# APPENDIX B-9

# DELINEATION SURVEYS FOR AREAS 12 AND 13

HALBERT ASSOCIATES, INC.
C. HALLAM/[illegible]
SURVEY # 008

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 021997
LOCATION: BLDG 14 AREA 12
PAGE 1 OF 2
see survey map for locations

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 50 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | N/A-SCAN |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | F0→F9 | 18" IBEAM LEDGE | | 100-170 | | | |
| 2 | F0-F9 | 18" IBEAM BOTTOM | | 100-150 | | | |
| 3 | F2→J2 | 10" IBEAM LEDGE | | 130-180 | | | |
| 4 | F0 | CORNER STEEL PLATE | | 150 | | | |
| 5 | J2→I2 | IBEAM BOTTOM | | 100-180 | | | |
| 6 | F0→H0 | 14" IBEAM LEDGE | | 100-160 | | | |
| 7 | F3 | IBEAM BOLT | | 170 | | | |
| 8 | F2-F4, G2-G9 | CEILING | | 100-170 | | | |
| 9 | F7-I7 | 10" IBEAM - BOTTOM | | 100-150 | | | |
| 10 | F7-I7 | 10" IBEAM LEDGE | | 100-180 | | | |
| 11 | H3 | ANGLE IRON | | 190 | | | |
| 12 | I4 | ANGLE IRON-STEEL PLATE | | 100-330 | | | |
| 13 | I4, I5, I6 | ANGLE IRON-NORTH VERT. | | 150-220 | | | |
| 14 | I3 | ANGLE IRON/IBEAM BOLTS | | 100-150 | | | |
| 15 | I5 | ANGLE IRON/IBEAM BOLTS | | 100-170 | | | |
| 16 | I7, I8 | 8" IBEAM LEDGE (NORTH+SOUTH) | | 100-160 | | | |
| 17 | I7 | IBEAM BOLTS | | 160 | | | |
| 18 | F3→I3 | 10" IBEAM - BOTTOM | | 100-200 | | | |
| 19 | I3, J3 | 10" IBEAM - LEDGE | | 100-180 | | | |
| 20 | I0, I1 | 8" IBEAM - LEDGE | | 100-150 | | | |
| 21 | K2, J3, I3, I4 | ANGLE IRON (TOP) | | 100-200 | | | |
| 22 | I2 | IBEAM BOLTS | | 100-180 | | | |
| 23 | I2 | 10" IBEAM VERT. | | 100-200 | | | |
| 24 | I3, J2 | 10" IBEAM VERT | | 100-150 | | | |
| 25 | K2, J3, I3, I4 | ANGLE IRON (BOTH SIDES) | | 100-180 | | | |
| 26 | F0→H0 | 14" IBEAM BOTTOM | | 100-150 | | | |
| 27 | G3→J3 | 10" IBEAM VERT (EAST+WEST) | | 100-180 | | | |
| 28 | E3→I3 | 10" IBEAM LEDGE (EAST+WEST) | | 100-200 | | | |
| 29 | G5→I5 | 10" IBEAM VERT (EAST+WEST) | | 100-170 | | | |
| 30 | I7, I8 | 8" IBEAM UPPER WEB | | 100-180 | | | |
| 31 | I7, I8 | 8" IBEAM VERT SOUTH SIDE | | 100-170 | | | |
| 32 | I8 | 8" IBEAM BOTTOM | | 100-160 | | | |
| 33 | H2-H9 I2-I9 | CEILING | | 100-160 | | | |
| 34 | 021997 H7-J7-I7 | CEILING | | 100-160 | | | |
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|---|---|
| Instrument Model & s/n: | L2221 8633 |
| Detector Model & s/n: | N1008 9310 |
| Calibration Date: | 020797 |
| Efficiency | 0.1 |
| Detector Area | 0.155 |

REVIEW

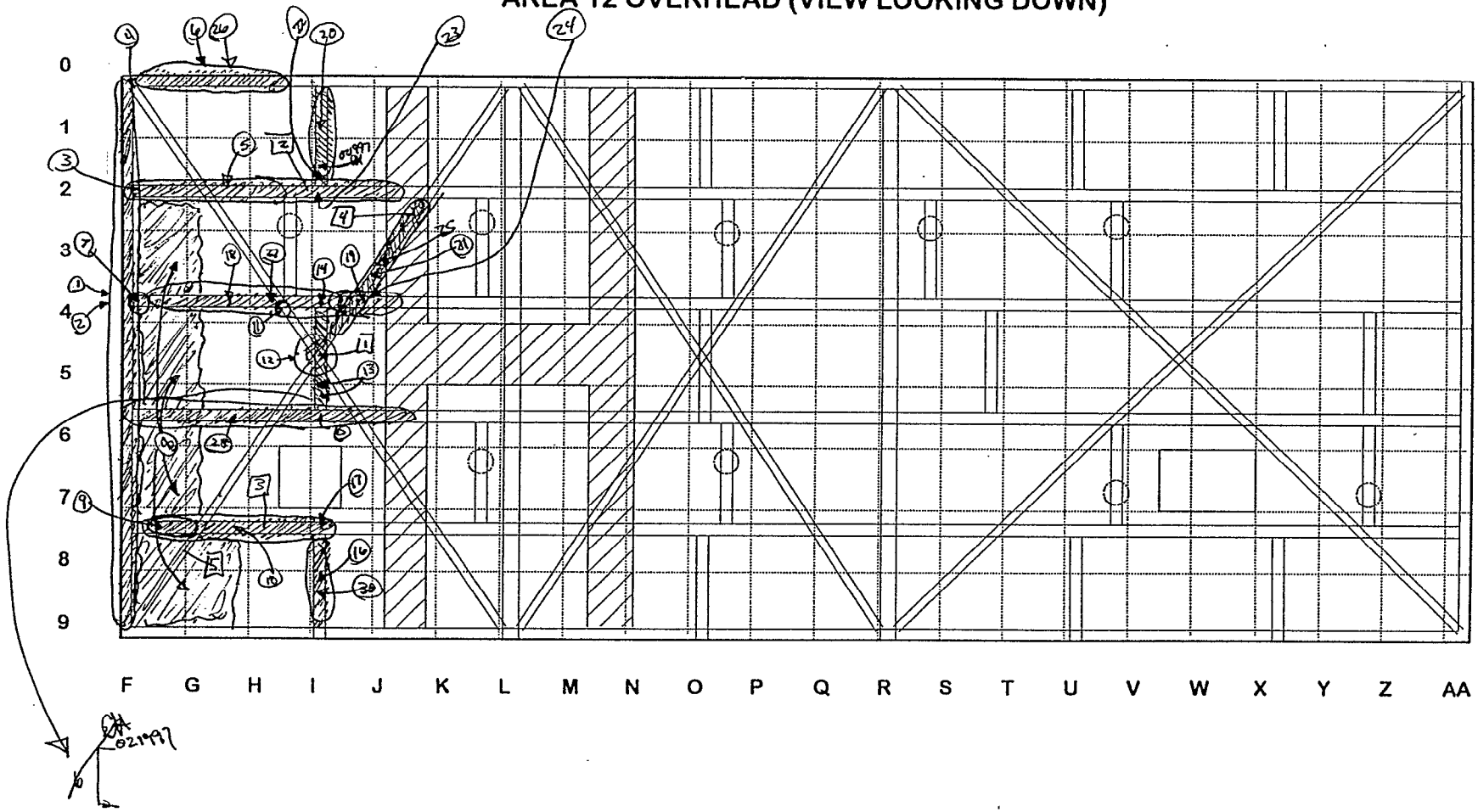
SURVEY # 008
PAGE 2 OF 2

021997
C. HALLAM / [illegible]

= > CRITERIA OF 3.5 KDPM

O = DIRECT SURVEY LOCATION
□ = SMEAR SURVEY LOCATION

## AREA 12 OVERHEAD (VIEW LOOKING DOWN)




021997

REVIEW

SURVEY 017

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE:
LOCATION:

PRAXAIR BLDG. #14
AREA 13
SOUTH WEST (@ CRANE RAIL)
AREA

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 343 CTS. |
| BACKGROUND COUNT TIME (MIN) | 5 MIN. |
| SAMPLE COUNT TIME (MIN) | 1 MIN. CT. |

DELINEATION SURVEY / JOB COVERAGE SURVEY  # = DELINEATION SURVEY

| DELINEATION SAMPLE # | LOCATION CODE cpm |
|---|---|
| 1 | 87 |
| 2 | 267 |
| 3 | 87 |
| 4 | 123 |
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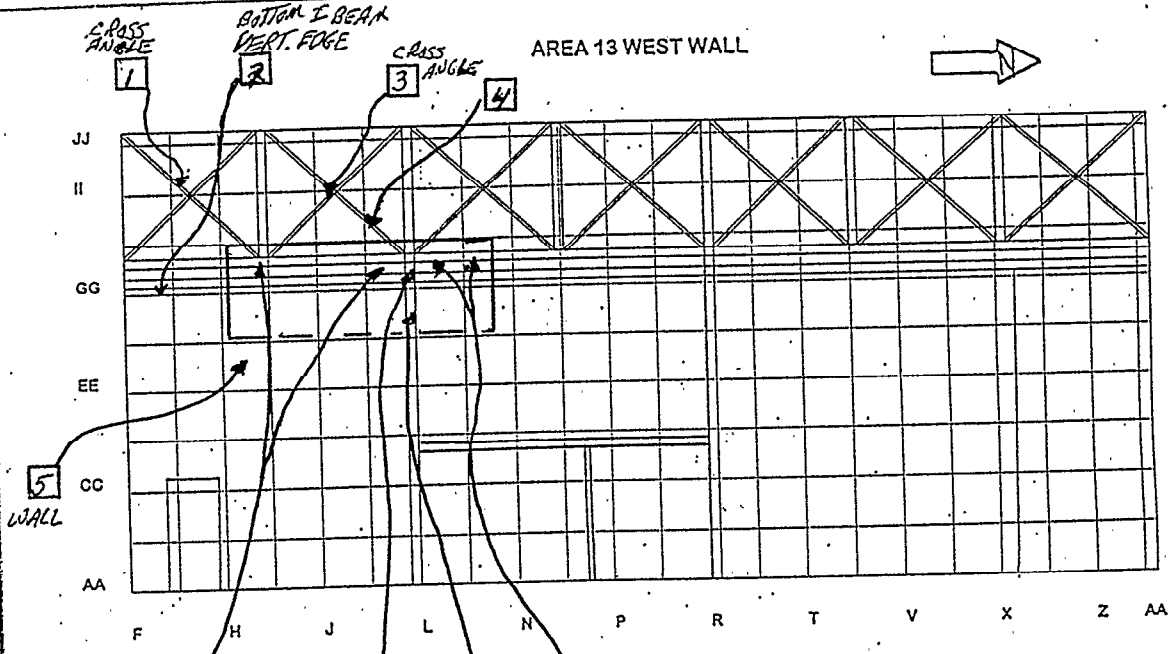


BOLTS @ I BEAM 210 cpm / 86 cpm

I BEAM UNION & BOLTS (VERT.) 500 cpm / 220 cpm

EAST SIDE & TOP CRANE RAIL # 458 cpm / 121 cpm

— JOB COVERAGE —

FACE PLATE & BOLTS @ I BEAM 596 cpm / N/A

NOTE: * # cpm / # cpm = PRE DE-CON ATTEMPT (cpm) BY / POST DE-CON ATTEMPT (cpm) BY

| | |
|---|---|
| Instrument Model & s/n: | L2221 #86314 w/1008 #9313 |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on SrY90 = .23 |
| Detector Area | cm2 = 15.5 |

William [illegible]
2/26/97

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

C. HALLAM / CHALL

SURVEY # 0014

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 022697
LOCATION: BLDG 14 . AREA 12 OVERHEAD

NCPM = NET COUNTS PER MINUTE

JP = JOICE PLATE
BH = BOLTHEADS
LW = LINER WEB (HORIZONTAL)
AI = ANGLE IRON
I-B = IBEAM
NAM = > CRITERIA (3.5K NAM)

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 52 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | N/A - SCAN |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION |
|---|---|---|
| 1 | L0 | BOTTOM OF 20" IBEAM 140-250 NCPM |
| 2 | L0 | JP, BH (TOP) 120-170 NCPM |
| 3 | L0, M0 | LW OF 14" IBEAM, BH 120-300 NCPM |
| 4 | L0 | AI NORTH VERT, 120-250 NCPM |
| 5 | L2 | LW OF 10" IBEAM (WEST SIDE) 120-180 NCPM |
| 6 | L0 | JP, BH 120-250 NCPM |
| 7 | L0 | SOUTH LW OF 20" IBEAM 120-200 NCPM |
| 8 | K1 | WEST LW OF 10" IBEAM 120-180 NCPM |
| 9 | L2 | BH ON 20" I-B 120-170 NCPM |
| 10 | L3 | SOUTH VERT + BH ON 20" IB 120-250 NCPM |
| 11 | K3 | WEST VERT OF 10" I-B 120-200 NCPM |
| 12 | K3 | EAST VERT OF 10" I-B 120-200 NCPM |
| 13 | L3, L4 | SOUTH VERT OF 20" I-B (JUNIPER) 120-250 NCPM |
| 14 | L3, L4 | SOUTH LW OF 20" I-B 120-350 NCPM |
| 15 | L8, L9 | SOUTH VERT OF 20" I-B 120-200 NCPM |
| 16 | L8, L9 | SOUTH LW OF 20" I-B 120-350 NCPM |
| 17 | L9 | TOP OF JOICE PLATE 120-200 NCPM |
| 18 | J8, J9 | CEILING 120-230 NCPM |
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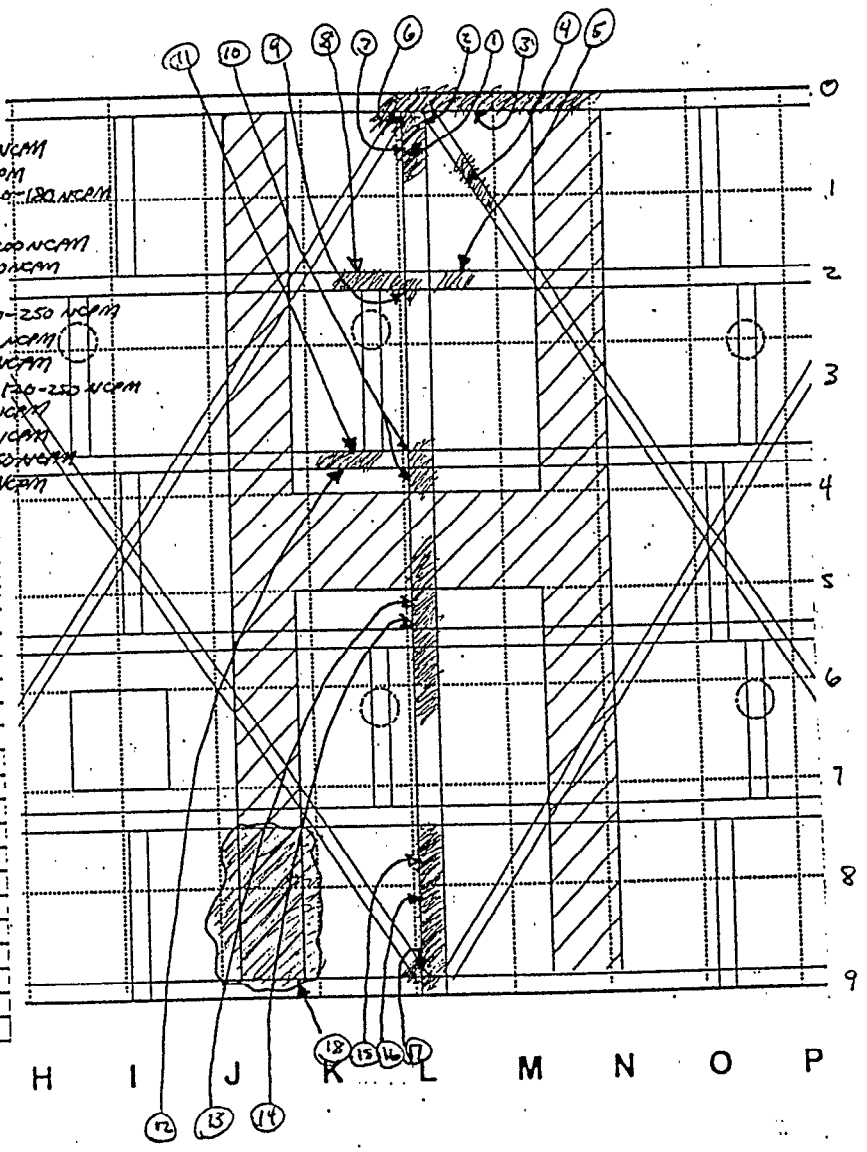


| | |
|---|---|
| Instrument Model & s/n: | L2221 / 86313 |
| Detector Model & s/n: | N1008 / 9310 |
| Calibration Date: | 2-7-97 |
| Efficiency | 0.22 cpm / dpm based on S/Y90 |
| Detector Area | 15.5 cm2 |

REVIEW

PAGE 1

ENCL-C2.XLS

SURVEY # 015

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 2-25-97
LOCATION:
- SOUTH WEST SIDE
LOOK WEST OF AREA 13 CRANE RAIL
BLDG #14

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 325 CTS. |
| BACKGROUND COUNT TIME (MIN) | 5 MIN. |
| SAMPLE COUNT TIME (MIN) | 1 MIN |

CRANE RAIL PRE-JOB

| SAMPLE # | LOCATION CODE |
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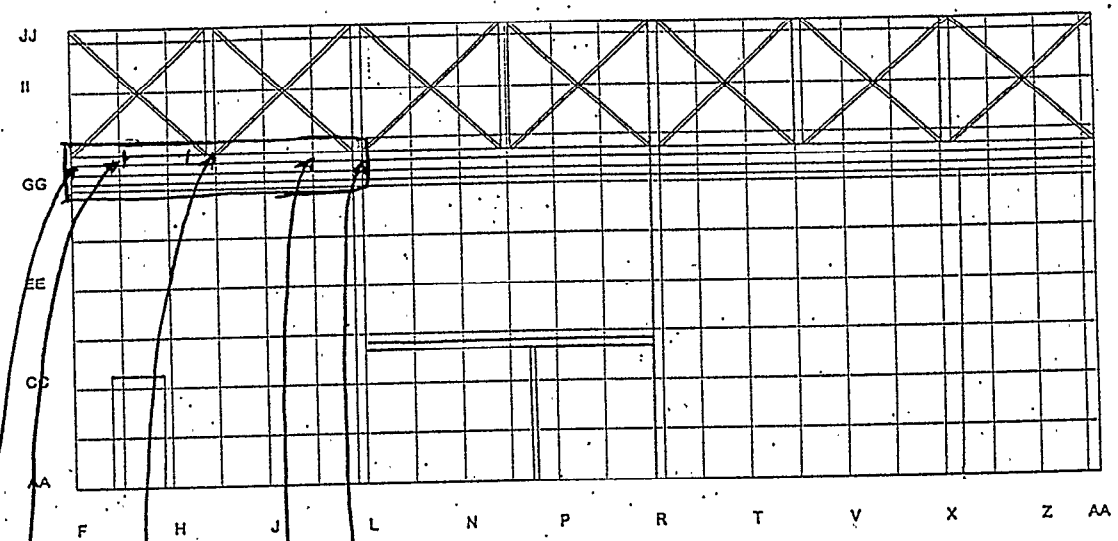
AREA 13 WEST WALL




150-250 cpm BY SPOTTY CONTAMINATION @ TOP RAIL & TOP OF I BEAM.

150-160 cpm BY @ BOLTS OF I BEAM.

* 150-180 cpm BY @ ALL ALONG CRANE RAIL BASE, WITHIN AREA SHOWN ABOVE.

UPTO 1k cpm BY UNDER CRANE RAIL INACCESSABLE GRASS CONTAMINATION.

UPTO 500 cpm BY @ BOLTS OF I BEAM (VERT. & HOR.)

250-300 cpm BY @ BOLTS OF I BEAM (VERTICAL).

| | |
|---|---|
| Instrument Model & s/n: | L2221 # 86314 w/20.8 # 9313 |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 = .21 |
| Detector Area | cm2 = 15.5 |

William W

2-25-97

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SURVEY # 016

ILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 2-26-97
LOCATION: PRAXAIR BLDG 14
AREA 12
WEST WALL — Remediation survey

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 40 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| | | CPM | | | | | |
| 1 | F-BB | 350cpm concrete | | | | | |
| 2 | F-AA | 400 cpm | | | | | |
| 3 | G-BB | 500 | | | | | |
| 4 | G-AA | 750 | | | | | |
| 5 | H-BB | 250 | | | | | |
| 6 | H-AA | 1100 | | | | | |
| 7 | I-BB | 200 | | | | | |
| 8 | I-AA | 800 | | | | | |
| 9 | J-BB | 600 | | | | | |
| 10 | J-AA | 900 | | | | | |
| 11 | K-BB | <100 | | | | | |
| 12 | K-AA | 1100 | | | | | |
| 13 | L-BB | 100 | | | | | |
| 14 | L-AA | 900 | | | | | |
| 15 | M-BB | 600 | | | | | |
| 16 | M-AA | 1000 | | | | | |
| 17 | N-BB | 100 | | | | | |
| 18 | N-AA | 1100 | | | | | |
| 19 | O-BB | 100 | | | | | |
| 20 | O-AA | 1400 | | | | | |
| 21 | P-BB | 500 | | | | | |
| 22 | P-AA | 1100 | | | | | |
| 23 | Q-BB | 300 | | | | | |
| 24 | Q-AA | 1500 | | | | | |
| 25 | F-AA | 250 galvanized drain pipe | | | | | |
| 26 | G-AA | 100 | | | | | |
| 27 | O-AA | 300 | | | | | |
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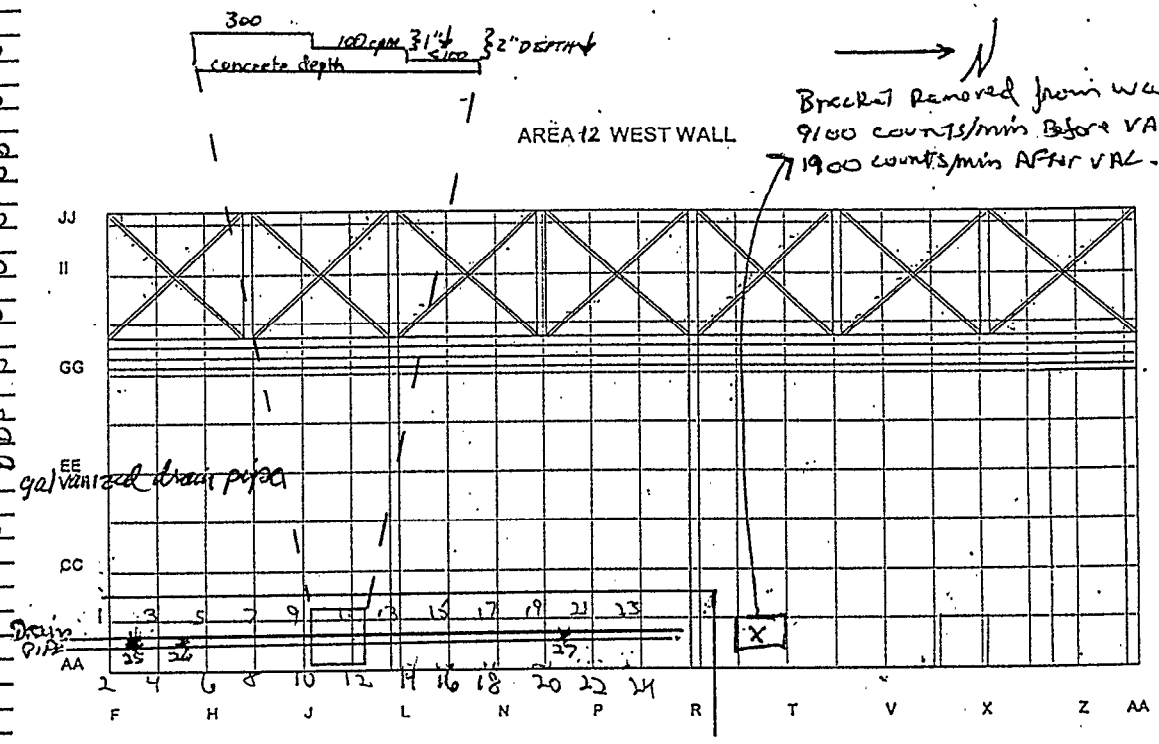


NOTE - Sample # 1-24 indicate fixed contamination on concrete.

Drain Pipe was Primary Area of Decon.

Decon effort from 400 cpm to <100 cpm. all Areas marked in Red except as indicated at locations #25, 26, 27 on 2" galvanized drain pip

| | |
|---|---|
| Instrument Model & s/n: | 2221/89648 |
| Detector Model & s/n: | 44-9/023041 |
| Calibration Date: | 12-27-96 |
| Efficiency | .23 cpm / dpm based on S/Y90 |
| Detector Area | .155 cm2 |

2-26-97

PAGE 1

ENCL-C2.XLS

SURVEY - 018

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 2/26/96
LOCATION: PRAXAIR SITE
BLDG. #14
AREA 13

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 343 CTS. |
| BACKGROUND COUNT TIME (MIN) | 5 MIN. |
| SAMPLE COUNT TIME (MIN) | 1 MIN. |

STEEL I BEAM (UNDERSIDE OF TOP) FOR CRANE RAIL.

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| | CPM | | | | | | |
| 1 | 1258 | I BEAM - BOTTOM OF TOP SIDE OF CRANE RAIL (RUST & PAINT) | | | | | |
| 2 | CPM BY | | | | | | |
| 3 | DIRECT | | | | | | |
| 4 | FRISK | | | | | | |
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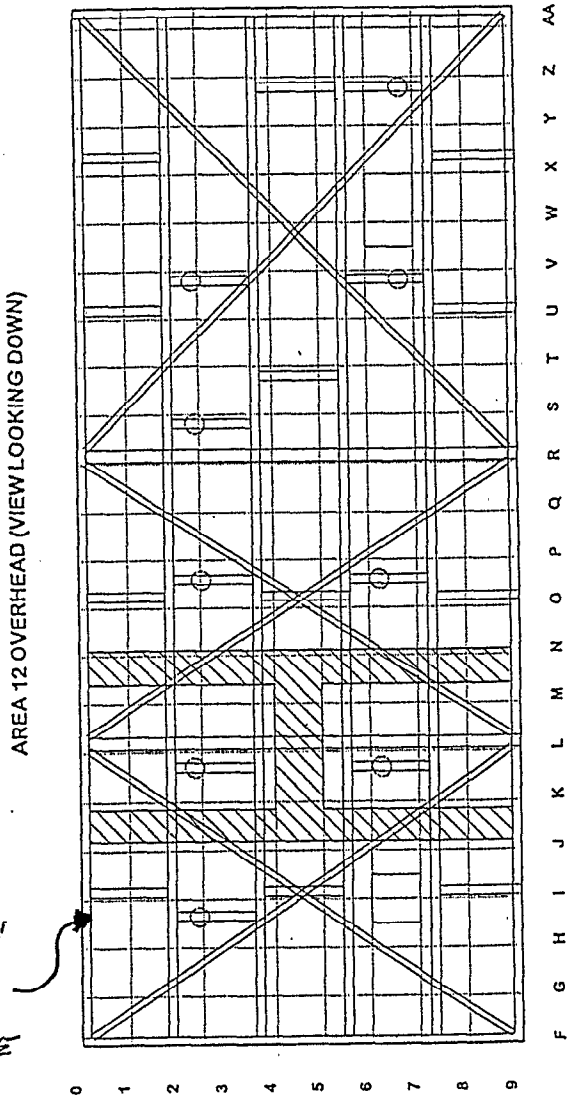


| | |
|---|---|
| Instrument Model & s/n: | L2221 #86314 w/1008 #9313 |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 = .21 |
| Detector Area | cm2 = 15.5 |

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

023

SAMPLE DATE: 3-3-97
LOCATION:
Prax AIR
BLDG 14
Area 12
WEST WALL

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 40 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS cpm | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | Q-44 | Weld Joint 3 Long | 600 | | | | |
| 2 | K-CC | I-Beam | <100 | | | | |
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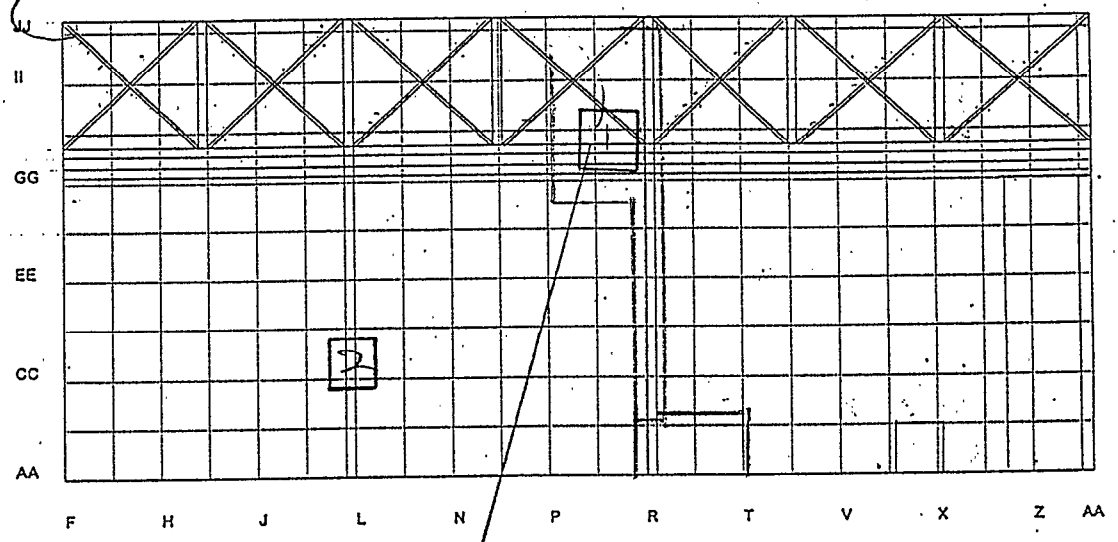
N

no X bracing joint grid

AREA 12 WEST WALL




Areas decomned ranged from 150 cpm → 900 cpm. ALL were on metal painted beds

* NOTE: 3' Area of Beam in weld joint could not be de-connel with a needle gun It appears a grinder would be effectin Area count rate increased from <100 to >600 when paint was removed.

| | |
|---|---|
| Instrument Model & s/n: | C-2221 |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 22% |
| Detector Area | cm2 0.155 |



ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

024

SAMPLE DATE: 3-3-97
LOCATION:
Praxair
Bldg 14
area 13
west wall

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scalar measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 40 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE |
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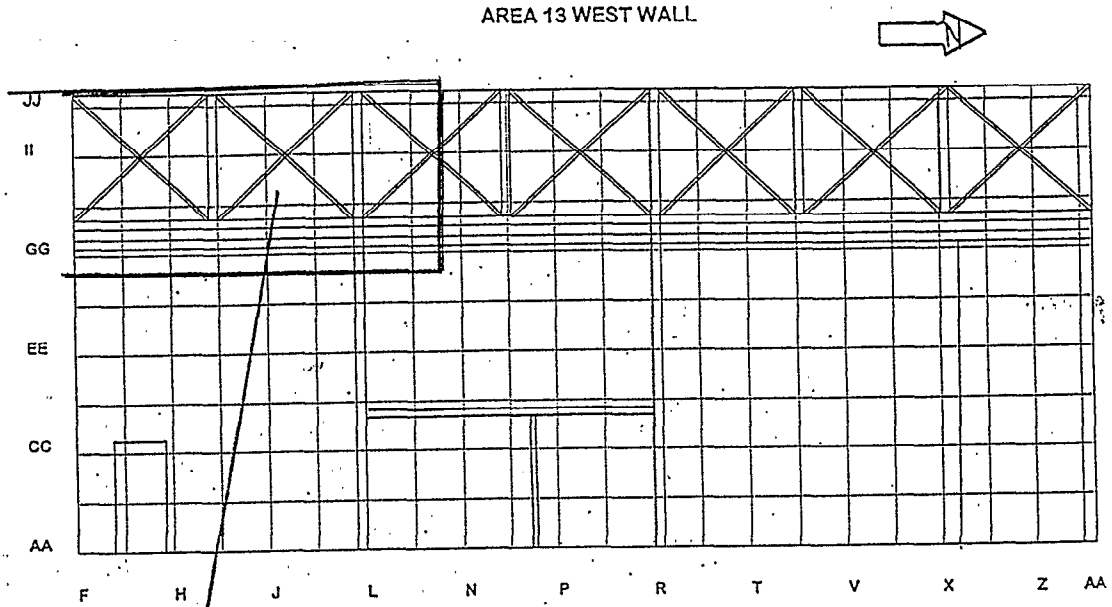
AREA 13 WEST WALL




Area Down complete. All locations marked in Red have been decomned to <5000 DPM.

| | |
|---|---|
| Instrument Model & s/n: | C -2221 |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 2298 |
| Detector Area | cm2 0.155 |

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

027

SAMPLE DATE: 3-4-97
LOCATION:
PRAXAIR
Bldg 14
AREA 12
WEST WALL

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 39 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
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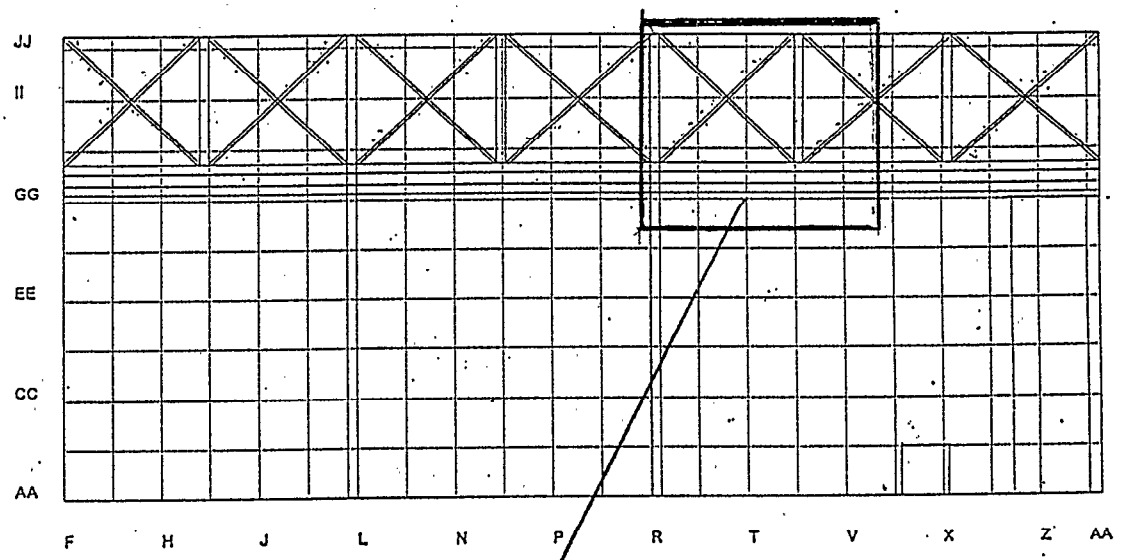
AREA 12 WEST WALL




Area decon 90% complete. Decon of Area based ONLY on Red painted metal surfaces. Decon effort was from 50 cpm → 2200 cpm. All areas decontaminated are less than 5000 DPM

| | |
|---|---|
| Instrument Model & s/n: | A -2221 |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 22% |
| Detector Area | cm2 0.155 |



ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

028

SAMPLE DATE: 3-4-97
LOCATION:
PRAXAIR
BLDG 14
Area 13
WEST WALL

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 39 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS - cpm | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | M-GG | 18" Linear Inch crack | 350-350 | | | | |
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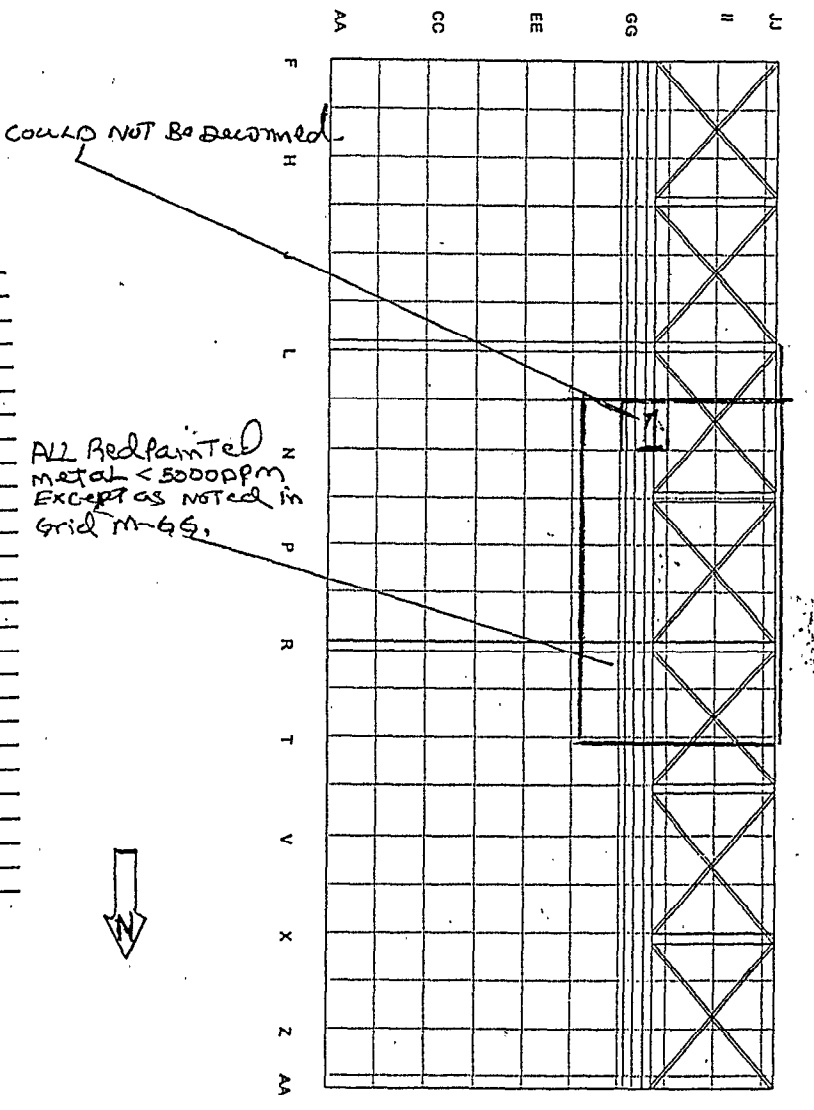


| | |
|---|---|
| Instrument Model & s/n: | ~~L2221~~ / ~~89648~~ A .2221 |
| Detector Model & s/n: | ~~44-9~~ / ~~33041~~ |
| Calibration Date: | ~~12-27-96~~ |
| Efficiency | .16 cpm / dpm based on S/Y90 .22 |
| Detector Area | .16 cm2 0.155 |

.155

~~Bkgd~~

AREA 13 WEST WALL

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

031

SAMPLE DATE: 030597
LOCATION:
Prax. Air
Bldg 14
Area 13
Ceiling

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 46 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
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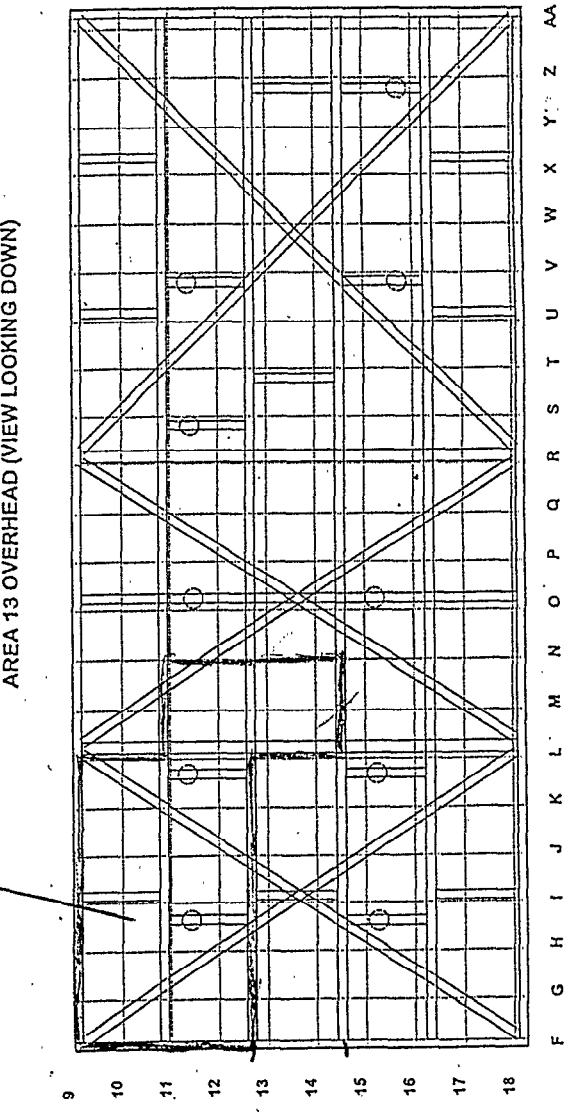


Bad Painted Areas
Need be Gunned And VACUUMBLASTED
Area To be overchecked Tomorrow A.M.

| | |
|---|---|
| Instrument Model & s/n: | A-2221 |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 20% |
| Detector Area | cm2 0.155 |

DJPitman 3/5/97

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

032

SAMPLE DATE: 030597
LOCATION:
Praxair
Bldg 14
Area 13
West Wall

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scalar measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 46 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE |
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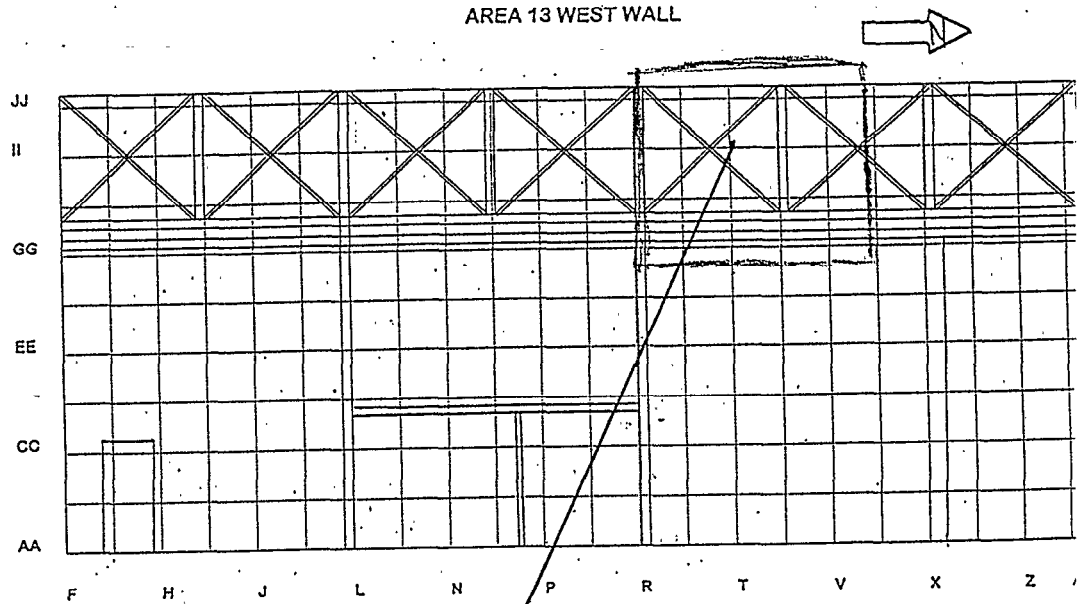
AREA 13 WEST WALL




All Red Painted metal surfaces decomed
To < 5000 DPM

D. Pittman 3/5/97

| | |
|---|---|
| Instrument Model & s/n: | A - 2221 |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 20% |
| Detector Area | cm2 0.155 |

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

033

SAMPLE DATE: 030597
LOCATION:
PTRXAIR
BLDG 14
Area 12
Ceiling

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 46 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| | Grid | | | | | | |
| 1 | L-3 | Ceiling I-Beam | 280 | | | | |
| 2 | L-4 | " " | 160 | | | | |
| 3 | L-3 | Bottom of I-Beam | 280 | | | | |
| 4 | L-5 | Bottom of Beam | 150 | | | | |
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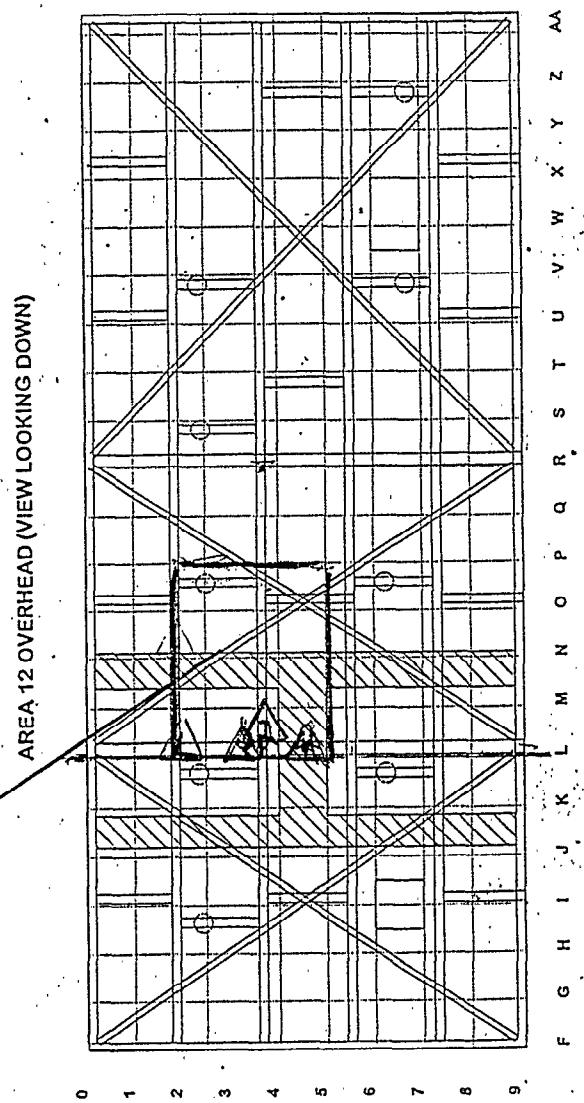
Not CPM




ALL Surfaces Decontaminated of Rad Paints Areas indicated by Δ show >5000 DPM. NOT Painted Red.

| | |
|---|---|
| Instrument Model & s/n: | A - 2221 |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 20% |
| Detector Area | cm2 0.155 |

D.F. Pitman 3/5/97

ENCL-C2.XLS

ILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

037P

SAMPLE DATE: 030597
LOCATION:
PraxAir
BLDG 14
Area 12
WEST WALL

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 46 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
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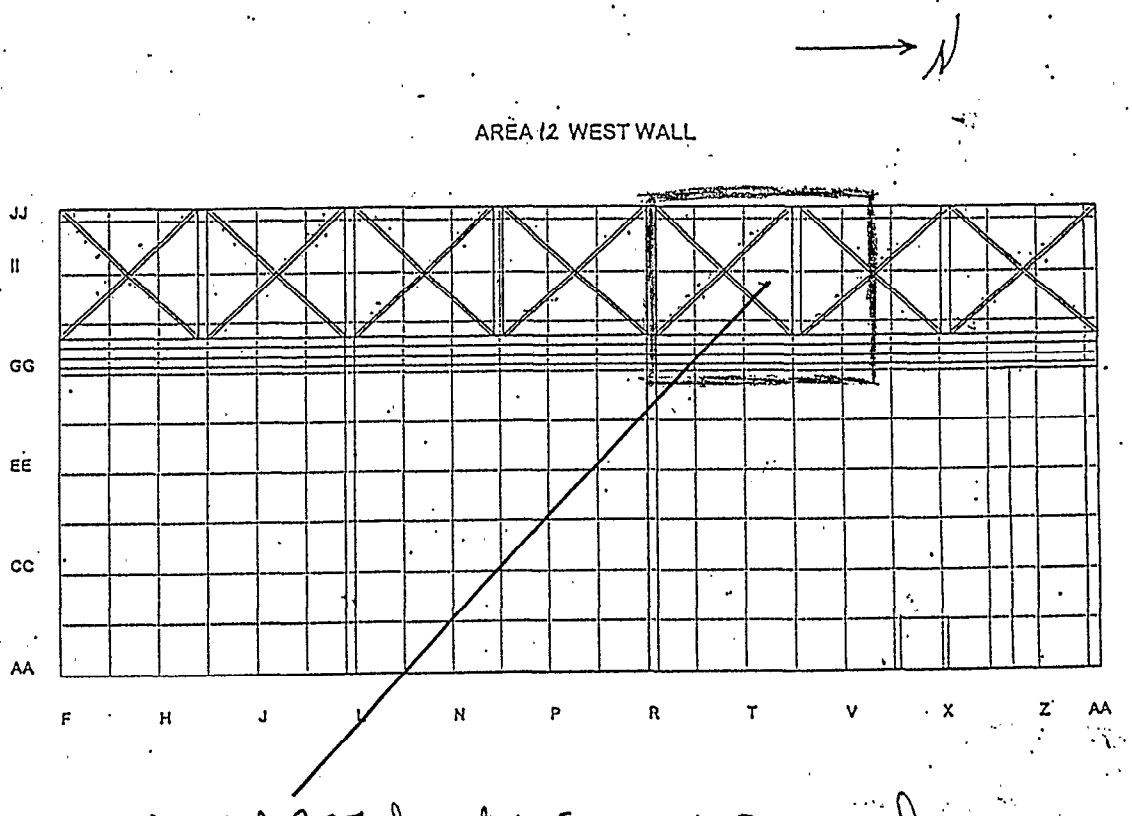


All Red Painted metal surfaces Decomed.
<5000 DPM.

D7 Pitman 3/5/97

| | |
|---|---|
| Instrument Model & s/n: | A - 2221 |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on SrY90 2070 |
| Detector Area | cm2 0.155 |



ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

41

SAMPLE DATE: 2/27/97
LOCATION:

PRAX AIR
BLDG 14
AREA 13

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 45 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE |
|---|---|
| 1 | M-GG |
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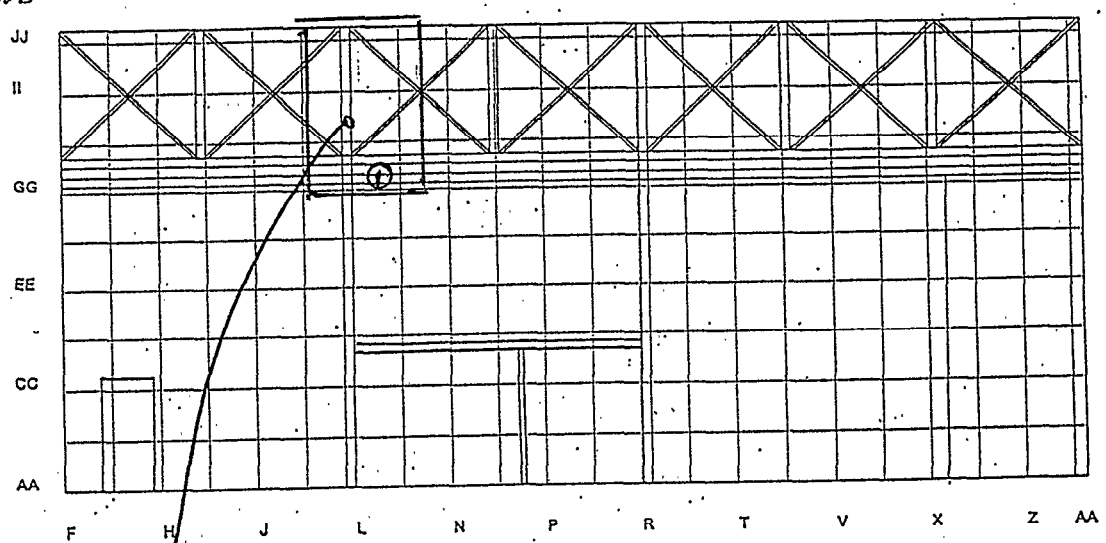
SCHROUD -1500 Fixed

AREA 13 WEST WALL




Area decomed from MAN LIST, contamination Range 150 cpm → 500 cpm
Decomed to < 150 cpm

Except for Sample #1

| | |
|---|---|
| Instrument Model & s/n: | C 2221 |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | .24 cpm / dpm based on S/Y90 |
| Detector Area | 0.155 cm2 |

2/27/97

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

0148

SAMPLE DATE: 030697
LOCATION:
Prax Air
BLDG -14
Area 12
Ceiling

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 46 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | ~~GROSS~~ NET SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | Q-3 | I-Beam Rivits | 350 | | | | |
| 2 | Q-Ø | Crane Track | 400 | | | | |
| 3 | Q-Ø | Concrete Ceiling | 200 | | | | |
| 4 | L-Ø | I-Beam | 250 | | | | |
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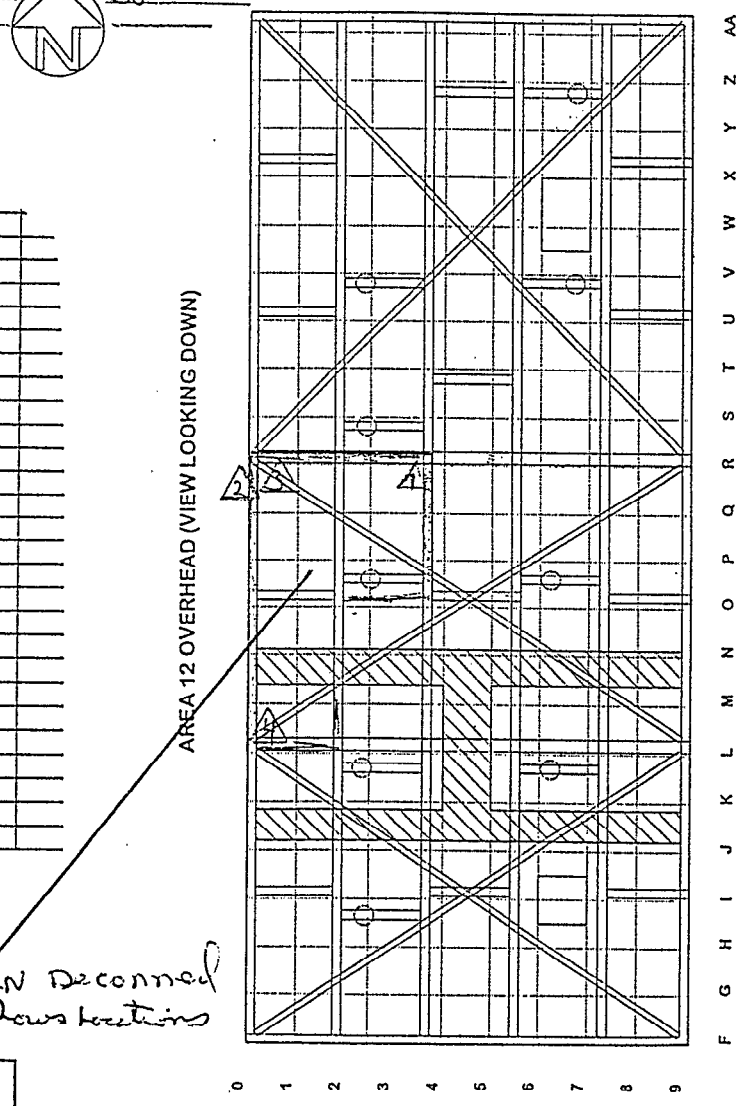


△=Fixed contamination

Area has been decomned of all red painted areas. △ shows locations that are still >5000 DPM

| | |
|---|---|
| Instrument Model & s/n: | |
| Detector Model & s/n: | A-2221 |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 25% |
| Detector Area | cm2 0.155 |

D Peterson 030697

Review: MEfferson

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

054

SAMPLE DATE: 3-10-97
LOCATION:

Praxair
Bldg 14
Area 12
Ceiling

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 65 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | ~~GROSS~~ Net SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
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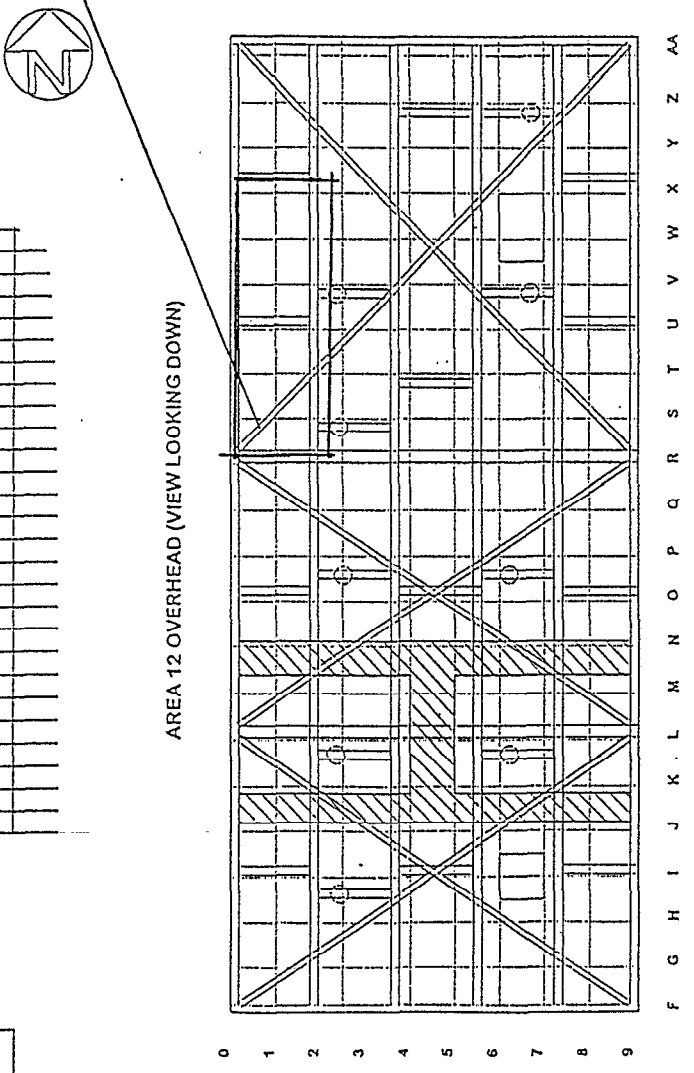
All locations previously painted red have been decontaminated to less than 500 dpm in the outlined area.




D. Pittman 3-10-97

| | |
|---|---|
| Instrument Model & s/n: | 2221-A |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/N90 27% |
| Detector Area | cm2 0.155 |

REVIEW:

ENCL-C2.XLS

BERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

OSS

MPLE DATE: 3-10-97
OCATION:
Prax Air
BLDG 14
Area 12
West Wall

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 65 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | ~~GROSS~~ NET SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | O-H7 | Paint in metal on crain Track | 400 CPM | | | | |
| 2 | R-G6. | Brick wall Behind Horiz Beam | 200 CPM | | | | |
| 3 | W-G4. | Conduit on Bottom of Beam | 2000 CPM | | | | |
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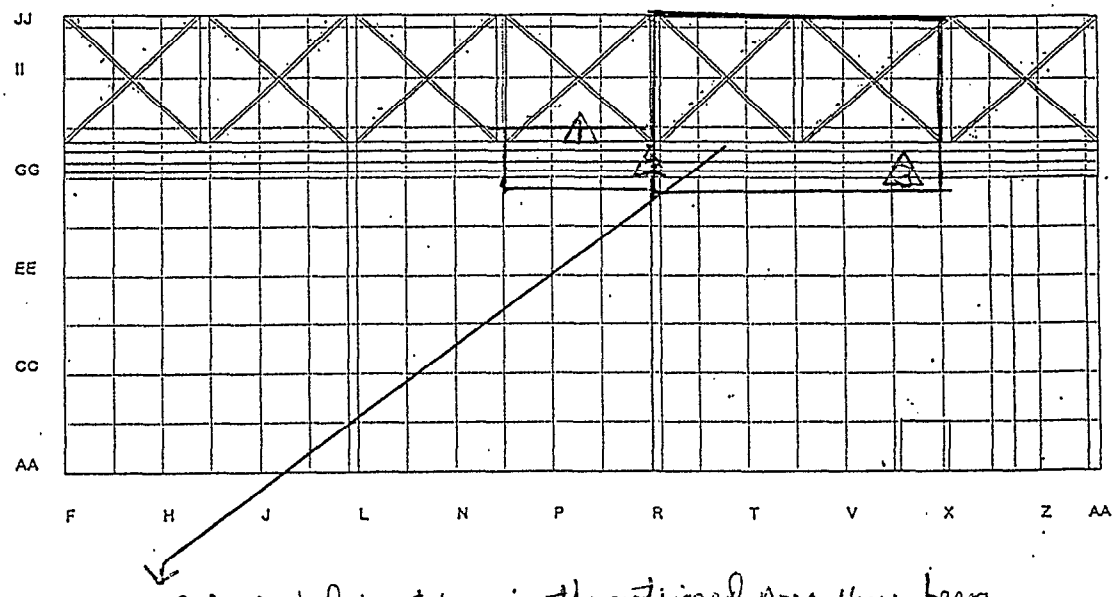
N

AREA 12 WEST WALL




All Red painted locations in the outlined Area Have been Decomed to less Than 500 dpm with the exceptions of Sample Locations 1, 2, 3.
Sample Locations 1+2 Have failed Decomed 5 Times with Needle gun and Vacublast. They Need an alternate method of decon.
Sample Location #3 Has been decomed once. Vacublast will work with ~~additional~~ additional attempts.

D. Pittman 3-10-97

| | |
|---|---|
| Instrument Model & s/n: | |
| Detector Model & s/n: | 2221 - A |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 21% |
| Detector Area | cm2 0.155 |

Review



ENCL-C2.XLS

ILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

056

SAMPLE DATE: 3-10-97
LOCATION:
Praxair
Bldg 14
Area 13
Caising

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 65 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | ~~GROSS~~ NET SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | L-15 | 3"x20" Area on I-Beam | 220 CPM | | | | |
| 2 | L-18 | 3"x12" Area on I Beam | 300 CPM | | | | |
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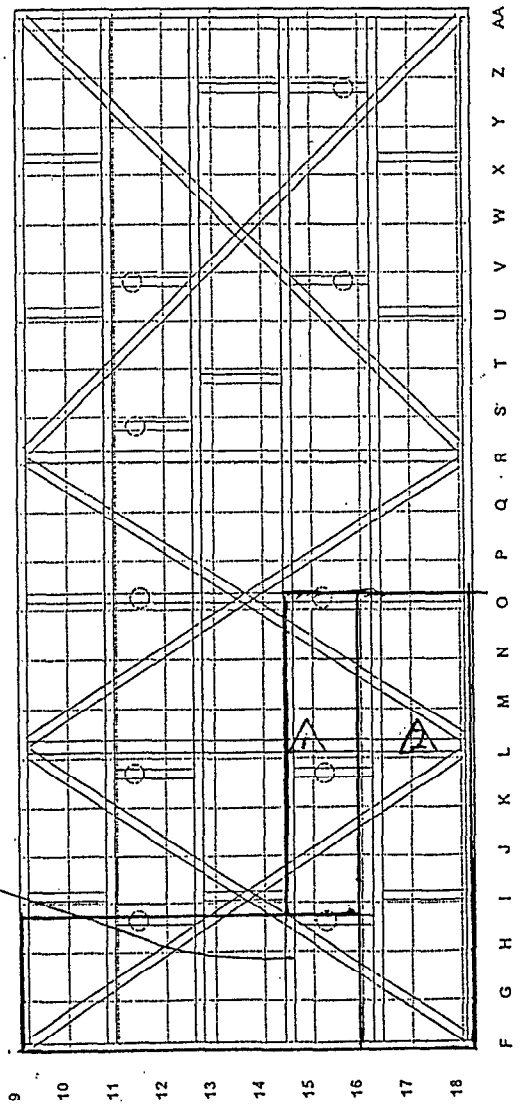
AREA 13 OVERHEAD (VIEW LOOKING DOWN)




outlined Location Has Been Decontaminated To Less Than 5000 DPM
In all areas identified in Red.
Sample #'s 1 + 2 are now identified with green paint. These are New Locations.

| | |
|---|---|
| Instrument Model & s/n: | |
| Detector Model & s/n: | 2221 - A |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 21 % |
| Detector Area | cm2 0.1 SS |

3-10-97

Review

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler-measurement)

057

SAMPLE DATE: 3-10-97
LOCATION:
Bldg. 14 Prax AIR
Area 13
East WALL

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 65 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
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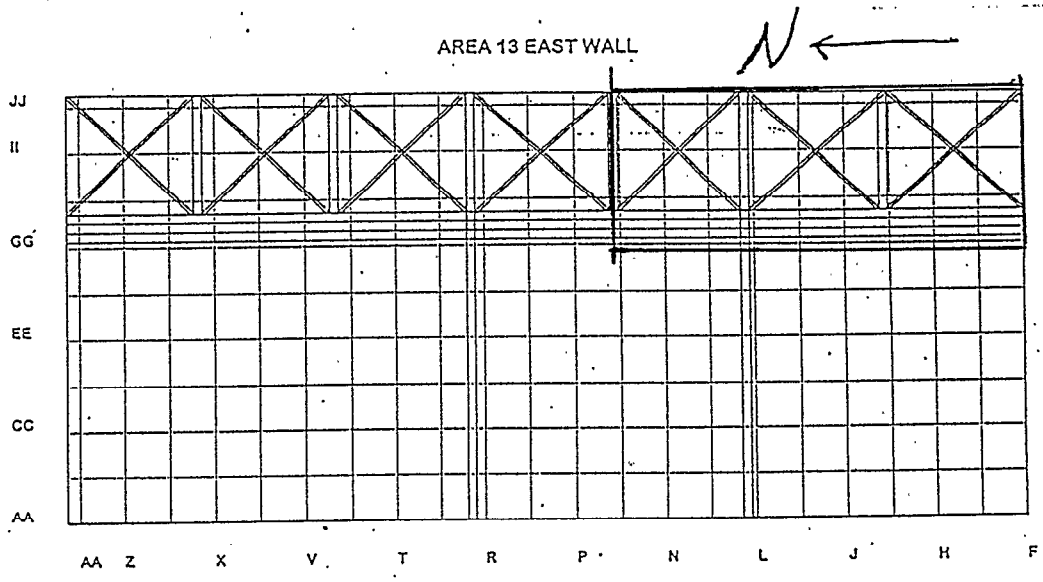


D Pitcher 3-10-97

| | |
|---|---|
| Instrument Model & s/n: | |
| Detector Model & s/n: | 2221 - A |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 21% |
| Detector Area | cm2 0.155 |

REVIEW



ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler·measurement)

063

SAMPLE DATE: 3-11-97
LOCATION:
Praxair
Bldg 14
Area 13
EAST WALL

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 61 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | ~~GROSS~~ NET SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | K-66 | Back of crane Track ≈ 30' | 320 CPM | | | | |
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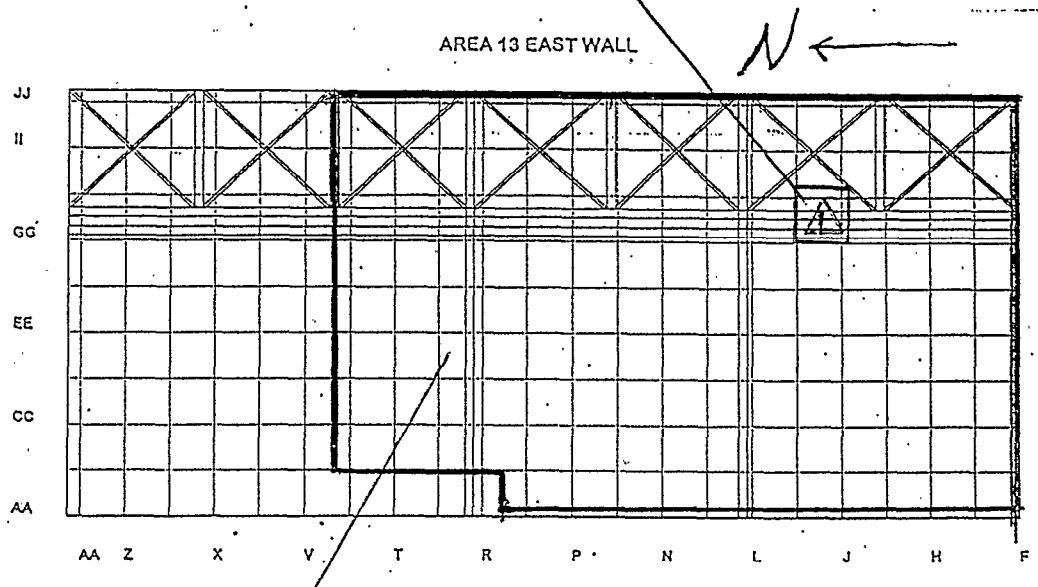
NOT IDENTIFIED IN Red BUT greater Than 5000 DPM




ALL Red Painted Locations in This Area Have Been Decontaminated To Less Than 5000 DPM

| | |
|---|---|
| Instrument Model & s/n: | 2221-A |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 23 % |
| Detector Area | cm2 0155 |

S Pitman 3-11-97

REVIEW

PAGE 1

ENCL-C2.XLS

.BERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

064

AMPLE DATE: 3-11-97
OCATION:
Praxair
Bldg 14
Area 13
South Wall

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 61 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
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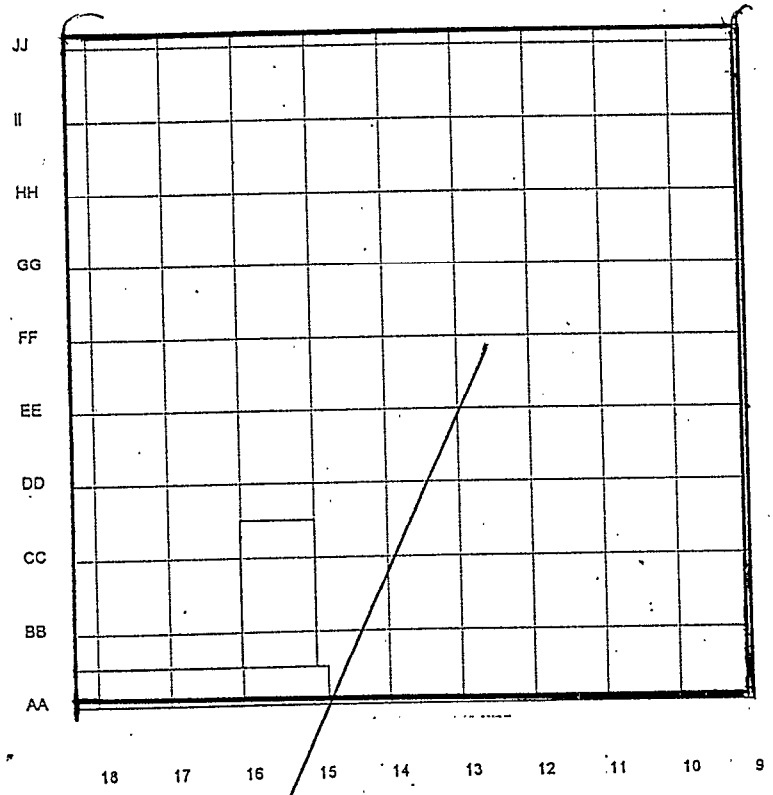
AREA 13 SOUTH WALL




All Red Painted Locations in this Area Have been Decomed To Less than 5000 DPM

| | |
|---|---|
| Instrument Model & s/n: | 2221-A |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | 23% |
| Detector Area | 0.155 cm2 |

cpm / dpm based on S/N90

3-11-97

REVIEW

PAGE 1

INCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

065

SAMPLE DATE: 3-11-97
LOCATION:
Prax Air
BLDG 14
Area 12
Ceiling

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 61 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
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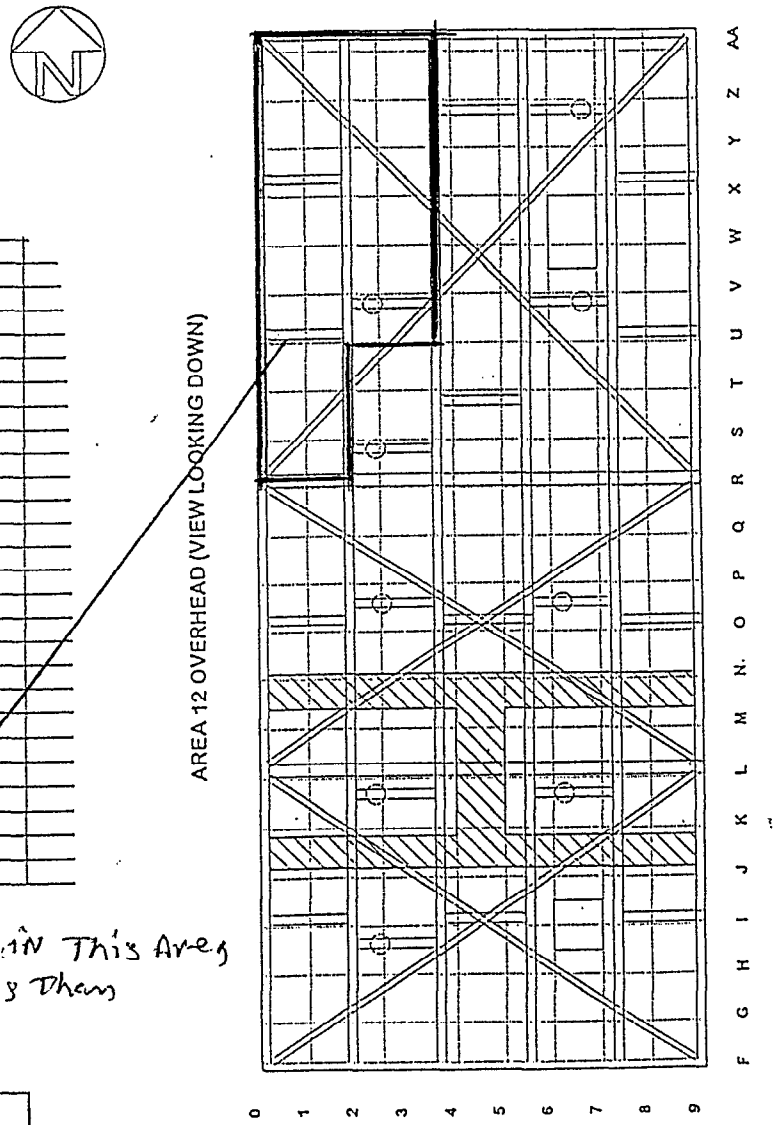


ALL Red Painted Locations in This Area Have been Decomned To Less Than 5000 DPM,

| | |
|---|---|
| Instrument Model & s/n: | 2221-A |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 23 % |
| Detector Area | cm2 0.155 |

D. Pittman 3-11-97

Review:

ENCL-C2.XLS

BERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

066

MPLE DATE: 3-11-97
CATION:
Praxair
BLDG 14
Area 12
West WALL

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 61 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | ~~GROSS~~ NET SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | X-44 | I-Beam -3"x4"x8" | 350 cpm | | | | |
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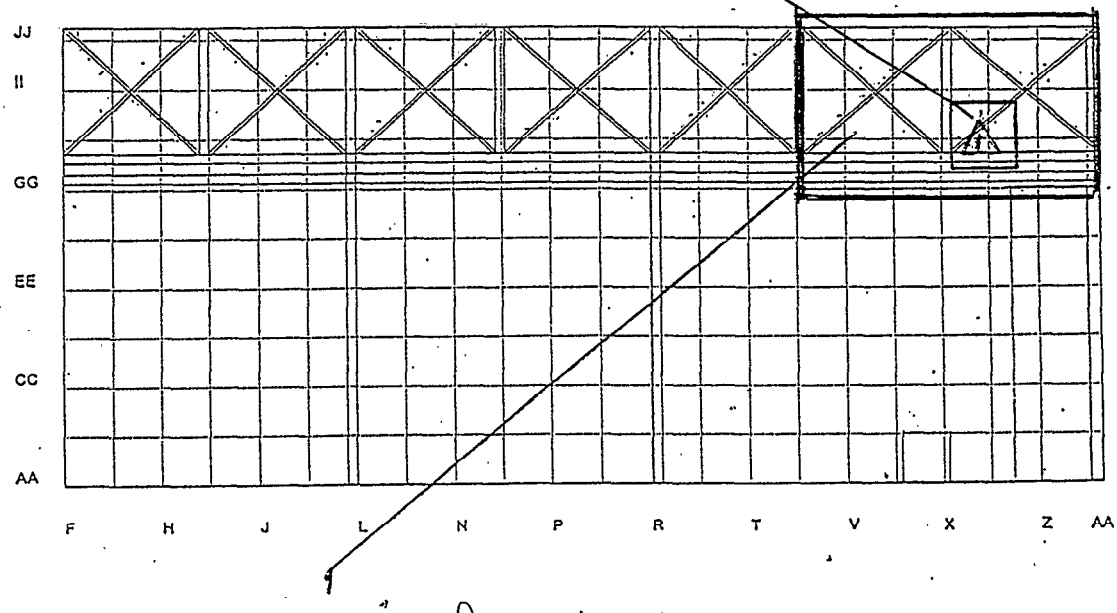
NOT IDENTIFIED in Red BUT Greater Than 5000 DPM

N

AREA 12 WEST WALL




ALL Red Painted Locations in This Area have been Decomned To Less Than 5000 DPM.

| | |
|---|---|
| nstrument Model & s/n: | |
| Detector Model & s/n: | 2221-A |
| Calibration Date: | |
| Efficiency | cpm / dpm based on SrY90 23% |
| Detector Area | cm2 0.155 |

ENCL-C2.XLS

REVIEW

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

~~066~~ 067

SAMPLE DATE: 3-11-97
LOCATION:
Grax Air
Bldg 14
Area 13
Ceiling

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 61 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | ~~GROSS~~ NET SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | L-16 | I-Beam @ 16" | 200 CPM | | | | |
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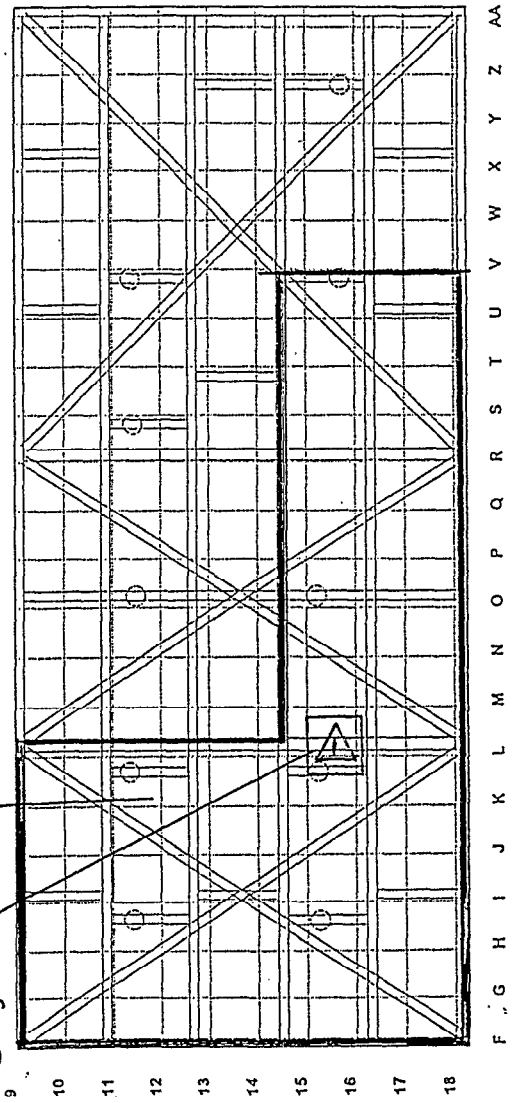


All Red Painted Locations in This Area Has Been Decontaminated To Less Than 5000 DPM.

Not Identified in Red but Greater Than 5000 DPM

| | |
|---|---|
| Instrument Model & s/n: | |
| Detector Model & s/n: | 2221 / A |
| Calibration Date: | |
| Efficiency | cpm / dpm based on SY90 .23 % |
| Detector Area | cm2 0.155 |

D Peterson 3-11-97

REVIEW

PAGE

ENCL-C2.XLS

.BERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

093

WMPLE DATE: 3-13-97
)CATION:
Praxair
Bldg 14
Area 12
West wall

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 52 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | GG-O | Cream Rail | 344 | | | | |
| 2 | GG-R | Brick | 434 | | | | |
| 3 | | | | | | | |
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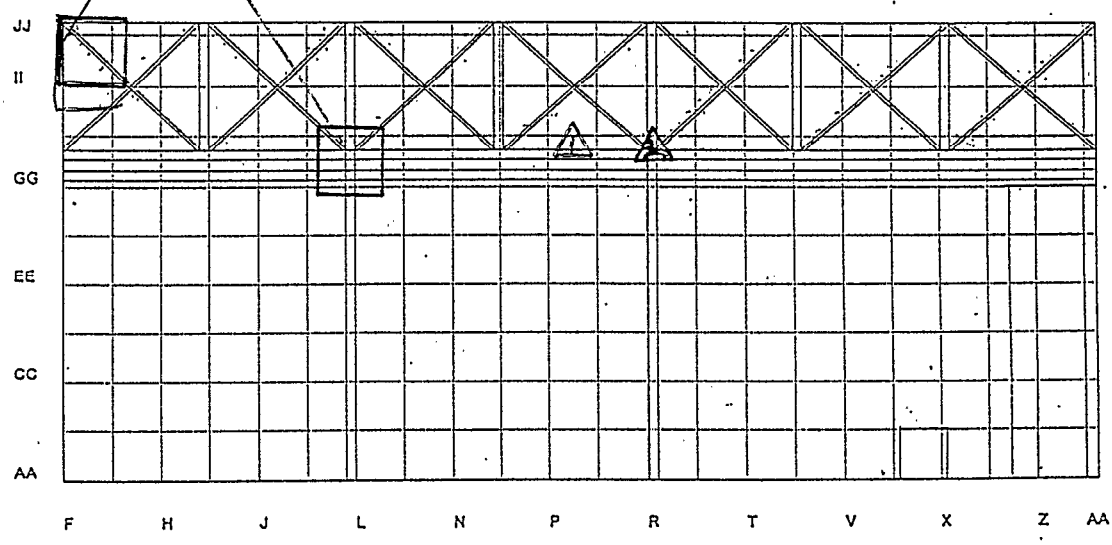
Areas Decontaminated To Less Than 5000 DPM

N

AREA 12 WEST WALL




△ = Fixed Contamination

| | |
|---|---|
| :trument Model & s/n: | 2221 - A |
| :tector Model & s/n: | |
| :ibration Date: | |
| :ficiency | cpm / dpm based on S/Y90 21 % |
| :tector Area | cm2 0.155 |

D J Pettman 3/13/97

REVIEW

PAGE 1

ICL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

095

SAMPLE DATE: 3-13-97
LOCATION:
Prxa 12
Bldg 14
Area 12
ceiling

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 52 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| | SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | ~~NET SAMPLE~~ COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|---|
| | | | | | color of paint | | | |
| 24 | 1 | L-4 | Bottom of Beam | 150 | Green | | | |
| 12 | 2 | L-0 | Bottom of Beam | 450 | Green | | | |
| 2X8 | 3 | L-2 | Corner of Beams | [illegible] | Green | | | |
| 3 | 4 | L-1 | Angle Iron | [illegible] | Green | | | |
| 2X8 | 5 | L-3 | Bottom of Beam | [illegible] | Green | | | |
| | 6 | | | | | | | |
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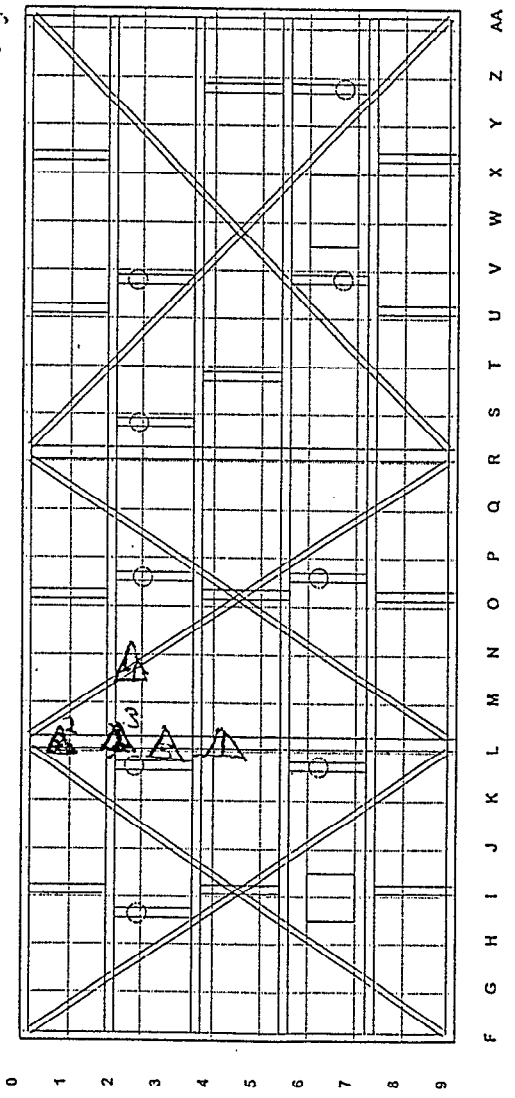
A = Direct Probe - Fixed contamination

AREA 12 OVERHEAD (VIEW LOOKING DOWN)




| | |
|---|---|
| Instrument Model & s/n: | |
| Detector Model & s/n: | 2221 - A |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 21 % |
| Detector Area | cm2 0.155 |

D. Pittman 3-17-97

Review: [illegible]

ENCL-C2.XLS

BERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

179

MPLE DATE: 3-26-97
CATION:
Praxair
Bldg 14
Area 12
West Wall

Decon Effort

*RADIATION MEASUREMENT: Beta-Gamma*
*RESULTS REPORTED UNITS: dpm per 100cm2*
*MEASUREMENT TYPE: direct scaler measurements*

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 62 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | AA-H | Concrete WALL 3'x3' | 200 → 400 | | | | |
| 2 | AA-K | Concrete wall 1'x1' | 250 | | | | |
| 3 | AA-O | Concrete wall/floor 2'x10' | 300 | | | | |
| 4 | AA-S | 55 gal Pipe 2'x6' | 13000 | | | | |
| 5 | AA-W | Steel wall remove spots | 500 | | | | |
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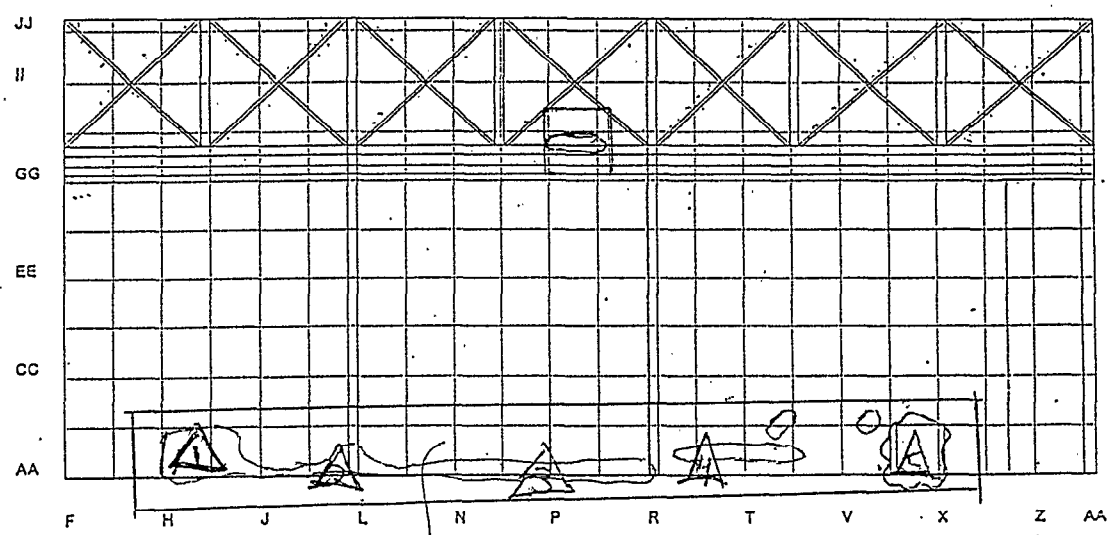
→ N

AREA 12 WEST WALL




area decomed to less than 5000 DPM except as indicated with Δ. Comments/Details above.

→ = Decon Effort
Δ = fixed contamination greater than 5000 DPM after Decon.

| | |
|---|---|
| Instrument Model & s/n: | |
| Detector Model & s/n: | 2221-C |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/Y90 23% |
| Detector Area | cm2 0.155 |

D. Pilmans 3-26-97

Review

PAGE 1

NCL-C2.XLS

ERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler·measurement)

251

SAMPLE DATE: 4-9-97
LOCATION:
Praxair
Bldg 14
Area 13
EAST WALL

*RADIATION MEASUREMENT: Beta-Gamma*
*RESULTS REPORTED UNITS: dpm per 100cm2*
*MEASUREMENT TYPE: direct scaler measurements*

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 51 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

Delineation Survey / Verification Survey

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| DT 1 | CC-Z-A | Block | 79 | | | | |
| DT 2 | B | | 92 | | | | |
| DT 3 | C | | 85 | | | | |
| DT 4 | D | | 78 | | | | |
| DT 5 | E | | 80 | | | | |
| S 6 | CC-Z | | | | | | |
| S 7 | CC-Z | | | | | | |
| DT 8 | CC-Z A | | 2 | | | | |
| DT 9 | B | | 3 | | | | |
| DT 10 | C | | 7 | | | | |
| DT 11 | D | | 6 | | | | |
| DT 12 | E | Block | 3 | | | | |
| DT 13 | GG-T-A | metal | 110 | | | | |
| DT 14 | B | | 98 | | | | |
| DT 15 | C | | 103 | | | | |
| DT 16 | D | | 85 | | | | |
| DT 17 | GG-T-E | | 96 | | | | |
| S 18 | GG-T | | | | | | |
| S 19 | GG-T | | | | | | |
| DT 20 | GG-T A | | 4 | | | | |
| DT 21 | B | | 5 | | | | |
| DT 22 | C | | 4 | | | | |
| DT 23 | D | | 3 | | | | |
| DT 24 | GG-T-E | metal | 3 | | | | |
| DT 25 | BB-K-A | Block | 75 | | | | |
| DT 26 | B | | 81 | | | | |
| DT 27 | C | | 79 | | | | |
| DT 28 | D | | 78 | | | | |
| DT 29 | BB-K-E | | 80 | | | | |
| S 30 | RR-K- | | | | | | |
| S 31 | RR-K- | | | | | | |
| DT 32 | RR K A | | 1 | | | | |
| DT 33 | B | | 0 | | | | |
| DT 34 | C | | 2 | | | | |
| DT 35 | D | | 2 | | | | |
| DT 36 | BB-K E | Block | 0 | | | | |
| 37 | | | | | | | |
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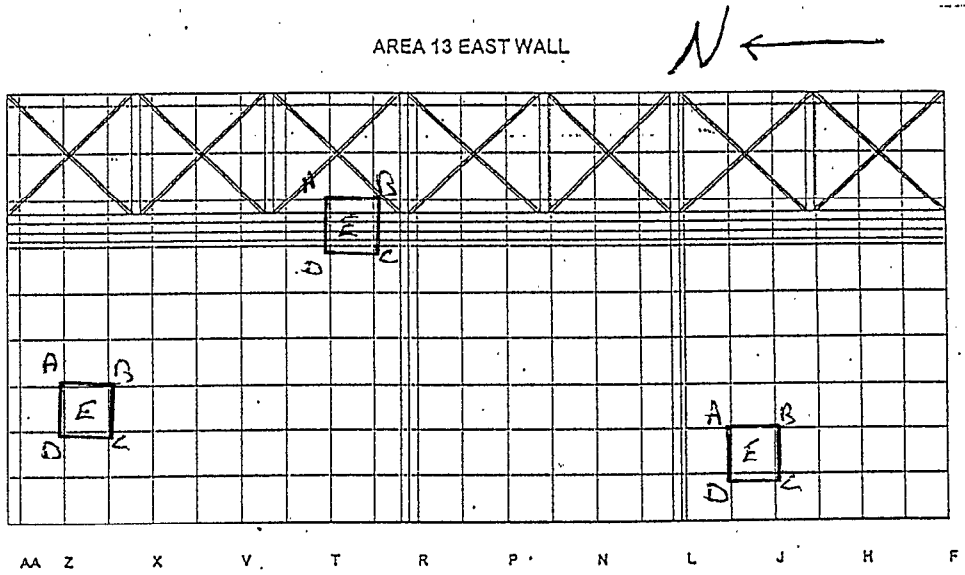
βγ
α
JJ
βγ
GG
α
EE
βγ
CC
AA
α

AREA 13 EAST WALL




| | | |
|---|---|---|
| Instrument Model & s/n: | 2221-C | ESP-1-F |
| Detector Model & s/n: | | 12% |
| Calibration Date: | | |
| Efficiency cpm / dpm based on S/Y90 | 21% | |
| Detector Area cm2 | 0.155 | 0.50 |

DJ Pilon 4-9-97



ENCL-C2.XLS

ATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

252

DATE: 4-9-97
TION:
Prazair
Bldg 14
Area 13
North Wall.

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 57 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

Delineation Survey / Verification Survey

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | BB-11-A | Metal | 75 | | | | |
| 2 | B | | 71 | | | | |
| 3 | C | | 75 | | | | |
| 4 | D | | 74 | | | | |
| 5 | BB-11 E | | 75 | | | | |
| 6 | BB-11 | | | | | | |
| 7 | BB-11 | | | | | | |
| 8 | BB-11 A | | 4 | | | | |
| 9 | B | | 3 | | | | |
| 10 | C | | 3 | | | | |
| 11 | D | | 4 | | | | |
| 12 | BB-11 E | Metal | 2 | | | | |
| 13 | BB-15-A | metal | 73 | | | | |
| 14 | B | | 73 | | | | |
| 15 | C | | 75 | | | | |
| 16 | D | | 79 | | | | |
| 17 | BB-15 E | | 80 | | | | |
| 18 | ~~BB-15 A~~ | | | | | | |
| 19 | BB-15 | | | | | | |
| 20 | BB-15 | | | | | | |
| 21 | BB-15 A | | 1 | | | | |
| 22 | B | | 0 | | | | |
| 23 | C | | 4 | | | | |
| 24 | D | | 5 | | | | |
| 25 | BB-15 E | Metal | 2 | | | | |
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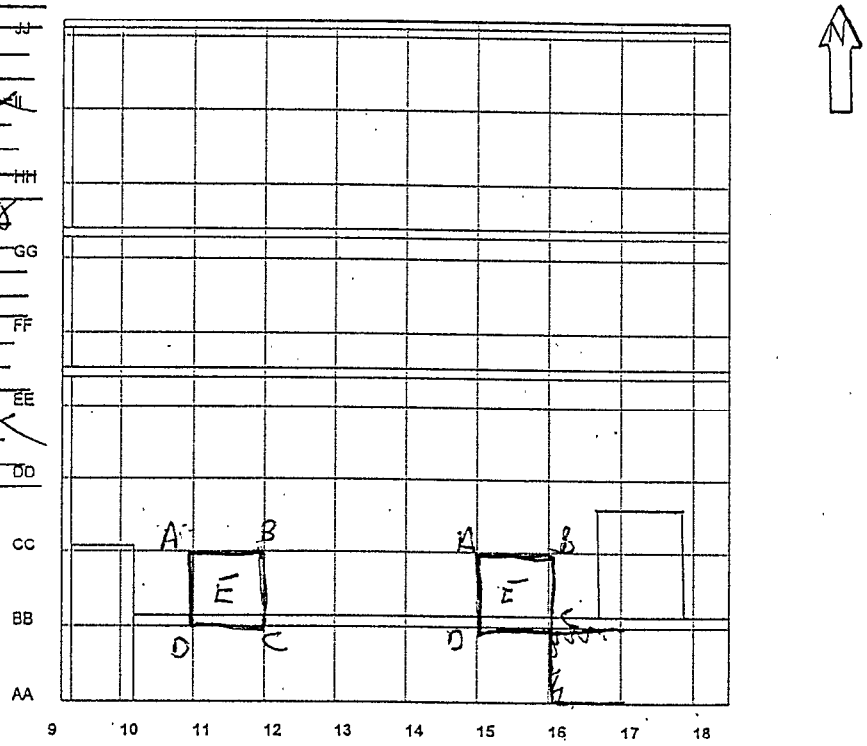
AREA 13 NORTH WALL




| | |
|---|---|
| ment Model & s/n: | 2221-C |
| r Model & s/n: | |
| n Date: | |
| cpm / dpm based on S/100 | 21% |
| or Area cm2 | 0.155 |

ESG-1-F
12%
0.50

4-9-97

.-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

253

SAMPLE DATE: 4-9-97
LOCATION: Praxair Bldg 14 Area 13 Ceiling

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 5 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | 1 |

Delineation Survey / Verification Survey

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| DF 1 | U-13-A | Concrete | 100 | | | | |
| DF 2 | B | | 98 | | | | |
| DF 3 | C | | 97 | | | | |
| DF 4 | D | | 105 | | | | |
| DF 5 | U-13-E | | 92 | | | | |
| S 6 | U-13 | | | | | | |
| S 7 | U-13 | | | | | | |
| DF 8 | U-13-A | | 4 | | | | |
| DF 9 | B | | 5 | | | | |
| DF 10 | C | | 3 | | | | |
| DF 11 | D | | 3 | | | | |
| DF 12 | U-13-E | Concrete | 1 | | | | |
| DF 13 | T-13-A | Concrete | 110 | | | | |
| DF 14 | B | | 112 | | | | |
| DF 15 | C | | 107 | | | | |
| DF 16 | D | | 99 | | | | |
| DF 17 | T-13-E | | 95 | | | | |
| 18 | T-13 | | | | | | |
| 19 | T-13 | | | | | | |
| 20 | T-13-A | | 3 | | | | |
| DF 21 | B | | 5 | | | | |
| DF 22 | C | | 0 | | | | |
| DF 23 | D | | 1 | | | | |
| DF 24 | T-13-E | Concrete | 2 | | | | |
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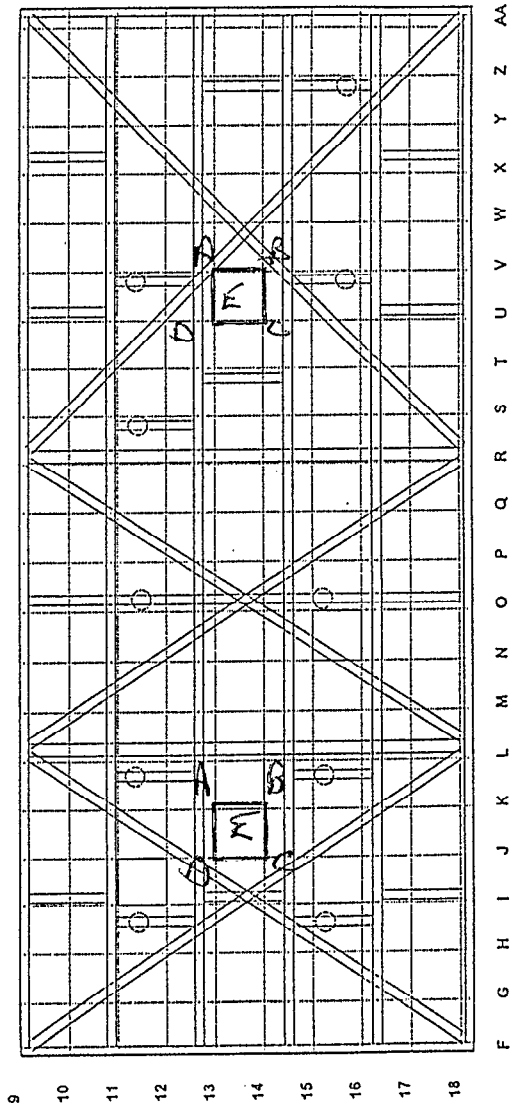
AREA 13 OVERHEAD (VIEW LOOKING DOWN)




| | |
|---|---|
| Instrument Model & s/n: | 2221-C |
| Detector Model & s/n: | ESP-1-F |
| Calibration Date: | |
| Efficiency | 21% |
| Detector Area | 0.1755 cm2 |

cpm / dpm based on S/Y90

122
0.50

D. Hilbert 4-9-97

ENCL-C2.XLS

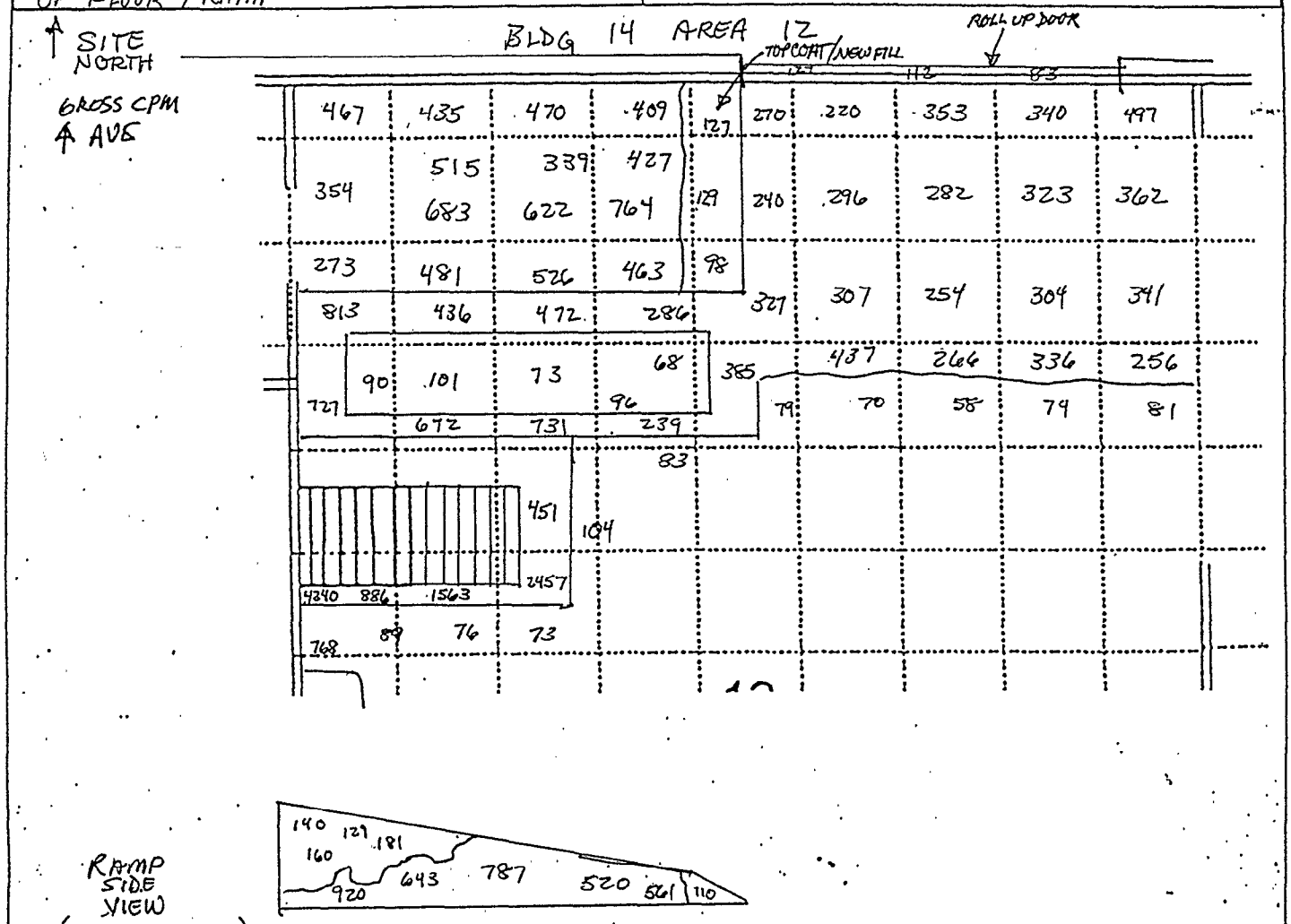
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

# IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

## Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

| | | |
|---|---|---|
| Date / Time 4-30-97 / 1645 | Tech C. HALLAM / C Hallam | Instruments / sn LUD 2221 / B EFF = 0.21 |
| Location / Purpose B14 AREA 12 NORTH END. DELINEATION OF FLOOR & RAMP | | Survey # 294 RWP # N/A |




| Loc | Type | Description | Gross | A DPM | Gross | Beta DPM | Loc | Type | Description | Gross | A DPM | Gross | Beta DPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| Comments: ALL READINGS SHOWN IN GROSS CPM. AREA BKGD = 72 CPM | Scaler S/N | BKD | EFF | MDA |
| | CT = Alpha: | | | |
| | Tech Beta: | | | |

Review

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

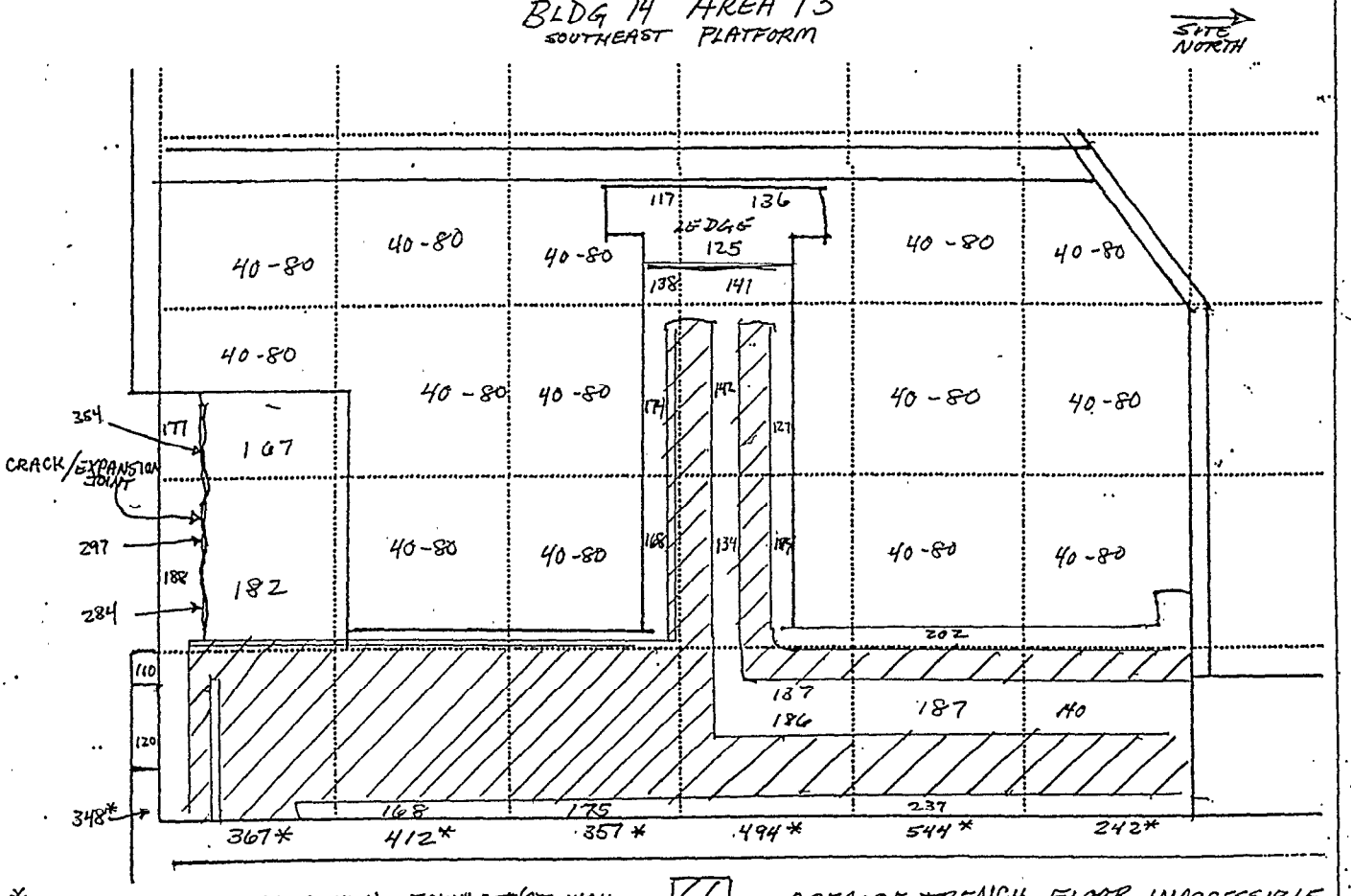
# IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

## Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

| | | | |
|---|---|---|---|
| Date / Time 5-1-97 / 1015 | Tech C. HALLAM / [signature] | Instruments / sn L2221 / D | EFF = 0.20 |
| Location / Purpose B14 AREA 13 SOUTHEAST PLATFORM | | Survey # 295 | RWP # N/A |

BLDG 14 AREA 13
SOUTHEAST PLATFORM




* = SURVEY ON SIDE OF POURED FOUNDATION WALL WHICH IS ≈ 10" IN HEIGHT. ALL READINGS ABOVE FOUNDATION <180 CPM ON WAY

= AREA OF TRENCH FLOOR INACCESSIBLE FOR SURVEY DUE TO ASBESTOS PIPING

| Loc | Type | Description | Gross | A DPM | Gross | Beta DPM | Loc | Type | Description | Gross | A DPM | Gross | Beta DPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

Comments: ALL READINGS SHOWN IN GROSS CPM
BACKGROUND = 64 CPM

| Scaler S/N | | BKD | EFF | MDA |
|---|---|---|---|---|
| CT = | Alpha: | | | |
| Tech | Beta: | | | |

Review [signature]

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

# IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

## Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

| | | |
|---|---|---|
| Date / Time 5-1-97/0745 | Tech C. HALLAM / [illegible] | Instruments / sn L2221 / D EFF = 0.20 |
| Location / Purpose B14 AREA 13 NORTH END DELINEATION | | Survey # 296 RWP # N/A |
| OF FLOOR | | |

GROSS CPM
4 AVE

BLDG 14 AREA 13

1045 @ CRACK/EXPANSION JOINT

397 UNDER WALL

SITE NORTH

| | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|
| Z | 207 | 212 | 297 | 270 / 227 | 168 | 237 / 258 | 192 / 351 | 317 / 268 | 289 / 226 | 288 / 261 |
| | 238 | 237 | 222 | 242 | 247 | 282 | 242 | 216 | 271 | 349 |
| Y | 247 | 258 | 303 | 299 | 245 | 325 | 294 | 302 | 273 | 270 |
| X | 279 | 267 | 346 | 281 | 358 | 425 | 388 | 317 | 289 | 241 |
| W | 258 / 80 – 160 | 296 | 244 | 217 | 220 | 287 | 312 | 398 | 465 | 498 |
| V | | | | | 13 | | | | | |
| U | | | | | | | | | | |

AREA 12

| Loc | Type | Description | Gross | A DPM | Gross | Beta DPM | Loc | Type | Description | Gross | A DPM | Gross | Beta DPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

Comments: ALL READINGS SHOWN IN GROSS CPM. AREA BKGD = 74 CPM

| Scaler S/N | | BKD | EFF | MDA |
|---|---|---|---|---|
| CT = | Alpha: | | | |
| Tech | Beta: | | | |

Review [illegible]

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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Bldg. 14, Praxair Site
Tonawanda, NY 14151

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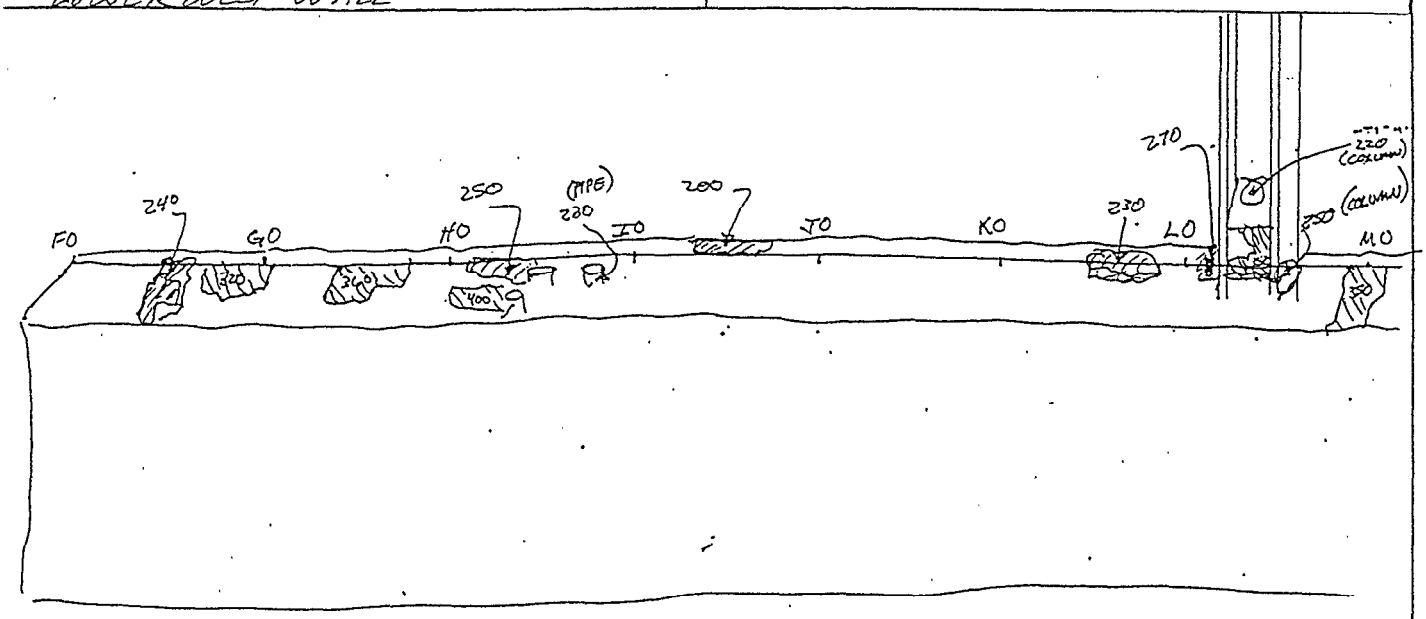
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

| | | | |
|---|---|---|---|
| Date / Time 5-5-97 / 1600 | Tech: C. HALLAM / [illegible] | Instruments / sn L2021 / A | EFF = 0.21 BKGD = 60 CPM |
| Location / Purpose B14 AREA 12 DELINEATION OF LOWER WEST WALL | | Survey # 303 | RWP # N/A |




/// = AREA ≥200 cpm

| Loc | Type | Description | Gross | A DPM | Gross | Beta DPM | Loc | Type | Description | Gross | A DPM | Gross | Beta DPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | N/A | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| Comments: ALL READINGS SHOWN IN GROSS CPM AND INDICATE PEAK READING FOR CONTAMINATED AREA | Scalar S/N | BKD | EFF | MDA |
| | CT = Alpha: | | | |
| | Tech Beta: | | | |

Review [illegible]

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RADIOLOGICAL ENGINEERS

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Tonawanda, NY 14151

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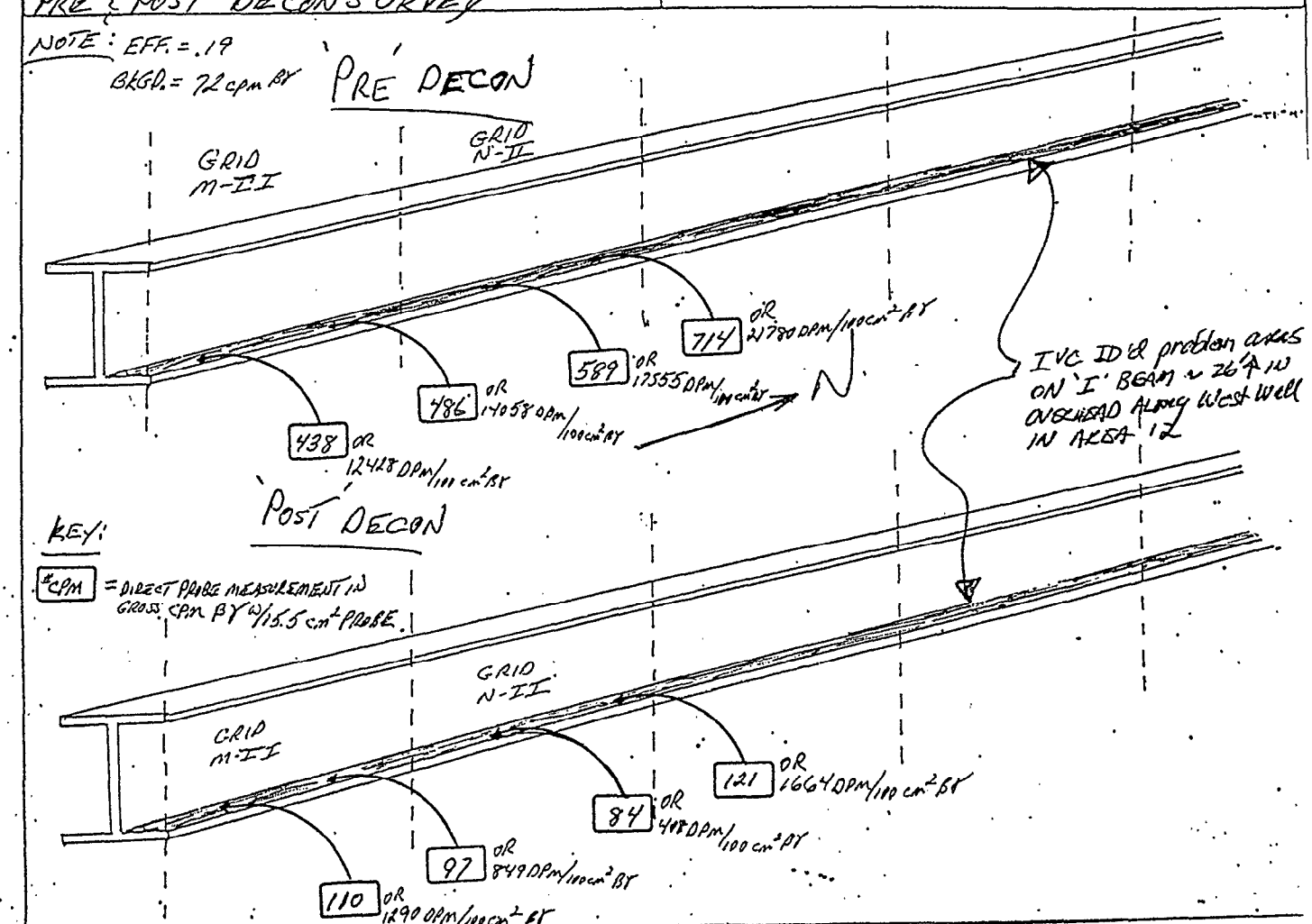
*Radiological Consultants*
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

| | | |
|---|---|---|
| Date / Time 5-12-97 0800 | Tech W. [illegible] | Instruments / sn INST. (B) L2221 W/44-9 |
| Location / Purpose PRAXAIR BLDG. #14 AREA 12 (WEST SIDE) | | Survey # 324 RWP # 01 |
| PRE & POST DECON SURVEY | | |

NOTE: EFF. = .19
BKGD. = 72 cpm BY




KEY:
[#CPM] = DIRECT PROBE MEASUREMENT IN GROSS CPM BY W/15.5 cm² PROBE.

SMEARS TAKEN OF CONTROLLED AREA PRIOR TO DEPOSTING

| Loc | Type | Description | Gross | A DPM/100cm² | Gross | Beta DPM/100cm² |
|---|---|---|---|---|---|---|
| 1 | S | I BEAM/OVERHEAD | 0 | -1 | 58 | -14 |
| 2 | S | FLOOR/IN ZONE | 0 | -1 | 62 | 0 |
| 3 | S | FLOOR/IN ZONE | 1 | 3 | 49 | -45 |
| 4 | S | FLOOR/IN ZONE | 0 | -1 | 57 | -17 |
| 5 | S | FLOOR/IN ZONE | 2 | 6 | 52 | -34 |
| 6 | S | FLOOR/OUTSIDE OF ZONE | 0 | -1 | 67 | 17 |
| 7 | S | FLOOR/OUTSIDE OF ZONE | 1 | 3 | 61 | -3 |

| Loc | Type | Description | Gross | A DPM | Gross | Beta DPM |
|---|---|---|---|---|---|---|
| | | N/A | | | | |

Comments:

| Scaler S/N (I) 2929 | BKD | EFF | MDA |
|---|---|---|---|
| CT = 1 MIN. Alpha: | 209/990 = 21 | .32 | 15 |
| Tech W. [illegible] Beta: | 6225/990 = 62 | .29 | 136 |

Review [illegible]

SURVEY # 359

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

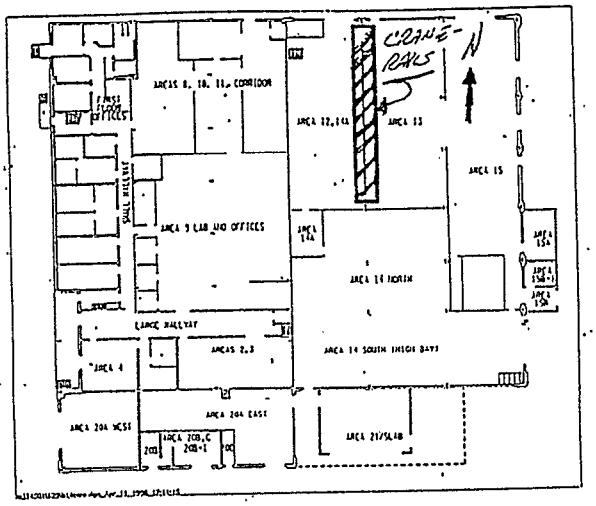
SAMPLE DATE: 5-22-97
LOCATION: PRAXAIR SITE
BLDG. 14
AREA 12 & 13
CROSSMEMBER - TOPS @ ENDS
POST DECON ATTEMPT SURVEY - AFTER REMOVAL PEELAWAY ROUGH
TOP HORIZONTALS @ END

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 58 |
| BACKGROUND COUNT TIME (MIN) | 1 MIN. |
| SAMPLE COUNT TIME (MIN) | 1 MIN. |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | NOT | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | SURVEYED | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | SEE MAP | CROSS MEMBERS @ BEAMS | 539 |
| 14 | | | 851 |
| 15 | | | 245 |
| 16 | | | 577 |
| 17 | | | 708 |
| 18 | | | 223 |
| 19 | | | 435 |
| 20 | | | 220 |
| 21 | | | 426 |
| 22 | | | 482 |
| 23 | | | 3,868 |
| 24 | | | 521 |
| 25 | | | 593 |
| 26 | | | 587 |
| 27 | | "SFT" IC | — |
| 28 | | | 526 |
| 29 | | FC | — |
| 30 | | | 904 |
| 31 | | | 833 |
| 32 | | | 554 |
| 33 | | IC | — |
| 34 | | IC | — |
| 35 | | | |
| 36 | | | |
| 37 | | N | |
| 38 | | | |
| 39 | | | |
| 40 | | | |

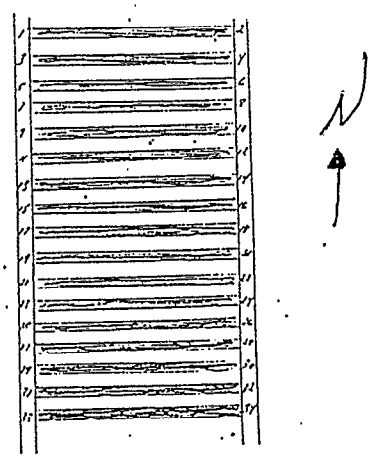
NOTE: IC = INCOMPLETE




IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151
Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
610 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8329
Contract # 93012

Date / Time: 5-22-97
Instrument / Det: (B) L2221 w/44-9
Location / Purpose: PRAXAIR BLDG 14 AREA 12 & 13
Survey #: 02
CROSS MEMBERS ON CRANE RAILS TOP SURFACE




5-22-97

| | |
|---|---|
| Instrument Model & s/n: | (B) L2221 w/44-9 |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | cpm / dpm based on S/N90 = .20 |
| Detector Area | cm2 = 15.5 |

REVIEW



ENCL-C2.XLS

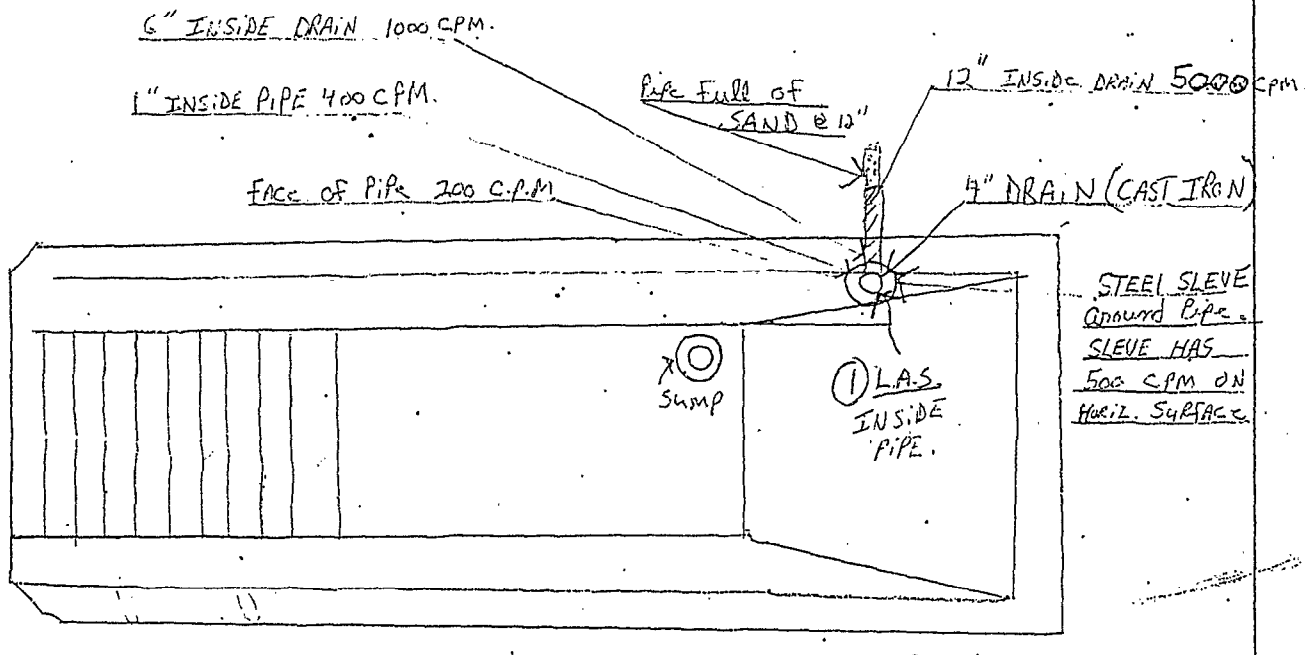
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

# IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

## Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

| | | | |
|---|---|---|---|
| Date / Time 5-22-97 @ 1500 | Tech M. Sugg | Instruments / sn Ludlum M-2 | 50150 / 44-7 |
| Location / Purpose AREA 13 West STAIR WELL. | | Survey # 376 | RWP # 02 |
| 4" DRAIN LINE, Delineation | | | |




SAMPLE Taken of Sand inside DRAIN.
≈ 500 CPM on Container

N ↓

| Loc | Type | Description | Gross | A DPM | Gross | Beta DPM | Loc | Type | Description | Gross | A DPM | Gross | Beta DPM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LAS | 6" INSIDE DRAIN | → | | → | N.D. | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| Comments: L.A.S. = Large Area Swipe. | Scaler S/N | BKD | EFF | MDA |
| N.D. = No Detectable activity. | CT = Alpha: | | | |
| a = Swipe location | Tech Beta: | | | |

Review

BldG-14 PRAXAIR SITE

5-28-97 4" DRAIN DELINEATION

H.P. M. Sigo

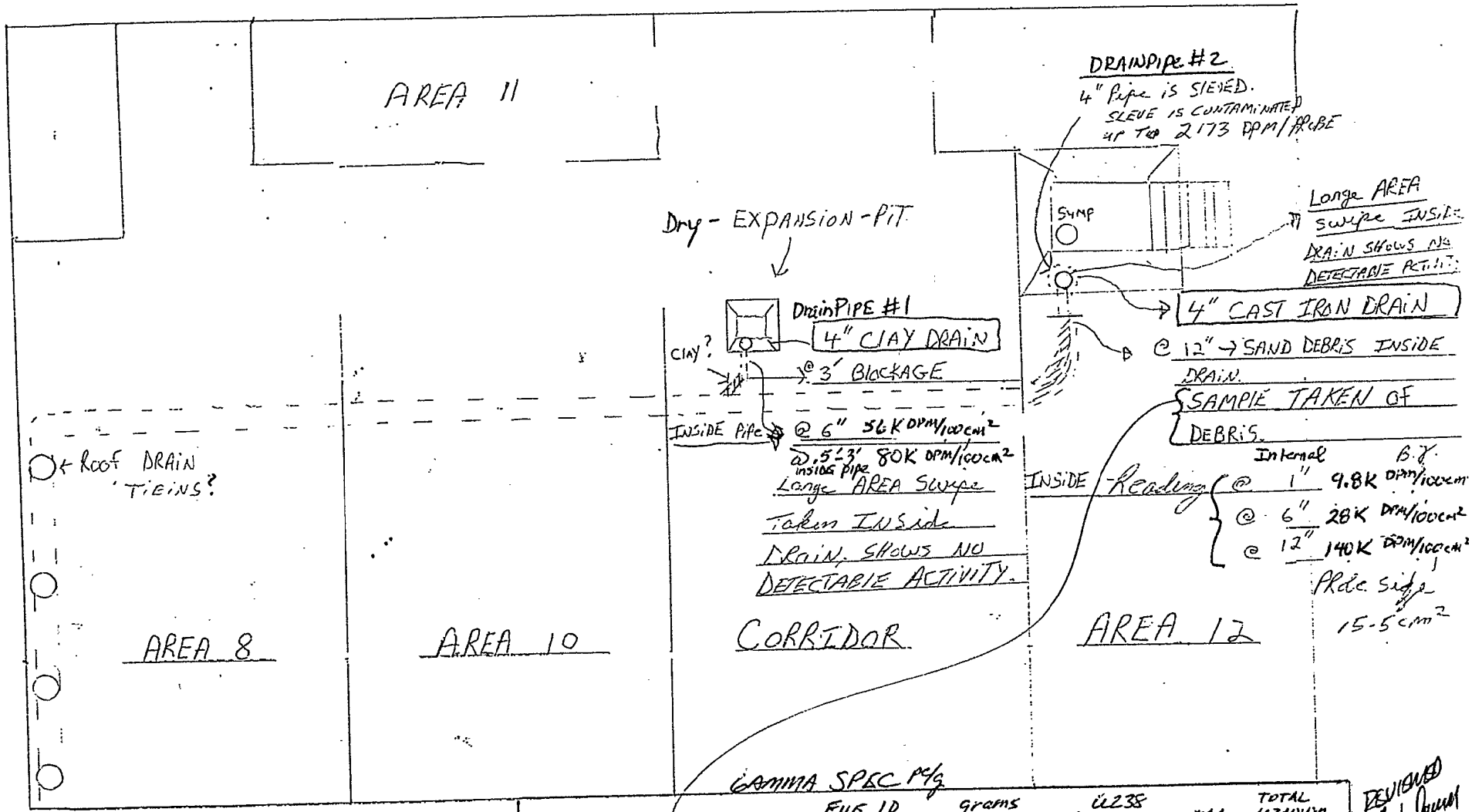
INSTRUMENT: LUDLUM M-2

SN.# 50150 Eff. .23

PROBE 44-9 15.5 CM²

BKG = 60 C.P.M.

Survey # 403




GAMMA SPEC pCi/g

| | | FILE ID | grams | U238 pCi/g | U238 Error | MDA | TOTAL URANIUM |
|---|---|---|---|---|---|---|---|
| AREA 12 Storm DRAIN | MARINELLI | prxm154 | 760.5 | 427.7 | 20.4 | 10.2 | 874.0 |
| | petric | prx-p014 | 10.5 | 367.8 | 33.0 | 23.2 | 751.2 |

REVIEWED

problems? CONTACT MARK CATOURAS RCS @ 716 876 5162

HILBERT ASSOCIATES, INC.

SURVEY # 526

C. HALLAM

SAMPLE DATE: 6-23-97

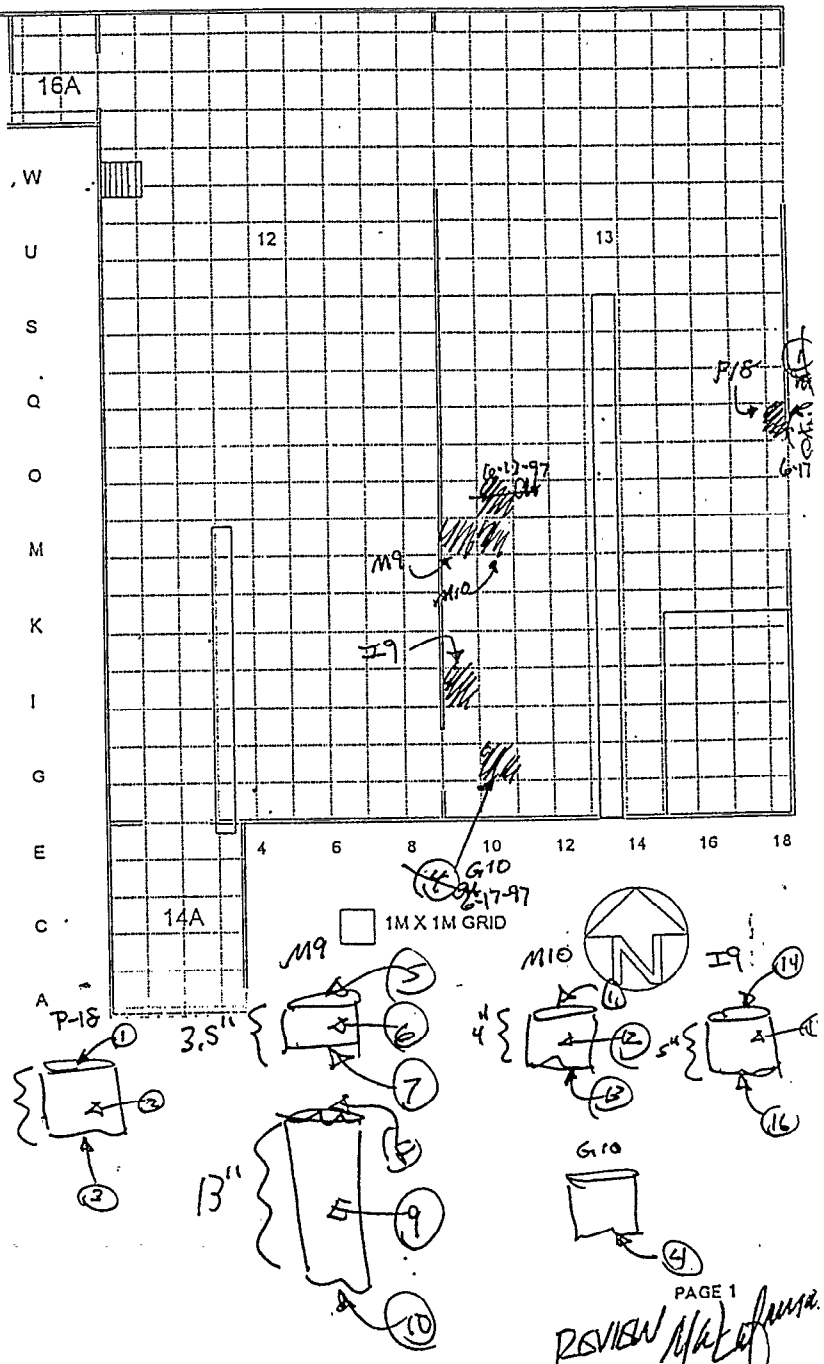
LOCATION: BM AREA 13 CORE DRILLING

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

*RADIATION MEASUREMENT:* Beta-Gamma
*RESULTS REPORTED UNITS:* dpm per 100cm2
*MEASUREMENT TYPE:* direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 52 |
| BACKGROUND COUNT TIME (MIN) | 1 MIN |
| SAMPLE COUNT TIME (MIN) | 1 MIN/SCAN |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | P18 | TOP OF CORE (6") | | 100-150 CPM | | | |
| 2 | | SIDE OF CORE | | 70-110 CPM | | | |
| 3 | | BOTTOM OF CORE | | 200-400 CPM | | | |
| 4 | G10 | BOTTOM OF CORE (6") | | 200-350 | | | |
| 5 | M9 | TOP | | 120-150 | | | |
| 6 | | SIDE | | 80-110 | | | |
| 7 | | BOTTOM | | 300-400 | | | |
| 8 | | TOP | | 150-200 | | | |
| 9 | | SIDE | | 70-90 | | | |
| 10 | | BOTTOM | | 80-100 | | | |
| 11 | M10 | TOP | | 80-100 | | | |
| 12 | | SIDE | | 80-120 | | | |
| 13 | | BOTTOM | | 300-600 | | | |
| 14 | I9 | TOP | | 90-120 | | | |
| 15 | | SIDE | | 80-100 | | | |
| 16 | | BOTTOM | | 100-150 | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | | | | | | | |
| 33 | | | | | | | |
| 34 | | | | | | | |
| 35 | | | | | | | |
| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |




| | |
|---|---|
| Instrument Model & s/n: | L2221 / D |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | 0.22 cpm / dpm based on S/Y90 |
| Detector Area | 19.5 cm2 |

ENCL-C2.XLS

REVIEW

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

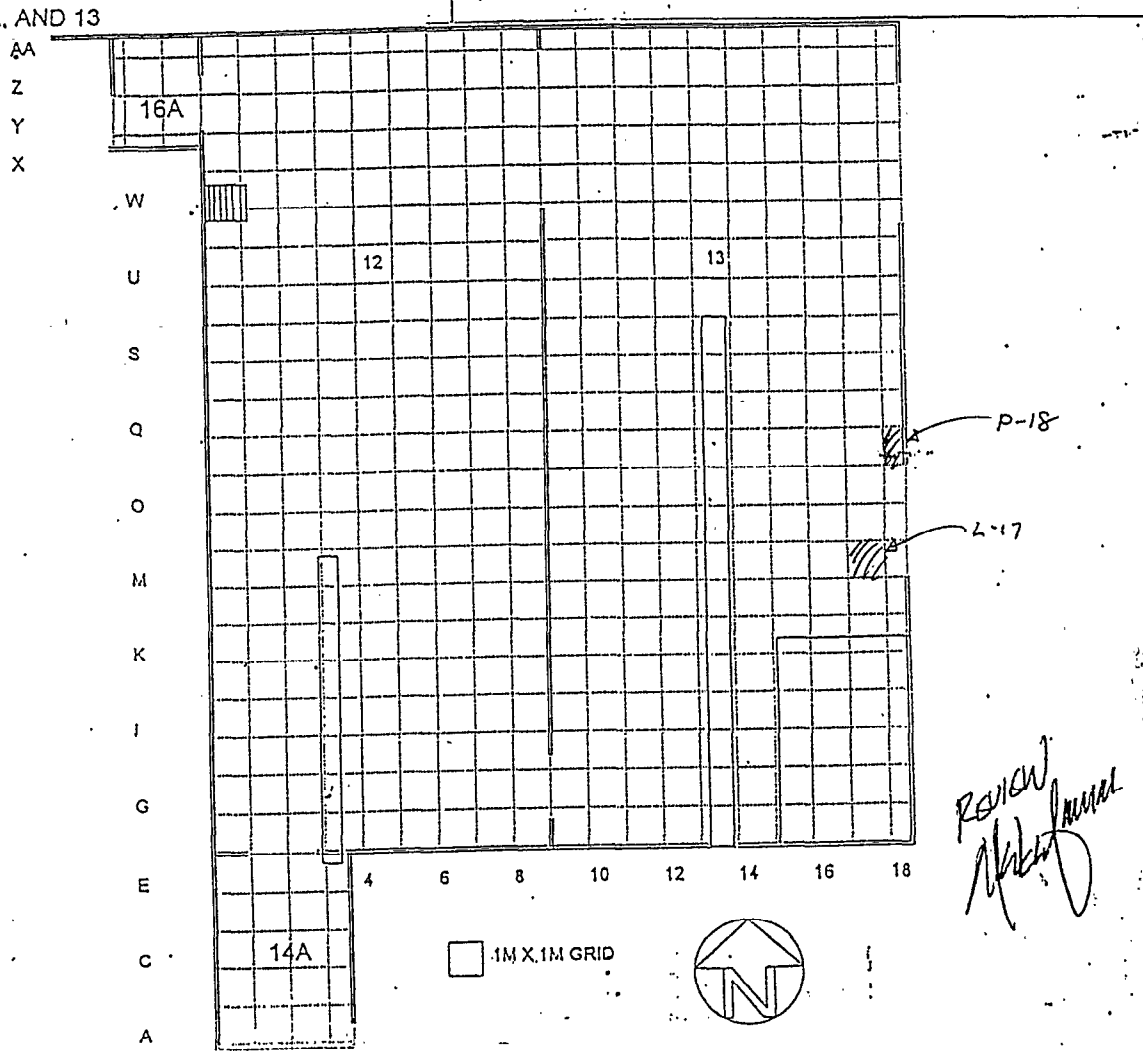
# IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

## Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

| | | | |
|---|---|---|---|
| Date / Time 6-23-97 / 1615 | Tech C. HALLAM | Instruments / sn L2221 / D | BKGD = 55 CPM EFF = 0.22 |
| Location / Purpose B14 AREA 13 CARE SAMPLING | | Survey # 527 | RWP # 04 |

AREAS 12, 14A, AND 13




REVIEW

| GRID | DEPTH | C.P.M. | COMMENTS | ACTIVITY |
|---|---|---|---|---|
| L-17 | 0-1' | 60-80 | BLACK ASH & CLAY | |
| L-17 | 1-2' | 60-80 | CLAY | |
| L-17 | 2-3' | 60-80 | CLAY | |
| L-17 | 3-4' | 60-80 | CLAY | |
| P-18 | 0-1' | 100-130 | BLACK ASH & CLAY | |
| | 1-2' | 60-90 | CLAY | |
| | 2-3' | 70-100 | CLAY | |
| | 3-4' | 70-100 | CLAY | |

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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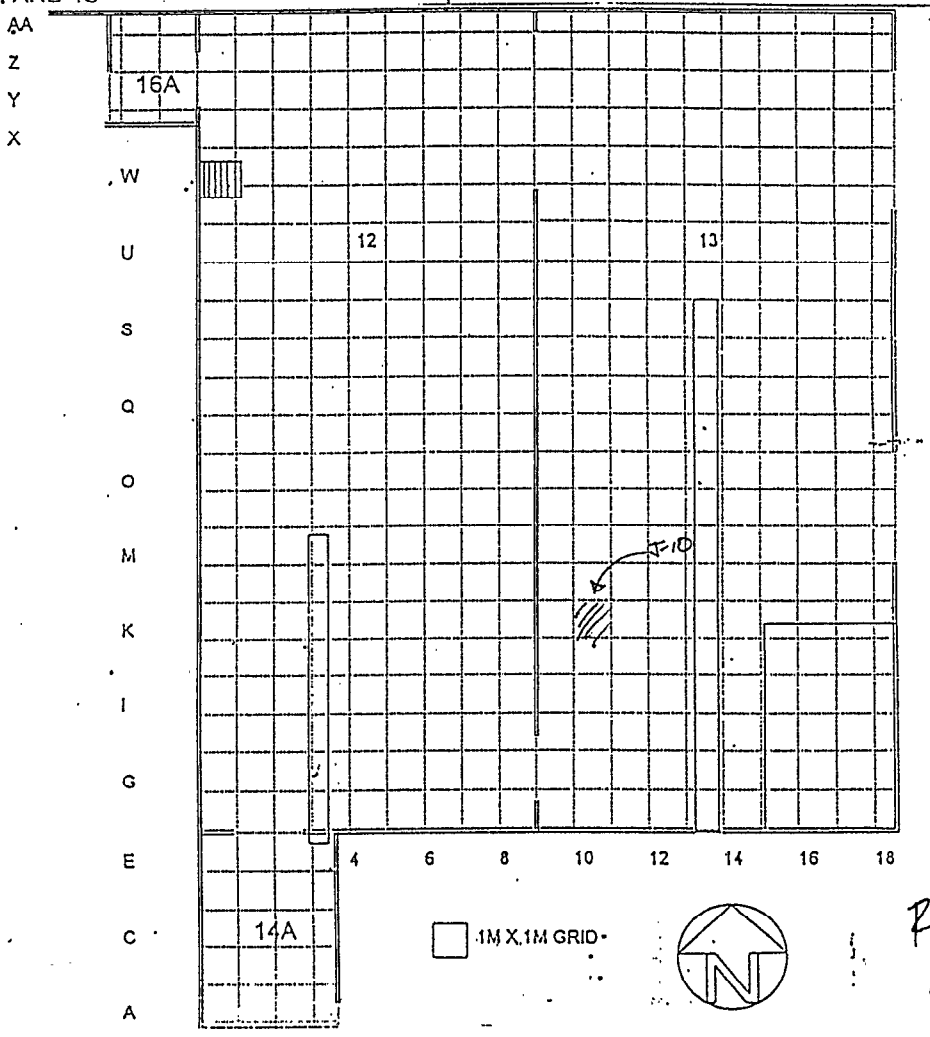
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

| | | | |
|---|---|---|---|
| Date / Time 6-23-97 / 1520 | Tech C. HALLAM | Instruments / sn L 22221 / D | BKGD = 55 CPM EFF = 0.22 |
| Location / Purpose B14 AREA 13 CORE SAMPLING | | Survey # 528 | RWP # 04 |

AREAS 12, 14A, AND 13




REVIEW

| GRID | DEPTH | C.P.M. | COMMENTS | ACTIVITY |
|---|---|---|---|---|
| J-10 | 0-1' | 1400-2200 | BLACK ASH & CLAY | |
| | 1-2' | 200-300 | CLAY | |
| | 2-3' | 70-100 | CLAY | |
| | 3-4' | 140-180 | CLAY | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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Bldg. 14, Praxair Site
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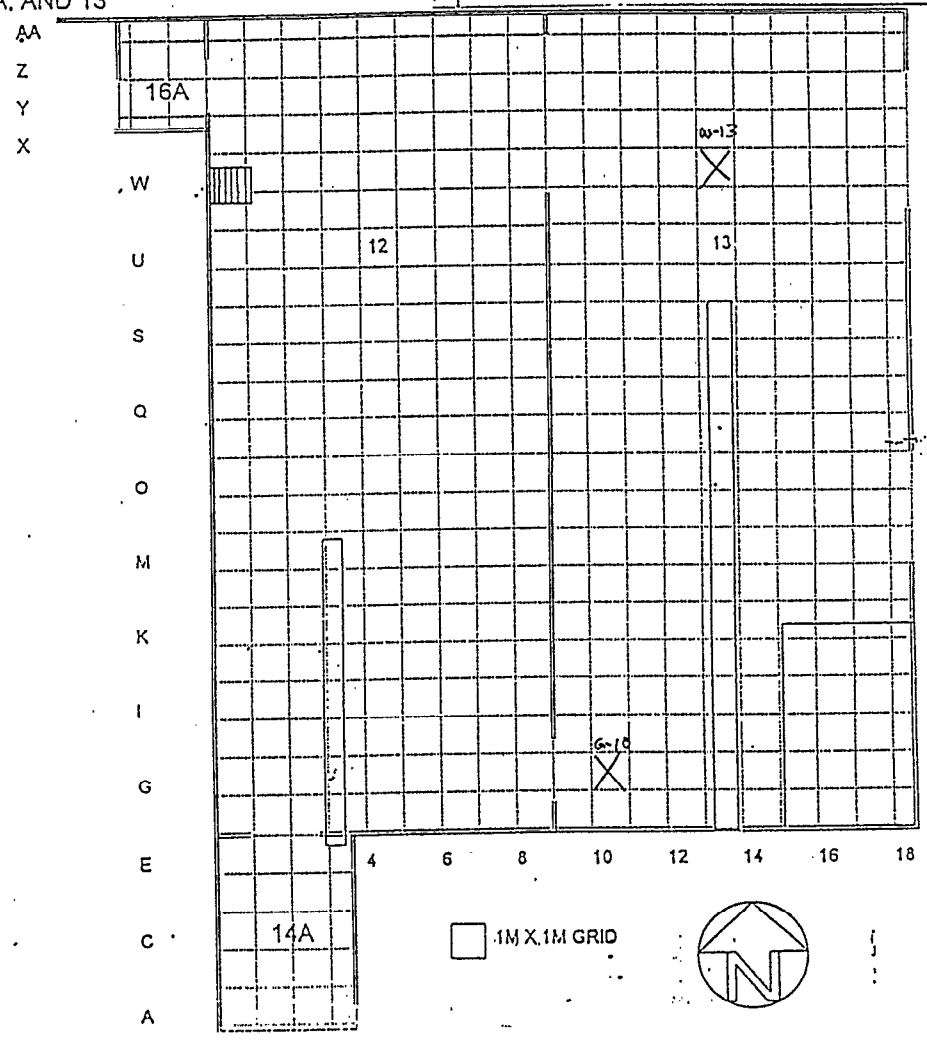
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

| | | | |
|---|---|---|---|
| Date / Time 6-19-97 / 0920 | Tech G. HALLAM | Instruments / sn L-2221 | BKGD = 54 CPM EFF = 0.20 |
| Location / Purpose B14 AREA 13 CORE SAMPLING | | Survey # 532 | RWP # 04 |

AREAS 12, 14A, AND 13




REVIEWED

| GRID | DEPTH | C.P.M. | COMMENTS | ACTIVITY |
|---|---|---|---|---|
| G-10 | 0-1' | 100-200 | BLACK ASH & CLAY | |
| | 1-2' | 80-100 | CLAY | |
| | 2-3' | 70-90 | | |
| | 3-4' | 90-110 | | |
| W-13 | 0-1' | 60-100 | BLACK ASH & CLAY | |
| | 1-2' | 7-110 | CLAY | |
| | 2-3' | 50-70 | | |
| | 3-4' | 60-80 | | |

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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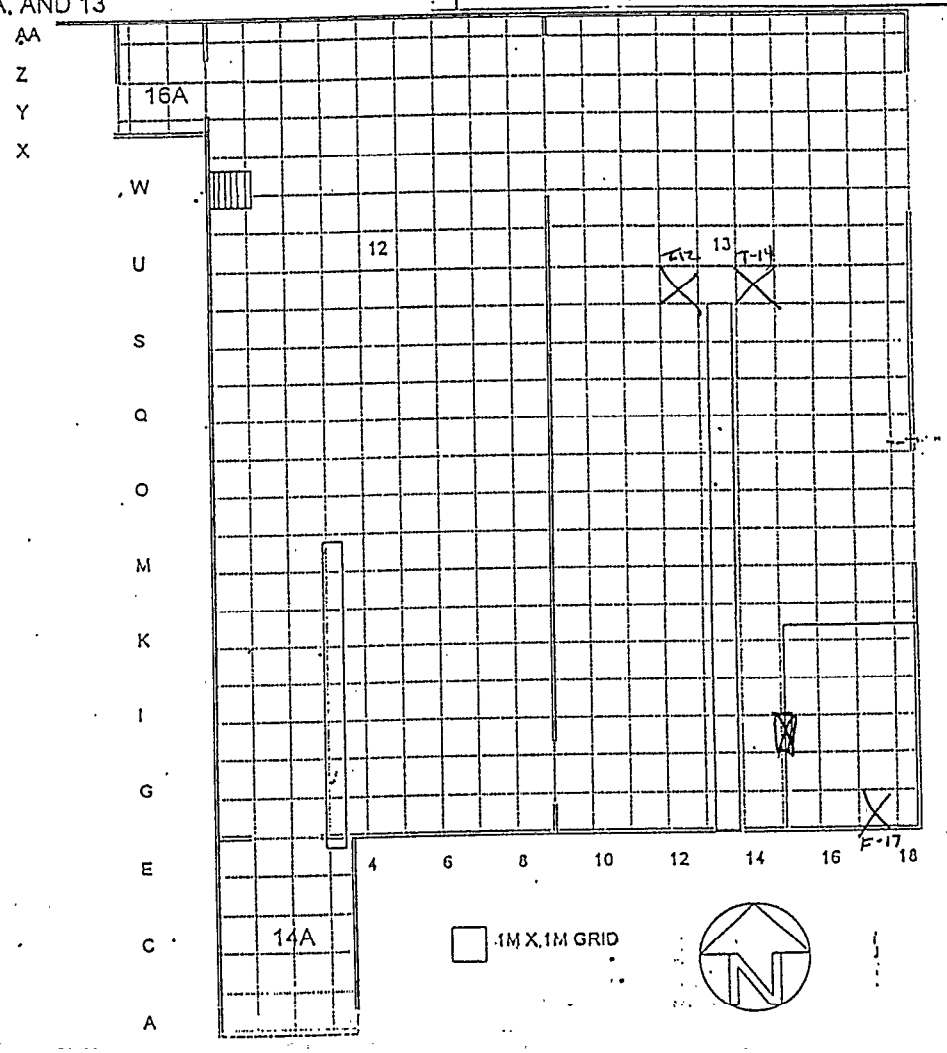
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

| | | | |
|---|---|---|---|
| Date / Time 6-19-97 / 0900 | Tech C. HALLAM | Instruments / sn L2221 / | BKGD = 54 CPM EFF = 0.28 |
| Location / Purpose B14 AREA 12 CORE SAMPLING | | Survey # 533 | RWP # 04 |

AREAS 12, 14A, AND 13




REVIEW

| GRID | DEPTH | C.P.M. | COMMENTS | ACTIVITY |
|---|---|---|---|---|
| H-15 | 0-1' | 60-80 | BLACK ASH & CLAY | |
| | 1-2' | 60-80 | CLAY | |
| | 2-3' | 60-80 | | |
| | 3-4' | 60-80 | | |
| T-14 | 0-1' | 80-100 | BLACK ASH & CLAY | |
| | 1-2' | 80-100 | CLAY | |
| | 2-3' | 60-80 | | |
| | 3-4' | 60-80 | | |
| F-17 | 0-1' | 70-90 | ~~BLACK ASH~~ / UTILITY TRENCH / CRUSH FILL | |
| | 1-2' | 70-90 | CLAY | |
| | 2-3' | 80-100 | | |
| | 3-4' | 70-90 | | |
| T-12 | 0-1' | 60-80 | BLACK ASH & CLAY | |
| | 1-2' | 60-80 | CLAY | |
| | 2-3' | 60-80 | | |
| | 3-4' | 60-80 | | |

HILBERT ASSOCIATES, INC.

Survey # 534

C. HALLAM

SAMPLE DATE: 6-23-97 / 1520

LOCATION:

B14 AREA 13

CORE DRILLING

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

*RADIATION MEASUREMENT:* Beta-Gamma
*RESULTS REPORTED UNITS:* dpm per 100cm2
*MEASUREMENT TYPE:* direct scaler measurements

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 55 |
| BACKGROUND COUNT TIME (MIN) | 1 MIN |
| SAMPLE COUNT TIME (MIN) | 1 MIN / SCAN |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| | | | ~~GROSS~~ CPM | | | | |
| 1 | J10 | 1ST LAYER TOP | 80-190 | | | | |
| 2 | ↓ | SIDE | 80-150 | | | | |
| 3 | ↓ | BOTTOM | 100-300 | | | | |
| 4 | ↓ | 2ND LAYER TOP | 10,000 AA | | | | |
| 5 | ↓ | BOTTOM | 5,000 Z | | | | |
| 6 | ↓ | 3RD LAYER TOP | 14,000 | | | | |
| 7 | ↓ | SIDE | 80-120 Y | | | | |
| 8 | ↓ | BOTTOM | 80-120 X | | | | |
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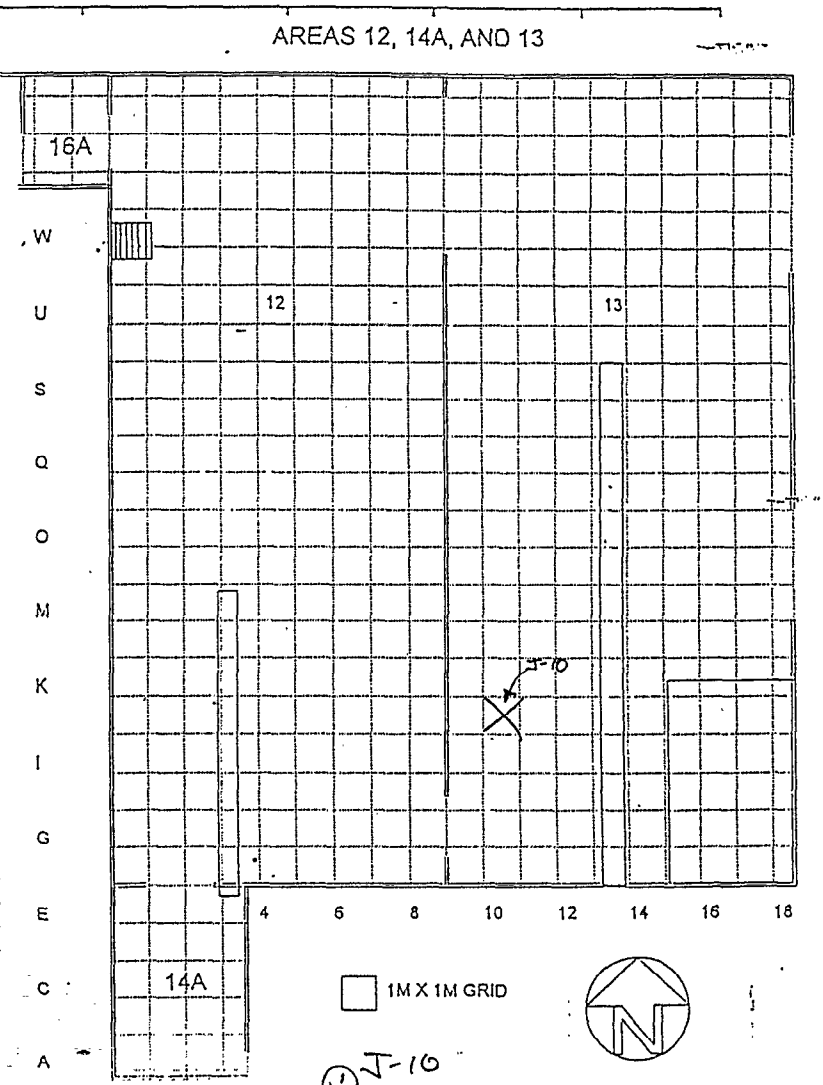
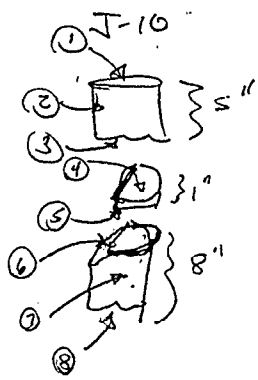



| | |
|---|---|
| Instrument Model & s/n: | L2221 / B |
| Detector Model & s/n: | |
| Calibration Date: | |
| Efficiency | 0.22 cpm / dpm based on S/Y90 |
| Detector Area | 15.5 cm2 |

REVIEW

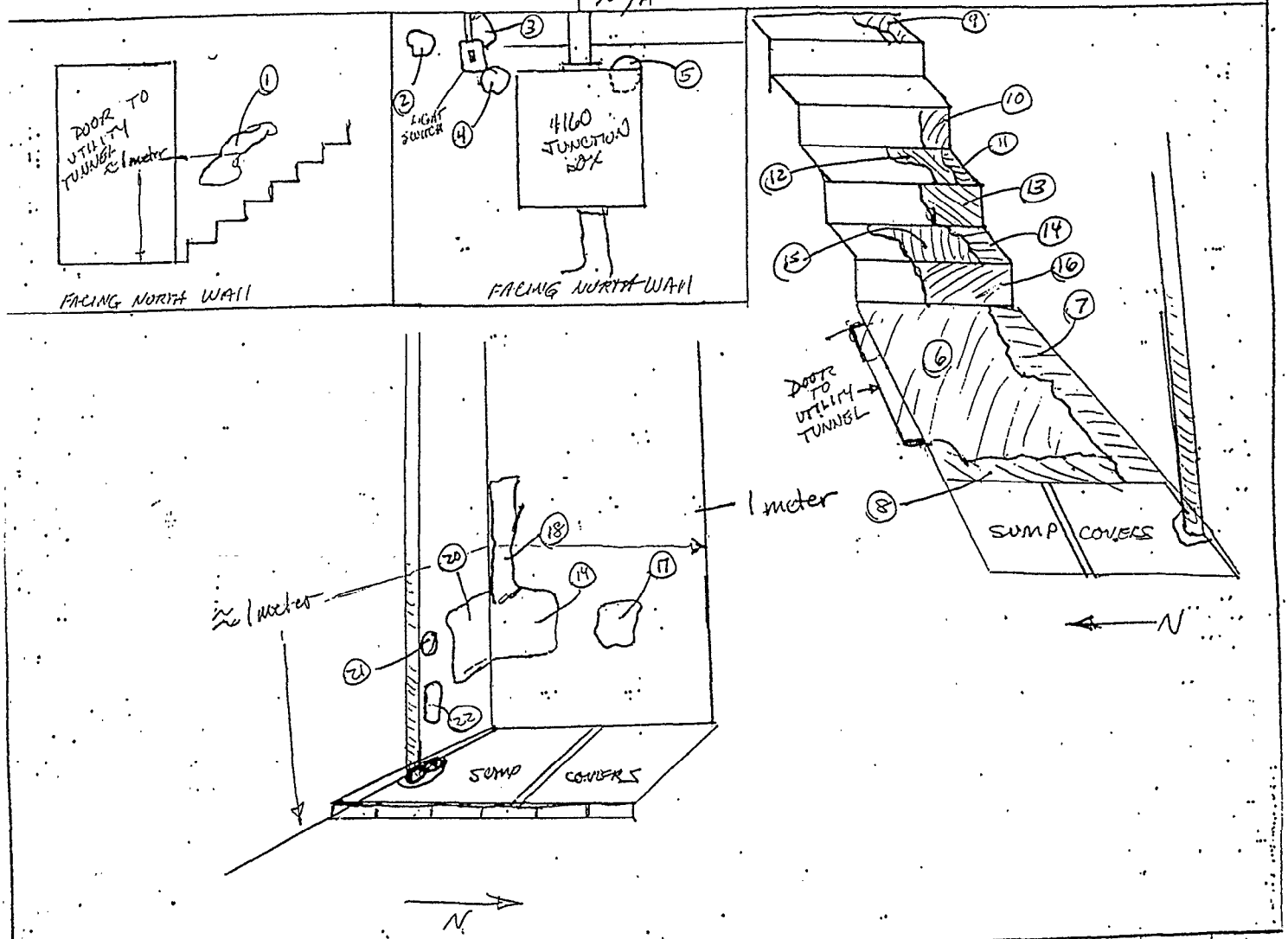
ENCL-C2.XLS

ON TECHNOLOGY, INC.
40 Maple Ave
aratoga Springs, NY
518) 584-0166

# RADIOLOGICAL SURVEY

Project: PRAXAIR BLDG 14
Area: 12

| | | |
|---|---|---|
| ate/Time 2-11-98 / 2230 | Tech: [illegible] / [illegible] | Instrument / sn LZ221 # 86314 / LLI-9 # 063A EFF = 0.19 BKGD = 93 cpm |
| ocation/ Purpose STAIRWAY TO UTILITY TUNNEL | Survey # 1222 N/A | RWP# N/A |




| Loc. | Type | Description | Gross | α dpm | Gross | β dpm | Loc | Type | Description | Gross | α dpm | Gross | β dpm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DP | NORTH WALL | | | 200-400 | 12K | 10 | DP | 3RD RISER | | ~~200-2.17K~~ | 200-400 | 12K |
| 2 | | | | | 200-400 | 12K | 11 | | 2ND STEP | | | 500-1000 | 32K |
| 3 | | | | | 200-400 | 12K | 12 | | | | | 200-500 | 15.5K |
| 4 | | | | A | 300-500 | 15.5K | 13 | | 2ND RISER | | A | 200-500 | 15.5K |
| 5 | | NORTH WALL | N | | 200-500 | 15.5K | 14 | | 1ST STEP | N | | 500-1000 | 32K |
| 6 | | FLOOR | | | 150-350 | 10K | 15 | | | | | 200-500 | 15.5K |
| 7 | | | | | 500-2000 | 66K | 16 | | 1ST RISER | | | 200-500 | 15.5K |
| 8 | | FLOOR | | | 400-600 | 19K | 17 | | WEST WALL | | | 200-400 | 12K |
| 9 | | 4TH STEP | | | 200-350 | 10K | 18 | | | | | 150-300 | 8.7K |

Type: s = smearable, dp = direct probe, ⊙ = SURVEY LOCATION / #

Comments: NONE

N/A

| | | | | |
|---|---|---|---|---|
| Scalar S/N | A | BKD | EFF | MDA |
| CT= | DATE N | α: | | |
| Tech | | β: | | |

Review: [illegible]

Encl 3.3 to HSP 210

ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0166

# RADIOLOGICAL CONTINUATION SURVEY FORM

Project: PERMAR B14
Area: 12

Date/Time 2-11-98/2230 | Tech C. HAMMOND | Instrument / sn 12221 #30314 / 44-9 #0163A EFF = 0.19 BKGD = 43 CPM
Location/ Purpose SHIPWELL TO UTILITY TUNNEL | Survey # 1222 | RWP# N/A
N/A

| Loc | Type | Description | Gross | α dpm | Gross | β dpm | Loc | Type | Description | Gross | α dpm | Gross | β dpm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | DP | WEST WALL | | | 200-400 | 12K | | | | | | | |
| 20 | | SOUTH WALL | | | 200-400 | 12K | | | | | | | |
| 21 | | | | | 300-600 | 19K | | | | | | | |
| 22 | DP | SOUTH WALL | | | 200-400 | 12K | | | | | | | |

Type: s = smearable, dp = direct probe

Comments: NONE
N/A

Scalar S/N | EFF | MDA
CT= DATE α:
Tech β:

Review:

Encl 3.4 to HSP 210

ILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 7/18/97
LOCATION: 12/13 BLD 14 BELOW grade Leave

Chris
Mark Catoulas
Dana

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: cpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

# 3001

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 54 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | Scan |

PREBACKFILL WEST WALL A12
Supplemental Standards

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION cpm ~AREA | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
|---|---|---|---|---|---|---|---|
| 1 | F/-BB | 3-650cpm 1 FT² | | | | | |
| 2 | G/-BB | 2000 36in² | | | | | |
| 3 | H/-BB | 1800 36" | | | | | |
| 4 | H/-BB | 1600cpm | | | | | |
| 5 | J→L/-BB | 2,000-5000cpm TOTAL AREA ~6 FT² | | | | | |
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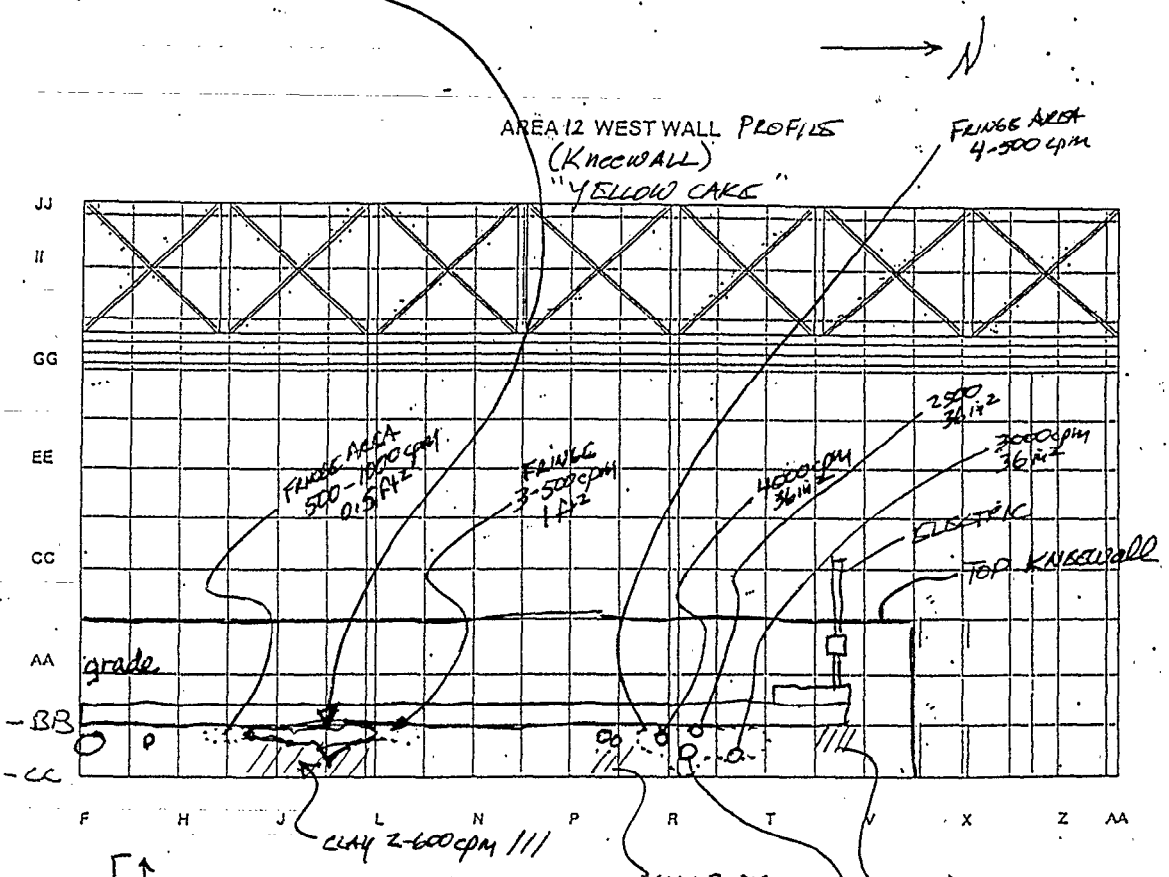


* NON REPORTED clay = <200cpm gross @ BLD @ 90
ALL KNEEWALL surfaces < 5000 dpm/100cm²

| | | |
|---|---|---|
| Instrument Model & s/n: | L2221 / S/N 8630B | |
| Detector Model & s/n: | 44-9 / Sn 48267 | |
| Calibration Date: | 2/7/97 | |
| Efficiency | cpm / dpm based on Sr/90 | B .21 C .21 |
| Detector Area | 15.5 cm2 | |

* See HpGe Data for composite LOCATIONS.

4½



ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler-measurement)

SAMPLE DATE: 7/18/97
LOCATION: B14 A12 EAST WALL profile prior to flowfill BACKFILL
"Supplemental Standards"
Mark LaFowles

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

# 3002

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 54 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | Scan |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
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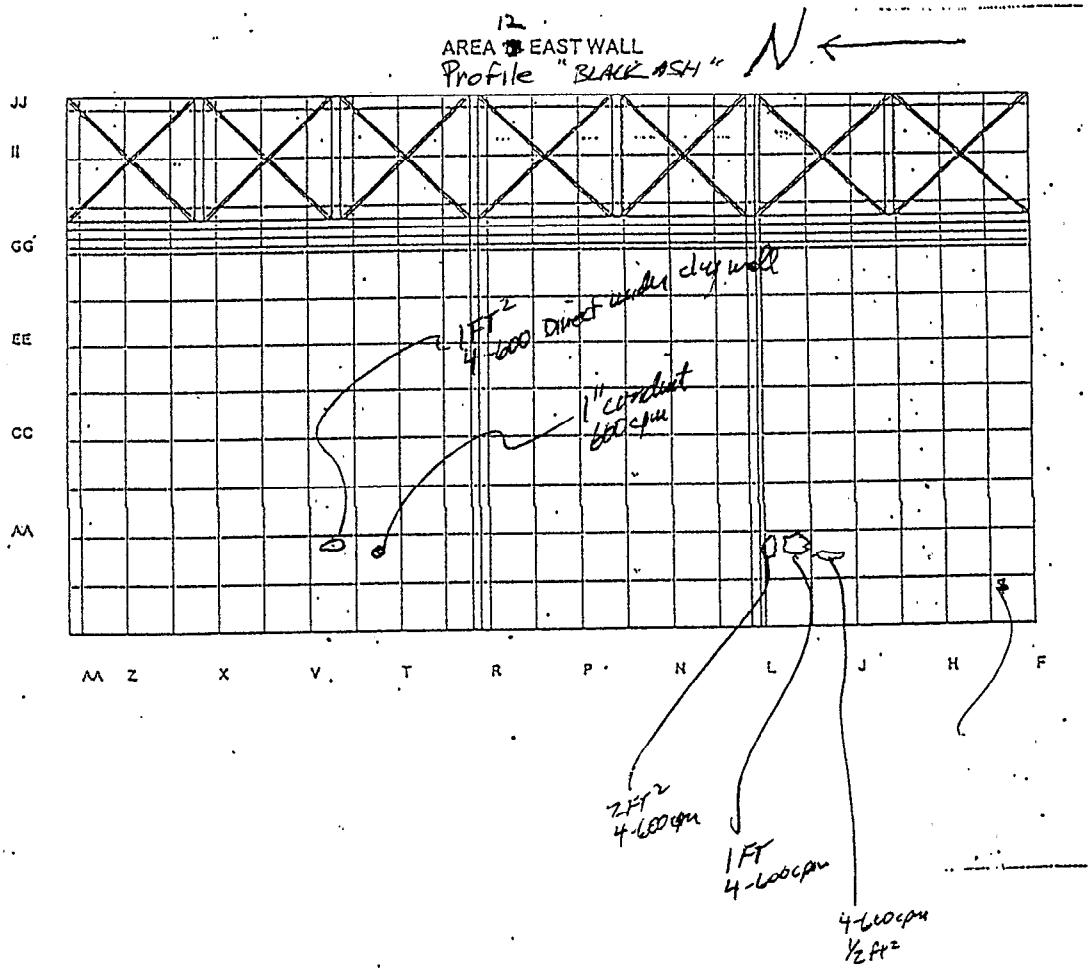


| | |
|---|---|
| Instrument Model & s/n: | L 2221 / 86308 |
| Detector Model & s/n: | 44-9 / 48767 |
| Calibration Date: | 2/7/97 |
| Efficiency | .24 cpm / dpm based on S/Y90 |
| Detector Area | 16.5 cm2 |



ENCL-C2.XLS

ILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 7/18/97
LOCATION: B14 12/13
CAFOURKS
pitman

PRIOR TO FLOWFILL BACKFILL

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: cpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

# 3003

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 54 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | Scan |

| SAMPLE # | LOCATION CODE | |
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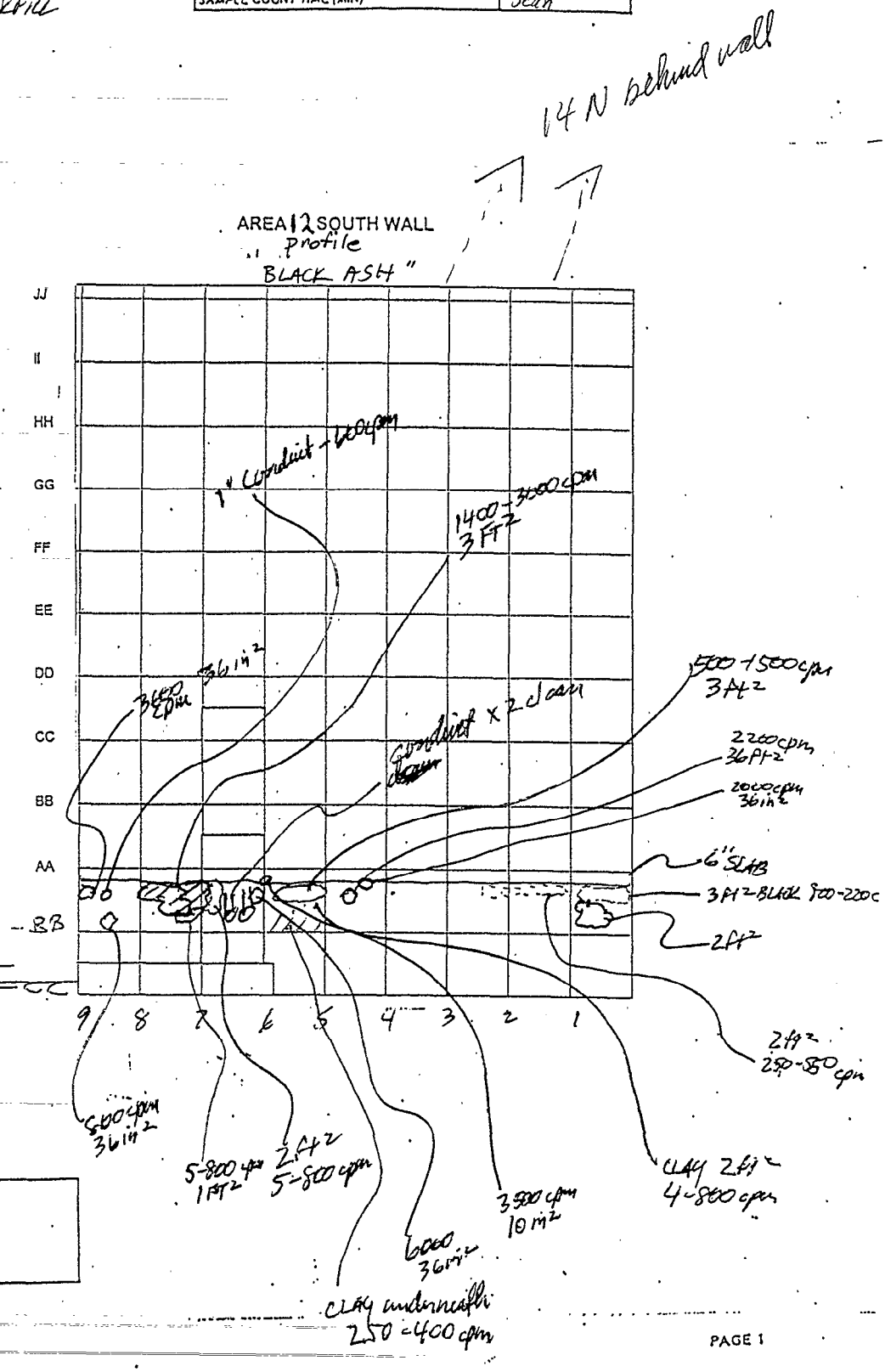


| | |
|---|---|
| Instrument Model & s/n: | L2221/86308 |
| Detector Model & s/n: | 44-9/48267 |
| Calibration Date: | 2/7/97 |
| Efficiency | [illegible] cpm / dpm based on S/100 |
| Detector Area | 15.5 cm2 |



ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 7/18/97
LOCATION: A13

prior to FLOWFILL BACKFILL
MAK CAFOVERS
Dana Pitman
SUP LIMITS

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

# 3004

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 54 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | Scan |

middle wall
A13 profile

| SAMPLE # | LOCATION CODE |
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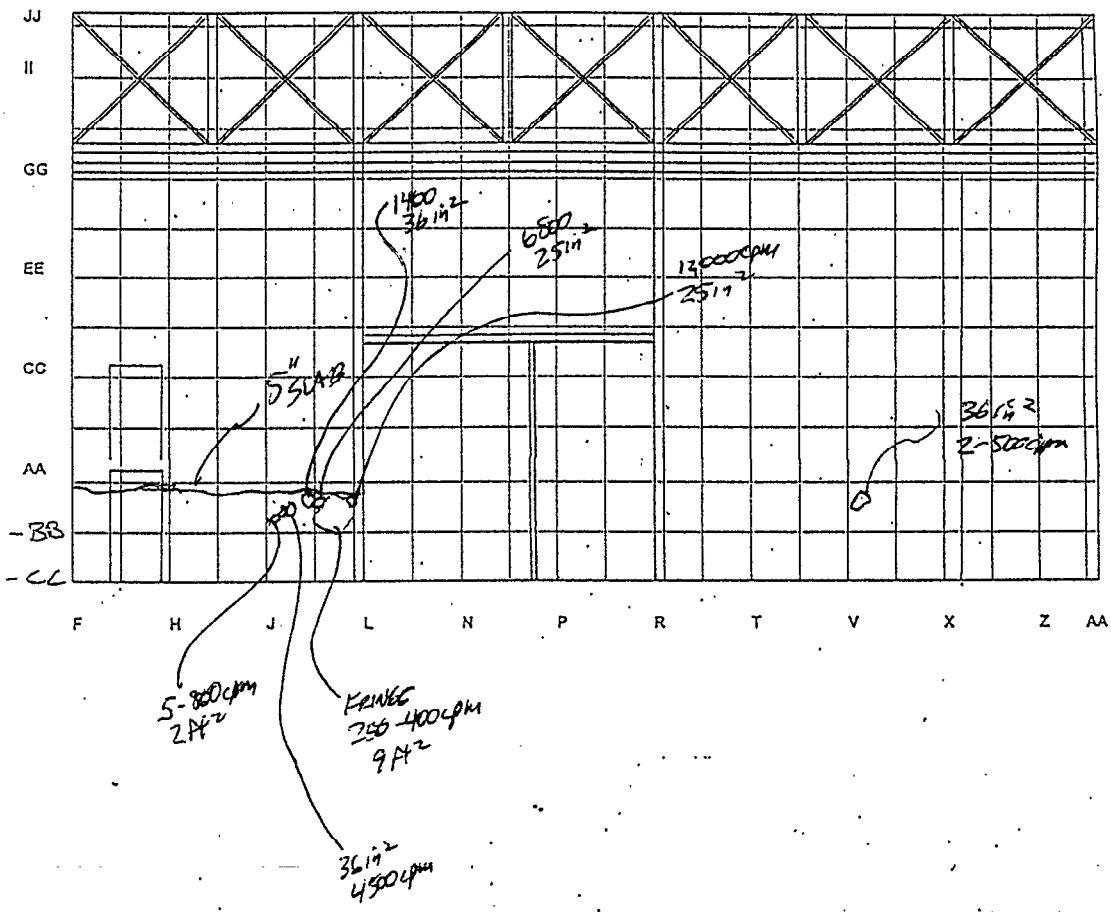
AREA 13 WEST WALL
"BLACK ASH"




| | |
|---|---|
| Instrument Model & s/n: | L2221 / 86308 |
| Detector Model & s/n: | 44-9 / 48267 |
| Calibration Date: | 2/7/97 |
| Efficiency | 21 cpm / dpm based on S/Y90 |
| Detector Area | 53.5 cm2 |

ENCL-C2.XLS

ILDERT ASSOCIATES, INC.

# DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 7/18/97
LOCATION: A13 Southwall
MARK CAFOURS
DANA PITMAN
prior to FlowFill BACKFILL

no problems

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

# 3005

| | |
|---|---|
| TOTAL BACKGROUND COUNTS | 54 |
| BACKGROUND COUNT TIME (MIN) | 1 |
| SAMPLE COUNT TIME (MIN) | Scan |

| SAMPLE # | LOCATION CODE | LOCATION DESCRIPTION | GROSS SAMPLE COUNTS | NET SAMPLE COUNT RATE (CPM) | RESULTS (DPM/100CM2) | 95% ERROR (DPM/100CM2) | MDA (DPM/100CM2) |
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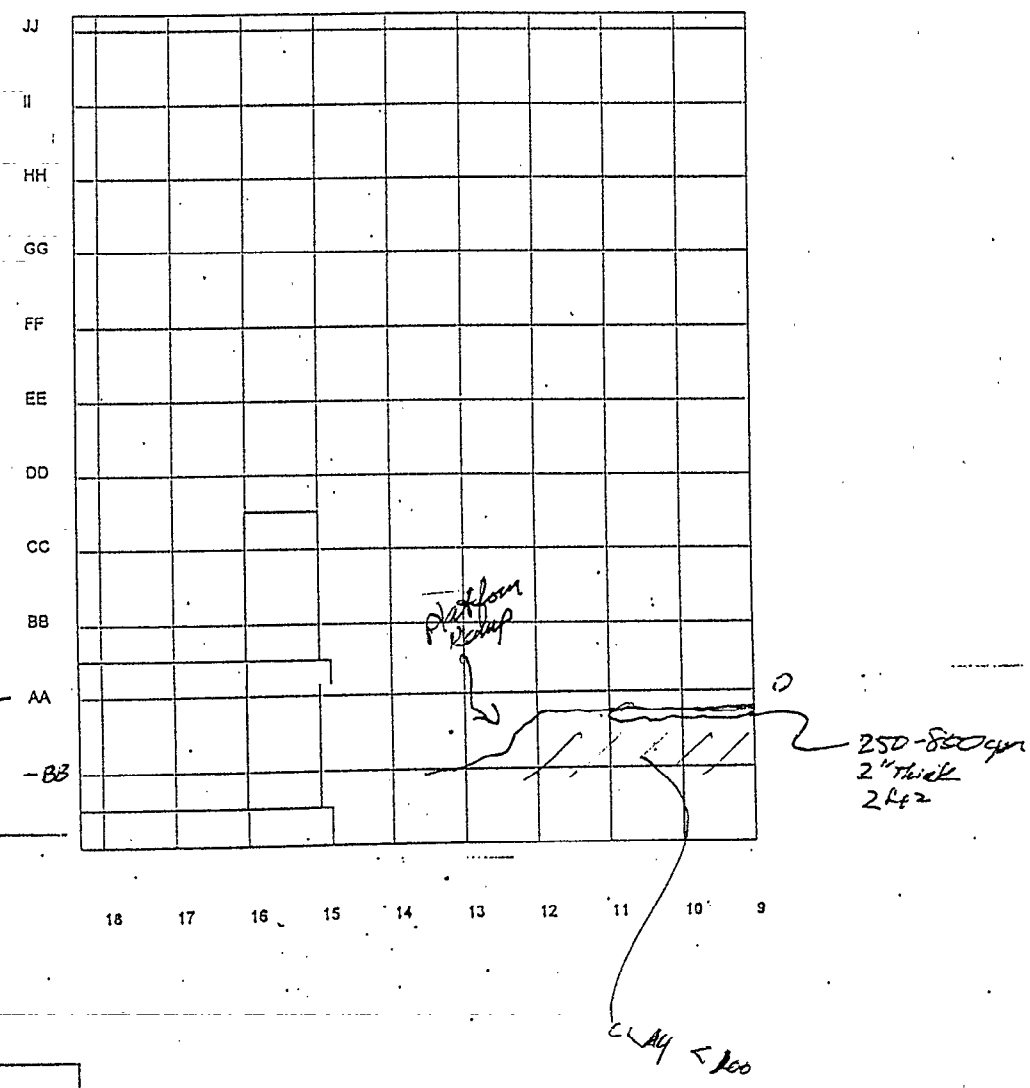
AREA 13 SOUTH WALL

"BLACK ASH"




| | |
|---|---|
| Instrument Model & s/n: | L2221 / 86308 |
| Detector Model & s/n: | 44-9 / 48267 |
| Calibration Date: | 2/7/97 |
| Efficiency | cpm / dpm based on S/100 .21 |
| Detector Area | cm2 |



ENCL-C2.XLS