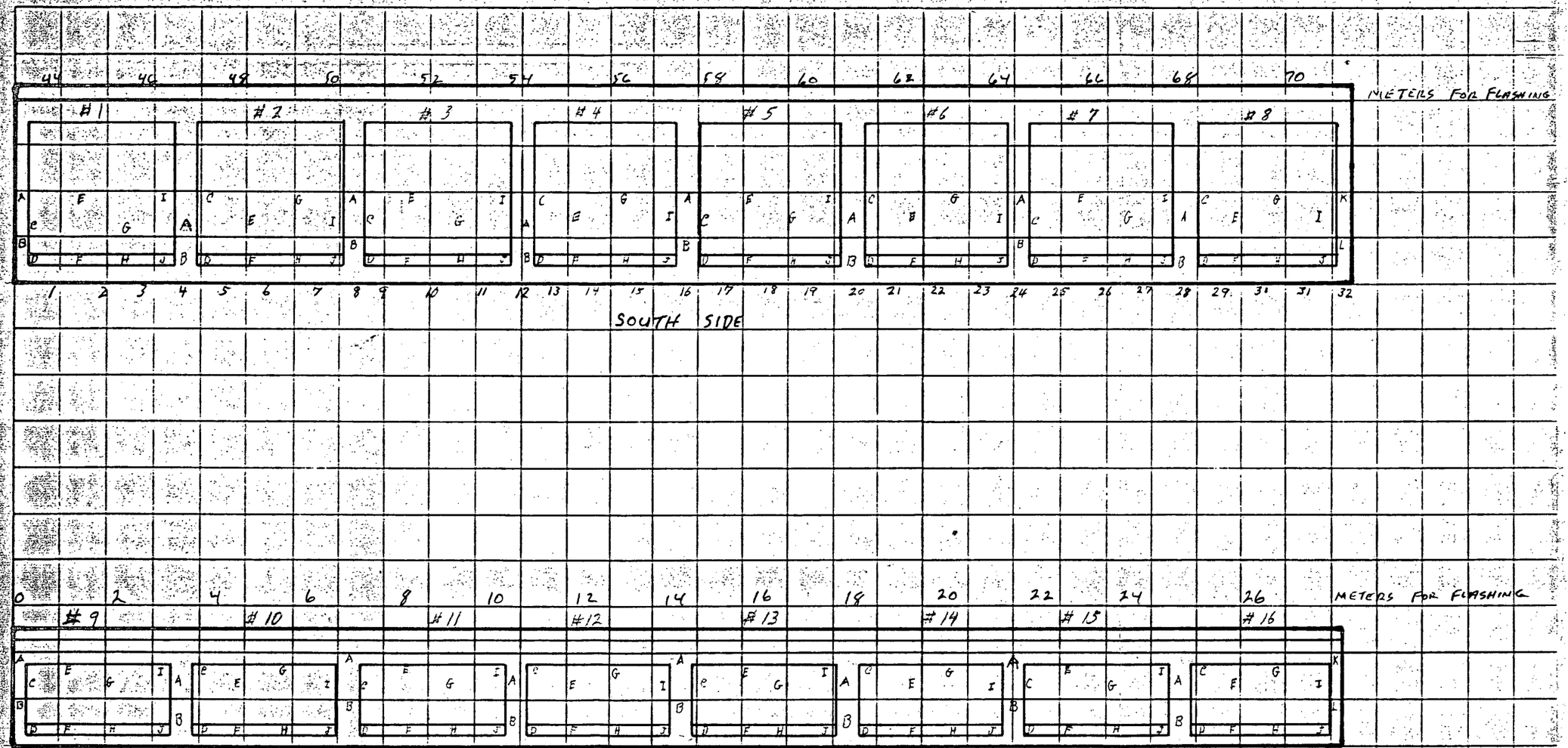
N
W E
S
1 cm = 1 Meter

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

MDA 15.68 DPM/100cm² FIXED

SOURCE#: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD. C/M
4-19-89	176-200	1
	214-201	0
4-20-89	191-192	2
4-21-89	191-185	2
	201-180	1
4-24-89	216-203	1
	188-204	1
	ASC#2	
4-20-89	29	.3
4-24-89	#30	.1
	ASC#1	
4-21-89	37	.3
4-24-89	34	.3



DIRECT
11,570 TOTAL DPM
228 READINGS
50.75 DPM/100cm² AVG
116 DPM / 100 cm² MAX

SMEAR
459 TOTAL DPM
228 SMEARS
2.01 DPM/100cm² AVG.
9

INSTRUMENT LUDLUM 2220 DATE 4-21-89 HP SIGNATURE Jim Hardley

DETECTOR 43-68 Serial 50069 SOURCE RESPONCE + BKGD AM 2-191-185

SOURCE NUMBER AND VALUE 7272-850 DPM SOURCE RESPONCE + BKGD PM 1-201-180

SURVEY #	DIRECT	SMEAR	SURVEY #	DIRECT	SMEAR	SURVEY #	DIRECT	SMEAR
	South Side	upper	Level			E	22 -88	0
1-A	12 -48	3	H	11 -44	3	F	22 -88	3
B	20 -80	0	I	12 -48	6	G	17 -68	0
C	15 -60	3	J	20 -80	0	H	24 -96	3
D	9 -36	6	5-A	12 -48	0	I	17 -68	3
E	29 -116	0	B	4 -16	0	J	20 -80	0
F	8 -32	0	C	13 -52	3	K	18 -72	6
G	9 -36	3	D	11 -44	3	L	18 -72	6
H	11 -44	0	E	19 -76	0			
I	10 -40	0	F	17 -68	0			
J	11 -44	0	G	23 -92	6			
2-A	14 -56	0	H	16 -64	0			
B	14 -56	0	I	11 -44	3			
C	17 -68	3	J	13 -52	0			
D	29 -116	3	6-A	15 -60	0			
E	15 -60	0	B	16 -64	3			
F	14 -56	3	C	18 -72	0			
G	11 -44	3	D	16 -64	3			
H	22 -88	0	E	21 -84	6			
I	13 -52	6	F	23 -92	3			
J	15 -60	3	G	19 -76	0			
3-A	11 -44	3	H	16 -64	3			
B	8 -32	3	I	13 -52	3			
C	19 -76	3	J	16 -64	6			
D	17 -68	0	7-A	15 -60	0			
E	22 -88	3	B	17 -68	0			
F	12 -48	3	C	19 -76	6			
G	15 -60	6	D	17 -68	0			
H	16 -64	0	E	14 -56	3			
I	19 -76	3	F	16 -64	3			
J	14 -56	6	G	20 -80	0			
4-A	15 -60	3	H	24 -96	3			
B	15 -60	3	I	14 -56	3			
C	23 -92	3	J	18 -72	0			
D	11 -44	0	8-A	17 -68	3			
E	13 -52	3	B	15 -60	0			
F	12 -48	3	C	19 -76	6			
G	20 -80	0	D	27 -108	0			

INSTRUMENT LUDLUM 2220 DATE 4-21-89 HP SIGNATURE Jim Hardley

DETECTOR 43-68 Serial 50069 SOURCE RESPONCE + BKGD AM 2-191-185

SOURCE NUMBER AND VALUE 7272-850 DPM SOURCE RESPONCE + BKGD PM 1-201-180

SURVEY #	DIRECT	SMEAR	SURVEY #	DIRECT	SMEAR	SURVEY #	DIRECT	SMEAR
	out Side	wall	upper	level		South Side	lower	flashing
1	15 -60	3						
2	17 -68	9						
3	22 -88	3						
4	20 -80	3						
5	20 -80	0						
6	23 -92	9						
7	23 -92	0						
8	21 -84	0						
9	13 -52	3						
10	14 -56	3						
11	12 -48	0						
12	19 -76	6						
13	20 -80	3						
14	19 -76	0						
15	16 -64	3						
16	22 -88	0						
17	20 -80	0						
18	15 -60	3						
19	13 -52	3						
20	14 -56	0						
21	24 -96	6						
22	18 -72	3						
23	14 -56	0						
24	12 -48	3						
25	7 -28	0						
26	24 -96	0						
27	5 -20	0						
28	12 -48	0						
29	7 -28	0						
30	15 -60	3						
31	14 -56	0						
32	22 -88	0						

INSTRUMENT-LUDLUM-2220 DATE-4-24-89 HP SIGNATURE Jim Handley

DETECTOR-43-68- SERIAL-50069 SOURCE RESPONCE + BKGD AM-1-216-203

SOURCE NUMBER AND VALUE-7272-850-DPM SOURCE RESPONCE + BKGD PM-1-188-204

SURVEY#	DIRECT	SMEAR	SURVEY#	DIRECT	SMEAR	SURVEY#	DIRECT	SMEAR
outside wall			Upper level			North side		
1-A	8 - -32	0	H	8 -32	0	E	9 -36	3
B	9 -36	3	I	9 -36	0	F	14 -56	0
C	18 -72	0	J	13 -52	0	G	9 -36	0
D	15 -60	3	5- A	3 -12	3	H	7 -28	6
E	21 -84	3	13 B	14 -56	3	I	8 -32	0
F	11 -44	0	C	10 -40	6	J	17 -68	0
G	3 -12	6	D	9 -36	0	K	14 -56	0
H	9 -36	3	E	24 -96	0	L	7 -28	0
I	13 -52	3	F	19 -76	0			
J	15 -60	0	G	11 -44	0			
2-A	12 -48	6	H	13 -52	3			
B	12 -48	0	I	8 -32	0			
C	6 -24	3	J	8 -32	0			
D	5 -20	0	6 - A	8 -32	3			
E	9 -36	3	14 B	4 -16	0			
F	13 -52	0	C	10 -40	0			
G	17 -68	0	D	14 -56	0			
H	16 -64	3	E	8 -32	0			
I	8 -32	0	F	15 -60	3			
J	7 -28	0	G	17 -68	0			
3-A	17 -68	3	H	15 -60	0			
B	7 -68	3	I	17 -68	0			
C	7 -68	0	J	8 -32	0			
D	14 -54	9	7- A	18 -72	3			
E	17 -68	0	15 B	8 -32	3			
F	17 -68	3	C	8 -32	0			
G	12 -48	6	D	7 -28	0			
H	7 -28	3	E	10 -40	3			
I	13 -52	3	F	15 -60	0			
J	11 -44	0	G	11 -44	6			
4- A	10 -40	0	H	12 -48	0			
12 B	4 -16	3	I	11 -44	0			
C	11 -44	3	J	7 -28	3			
D	11 -40	0	8 - A	18 -72	0			
E	12 -48	3	16 B	7 -28	3			
F	9 -36	0	C	9 -36	0			
G	12 -48	0	D	6 -24	0			

INSTRUMENT-LUDLUM-2220 DATE-4-24-89 HP SIGNATURE Jim Handley

DETECTOR-43-68-SERIAL-50069 SOURCE RESPONCE + BKGD AM-1-216-203

SOURCE NUMBER AND VALUE-7272-850-DPM SOURCE RESPONCE + BKGD PM-1-188-204

SURVEY#	DIRECT	SMEAR	SURVEY#	DIRECT	SMEAR	SURVEY#	DIRECT	SMEAR
outside wall			Upper Level			North Side Lower Flashing		
1	4 -16	9						
2	4 -16	0						
3	1 -4	6						
4	4 -16	3						
5	1 -4	3						
32	1 -4	0						
6	4 -16	0						
7	1 -4	3						
8	1 -4	3						
9	1 -4	3						
10	2 -8	0						
11	6 -24	0						
12	3 -12	0						
13	1 -4	3						
14	4 -16	0						
15	6 -24	3						
16	10 -40	6						
17	4 -16	3						
18	1 -4	0						
19	1 -4	3						
20	2 -8	3						
21	5 -20	6						
22	4 -16	3						
23	5 -20	0						
24	7 -28	3						
25	6 -24	3						
26	2 -8	6						
27	4 -16	3						
28	1 -4	6						
29	4 -16	3						
30	5 -20	3						
31	6 -24	0						

PLANT Pu ROOF AREA Flashing around top of middle section
SURVEYED BY A Hetzler
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 202,230 BKG. 4
DATE: 4-28-89 SOURCE #: 7272 VALUE: 850 DPM

ASC 0 # 2 83600108
CTD. BY D. Ford
SOURCE CK. AVG. 32
BKG. 3
DATE: 5-1-89 PAGE 1 OF 2

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	METERS	DIRECT CPM	DIRECT DPM	SMEAR
Top Flashing around middle	0	63	252	0
of top section	2	45	180	6
start at N.E. Corner going west	4	37	148	0
	6	35	140	3
	8	34	136	9
(SURVEY POINTS SHOWN ON	10	29	116	0
EAST & WEST WALLS MIDDLE SECTIONS	12	40	160	0
AND UPPER LEVELS)	14	37	148	0
	16	34	136	3
	18	35	140	0
	20	30	120	0
	22	33	132	6
	24	44	176	0
	26	31	124	0
TURN SOUTH	28	38	152	3
	30	32	128	3
	32	25	100	0
	34	38	152	3
	36	55	220	3
	38	45	180	3
	40	45	180	0
	42	65	260	9
TURN EAST	44	60	240	3
	46	36	144	0
	48	33	132	6
	50	34	136	0
	52	34	136	0
	54	27	108	3
	56	27	108	3
	58	31	124	0
	60	26	104	0
	62	36	144	6
MDA = 22.17 dpm/100 cm² Direct	64	30	120	0

	DIRECT	SMEAR
TOTAL DPM	6364	108
# READINGS	45	45
AVG. DPM/100cm²	141.42	2.40
MAX DPM/100cm²	260	9

PLANT Pu ROOF AREA Flashing around top of middle section
SURVEYED BY A. Hetzler
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 202-230 BKG. 4
DATE: 4-28-84 SOURCE #: 7272 VALUE: 850 DPM

ASC 0 # 2 83600108
CTD. BY D Ford
SOURCE CK. AVG. 32
BKG. 3
DATE: 5-1-89 PAGE 2 OF 2

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	METERS	DIRECT CPM	DIRECT DPM	SMEAR
Flashing around middle of	66	23	92	3
top section	68	27	108	3
	70	33	132	0
TURN NORTH	72	48	192	3
	74	38	152	0
	76	27	108	3
	78	9	36	6
	80	33	132	3
	82	27	108	3
	84	14	56	9
	86	23	92	0
	88	45	180	3

AREA Pu-PLANT STACK HOUSE OUTSIDE
BEFORE DECON
TAR, ROCK & FLASHING REMOVED

TYPE OF SURVEY & DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 5-5-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: #2 83600108

SURVEY UNITS DPM/100 cm² WGK

N
W E
S
1.5cm = 1 Meter

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

D- DIRECT
S- SMEAR

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
4-25-89	186-217	0
5-5-89	197-212	2
"	212-188	3
	ASC #2	
4-26-89	27	.3
5-5-89	35	.3

NORTH WALL

D- S-	D- S-	D- S-	D- S-
D- S-	D- S-	D- S-	D- S-
D- S-	D- S-	D- S-	D- S-
D- S-	D- S-	D- S-	D- S-

WEST WALL

D- S-	D- S-	D- S-	D- S-
D- S-	D- S-	D- S-	D- S-
D- S-	D- S-	D- S-	D- S-
D- S-	D- S-	D- S-	D- S-

SOUTH WALL

D- S-	D- S-	D- S-	D- S-
D- S-	D- S-	D- S-	D- S-
D- S-	D- S-	D- S-	D- S-
D- S-	D- S-	D- S-	D- S-

EAST WALL

D- S-	D- S-	D- S-	D- S-	D- S-
D- S-	D- S-	D- S-	D- S-	D- S-
D- S-	D- S-	D- S-	D- S-	D- S-
D- S-	D- S-	D- S-	D- S-	D- S-

TOP FLOOR

D-124 S-0	D-72 S-3	D-96 S-6.	D-60 S-0
		D-80 S-0	D-88 S-0
D-120 S-6	D-100 S-6	D-126 S-3	D-140 S-0
D-104 S-3	D-156 S-0		D-92 S-0
D-140 S-0		D-128 S-3	D-164 S-6
D-124 S-0	D-128 S-0	D-160 S-0	D-108 S-0

INSIDE WALLS ON TOP

NORTH

D-324 S-3 D-256	D-268 S-3	D-216 S-3 D-272	D-264 S-3
D-208 S-6 S-3	D-224 S-9	D-228 S-9 S-6	D-240 S-0

EAST

D-192 S-0 D-160	D-120 S-6	D-172 S-3 D-152	D-180 S-0
D-152 S-0 S-6	D-204 S-3	D-208 S-0 S-3	D-228 S-0

SOUTH

D-204 S-3 D-152	D-184 S-6	D-224 S-3 D-272	D-224 S-0
D-144 S-6 S-0	D-124 S-6	D-312 S-9 S-3	D-232 S-0

WEST

D-228 S-3 D-216	D-204 S-0	D-96 S-0 D-180	D-160 S-3
D-164 S-0 S-6	D-200 S-3	D-144 S-0 S-0	D-172 S-6

AREA Pu-PLANT STACK HOUSE OUTSIDE AFTER DECON

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 8-18-89

H.P. SIGNATURE Claude M Thompson

SURVEY UNITS DPM/100cm² WGR

AUTO. SAMPLE COUNTER #: #1 83600115 #2 83600108

N / W / E / S

1.5cm = 1 Meter

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

D – DIRECT
S – SMEAR

SOURCE #: 1832 7272 342 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
4-25-89	186 - 217	0
8-11-89	101 - 93	1
8-17-89	88 - 79	2
5-5-89	212 - 188	3
	ASC #2	
4-26-89	27	.3
5-5-89	35	.3
	ASC #1	
8-18-89	32	.2

	D-32 S-0	D-20 S-0	D-44 S-6	D-32 S-3		D-48 S-3	D-40 S-0	D-48 S-0	D-36 S-6		D-64 S-0	D-80 S-6	D-32 S-0	D-56 S-0		D-138 S-0	D-90 S-3	D-28 S-0	D-56 S-6	D-84 S-3		
	D-44 S-3	D-36 S-6	D-40 S-3	D-36 S-0		D-48 S-0	D-32 S-3	D-16 S-3	D-40 S-0		D-44 S-6	D-28 S-0	D-80 S-3	D-36 S-3		D-12 S-0	D-32 S-3	D-40 S-3	D-20 S-3			
	D-28 S-0	D-24 S-0	D-32 S-6	D-20 S-0		D-52 S-0	D-24 S-6	D-36 S-6	D-20 S-3		D-56 S-9	D-24 S-0	D-36 S-0	D-32 S-0		D-32 S-3	D-32 S-3	D-20 S-0	D-48 S-9			
		NORTH	WALL				WEST	WALL				SOUTH	WALL				EAST	WALL				
	D-28 S-0	D-20 S-9	D-52 S-3	D-44 S-0		D-154 S-3	D-44 S-0				D-16 S-3	D-16 S-0	D-4 S-0	D-0 S-0		D-16 S-6	D-4 S-0	D-0 S-0	D-12 S-0			
	D-40 S-0	D-36 S-3	D-64 S-0	D-40 S-0		D-54 S-3	D-40 S-0	D-64 S-0			D-12 S-6	D-0 S-6	D-4 S-0	D-0 S-0		D-4 S-3	D-0 S-0	D-0 S-3	D-4 S-0			
	D-36 S-0	D-28 S-0										NORTH					EAST				
	D-36 S-0																				
	D-16 S-0	D-24 S-6																			
	D-16 S-3	D-16 S-6	D-8 S-0	D-12 S-3		D-80 S-6	D-52 S-0	D-64 S-3	D-32 S-3		D-8 S-3	D-4 S-0	D-40 S-0	D-12 S-0		D-24 S-6	D-12 S-0	D-16 S-3	D-4 S-3			
D-24 S-6			D-8 S-0								D-8 S-3	D-0 S-0	D-12 S-0	D-8 S-3		D-8 S-0	D-24 S-0	D-80 S-3	D-4 S-0			
D-20 S-3			D-24 S-3	D-44 S-0								SOUTH					WEST				
	TOP		FLOOR			FLASHING AROUND STACKS															
								TOTALS ON NEXT PAGE													

AREA Pu-PLANT STACK HOUSE OUTSIDE OF STACKS

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 5-5-89

H.P. SIGNATURE Claude M Thompson

SURVEY UNITS DPM/100cm² WGR

AUTO. SAMPLE COUNTER #: #2 83600108

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

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
5-5-89	197-212	2
"	212-188	3
	ASC #2	
5-5-89	35	3

#3
#2
#1

	STACK #1		STACK #2		STACK #3	
N	D-64 S-9	1	D-48 S-0	1	D-60 S-0	
		2	D-128 S-0	N 2	D-116 S-0	N 2
S	D-100 S-9	1	D-60 S-0	1	D-12 S-6	
		2	D-216 S-3	S 2	D-80 S-0	S 2
E	D-80 S-3	1	D-48 S-0	1	D-36 S-0	
		2	D-172 S-0	E 2	D-136 S-3	E 2
W	D-40 S-0	1	D-24 S-0	1	D-24 S-0	
		2	D-148 S-0	W 2	D-72 S-3	W 2

	DIRECT	SMEAR
TOTAL DPM	5650	288
# READINGS	141	141
AVG. DPM/100cm²	40.07	2.04
MAX. DPM/100cm²	216	9

MDA = 19.20 DPM/100cm²

AREA Pu-PLANT STACK HOUSE INSIDE

TYPE OF SURVEY ☒ DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68 43-4

SERIAL NUMBER 50069 / 48313

COMPLETION DATE 4-28-89

H.P. SIGNATURE Claude M Thompson

SURVEY UNITS DPM/100 cm² WAR

AUTO. SAMPLE COUNTER #: 2 SN 93600108

1.5cm = 1 Meter

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

D-DIRECT
S-SMEAR
mDA = 28.8
DPM/100cm²
FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
4-26-89	215 / 1.92	3
4-27-89	189/204	2
	204/199	0
4-28-89	190 / 198	1
	ASC#2	
5-1-89	32	3

	D-0 S-0	D-0 S-0	D-16 S-3	D-8 S-0		D-20 S-0	D-12 S-6	D-12 S-0	D-12 S-3		D-20 S-0	D-20 S-3	D-8 S-6	D-16 S-0		D-4 S-3	D-8 S-0	D-4 S-0	D-20 S-0		
	D-0 S-0	D-0 S-0	D-4 S-3	D-0 S-0		D-4 S-0	D-4 S-0	D-12 S-0	D-8 S-0		D-32 S-0	D-4 S-6	D-0 S-0	D-8 S-6		D-0 S-0	D-4 S-3	D-0 S-0	D-8 S-0		
Beam #1	D-205-3	D-105-3	D-225-6	D-225-3		D-285-3	D-285-3	D-285-3	D-285-3		D-285-6	D-285-6	D-285-0	D-265-3		D-245-9	D-265-6	D-265-6	D-265-3		BEAM
	D-0 S-3	D-0 S-3	D-8 S-6	D-4 S-0		D-8 S-0	D-12 S-0	D-4 S-3	D-0 S-3		D-20 S-3	D-4 S-0	D-12 S-0	D-8 S-3		D-8 S-3	D-0 S-3	D-4 S-3	D-0 S-3		
Beam #2	D-12 S-0	D-8 S-0	D-0 S-6	D-36 S-0		D-8 S-0	D-8 S-0	D-12 S-0	D-0 S-0		D-0 S-3	D-12 S-3	D-16 S-0	D-12 S-6		D-8 S-3	D-4 S-3	D-4 S-3	D-0 S-0		
	D-205-0	D-105-3	D-205-0	D-265-0		D-285-3	D-85-6	D-205-0	D-0 S-0		D-0 S-3	D-0 S-6	D-265-6	D-265-0		D-0 S-0	D-0 S-6	D-0 S-0	D-0 S-3		BEAM
		NORTH	WALL				SOUTH	WALL				EAST	WALL				WEST	WALL		

	D-20 S-0	D-16 S-0	D-10 S-0	D-52 S-0		D-4 S-0	D-8 S-3	D-8 S-3	D-4 S-0												
	D-36 S-3	D-0 S-0	D-70 S-6		B	D-4 S-6		D- S-	D-20 S-0	D											
	D-8 S-3	D-8 S-0	D-16 S-9			D- S-	D- S-	D-24 S-3													
	D-40 S-0	D-0 S-3	D-0 S-0		A	D-16 S-0	D-0 S-6	D-4 S-1		C											
	D-48 S-0	D-4 S-3	D-40 S-6	D-32 S-0		D-4 S-0	D-8 S-6	D-12 S-3	D-12 S-9	D-4 S-0											
		FLOOR						CEILING													

	DIRECT	SMEAR
TOTAL DPM	2296	339
# READINGS	164	164
AVG DPM/100cm²	14.00	2.07
MAX DPM/100cm²	76	9

PIPE SURVEY PAGE 1 OF 4

LINE NUMBER NORTH STACK DATE 4-28-89

INSTRUMENT 2220 SERIAL NUMBER

DETECTOR 43-68/2 OPERATOR 50069 43-68

SOURCE NUMBER AND VALUE 7272 850 DPM

SOURCE RESPONSE AND BACKGROUND AM 190/184 1

SOURCE RESPONSE AND BACKGROUND PM 219/202 4

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION		Direct cpm	Direct dpm/100cm²	Smearable dpm/100cm²
NORTH STACK	mild steel		T	1	4	16	0
STACK HOUSE				2	6	24	0
				3	2	8	0
				4	1	4	3
			M	1	0	0	3
				2	2	8	0
				3	2	8	6
	DIRECT SMEAR			4	5	20	3
TOTAL DPM	460		72				
# Readings	34		34	B	1	0	0	3
AVG DPM/100cm²	13.53		2.12		2	4	16	0
MAX DPM/100cm²	120		6		3	1	4	3
					4	0	0	0
MDA = 33.26	dpm/100cm²							

PIPE SURVEY PAGE 2 OF 4

LINE NUMBER SOUTH STACK DATE 4-28-89

INSTRUMENT 2220 SERIAL NUMBER 50069 43-68

DETECTOR 43-68/2 OPERATOR

SOURCE NUMBER AND VALUE 7272 850 DPM

SOURCE RESPONSE AND BACKGROUND AM 190/198 1

SOURCE RESPONSE AND BACKGROUND PM 219/202 4

START OF SURVEY	TYPE OF LINE	DIA.	READING LOCATION		Direct cpm	Direct dpm/100cm²	Smearable dpm/100cm²
SOUTH STACK			T	1	1	4	3
STACK HOUSE				2	7	28	0
				3	1	4	3
				4	5	20	6
			M	1	1	4	0
				2	1	4	6
				3	0	0	0
				4	0	0	6
			B	1	3	12	0
				2	5	20	0
				3	0	0	0
				4	0	0	0

PIPE SURVEY PAGE 3 OF 4

LINE NUMBER Stack Hole DATE 4-27-89

INSTRUMENT 2220 SERIAL NUMBER 5569 43-68

DETECTOR 43/681/2 OPERATOR W McLain

SOURCE NUMBER AND VALUE 7272 850

SOURCE RESPONSE AND BACKGROUND AM 204/187 2

SOURCE RESPONSE AND BACKGROUND PM 199/204 0

START OF SURVEY	TYPE OF LINE	DIA	READING LOCATION	Direct cpm	Direct dpm/100cm²	Smearable dpm/100cm²
STACK HOUSE			E 1	0	0	3
STACK HOLE			S 2	4	16	6
			W 3	14	56	3
			N 4	4	16	0

PIPE SURVEY PAGE 4 OF 4

LINE NUMBER DATE 4/28/89

INSTRUMENT 58313 SERIAL NUMBER 58313

DETECTOR 43-4 OPERATOR W Rettke

SOURCE NUMBER AND VALUE 7272 850 DPM

SOURCE RESPONSE AND BACKGROUND AM 202/174 4

SOURCE RESPONSE AND BACKGROUND PM

START OF SURVEY	TYPE OF LINE	DIA	READING LOCATION	Direct cpm	Direct dpm/100cm²	Smearable dpm/100cm²
ROOF DRAIN	BLACK	1"	TE	0	0	0
LINE STACK	PIPE		NS	2	24	3
HOUSE						
			ME	1	12	3
			W	1	12	3
			RE	0	0	3
			NS	10	120	3

East Side PU Building
Out side Gas Valving Cabinet

	Direct	Smear
TOTAL DPM	4,353	147
# READINGS	85	88
AVG DPm/100cm²	51.21	1.67
MAX DPm/100cm²	276	9

MDA
15.68 DPm/100cm² FIXED

PLANT PH AREA Outside Gas Valving Cabinet

SURVEYED BY A Hitzler

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 186-218 BKG. 2

DATE: 5-8-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SM 83600108

CTD. BY A Black

SOURCE CK. AVG. 24

BKG. 3

DATE: 5-9-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Outside West Face North Cabinet				
Top	1	4	16	0
	2	13	52	0
	3	9	36	9
	4	5	29	0
	5	10	40	0
North Face	1	22	88	0
	2	34	136	0
	3	23	92	6
	4	11	44	0
	5	22	88	0
East Face	1	13	52	0
	2	20	80	0
	3	11	44	6
	4	11	44	0
	5	6	24	3
Top	1	56	224	3
	2	40	160	3
	3	69	276	0
	4	49	196	0
	5	59	236	6
Inside East Face North Cabinet	1	5	20	0
	2	0	0	0
	3	4	16	0
	4	5	20	0
	5	1	4	0

PLANT PH AREA Outside Gas Valving Cabinet

SURVEYED BY A Hitzler

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 186-218 BKG. 2

DATE: 5-8-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SM 83600108

CTD. BY A Black

SOURCE CK. AVG. 24

BKG. 3

DATE: 5-9-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Inside South Face North Cabinet				
South	1	1	4	0
	2	3	12	3
	3	2	8	6
	4	2	8	3
	5	3	12	0
West Face				
	1	2	8	0
	2	2	8	3
	3	3	12	3
	4	3	12	0
	5	4	16	0
North Face				
	1	2	8	0
	2	5	20	0
	3	8	32	0
	4	1	4	0
	5	3	12	6
Floor	1	N/A	—	3
	2	N/A	—	0
	3	N/A	—	0
	4	5	20	3
	5	6	24	6

PLANT PH AREA outside Gas Analysis Cabinet

SURVEYED BY A Hutchison

INST. LUDLUM 2220 S/N 50069 DET. 43-68

SOURCE CK 193-193 BKG. 1

DATE: 5-2-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 83600108

CTD. BY A Pilcher

SOURCE CK. AVG. 24

BKG. 13

DATE: 5-9-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Inside South Face South Cabinet				
South Face	1	N/A	—	
	2	1	4	3
	3	1	4	6
	4	N/A	—	
	5	0	0	0
East Face	1	1	4	0
	2	9	36	6
	3	2	8	3
	4	4	16	0
	5	2	8	3
North Face	1	4	16	0
	2	4	16	0
	3	N/A	—	—
	4	N/A	—	—
	5	5	20	6
West Face	1	6	24	3
	2	3	12	0
	3	1	4	0
	4	1	4	0
	5	2	8	3
Floor	1	16	60	0
	2	7	28	0
	3	N/A	—	—
	4	N/A	—	—
	5	N/A	—	—

PLANT PH AREA outside Gas Analysis Cabinet

SURVEYED BY A Hutchison

INST. LUDLUM 2220 S/N 50069 DET. 43-68

SOURCE CK 196-193 BKG. 1

DATE: 5-2-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 83600108

CTD. BY A Pilcher

SOURCE CK. AVG. 24

BKG. 13

DATE: 5-9-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Outside Top South Cabinet	1	59	236	0
	2	35	140	3
	3	69	276	0
	4	64	256	0
	5	34	136	0
Outside West Face South Cabinet	1	9	36	3
West	2	6	24	0
	3	10	40	0
	4	2	8	6
	5	7	28	0
South Face	1	18	72	3
	2	19	72	3
	3	12	48	6
	4	9	36	3
	5	20	80	0
East Face	1	22	88	3
	2	11	44	3
	3	22	88	3
	4	17	68	0
	5	5	20	3
Panel Face				
	1	2	8	3
	2	4	16	0
	3	3	12	0
	4	N/A	—	—
	5	N/A	—	—
Back side Panel	1	1	4	0
	2	2	8	0
	3	N/A	—	—
	4	N/A	—	—
	5	N/A	—	—

PU VALVING AND GAS ANALYSIS
Cabinet outside lines

	DIRECT	SMEAR
TOTAL DPM	20,482	117
#READINGS	64	64
AVG DPM/100cm²	320.03	1.83
MAX DPM/100cm²	770	9

MDA
54.88 DPM/100cm² FIXED

PLANT PU AREA Valving + Gas Analysis Cabinet
SURVEYED BY A Hefter
INST. LUDLUM 2220 # 158313 DET. 43-4
SOURCE CK 202/221 BKG. 2
DATE: 5/9/89 SOURCE #: 7272 VALUE: 85 DPM

ASC # 1 SN 83600115
CTD. BY D Ford
SOURCE CK. AVG. 30
BKG. 2
DATE: 5-11-89

X 14

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Pipe from bottom NE Corner of Cabinet				
0M Line A	T	13	182	9
	N	19	266	0
2M	T	22	308	0
"	B	17	238	0
Line B				
1M	T	12	168	0
	N	14	196	0
Line C				
0M	T	18	252	0
	S	14	196	6
2M	T	23	322	0
	S	20	280	0
Line D				
1M	N	13	182	9
	S	20	280	0
Line E				
0M	N	14	196	0
	S	15	210	3
Line F				
1M	E	17	238	9
	W	21	294	3
3M	N	19	266	0
	S	25	350	6
Rubber Line G				
Mid reading	E	1	14	0
	W	12	168	3
Rubber Line H				
Mid reading	N	8	112	3
	S	12	168	3
Line I				
0M	T	36	504	0
	N	35	490	0

PLANT PU AREA Valving + Hot Hydrogen Cabinet

SURVEYED BY W Reiter

INST. LUDLUM 2220 # 58313 DET. 43-4

SOURCE CK 202/221 BKG. 2

DATE: 5/9/89 SOURCE #: 727 VALUE: 850 DPM

ASC # 1 SN 8360015

CTD. BY D Ford

SOURCE CK. AVG. 30

BKG. 12

DATE: 5-11-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
Line I'				
2M	N	26	364	6
	E	23	322	9
4M	N	36	504	0
	S	30	420	0
Line J'				
1M	N	55	770	0
	W	56	784	0
Line K'				
0M	E	23	322	0
	W	17	238	3
2M	T	25	350	6
	B	21	294	0
4M	N	48	672	0
	S	28	392	0
6M	N	17	238	0
	S	17	238	3
Line L'				
1M	T	50	700	0
	B	48	672	3
3M	T	40	560	0
	B	26	364	3
5M	N	20	280	0
	S	29	406	0
Line M'				
Mid Reading	T	24	336	0
	B	22	308	0
Line M'				
0M	N	23	322	3
	S	20	280	3
2M	T	23	322	3
	B	32	448	0
4M	N	20	280	0
	S	22	308	0

PLANT PU AREA Valving + Hot Hydrogen Cabinet

SURVEYED BY W Reiter

INST. LUDLUM 2220 # 58313 DET. 43-4

SOURCE CK 202/221 BKG. 2

DATE: 5/9/89 SOURCE #: 727 VALUE: 850 DPM

ASC # 1 SN 8360015

CTD. BY D Ford

SOURCE CK. AVG. 30

BKG. 12

DATE: 5-11-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
Line O				
0M	T	22	308	0
	B	17	238	9
2M	T	36	504	3
	B	27	378	0
4M	E	17	238	0
	W	11	154	3
Line P				
1M	T	13	182	0
	B	4	56	0
3M	T	17	238	0
	B	17	238	3
5M	N	29	406	3
	S	12	168	0
End				

EAST SIDE PU BUILDING
AIR DRYER PAD, FLUORIDE TANK AND
EVAPORATOR TANK

	DIRECT	SMEAR
TOTAL DPM	6,384	153
# READINGS	65	66
AVG DPM/100cm²	98.22	2.32
MAX DPM/100 cm²	972	9

MDA
22.17 DPM/100cm² FIXED

PLANT PU AREA East Side PU Bldg.
SURVEYED BY R Hotaling V McClain
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 191-207 BKG. 4
DATE: 5-3-89 SOURCE #: VALUE: DPM

ASC # 2 SN 83600108
CTD. BY J Black
SOURCE CK. AVG. 30
BKG. 2
DATE: 5-12-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		CPM	DIRECT DPM	SMEAR
Air Dryer Pad North Grid	1	18	72	0
East Half	2	9	36	3
	3	25	100	0
	4	15	60	3
	5	28	112	0
Middle	1	14	56	0
	2	15	60	3
	3	7	28	0
	4	12	48	3
	5	13	52	3
South				
	1	29	116	6
	2	23	92	0
	3	8	32	6
	4	11	44	3
	5	11	44	6
Air Dryer Pad North Grid	1	15	60	0
WEST HALF	2	12	48	3
	3	26	104	6
	4	17	68	3
	5	14	56	3
Middle	1	23	92	3
	2	11	44	0
	3	79	316	0
	4	15	60	0
	5	14	56	0
South	1	22	88	6
	2	22	88	0
	3	21	84	0
	4	22	88	3
	5	10	40	3

PLANT P4 AREA East Side P4 Bldg.
SURVEYED BY A Hutchins W McLain
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 203-225 191-207 BKG. 4-1
DATE: 5-3-89 5-4-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 83600108
CTD. BY 1 Black
SOURCE CK. AVG. 30
BKG. 12
DATE: 5-12-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	T= TOP L= LOWER	DIRECT CPM	DIRECT DPM	SMEAR
North Drylite Tank				
TOP	IN	69	276	6
	2S	53	212	—
North		—		
	T	21	84	6
	L	27	108	3
West				
	T	24	96	0
	L	11	44	0
South				
	T	24	96	0
	L	11	44	6
East				
	T	28	112	0
	L	13	52	0
South Drylite Tank				
Top	N	14	56	6
	S	19	76	3
	E	25	100	9
	W	25	100	0
Middle	N	24	96	0
	S	16	64	9
	E	19	76	3
	W	13	52	0
Bottom	N	18	72	0
	S	13	52	0
	E	13	52	6
	W	14	56	3
Cap				
		64	256	0

PLANT P4 AREA East Side P4 Bldg.
SURVEYED BY A Hutchins W McLain
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 203-255 BKG. 1
DATE: 5-4-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 83600108
CTD. BY 1 Black
SOURCE CK. AVG. 30
BKG. 12
DATE: 5-12-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Evaporator Tank	N	10	40	9
Top	S	N/A	—	3
	E	N/A	—	3
	W	14	56	0
Middle	N	28	112	3
	S	10	40	0
	E	10	40	0
	W	7	28	3
Bottom	N	3	12	6
	S	33	132	0
	E	12	48	0
	W	19	76	0
Cap				
	IN	249	972	0
	2S	88	352	0

PLANT Pu AREA Emergency Generator ASC # 1 SN 93600115

SURVEYED BY McLAIN CTD. BY D Ford

INST. LUDLUM 2220 SN 50069 DET. 43-68 SOURCE CK. AVG. 31

SOURCE CK 205-199 BKG. 2 BKG. 3

DATE: 5-30-89 SOURCE #: 7072 VALUE: 850 DPM DATE: 6-1-99

READINGS IN DPM/100 cm²

PU EMERGANCY GENERATOR

	DIRECT	SMEAR
TOTAL DPM	7136	216
# READINGS	136	136
AVG. DPM/100cm²	52.47	1.59
MAX. DPM/100cm²	420	9

MDA
15.68 DPM/100cm² FIXED

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
EMERGANCY GENERATOR PAD	1	1		
TOO OILY TO COUNT	2	-		
	4	-		
	5			
	1			
	2			
	4			
	5			
EMERGANCY GENERATOR WEST WALL	1	7	28	3
	2	11	44	0
	3	13	52	0
	4	12	48	0
	5	15	60	0
	1	9	36	3
	2	13	52	3
	3	11	44	0
	4	9	36	0
	5	12	48	6
	1	8	32	3
	2	16	64	0
	3	9	36	0
	4	8	32	9
	5	11	44	3
EMERGANCY GENERATOR SOUTH WALL	1	14	56	6
	2	9	36	0
	3	16	64	0
	4	10	40	0
	5	13	52	0
	1	11	44	0
	2	8	32	0
	3	10	40	3
	4	19	76	6
	5	16	64	0

PLANT Lee AREA Emergency Generator ASC # 1 SN 93600115

SURVEYED BY McLain CTD. BY D Ford

INST. LUDLUM 2220 # 50069 DET. 43-68 SOURCE CK. AVG. 31

SOURCE CK 205-199 BKG. 2 BKG. 3

DATE: 5-30-89 SOURCE #: 1272 VALUE: 850 DPM DATE: 6-1-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Emergency Generator South Wall (3)	1	10	40	0
	2	1	4	3
	3	10	40	0
	4	12	48	0
	5	8	32	0
east end of wall	1	4	16	3
	2	3	12	0
Drain House wall	1	7	28	3
	2	11	44	0
East Drain Guide Wall	1	12	48	0
	2	7	28	3
Top	1	10	40	3
Em - Gen - South Wall				
South Wall South Side	1	14	56	0
	2	9	36	0
	3	12	48	0
	4	9	36	0
Portable Stand Steps	1	29	116	3
Grates Top — Bottom	2	25	100	0
	3	15	60	3
	4	20	80	0
	5	31	124	3
	6	12	48	0
	7	17	68	6

PLANT Lee AREA Emergency Generator ASC # 1 SN 93600115

SURVEYED BY McLain CTD. BY D Ford

INST. LUDLUM 2220 # 50069 DET. 43-68 SOURCE CK. AVG. 31

SOURCE CK 205-199 BKG. 2 BKG. 3

DATE: 5-30-89 SOURCE #: 1272 VALUE: 850 DPM DATE: 6-1-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Inside Box in Block Wall	W	4	16	0
	E	7	28	0
	T	5	20	3
	Back 1	18	72	9
	2	10	40	0
Galvanized Box Top	1	64	256	0
	2	55	220	3
East	1	13	52	3
West	1	25	100	3
front South	1	4	16	3
	2	6	24	0

Cabinet

PLANT Pu AREA Power Supply Generator

SURVEYED BY J Handley & A Hetzler

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 186/218 BKG. 2

DATE: 5/8/89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 83600108

CTD. BY J Block

SOURCE CK. AVG. 24

BKG. 3

DATE: 5-9-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
Power Supply Generator Cabinet			
Top South Grid			
1	50	200	3
2	7	28	0
3	19	76	3
4	2	8	0
5	4	16	3
Top North Grid			
1	5	20	0
2	4	16	0
3	3	12	0
4	5	20	0
5	8	32	0
North End Grid			
1	0	0	0
2	4	16	0
3 N/A	N/A		
4	7	28	0
5	7	28	6
East side Grid 1			
1	6	24	3
2	2	8	0
3	1	4	3
4	5	20	0
5	1	4	0
East side Grid 2			
1	3	12	3
2	3	12	0
3	2	8	0
4	5	20	0
5	0	0	0

Cabinet

PLANT Pu AREA Power Supply Generator

SURVEYED BY J Handley & A Hetzler

INST. LUDLUM 2220 # 50069 DET. 43-68

SOURCE CK 186/218 BKG. 2

DATE: 5/8/89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 83600108

CTD. BY J Block

SOURCE CK. AVG. 24

BKG. 3

DATE: 5-9-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DPM	SMEAR
South End Grid			
1	9	36	0
2	5	20	3
3	8	32	6
4	4	16	6
5	8	32	9
West Side Grid 1			
1	4	16	3
2	5	20	0
3	6	24	3
4	2	8	6
5	1	4	0
West Side Grid 2			
1	4	16	0
2	8	32	0
3	2	8	0
4	2	8	0
5	4	16	9
Metal Top of Drain Box			
1	10	40	3
2	5	20	0
3	19	76	6
4	18	72	3
5	14	56	0

PLANT PU AREA Power Supply Generator Retaining Wall Block Wall
SURVEYED BY J Handley & A Hetzler
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 186/218 BKG. 2
DATE: 5/8/89 SOURCE #: 7272 VALUE: 8500 DPM

ASC # 2 SN 93600108
CTD. BY J Black
SOURCE CK. AVG. 24
BKG. 3
DATE: 5-9-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
Block Wall South Side Grid 2			
1			
2 N/A			
3			
4			
5			
Top Block Wall			
0M	49	196	6
2M	41	164	3
End	50	200	0
Block Wall North Side Grid 1			
1	N/A		
3			
4			
" " " Grid 2			
1	16	64	3
2	14	56	0
3	13	52	0
4	5	20	0
5	14	56	0
East Edge Block Wall			
0M	N/A		
2M	105	420	0
End	16	64	0

PLANT PU AREA Power Supply Generator Retaining Wall Block Wall
SURVEYED BY J Handley & A Hetzler
INST. LUDLUM 2220 # 50069 DET. 43-68
SOURCE CK 186/218 BKG. 2
DATE: 5/8/89 SOURCE #: 7272 VALUE: 8500 DPM

ASC # 2 SN 93600108
CTD. BY J Black
SOURCE CK. AVG. 24
BKG. 3
DATE: 5-9-89

Power Supply Generator = PSG

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
Begin SE Corner of Retaining Wall running West			
0M	15	60	6
2M	10	40	3
4M	29	116	0
6M	37	148	0
Turn North			
8M	31	124	0
10M	19	76	0
12M	18	72	3
14M	8	32	0
16M	20	80	0
18M	14	56	0
20M	14	56	0
Turn East			
22M	18	72	0
24M	14	56	0
26M	13	52	3
End	END		
Block Wall South Side Grid 1			
1	10	40	0
2 N/A	N/A		
3	22	88	3
4	16	64	6
5 N/A	N/A		
Grid 2			
1	17	68	0
2	20	80	0
3	16	64	0
4	4	16	0
5	7	28	0
West Edge Block Wall			
1	9	36	0

Pu-PLANT

YARD TRANSFORMERS

	DIRECT	SMEAR
TOTAL DPM	11,982	357
# READINGS	175	175
AVG DPM/100cm²	68.47	2.04
MAX DPM/100cm²	472	9

MDA
52.21 DPM/100cm² FIXED

PLANT Pu AREA Transformer
SURVEYED BY McLain
INST. LUDLUM 2220 +/- 50069 DET. 43-68 / 43-4
SOURCE CK 225-223 BKG. 4
DATE: 5-31-89 SOURCE #: 7272 VALUE: 8500PM

ASC # 2 SM 83600108
CTD. BY D Ford
SOURCE CK. AVG. 31
BKG. .2
DATE: 5-31-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
TOP NORTH TRANSFORMER	1	34	136	3
Grid 1	2	37	148	0
	3	34	136	3
	4	41	164	3
	5	32	128	6
Grid 2	1	32	128	0
	2	32	128	9
NORTH TRANSFORMER COIL	1	16	64	9
COIL	2	15	60	0
	3	18	72	0
	4	10	40	0
X5	5	9	36	0
BASE	1	11	44	0
	2	21	84	0
	3	10	40	3
	4	0	0	3
X10 TOP PIPE	1	18	72	3
X10	2	17	68	6
SOUTH TRANSFORMER COIL	1	6	24	0
COIL	2	10	40	0
	3	8	32	0
	4	9	36	0
	5	8	32	3
X5 BASE	1	8	32	6
	2	14	56	0
	3	16	64	0
	4	4	16	0
X10 TOP PIPE	1	14	56	6
X10	2	21	84	0

PLANT Pu AREA Transformer
SURVEYED BY V. McLain
INST. LUDLUM 2220 +/- 50069 DET. 43-68
SOURCE CK 225-223 BKG. 4
DATE: 5-31-89 SOURCE #: 7272 VALUE: 8500PM

ASC # 2 SM 83600108
CTD. BY D Ford
SOURCE CK. AVG. 31
BKG. .2
DATE: 5-31-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
WALL TRANSFORMER PAD WEST	1	13	52	3
WEST (E/W START) Grid 1	2	8	32	3
	3	9	36	6
	4	12	48	3
	5	9	36	0
Grid 2	1	12	48	0
	2	14	56	0
	3	17	68	0
	4	4	16	3
	5	9	36	6
Grid 3	1	15	60	3
	2	14	56	3
	3	17	68	6
	4	20	80	0
	5	12	48	3
Grid 4	1	9	36	0
	2	21	84	0
	3	10	40	6
	4	11	44	0
	5	13	52	0
WALL TRANSFORMER NORTH PAD				
Grid 1	1	10	40	0
	2	15	60	3
	3	14	56	0
	4	14	56	0
	5	7	28	0
Grid 2	1	8	32	3
	2	14	56	0
	3	14	56	6
	4	13	52	0
	5	11	44	0

PLANT P4 AREA Transformer
SURVEYED BY V McLain
INST. LUDLUM 2220 S/N 50069 DET. 43-68
SOURCE CK 225-223 BKG. 4
DATE: 5-31-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SM 8360108
CTD. BY D Ford
SOURCE CK. AVG. 31
BKG. 2
DATE: 5-31-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Transformer Pad North Wall	1	10	40	0
Grid 3	2	12	48	3
	3	8	32	0
	4	13	52	0
	5	12	48	0
Transformer Pad West of Trans	1	16	64	0
	2	7	28	6
East →	3	12	48	0
Metal Box in South Block Wall	1	57	228	3
Top	2	56	224	0
	1	16	64	0
West	2	13	52	3
	1	29	116	3
East	2	38	152	3
North Grid	1	5	20	0
	2	9	36	0
	3	4	16	3
	4	3	12	0
	5	8	32	3
Top South Transformer Grid 1	1	34	136	9
	2	38	152	0
	3	31	124	9
	4	31	124	0
	5	38	152	6
Grid 2	1	39	156	0
	2	47	188	3

PLANT P4 AREA Transformer
SURVEYED BY McLain
INST. LUDLUM 2220 S/N 50069 DET. 43-68
SOURCE CK 209/210 BKG. 2
DATE: 5-25-89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SM 8360108
CTD. BY D Ford
SOURCE CK. AVG. 36
BKG. 3
DATE: 6-1-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
North Transformer North Face				
N Grid	1	28	112	3
	2	25	100	0
	3	25	100	0
	4	27	108	3
	5	17	68	0
E Grid	1	9	36	3
	2	8	32	3
	3	18	72	3
	4	4	16	0
	5	22	88	0
W Grid	1	26	104	0
	2	6	24	3
	3	14	56	3
	4	13	52	0
	5	6	24	3
South Transformer North Face				
Grid N	1	30	120	6
	2	25	100	3
	3	20	80	6
	4	9	36	0
	5	18	72	3
Grid E	1	19	76	3
	2	24	96	0
	3	25	100	0
	4	10	40	0
	5	10	40	3
Grid W	1	14	56	3
	2	10	40	0
	3	15	60	6
	4	11	44	0
	5	5	20	0

PLANT PH AREA Pad Area West of Cooling Tower

SURVEYED BY A Hellyer V. McCain

INST. LUDLUM 2220 * # 50069 DET. 43-68

SOURCE CK 207/210 BKG. 2 AM

DATE: 5/25/89 SOURCE #: 7272 VALUE: 850 DPM

196/180

ASC # 2 SM 83600108

CTD. BY D Ford

SOURCE CK. AVG. 36

BKG. .3

DATE: 6-1-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Concrete Cap Blk Grid #2	1	25	100	3
	2	118	472	0
	3	42	168	0
	4	7	28	0
	5	10	40	3
Storm Drain Lid Grid #2	1	13	52	3
	2	6	24	0
	3	5	20	0
	4	6	24	0
	5	5	20	3
West Wing wall From Storm Drain	W	8	32	0
	E	4	16	6
East Wing wall From Storm Drain	W	18	72	3
	Mid	9	36	0
	E	11	44	6
Mid East Yard Lite	N	3	12	3
	E	20	80	3
	S	11	44	3
	W	17	68	0
Transformer Pad Grid #1	1	17	68	3
Face North	2	9	36	3
	3	N/A		—
	4	17	68	3
	5	15	60	3
Grid #2	1	24	96	0
	2	24	96	0
	3	24	96	0
	4	13	52	3
	5	23	92	0
Grid #3	1	38	152	0
	2	28	112	0
	3	N/A		
	4	21	84	9
	5	25	100	6

PLANT PH AREA Pad Area West of Cooling Tower

SURVEYED BY A Hellyer V. McCain

INST. LUDLUM 2220 * # 50069 DET. 43-68

SOURCE CK 207/210 BKG. 2 AM

DATE: 5/25/89 SOURCE #: 7272 VALUE: 850 DPM

196/180 1 PM

ASC # 2 SM 83600108

CTD. BY D. Ford

SOURCE CK. AVG. 36

BKG. .3

DATE: 6-1-89

READINGS IN DPM/100 cm²

Start SW corner

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Pad Area West of Cooling Tower Grid #1				
	1	15	60	0
	2	22	44	3
	3	10	40	0
	4	6	24	6
	5	20	80	0
" " " " " " Grid #2	1	18	72	0
	2	12	48	0
	3	8	32	3
	4	7	28	0
	5	13	52	3
" " " " " " Grid #3	1	19	76	3
	2	20	80	6
	3	17	68	0
	4	13	52	6
	5	9	36	3
" " " " " " Grid #4	1	6	24	0
	2	6	24	3
	3	15	60	0
	4	16	64	3
	5	19	76	0
Ends		Ends		
Mid North Fence Yard Lite	N	11	44	0
Base	E	27	108	0
	S	19	76	6
	W	10	40	0
NE Corner Yard Lite	N NNW	23	92	6
Base	S NE	36	144	6
	E SE	22	88	0
	W SW	21	84	3

AREA Pu-PLANT - OUTSIDE
EMERGENCY EXIT PLATFORM
ROOM # 121

TYPE OF SURVEY ✓ DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-4 (43-68)

SERIAL NUMBER 50064 (43-4), 58308 (43-4), 50069 (43-68)

COMPLETION DATE 6-22-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: #1 83600115 - #2 83600108

SURVEY UNITS DPM/100cm²

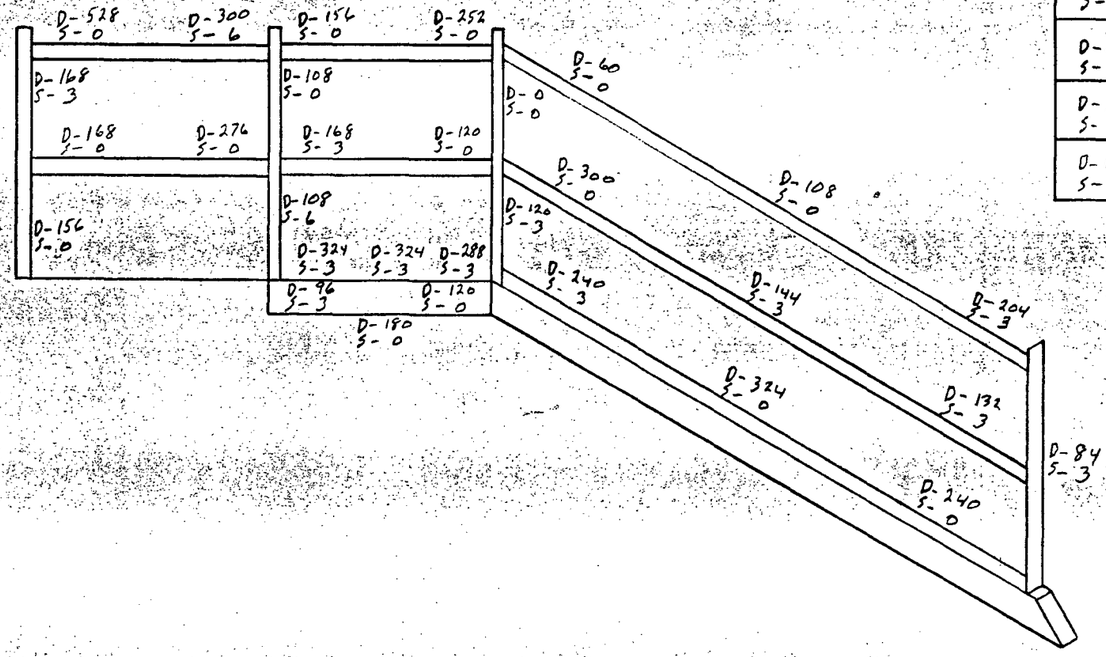
F – FLOOR
C – CEILING
N – NORTH WALL
S – SOUTH WALL
E – EAST WALL
W – WEST WALL

D – DIRECT
S – SMEAR

SOURCE #: 6832-7272 6811 VALUE: 1078 DPM 342-850

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
50064 5-23-89	245-238	1
"	238-251	0
58308 6-18-89	77-79	2
	73-68	2
50069 5-19-89	195-184	2
"	219-192	2
	ASC #1	
5-25-89	32	.2
	ASC #2	
6-22-89	32	.1

ROOM 121 EMERGENCY EXIT
HAND RAILS
BEFORE DECON



D-108 S-3	D-100 S-0	LANDING
D-128 S-0		
D-92 S-3	D-68 S-3	

STEPS

D-88 S-0	D-92 S-3
D-80 S-0	D-96 S-0
D-84 S-3	D-128 S-0
D-168 S-3	D-104 S-0

AREA Pu-PLANT - OUTSIDE
EMERGENCY EXIT PLATFORMS
ROOM # 121

TYPE OF SURVEY α DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4 (43-68)

SERIAL NUMBER 58308 (43-4), 50069 (43-68)

COMPLETION DATE 6-22-89

H.P. SIGNATURE Claude M. Thompson

AUTO. SAMPLE COUNTER #: #1 83600115, #2 83600108

SURVEY UNITS DPM/100cm²

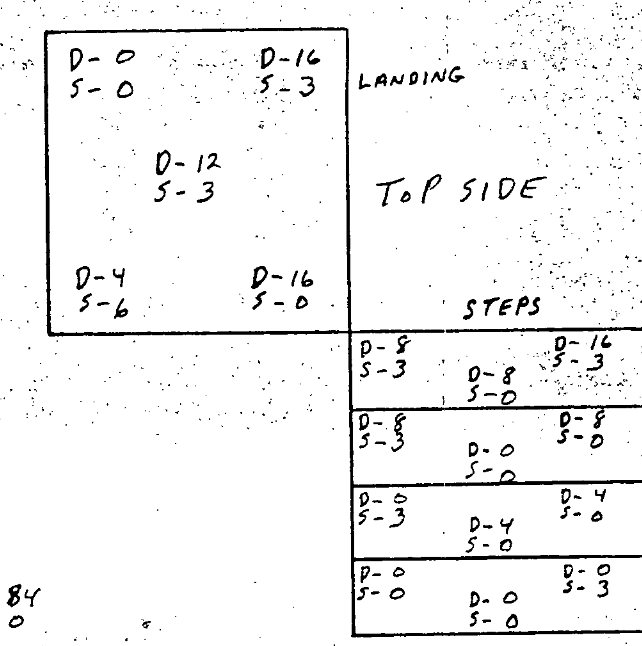
F — FLOOR
C — CEILING
N — NORTH WALL
S — SOUTH WALL
E — EAST WALL
W — WEST WALL

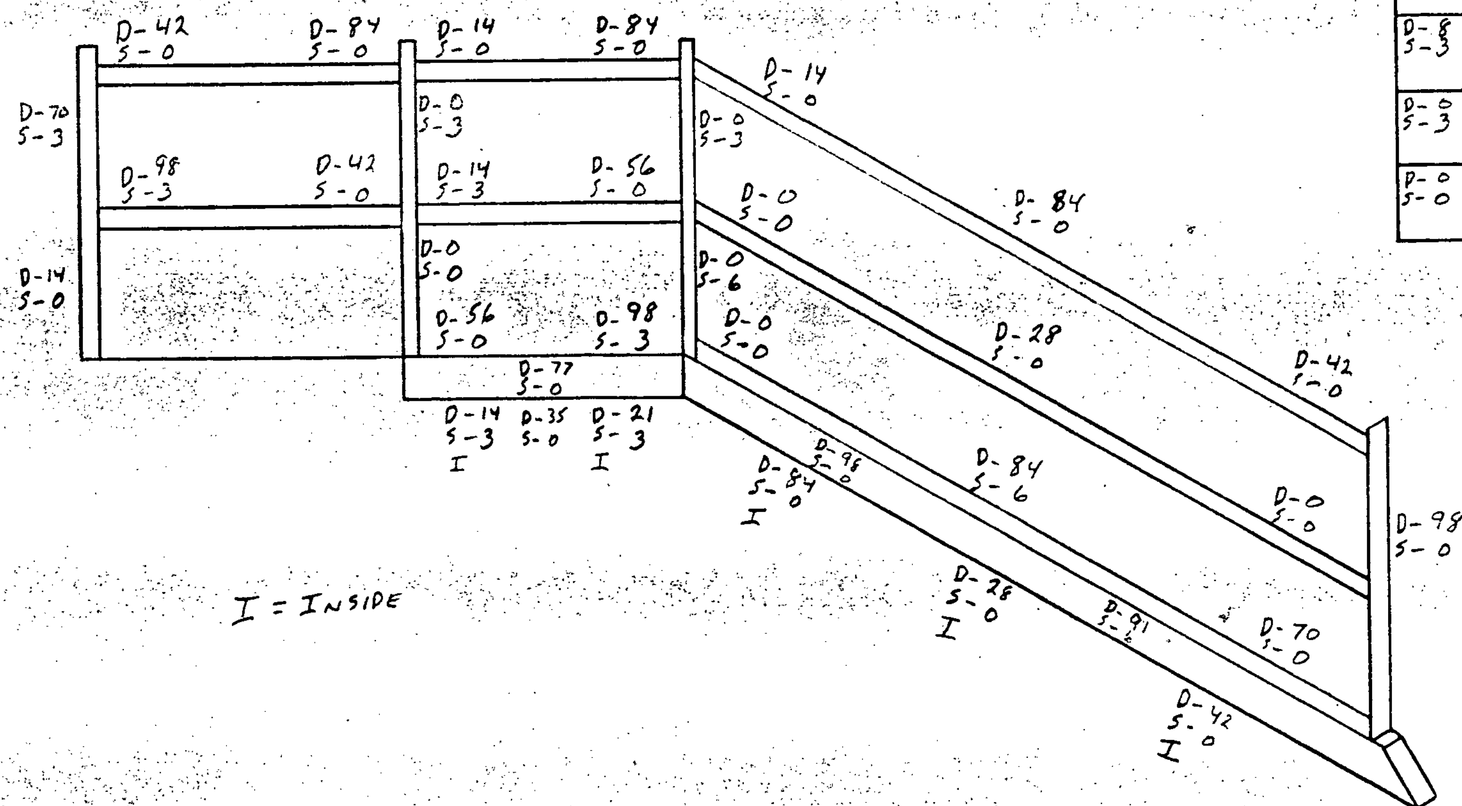
D - DIRECT
S - SMEAR

SOURCE #: 6832 VALUE: 342 DPM

	INSTRUMENT		
	DATE	SOURCE RESPONSE C/M	BKGD. C/M
58308	6-18-89	73-68	2
	"	77-79	2
50068	"	116-100	1
		ASC #1	
	6-22-89	32	.1
		ASC #2	
	6-19-89	32	.3

ROOM 121 EMERGENCY EXIT
HAND RAILS
AFTER DECON





AREA Pu-PLANT - OUTSIDE
EMERGENCY EXIT PLATFORM
ROOM # 121

TYPE OF SURVEY ∠ DIRECT ∤ SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68

SERIAL NUMBER 50068

COMPLETION DATE 6-19-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: #1 836 00115

SURVEY UNITS DPM/100cm²

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

D - DIRECT
S - SMEAR
MDA = 54.88 DPM/100cm²
FIXED

SOURCE #: 6832 VALUE: 342 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
6-18-89	116-100	1
	ASC #1	
6-19-89	132	.3

AREA Pu-PLANT - OUTSIDE
EMERGENCY EXIT PLATFORM
Room #123

TYPE OF SURVEY ✓ DIRECT ✓ SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4

SERIAL NUMBER 50064

COMPLETION DATE 5-25-89

H.P. SIGNATURE Claude Thompson

AUTO. SAMPLE COUNTER #: #1 83600115

SURVEY UNITS DPM/100cm²

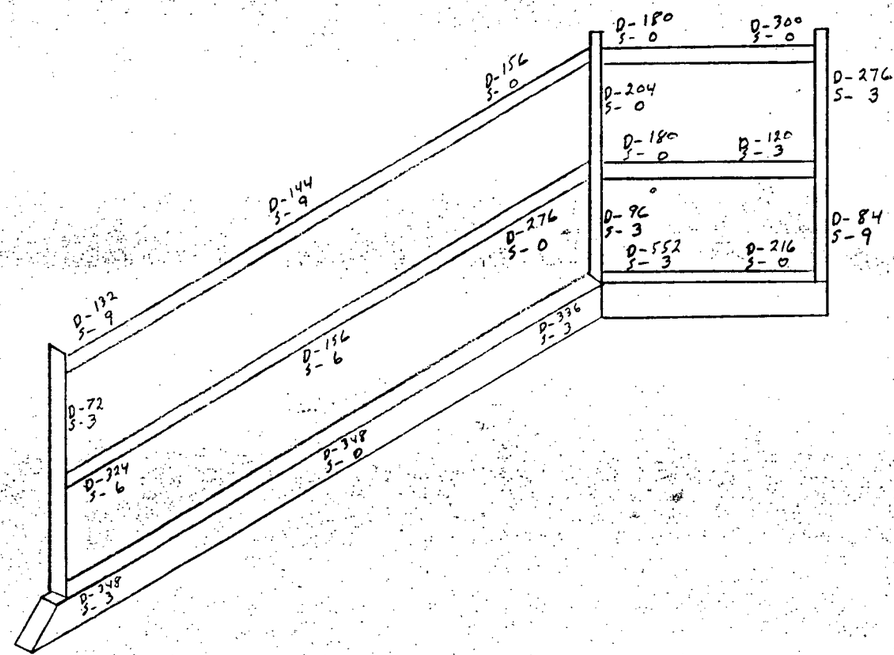
D - DIRECT
S - SMEAR

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

SOURCE #: 6816 VALUE: 1078 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
5-23-89	245 - 238	1
"	238 - 251	0
	ASC # 1	
5-25-89	32	.2

Room # 123 EMERGENCY EXIT
HAND RAILS WEST SIDE
BEFORE DECON



AREA Pu-PLANT - OUTSIDE EMERGENCY EXIT PLATFORM ROOM #123

TYPE OF SURVEY ∝ DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-4

SERIAL NUMBER 50064

COMPLETION DATE 5-24-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: #2 83600108

SURVEY UNITS DPM/100cm²

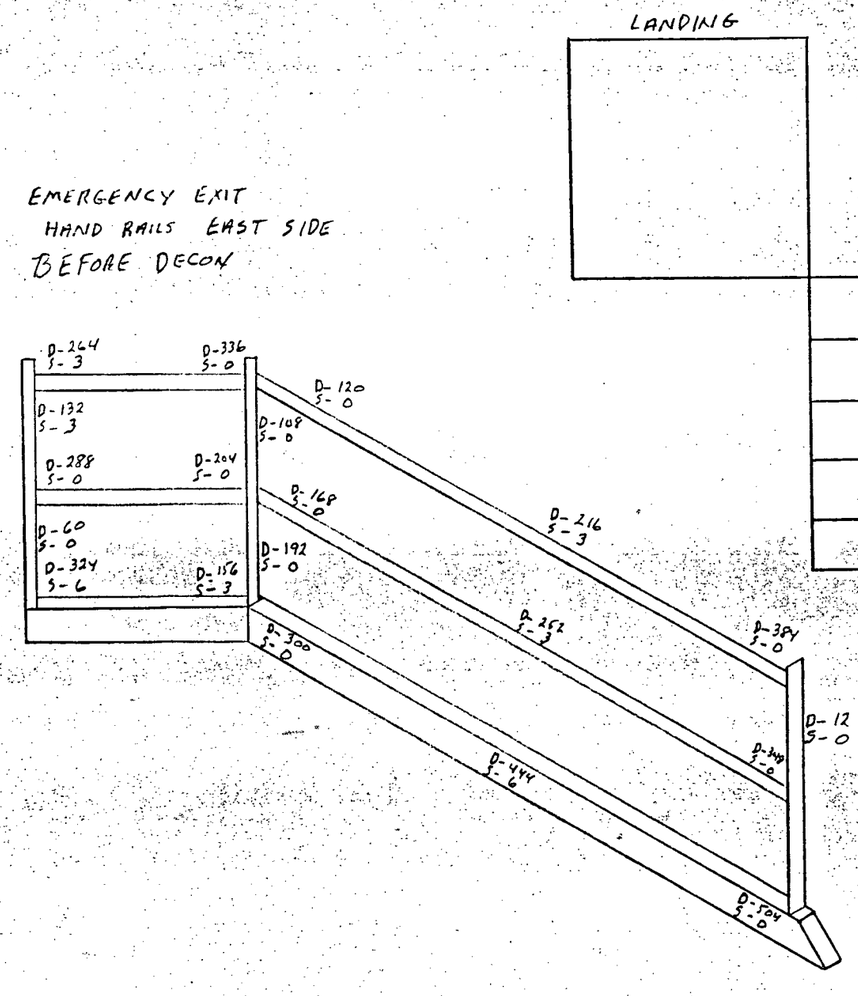
D - DIRECT
S - SMEAR

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

SOURCE #: 6816 VALUE: 1078 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
5-23-89	245-238	1
"	238-251	0
	ASC #2	
5-24-89	31	.3

ROOM #123 EMERGENCY EXIT
HAND RAILS EAST SIDE
BEFORE DECON



AREA Pu-PLANT - OUTSIDE EMERGENCY EXIT PLATFORM ROOM #123

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68 / 43-4

SERIAL NUMBER 50069

COMPLETION DATE 6-22-89

H.P. SIGNATURE Claude M. Thompson

AUTO. SAMPLE COUNTER #: #2 83600108

SURVEY UNITS DPM/100cm²

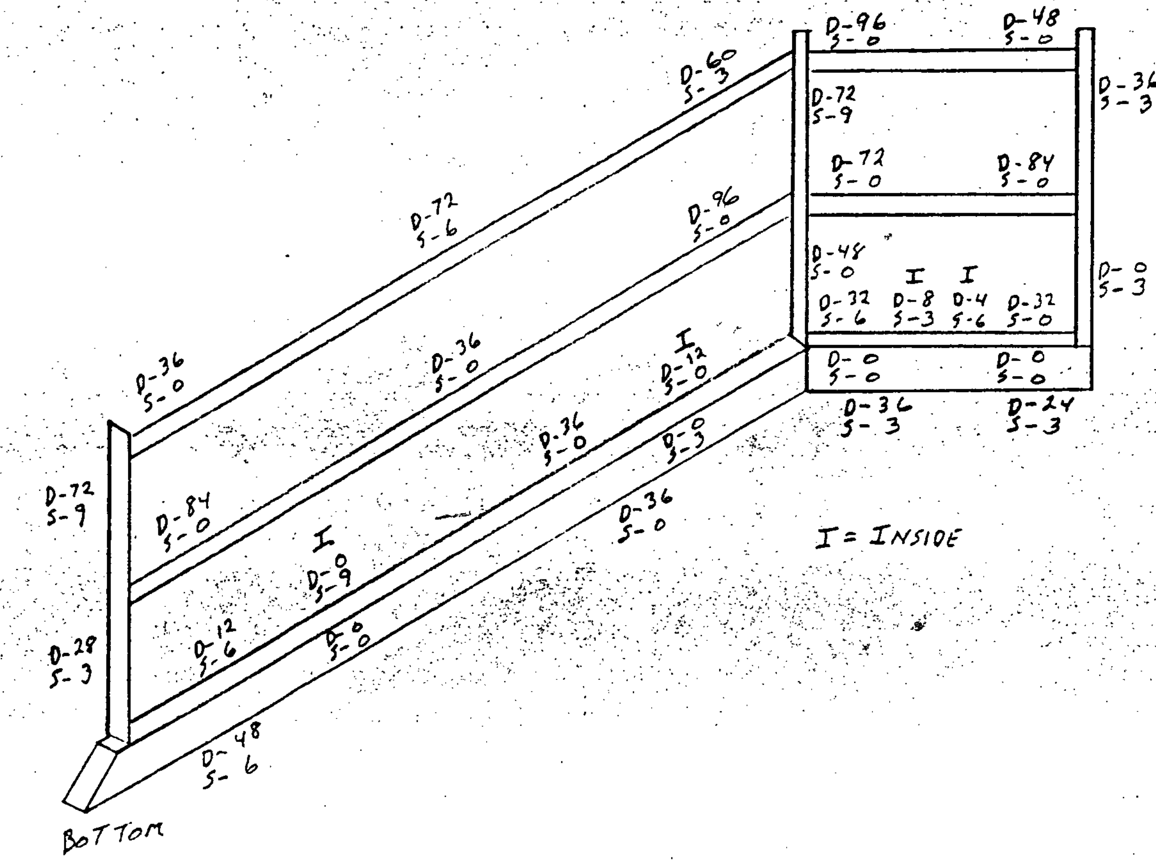
F – FLOOR
C – CEILING
N – NORTH WALL
S – SOUTH WALL
E – EAST WALL
W – WEST WALL

D-DIRECT
S-SMEAR

SOURCE #: 7272 VALUE: 850 DPM

	INSTRUMENT		
	DATE	SOURCE RESPONSE C/M	BKGD. C/M
43-4	6-20-89	210 - 199	2
43-68	"	195 - 182	1
		ASC #2	
	6-22-89	30	1

Room #123 EMERGENCY EXIT
HAND RAILS WEST SIDE
AFTER DECON



AREA Pu-PLANT-OUTSIDE
EMERGENCY EXIT PLATFORM
ROOM #123

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68 / 43-4

SERIAL NUMBER 50069

COMPLETION DATE 6-22-89

H.P. SIGNATURE [signature]

AUTO. SAMPLE COUNTER #: #2 83600108

SURVEY UNITS DPM/100cm²

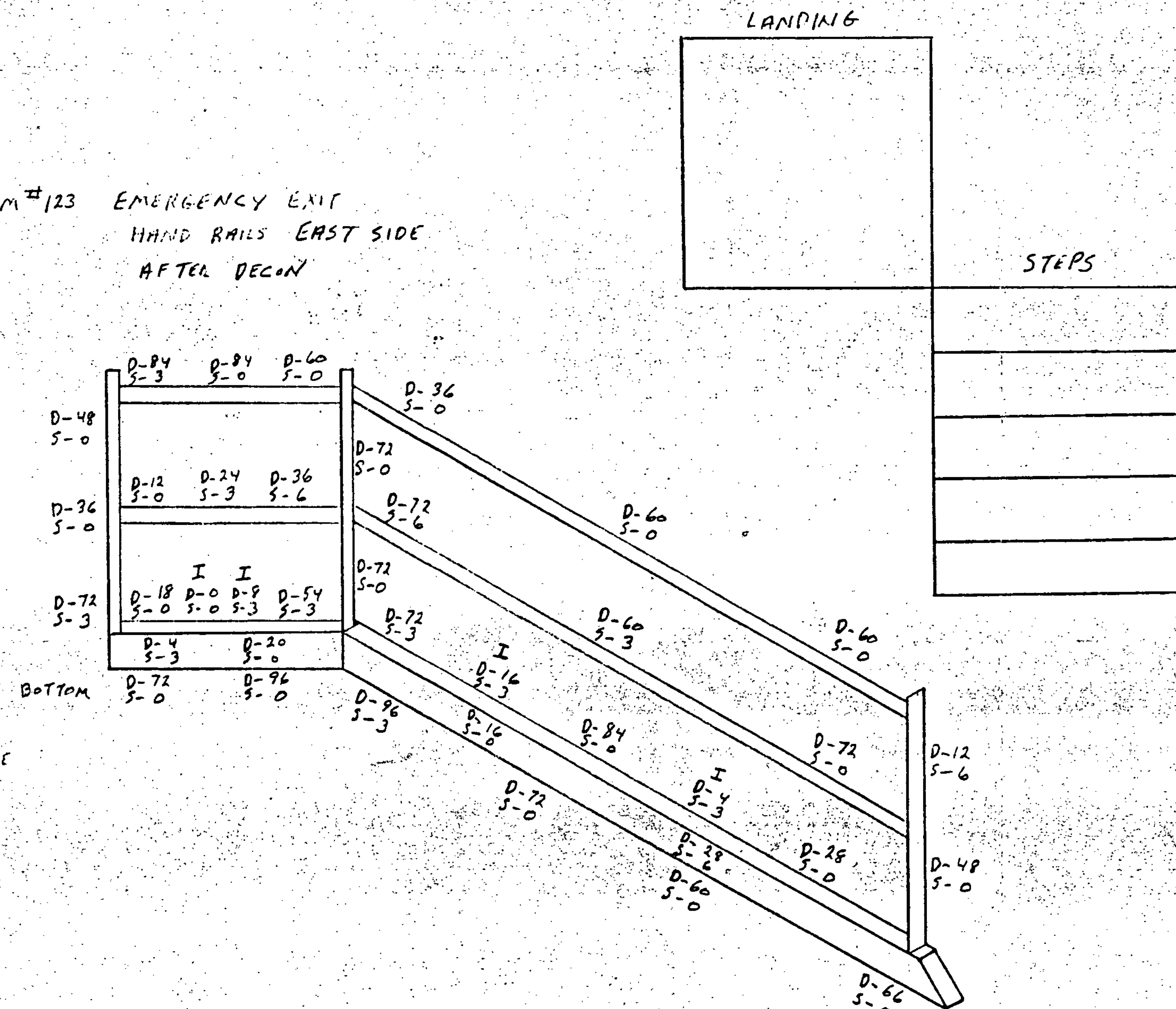
D-DIRECT
S-SMEAR

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

SOURCE #: 7272 VALUE: 850 DPM

	INSTRUMENT		
	DATE	SOURCE RESPONSE C/M	BKGD C/M
43-4	6-20-89	210-199	2
43-68	"	195-182	1
		ASC #2	
	6-22-89	30	.1

ROOM #123 EMERGENCY EXIT
HAND RAILS EAST SIDE
AFTER DECON



I = INSIDE

AREA Pu-PLANT-OUTSIDE
EMERGENCY EXIT PLATFORM
ROOM #123

TYPE OF SURVEY α DIRECT + SMEAR
TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68
SERIAL NUMBER 50069

COMPLETION DATE 6-22-89
H.P. SIGNATURE Claude M Thompson
AUTO. SAMPLE COUNTER #: #2 83600108

SURVEY UNITS DPM/100cm²

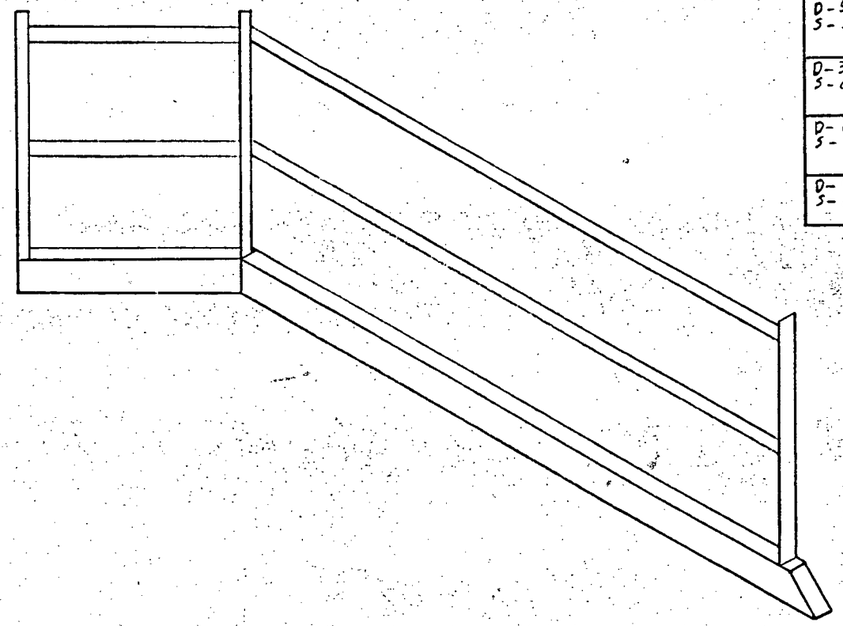
D - DIRECT
S - SMEAR

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

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
6-20-89	195-182	1
	-	
	ASC #2	
6-22-89	30	.1

ROOM #123 EMERGENCY EXIT
HAND RAILS



LANDING

D-4 S-0 | D-8 S-0
D-16 S-3
D-8 S-3 | D-12 S-0

TOP SIDE

STEPS

D-88 S-3	D-64 S-3	D-64 S-0 / D-48 S-0
D-56 S-3	D-80 S-0	D-56 S-6 / D-84 S-6
D-36 S-0	D-88 S-0	D-44 S-3 / D-40 S-6
D-84 S-6	D-20 S-9	D-36 S-0 / D-12 S-3
D-40 S-0	D-64 S-0	D-48 S-0 / D-92 S-3

AREA Pu-PLANT-OUTSIDE
EMERGENCY EXIT PLATFORM
ROOM # 123

TYPE OF SURVEY ∝ DIRECT + SMEAR
TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68
SERIAL NUMBER 50069

COMPLETION DATE 6-22-89
H.P. SIGNATURE Claude M Thompson
AUTO. SAMPLE COUNTER #: #2 83600108

SURVEY UNITS DPM/100cm²

D-DIRECT
S-SMEAR

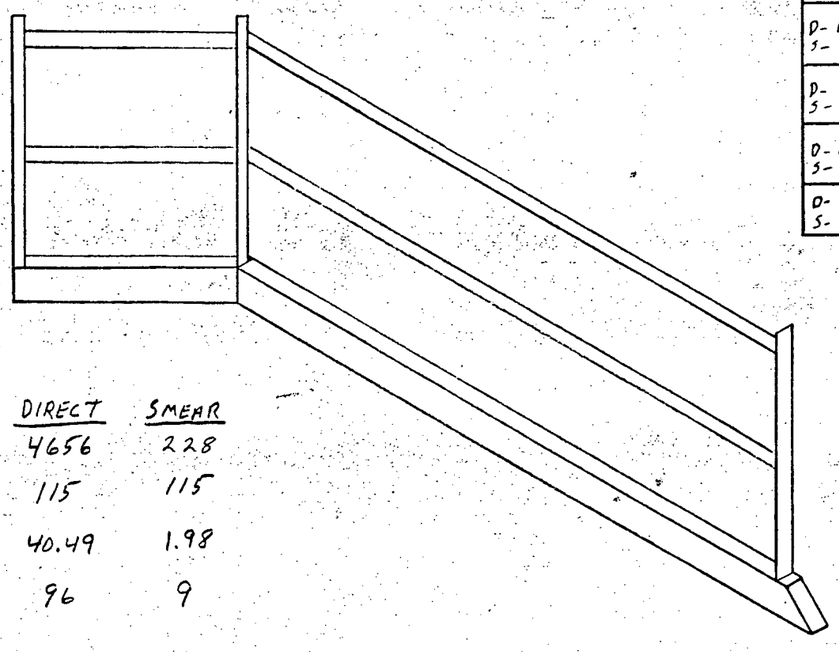
F – FLOOR
C – CEILING
N – NORTH WALL
S – SOUTH WALL
E – EAST WALL
W – WEST WALL

MDA = 54.88 DPM/100 cm² FIXED

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
6-20-89	195-182	1
	MSC #2	
6-22-89	30	.1

ROOM # 123 EMERGENCY EXIT
HAND RAILS



	DIRECT	SMEAR
TOTAL DPM	4656	228
# READINGS	115	115
AVG. DPM/100cm²	40.49	1.98
MAX. DPM/100cm²	96	9

LANDING

D-20 S-0		D-24 S-0
	D-52 S-3	
D-4 S-9		D-8 S-6

BOTTOM SIDE

STEPS

D-20 S-3	D-32 S-0	D-32 S-0
D-16 S-0	D-36 S-0	D-20 S-3
D-4 S-0	D-20 S-0	D-16 S-0
D-16 S-0	D-20 S-3	D-20 S-0
D-8 S-0	D-20 S-3	D-20 S-3

AREA Pu-PLANT - OUTSIDE
EMERGENCY EXIT PLATFORM
ROOM # 124

TYPE OF SURVEY ∝ DIRECT ∤ SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4

SERIAL NUMBER 50064

COMPLETION DATE 5-25-89

H.P. SIGNATURE Chuck M Thompson

AUTO. SAMPLE COUNTER #: #2 83600108

SURVEY UNITS DPM/100cm²

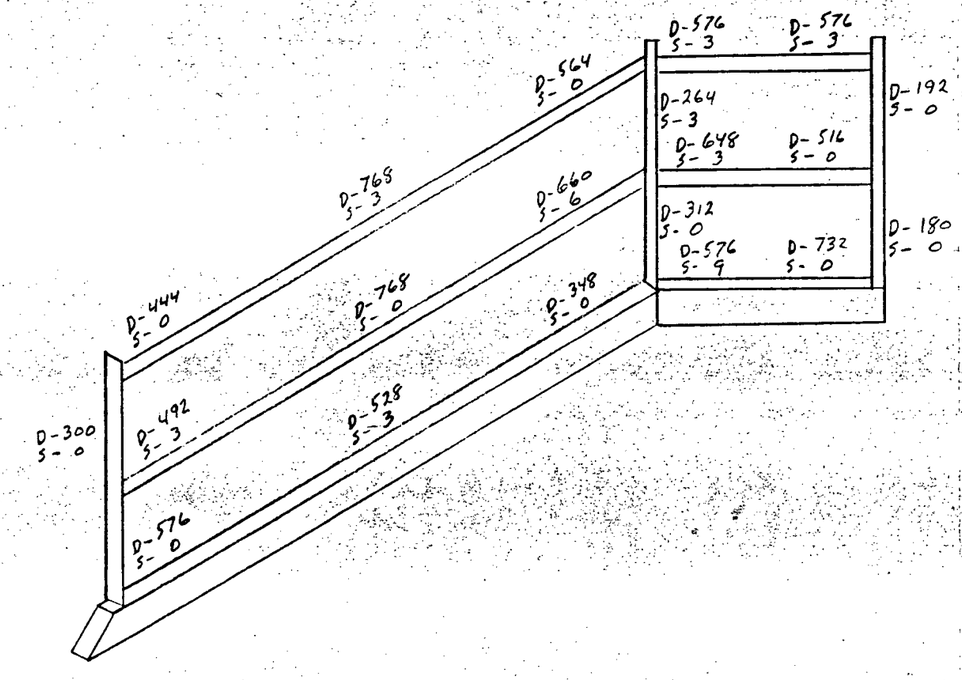
D = DIRECT
S = SMEAR

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

SOURCE #: 6816 VALUE: 1078 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
5-23-89	245 - 238	1
"	238 - 251	0
	ASC #2	
5-25-89	31	.3

Room # 124 EMERGENCY EXIT
HAND RAILS WEST SIDE
BEFORE DECON



AREA Pu-PLANT - OUTSIDE EMERGENCY EXIT PLATFORM ROOM #124

TYPE OF SURVEY ∝ DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-4

SERIAL NUMBER 50064

COMPLETION DATE 5-25-89

H.P. SIGNATURE Claude M Thorpe

AUTO. SAMPLE COUNTER #: #2 8360108

SURVEY UNITS DPM/100cm²

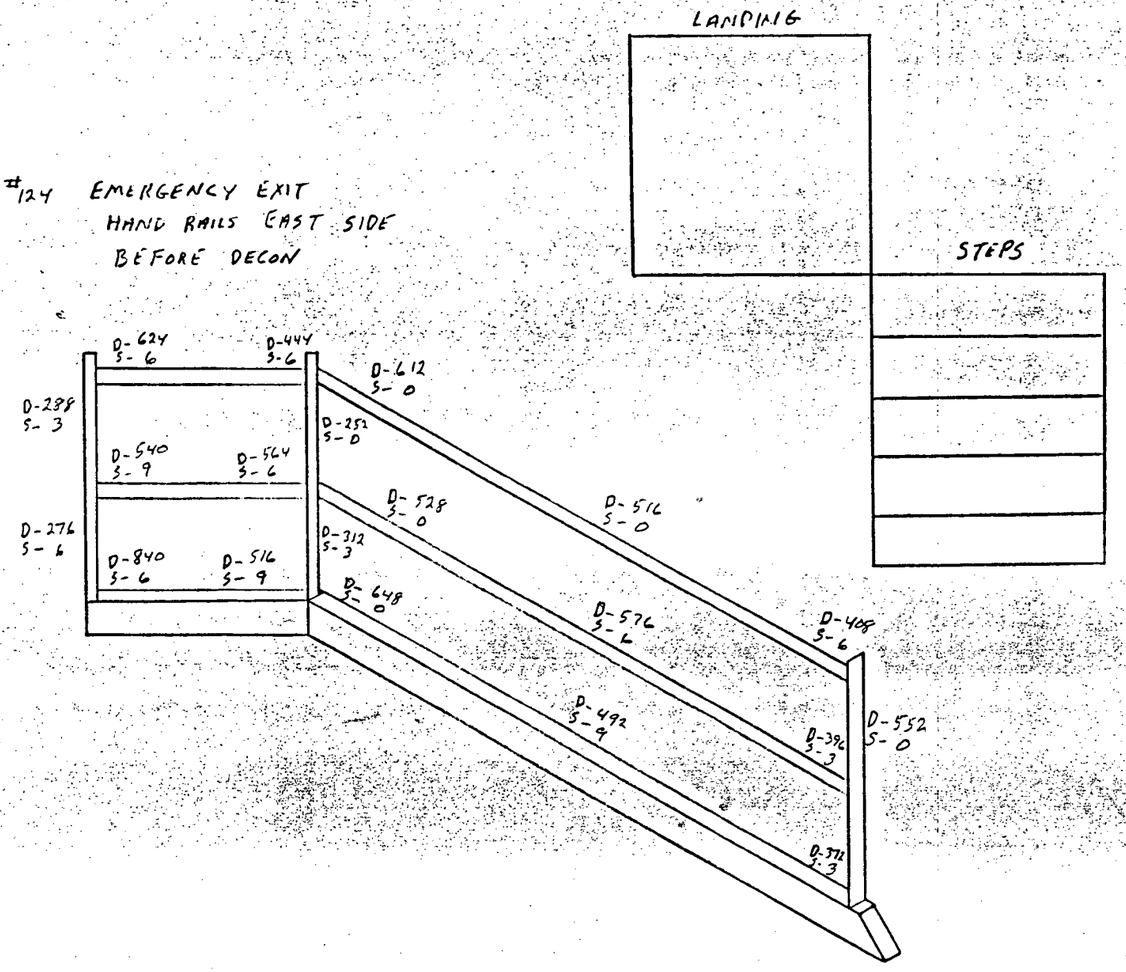
D - DIRECT
S - SMEAR

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

SOURCE #: 6816 VALUE: 1078 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
5-23-89	238-251	0
"	245-238	1
	ASC #2	
5-25-89	31	3

ROOM #124 EMERGENCY EXIT
HAND RAILS EAST SIDE
BEFORE DECON



AREA Pu-PLANT-OUTSIDE
EMERGENCY EXIT PLATFORM
ROOM #124

TYPE OF SURVEY ✓ DIRECT ✓ SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4 43-68

SERIAL NUMBER 58308, 50068 (43-4, 43-68)

COMPLETION DATE 6-22-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: #1 83600115

SURVEY UNITS DPM/100cm²

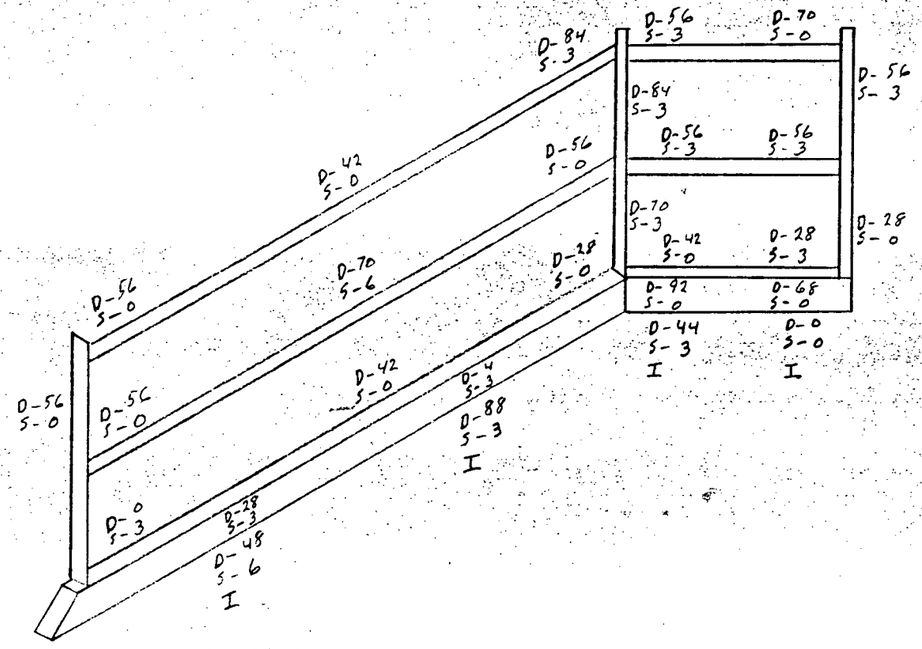
D-DIRECT
S-SMEAR

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

SOURCE #: 1832 VALUE: 342 DPM

	INSTRUMENT		
	DATE	SOURCE C/M RESPONSE	BKGD C/M
58308	6-21-89	80-96	1
50068	"	105-120	2
		ASC #1	
	6-22-89	30	.2

Room #124 EMERGENCY EXIT
HAND RAILS WEST SIDE
AFTER DECON



I = INSIDE

AREA Pu-PLANT-OUTSIDE
EMERGENCY EXIT PLATFORM
ROOM # 124

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4 43-68

SERIAL NUMBER 43-4 58308; 43-68 50068

COMPLETION DATE 6-27-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: #1 8360116

SURVEY UNITS DPM/100cm²

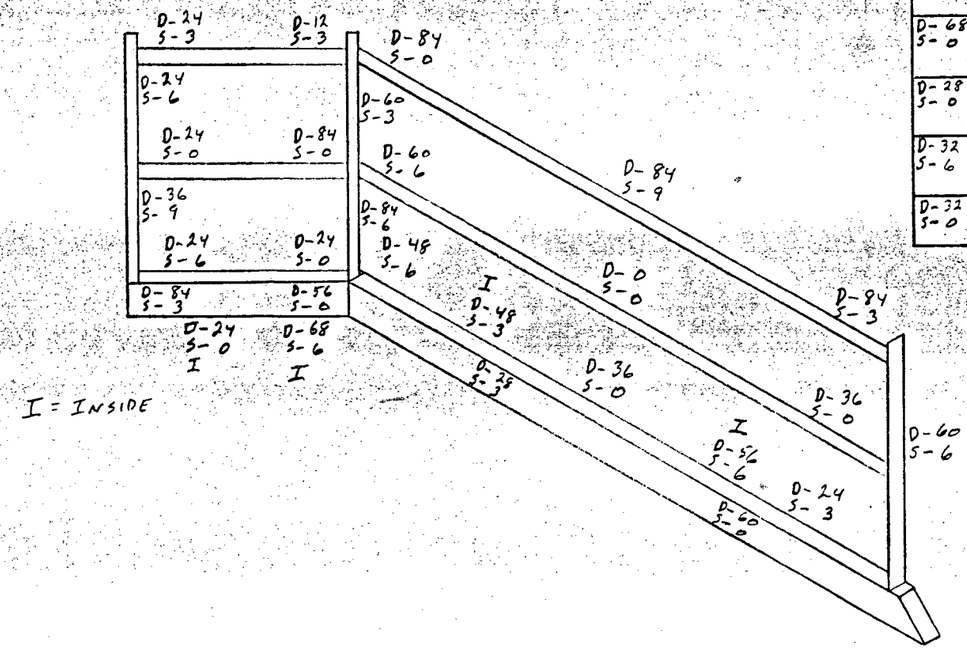
D - DIRECT
S - SMEAR

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

SOURCE #: 1832 VALUE: 342 DPM

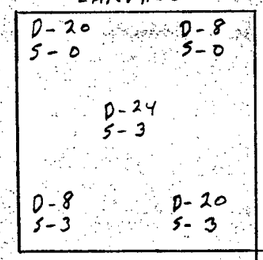
	INSTRUMENT		
	DATE	SOURCE C/M	BKGD C/M
58308	6-26-89	73-80	0
50068	"	93-104	2
"	6-7-89	93-121	3
		ASC #1	
	6-27-89	32	.3
	6-7-89	33	.1

ROOM #124 EMERGENCY EXIT
HAND RAILS EAST SIDE
AFTER DECON



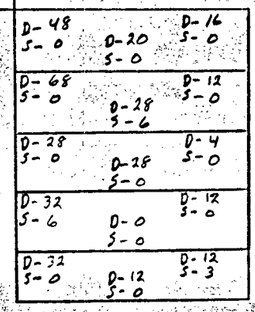
I = INSIDE

LANDING



TOP SIDE

STEPS



AREA Pu-PLANT - OUTSIDE
EMERGENCY EXIT PLATFORM
ROOM # 124

TYPE OF SURVEY ∝ DIRECT + SMEAR
TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68
SERIAL NUMBER 50068

COMPLETION DATE 6-7-89
H.P. SIGNATURE Claude M Thompson
AUTO. SAMPLE COUNTER #: #1 83600115

SURVEY UNITS DPM/100cm²

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

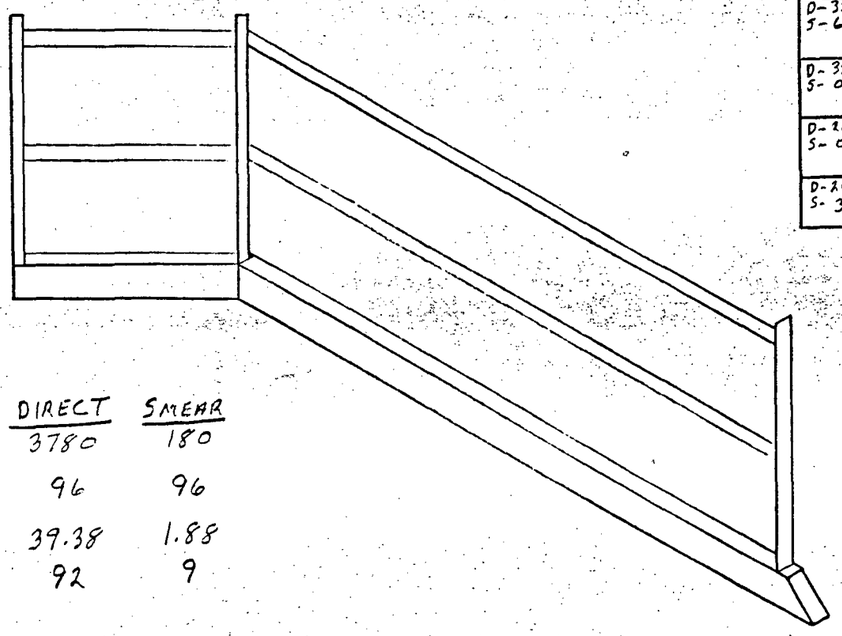
D - DIRECT
S - SMEAR

MDA = 38.80 DPM/100cm²
FIXED

SOURCE #: 1832 VALUE: 342 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
6-7-89	93-121	3
	ASC #1	
6-7-89	33	.1

ROOM # 124 EMERGENCY EXIT
HAND RAILS



LANDING

D-12 S-0		D-28 S-0
	D-20 S-0	
D-28 S-0		D-16 S-0

BOTTOM SIDE

STEPS

D-20 S-0	D-40 S-0	D-36 S-0
D-32 S-6	D-28 S-0	D-32 S-0
D-32 S-0	D-40 S-0	D-64 S-3
D-20 S-0	D-8 S-0	D-52 S-0
D-24 S-3	D-20 S-0	D-52 S-3

	DIRECT	SMEAR
TOTAL DPM	3780	180
# READINGS	96	96
AVG. DPM/100cm²	39.38	1.88
MAX. DPM/100cm²	92	9

AREA Pu-PLANT - OUTSIDE EMERGENCY EXIT PLATFORM ROOM # 127

TYPE OF SURVEY ∝ DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 50069

COMPLETION DATE 5-26-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER #: #1 83600115

SURVEY UNITS DPM/100cm²

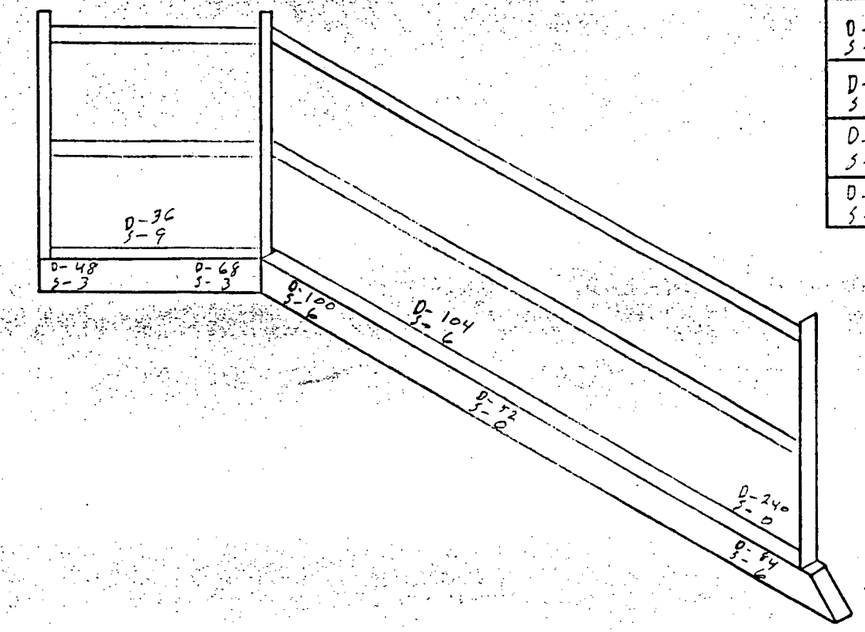
F – FLOOR
C – CEILING
N – NORTH WALL
S – SOUTH WALL
E – EAST WALL
W – WEST WALL

D - DIRECT
S - SMEAR

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
5-24-89	199-210	2
	ASC #1	
5-26-89	36	.1

ROOM # 127 EMERGENCY EXIT
HAND RAILS EAST SIDE
BEFORE DECON



LANDING

D-372 S-9	D-124 S-9
D-252 S-6	
D-324 S-9	D-240 S-9

STEPS

D-212 S-3	D-292 S-3
D-300 S-0	D-324 S-0
D-260 S-9	D-316 S-3
D-500 S-3	D-316 S-0
D-196 S-0	D-324 S-0

AREA Pu-PLANT-OUTSIDE
EMERGENCY EXIT PLATFORM
ROOM #127

TYPE OF SURVEY α DIRECT & SMEAR
TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68
SERIAL NUMBER 50069

COMPLETION DATE 5-26-89
H.P. SIGNATURE [signature]
AUTO. SAMPLE COUNTER #: #1 83600115

SURVEY UNITS DPM/100cm²

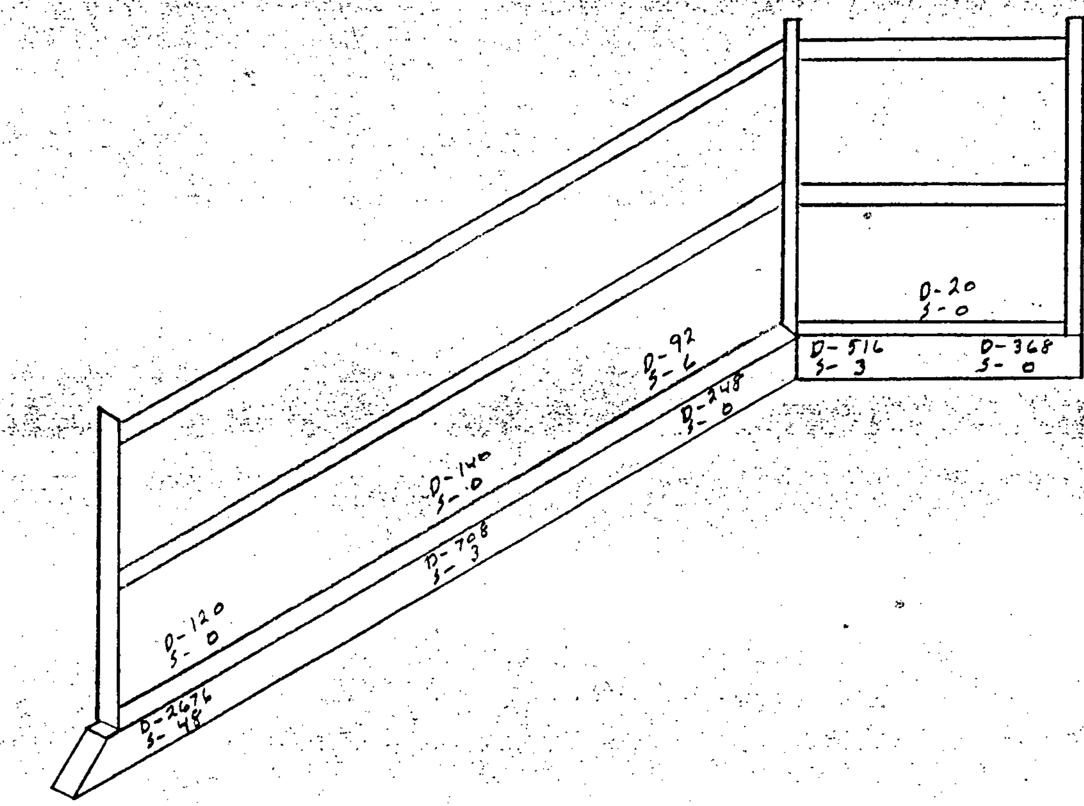
D - DIRECT
S - SMEAR

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

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE c/m	BKGD c/m
5-24-89	199-210	2
	ASC #1	
5-26-89	36	.1

Room #127 EMERGENCY EXIT
HAND RAILS WEST SIDE
BEFORE DECON



AREA Pu-PLANT-OUTSIDE
EMERGENCY EXIT PLATFORM
ROOM # 127

TYPE OF SURVEY α DIRECT & SMEAR
TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-4, 43-68
SERIAL NUMBER 58308 (43-4), 50068 (43-68)

COMPLETION DATE 6-29-89
H.P. SIGNATURE [signature]
AUTO. SAMPLE COUNTER #: #2 83600108

SURVEY UNITS DPM/100cm²

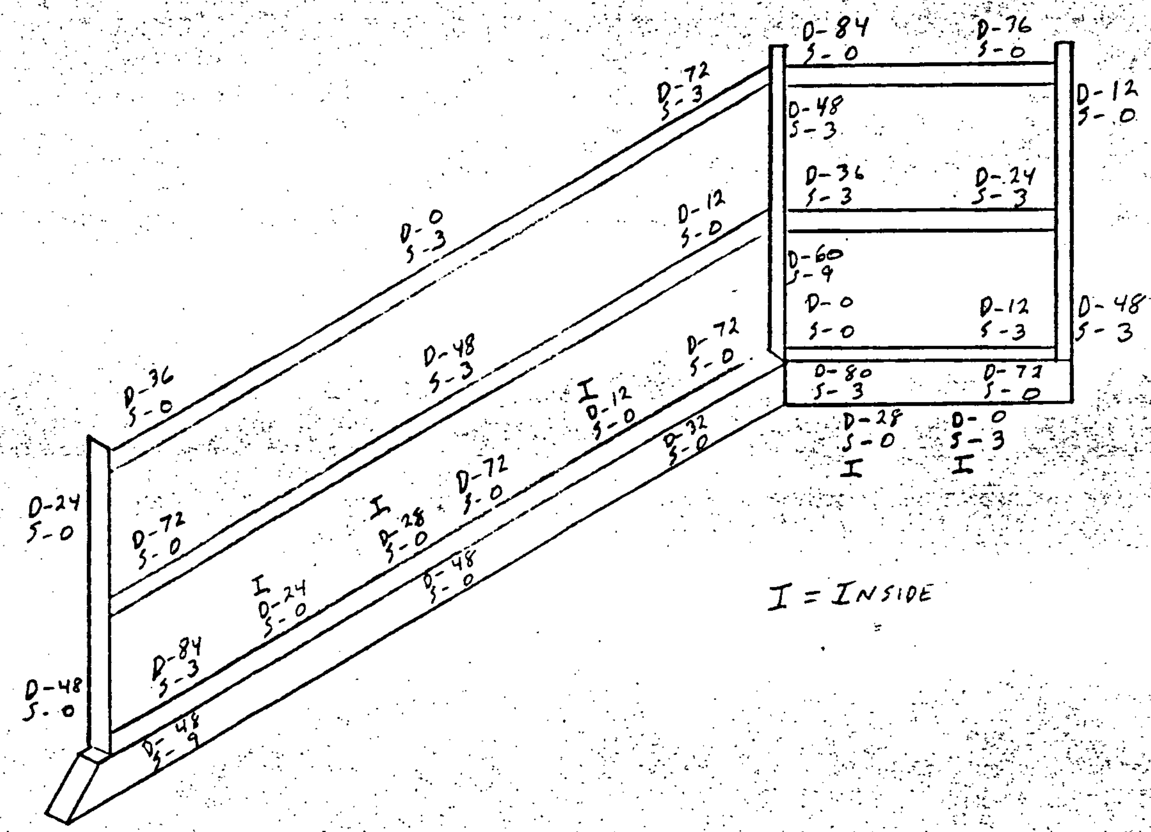
D-DIRECT
S-SMEAR

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

SOURCE #: 1832 VALUE: 342 DPM

	INSTRUMENT		
	DATE	SOURCE RESPONSE C/M	BKGD. C/M
58308	6-26-89	65-94	3
	6-27-89	74-78	1
	"	75-92	4
50068	"	109-110	1
		ASC # 2	
	6-29-89	32	1

Room # 127 EMERGENCY EXIT
HAND RAILS WEST SIDE
AFTER DECON



I = INSIDE

AREA Pu-PLANT - OUTSIDE EMERGENCY EXIT PLATFORM ROOM #127

TYPE OF SURVEY ∝ DIRECT + SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-4, 43-68

SERIAL NUMBER 58308 (43-4), 50068 (43-68)

COMPLETION DATE 6-30-89

H.P. SIGNATURE Clark M Thompson

AUTO. SAMPLE COUNTER #: #1 83600115 - #2 83600108

SURVEY UNITS DPM/100cm²

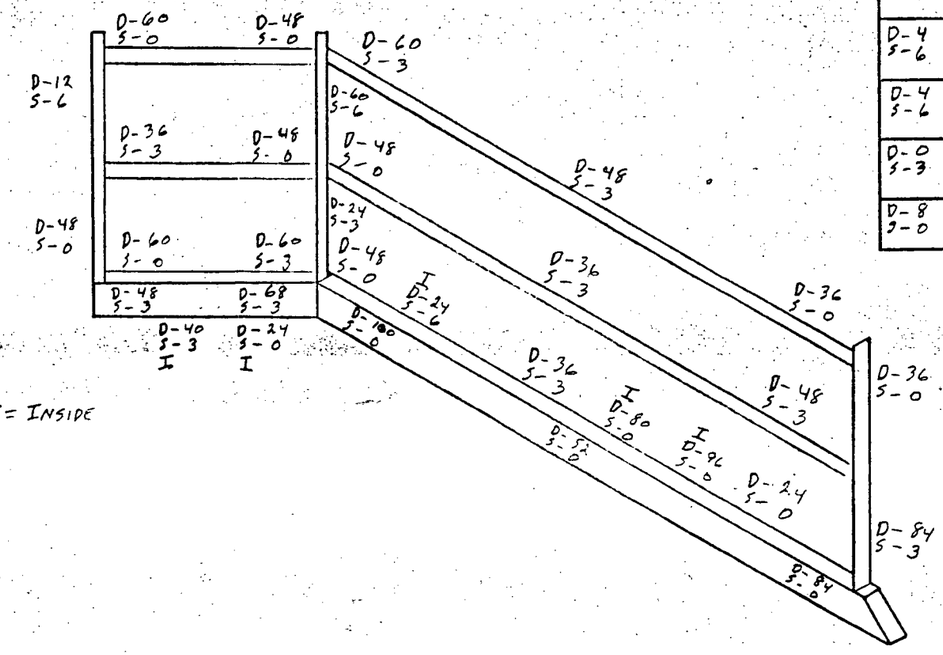
D - DIRECT
S - SMEAR

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

SOURCE #: 1832 VALUE: 342 DPM

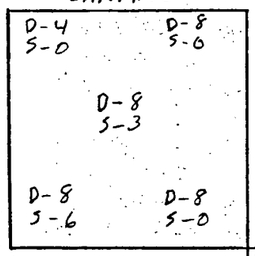
	INSTRUMENT		
	DATE	SOURCE C/M RESPONSE	BKGD C/M
50068	6-19-89	116-100	1
	"	97-96	2
	6-29-89	105-119	3
58308	"	67-70	3
		ASC #1	
	6-19-89	32	.3
		ASC #2	
	6-30-89	35	.2

ROOM #127 EMERGENCY EXIT
HAND RAILS EAST SIDE
AFTER DECON



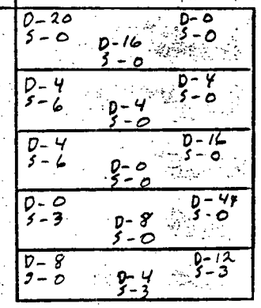
I = INSIDE

LANDING



TOP SIDE

STEPS



AREA Pu-PLANT – OUTSIDE
EMERGENCY EXIT PLATFORM
ROOM #127

TYPE OF SURVEY α DIRECT & SMEAR
TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-68
SERIAL NUMBER 50068

COMPLETION DATE 6-19-89
H.P. SIGNATURE [signature]
AUTO. SAMPLE COUNTER #: #1 83600115

SURVEY UNITS DPM/100cm²

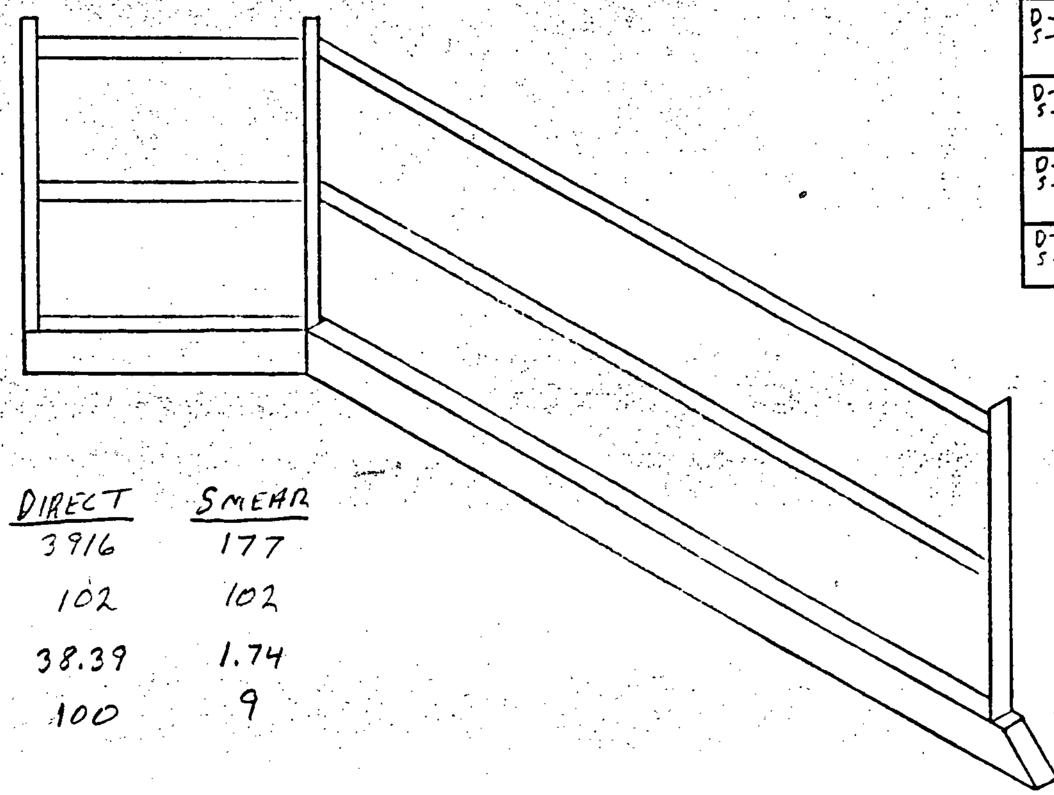
D – DIRECT
S – SMEAR

F – FLOOR
C – CEILING
N – NORTH WALL
S – SOUTH WALL MDA = 77.61
E – EAST WALL DPM/100cm²
W – WEST WALL FIXED

SOURCE #: 1832 VALUE: 342 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE c/m	BKGD. c/m
6-19-89	116 - 100	1
"	97 - 96	2
	ASC #1	
6-19-89	32	.3

ROOM #127 EMERGENCY EXIT
HAND RAILS



LANDING

D-0 S-0	D-8 S-0
D-24 S-0	
D-16 S-6	D-16 S-0

BOTTOM SIDE

STEPS

D-96 S-0	D-36 S-0	D-100 S-3
D-36 S-0	D-60 S-0	D-52 S-3
D-44 S-0	D-72 S-3	D-52 S-9
D-20 S-0	D-48 S-3	D-36 S-9
D-68 S-3	D-40 S-0	D-64 S-3

	DIRECT	SMEAR
TOTAL DPM	3916	177
# READINGS	102	102
AVG. DPM/100cm²	38.39	1.74
MAX. DPM/100cm²	100	9

PU PLANT COOLING TOWER

	DIRECT	SMEAR
TOTAL DPM	5,776	177
# READINGS	138	139
AVG: DPM/100cm²	41.68	1.27
MAX DPM/100cm²	216	9

MDA
15.68 DPM/100cm² FIXED

PLANT PU AREA Cooling Tower
SURVEYED BY T.J. Walsh/H. Pain
INST. LUDLUM 2220 # 150669 DET. 43-68
SOURCE CK 199/216 BKG. 2 AM
DATE: 5/24/89 SOURCE #: 7272 VALUE: 850DPM

ASC # 2 83600108
CTD. BY D. Ford
SOURCE CK. AVG. 31
BKG. 2
DATE: 5-31-89

PM

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
Water Pan West Face Start SW Corner			
0m	3	12	0
2m	1	4	3
4m	3	12	0
West I Beam Support			
0m	2	8	0
2m	2	8	0
4m	5	20	0
Housing Cover Power Supply to SW Pump Mtr	7	28	0
Pump Mtr Top	1	4	6
Shaft Shroud Top	3	12	9
" " West	21	84	0
NW Pump Mtr Top	14	56	0
Mount Blk West	8	32	0
Shaft Shroud Top	16	64	0
" " West	9	36	0
Water Pan North Face			
0m	2	8	6
2m	12	48	0
4m	2	8	0
Elec Junction Box Face	32	128	3
North Stem Wall Top			
0m	8	32	0
2m	9	36	6
4/6m	13 / 11	52 / 44	3 / 0
Stem Wall Grid #1 West End			
1	7	28	6
2	11	44	0
3	14	56	0
4	5	20	0
5	7	28	6
Wing Wall NW Corner 0m Running North	13	52	0
2m	54	216	0
4m	12	48	3

PLANT PU AREA Cooling Tower
SURVEYED BY Hebert/Wallin
INST. LUDLUM 2220 + #50069 DET. 43-68
SOURCE CK 199/210 BKG. 2 AM
DATE: 5/24/89 SOURCE #: VALUE: DPM
183/184 8 PM
5/25/89 25/210 2

ASC # 2 SN 83600108
CTD. BY D Ford
SOURCE CK. AVG. 31
BKG. 12
DATE: 5-31-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
Wing Wall Running NW	0m	25	100	6
	2m	23	92	0
	4m	15	60	0
Storm Drain Cover Grid Facing North	1	22	88	0
	2	13	52	3
	3	20	80	9
	4	26	104	0
	5	24	96	0
North Stem Wall Grid 2 East End	1	8	32	0
	2	3	12	0
	3	7	28	0
	4	8	32	0
	5	9	36	0
Landing Kick Board SW		20	80	3
NW		19	76	0
NNW		24	96	0
NNE		24	96	0
SE		34	136	0
Concrete Cap BLK Grid	1	11	44	3
	2	19	76	3
	3	11	44	3
	4	11	44	3
	5	12	48	0
Inside Cooler North Door Inner Bottom Readings				
North		13	52	3
Center		25	100	3
South		12	48	6
Wing Wall NE Corner Runs North	0m	6	24	0
ends	1m	18	72	3

PLANT PU AREA Cooling Tower
SURVEYED BY Hebert/Wallin
INST. LUDLUM 2220 + #50069 DET. 43-68
SOURCE CK 199/210 BKG. 2 AM
DATE: 5/24/89 SOURCE #: 7272 VALUE: 950 DPM
183/184 2 PM

ASC # 2 SN 83600108
CTD. BY D Ford
SOURCE CK. AVG. 31
BKG. 12
DATE: 5-31-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
Water Pan East Face	0m	2	8	0
	2m	1	4	0
	4m	0	0	0
East I Beam Support	0m	2	8	3
	2m	0	0	6
	4m	1	4	3
Elec Switch Box East Side		15	60	0
		(((	///	——
		)))	((((	——
		}}}	[[[	——
South Stem Wall East end		3	12	6
Water Pan South Face	0m	3	12	0
	2m	1	4	0
	4/6m	12/2	48/8	3/0
South Stem Wall Top	0m	14	56	0
	2m	1	4	3
	4/6m	13/6	52/24	0/0
South Stem Wall Grid 1	1	6	24	0
	2	9	36	0
	3	5	20	0
	4	6	24	0
	5	13	52	0
Landing Kick Board		——	——	——
	E	6	24	0
	SSE	12	48	0
	SSW	9	36	0
South Stem Wall Grid 2	1	6	24	0
	2	5	20	3
	3	14	56	3
	4	N/A	——	0
	5	6	24	0
Electric Junction Box (Water Pan South Face)		——	——	——
Top		53	212	3

PLANT Pu AREA Cooling Tower Top

SURVEYED BY [illegible]

INST. LUDLUM 2220 + # 50069 DET. 43-68

SOURCE CK 207/210 BKG. 2

DATE: 5/25/89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 83600108

CTD. BY D Ford

SOURCE CK. AVG. 31

BKG. 2

DATE: 5-31-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
South Cooling Fan Shroud	N	16	64	0
	E	38	152	0
	S	1	4	0
	W	6	24	3
North Cooling Fan Shroud	N	8	32	3
	E	16	64	3
	S	17	68	6
	W	17	68	0
SW Percolator Tray Face West	1	7	28	0
	2	10	40	0
	3	10	40	3
	4	10	40	0
	5	3	12	0
NW Percolator Tray Face West	1	4	16	0
	2	5	20	0
	3	14	56	0
	4	4	16	0
	5	6	24	3
NE Percolator Tray Face East	1	5	20	0
	2	9	36	0
	3	16	64	0
	4	14	56	3
	5	8	32	0
SE Percolator Tray Face East	1	2	8	0
	2	9	36	0
	3	18	72	0
	4	6	24	0
	5	8	32	0
South Tower Floor Grid (Structure Top)	1	13	52	0
Face North	2	6	24	0
	4	8	32	0
	5	4	16	0

PLANT Pu AREA Cooling Tower Top

SURVEYED BY [illegible]

INST. LUDLUM 2220 + # 50069 DET. 43-68

SOURCE CK 207/210 BKG. 2

DATE: 5/25/89 SOURCE #: 7272 VALUE: 850 DPM

ASC # 2 SN 83600108

CTD. BY D Ford

SOURCE CK. AVG. 31

BKG. 2

DATE: 5-31-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
North Tower Floor Grid Structure Top	1	13	52	3
Face North	2	18	72	0
	4	16	64	3
	5	4	16	3
West Percolator Shed Roof #1 Grid	3	5	20	3
Face West	4	4	16	0
	5	4	16	0
" " " " #2 Grid	3	2	8	3
	4	5	20	0
	5	4	16	0
East Percolator Shed Roof #3 Grid	3	4	16	0
Face East	4	3	12	0
	5	6	24	0
" " " " #4 Grid	3	2	8	0
	4	3	12	0
	5	7	28	0
Inside Center Trailer South entry	North	8	32	3
	Center	9	36	3
	South	14	56	0

AREA Pu-PLANT
SILVER TRAILER
FINAL RELEASE SURVEY
BEFORE DECON

TYPE OF SURVEY α DIRECT + SMEAR
TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68
SERIAL NUMBER 49395, 50069

COMPLETION DATE 10-24-89
H.P. SIGNATURE [signature]
AUTO. SAMPLE COUNTER #:

SURVEY UNITS DPM/100 cm² Nar

N / W — E / S
1.5cm = 1 Meter

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

D - DIRECT
S - SMEAR

SOURCE #: 7272 VALUE: 850 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
10-24-89	179-185	1
"	202-191	0
"	195-213	1
"	184-212	2

48395
50069

TOP - OUTSIDE

Block	Readings
1	D- S- ; D- S- ; D- S- ; D-160 S- ; D- S- 400
2	D- S- ; D- S- 240 ; D-200 S- ; D- S- ; D- S- 100
3	D- S- ; D- S- 120 ; D-120 S- ; D-200 S- ; D- S- 184
4	D-216 S- ; D- S- 176 ; D-168 S- ; D-200 S- ; D- S-
5	D-140 S- ; D- S- ; D-200 S- ; D-200 S- ; D- S- 196
6	D-208 S- ; D- S- 204 ; D-108 S- ; D-176 S- ; D- S- 212

FLOOR

Block	Readings
1	D- S- ; D- S- ; D- S- ; D-120 S-3 ; D- S-
2	D- S- ; D- S- 144 / 0 ; D- S- ; D- S- ; D- S-
3	D- S- ; D- S- ; D- S- ; D-120 S-9 ; D- S- 112 / 0
4	D-120 S-0 ; D- S- 160 / 0 ; D- S- ; D- S- ; D- S-
5	D- S- ; D- S- ; D- S- ; D- S- ; D- S-
6	D- S- ; D- S- ; D- S- ; D- S- ; D- S-

INSIDE

CEILING

Block	Readings
1–6	D- S- ; D- S- ; D- S- ; D- S- ; D- S- (each block)

EAST WALL

Block	Readings
1–6	D- S- ; D- S- ; D- S- ; D- S- ; D- S- (each block)

WEST WALL

Block	Readings
1–6	D- S- ; D- S- ; D- S- ; D- S- ; D- S- (each block)

INSIDE NORTH WALL

D- S- ; D- S- ; D- S- ; D- S- ; D- S-

SOUTH WALL

D- S- ; D- S- ; D- S- ; D- S- ; D- S-

OUTSIDE

NORTH WALL

D- S- ; D- S- ; D- S- ; D- S- ; D- S-

SOUTH WALL

D- S- ; D- S- ; D- S- ; D- S- ; D- S-

AREA Pu-PLANT
SILVER TRAILER
FINAL RELEASE SURVEY
AFTER - DECON

TYPE OF SURVEY δ DIRECT & SMEAR
TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68
SERIAL NUMBER 48395, 50069, 37800

COMPLETION DATE 8-25-89
H.P. SIGNATURE Claude M Thompson
AUTO. SAMPLE COUNTER #: #1 83600113 #2 83600108

SURVEY UNITS DPM/100 cm² NGR

N
W E
S
1.5cm = 1 Meter

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

D – DIRECT
S – SMEAR

MDA = 15.68 DPM/100cm²

Source #: 112 7272 VALUE: 1075 850 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
10-24-88	179-185	1
"	202-191	0
"	195-213	1
"	184-212	1
10-25-88	187-191	2
"	202-195	1
"	180-196	1
"	200-191	1
10-26-88	196-197	1
"	184-211	1
8-25-89	241-249	2
	ASC #1	
10-25-88	30	.3
10-27-88	29	.1
10-28-88	29	.2
	ASC #2	
11-11-88	29	.3
8-25-89	29	.2

TOP - OUTSIDE

D-76 S-3		D-48 S-0	
	D-88 S-0		
D-192 S-3		D-320 S-6	
	D-68 S-6		D-384 S-0
	D-152 S-3		
48395 D-88 S-0		D-88 S-0	
50069 D-40 S-6		D-88 S-9	
	D-144 S-0		
48395 D-144 S-0		D-104 S-3	
50069 D-236 S-3		D-192 S-0	
48395	D-120 S-0		
50069 37800 D-188 S-0		D-136 S-0	
	D-132 S-3		D-88 S-0
	D-168 S-3		
D-112 S-3		D-112 S-0	
	D-96 S-3		D-116 S-0
	D-168 S-0		
D-120 S-6		D-156 S-3	

FLOOR

D-12 S-3		D-32 S-3	
	D-48 S-3		
D-36 S-3		D-44 S-0	
	D-24 S-3		D-44 S-0
	D-28 S-0		
D-36 S-3		D-28 S-6	
D-32 S-6		D-48 S-3	
	D-28 S-9		
D-48 S-0		D-56 S-3	
D-36 S-0		D-120 S-3	
	D-28 S-0		
D-16 S-0		D-32 S-6	
	D-32 S-6		D-40 S-0
	D-28 S-9		
D-12 S-6		D-28 S-6	
D-24 S-0		D-36 S-6	
	D-8 S-0		
D-28 S-12		D-16 S-6	

CEILING

D-4 S-0		D-0 S-0	
	D-8 S-0		
D-4 S-0		D-4 S-3	
	D-0 S-3		D-4 S-0
	D-0 S-0		
D-4 S-0		D-4 S-3	
D-0 S-3		D-4 S-3	
	D-0 S-0		
D-0 S-0		D-0 S-3	
D-0 S-0		D-0 S-0	
	D-0 S-9		
D-0 S-0		D-0 S-3	
	D-0 S-0		D-0 S-3
	D-4 S-6		
D-0 S-0		D-0 S-3	
D-4 S-0		D-0 S-0	
	D-0 S-0		
D-4 S-3		D-8 S-9	

INSIDE EAST WALL

D-4 S-0		D-0 S-6	
	D-8 S-3		
D-12 S-0		D-8 S-0	
	D-8 S-0		D-8 S-0
	D-8 S-0		
D-20 S-0		D-20 S-0	
D-4 S-9		D-20 S-0	
	D-56 S-3		
D-36 S-0		D-0 S-3	
D-48 S-3		D-12 S-6	
	D-8 S-0		
D-8 S-6		D-0 S-3	
	D-0 S-0		D-0 S-3
	D-16 S-0		
D-20 S-0		D-24 S-3	
D-24 S-6		D-8 S-0	
	D-12 S-0		
D-8 S-3		D-20 S-0	

INSIDE WEST WALL

D-4 S-3		D-16 S-3	
	D-12 S-6		
D-4 S-0		D-24 S-0	
	D-12 S-0		D-20 S-3
	D-8 S-3		
D-8 S-3		D-8 S-0	
D-4 S-0		D-4 S-0	
	D-8 S-0		
D-12 S-3		D-28 S-6	
D-8 S-0		D-12 S-3	
	D-24 S-0		
D-12 S-3		D-16 S-6	
	D-24 S-0		D-40 S-3
	D-32 S-6		
D-4 S-3		D-24 S-3	
D-52 S-0		D-32 S-3	
	D-4 S-0		
D-24 S-6		D-40 S-3	

INSIDE NORTH WALL

D-4 S-0		D-16 S-9
	D-4 S-0	
	D-0 S-3	D-4 S-0
	D-8 S-3	

SOUTH WALL

D-4 S-3		D-4 S-0
	D-12 S-0	
	D-4 S-6	D-4 S-6

OUTSIDE NORTH WALL

D-40 S-0		D-32 S-0
	D-32 S-9	
	D-28 S-0	D-28 S-0

SOUTH WALL

D-32 S-0		D-28 S-0
	D-20 S-3	
	D-16 S-0	D-12 S-6

	DIRECT	SMEAR
TOTAL DPM	7052	480
# READINGS	210	210
AVG. DPM/100cm²	33.58	2.29
MAX DPM/100cm²	384	12

AREA Pu-PLANT
SILVER TRAILER
FINAL RELEASE SURVEY
After Decon

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-68

SERIAL NUMBER 48395, 50069, 37800

COMPLETION DATE 8-25-89

H.P. SIGNATURE W. A. Rogers

AUTO. SAMPLE COUNTER #:

SURVEY UNITS DPM/100 cm² WALL

N
W E
S
1.5cm = 1 Meter

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

D- DIRECT
S- SMEAR

SOURCE#: VALUE: DPM

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
instrument data	on	
	page 1	

OUTSIDE

EAST WALL

D-12 S-3			D-16 S-3
	D-16 S-0	D-16 S-3	
D-16 S-9			
D-12 S-0			D-20 S-6
	D-20 S-6		
D-8 S-3		D-8 S-0	
D-4 S-0			D-12 S-0
	D-0 S-0		
D-8 S-3		D-44 S-0	
D-8 S-0			D-32 S-0
	D-8 S-6		
D-12 S-0		D-8 S-3	
D-24 S-3			D-16 S-0
	D-20 S-0		
D-20 S-3		D-24 S-0	
D-24 S-3			D-8 S-3
	D-8 S-3		
D-16 S-0		D-12 S-6	

WEST WALL

D-28 S-3		D-48 S-0
	D-36 S-0	
D-12 S-0		D-24 S-6
D-36 S-3		D-4 S-0
	D-4 S-6	
D-20 S-0		D-28 S-6
D- S-		D- S-
	D- S-	
D- S-		D- S-
D- S-		D- S-
	D- S-	
D- S-		D- S-
D- S-		D- S-
	D- S-	
D- S-		D- S-
D- S-		D- S-
	D- S-	
D- S-		D- S-

NEXT TO RED TRAILER

Totals ON page 1

N
W E
S

1.5cm = 1 Meter

AREA Pu-PLANT
RED TRAILER
FINAL RELEASE SURVEY
BEFORE DECON

TYPE OF SURVEY α DIRECT & SMEAR

TYPE OF INSTRUMENT LaBlum 2220 / DET. 43-68

SERIAL NUMBER 48395, 50069,

COMPLETION DATE 10-13-88

H.P. SIGNATURE Claude M Harper

SURVEY UNITS DPM/100 cm² WAR

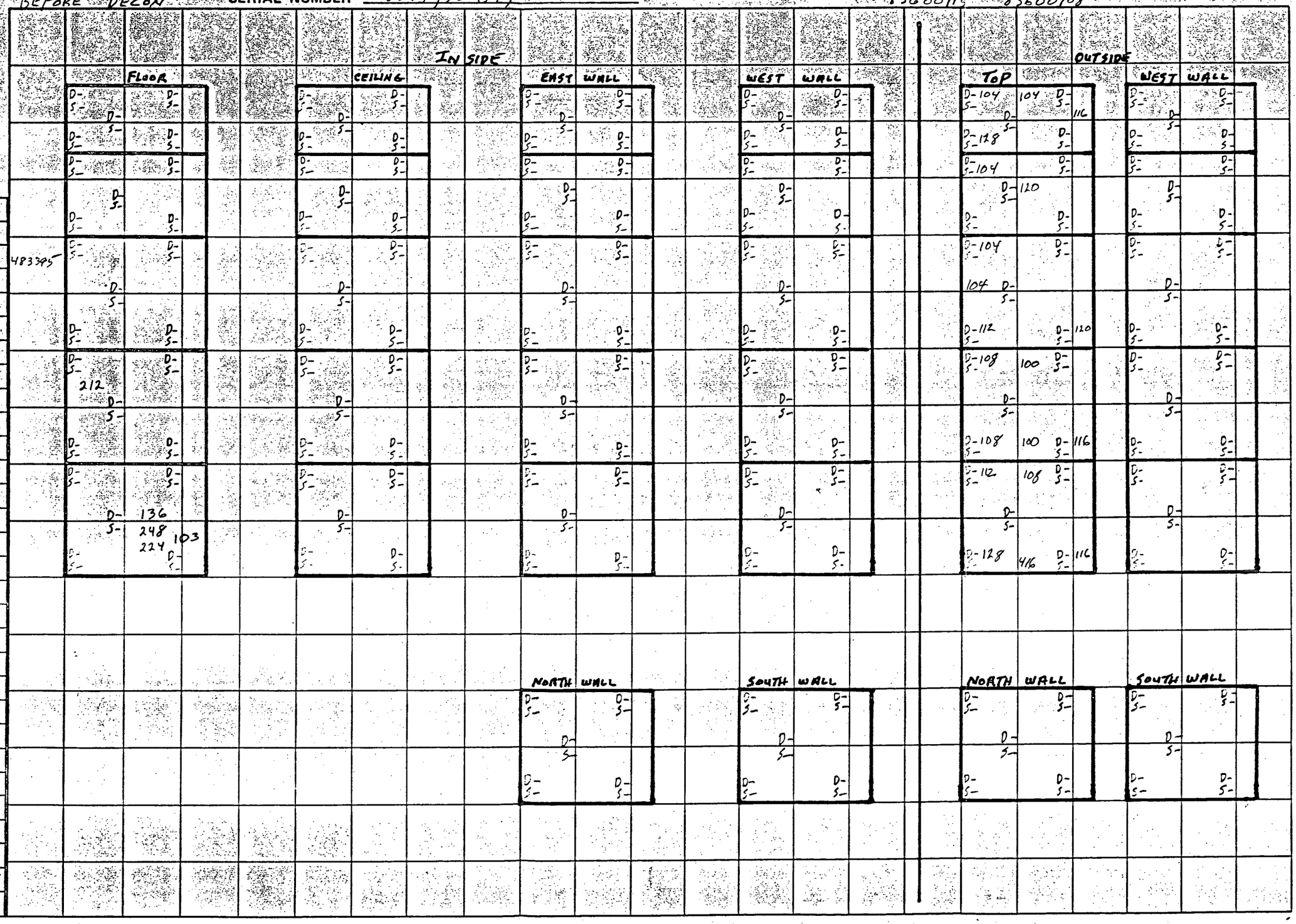
AUTO. SAMPLE COUNTER #: #1 83600115 #2 83600108

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

D - DIRECT
S - SMEAR

SOURCE #: VALUE: DPM

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
10-12-88	207 - 198	0
10-13-88	183 - 190	0
"	209 - 171	0



AREA Pu-PLANT
RED TRAILER
FINAL RELEASE SURVEY
AFTER DECON

TYPE OF SURVEY d DIRECT & SMEAR

TYPE OF INSTRUMENT LaBlum 2220 / DET. 43-68

SERIAL NUMBER 48395, 50069, 37800

COMPLETION DATE 8-25-89

H.P. SIGNATURE Claude M Thorpe

SURVEY UNITS DPM/100 cm² WGR

AUTO. SAMPLE COUNTER #: #1 83600115 #2 83600108

N
W E
S
1.5cm = 1 Meter

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

D – DIRECT
S – SMEAR
MDA = 15.68 DPM/100cm²

SOURCE #: 7272 112 VALUE: 850 1075 DPM

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
10-12-89	207-198	0
10-13-89	183-190	0
"	209-171	0
"	198-198	1
"	210-191	0
10-14-88	201-208	1
"	183-205	0
8-25-89	241-249	2
	ASC #2	
10-14-88	27	0
	ASC #1	
10-14-88	36	.3
10-17-88	31	.2
8-25-89	32	.1

IN SIDE

FLOOR

D-16 S-0		D- S-	28 0
D- S-	D-40 S-0	D- S-	
D- S-		D- S-	
D- S-	D-36 S-0	D- S-	52 3
48395 D-12 S-3	D-44 S-9	D- S-	40 9
50069 D-24 S-6		D- S-	32 3
D-24 S-0	D-52 S-0	D- S-	32 0
48395			
37800 D-28 S-0		D- S-	60 0
D-28 S-6	D-56 S-6	D- S-	20 0
D-32 S-3		D- S-	12 3

CEILING

D-8 S-0	D-12 S-0	D- S-	0 0
D-12 S-3		D- S-	8 9
D-0 S-3		D- S-	0 0
D-4 S-0	D-4 S-0	D- S-	16 0
D-8 S-0	D-12 S-0	D- S-	0 0
D-4 S-0		D- S-	12 0
D-12 S-0	D-8 S-3	D- S-	4 6
D-8 S-0		D- S-	8 3
D-4 S-0		D- S-	0 0
D-16 S-0			
D-20 S-0		D- S-	12 0

EAST WALL

D-8 S-0	D-8 S-0	D- S-	20 6
D-0 S-3		D- S-	8 0
D-12 S-0		D- S-	4 0
D-16 S-0	D-16 S-3	D- S-	24 3
D-4 S-0	D-8 S-0	D- S-	12 0
D-8 S-3		D- S-	12 0
D-8 S-3	D-8 S-0	D- S-	8 3
D-20 S-6		D- S-	4 0
D-0 S-9	D-8 S-9	D- S-	12 9
D-8 S-0		D- S-	0 0

WEST WALL

D-8 S-0	D-8 S-0	D- S-	20 3
D-0 S-3		D- S-	0 3
D-0 S-3		D- S-	0 0
D-8 S-3	D-0 S-3	D- S-	8 0
D-8 S-0	D-4 S-0	D- S-	0 0
D-0 S-3		D- S-	8 3
D-16 S-0	D-24 S-3	D- S-	16 0
D-16 S-0	D-12 S-0		
D-8 S-0	D-12 S-0	D- S-	16 3
D-24 S-3		D- S-	20 0

OUTSIDE

TOP

D-100 S-0	D-68 S-3	D- S-	108 0
D-112 S-0		D- S-	104 0
D-56 S-0		D- S-	80 0
D-60 S-3	D-48 S-3	D- S-	76 0
D-92 S-3	D-52 S-6	D- S-	80 0
D-48 S-6		D- S-	56 3
D-112 S-0	D-72 S-0	D- S-	56 0
D-48 S-0		D- S-	76 0
D-56 S-3	D-108 S-3	D- S-	68 3
D-40 S-3		D- S-	88 0

WEST WALL

D-16 S-0	D-32 S-0	D- S-	32 0
D-112 S-0		D- S-	104 0
D-56 S-0		D- S-	80 0
D-20 S-6		D- S-	24 0
D-12 S-3	D-44 S-0	D- S-	28 0
D-40 S-0		D- S-	28 0
D-48 S-3	D-56 S-3	D- S-	40 0
D-48 S-0		D- S-	44 9
D-24 S-0	D-44 S-0	D- S-	52 0
D-28 S-9		D- S-	44 3

	DIRECT	SMEAR
TOTAL DPM	4456	279
# READINGS	162	162
AVG DPM/100 cm²	27.51	1.72
MAX DPM/100 cm²	124	9

NORTH WALL

D-8 S-0	D-20 S-0	D- S-	0 0
D-12 S-3		D- S-	0 0
D-4 S-0	D-4 S-3	D- S-	0 0

SOUTH WALL

D-36 S-3	D-16 S-3	D- S-	0 0
D-36 S-0	D-0 S-3	D- S-	0 0
D-32 S-0	D-28 S-0	D- S-	0 0

NORTH WALL

D-32 S-3	D-36 S-6	D- S-	0 0
D-124 S-9		D- S-	0 0
D-24 S-0	D-24 S-0	D- S-	0 0

SOUTH WALL

D-32 S-0	D-24 S-0	D- S-	0 0
D-8 S-0	D-28 S-0	D- S-	0 0
D-16 S-3	D-20 S-0	D- S-	0 0

PLANT PU AREA PIPE YARD POST + GATE

SURVEYED BY HANDLEY by Pipe Rack

INST. IODINE 2220 + #50064 DET. 43-4

SOURCE CK#M-254-272 BKG. AM-1

DATE: 7-6-89 SOURCE #: 6816 VALUE: 1078 DPM

ASC 02 SN 8360108

CTD. BY J. Black

SOURCE CK. AVG. 31

BKG. 3

DATE: 7-7-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
4" GATE POST Bottom	N	44	528	6
	S	45	540	3
TOP	N	31	372	6
NORTH OF TRAILERS	S	101	1212	6
PIPE YARD GATE	A	203	2436	3
	B	157	1884	3
	C	75	900	6
DIRECT SMEAR	D	87	1044	3
TOTAL DPM 32802 144	E	179	2148	6
#READINGS 62 62	F	75	900	0
AVG. DPM/100cm² 529.06 2.32	G	59	708	6
MAX. DPM/100 cm² 2436 9	H	131	1572	0
MDA = 23.52 DPM/100 cm²	I	128	1536	0
	J	177	2124	3
Pipe rack North of Trailers				
#1 post North post	T 1	94	564	0
	M 2	47	282	3
	B 3	48	288	3
	T 4	59	354	3
	M 5	18	108	9
	B 6	26	156	6
	rack 7	15	90	0
	rack-8	10	60	3
#2 post	T 1	107	642	3
	M 2	78	468	3
	B 3	24	144	0
	T 4	192	1152	3
	M 5	93	558	0
	B 6	158	948	0
	rack 7	5	30	0
	rack 8	14	84	3

PLANT Pu AREA Outside Pipe Rack
SURVEYED BY S. Handley
INST. LUDLUM 2220 # 150064 DET. 43-4
SOURCE CK 295-293 BKG. 0
DATE: 8-25-89 SOURCE #: 6816 VALUE: 1078 DPM

ASC # S/N 83600115
CTD. BY K. Morgan
SOURCE CK. AVG. 31
BKG. .2
DATE: 8-30-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Pipe rack North of trailers				
#3 post	T 1	63	378	6
	M 2	378	2268	0
	B 3	27	162	3
	T 4	87	522	3
	M 5	139	834	0
	B 6	12	72	6
	rack 7	10	60	6
	rack 8	9	54	0
#4 post	T 1	32	192	3
	M 2	70	420	0
	B 3	40	240	0
	T 4	85	510	0
	M 5	13	78	0
	B 6	15	90	0
	rack 7	9	54	0
	rack 8	6	36	0
#5 post	T 1	81	486	0
	M 2	119	714	0
	B 3	30	180	0
	T 4	25	150	3
	M 5	17	102	0
	B 6	21	126	3
	rack 7	7	42	0
	rack 8	4	24	0

PLANT Pu AREA Outside Pipe Rack
SURVEYED BY J. Handley
INST. LUDLUM 2220 # 150064 DET. 43-4
SOURCE CK 295-293 BKG. 0
DATE: 8-25-89 SOURCE #: 6816 VALUE: 1078 DPM

ASC # S/N 83600115
CTD. BY K. Morgan
SOURCE CK. AVG. 31
BKG. .2
DATE: 8-30-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Pipe rack North of trailers				
#6 post	T 1	39	234	0
	M 2	18	108	3
	B 3	32	192	0
	T 4	23	138	6
	M 5	30	180	6
	B 6	30	180	3
	rack 7	8	48	0
	rack 8	16	96	3

2" Pipe East Hookest at Northend of

PLANT Pu AREA Dock Ramp power to Hoist motor

SURVEYED BY [illegible] INST. [illegible] 52834 DET. 43-4

SOURCE CK 28/213 BKG. .3

DATE: 5/16/89 PM Source = 6498 value 890 dpm

Completed

ASC # 1 83600115

CTD. BY D Ford

SOURCE CK. AVG. 37

BKG. .2

DATE: 5-16-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION	DIRECT CPM	DIRECT DPM	SMEAR
2" Pipe Northend of Dock Ramp			
West TOP	35	420	3
Bottom	22	264	3
Mid Top	50	600	0
Bottom	32	384	0
East Top	23	276	6
Bottom	12	144	6
End	End		

	DIRECT	SMEAR
TOTAL DPM	3779	105
# READINGS	64	64
AVG. DPM/100 cm²	59.05	1.64
MAX. DPM/100 cm²	600	9

MDA = 57.61 DPM/100 cm²

PLANT Lee AREA Grande Hoist

SURVEYED BY McGinn

INST. Ludlum 2220 # 52834 DET. 43-4

SOURCE CK 60/87 BKG. .2

DATE: 8-24-89 Source = 1832 value 342 dpm

ASC # 1-83600115

CTD. BY Kmorgan

SOURCE CK. AVG. 31

BKG. .2

DATE: 8-30-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Sling adapter for Hoist	1	8	56	3
	2	10	70	0
Cradle adapter	1	9	63	0
	2	10	70	0
	3	12	84	3
	4	0	0	0

PLANT Pu AREA Dock Hoist
SURVEYED BY QH + 2D
INST. LUDLUM 2220 s/ 148395 DET. 43-68
SOURCE CK 265-226 BKG. 2
DATE: 8-11-89 SOURCE #. VALUE: DPM

ASC # 1 83600115
CTD. BY A Reid
SOURCE CK. AVG. 27
BKG. 1
DATE: 8-14-89

READINGS IN DPM/100 cm²

SMEAR # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
Hoist Base			x4	
North	1	1	4	0
	2	0	0	3
East	1	0	0	0
	2	3	12	0
South	1	5	0	0
	2	0	0	3
west	1	3	12	0
	2	2	8	0
Hoist Base Plate - East	1	21	84	0
	2	20	80	3
south	1	33	132	3
	2	9	36	3
west	1	15	60	3
	2	13	52	0
Hoist Arm - North Side	1	0	0	6
	2	2	8	0
	3	2	8	6
	4	0	0	0
	5	2	8	0
	6	1	4	0
Hoist arm: South side	1	3	12	0
	2	2	8	0
	3	2	8	0
	4	1	4	6
	5	4	16	3
	6	0	0	3

Completed 8-11-89

PLANT Pu AREA Dock Hoist
SURVEYED BY QH + 2D
INST. LUDLUM 2220 s/ 148395 DET. 43-68 x4
SOURCE CK 265-226 BKG. 2
DATE: 8-11-89 SOURCE #. 6811 VALUE: 10780 DPM

ASC # 1 83600115
CTD. BY A Reid
SOURCE CK. AVG. 27
BKG. 1
DATE: 8-14-89

READINGS IN DPM/100 cm²

SMEAR # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
Large Hoist on Loading Dock -			x4	
Hoist Bucket Control Table - 1		0	0	0
Hoist Cage 2 -		16	64	3
outside Right side 3		5	20	0
Right side 4		1	4	3
Back 5		6	24	0
Back 6		0	0	0
Left side 7		13	52	3
LH side 8		4	16	0
Bottom - 9		7	28	0
Bottom - 10		2	8	0
Inside Hoist Basket (front inside) 11 -		39	156	0
Hoist Mount 12 -		8	32	3
Inside Right 13 -		12	48	0
" 14 -		1	4	3
Inside Back 15 -		9	36	0
" " 16 -		0	0	0
Left 17 -		4	16	3
Left 18 -		10	40	0
Bottom 19 -		20	80	9
Bottom 20 -		23	92	3
Basket mount outside 21		5	20	3
Inside Left 22		1	4	3
Inside Center 23		4	16	0
outside Right 24		2	8	3
outside Right 25		1	4	0
Inside Right 26		5	20	0

Completed 8-11-89

PLANT Pu AREA Yard

SURVEYED BY MSaus

INST. Ludlum 2220 S# 50069 E# 52834 DET. 43-69 43-54

SOURCE CK ____ BKG. ____

DATE: 9-18-89 SOURCE # 1832 VALUE: 3-1/2 DPM

50069 Am-241 2-19-98/99

52834 Sr-90 2-19-98/99

ASC # 83600108

CTD. BY K. Morgan

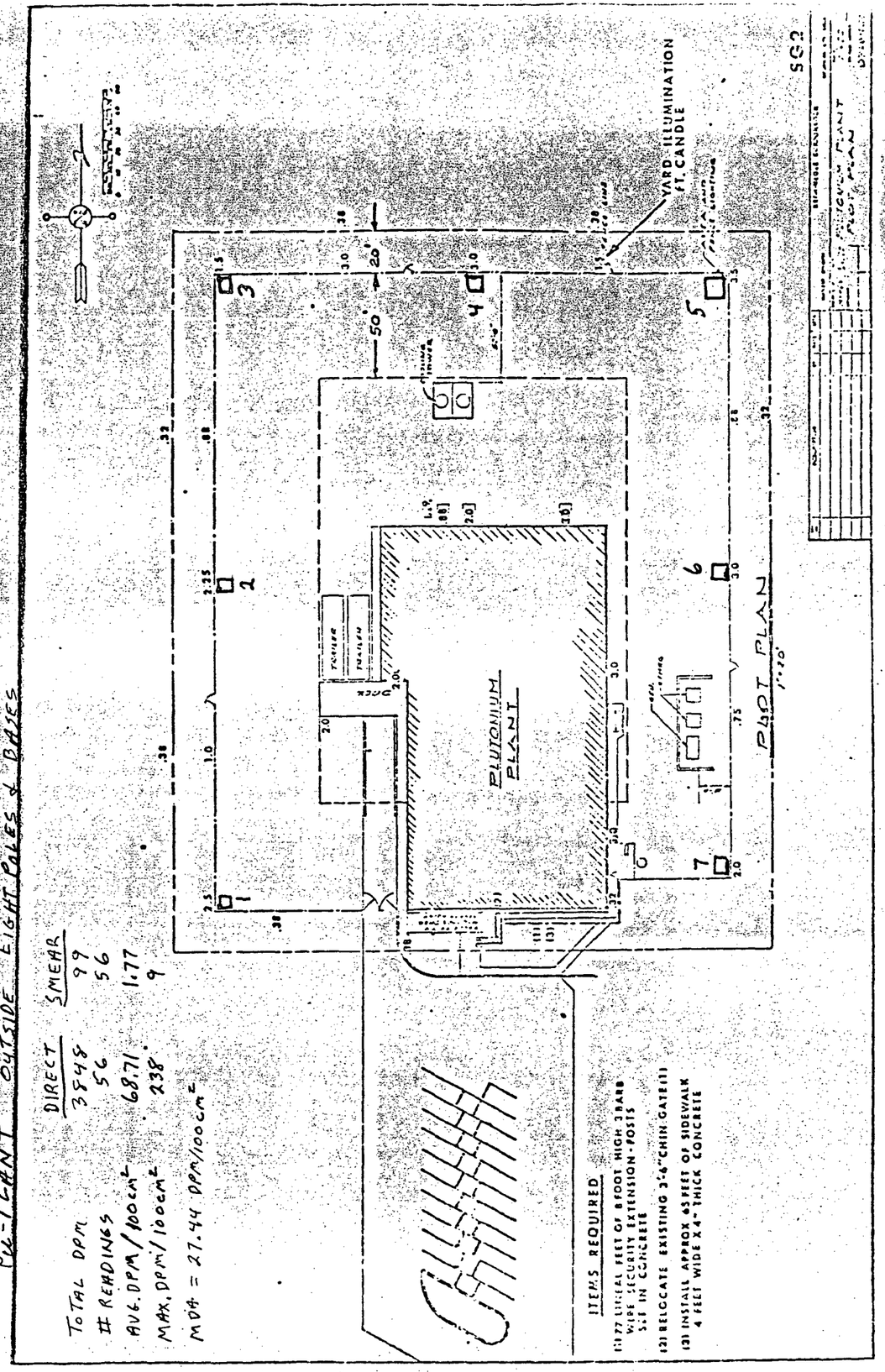
SOURCE CK. AVG. 31

BKG. 0

DATE: 8-21-89

	SAMPLE # OR DESCRIPTION		READINGS IN DPM/100 cm² DIRECT CPM	DPM	SMEAR
1	Lite pole Base S/W Radius #1	N	13	52	0
		E	19	76	0
		S	27	108	6
		W	27	108	3
	Lite pole 2 mi. to Rich #1	S	5	35	0
		E	2	14	3
		W	0	0	0
		N	7	49	0
2	West base of Platau Lite radial Rad. #2	N	11	44	0
		E	24	96	0
		S	29	116	0
		W	10	40	3
	Lite Pole 2 mi. to Rich #2	N	7	28	3
		E	6	42	0
		S	10	70	3
		W	2	14	0
3	Lite pole Base N/W Radius #3	N	13	52	0
		E	38	152	3
		S	29	116	0
		W	23	92	0
	Lite pole North corner Radius 2m Rich #3	N	6	42	6
		E	4	28	3
		S	5	35	3
		W	4	28	3

	Direct	Smear
Total DPM	3848	99
# of Readings	56	56
Avg. DPM/100 cm²	68.71	1.77
Max DPM/100 cm²	238	9



PLANT Pu AREA Yard

SURVEYED BY McLain

INST. Ludlum 2220 #150069 / 52834 DET. 4/3-68 / 4/3-4

SOURCE CK _____ BKG. _____

DATE: 8-21-36 SOURCE #: 1832 VALUE: 342 DPM

50069 Am-2-94/98

52834 Am-1-112/102

ASC # 83600115

CTD. BY K. Morgan

SOURCE CK. AVG. 27

BKG. .2

DATE: 8-22-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Lite pole South east	N	7	28	0
Base #7	E	17	68	6
	S	36	144	0
	W	11	44	0
Lite Pole #7	N	20	140	0
	E	9	63	0
	S	15	105	0
	W	16	112	3

PLANT Pu AREA Yard

SURVEYED BY McLain

INST. Ludlum 2220 #150069 / 52834 DET. 4/3-68 / 4/3-4

SOURCE CK _____ BKG. _____

DATE: 8-21-36 SOURCE #: 1832 VALUE: 342 DPM

50069 Am-2-94/98

52834 Am-1-112/102

ASC # 83600115

CTD. BY K. Morgan

SOURCE CK. AVG. 27

BKG. .2

DATE: 8-22-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
Curbing North fence	N	18	72	3
Lite pole Base #4	E	30	120	0
	S	21	84	3
	W	6	24	9
Lite pole #4	N	9	63	0
	E	20	140	0
	S	34	238	6
	W	5	35	3
North side Lite	N	31	124	0
pole Base #5	E	7	28	3
	S	13	52	0
	W	8	32	9
Lite pole #5	N	7	49	0
	E	10	70	0
	S	12	84	0
	W	4	28	3
Outside Lite pole #6	N	10	40	0
Base east Lane	E	20	80	0
	S	8	32	0
	W	8	32	6
Lite pole North	N	9	63	3
East Lane #6	E	11	77	0
	S	11	77	3
	W	9	63	0

PU YARD FENCE SOUTH SIDE
INCLUDING GUARDSHACK AREA

	DIRECTS	SMEARS
TOTAL DPM	64,582	387
# READINGS	180	180
DPM/100cm² AVG	358.79	2.15
MAX DPM/100cm² AVG	1,848	9

MDA
38.81 DPM/100cm² FIXED

PLANT Pu AREA YARD FENCE GUARD SHACK AREA
SURVEYED BY J. Handley
INST. LUDLUM 2220 S/N 50064 DET. 43-4
SOURCE CK 286-264 BKG. 1
DATE: 5-9-89 pm SOURCE #: 6816 VALUE: 1078 DPM

ASC # 1 SN 83600115
CTD. BY Dennis Ford
SOURCE CK. AVG. 30-33
BKG. 2-1
DATE: 5-11-89 5-12-89

READINGS IN DPM/100 cm²

SECT #1

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
WEST SIDE				
PU YARD FENCE GUARD SHACK AREA				
EAST 3" POST	A-1	18	252	9
	A-2	27	378	0
TOP RAIL EAST & WEST	A-3	25	350	0
MIDDLE RAIL	A-4	24	336	6
4" POST NORTH SIDE	A-5	24	336	3
	A-6	14	196	3
4" POST WEST SIDE	B-1	27	378	3
	B-2	21	294	3
TOP RAIL NORTH & SOUTH 1½" POST	B-3	23	322	3
MIDDLE RAIL NORTH & SOUTH 1½ POST	B-4	20	280	3
TOP RAIL NORTH 1½" POST	C-1	42	588	6
TOP RAIL SOUTH 1½" POST	C-2	102	1428	0
	C-3	25	350	3
	C-4	24	336	0
GATE POST 1½" NORTH SIDE	D-1	0	0	3
	D-2	0	0	0
CROSS BAR TOP	D-3	13	182	0
CROSS BAR MIDDLE	D-4	12	168	0
CROSS BAR BOTTOM	D-5	26	364	0
GATE POST 1½" SOUTH SIDE	D-6	6	84	3
	D-7	6	84	3
NORTH POST 3"	E-1	19	266	3
	E-2	12	168	0
TOP RAIL 1½"	E-3	33	462	0
MIDDLE RAIL 1½"	E-4	36	504	0

PLANT Pu AREA YARD FENCE GUARD SHACK AREA
SURVEYED BY J. Handley
INST. LUDLUM 2220 S/N 50064 DET. 43-4
SOURCE CK 286-264 BKG. 1
DATE: 5-9-89 pm SOURCE #: 6816 VALUE: 1078 DPM

ASC # 1 SN 83600115
CTD. BY Dennis Ford
SOURCE CK. AVG. 30-33
BKG. 2-1
DATE: 5-11-89 - 5-12-89

READINGS IN DPM/100 cm²

SECT #1

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
WEST SIDE				
PU YARD FENCE GUARD SHACK AREA				
SOUTH POST (4" POST) TOP	E-5	18	252	0
BOTTOM	E-6	21	294	3
SOUTH IN SIDE YARD				
EAST SIDE PU FENCE GUARD SHACK AREA				
4" POST SOUTH TOP	F-1	19	266	0
BOTTOM	F-2	7	98	0
TOP RAIL 1½" POST SOUTH	F-3	20	280	0
MIDDLE RAIL 1½ POST SOUTH	F-4	15	210	3
POST 1½" SOUTH TOP	F-5	8	112	0
BOTTOM	F-6	18	252	0
TOP RAIL 1½" POST SOUTH	G-1	20	280	0
POST 1½" SOUTH TOP	G-2	10	140	3
BOTTOM	G-3	20	280	0
TOP RAIL 1½" POST SOUTH	H-1	26	364	3
MIDDLE 1½ POST SOUTH	H-2	11	154	6
POST 2" SOUTH ENTRANCE TOP	H-3	12	168	6
BOTTOM	H-4	18	252	3
SOUTH ENTRANCE GATE GUARD SHACK YARD. 1½" POST TOP WEST SIDE	I-1	52	728	6
1½" POST TOP EAST SIDE	I-2	14	196	3
CENTER POST 3" MIDDLE	I-3	8	112	0
CROSS BAR BOTTOM WEST SIDE	I-4	18	252	3
CROSS BAR BOTTOM EAST SIDE	I-5	26	364	0

PLANT PU AREA YARD FENCE
SURVEYED BY A Hamlin GUARD SHACK AREA
INST. LUDLUM 2220 S/N 50064 DET. 43-4
SOURCE CK 286-264 BKG. 1
DATE: 5-9-89 SOURCE #: 6816 VALUE: 1078 DPM

ASC # 1 SN 83600115
CTD. BY Dennis Ford
SOURCE CK. AVG. 30-33
BKG. 2-1
DATE: 5-11-89 - 5-12-89

READINGS IN DPM/100 cm^2

SECT. #1

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
POST 3" SOUTH TOP	J-1	13	182	3
BOTTOM	J-2	9	126	0
TOP RAIL 1½" SOUTH	J-3	19	266	3
MIDDLE RAIL 1½ SOUTH	J-4	132	1848	3
POST 1½" SOUTH TOP	J-5	9	126	6
BOTTOM	J-6	11	154	0
POST 3" SOUTH TOP	J-7	17	238	0
BOTTOM	J-8	16	224	3
EAST FENCE				
GATE #3 POST 1½" EAST TOP	K-1	20	280	3
EAST BOTTOM	K-2	19	266	3
TOP RAIL 1½" EAST GATE	K-3	40	560	6
MIDDLE RAIL 1½" EAST GATE	K-4	44	616	3
BOTTOM RAIL 1½" EAST GATE	K-5	24	336	0
POST 1½" EAST TOP	K-6	17	238	9
EAST BOTTOM	K-7	23	322	3
EMEGENCY GATE NORTH OF GATE #3				
POST 1" EAST TOP	L-1	9	126	3
EAST BOTTOM	L-2	3	42	6
TOP RAIL EAST SIDE	L-3	53	742	3
MIDDLE RAIL EAST SIDE	L-4	30	420	3
BOTTOM RAIL EAST SIDE	L-5	33	462	0
POST 1" EAST TOP	L-6	17	238	3
EAST BOTTOM	L-7	7	98	0
2" POST EAST SIDE TOP	M-1	0	0	0
BOTTOM	M-2	9	126	0
TOP RAIL 1" EAST SIDE	M-3	82	1148	9
2" POST EAST TOP	M-4	10	140	0
EAST BOTTOM	M-5	22	308	3

PLANT PU AREA YARD FENCE
SURVEYED BY A Hamlin GUARD SHACK AREA
INST. LUDLUM 2220 S/N 50064 DET. 43-4
SOURCE CK 286-264 BKG. 1
DATE: SOURCE #: 6816 VALUE: 1078 DPM

ASC # 1 SN 83600115
CTD. BY Dennis Ford
SOURCE CK. AVG. 30-33
BKG. 2-1
DATE: 5-11-89 - 5-12-89

READINGS IN DPM/100 cm^2

SECT. #1

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
EAST SIDE				
TOP RAIL 1"	N-1	28	392	3
POST 2" TOP	N-2	21	294	0
BOTTOM	N-3	19	266	0
GATE #4 EAST SIDE POST 2" TOP	O-1	92	1288	3
BOTTOM	O-2	74	1036	3
TOP RAIL 1½"	O-3	49	686	0
MIDDLE RAIL 1½"	O-4	91	1274	0
BOTTOM RAIL 1½"	O-5	37	518	0
POST 2"	O-6	78	1092	0
BOTTOM	O-7	61	854	6
POST 3" NORTH OF GATE 4 TOP	P-1	26	364	3
BOTTOM	P-2	21	294	0
TOP RAIL 1"	P-3	30	420	0
POST 3" NEXT TO BUILDING TOP	P-4	18	252	0
BOTTOM	P-5	17	238	3

UNIT PU AREA SOUTHEAST-FENCE

SURVEYED BY J Handley

INST. LUDLUM 2220 # 50064 DET. 43-4

SOURCE CK 255-266 BKG. 1

DATE: 5-10-89 SOURCE # 6816 VALUE 1078 DPM

ASC # 2 SN 83600108

CTD. BY J m Black

SOURCE CK. AVG. 33

BKG. 2

DATE: 5-11-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION Sect #2		DIRECT CPH	DIRECT DPM	SMEAR
POST 3" SEC. 2 - SOUTH PU FENCE				
TOP A-1	A-1	7	98	0
BOTTOM A-2	A-2	7	98	3
TOP RAIL-1"	A-3	19	266	0
BOTTOM CONDUIT 4"	A-4	21	294	0
ELECTRIC CONDUIT BOX-6"	A-5	19	266	6
ELECTRIC CONDUIT BOX-12"	A-6	36	504	9
POST-2" TOP	A-7	5	70	0
BOTTOM	A-8	5	70	3
TOP RAIL-1"	B-1	23	322	3
BOTTOM CONDUIT 4"	B-2	6	84	0
POST-2" TOP	B-3	9	126	6
BOTTOM	B-4	13	182	0
TOP RAIL-1"	C-1	41	574	3
BOTTOM CONDUIT-4"	C-1	2	28	6
POST-2" TOP	C-2	5	70	0
BOTTOM	C-4	4	56	9
TOP RAIL-1"	D-1	3	42	0
BOTTOM CONDUIT-4"	D-2	1	14	3
POST-2" TOP	D-3	17	238	3
BOTTOM	D-4	15	210	0
TOP RAIL-1"	E-1	14	196	0
BOTTOM CONDUIT-4"	F-2	3	42	6
POST-2" TOP	E-3	14	196	3
BOTTOM	E-4	17	238	3
TOP RAIL-1"	F-1	34	476	0
BOTTOM CONDUIT-4"	F-2	4	56	0
POST-2" TOP	F-3	37	518	0
BOTTOM	F-4	17	238	3

UNIT PU AREA SOUTH EAST FENCE

SURVEYED BY J Handley

INST. LUDLUM 2220 # 50064 DET. 43-4

SOURCE CK 255-266 BKG. 1

DATE: 5-10-89 SOURCE # 6816 VALUE 1078 DPM

ASC # 2 SN 83600108

CTD. BY J m Black

SOURCE CK. AVG. 33

BKG. 2

DATE: 5-11-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION Sect #2		DIRECT CPH	DIRECT DPM	SMEAR
TOP RAIL-1"	G-1	28	392	0
BOTTOM CONDUIT-4"	G-2	5	70	0
POST 2" TOP	G-3	20	280	3
BOTTOM	G-4	23	322	9
TOP RAIL-1"	H-1	73	1022	3
BOTTOM CONDUIT-4"	H-2	8	112	0
POST-2" TOP	H-3	14	196	3
BOTTOM	H-4	20	280	3
TOP RAIL-1"	I-1	110	1540	6
BOTTOM CONDUIT-4"	I-2	5	70	0
POST-2" TOP	I-3	10	140	0
BOTTOM	I-4	14	196	0
TOP RAIL-1"	J-1	97	1358	0
BOTTOM CONDUIT-4"	J-2	5	70	3
POST-2". TOP	J-3	26	364	0
BOTTOM	J-4	14	196	6
TOP RAIL-1"	K-1	29	406	9
BOTTOM CONDUIT-4"	K-2	11	154	0
ELECTRIC CONDUIT BOX 12"	K-3	30	420	3
POST-2". TOP	K-4	21	294	0
BOTTOM	K-5	25	350	3
TOP RAIL-1"	L-1	22	308	0
CENTER RAIL-1"	L-2	60	840	3
ELECTRIC CONDUIT BOX 10"	L-3	24	336	0
CORNER-POST-3" TOP	L-4	10	140	6
BOTTOM	L-5	15	210	0

PLANT PA AREA FENCE SOUTH #6

SURVEYED BY Handley

INST. LUDLUM 2220 S/N 50064 DET. 43-4

SOURCE CK 284-290 BKG. 1

DATE: 5-25-89 SOURCE #6816 VALUE: 1078 DPM

ASC # 2 SN 83600108

CTD. BY J Bleck

SOURCE CK. AVG. 28

BKG. 3

DATE: 5-25-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
Section #6 Fence Around					
PA Plant.					
Top RAIL 1"		1-A	50	700	0
CENTER RAIL 1"		1-B	22	308	0
Post 2"	TOP	1-C	30	420	0
" 2"	BOTTOM	1-D	10	140	0
TOP RAIL 1"		2-A	67	938	0
Post 2"	TOP	2-B	30	420	0
" 2"	BOTTOM	2-C	26	364	3
TOP RAIL 1"		3-A	45	630	0
Post 2"	TOP	3-B	26	364	6
" 2"	BOTTOM	3-C	21	294	0
TOP RAIL 1"		4-A	55	770	0
POST 2"	TOP	4-B	30	420	0
" 2"	BOTTOM	4-3	26	364	3
TOP RAIL 1"		5-A	30	420	0
POST 2"	TOP	5-B	32	448	6
" 2"	BOTTOM	5-C	32	448	3
TOP RAIL 1"		6-A	31	434	3
POST 2"		6-B	22	308	9
" 2"		6-C	25	350	0
TOP RAIL 1"		7-A	30	420	9
CENTE RAIL 1"		7-B	53	742	0
POST 3"	TOP	7-C	20	280	6
" 3"	BOTTOM	7-D	21	294	0

PLANT PA AREA FENCE SOUTH

SURVEYED BY Handley

INST. LUDLUM 2220 S/N 50064 DET. 43-4

SOURCE CK 284-290 BKG. 1

DATE: 5-25-89 SOURCE #6816 VALUE: 1078 DPM

ASC # 2 SN 83600108

CTD. BY J Bleck

SOURCE CK. AVG. 28

BKG. 3

DATE: 5-25-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
POST 1"	TOP	8-A	20	280	6
" 1"	BOTTOM	8-B	20	280	0
TOP RAIL 1"		8-C	39	546	3
CENTER POST 1"	TOP	8-D	20	280	0
" " 1"	BOTTOM	8-E	35	490	0
BOTTOM RAIL 1"		8-F	32	448	6
POST 1"	TOP	8-G	33	462	0
" 1"	BOTTOM	8-H	35	490	3
POST 1"	TOP	9-A	33	462	0
" 1"	BOTTOM	9-B	36	504	0
TOP RAIL 1"		9-C	42	588	0
CENTER POST 1"	TOP	9-D	33	462	0
" " 1"	BOTTOM	9-E	26	364	0
BOTTOM RAIL 1"		9-F	36	504	0
POST 1"	TOP	9-G	20	280	0
" 1"	BOTTOM	9-H	12	168	3
Section #9 truck gate					

PU SECTION #3 EAST FENCE

	DIRECT	SMEAR
TOTAL DPM	56,584	243
# READINGS	118	118
DPm/100cm² AVG	479.44	2.06
MAX DPM/100cm²	3,150	9

MDA
54.88 DPM/100cm² FIXED

UNIT PU AREA Sect #3 EAST
SURVEYED BY J Handley mini FENCE
INST. LUDLUM 2220 # 50064 DET. 43-4
SOURCE CK 280-270 BKG. 2
DATE: 5-11-89 SOURCE F-6816 VALUE: 1078 DPM

ASC # 8360015
CTD. BY D Ford
SOURCE CK. A.C. 33
BKG. 1
DATE: 5-12-89

T - TOP
B - BOTTOM

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		CTS X 14 = DPM	DIRECT CPM	DIRECT DPM	SMEAR
Sect #3 FENCE EAST SIDE					
Around PU Building		T-F			
CROSS BAR	TOP	1-A	32	448	3
CROSS BAR	MIDDLE	1-B	19	266	3
POST 2"	T	1-C	7	98	0
POST	B	1-D	13	182	3
		T-F			
CROSS BAR	TOP	2-A	19	266	3
POST 2"	T	2-B	14	196	0
POST 2"	B	2-C	10	140	0
CROSS BAR	TOP	3-A	14	196	0
POST 2"	T	3-B	12	148	0
POST 2"	B	3-C	17	238	0
CROSS BAR	TOP	4-A	4	56	3
POST 2"	T	4-B	17	238	0
POST 2"	B	4-C	8	112	3
CROSS BAR	TOP	5-A	14	196	0
POST 2"	T	5 B	28	392	3
POST 2"	B	5-C	27	378	0
CROSS BAR	TOP	6-A	75	1050	0
POST "2	T	6-B	157	2198	6
POST "2	B	6-C	65	910	0
CROSS BAR	TOP	7-A	49	686	0
POST "2	T	7-B	107	1498	3
POST "2	B	7-C	43	602	6
CROSS BAR	TOP	8-A	43	602	0
POST 2"	T	8-B	164	2296	3
POST 2"	B	8-C	114	1596	0

UNIT PH AREA Section #3 EAST
SURVEYED BY J Handley FENCE
I.T. NUMBER 50064 DET. 43-4
SOURCE CK 280-270 ENG. 2
DATE: 5-11-89 SOURCE F-6816 VALUE 1078 cm

ACC # 1 SN 83600115
CTD. BY D. Ford
SOURCE CK. NO. 33
ENG. 1
DATE: 5-12-89

READINGS IN DPM/100 cm²

T - TOP
B - BOTTOM

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
Continuation of Sect #3 FENCE					
AROUND PH BUILDING					
CROSS BAR	T	9-A	46	644	0
POST 2"	T	9-B	125	1750	3
POST 2"	B	9-C	24	336	0
CROSS BAR	T	10-A	14	196	6
POST 2"	T	10-B	44	616	0
POST 2"	B	10-C	36	504	0
CROSS BAR	T	11-A	19	266	3
POST 2"	T	11-B	14	196	0
POST 2"	B	11-C	7	98	0
CROSS BAR	T	12-A	28	392	3
POST 2"	T	12-B	10	140	6
POST 2"	B	12-C	5	70	0
CROSS BAR	T	13-A	29	406	0
POST 2"	T	13-B	41	574	0
POST 2"	B	13-C	35	490	0
CROSS BAR	T	14-A	44	616	0
POST 2"	T	14-B	18	252	3
POST 2"	B	14-C	15	210	3
CROSS BAR	T	15-A	53	742	6
POST 2"	T	15-B	33	462	3
POST 2"	B	15-C	20	280	6
CROSS BAR	T	16-A	48	672	0
POST 2"	T	16-B	46	644	6
POST 2"	B	16 C	28	392	3

UNIT PH AREA Section #3 EAST
SURVEYED BY J Handley FENCE
I.T. NUMBER 50064 DET. 43-4
SOURCE CK 280-270 ENG. 2
DATE: 5-11-89 SOURCE F-6816 VALUE 1078 cm

ACC # 1 SN 83600115
CTD. BY D. Ford
SOURCE CK. NO. 33
ENG. 1
DATE: 5-11-89

READINGS IN DPM/100 cm²

T - TOP
B - BOTTOM

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
CONTINUATION OF SEC. #3 FENCE					
AROUND PH Building					
CROSS B	T	17-A	47	658	0
POST 2"	T	17-B	225	3150	9
POST 2"	B	17-C	147	2058	3
CROSS BAR	T	18-A	30	420	3
POST 2"	T	18-B	122	1708	3
POST 2"	B	18-C	63	882	3
CROSS BAR	T	19-A	52	728	0
POST 2"	T	19-B	42	588	3
POST 2"	B	19-C	35	490	3
CROSS BAR	T	20-A	30	420	0
POST 2"	T	20-B	25	350	3
POST 2"	B	20-C	17	238	9
CROSS BAR	T	21-A	24	336	3
POST 2"	T	21-B	22	308	3
POST 2"	B	21-C	18	266	0
CROSS BAR	T	22-A	28	392	3
POST 2"	T	22-B	106	1484	3
POST 2"	B	22-C	81	1134	9
CROSS BAR	T	23-A	10	140	6
POST 2"	T	23-B	9	126	3
POST 2"	B	23-C	9	126	0
CROSS BAR	T	24-A	10	140	0
POST 2"	T	24-B	40	560	3
POST 2"	B	24-C	31	434	0

UNIT PU AREA Dept #3 EAST

SURVEYED BY J. Handley Mabry

INST. NO. 50064 DET. 43-4

SOURCE CK. 280-220 ENG. 2

DATE: 5-11-89 Source F6816 Value 1078 cm

ACC # 1 SN 83600115

CTD. BY D Ford

SOURCE CK. NO. 33

ENG. 1

DATE: 5-11-89

T= TOP
B= BOTTOM
m= MIDDLE

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
CONTINUATION OF SEC #3 FENCE					
AROUND PU BUILDING					
CROSS BAR		25-A	56	784	0
POST 2"		25-B	17	238	0
POST 2"		25-C	11	154	0
CROSS BAR	T	26-A	32	448	0
POST 2"	T	26-B	15	210	0
POST 2"	B	26-C	6	84	0
CROSS BAR	T	27-A	11	154	0
POST 2"	T	27-B	1	14	3
POST 2"	B	27-C	4	56	0
CROSS BAR	T	28-A	14	196	3
POST 2"	T	28-B	11	154	0
POST 2"	B	28-C	6	84	3
CROSS BAR	T	29-A	27	378	0
POST 2"	T	29-B	19	268	0
POST 2"	B	29-C	6	84	0
CROSS BAR	T	30-A	18	252	0
POST 2"	T	30-B	10	140	6
POST 2"	B	30-E	13	182	0
CROSS BAR		31-A	33	462	6
POST 2"		31-B	0	0	3
POST 2"		31-C	0	0	0
~~CROSS BAR~~		~~-A~~			
~~POST 2"~~		~~B~~			
~~POST 2"~~		~~C~~			

UNIT PU AREA Dept #3 EAST

SURVEYED BY J Handley Mabry FENCE

INST. NO. 50064 DET. 43-4

SOURCE CK. 280-220 ENG. 2

DATE: 5-11-89 Source F6816 Value 1078 cm

ACC # 1 SN 83600115

CTD. BY D Ford

SOURCE CK. NO. 33

ENG. 1

DATE: 5-11-89

m= MIDDLE
T= TOP
B= BOTTOM

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
CONTINUATION OF SEC #3 FENCE EAST					
AROUND PU BUILDING					
POST 2"	T	32-A	4	56	0
POST 2"	B	32-B	0	0	0
CROSS BAR-1"	T	32-C	0	0	6
POST 2"	T	32-D	2	28	6
POST 2"	B	32-E	40	560	0
CROSS BAR 1"		33-A	67	938	3
ELECTRIC CONDUIT BOX 10"		33-B	8	112	3
CROSS BAR-1"		33 C	60	840	3
POST 2"	T	33 D	23	322	3
POST 2"	B	33 E	12	168	6
CROSS BAR	T	34-A	102	1428	3
CROSS BAR	M	34 B	6	84	0
CORNER POST 2"	T	34-C	2	28	0
	B	34-D	5	70	0
CROSS Bar	T	35 A	15	210	3
CROSS BAR	M	35 B	112	1568	6
POST 2"	T	35 C	7	98	0
POST 2"	B	35 D	2	28	0
CROSS BAR	T	36-A	25	350	3
CROSS BAR	M	36 B	30	420	3
CORNER POST 2"	T	36 C	9	126	0
CORNER POST 2"	B	36 D	0	0	0
CROSS BAR	T	37-A	41	574	0
CROSS BAR	M	37 B	83	1162	9

PU SECTION #4 NORTH FENCE

	DIRECT	SMEAR
TOTAL DPM	89,814	270
#READINGS	82	82
AVG DPM/100cm²	1,095.29	329
MAX DPM/100cm²	3,206	9

MDA
54.88 DPM/100cm² FIXED

PLANT PU AREA Sect. #4 NORTH FENCE
SURVEYED BY J Handley mHandley
FT. MON. RECD. 50064 DET. 43-4
SOURCE CR. 256-276-AM BKG. 2
DATE: 5-19-89 Source=6816 Value 1078 cpm

ACC # 1 SN 83600115
CTD. BY D Ford
SOURCE CR. NO. 34
BKG. 3
DATE: 5-22-89

T- TOP
B- Bottom
m- MIDDLE

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
SECTION #4 FENCE NORTH SIDE				
CROSS BAR T	1-A	40	560	0
CROSS BAR M	1-B	17	238	3
POST 2" T	1-C	84	1176	3
POST 2" B	1-D	54	756	3
CROSS BAR T	2-A	78	1092	9
CROSS BAR M	2-B	55	770	0
POST 2" T	2-C	78	1092	3
POST 2" B	2-D	34	476	3
CROSS BAR T	3-A	63	882	9
POST 2" T	3-B	98	1372	3
POST 2" B	3-C	82	1148	3
CROSS BAR T	4-A	69	966	6
POST 2" T	4-B	159	2226	0
POST 2" B	4-C	119	1666	3
CROSS BAR T	5-A	114	1596	9
POST 2" T	5-C	95	1330	6
POST 2" B	5-D	50	700	0
CROSS BAR T	6-A	79	1106	6
POST 2" T	6-B	145	2030	6
POST 2" B	6-C	109	1526	0
CROSS BAR T	7-A	144	2016	9
POST 2" T	7-B	224	3136	0
POST 2" B	7-C	105	1470	6
CROSS BAR T	8-A	128	1792	9
POST 2" T	8-B	192	2688	6
POST 2" B	8-C	181	2534	0

PLANT PU AREA Sect #4 NORTH FENCE
SURVEYED BY J Handley
FT. MON. RECD. 50064 DET. 43-4
SOURCE CR. 256-276-AM BKG. 2
DATE: 5-19-89 Source=6816 Value 1078 cpm

ACC # 1 SN 83600115
CTD. BY D Ford
SOURCE CR. NO. 34
BKG. 3
DATE: 5-22-89

T- TOP
B- Bottom

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DPM	SMEAR
CONTINUATION OF SECT #4				
CROSS BAR	9-A	164	2296	9
POST 2"	9-B	57	798	3
POST 2"	9-C	34	476	0
CROSS BAR	10-A	127	1778	0
POST 2"	10-B	229	3206	0
POST 2"	10-C	140	1960	6
CROSS BAR	11-A	183	2562	6
POST 2"	11-B	117	1638	9
POST 2"	11-C	111	1554	0
CROSS BAR	12-A	126	1764	6
POST 2"	12-B	60	840	6
POST 2"	12-C	40	560	6
CROSS BAR	13-A	32	448	0
POST 2"	13-B	61	854	3
POST 2"	13-C	74	1036	0
CROSS BAR	14-A	70	980	0
POST 2"	14-B	66	924	6
POST 2"	14-C	56	784	0
CROSS BAR	15-A	76	1064	6
POST 2"	15-B	54	756	0
POST 2"	15-C	27	378	0
CROSS BAR	16-A	90	1260	6
POST 2"	16-B	22	308	6
POST 2"	16-C	20	280	3

UNIT PU AREA Sect #4 NORTH FENCE

SURVEYED BY J Handley

UNIT NUMBER 50064 DET. 43-4

SOURCE CK 256-276-AM ENG. 2

DATE: 5-19-89 Source # 6816 VALUE 1078 cm

ACC # 1 SM 836 00115

CTD. BY: D Ford

SOURCE CK. AND: 34

ENG. 3

DATE: 5-22-89

T - TOP
B - BOTTOM

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
CONTINUATION OF SECT #4 FENCE					
CROSS BAR	T	17-A	57	798	6
POST 2"	T	17-B	46	644	3
POST 2"	B	17-C	41	574	0
CROSS BAR	T	18-A	71	998	3
POST 2"	T	18-B	37	518	6
POST 2"	B	18-C	53	742	3
CROSS BAR	T	19-A	104	1456	3
POST 2"	T	19-B	69	966	3
POST 2"	B	19-C	40	560	0
CROSS BAR	T	20-	47	658	0
POST 2"	T	20-	60	840	3
POST 2"	B	20-	46	644	6
CROSS BAR	T	21-	63	882	6
POST 2"	T	21-	52	728	3
POST 2"	B	21-	32	448	0
CROSS BAR	T	22-	64	896	3
POST 2"	T	22-	92	1288	0
POST 2"	B	22-	57	798	0
CROSS BAR	T	23-	22	308	3
POST 2"	T	23-	74	1036	0
POST 2"	B	23-	52	728	9
CROSS BAR	T	24-	36	504	3
POST 2"	T	24-	92	1288	3
POST 2"	B	24-	61	854	0

UNIT PU AREA Sect #4 NORTH FENCE

SURVEYED BY J Handley

UNIT NUMBER 50064 DET. 43-4

SOURCE CK 256-276-AM ENG. 2

DATE: 5-19-89 Source # 6816 VALUE 1078 cm

ACC # 1 SM 836 00115

CTD. BY: D Ford

SOURCE CK. AND: 34

ENG. 3

DATE: 5-22-89

T - TOP
B - BOTTOM

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION			DIRECT CPM	DIRECT DPM	SMEAR
CONTINUATION OF SECT #4 FENCE					
CROSS BAR		25-A	60	840	0
POST 2"		25-B	86	1204	0
POST 2"		25-C	52	728	3
CROSS BAR 1"		26-A	44	616	0
ELECTRIC BOX 12"		26-B	38	532	0
CENTER BAR 1"		26-C	32	448	9
CORNER POST 3"	TOP	26-D	63	882	3
CORNER POST 3"	BOTTOM	26-E	40	560	3

P4 SECTION #5 WEST FENCE

	DIRECT	SMEAR
TOTAL DPM	88,332	315
#READINGS	140	140
AVG DPM/100cm²	630.94	2.25
MAX DPM/100cm²	2,352	9

MDA
38.81 DPM/100cm² FIXED

PLANT PU AREA Section #5 West

SURVEYED BY J Handley

INST. Ludlum 2220 # 150064 DET. 43-4

SOURCE CK 258-280 BKG. 0

DATE: 5-24-89 Source #6816 Value: 1078 DPM

ASC # 2 SN 83600108

CTD. BY J Black

SOURCE CK. AVG. 29

BKG. 13

DATE: 5-24-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION			DIRECT CPH	DIRECT DPM	SMEAR
Section 5 fence around PU Building					
Top Rail		1-A	40	560	0
Center Rail		1-B	29	406	0
Post 2"	TOP	1-C	33	462	0
Post 2"	BOTTOM	1-D	14	196	0
Top RAIL 1"		2-A	30	420	3
POST 2"	TOP	2-B	45	630	3
Post 2"	BOTTOM	2-C	39	536	0
TOP RAIL 1"		3-A	18	252	0
POST 2"	TOP	3-B	51	714	0
"	BOTTOM	3-C	62	868	0
TOP RAIL 1"		4-A	46	644	9
POST 2"	TOP	4-B	24	336	0
" 2"	BOTTOM	4-C	27	378	0
		5-A			
TOP RAIL 1"		5-A	40	560	0
POST 2"	TOP	5-B	34	478	3
" 2"	BOTTOM	5-C	26	364	0
TOP RAIL 1"		6-A	46	644	3
POST 2"		6-B	33	462	3
" 2"		6-C	20	280	0
TOP RAIL 1"		7-A	35	490	6
POST 2"		7-B	26	364	0
" 2"		7-C	20	280	3

PLANT PU AREA SECTION #5 West

SURVEYED BY J HANDLEY

INST. Ludlum 2220 # 150064 DET. 43-4

SOURCE CK 258-280 BKG. 0

DATE: 5-24-89 Source #6816 Value: 1078 DPM

ASC # 2 SN 83600108

CTD. BY J Black

SOURCE CK. AVG. 29

BKG. 13

DATE: 5-24-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION			DIRECT CPH	DIRECT DPM	SMEAR
CONTINUATION SECTION #5 FENCE					
AROUND PU PLANT					
TOP RAIL 1"		8-A	27	378	6
POST 2"	TOP	8-B	29	406	0
" 2"	BOTTOM	8-C	26	364	0
TOP RAIL 1"		9-A	24	336	6
POST 2"	TOP	9-B	36	504	0
" 2"	BOTTOM	9-C	26	364	0
TOP RAIL 1"		10-A	20	280	9
POST 3"	TOP	10-B	29	406	0
POST 3"	BOTTOM	10-C	24	336	3
ELECTRIC BOX 8"		10-D	14	196	0
POST 1"	TOP	11-A	30	420	9
" 1"	BOTTOM	11-B	24	336	3
TOP RAIL 1"		11-C	24	336	0
CENTER RAIL 1"		11-D	42	588	3
BOTTOM RAIL 1"		11-E	26	364	0
POST 1"	TOP	11-F	30	420	6
" 1"	BOTTOM	11-G	20	280	3
POST 3"	TOP	12-A	23	322	3
" 3"	BOTTOM	12-B	28	392	0
TOP RAIL 1"		12-C	40	560	0
POST 2"	TOP	12-D	29	406	0
POST 2"	BOTTOM	12-E	18	252	0
TOP RAIL 1"		13-A	42	588	3
POST 2"	TOP	13-B	30	420	0
" 2"	BOTTOM	13-C	23	322	0

PLANT PU AREA SECTION #5 West

SURVEYED BY T HANDLEY

INST. LUDLUM 2220 # 150064 DET. 43-4

SOURCE CK 258-280 BKG. 0

DATE: 5-24-89 Source #6816 VALUE: 1078 DPM

ASC # 2 SN 83600108

CTD. BY J Black

SOURCE CK. AVG. 29

BKG. .3

DATE: 5-24-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
CONTINUATION SECTION #5 FENCE AROUND				
PU PLANT				
TOP RAIL 1"	14-A	30	420	0
POST 2" TOP	14-B	25	350	3
" 2" BOTTOM	14-C	20	280	0
TOP RAIL 1"	15-A	28	392	0
POST 2" TOP	15-B	22	308	0
" 2" BOTTOM	15-C	20	280	0
TOP RAIL	16-A	20	280	6
POST 2" TOP	16-B	20	280	0
" 2" BOTTOM	16-C	22	308	3
TOP RAIL 1"	17-A	12	168	6
POST 2" TOP	17-B	9	126	6
" 2" BOTTOM	17-C	8	112	6
TOP RAIL 1"	18-A	20	280	0
POST 2" TOP	18-B	28	392	0
" 2" BOTTOM	18-C	20	280	6
TOP RAIL 1"	19-A	10	140	3
POST 2" TOP	19-B	43	602	3
" 2" BOTTOM	19-C	30	420	3
TOP RAIL 1"	20-A	25	350	3
POST 2" TOP	20-B	53	742	6
" 2" BOTTOM	20-C	75	1050	6
TOP RAIL 1"	21-A	21	294	6
CENTER RAIL 1"	21-B	18	252	3
POST 3" TOP	21-C	68	952	0
" 3" BOTTOM	21-D	11	154	9
ELECTRIC BOX 8"	21-E	20	280	3

PLANT PU AREA FENCE WEST

SURVEYED BY Handley

INST. LUDLUM 2220 # 150064 DET. 43-4

SOURCE CK 258-280 BKG. 0

DATE: 5-24-89 Source #6816 VALUE: 1078 DPM

ASC # 2 SN 83600108

CTD. BY 1 Black

SOURCE CK. AVG. 29

BKG. .3

DATE: 5-24-89

READINGS IN DPM/100 cm^2

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
CONTINUATION OF SECTION #5 FENCE				
AROUND PU PLANT				
POST 1" TOP	22-A	63	882	0
" 1" BOTTOM	22-B	10	140	3
TOP RAIL 1"	22-C	18	252	3
CENTER RAIL 1"	22-D	15	210	6
BOTTOM RAIL 1"	22-E	13	182	3
POST 1" TOP	22-F	73	1022	0
" 1" BOTTOM	22-G	31	434	0
POST 3" TOP	23-A	78	1092	3
" 3" BOTTOM	23-B	43	602	0
TOP RAIL 1"	23-C	34	476	3
CENTER RAIL 1"	23-D	24	336	3
POST 2" TOP	23-E	48	672	0
POST 2" BOTTOM	23-F	38	532	6
TOP RAIL 1"	24-A	30	420	3
POST 2" TOP	24-B	103	1442	0
" 2" BOTTOM	24-C	68	952	3
TOP RAIL 1"	25-A	57	798	9
POST 2" TOP	25-B	83	1162	6
" 2" BOTTOM	25-C	61	854	6
TOP RAIL 1"	26-A	98	1372	6
POST 2" TOP	26-B	134	1876	3
" 2" BOTTOM	26-C	74	1036	0
TOP RAIL 1"	27-A	100	1400	0
POST 2" TOP	27-B	168	2352	0
" 2" BOTTOM	27-C	133	1862	9

PLANT PU AREA FENCE WEST

SURVEYED BY Hartley

INST. LUDLUM 2220 # 150064 DET. 43-4

SOURCE CK 184-190 BKG. 1

DATE: 5-25-89 SOURCE #: 1816 VALUE: 1078 DPM

ASC # 2-SW-83600108

CTD. BY J Black

SOURCE CK. AVG. 29

BKG. 3

DATE: 5-24-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
CONTINUATION #5 FENCE AROUND PU BUILDING				
TOP RAIL 1"	28-A	106	1484	6
POST 2" TOP	28-B	161	2254	0
" 2" BOTTOM	28-C	120	1680	0
TOP RAIL 1"	29-A	97	1358	0
POST 2" TOP	29-B	148	2072	3
" 2" BOTTOM	29-C	94	1316	3
TOP RAIL 1"	30-A	82	1148	0
POST 2" TOP	30-B	142	1988	3
" 2" BOTTOM	30-C	95	1330	0
TOP RAIL 1"	31-A	101	1484	0
POST 2" TOP	31-B	143	2002	3
" 2" BOTTOM	31-C	116	1624	3
TOP RAIL 1"	32-A	116	1624	3
CENTER RAIL 1"	32-B	56	784	0
POST 2" TOP	32-C	107	1498	0
" 2" BOTTOM	32-D	79	1106	6
TOP RAIL 1"	33-A	54	756	3
POST 2" TOP	33-B	91	1274	0
" 2" BOTTOM	33-C	74	1036	0
TOP RAIL 1"	34-A	40	560	0
CENTER RAIL 1"	34-B	28	392	0
POST 3"	34-C	33	462	3
" 3"	34-D	12	168	0
ELECTRIC BOX .8"	34-E	13	182	0

PLANT ____ AREA ____

SURVEYED BY ____

INST. LUDLUM 2220 # ____ DET. ____

SOURCE CK ____ BKG. ____

DATE: ____ SOURCE #: ____ VALUE: ____ DPM

ASC # 2-SW-83600108

CTD. BY J Black

SOURCE CK. AVG. 29

BKG. 3

DATE: 5-24-89

READINGS IN DPM/100 cm²

SAMPLE # OR DESCRIPTION		DIRECT CPM	DIRECT DPM	SMEAR
CONTINUATION #5 FENCE AROUND PU PLANT				
POST 1" TOP	35-A	23	322	6
" 1" BOTTOM	35-B	20	280	0
TOP RAIL 1"	35-C	34	476	3
CENTER RAIL 1"	35-D	29	406	0
BOTTOM RAIL 1"	35-E	20	280	3
POST 1" TOP	35-F	19	266	6
" 1" BOTTOM	35-G	20	280	0
POST 3" TOP	36-A	23	322	3
POST 3" BOTTOM	36-B	10	140	0
TOP RAIL 1"	36-C	42	588	0
CENTER RAIL 1"	36-D	24	336	0
POST 2" TOP	36-E	40	560	3
POST 2" BOTTOM	36-F	30	420	6
ELECTRIC BOX .8"	37-A	33	462	6
TOP RAIL 1"	37-B	39	546	0
CENTER RAIL 1"	37-C	26	364	0
POST 3" TOP	37-D	43	602	0
" 3" BOTTOM	37-E	25	350	0

AREA Pu-PLANT ROOF
SOUTH SECTION

TYPE OF SURVEY LOW ENERGY GAMMA

TYPE OF INSTRUMENT LUDLUM 2220 / DET. 43-17

SERIAL NUMBER 37819

COMPLETION DATE 8-23-89

H.P. SIGNATURE Claude M Thayer

SURVEY UNITS CTS/0.1 MIN

BKG. - 70

N
W E
S

1 cm = 1 Meter

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

SOURCE #: S-88 VALUE: 4 uCi

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
8-23-89	14308-14313	70

	57			65			82			73			60			71			69			80			75
	63			73			73			62			67			74			63			74			75
	82			69			66			58			61			65			53			76			66

AREA Pu-PLANT ROOF
MIDDLE SECTION

TYPE OF SURVEY LOW ENERGY GAMMA

TYPE OF INSTRUMENT LUDLUM 2220/DET. 43-17

SERIAL NUMBER 37819

COMPLETION DATE 8-23-89

H.P. SIGNATURE Blanch M. Thayer

SURVEY UNITS
CTS./0.1 MIN
BKG. - 70

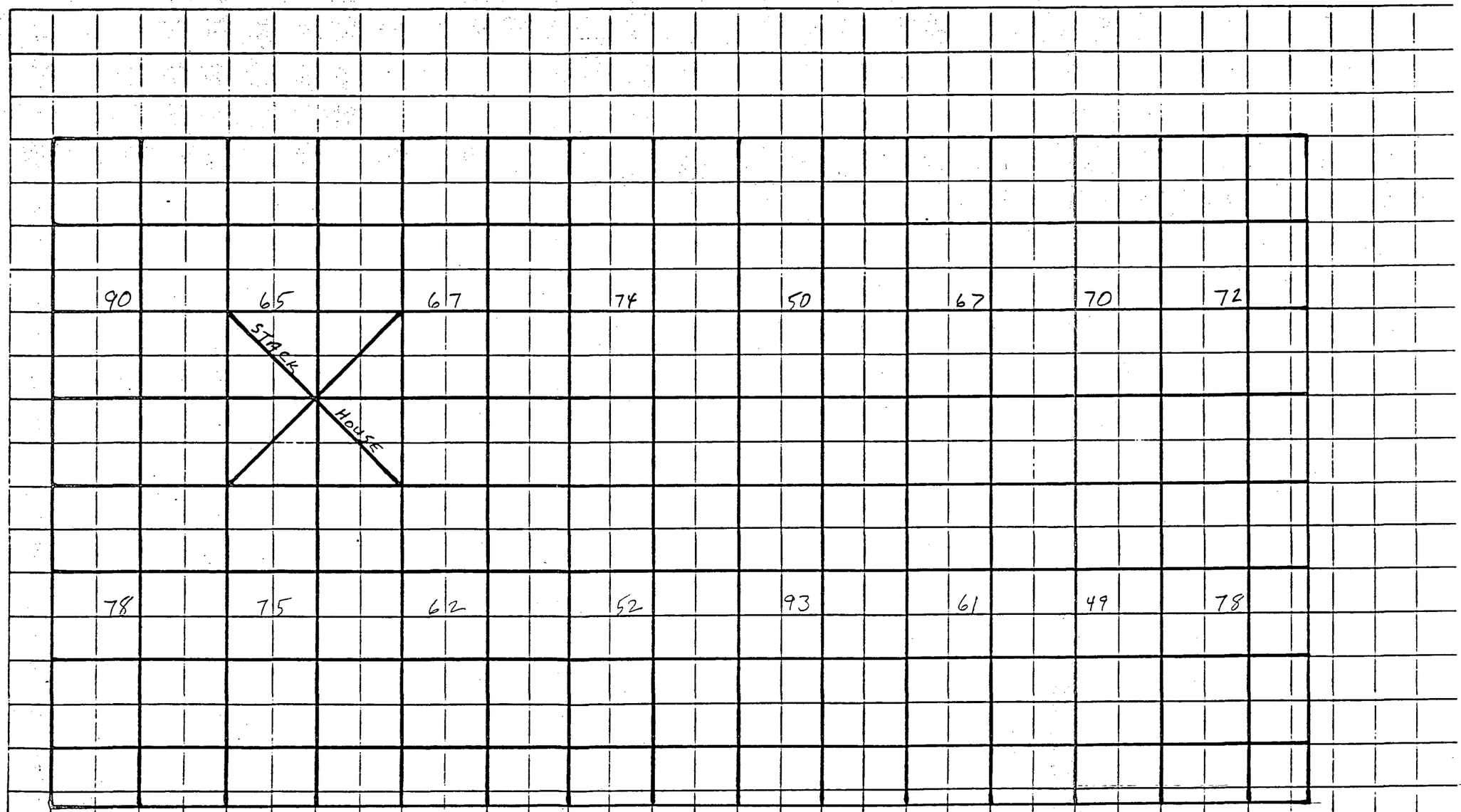
N
W E
S

1 cm = 1 Meter

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

SOURCE #: S-88 VALUE: 4 4ci

INSTRUMENT		
DATE	SOURCE RESPONSE	BKGD.
8-23-89	14308-14313	70



AREA Pu-PLANT ROOF
NORTH SECTION

TYPE OF SURVEY ~~DIRECT & SMEAR~~ LOW ENERGY GAMMA

TYPE OF INSTRUMENT LUDLUM 2220 / DET. [redacted] 43-17

SERIAL NUMBER 37819

COMPLETION DATE 8-23-89

H.P. SIGNATURE Claude M Thompson

AUTO. SAMPLE COUNTER#:

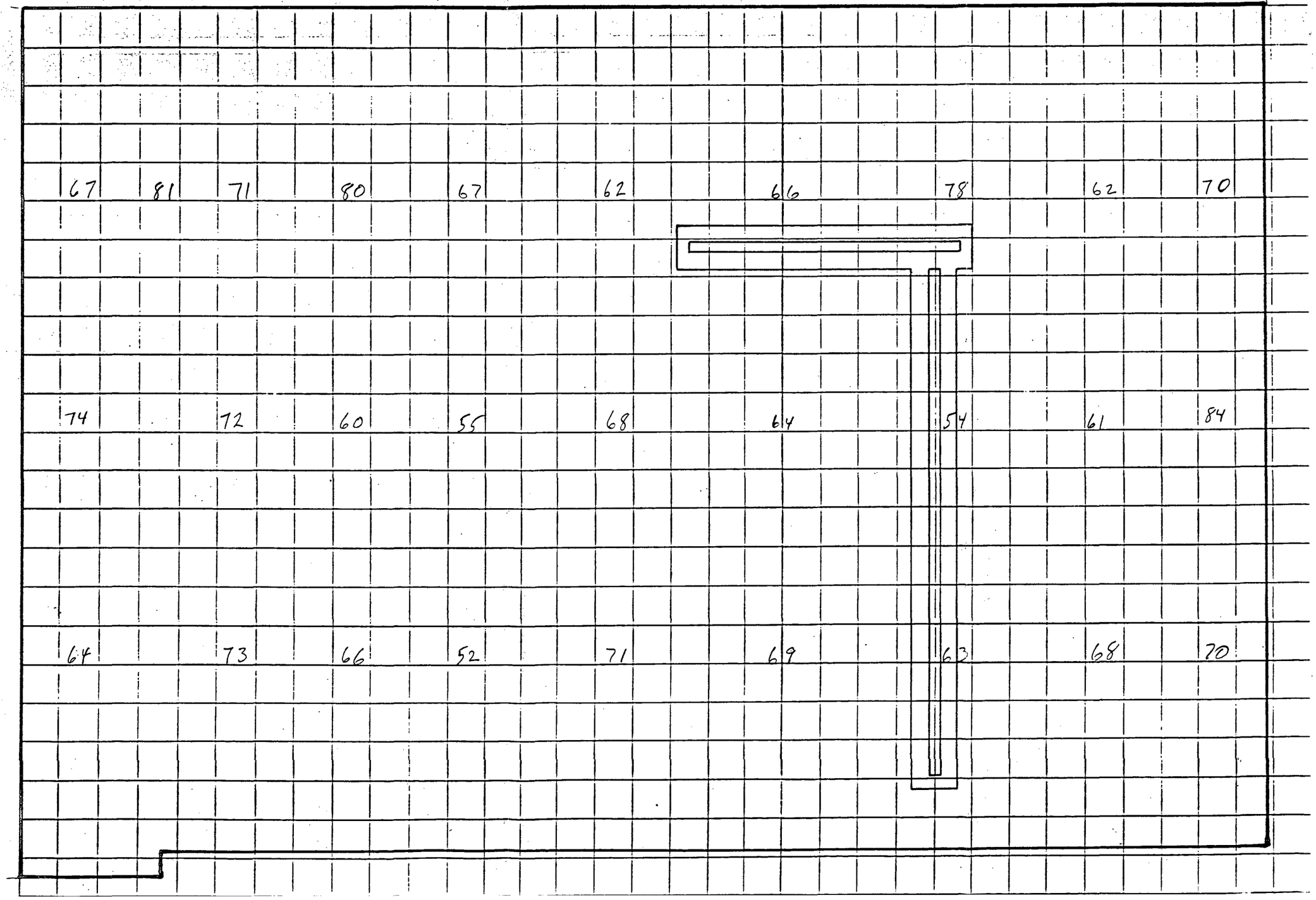
SURVEY UNITS [redacted]
CTS/0.1 MIN
BKG. - 70

N
W E
S
1 cm = 1 Meter

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

SOURCE#: S-88 VALUE: 44 ci [redacted]

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD. C/M
8-23-89	14308-14313	70



AREA Pu-PLANT YARD

TYPE OF SURVEY LOW ENERGY GAMMA

TYPE OF INSTRUMENT LUDLUM 2220/DET. 44-17

SERIAL NUMBER 37819

COMPLETION DATE 8-23-89

H.P. SIGNATURE Claude M Thompson

SURVEY UNITS CTS/0.1MIN

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

SOURCE #: 5-88 Pu^{239} VALUE: 4-4 ci

INSTRUMENT		
DATE	SOURCE C/M RESPONSE	BKGD C/M
8-23-89	13851-14220	73
"	13750-13846	