APPENDIX B-4

DELINEATION SURVEYS FOR FIRST FLOOR OFFICES AND SMALL HALLWAY

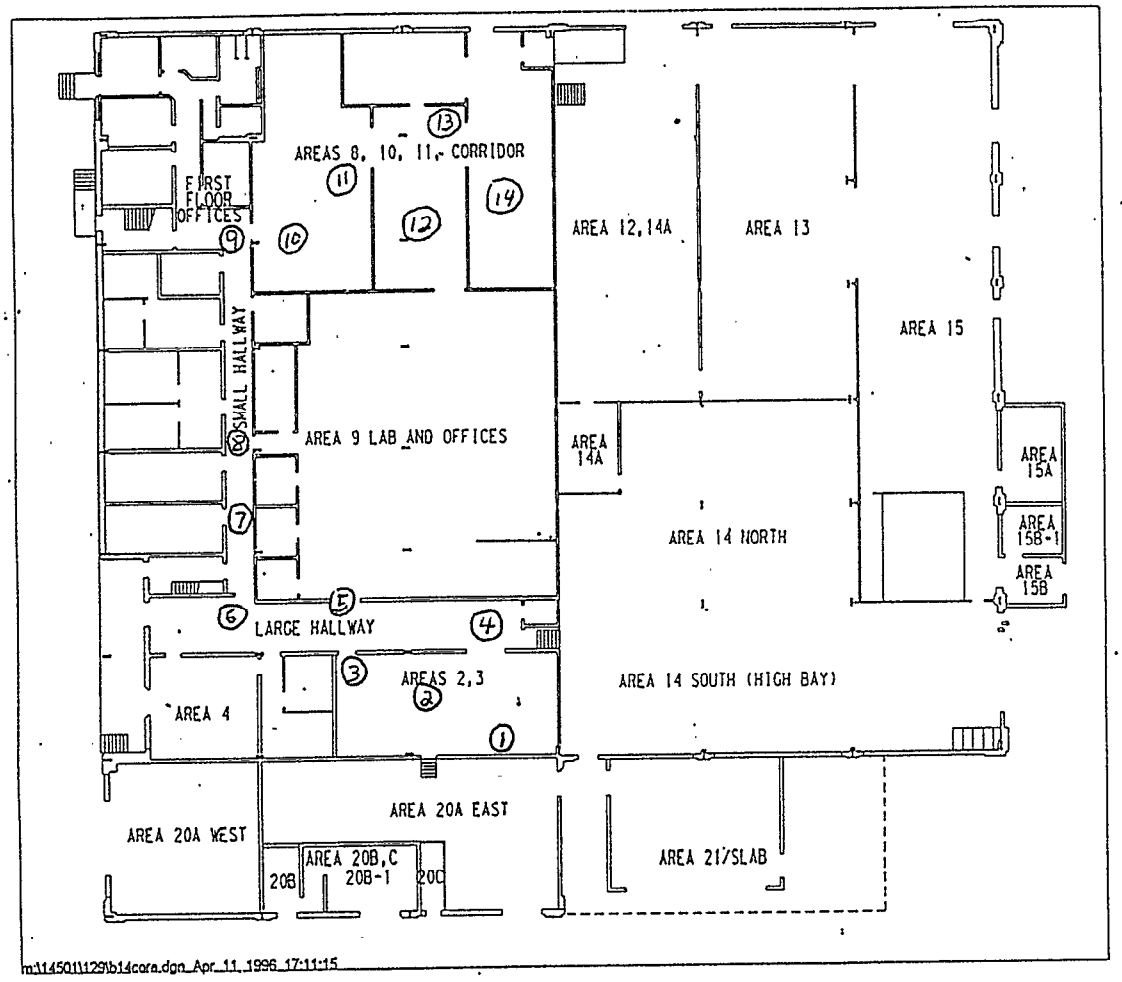
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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 3-18-97 @ 1600	Tech M. Zigo	Instruments / sn Ludlum 2221 A	BKG. 60 C.P.M.
Location / Purpose AREA 2&3, Large Hall, Small Hall. AREAS		Survey # 119	RWP # N/A
8, 10, 11, and Corridor. Swipe Survey.			



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
1	S	Floor	1	2	53	-31	8	S	Floor	1	2	64	7
2	S	↓	1	2	63	3	9	S	↓	0	-1	69	24
3	S	↓	3	8	67	17	10	S	↓	0	-1	52	-34
4	S	↓	1	2	54	-28	11	S	↓	0	-1	62	0
5	S	↓	1	2	65	10	12	S	↓	1	2	77	52
6	S	↓	1	2	57	-17	13	S	↓	1	2	61	-3
7	S	↓	1	2	53	-31	14	S	↓	0	-1	48	-48

Comments: O = "Denotes Swipe LOCATIONS.

Scaler S/N Ludlum 2929 I	BKD	EFF-	MDA
CT = 1 Alpha:	165/700	.34	14
Tech M. Zigo Beta:	43199/700	.29	135

Review

HILBERT ASSOCIATES, INC.

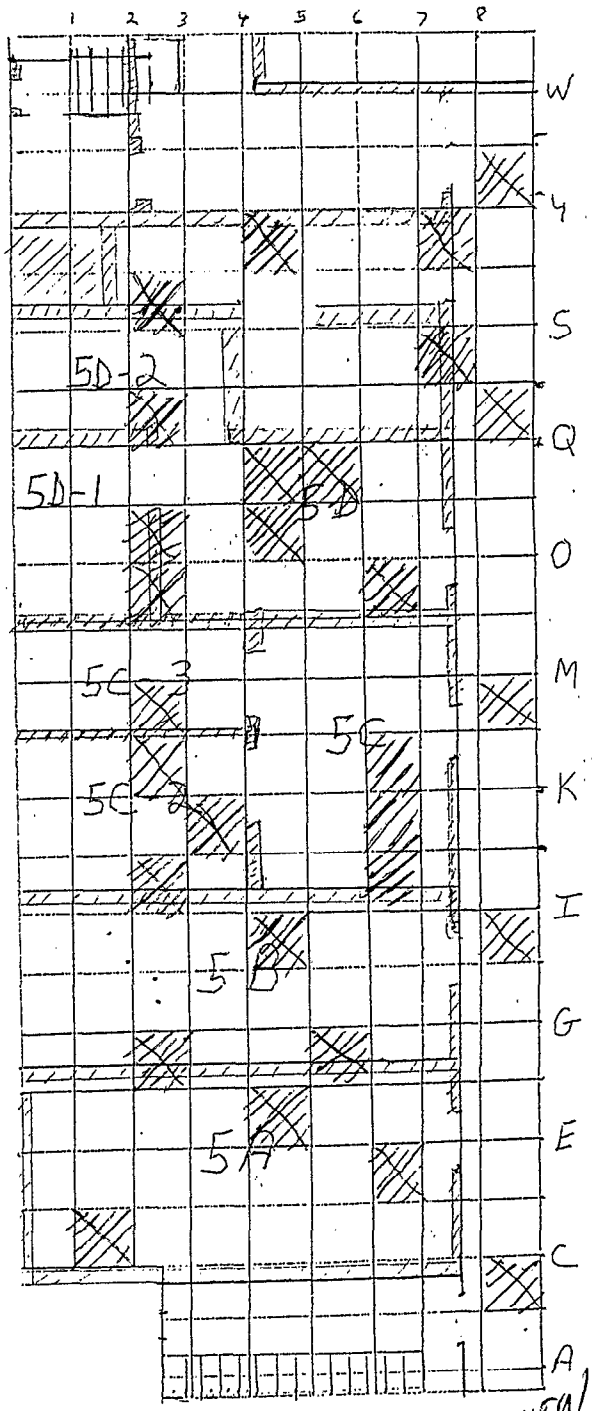
DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 6-2-97
LOCATION: 1ST Floor Offices
Bld-14 Pratt
Delineation of OVERHEAD
Survey # 412

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

TOTAL BACKGROUND COUNTS	60
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	GRID LOCATION CODE	SURFACE LOCATION DESCRIPTION	GROSS SAMPLE COUNTS/MIN
1	C-1	GYPSEN CEILING	70-80
2	B-6	GYPSEN Ceiling	60-80
3	E-4	GYPSEN Ceiling	60-70
4			
5	F-2	GYPSEN Ceiling	50-60
6	F-5	GYPSEN Ceiling	50-60
7	H-4	GYPSEN Ceiling	60-70
8			
9	I-2	GYPSEN Ceiling	50-60
10	J-3	GYPSEN Ceiling	40-60
11	K-2	GYPSEN Ceiling	40-60
12			
13	L-2	GYPSEN Ceiling	60-70
14	N-2	GYPSEN Ceiling	60-70
15			
16	I-6	GYPSEN Ceiling	50-60
17	K-6	GYPSEN Ceiling	60-70
18	N-6	GYPSEN Ceiling	60-70
19	J-6	GYPSEN Ceiling	50-70
20			
21	O-2	GYPSEN Ceiling	60-70
22	S-2	GYPSEN Ceiling	50-60
23	Q-2	GYPSEN Ceiling	60-70
24			
25	O-4	GYPSEN CEILING	60-70
26	P-4	GYPSEN Ceiling	60-70
27	P-5	GYPSEN Ceiling	60-70
28			
29	R-7	Ceiling VENT	70-90
30	T-7	Ceiling	60-70
31	T-7	GYPSEN Ceiling	60-70
32			
33	B-8	Ceiling	60-80
34	H-8	Ceiling	50-60
35	L-8	Ceiling	60-80
36	O-8	Ceiling	80-90
37	Q-8	Ceiling	60-80
38			
39			
40			



Instrument Model & S/N: Ludlum 2221 C
Detector Model & S/N:
Calibration Date:
Efficiency: cpm / dpm based on S/Y90
Detector Area: cm2 15.5

REVIEW

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 6-2-97
LOCATION: B1D-1 Pharmacy
over Head Delineation
H.P. M. Typ
Survey # 412

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

over Head

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS C.P.M.
1	X-1	Ceiling Tile	60-70
2	X-4	Ceiling Tile	60-70
3	X-2	Ceiling	70-80
4	X-0	Ceiling	70-80
5	AA-1	Ceiling Tile	60-70
6	AA-2	Ceiling Tile	60-70
7	BB-2	Ceiling Tile	60-70
8			
9	CC-0	BEAM	80-90
10	CC-2	Ceiling Tile	60-70
11	CC-3	Ceiling Tile	60-70
12			
13	DD-0	Ceiling Tile	60-70
14	DD-5	Ceiling Tile	50-60
15	FF-5	Ceiling Tile	50-60
16			
17	CC-7	Ceiling	50-60
18	Y-7	Ceiling	60-70
19	AA-7	Ceiling	60-80
20			
21	CC-9	Ceiling Tile	60-70
22	AA-9	Ceiling Tile	50-60
23	Y-10	Ceiling Tile	50-60
24	FF-10	Ceiling Tile	60-70
25			
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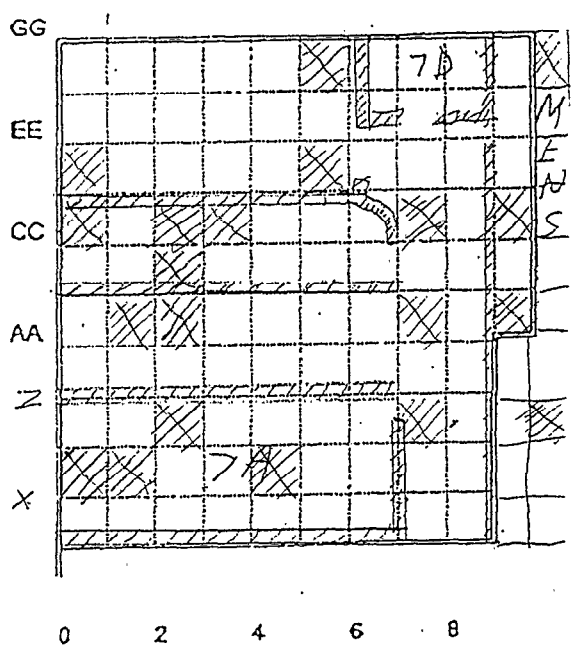


Review

Instrument Model & S/N	Ludlum 2221 "C"
Detector Model & S/N	
Calibration Date:	
Efficiency	cpm / dpm based on SR90 0-21
Detector Area	cm2 15-5

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

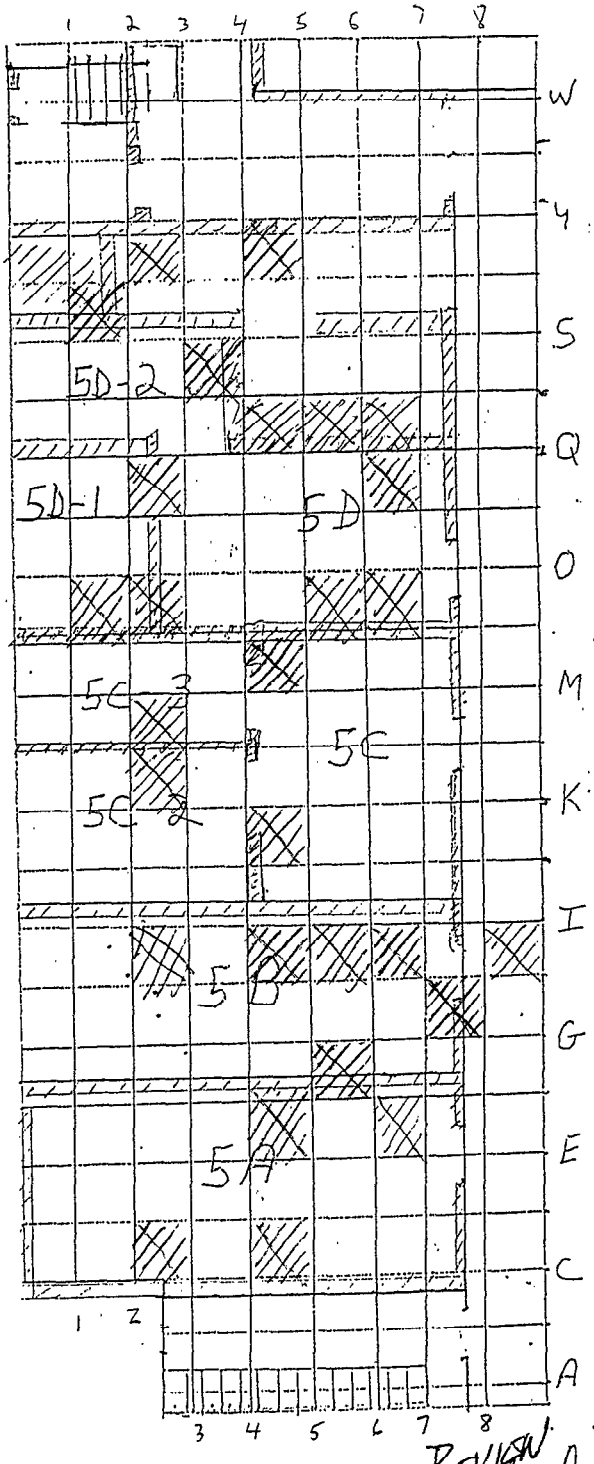
SAMPLE DATE: 6-2-97
LOCATION: 1ST Floor offices
Bld-14.
Praxair
Delineation of walls.
Survey # 413

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	

walls

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	E-AA-4	BLOCK WALL	60-70
2	E-BB-6	BLOCK WALL	60-80
3			
4	B-AA-2	BLOCK WALL	70-80
5	B-BB-4	BLOCK WALL	60-70
6			
7	H-AA-4	BLOCK WALL	50-60
8	H-BB-6	BLOCK WALL	50-60
9	F-AA-5	BLOCK WALL	50-60
10	G-AA-7	BLOCK WALL	50-60
11			
12	J-AA-4	BLOCK WALL	50-60
13	K-AA-2	BLOCK WALL	50-60
14	H-BB-2	BLOCK WALL	60-70
15			
16	N-AA-1	BLOCK WALL	50-60
17	N-BB-2	BLOCK WALL	40-50
18	L-AA-2	BLOCK WALL	50-60
19	M-AA-4	BLOCK WALL	50-60
20	K-AA-2	BLOCK WALL	60-70
21			
22	H-AA-5	BLOCK WALL	60-70
23	H-BB-6	BLOCK WALL	60-70
24	N-AA-6	BLOCK WALL	50-60
25	N-AA-7	BLOCK WALL	60-70
26	P-AA-2	BLOCK WALL	60-70
27			
28	S-AA-1	BLOCK WALL	60-70
29	R-AA-3	BLOCK WALL	60-70
30	N-AA-5	BLOCK WALL	50-60
31	P-AA-6	BLOCK WALL	50-60
32			
33	T-AA-2	BLOCK WALL	50-60
34	T-AA-4	BLOCK WALL	50-60
35	G-S1	SINK #1	180-210
36	A-AA-6	SINK #2	180-200
37	G-4	SHOWER DRAIN	80-90
38	G-AA-5	BLOCK WALL	50-70
39	T-BB-2	VENT	80-90
40	M-AA-8	WALL	90-100



M. Zego

Instrument Model & S/N	Ludlum 2221 C
Detector Model & S/N	
Calibration Date:	
Emiciency	cpm / dpm based on S/Y90
Detector Area	cm2 15.5

Review

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 6-2-97
LOCATION: Bld-14 1st Floor
wall Delineation
HP. M. Tyo

Survey # 413

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

TOTAL BACKGROUND COUNTS	60
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	

wall Delineation

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	X-AA-1	Block wall	60-80
2	Y-AA-4		60-80
3	Y-AA-4		70-80
4	Z-AA-2		60-80
5	Z-BB-2		60-70
6			
7	AA-AA-1	BLOCK WALL	60-70
8	AA-BB-2		60-70
9	BB-AA-6		70-80
10			
11	CC-AA-1	BLOCK WALL	60-70
12	CC-BB-3		60-70
13	CC-AA-4		60-70
14			
15	DD-AA-0	window ledge	80-100
16	DD-AA-0	Block wall	80-120
17			
18	EE-AA-6	BLOCK WALL	60-70
19			
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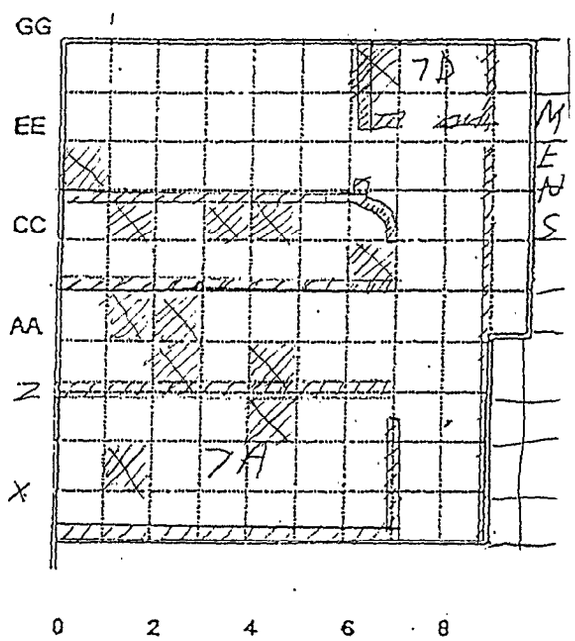

Review

Instrument Model & S/N	Ludlum 2221 "C"
Detector Model & S/N	
Calibration Date:	
Efficiency	cpm / dpm based on Sr/Y90 0-21
Detector Area	cm2 15-5

#440

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 6-17-97
LOCATION: Praxair
Bldg 14
Area - 1st Floor office Hallway

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

TOTAL BACKGROUND COUNTS	64
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	W-V/6-8	FLOOR	60
2	W-V/5-6	FLOOR	64
3	V/2-4	FLOOR	62
4	W/3-5	FLOOR	60
5	W-W/0	FLOOR	63
6	W-V/0-1	FLOOR	64
7			
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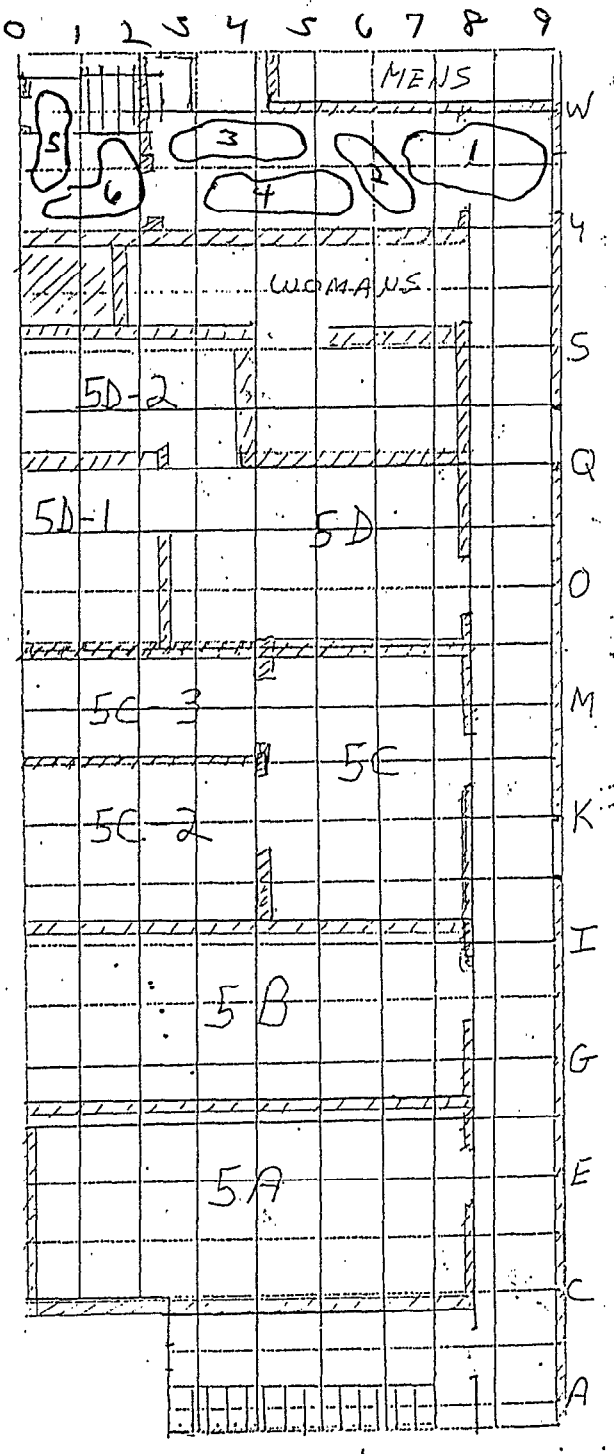

= Large Area Wipe

Instrument Model & S/N	2221-6
Detector Model & S/N	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 0.21
Detector Area	cm2 0.155

REVIEW

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY #454

SAMPLE DATE: 6-23-97
LOCATION: PRAIRIE SITE
B-14 1ST FL OFFICES
-HALLWAY FLOOR DELINEATION

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

TOTAL BACKGROUND COUNTS	62 cpm
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

ELEVATED AREAS & HOT SPOTS

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION		GROSS SAMPLE COUNTS
1	SEE	FLOOR - AREA FT2 =	5	800
2	MAP	SURFACE	2.5	~~25~~ 250-350
3			1	150-250
4			1.5	16k-35k
5		CRACK	—	300-1k
6		CHIPPED FLOOR	—	450
7		AREA FT2 =	2.5	200-1500
8			3	200-1000
9			1	200-600
10			2	500-2000
11			3	190-260
12				
13				
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21		N/A		
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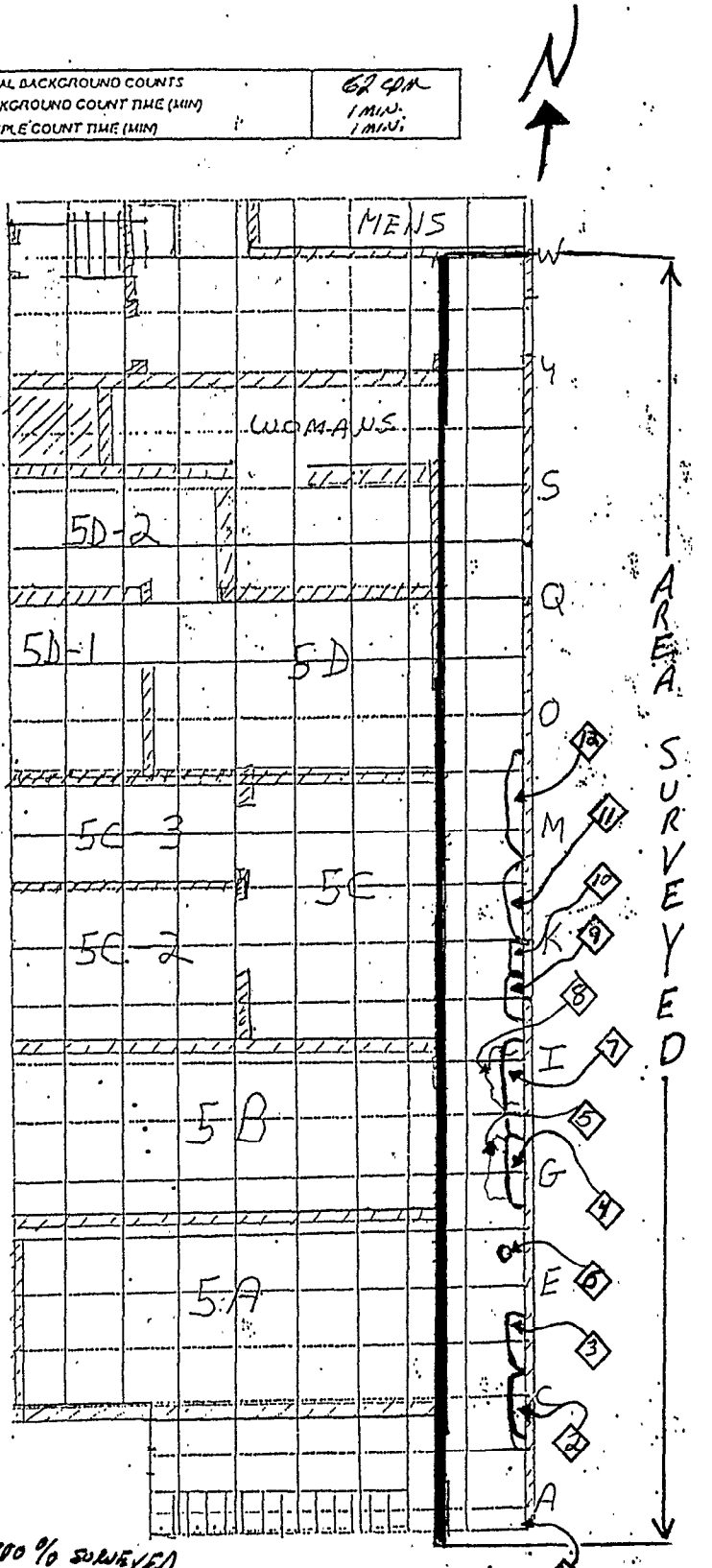

KEY

◇ = DIRECT PROBE (15.5cm²/BY) MEASUREMENT LOCATION

W
6-23-97

Instrument Model & S/N:	(B) LB221 W/44-9
Detector Model & S/N:	
Calibration Date:	
Efficiency	cpm / dpm based on S/N90 = .20
Detector Area	cm2 = 15.5 cm²

FLOOR 100% SURVEYED IN SPECIFIED AREA SHOWN ABOVE ALONG WITH AREA BEHIND MOP BOARD ON WALLS.

REVIEW

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

473

SAMPLE DATE: 7-1-97
LOCATION:
Praxair
Bldg 14
Area - 1st FLOOR offices
Rm. 5B

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

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

Core Bore

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	G-1	Floor - Core Top	58
2	↓	↓ Core Side	60
3	↓	↓ Core Bottom	55
4			
5			
6			
7			
8			
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10			
11			
12			
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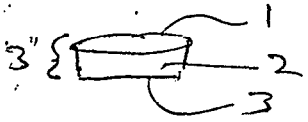

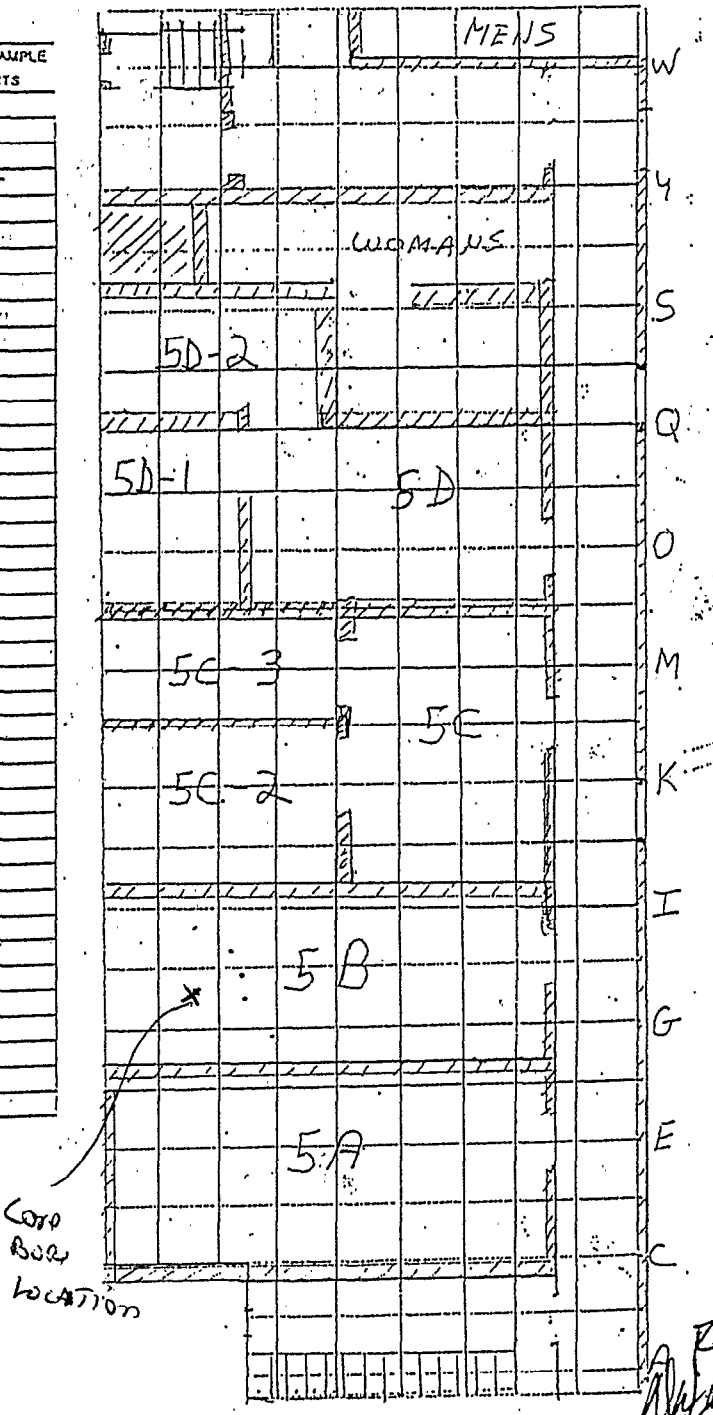

Instrument Model & S/N	2221-C
Detector Model & S/N	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 0.21
Detector Area	cm2 0.155

NOTE:
No Soil Sample, Total Depth of Concrete 11½" (3" over pour - 8½" original).
45" Void Space Between concrete & Soil

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

477

SAMPLE DATE: 7-2-97
LOCATION:
Proair
Bldg 14
Area - 1st Floor Office
Rms 5C, 1, 2, 3

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

TOTAL BACKGROUND COUNTS	80
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

Core Survey

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	I-3	Core Top	100
2	I-3	Side	70
3	I-3	Bottom	100
4	I-3	Inside Crack	160
5	L-3	Core Top	90
6	L-3	Side	70
7	L-3	Bottom	60
8	L-5	Core Top	120
9	L-5	Side	120
10	L-5	Bottom	90
11	J-5	Core Top	110
12	J-5	Side	110
13	J-5	Bottom	120
14	J-5	Inside Crack	130
15			
16			
17			
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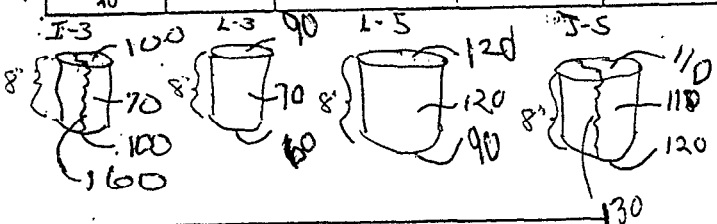

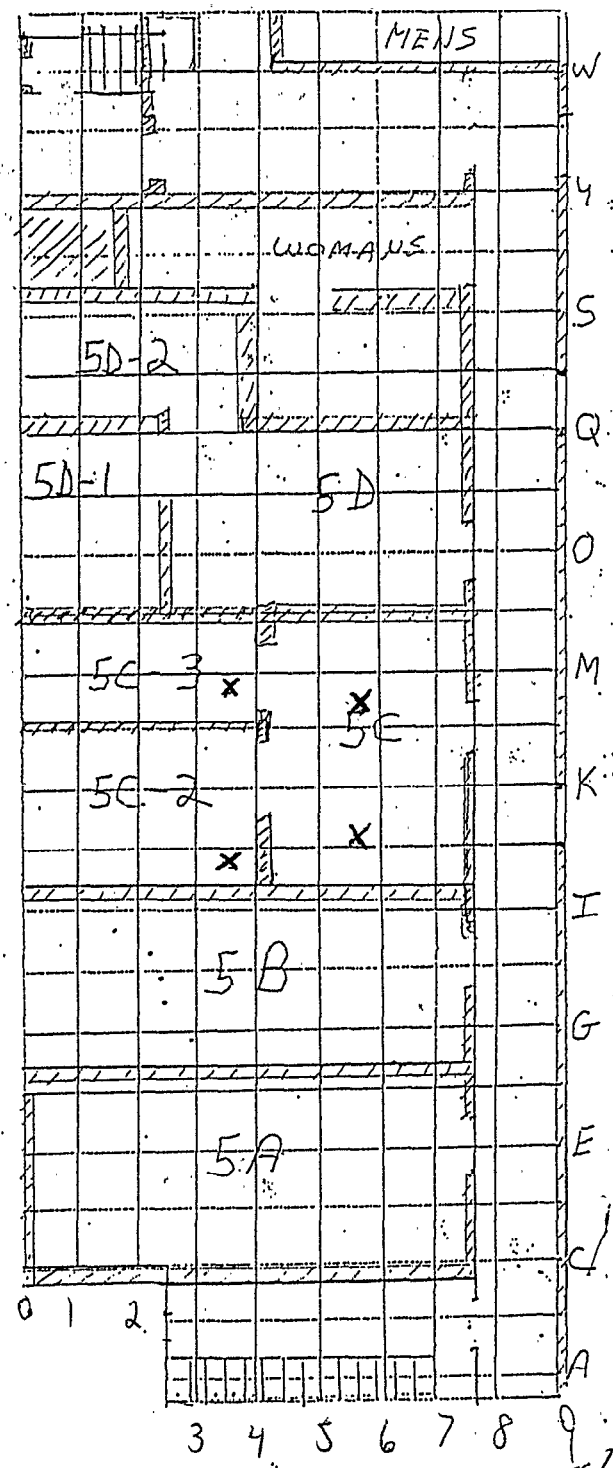

Instrument Model & s/n:	
Detector Model & s/n:	2221-D
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 0.21
Detector Area	cm2 0.155

D Pittman

REVIEW

ENCL-C1.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 7-3-97 / 1600	Tech D. Pitman	Instruments / sn 2221-D	
Location / Purpose Bld 14 1st Floor Offices Ans Sat 8		Survey # 495	RWP # 04
Core drilling			

Bldg 14 1st Floor offices

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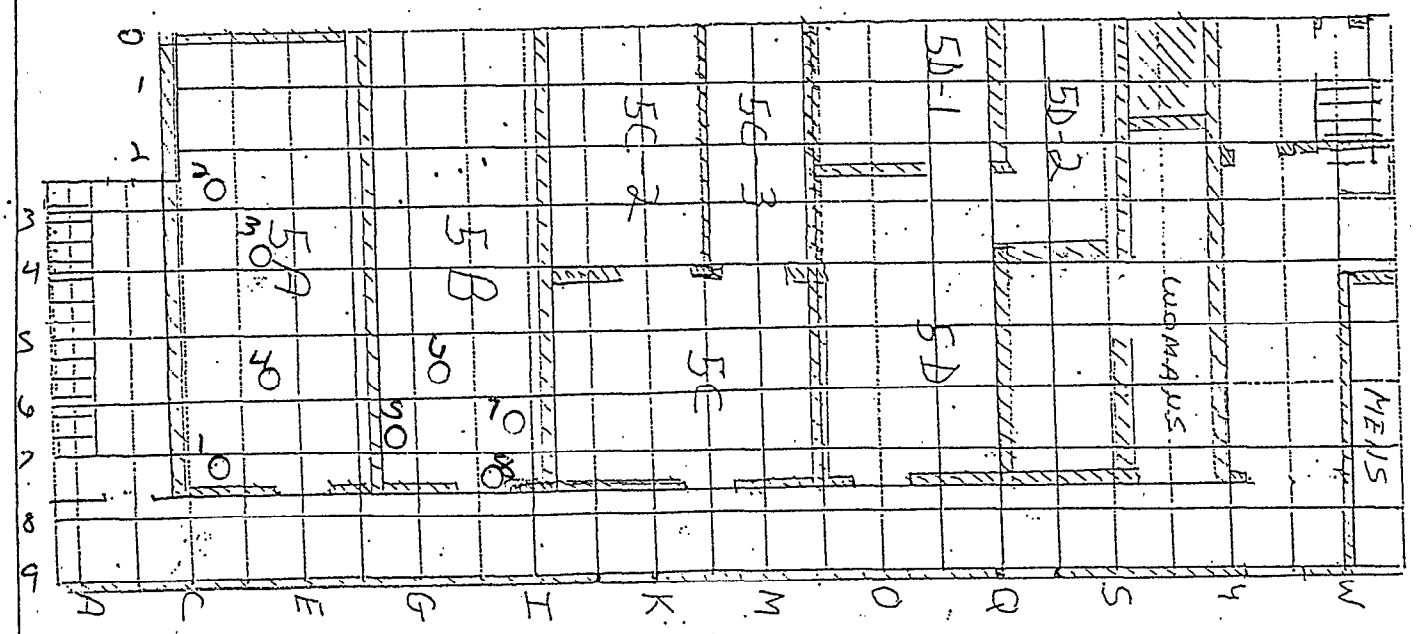

O = 100 cm² swipe

Loc	Type	Description	Gross	Δ DPM	Gross	Beta DPM	Loc	Type	Description	Gross	Δ DPM	Gross	Beta DPM
1	S	FLOOR	0	-.6	61	-7.4	8	S		0	-.6	57	-22
2	S		1	2.4	55	-29							
3	S		0	-.6	68	18							
4	S		0	-.6	70	25							
5	S		1	2.4	61	-7.4							
6	S		0	-.6	59	-14							
7	S		1	2.4	64	3.8							

Comments:

All smears < MDA

Scaler S/N 91234		BKD	EFF	MDA
CT = 1 min	Alpha:	220/990 #.2	.33	15
Tech R. Smallridge	Beta:	63237/990 63	.27	148

Review

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 7-3-97
LOCATION:
Praxair
Bldg 14
Area - 1st Floor Offices
Rooms 5A, 5B

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

Core Samples - Concrete

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION			GROSS SAMPLE COUNTS
1	C-3	FLOOR	CORE	TOP	160
2	↓	↓	↓	MIDDLE	70
3	↓	↓	↓	BOTTOM	120
4	C-5	FLOOR	CORE	TOP	270
5	↓	↓	↓	SIDE	90
6	↓	↓	↓	BOTTOM	110
7	G-6	FLOOR	CORE	TOP	100
8	↓	↓	↓	SIDE	100
9	↓	↓	↓	BOTTOM	130
10	T-5	FLOOR	CORE	TOP	75
11	↓	↓	↓	SIDE	80
12	↓	↓	↓	BOTTOM	70
13					
14					
15					
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17					
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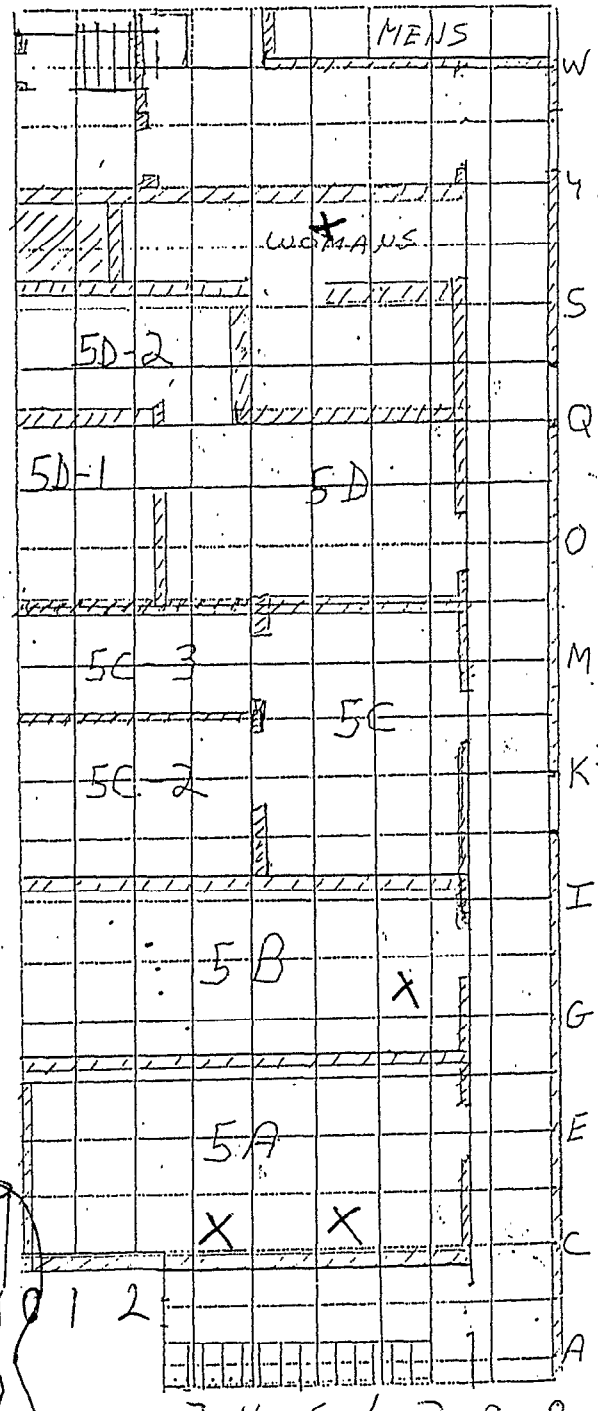
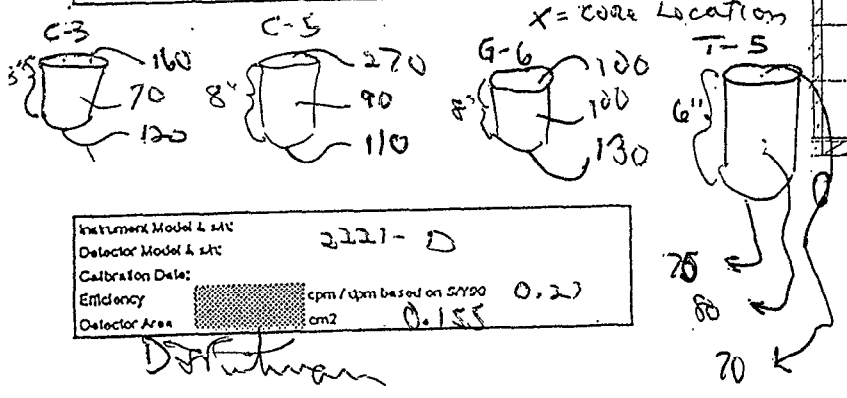


X = Core Location



Instrument Model & S/N	2221-D
Detector Model & S/N	
Calibration Date:	
Efficiency	cpm / dpm based on Sr/Y90 0.27
Detector Area	cm2 0.155

D. Pittman

REVIEW

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

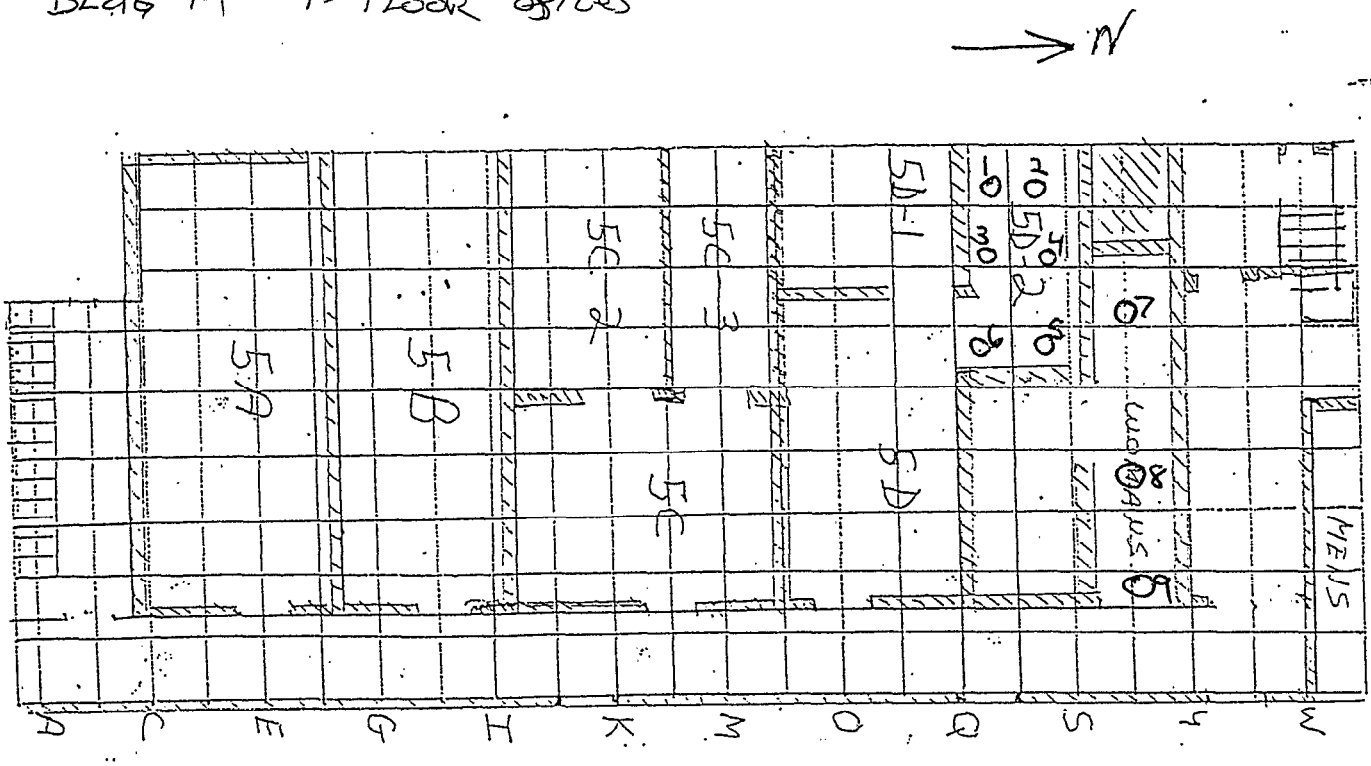
IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

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 7-7-97	Tech D. PITMAN	Instruments / sn 2221-B
Location / Purpose BLDG 14 1ST FL. OFF. Rms 5D2, WO. LAV	Survey # 497	RWP # 04

CORE BORE - Down Post of Area
BLDG 14 1ST FLOOR offices



O=100cm² Swipe

Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
1	S	FLOOR Rm5D2	1	2.4	61	-11	8	S	FLOOR - WO. LAV	0	-.6	89	93
2	S	↓ ↓	1	2.4	52	-44	9	S	↓ ↓	0	-.6	61	-11
3	S		1	2.4	65	3.7							
4	S		1	2.4	42	-81							
5	S		0	-.6	51	-48							
6	S		0	-.6	51	-48							
7	S	FLOOR WO. LAV	0	-.6	53	-40							

Comments: ALL SMEARS < M.D.A. α & βγ
MDA α 15
MDA βγ 148.

Scaler S/N 91234		BKD	EFF	MDA
CT = 1 MIN	Alpha:	220/990 ÷ 2	.83	15
Tech SMALLridge	Beta:	632437/990 = 64	.27	148

Review

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

499

SAMPLE DATE: 7-7-97
LOCATION:
Praxair
Bldg 14
Area: 1st Floor offices
Rm 7A, B

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

TOTAL BACKGROUND COUNTS	60
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

Core Bore

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	X-5	Core Bore Top	90
2	↓	Core Bore Side	75
3	↓	Core Bore Bottom	80
4	BB-3	Core Bore Top	175
5	↓	Side	90
6	↓	Bottom	70
7			
8			
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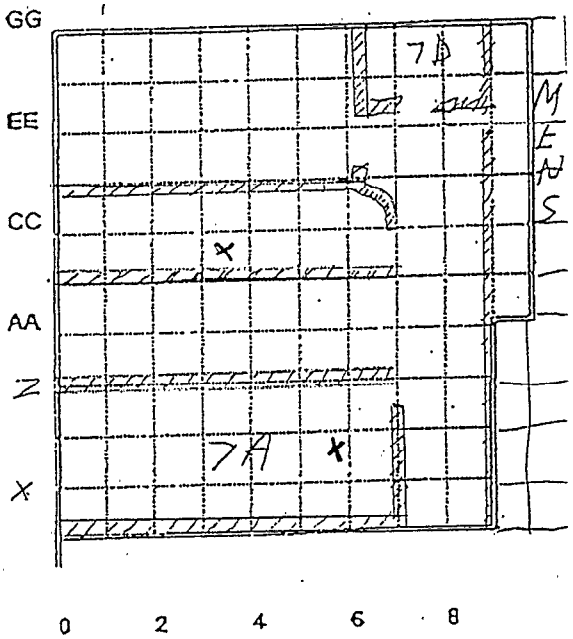

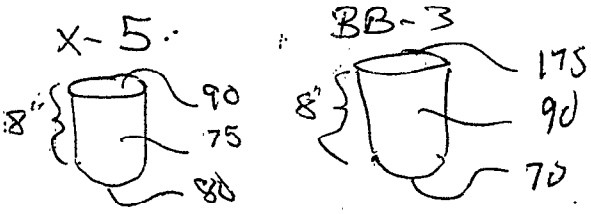

Instrument Model & S/N	2221-B
Detector Model & S/N	
Calibration Date:	
Efficiency	cpm / dpm based on 5/90 0.20
Detector Area	cm2 0.155

REVIEW

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY #508

SAMPLE DATE: 7-1, 1620-1730
LOCATION: 7-2, 2010-2120
7-3, 2215-2315
7-7, 1630-2230

B-14 1ST FL. OFFICES
DELINEATION

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

TOTAL BACKGROUND COUNTS	53
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS (βγ RANGE)
1	~~Rm. 5B~~	FLOOR SURFACE - SEE MAP	200-600
2	SEE MAP		200-600
3			200-350
4			200-400
5			200-400
6			200-500
7			200-360
8			200-350
9			200-550
10			
11			
12			
13			
14			
15			
16		N/A	
17			
18			
19			
20			
21			
22			
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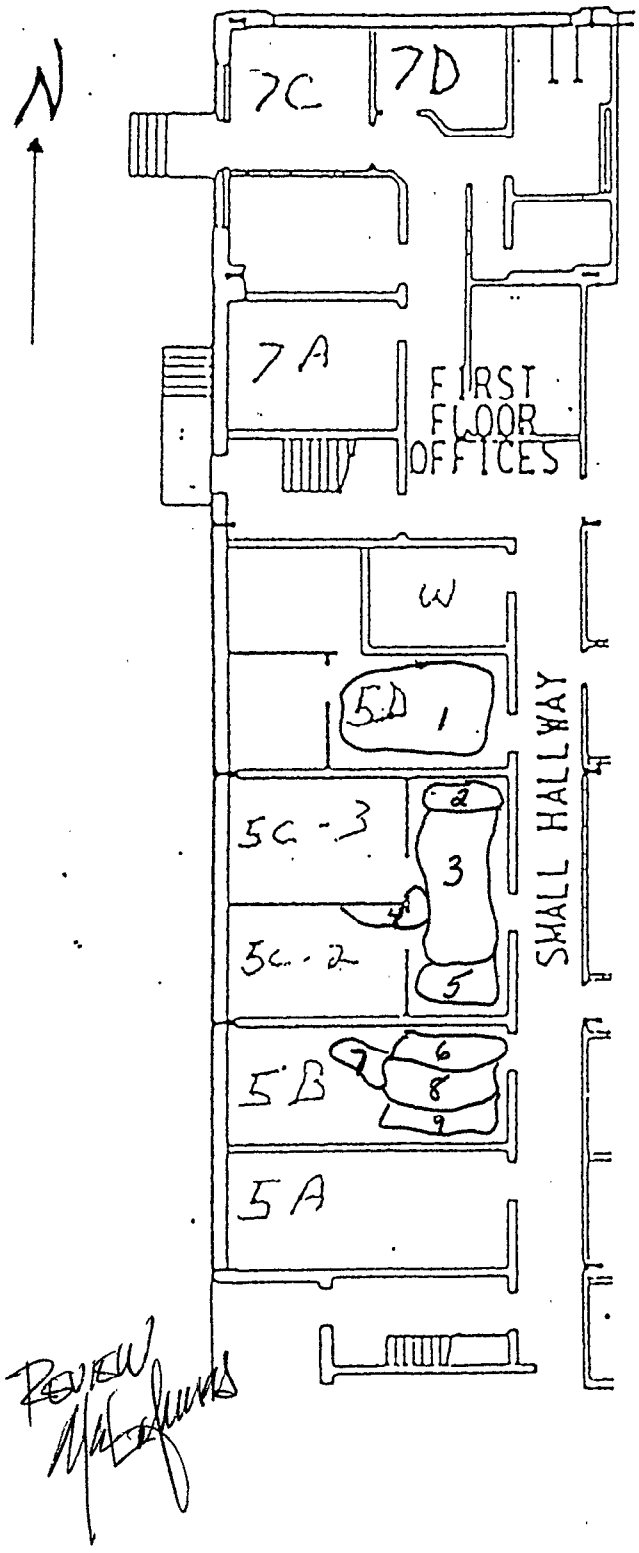

Instrument Model & s/n:	(B) L2221 W/44-9
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 .20
Detector Area	cm2 =15.5

REVIEW

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 7-26-97
LOCATION: PRAXAIR SITE
B-14 1st FLOOR OFFICES
SOIL SAMPLING DELINEATION
Survey # 542

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

TOTAL BACKGROUND COUNTS	61
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

GR10

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION ROOM	DEPTH	~~CPM~~ ~~GROSS SAMPLE COUNTS~~ CCPM BY	C.O.C. #
1	E-9	SMALL HALL	0-1'	<100	430
2	↓	↓	1-2'	<100	431
3	I-3	5C2	0-1'	<100	432
4	↓	↓	1-2'	<100	433
5	↓	↓	2-3'	<100	434
6	↓	↓	3-4'	<100	435
7	M-2	5C3	0-1'	<100	436
8	↓	↓	1-2'	<100	437
9	↓	↓	2-3'	<100	438
10	↓	↓	3-4'	<100	439
11	O-3	5D	0-1'	<100	440
12	P-7	5D	0-1'	<100	441
13	↓	↓	1-2'	<100	442
14	↓	↓	2-3'	<100	443
15	O-5	5D	0-1'	<100	444
16	↓	↓	1-2'	<100	445
17	↓	↓	2-3'	<100	446
18	↓	↓	3-4'	<100	447
19	Q-0	5D2	0-1'	<100	448
20					
21					
22					
23					
24					
25					
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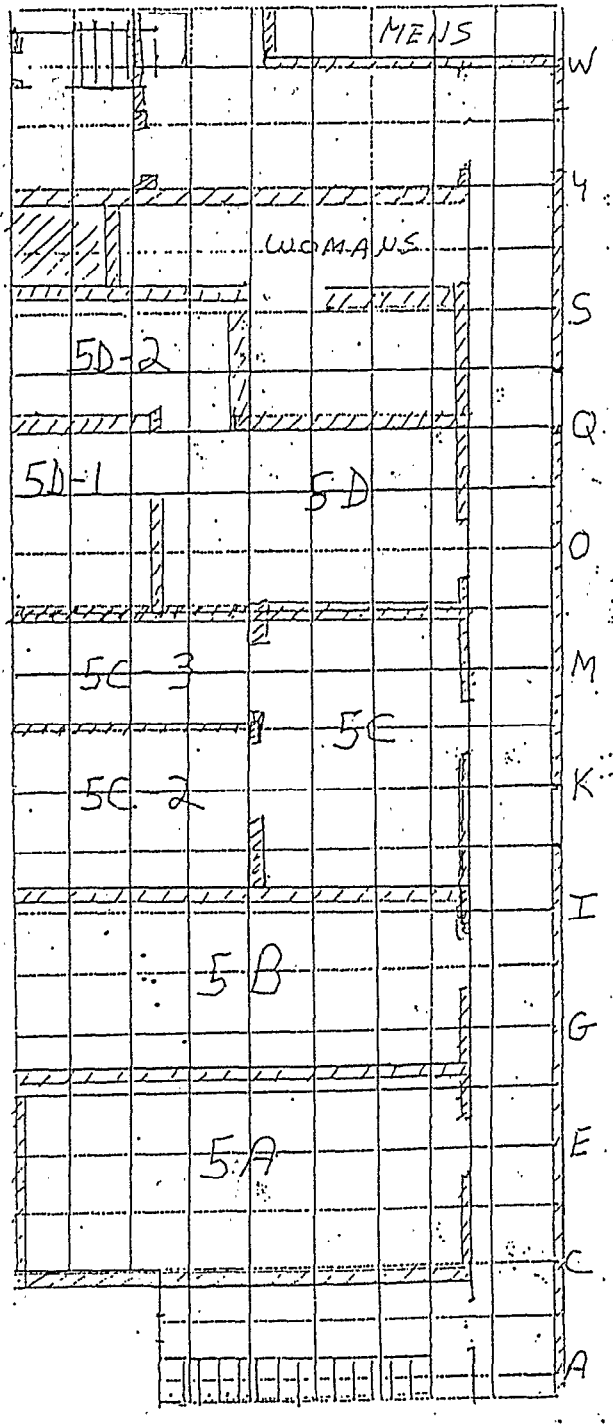


7-16-97

Instrument Model & S/N:	Ludlum 2221 B
Detector Model & S/N:	
Calibration Date:	
Efficiency	cpm / dpm based on 2π/90 0.20
Detector Area	cm2 15.5

REVIEW

ENCL-C2.XLS

Corebores

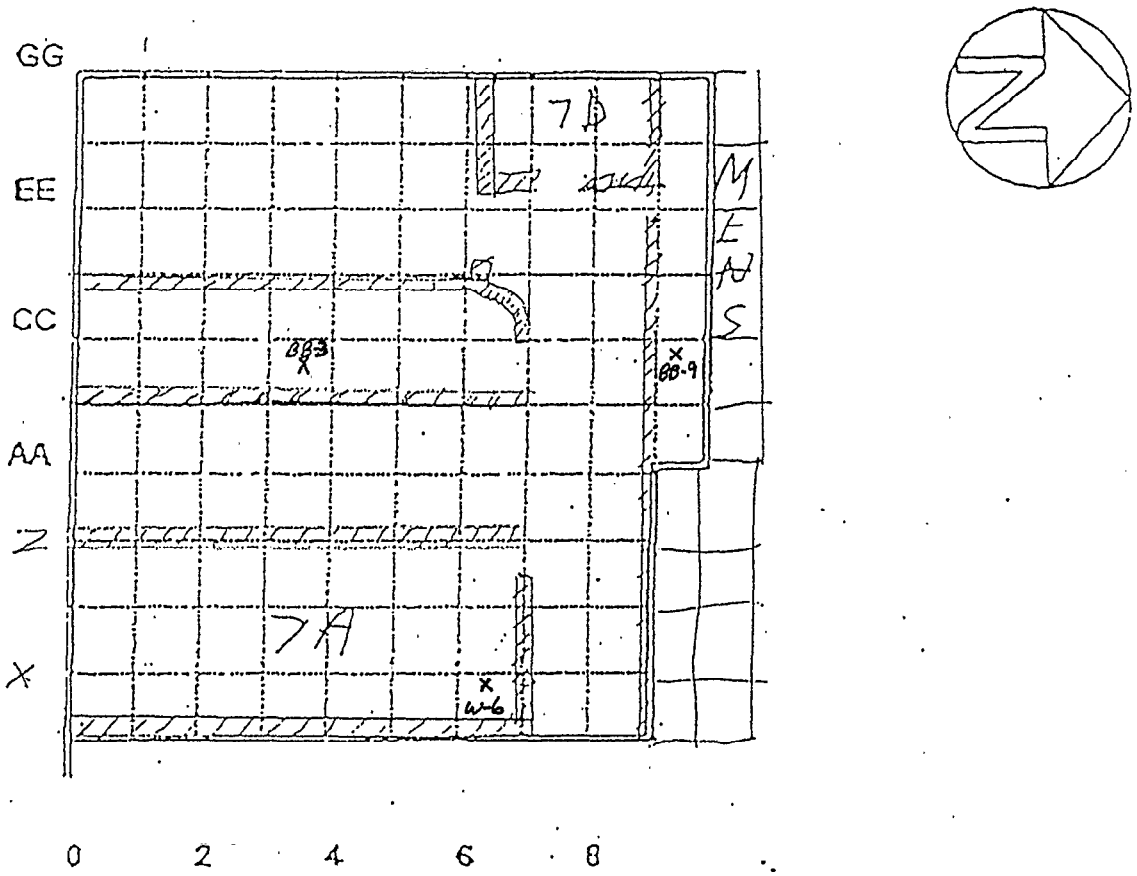
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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 7-16-97 1800	Tech W. [illegible]
Location / Purpose B-14 1ST FLOOR OFFICE AREA.	Instruments / sn (B) L2221 W/44-9
	Survey # 543 RWP # 04
5.	



Loc	Type	Description Room	Grid	C.O.C.#	~~Gross~~ Depth	A DPM	~~Gross~~ CCPM BY	Beta DPM
SEE ABOVE	S.S.	MENS LOWER ROOM	BB-9	470	0-1'		<100	
				471	1-2'		<100	
				472	2-3'	N	<100	N
		7B	BB-3	473	0-1'	A	<100	A
				474	1-2'		<100	
				475	2-3'		<100	
				476	3-4'		<100	

Loc	Type	Description Room	Grid	C.O.C.#	~~Gross~~	A DPM	~~Gross~~ CCPM BY	Beta DPM
SEE ABOVE	S.S	7A	W-6	477	0-1'		<100	
				478	1-2'		<100	
				479	2-3'	N	<100	N
				480	3-4'	A	<100	A
			N	A				

Comments: S.S. = SOIL SAMPLE

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

Review [illegible]

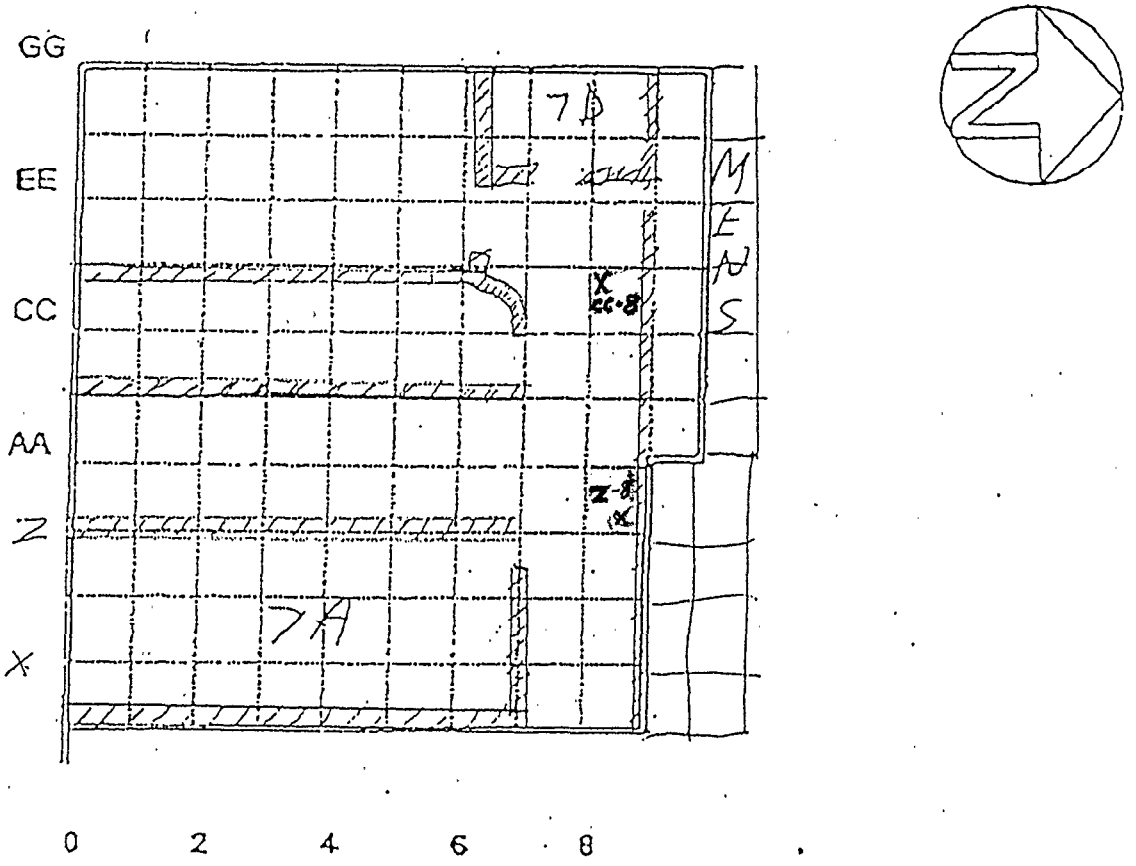
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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 7-17-97 0010	Tech [illegible]	Instruments / sn (B) L2221	
Location / Purpose B-14 1st FLOOR OFFICES.		Survey # 544	RWP # 04
SMALL HALL			



Loc	Type	Description Room	Grid	C.O.C.#	Depth	A DPM	CCPM	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
SEE ABOVE	S.S.	SMALL HALL	CC-8	481	0-1'		<100								
				482	1-2'		<100								
				483	2-3'	N	<100	N			N				
				484	3-4'	A	<100	A			A				
		SMALL HALL	2-8	485	0-1'		<100								
				486	1-2'		<100								

Comments: S.S. = SOIL SAMPLE

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

Review [illegible]

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 548

SAMPLE DATE: 7-18-97
LOCATION: PRAXAIR SITE
B-4 1ST FLOOR OFFICES (SMALL HALL)
SOIL SAMPLE DELINEATION SURVEY

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

TOTAL BACKGROUND COUNTS	63
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	GRID LOCATION CODE	LOCATION DESCRIPTION		~~GROSS SAMPLE~~ COUNTS
1	B-8	SMALL HALL	0-1'	<100 CCPM
2	B-8		1-2'	<100 CCPM
3	B-8		2-3'	<100 CCPM
4	A-4		0-1'	<100 CCPM
5	A-4		1-2'	<100 CCPM
6	A-4		2-3'	<100 CCPM
7	U-2		0-1'	<100 CCPM
8	U-2		1-2'	<100 CCPM
9	U-2		2-3'	<100 CCPM
10				
11				
12				
13				
14				
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16				
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19		N/A		
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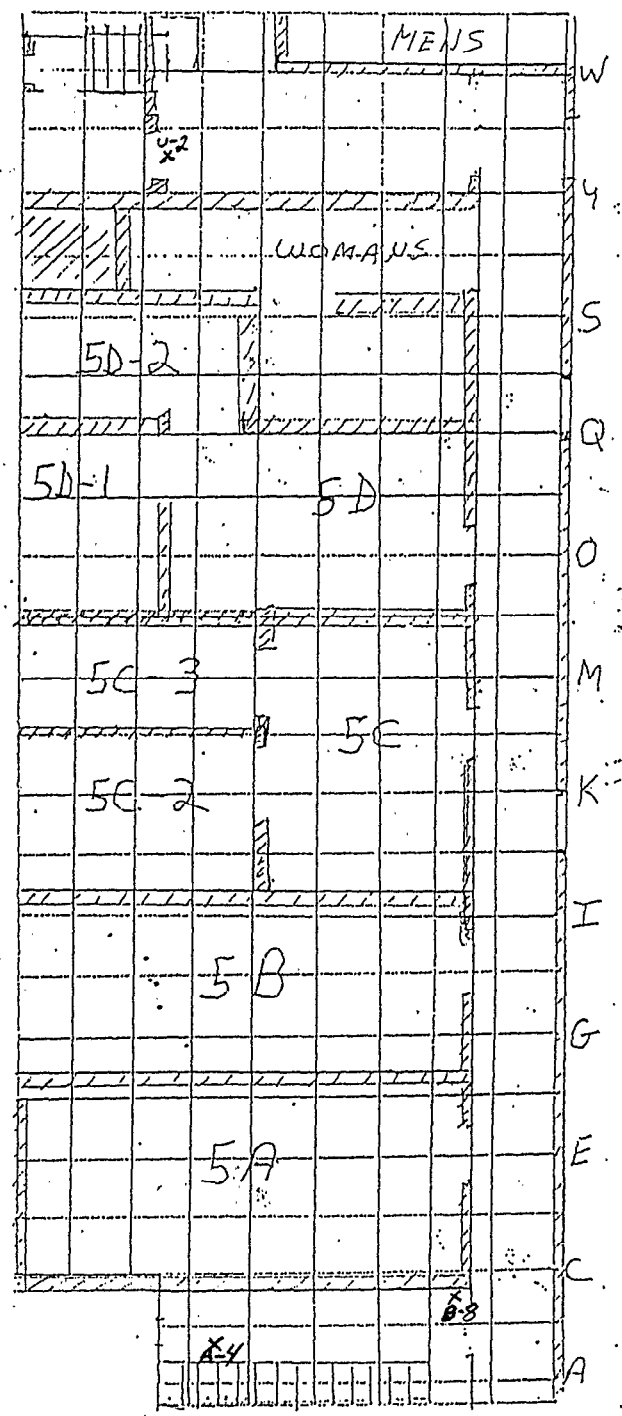


7/18/97
William W

Instrument Model & S/N	(B) L2221 W/44-9
Detector Model & S/N	
Calibration Date:	
Efficiency	cpm / dpm based on 5/100 = 20
Detector Area	cm2 = 15.5

REVIEW

ENCL-C2.XLS

APPENDIX B-5

DELINEATION SURVEYS FOR SECOND FLOOR

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 1545 2-20-97	Tech William Jake	Instruments / sn L 2221 # 78163 w/43-37 # 089382
Location / Purpose 2ND FLOOR OFFICE AREAS		Survey # 003 RWP # N/A
BASELINE FLOOR SURVEY		

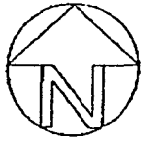
Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
		SEE ATTACHED							SEE ATTACHED				

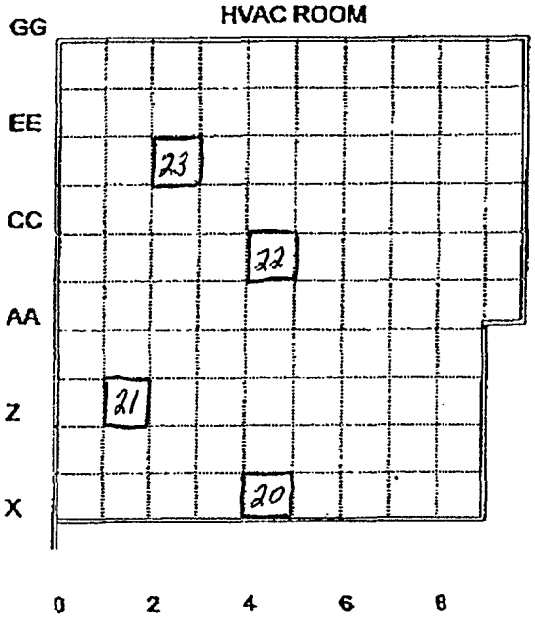
Comments:

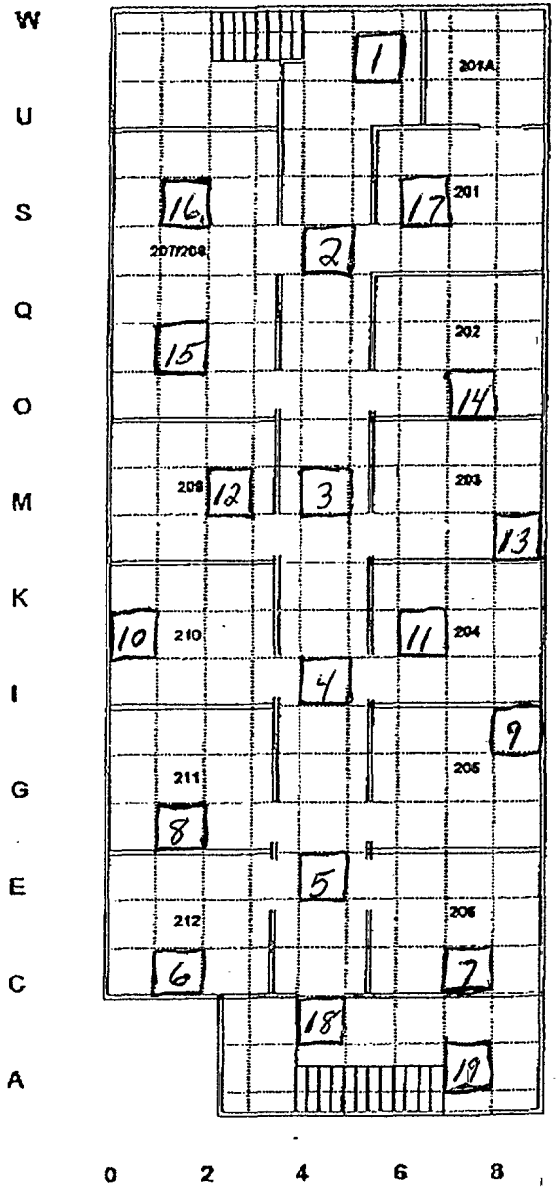
Scaler S/N L-2221 # 78163	BKD	EFF	MDA
CT = Alpha:	N/A	N/A	
Tech Beta:		.24	

Review

SECOND FLOOR OFFICES







1M X 1M GRID

ION TECHNOLOGY, INC.

Bldg. 14, Praxair Site

RADIOLOGICAL SURVEY CONTINUATION FORM

Date / Time: 2-20-97 1545	Tech.: William [illegible]	Instruments/sn: L2221 # 78163 w/43-37 # 089382
Location / Purpose: 2ND FLOOR OFFICE AREAS		Survey No.: 003 RWP No.: N/A
BASELINE FLOOR SURVEY		

Loc.	Type	Description	Gross	α DPM	β Gross	β DPM	Loc.	Type	Description	Gross	α DPM	Gross	β DPM
1	O.P.	GRID w/1MW. COUNTER			958		25						
2					1046		26						
3					1096		27						
4					1103		28						
5					1040		29						
6					1018		30						
7					1148		31						
8					1072		32						
9					1116		33						
10					1034		34						
11					1107		35						
12					1008		36						
13					1166		37						
14			N		1076		38		N				
15				A	1120		39			A			
16					1074		40						
17					1170		41						
18					964		42						
19					1004		43						
20					1404		44						
21					1422		45						
22					1382		46						
23					1408		47						
24							48						

Comments: O.P. = DIRECT PROBE MEASUREMENT BY 1MW COUNT.

MAC 10/28/98 L/2221 #78163 EFF .24

BKD 830

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

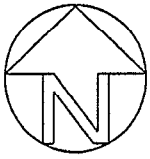
IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

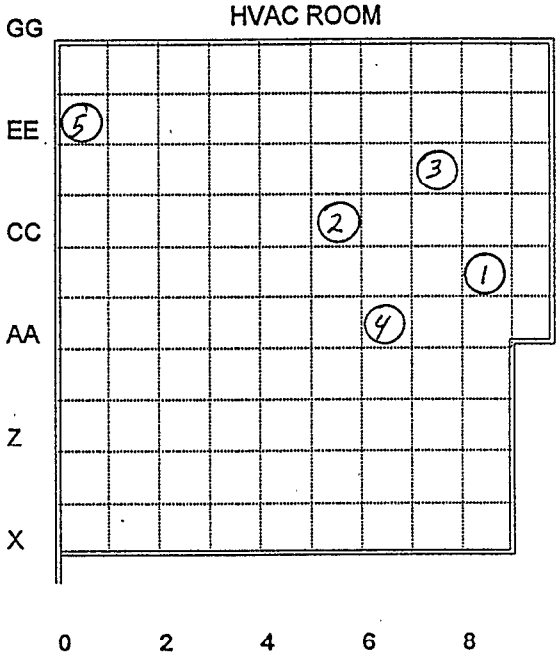
Radiological Survey Form

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

Date / Time 2-24-97 @ 1500	Tech M. Stojo	Instruments / sn Ludlum 2221 # 86308	
Location / Purpose 2ND Fl. BLD-14		Survey # 004	RWP # N/A
		Pg 1 of 3	

SECOND FLOOR OFFICES





Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
1	S	OVER HEAD BEAMS	4	11.2	87	78.1							
2	S	Ceiling	1	2.4	64	6.2							
3	S	BEAM	1	2.4	71	28.1							
4	S	"	0	N.D.	59	N.D.							
5	S	WALL	3	8.2	58	N.D.							
6	S	BEAM	1	2.4	59	N.D.							
7	S	"	0	N.D.	72	31.2							

Comments: S DENOTES SWIPE SURVEY
N.D. DENOTES NO DETECTABLE ACTIVITY

Scaler S/N 9123		BKD	EFF	MDA
CT = 1	Alpha:	0.2	.34	4.8 DPM
Tech M.S.	Beta:	.62	.32	39.3 DPM

Review

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

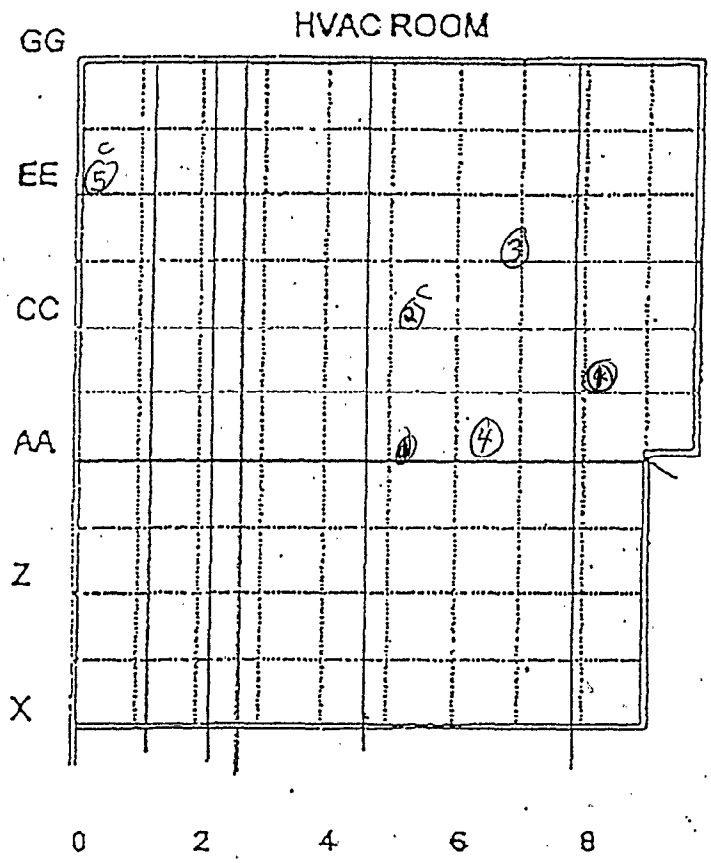
SAMPLE DATE: 2-24-97
LOCATION: 2EN floor offices

SURVEY # 004

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

TOTAL BACKGROUND COUNTS	60 cpm
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION
1	AA-6	BEAM 150-200 cpm
2	AA-7	" HORZ. 150-200
3	AA-8	" HORZ. " "
4	AA-6	BEAM VERT 50-80
5	" 7	" "
6	" 8	" "
7		
8	BB-7	BEAM HORZ 150-300
9	BB-8	" 150-300
10		
11	AA-9	BEAM HORZ 100-150
12	BB-9	" " 100-150
13		
14	AA-5	BEAM HORZ. 500-1000
15	AA-6	" " 400 800
16		VERT BEAM 150-500
17		All BOLTS HOT - 150-500
18		
19	AA-1	BEAM 100-120
20		
21	CC-5	BEAM HORZ 200 CPM
22	BB-5	Ceiling CONCRETE 150-200
23	CC-5	" " 100-150
24		
25	AA-5	BEAM HORZ. 100-200
26	CC-5	" VERT. 60-90
27		
28	BB-5	Ceiling CONCRETE 150-200
29	EE-0	BRICK LEDG - 60-130
30	EE 0	HOLE IN WALL 120-150
31	EE-0	WALL 60-120
32	EE-1	100-150 Ceiling
33	EE-2	200 "
34		
35		
36		
37		
38		
39		
40		



O = DENOTES SWIPE LOCATION.
SEE ATTACHED SHEET FOR RESULTS
All READINGS are IN. C.P.M. / PROBE 15.5 cm²

Review

Instrument Model & s/n:	LUDLUM 2221 / 86308
Detector Model & s/n:	44-9 #9317
Calibration Date:	2-7-97
Efficiency	.19 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

ENCL-C2.XLS

ILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 2-24-97
LOCATION: 2ND FLOOR OFFICES
SURVEY # 004

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

TOTAL BACKGROUND COUNTS	60 cpm
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION
1	4-4	BEAM. HORZ. 400-800
2	"	VERT. 50-80
3	4-5	BEAM HORZ 100-400
4		VERT. 50-80
5	4-6	BEAM HORZ 400-1K
6		VERT 50-80
7		ALL BOLTS ON VERT. SUPS.
8		ARE HOT. 300-400
9-		
10	4-5	BEAM HORZ 150-400
11	V-5	BEAM HORZ 150-400
12	W-5	" " 200-400
13		
14	4-5; V-5,	CONCRETE Ceiling 50-90
15	W-5	" " 50-90
16		
17	4-4	CONCRETE Ceiling 60-90
18	4-5	" " 60-90
19	4-6	" " 60-90
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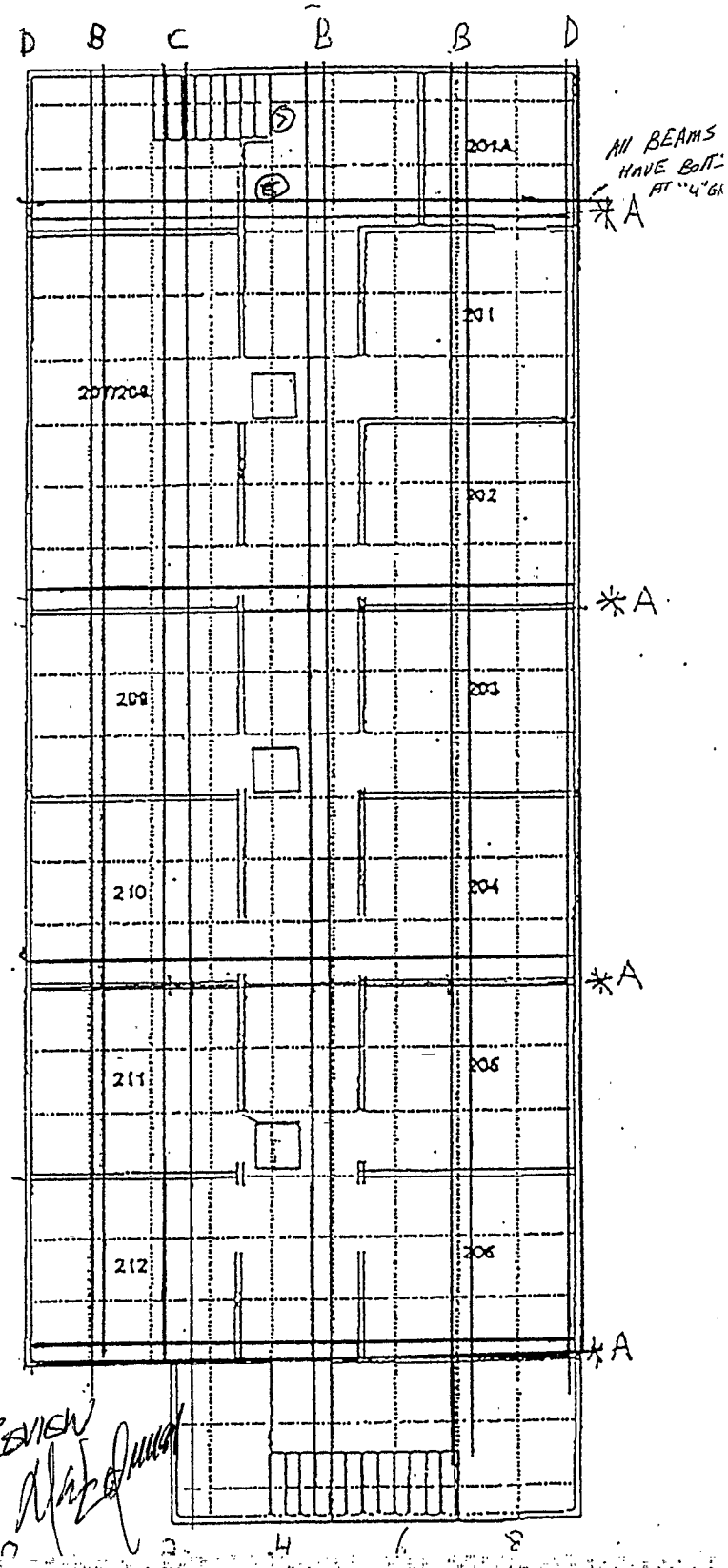

*I BEAM SIZES
*A = I 18 1/4 19 3/4
*B = 15 1/4 7 1/4
*C = 9" 13" 15" 12"
*D I 13" 10 1/2

Instrument Model & s/n:	LUDLUM 86308
Detector Model & s/n:	44-9 #9317
Calibration Date:	2-7-97
Efficiency	[illegible] cpm / dpm based on S/Y90
Detector Area	15.5 cm2

REVIEW

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

C. HALLAM / [illegible]
SURVEY #009

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 022497
LOCATION: BLDG 14 2ND FLOOR SOUTH STAIRWELL ~~PAGE 1 OF 1 ON~~ 022497

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

[illegible] = > CRITERIA (3.5K DPM)

TOTAL BACKGROUND COUNTS	49
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	N/A - SCAN

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION
1	A2-A8, B2-B8	CEILING <114 NET CPM
2	A7, B7	IBEAM UPPER HORIZ (EAST) <114 NET CPM
3	A7, B7	IBEAM VERT (EAST) <114 NET CPM
4	A7, B7	IBEAM LEDGE (EAST) - ALL 100-300 NET CPM (AL) 022497
5	A6, B6	IBEAM UPPER HORIZ (WEST) <114 NET CPM
6	A6, B6	IBEAM VERT (WEST) <114 NET CPM
7	A6, B6	IBEAM LEDGE (WEST) 150-350 NET CPM (AL)
8	A6, B6	IBEAM BOTTOM <114 NET CPM
9	A5, B5	IBEAM UPPER HORIZ (EAST) <114 NET CPM
10	A5, B5	IBEAM VERT (EAST) <114 NET CPM
11	A5, B5	IBEAM LEDGE (EAST) 150-250 NET CPM (AL) 2011202
12	A4, B4	IBEAM UPPER HORIZ (WEST) <114 NET CPM
13	A4, B4	IBEAM VERT (WEST) <114 NET CPM
14	A4, B4	IBEAM LEDGE (WEST) ALL 150-350 NET CPM
15	A4, B4	IBEAM BOTTOM <114 NET CPM
16	A4, A5, A6	STAIRS - ALL SURFACES <114 NET CPM
17	V2, V3, W2, W3	STAIRS - ALL SURFACES <114 NET CPM
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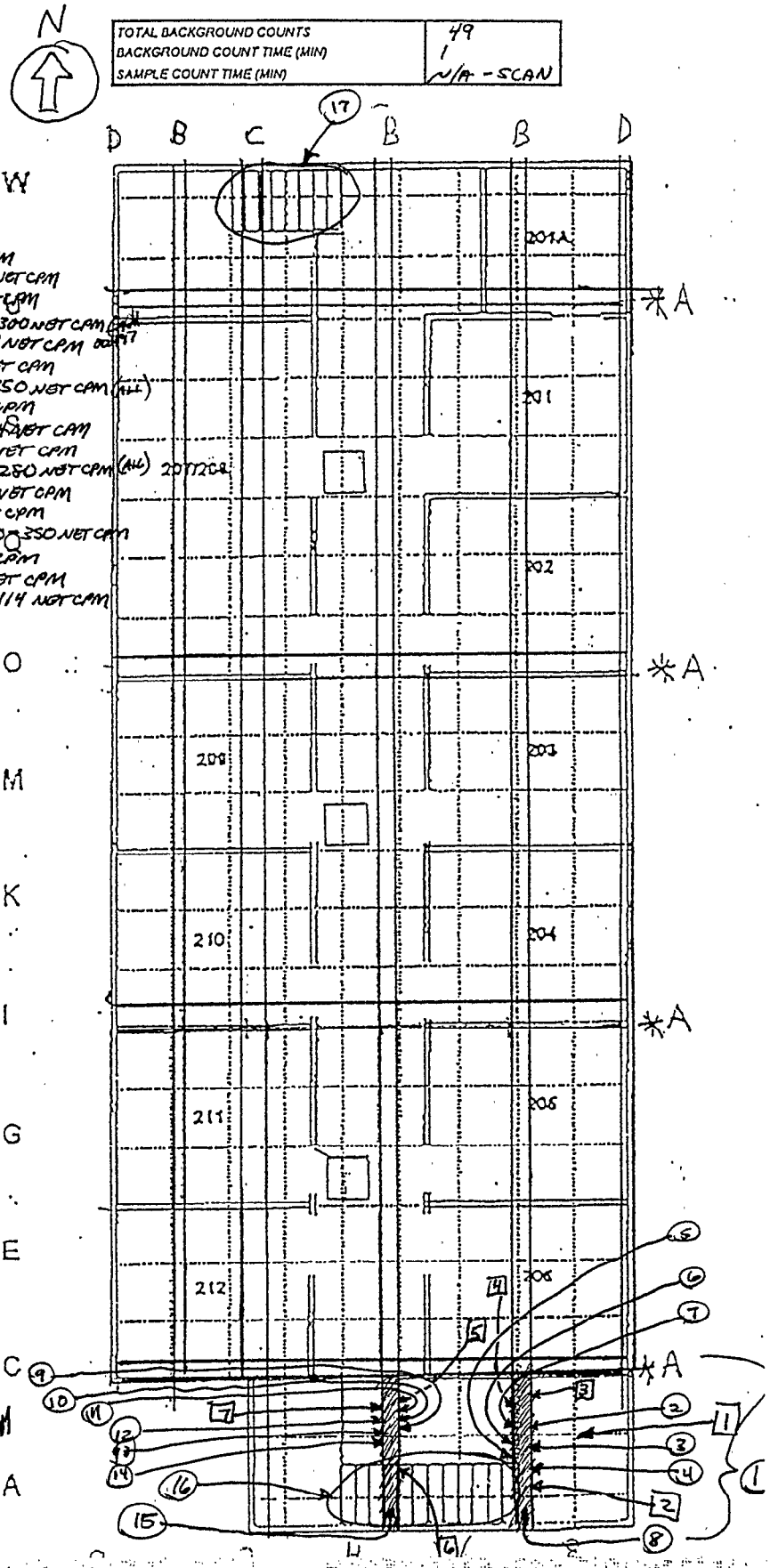


* I BEAM SIZES
* A = I 18 1/4 19 3/4
* B = 15 1/4 7 1/4
* C = 9 13" 13" 12"
* D I 13" 10 1/2

Instrument Model & s/n:	L2221/86313
Detector Model & s/n:	N1008/9310
Calibration Date:	020797
Efficiency σ_2	cpm / dpm based on S/Y90
Detector Area	15.5 cm2

REVIEW [illegible]

ENCL-C2.XLS

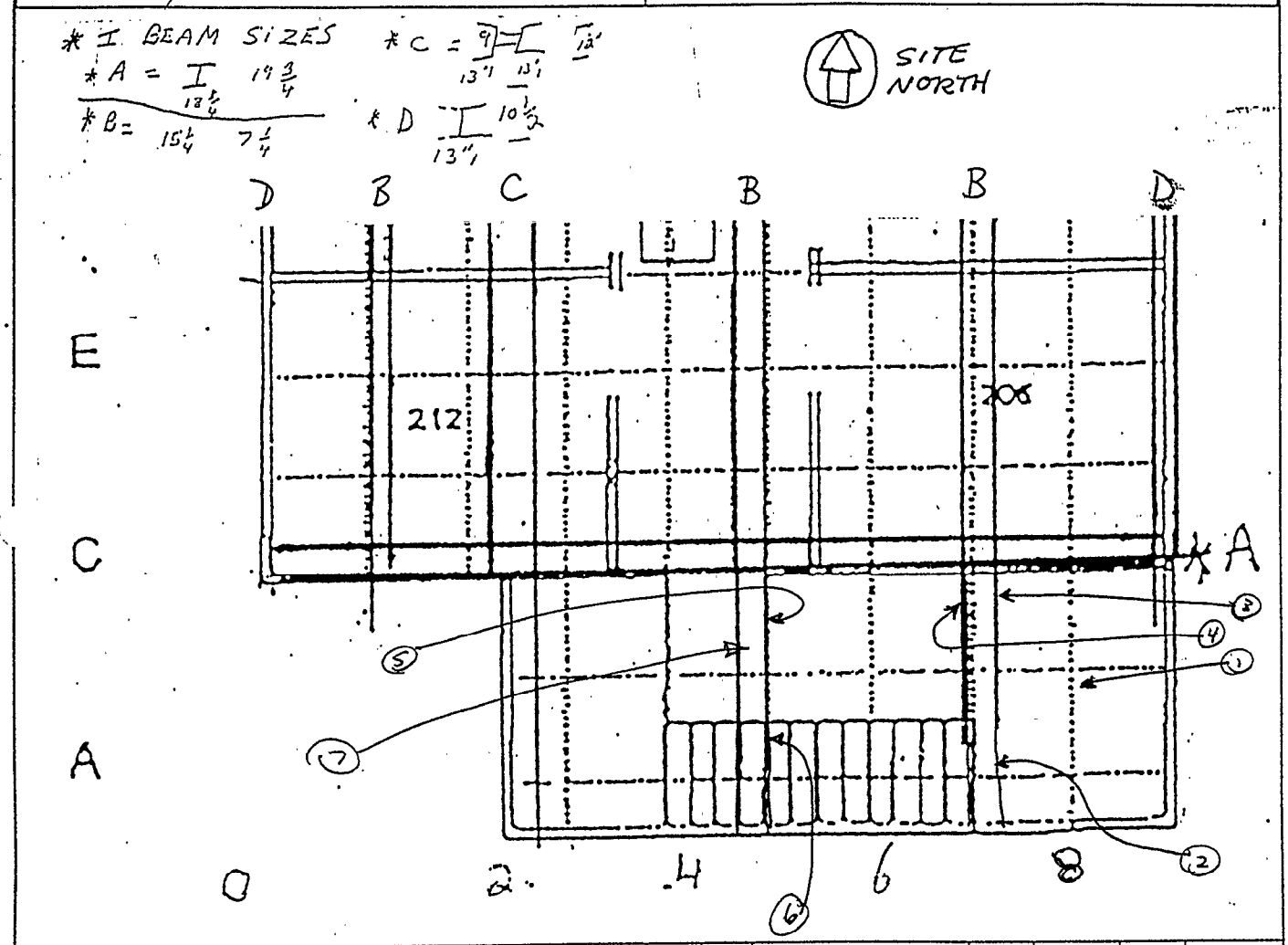
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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 022497 / 1600	Tech C. HALLAM / [signature]	Instruments / sn L2221 / 86313 N1008 / 9310	
Location / Purpose PRAXAIR BLDG 14 2ND FLOOR SOUTH		Survey # 010	RWP # N/A
STAIRWELL / SPOT DELINEATION			



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
1	S	(A8) CEILING	0	<MDA	63	<MDA							
2	S	(A7) EAST IBEAM LEDGE	0	<MDA	64	<MDA							
3	S	(B7) EAST IBEAM LEDGE	0	<MDA	68	<MDA							
4	S	(B6) WEST IBEAM LEDGE	0	<MDA	70	<MDA							
5	S	(B5) EAST IBEAM LEDGE	0	<MDA	54	<MDA							
6	S	(A5) EAST IBEAM LEDGE	0	<MDA	68	<MDA							
7	S	(B4) WEST IBEAM LEDGE	0	<MDA	69	<MDA							

Comments: S = SMEAR

Scaler S/N L2929 / 91234		BKD	EFF	MDA
CT = 1 MIN	Alpha:	0.2	0.34	~~0.23~~ 1.83
Tech C. HALLAM	Beta:	62	0.32	~~0.12~~ 1.59

Review [signature]

HILBERT ASSOCIATES, INC.
SURVEY # 011
C. HALLAM /

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 022597
LOCATION: PRAXAIR BLDG 14 2ND FLOOR HVAC ROOM TANK STAND

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

TOTAL BACKGROUND COUNTS	
BACKGROUND COUNT TIME (MIN)	
SAMPLE COUNT TIME (MIN)	

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	NET COUNTS PER MINUTE
1	BB7→BB9	*A, TOP OF I BEAM (ALL)	200-300
2		*A, BOTTOM (ALL)	200-300
3		*A, NORTH LOWER WEB (ALL)	250-500
4		*A, NORTH VERT (ALL)	280-350
5		*A, NORTH UPPER WEB (ALL)	450-600
6		*A, SOUTH LOWER WEB (ALL)	180-350
7		*A, SOUTH VERT (ALL)	200-330
8	BB7→BB9	*A, SOUTH UPPER WEB (ALL)	180-400
9	CC6→CC9	*A, TOP (ALL)	450-650
10		*A, BOTTOM (ALL)	280-600
11		*A, NORTH LOWER WEB (ALL)	400-600
12		*A, NORTH VERT (ALL)	400-550
13		*A, NORTH UPPER WEB (ALL)	350-600
14		*A, SOUTH LOWER WEB (ALL)	180-400
15		*A, SOUTH VERT (ALL)	350-600
16	CC6→CC9	*A, SOUTH UPPER WEB (ALL)	200-800
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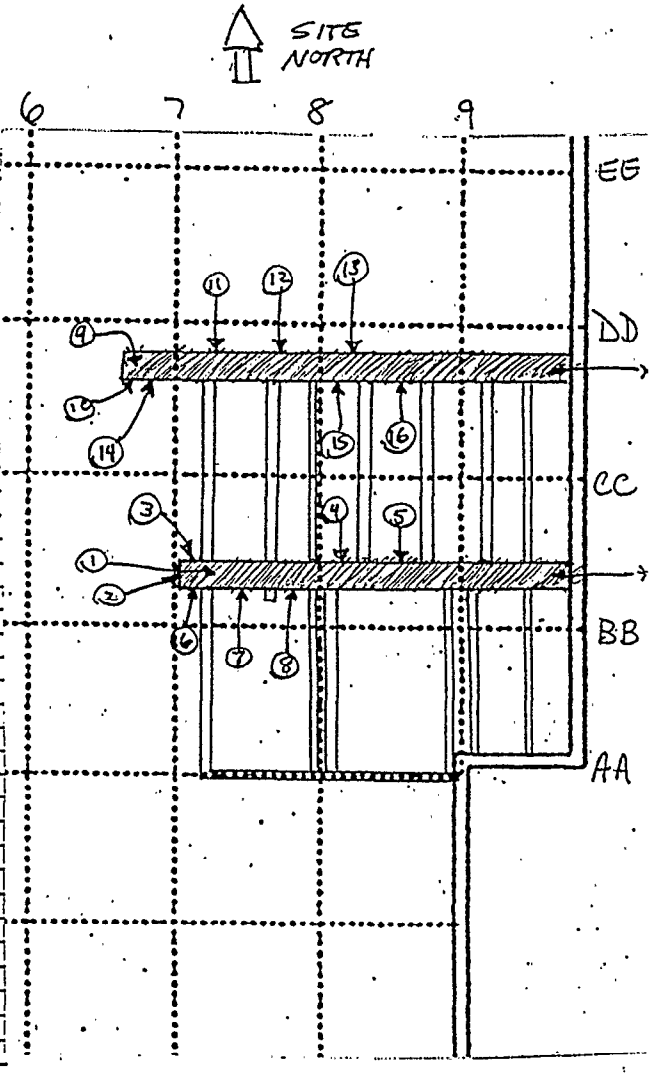
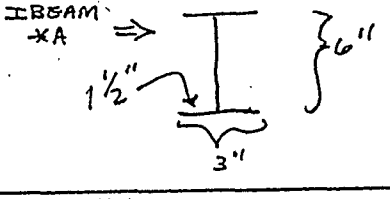




▨ = > CRITERIA OF 5K DPM

Instrument Model & s/n:	
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90
Detector Area	cm2

REVIEW

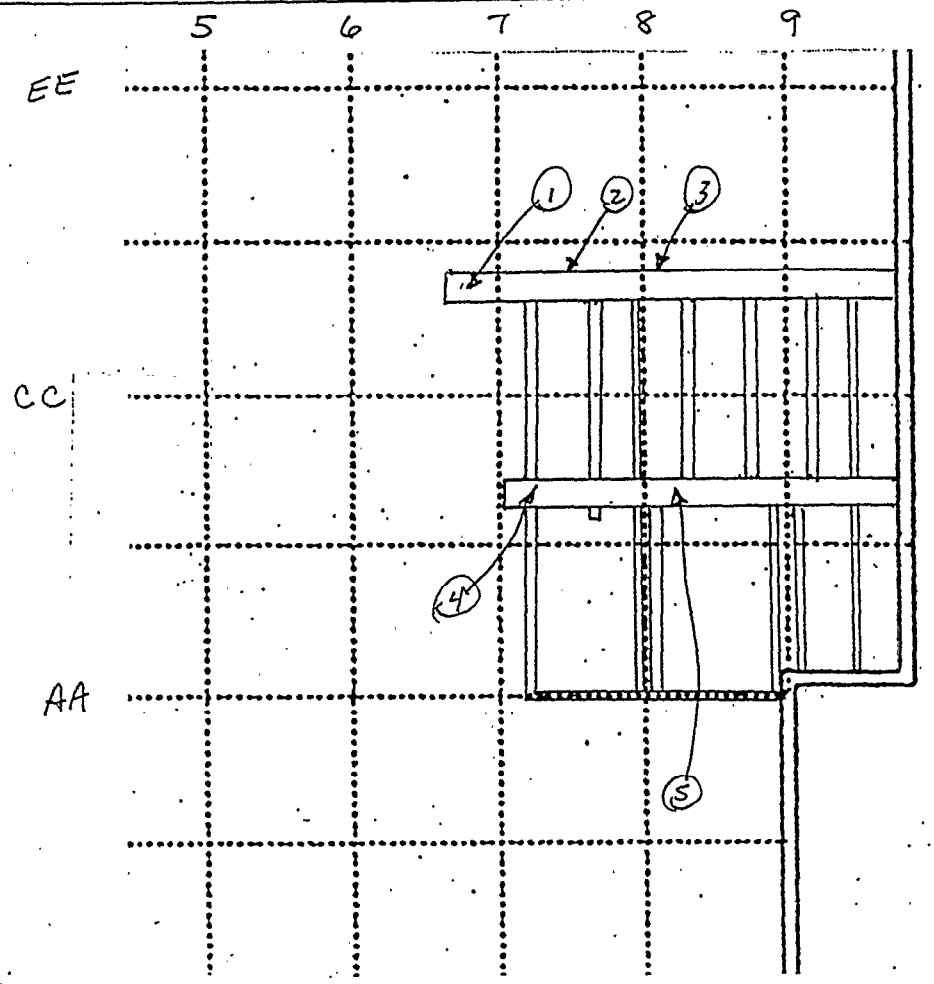
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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 022597/1450	Tech C. HALLAM / [illegible]	Instruments / sn. N/A
Location / Purpose PRAXAIR 2ND FLOOR HVAC ROOM TANK STAND		Survey # 012 RWP # N/A



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
1	S	(CC6) TOP OF IBEAM	0	<MDA	63	<MDA							
2	S	(CC7) UPPER WEB OF IBEAM	0	<MDA	57	<MDA							
3	S	(CC8) LOWER WEB OF IBEAM	0	<MDA	68	<MDA							
4	S	(BB7) TOP OF IBEAM	0	<MDA	65	<MDA							
5	S	(BB8) LOWER WEB OF IBEAM	0	<MDA	60	<MDA							

Comments: S = SMEAR 0 = SMEAR LOCATION

Scalar S/N		BKD	EFF	MDA
CT #	Alpha:	0.2	0.32	
Tech	Beta:	62	0.29	

Review [illegible]

HILBERT ASSOCIATES, INC.

C. HALLAM / CHALL

SURVEY #013

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 022597
LOCATION: PRAXAIR BLDG 14 2ND FLOOR

V = VERTICAL
B = BOTTOM
UW = UPPER WEB (HORIZ)
LW = LOWER WEB (HORIZ)
BH = BOLT HEADS
P = BOLT PLATE
NCPM = NET COUNTS PER MINUTE
*** = > CRITERIA OF 3.5K DPM

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

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

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION
1	C3→C8	*A, (V, B, UW) NORTH SIDE ALL 119 NETCPM
2	C3→C8	*A, NORTH LW 120-400 NETCPM
3	C8	BOLT HEADS + PLATE 120-250 NETCPM
4	C7	*B VERT BH, P 120-250 NETCPM
5	C4	BOLT HEADS + PLATE 120-230 NETCPM
6	C8→~~H8~~ F8	*D LOWER WEB (WEST SIDE) 120-500 NETCPM
7	C8	*D, VERTICAL 120-160 NETCPM
8	F8	*D, VERTICAL 120-140 NCPM
9	G8	*D, VERT. 120-160 NCPM
10	H8	*D, VERT. 120-150 NCPM
11	H8	*D, BOLT HEADS + PLATE 120-270 NCPM
12	I3→I8	*A, SOUTH LW 150-1000 NCPM
13	I7	*A, SOUTH VERT. 120-160 NCPM
14	I6	*A, SOUTH (V, BH, P) 120-300 NCPM
15	I4	*A, SOUTH (V, BH, P) 120-300 NCPM
16	C6→I6	*B, EAST (LW) 150-350 NCPM
17	C6→I6	*B, EAST VERT 120-180 NCPM
18	C6→I6	*B, WEST (LW) 150-400 NCPM
19	C6→I6	*B, WEST VERT 120-200 NCPM
20	G8	CEILING 120-180 NCPM
21	C4→I4	*B, EAST (LW) 120-400 NCPM
22	C4→I4	*B, EAST VERT. 120-180 NCPM
23	C4→I4	*B, WEST (LW) 120-400 NCPM
24	C4→I4	*B, WEST VERT. 120-180 NCPM
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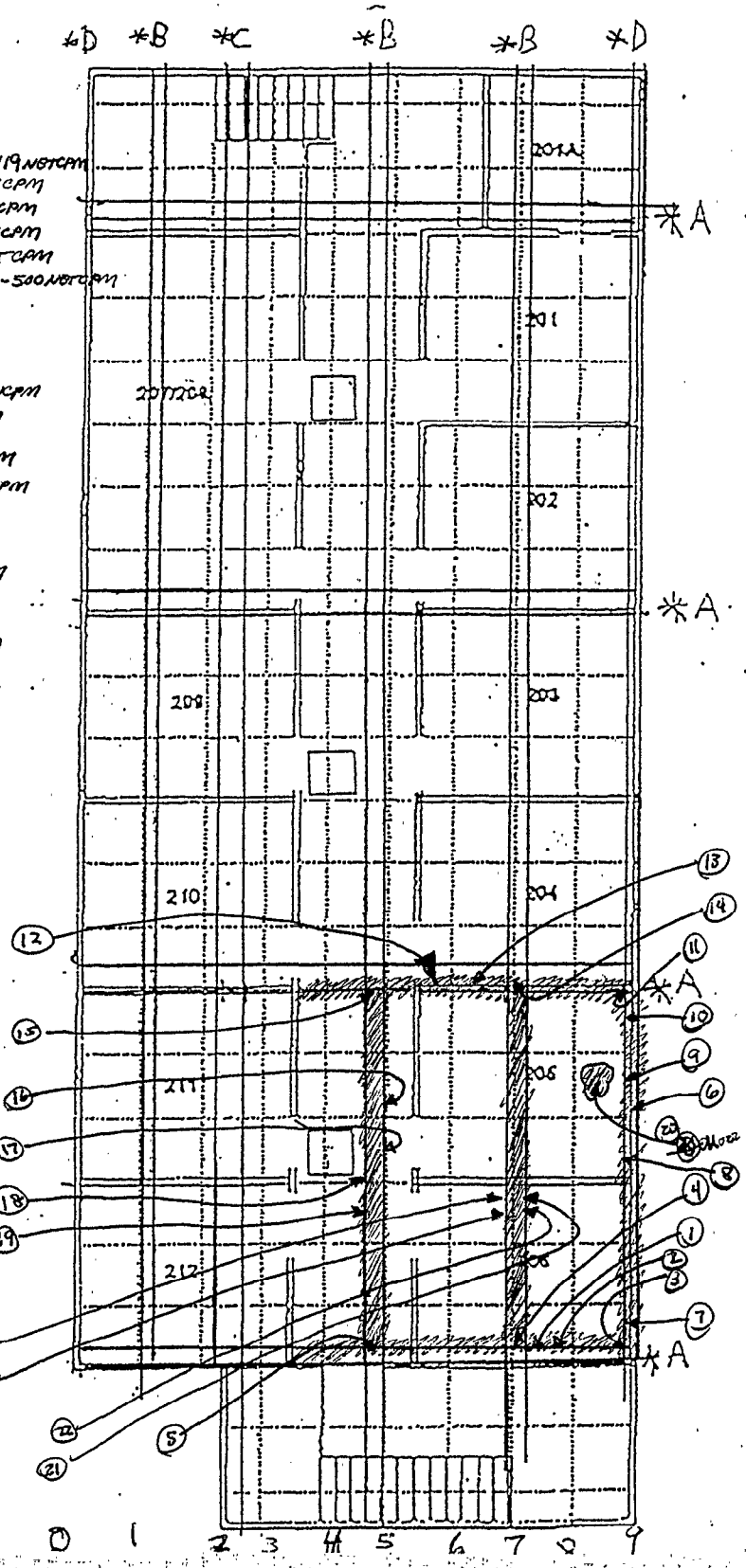
*I BEAM SIZES

*A = I 12 1/4 19 3/4

*B = 15 1/4 7 1/4

*C = 9 13" 15" 12"

*D I 13" 10 1/2



Instrument Model & s/n:	L2221/86313
Detector Model & s/n:	N1008/9310
Calibration Date:	020797
Efficiency	0.22 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

REVIEW

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

C. HALLAM / CHallam SURVEY #020

SAMPLE DATE: 022797
LOCATION: PRAKAIR 2ND FLOOR OVERHEAD
LW = LOWER WEB (HORIZ.)
NCPM = NET COUNTS PER MINUTE

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

TOTAL BACKGROUND COUNTS	65
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	N/A - SCAN

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION
1	U6, V7, U8	*A, LOWER WEB (SOUTH) ALL 150 - 400 NCPM
2	U6, V7, U8	*A, LOWER WEB (NORTH) ALL 100 - 350 NCPM
3	U8, V8, W8	*D, LOWER WEB (WEST) ALL 100 - 400 NCPM
4	U7, V7, W7	*B, LOWER WEB (EAST) ALL 150 - 350 NCPM
5	R8, S8, T8	*D, LOWER WEB (WEST) ALL 150 - 500 NCPM
6	T8	WALL/I BEAM JOINT 200 - 220 NCPM
7	S8	WALL/I BEAM JOINT 180 - 230 NCPM
8	R8	BRACKET @ WALL/I BEAM JOINT 250 NCPM
9	R7, S7, T7	*B, LOWER WEB (EAST) ALL 100 - 350 NCPM
10	R6, S6, T6	*B, LOWER WEB (WEST) ALL 180 - 700 NCPM
11	R6, S6	*B, VERT (WEST) 180 - 230 NCPM
12	O4 → U4	*B, LOWER WEB (EAST) 180 - 600 NCPM
13	O4 → U4	*B, VERTICAL (EAST) 180 - 600 NCPM
14	O4 → U4	*B, LOWER WEB (WEST) 180 - 600 NCPM
15	O4 → U4	*B, VERTICAL (WEST) 180 - 600 NCPM
16	O4	BOLTS & BOLT PLATE 180 - 250 NCPM
17	O4	BOLTS & BOLT PLATE 180 - 250 NCPM
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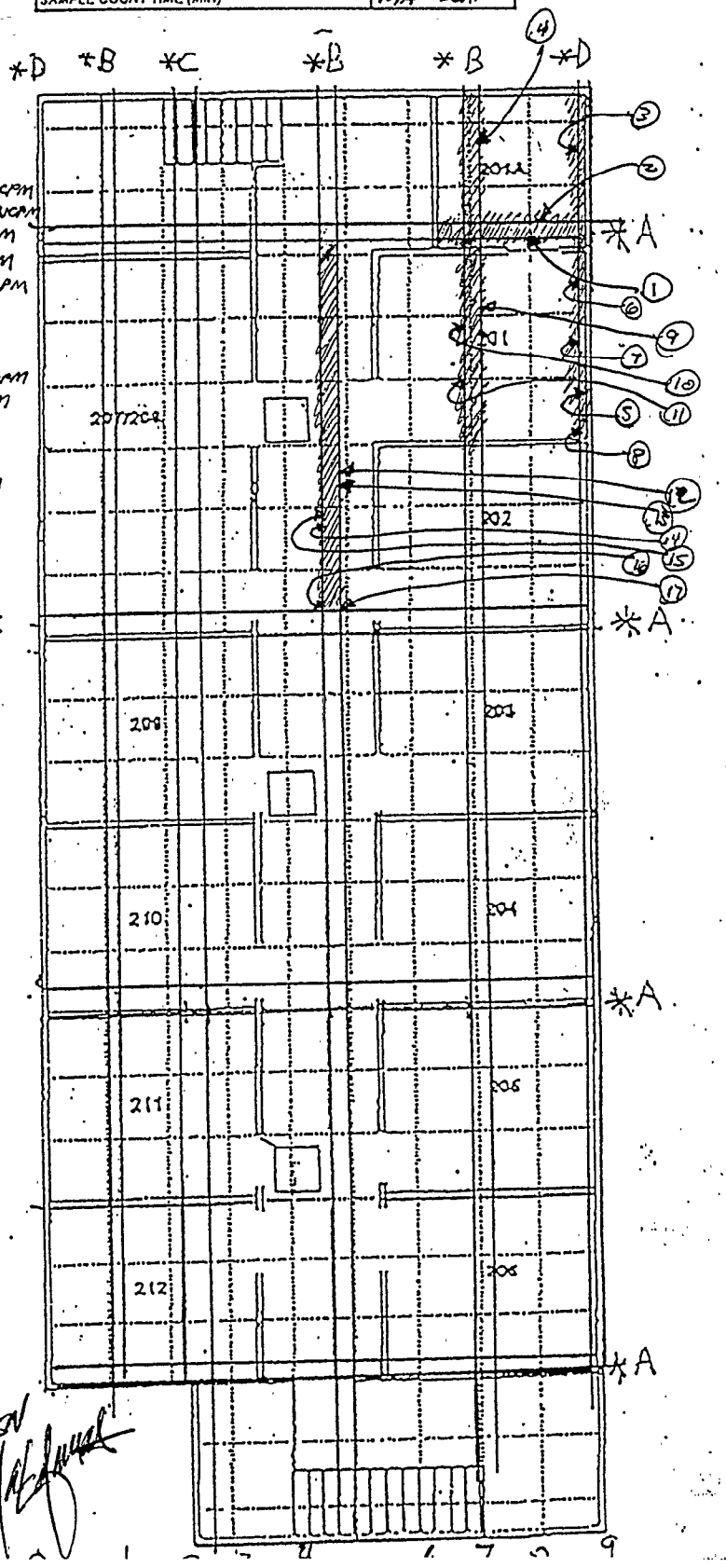
*I BEAM SIZES
*A = I 19 3/4, 12 1/4
*B = 15 1/4, 7 1/4
*C = 9, 13", 13", 12"
*D I 10 1/2, 13"

Instrument Model & s/n:	L2221/86313 (D)
Detector Model & s/n:	N1008/9310
Calibration Date:	020797
Efficiency	0.24 cpm / dpm based on S/Y90
Detector Area	15.5 cm2



Review

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

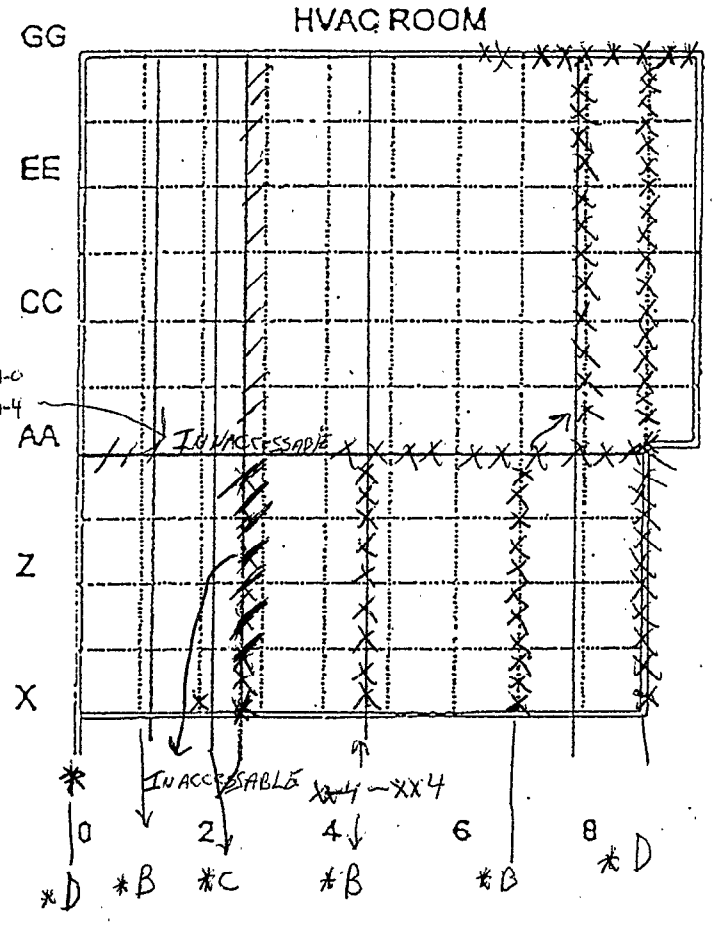
SAMPLE DATE: 2-26-97
LOCATION: BLD-14 2ND FLOOR
H.P. M. Zigo
SURVEY # 022

NOTE: ALL READINGS ARE IN GROSS cpm. with 15.5 cm² PROBE.
BKD = 50 cpm

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

TOTAL BACKGROUND COUNTS	
BACKGROUND COUNT TIME (MIN)	N/A
SAMPLE COUNT TIME (MIN)	

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION CPM / PROBE Bγ
1	* D	X-0 → AA-0
2	Horiz	100 – 130 CPM
3	Ceiling	100 – 140
4		
5		
6	* B	X-1 → AA-1
7		80 – 120 HORIZ.
8	Ceiling	FF-1 → 140 – 160
9		
10		
11	* D	AA-0 → GG-0
12		BRICK WALL HORIZ. SURFACE
13		70 – 120
14		
15	* B	AA-3 → GG-3
16		IN ACCESSABLE
17		
18	* A	GG-7 → GG-9
19		100 – 300
20		
21	Ceiling	DD-5 160 – 190 CPM
22		AA-5 160 – 170
23		BB-9 160 – 190
24	* D	AA-9 → GG-9
25		150 – 300 HORIZ.
26	* A	AA-0 → AA-9
27		200 – 800 ON SOUTH SIDE
28		140 – 400 ON NORTH
29		NORTH WEB IS SAFE.
30		90 – 120 AVE.
31		
32	* B	X-4 → AA-4
33		200 – 700 HORIZ.
34	Ceiling	X-5 → 120 – 140
35		
36	* C	X-7 → AA-7
37		200 → 300
38	* B	AA-5 → GG-5
39		100 – 120
40		80 – 120



* DENOTES I BEAM SIZE
* A = 18¼ X 19¾
* B = 15¼ X 7¼
* C = 9" (13-1) = [12" (13)
* D = I 10½" 13"

Instrument Model & s/n:	LUDLUM M-2221 # 86308
Detector Model & s/n:	44-9 #9317
Calibration Date:	2-7-97
Efficiency	[illegible] cpm / dpm based on S/Y90
Detector Area	[illegible] cm2

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

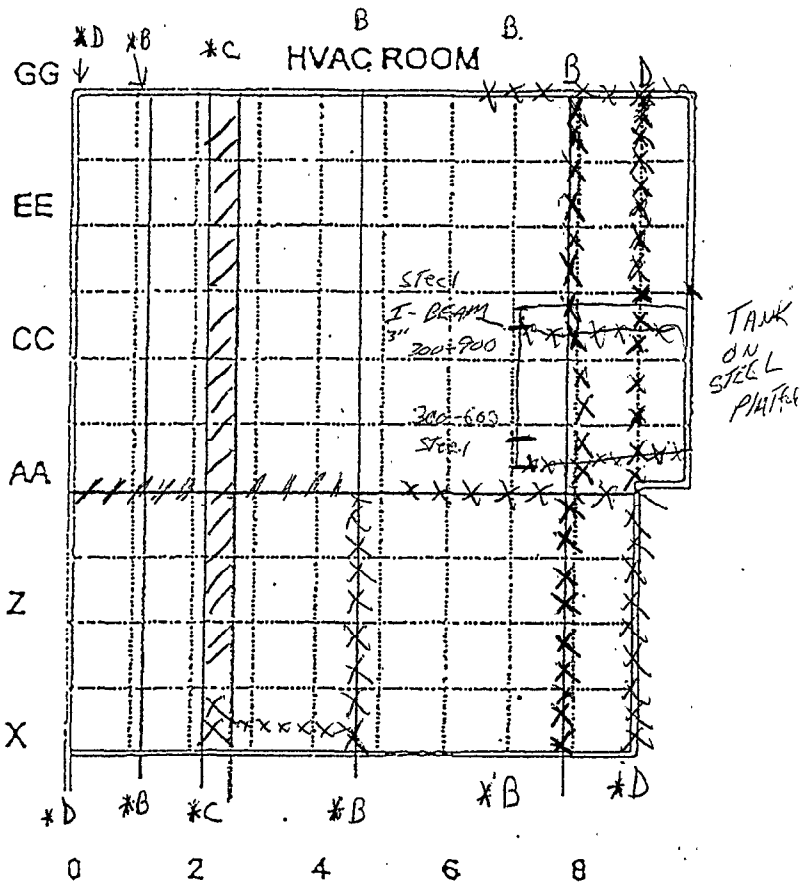
SAMPLE DATE: 2-26-97
LOCATION: BLD-14 2ND FLOOR
H.P. M. Zigo
SURVEY # 022

NOTE. ALL Readings are IN GROSS c.p.m. / 15.5 cm² PROBE
BKD = 50 cpm

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

TOTAL BACKGROUND COUNTS	N/A
BACKGROUND COUNT TIME (MIN)	
SAMPLE COUNT TIME (MIN)	

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION
1	* B	X-7 → AA-7
2		Horiz.
3		200 – 300, 500 cpm
4		VERT 100 – 140
5	Ceiling	140 → 160
6		
7		
8	* B	AA-7 → GG → 7
9		Horiz. EAST side of
10		BEAM 150 – 400
11	Ceiling	140 – 180
12		
13		WEST SIDE of BEAM
14		SPOTY F-7 → GG-7
15		160 – 250
16		
17	* D	GG-9 → DD-9
18		Horiz. 150 – 300 Horiz.
19		
20	Ceiling	EE9 → FF-9
21		160 – 180
22		150 – 180
23		
24	* B	AA-7 → GG-7
25		100 – 300 ON EAST
26		Side. Horiz.
27		
28	* D	X-9 → AA-9
29		200 – 600
30		
31	* C	EAST SIDE Horiz.
32		150 – 300
33		MOST OF BEAM IS
34		INACCESSABLE
35		
36	NOTE:	TWO CONDUIT BOXES
37		HAVE CONTAMINATION.
38		X-6 300 cpm
39		2-4 700 cpm
40		

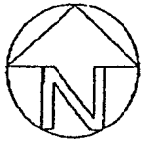


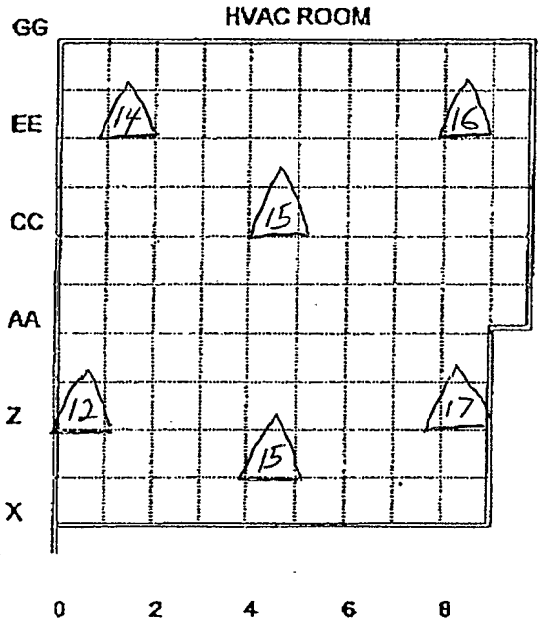
# DENOTES INACCESSABLE AREA

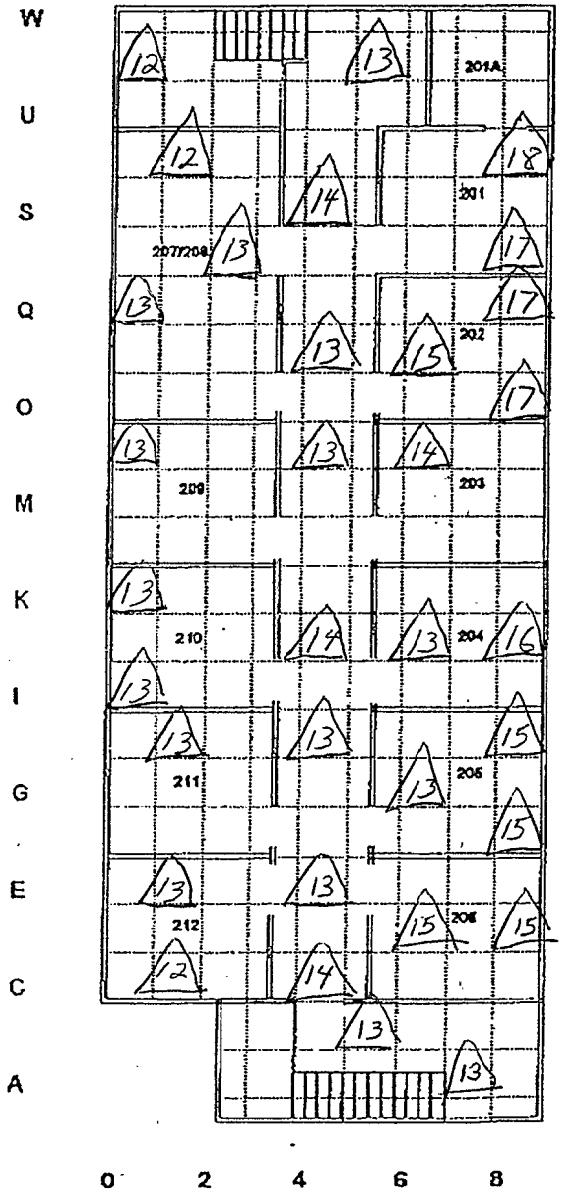
Instrument Model & s/n:	Ludlum M-2221 # 86308
Detector Model & s/n:	44-9 # 9317
Calibration Date:	2-7-97
Efficiency	22 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

ENCL-C2.XLS

SECOND FLOOR OFFICES







3-5-97

Radiation Survey

Δ = Denotes 1 Meter mR/hr

INST. MODEL Ludlum M-19

SN. 109994 CAL. 2-10-97

H.P. M. Zigo

1M X 1M GRID

Survey # 037

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey # 038

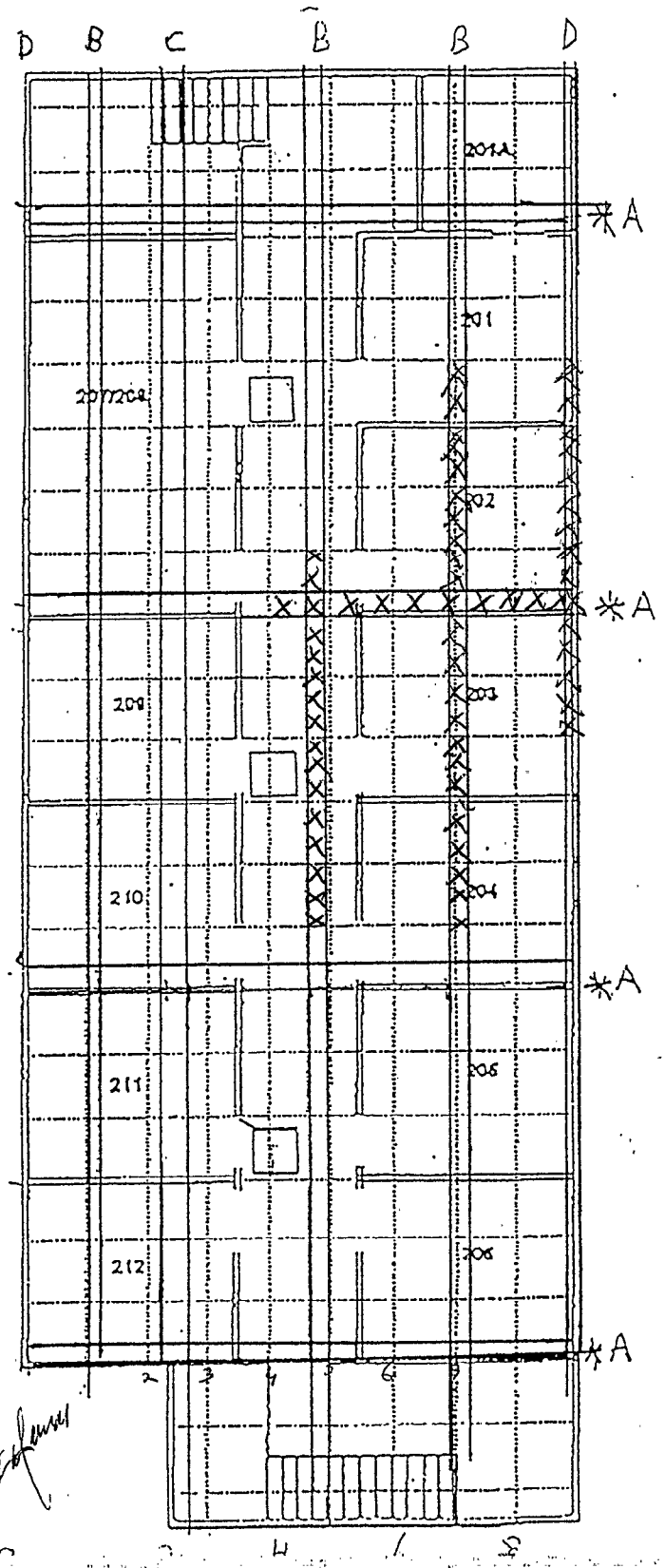
SAMPLE DATE: 2-27-97
LOCATION: 2 END FLOOR BLD. 14
OVERHEAD BEAMS.

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

NOTE: All readings are in C.P.M./
15.5 cm² Probe Bγ-
BKD. = 50 C.P.M.

TOTAL BACKGROUND COUNTS BACKGROUND COUNT TIME (MIN) SAMPLE COUNT TIME (MIN)	N/A

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION GRID
1	*B	J-7, K-7, L-7
2		HOR.Z. SURFACE
3		300 → 800 C.P.M.
4		
5	*B	J-4, K-4, L-4,
6		300 → 600 C.P.M.
7		ON THE HORIZ. SURFACE
8	Ceiling	100 - 130 C.P.M.
9		
10	*B	M-4, N-4, O-4
11		350 → 800 C.P.M.
12		ON HORIZ. SURFACE.
13	Ceiling	120 → 130 C.P.M
14		
15	*A	O-4 → O-9
16		400 → 1600 ON THE
17		HORIZ. SURFACES.
18		
19	*D	M-9 → O-9
20		400 → 1500 C.P.M.
21		ON THE HORIZ. SURFACES.
22	NOTE:	ALL BOLTS ON EAST WALL
23		350 → 600 C.P.M.
24		3 METERS WIPE.
25		
26	*B	M-7 N-7 O-7
27		400 → 1200 C.P.M.
28	Ceiling	100 - 120 C.P.M.
29		
30	*D	P-9 - Q-9 - R-9
31		400 → 600 C.P.M.
32		ON THE HORIZ. SURFACE
33	Ceiling	90 → 120 C.P.M.
34		
35		
36		
37		
38		
39		
40		



*I BEAM SIZES

*A = I 18 1/4 19 3/4

*B = 15 1/4 7 1/4

*C = 9" 13" 13" 12"

*D 13" 10 1/2

Instrument Model & s/n:	B -2221/44-9
Detector Model & s/n:	
Calibration Date:	
Efficiency	.24 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

H.P. M. Tago

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

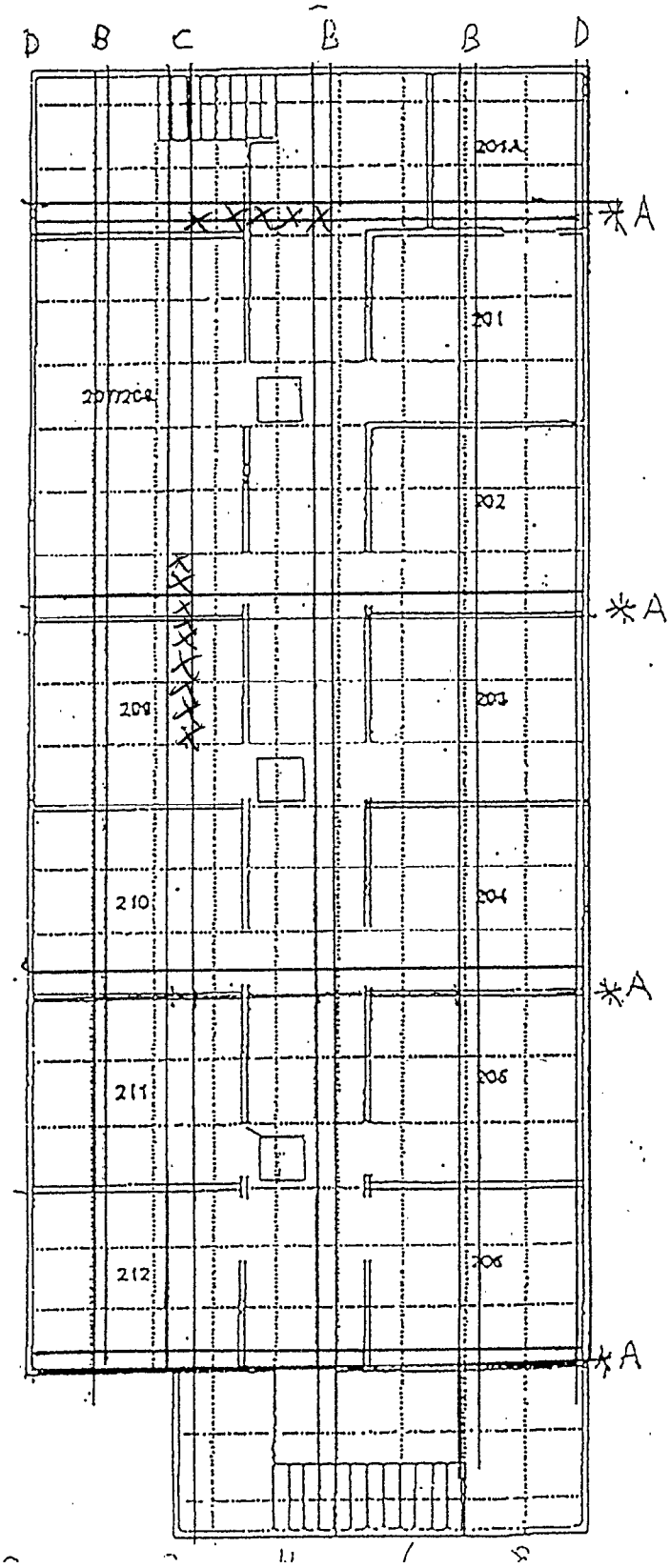
SAMPLE DATE: 2-27-97
LOCATION: BLD-14 2END floor south stair way.

All readings are in C.P.M. / Probe BG (15.5 cm²)
BKD = 50 C.P.M.

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

TOTAL BACKGROUND COUNTS BACKGROUND COUNT TIME (MIN) SAMPLE COUNT TIME (MIN)	N/A

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION (BEAM / Grid)
		South STAIR WAY
1		A-2 on Brick
2		wall and window
3		Horiz. Ledge.
4		70 → 120 cpm.
5		
6		NORTH STAIRWAY
7		4-1
8		80 → 100 cpm
9		on Horiz. window
10		Platform.
11	* B	4-1
12		80 → 110 cpm.
13		
14	* C	4-2
15		150 → 200 cpm
16		4-3 → 4-4
17		300 → 1000 cpm
18		
19	* D	M-0 → O-0
20		70 → 130 cpm on
21		The Horiz. Surfaces.
22		vert surfaces - 70-90
23		c.p.m
24	Ceiling	90 - 120 cpm.
25		
26	* B	M-1 → O-1
27		120 → 170 cpm
28		on Horiz. Surfaces.
29	Ceiling	90 → 130 cpm.
30		
31	* C	M-2 → O-2
32		EAST Side Horiz.
33		surfaces. 500 → 1200
34		cpm.
35		West Side of
36		Beam 90 - 180 cpm
37		
38		
39		
40		



* I BEAM SIZES
* A = I 12¼ 19¾
* B = 15¼ 7¼
* C = 9 13" 13" 12'
* D I 13" 10½

Instrument Model & s/n:	B 2221
Detector Model & s/n:	
Calibration Date:	
Efficiency	.24 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

H.P. M. Zigo

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

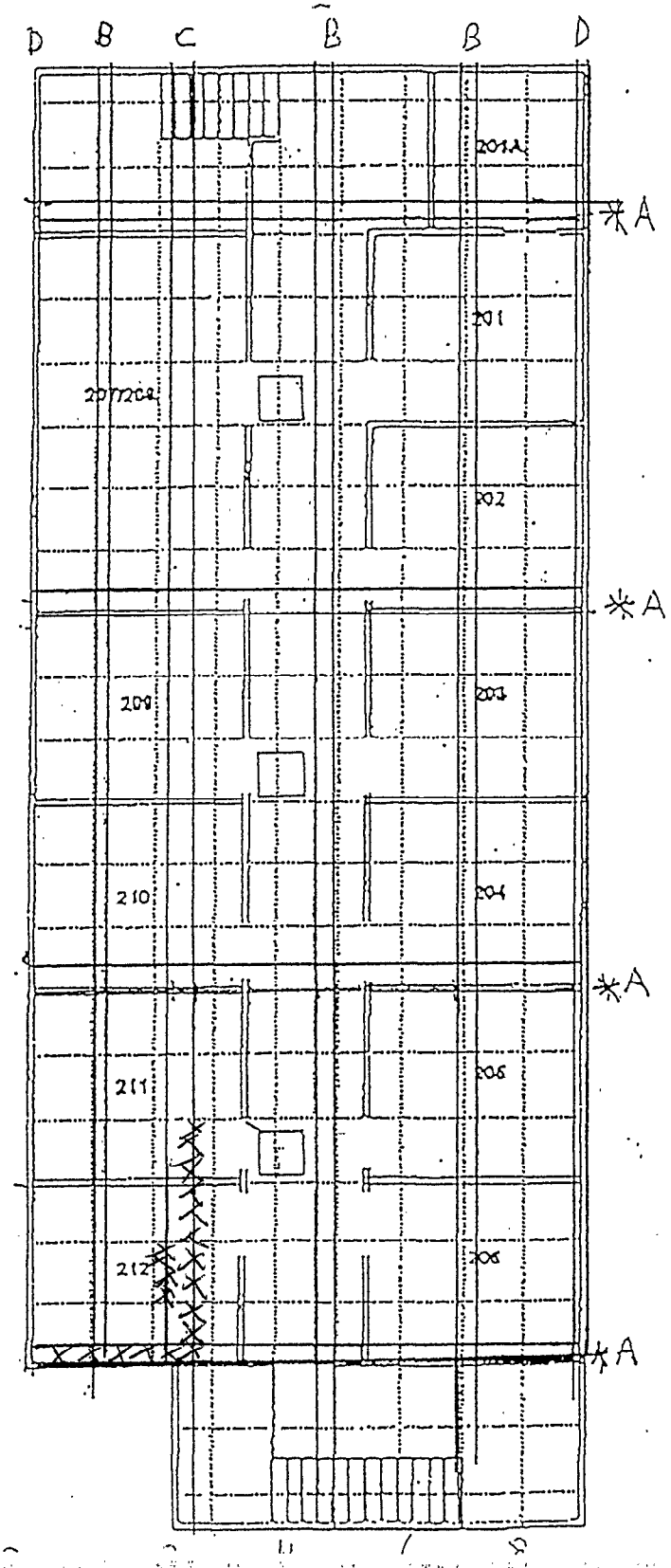
DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 2-26-97
LOCATION: BLD-14 2ND Floor
overHead BEAMS.
Note: All Readings are in
C.P.M./15.5 cm² Probe BK.
BKD = 50 cpm

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

TOTAL BACKGROUND COUNTS BACKGROUND COUNT TIME (MIN) SAMPLE COUNT TIME (MIN)	N/A

SAMPLE #	LOCATION CODE (Beam)	LOCATION DESCRIPTION (Grid)
1	* D	G0 → F-0
2		100 → 160 on The
3		Horiz. BEAMS.
4		60 → 90 cpm
5		on The Vert. Surface
6		
7	* B	C-1 → E-1
8		100 → 150 CPM
9		on The Horiz. Surface.
10		60 → 90 cpm on
11		The Vert. Surface.
12	(West)	
13	* C	C-2 → F-2
14		WEST SIDE
15		100 → 120 cpm.
16		on The Horiz. Surface.
17		80 → 90 on The Vert.
18		surface.
19		
20	East	C-2 → F-2
21	* C	EAST SIDE of BEAM
22		100 → 800 c.p.m
23		60 → 90 c.p.m. on
24		The vert. Surface.
25	ceiling	100 → 130 cpm.
26		
27	* A	C-0 → C-3
28		180 → 300 c.p.m
29		on The Horiz. Surface
30		
31	* D	G-0 → I-0
32		70 → 130 cpm
33		on The Horiz. Surface
34		
35	* C	D-1 C-3 → F-3
36		EAST SIDE of BEAM
37		300 → 500 c.p.m
38		on The Horiz. Surface
39		
40		—



* I BEAM SIZES
* A = I 19 3/4, 13 1/4
* B = 15 1/4, 7 1/4
* C = 9" [13", 13", 12"
* D I 10 1/2, 13"

Instrument Model & s/n:	B 2221
Detector Model & s/n:	
Calibration Date:	2-10-22
Efficiency	cpm / dpm based on SrY90
Detector Area	15.5 cm2

H.P. M. Yogo

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

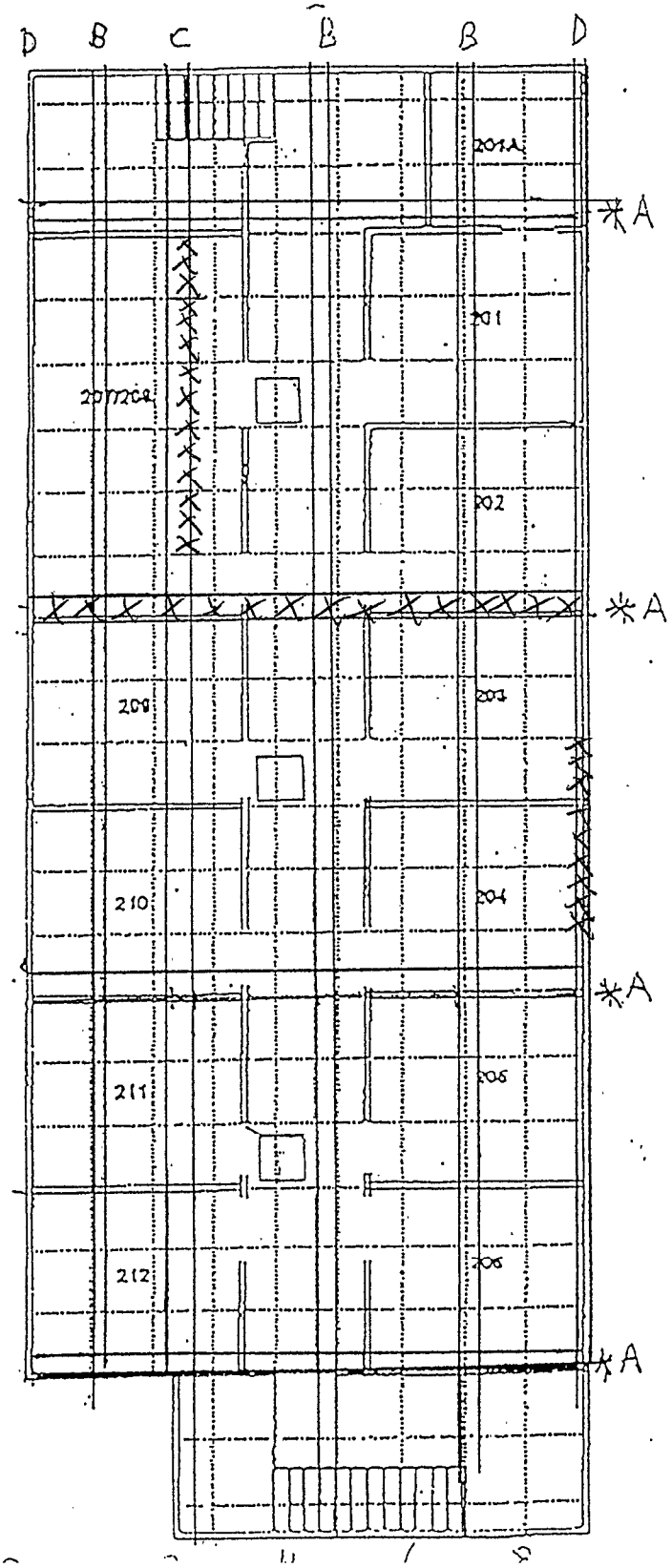
SAMPLE DATE: 2-26-97
LOCATION: Bld-14 2ND Floor overHead Beams.

All Readings are in C.P.M./Probe 15.5 cm² Bd.
BKG = 50 CPM

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

TOTAL BACKGROUND COUNTS	N/A
BACKGROUND COUNT TIME (MIN)	
SAMPLE COUNT TIME (MIN)	

SAMPLE #	BEAM LOCATION CODE	LOCATION DESCRIPTION Grid Location.
1	* D	P-0 → T-0
2		100 → 140 on The
3		Horiz. Surface.
4		80 → 100 cpm
5		on The Vert. Surface
6	Ceiling	120 → 160 c.p.m.
7		
8	* B	P-1 → T-1
9		90 → 140 c.p.m on
10		The Horiz. Surface.
11		80 → 100 c.p.m
12		on The Vert. Surface.
13	Ceiling	140 → 180 c.p.m.
14		
15	* A	O-0 → O-9
16		150 → 600 cpm
17		on Horiz. Surface.
18		Started at O-2
19		120 cpm → 650 cpm
20		
21	* C	P-2 → T-2
22		West Side of Beam
23		90 → 130 cpm on The
24		Horiz. Beam.
25		
26		EAST SIDE
27		300 → 600 cpm on
28		The Horiz Surface.
29		All Bolts every 2'
30	Ceiling	120 → 140 cpm.
31		
32	* D	J-9 K-9 L-9
33		400 → 800 cpm on
34		The Horiz.
35		Top Joint with
36		The Ceiling ≈ 200 cpm
37		All Bolts.
38	Ceiling	120 → 140 cpm.
39		EAST WALL ≈ 2" under
40		BEAM 200 → 300. (VERT.)



* I BEAM SIZES
* A = I 19 3/4, 12 1/4
* B = 15 1/4, 7 1/4
* C = 9, 13", 13", 12'
* D I 10 1/2, 13"

Instrument Model & s/n:	B - 2221
Detector Model & s/n:	
Calibration Date:	2-26-97
Efficiency	.22 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

H.P. M. Zugo

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

P.5. 5 of 6

SAMPLE DATE: 2-25-97
LOCATION: BLD-14 2END FLOOR
overhead Beams.
All readings are in
C.P.M. / 15.5 CM² Probe Bg.
BKD. = 50 CPM.

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

TOTAL BACKGROUND COUNTS	N/A
BACKGROUND COUNT TIME (MIN)	
SAMPLE COUNT TIME (MIN)	

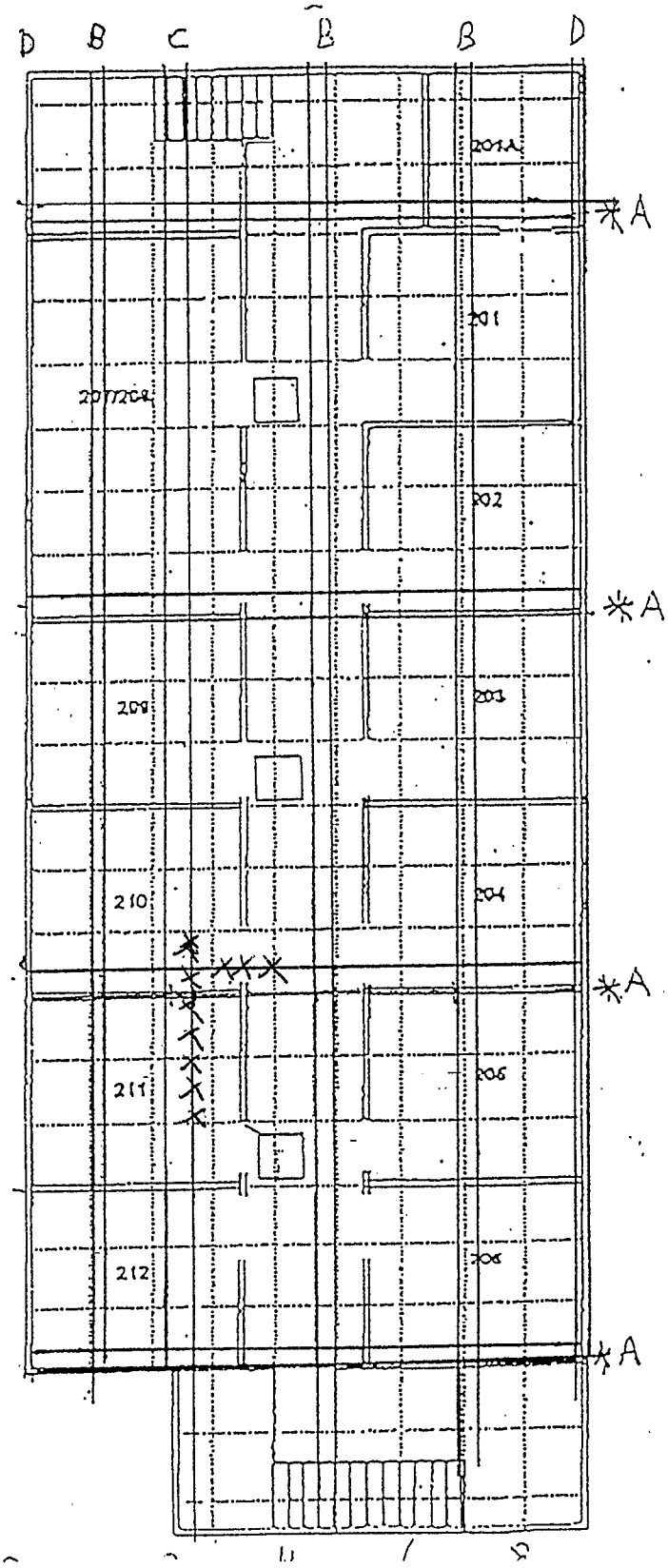
SAMPLE #	BEAM LOCATION CODE	LOCATION DESCRIPTION
1	*D	G-0 → I-0
2		90 → 160 C.P.M.
3		ON The Horiz. SURFACE
4		90 → 120 ON The Vert.
5		Surface.
6	Ceiling	90 → 120 CPM
7		
8	*B	G-1 → I-1
9		120 → 180 CPM
10		ON The Horiz. SURFACE.
11		90 → 120 ON The
12		Vert. Surface.
13	Ceiling	90 → 150 C.P.M.
14		
15	*C	G-2 → I-2
16		west side - Horiz.
17		Surface 120 → 160 CPM.
18		Vert. Surface 100 → 130
19		C.P.M.
20	Ceiling	120 → 160 C.P.M.
21		
22		EAST SIDE of (C) BEAM
23		G-2 → I-2
24		200 → 500 CPM.
25		ON HORIZ. Surface
26		Vert. Surface 60 →
27		120 CPM.
28	Ceiling	120 → 160 CPM
29		
30	*A	I-3 → 200 → 600
31		C.P.M. on The Horiz.
32		Surface.
33		
34		I-1 → I-2
35		80 → 140 CPM
36		ON The Horiz. Surface.
37		
38		
39		
40		

*I BEAM SIZES
*A = I 19 3/4, 12 1/4
*B = 15 1/4, 7 1/4
*C = 9 13", 13", 12"
*D I 10 1/2, 13"

Instrument Model & s/n:	B 2221
Detector Model & s/n:	
Calibration Date:	2-21
Efficiency	cpm / dpm based on S/Y90
Detector Area	15.5 cm2

H.P. M. Zigo

ENCL-C2.XLS



HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 2-25-97
LOCATION: BLD. 14 2EN FLOOR
H.P. M. Zigo

NOTE: All readings are in C.P.M./15 CM.^{2} Probe
BKG. = 50

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

TOTAL BACKGROUND COUNTS BACKGROUND COUNT TIME (MIN) SAMPLE COUNT TIME (MIN)	N/A

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION GRID
1	*D	J-0 → L-0
2		90 → 130 CPM. ON
3		HORIZ. SURFACE
4		VERT. SURFACE - 90 - 120
5		C.P.M.
6	Ceiling	90 - 120 C.P.M.
7		
8	* A	I0 → I-3 NORTH
9		side I-3 100 → 300
10		C.P.M.
11		VERT. SURFACES 80-90
12		C.P.M.
13	Ceiling	90 → 130 C.P.M.
14		
15	* B	J-1 → L-1
16		100 → 220 ON
17		THE HORIZ. SURFACES
18		WEST SIDE of BEAM
19		120 → 140 C.P.M
20		VERT. 90 → 120 CPM.
21	Ceiling	90 → 130 C.P.M.
22		
23	* C	J-3 → L-3
24		EAST SIDE 200 →
25		600 C.P.M. ON
26		THE HORIZ. SURFACE
27		VERT. SURFACE 120 →
28		130 C.P.M.
29	Ceiling	120 → 130 C.P.M.
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		

* I BEAM SIZES

* A = I 13 1/4 19 3/4

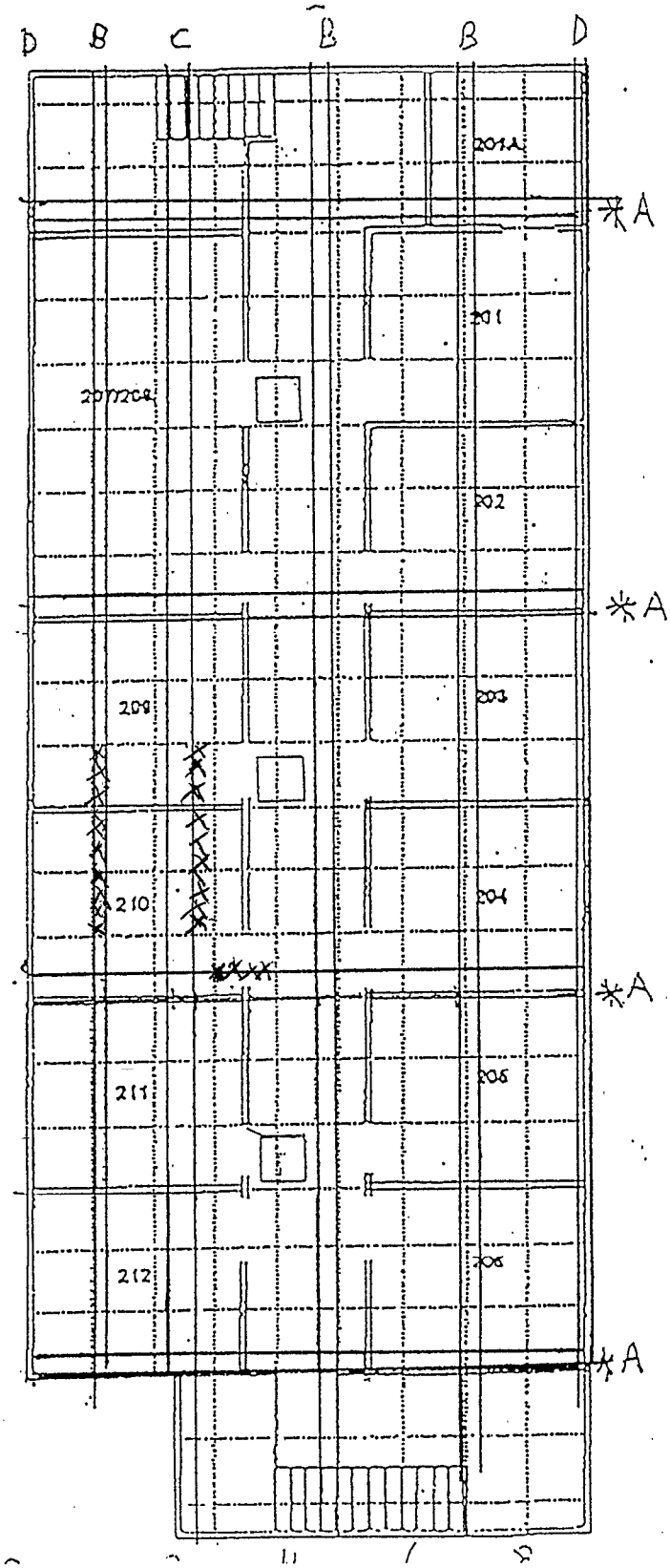
* B = 15 1/4 7 1/4

* C = 9 13" I 13" 12'

* D I 13" 10 1/2

Instrument Model & s/n:	LUDLUM 2221 # 86308
Detector Model & s/n:	44-9 # 9317
Calibration Date:	2-7-97
Efficiency	cpm / dpm based on S/Y90
Detector Area	cm2

H.P. M. Zigo



ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

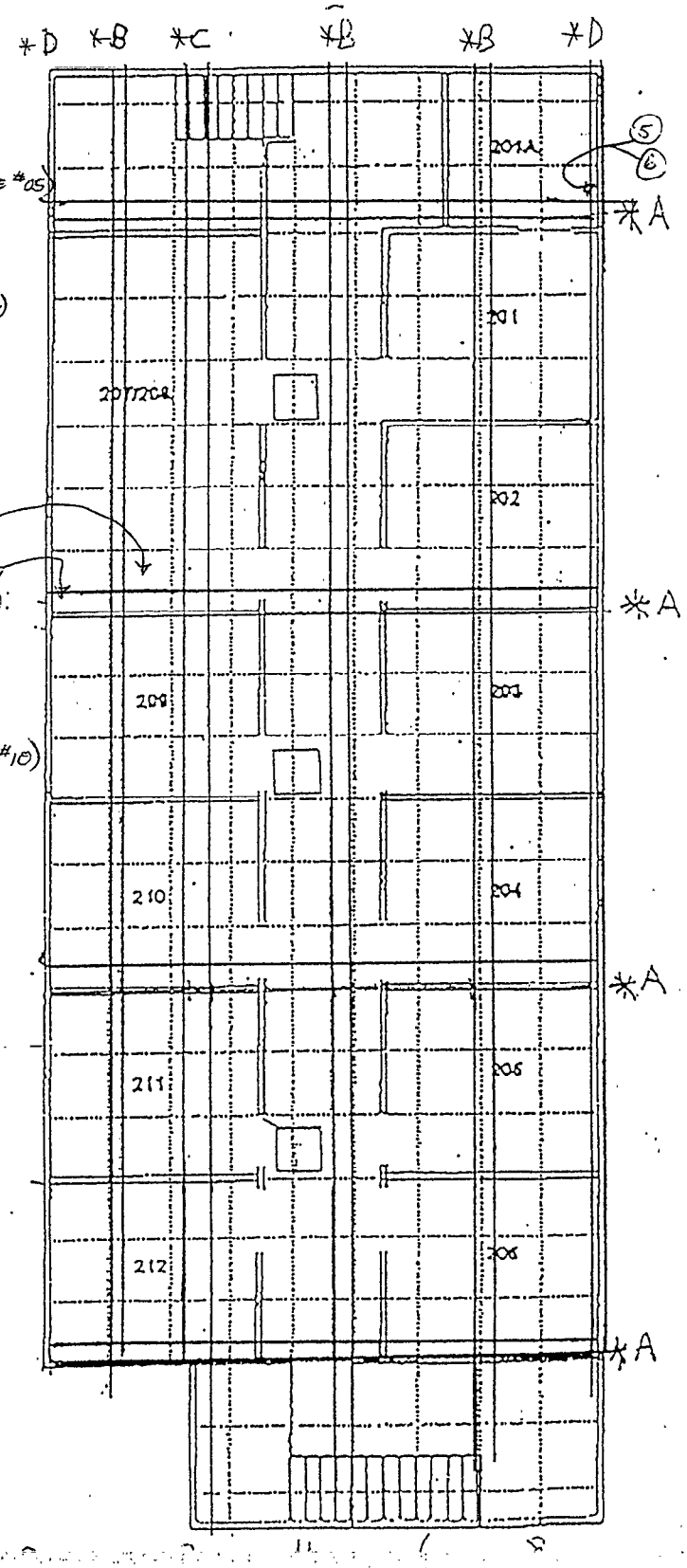
DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

C. HALLAM / C Hallam Survey #129
SAMPLE DATE: 031897 / 1425
LOCATION: BLDG 14 2ND FLOOR OVERHEAD
PAINT & CEILING MATERIAL SAMPLES
FOR MCA DESCRIPTION / LOCATION

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

TOTAL BACKGROUND COUNTS	74
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN

~~SAMPLE~~ SURVEY POINT	LOCATION CODE	LOCATION DESCRIPTION
Sample # 1 5	01	CEILING / PAINT CHIPS MIXED
2		WITH SURFACE CRETE PLANK (SAMPLE #05)
3		PRIOR TO REMOVAL: 110 - 180 CPM
4		IN PETRIE DISH: 162 CPM
5		
# 6 2	01	CEILING MATERIAL (CRETE PLANK)
7 6		UNDER SAMPLE #05 ABOVE (SAMPLE #06)
8		PRIOR TO REMOVAL: 110 - 150 CPM
9		IN MARINELLI BEAKER: 197 CPM
10		
# 11 3	00	*A, LOWER HORIZONTAL (LEDGE)
12 7		PAINT CHIPS (SAMPLE #07)
13		PRIOR TO REMOVAL: 90 - 150 CPM
14		IN PETRIE DISH: 151 CPM
15		
# 16 4	00	*A, VERTICAL @ 10" ABOVE LEDGE
17 8		PAINT CHIPS (SAMPLE #08)
18		PRIOR TO REMOVAL: 80 - 130 CPM
19		IN PETRIE DISH: 88 CPM
20		
# 21 5	118	*D, LOWER HORIZONTAL (LEDGE)
22 9		TOP LAYER OF PAINT CHIPS (SAMPLE #09)
23		PRIOR TO REMOVAL: 300 - 400 CPM
24		IN PETRIE DISH: 292 CPM
25		
# 26 6	118	*D, LOWER HORIZONTAL (LEDGE)
27 10		BOTTOM LAYER OF PAINT CHIPS (SAMPLE #10)
28		PRIOR TO REMOVAL: 550 - 550 CPM
29		IN PETRIE DISH: 507 CPM
30		NOTE: THIS SAMPLE TAKEN DIRECTLY
31		UNDER SAMPLE #1 ABOVE
32		
33		
34		
35		
36		
37		
38		
39		
40		



*I BEAM SIZES
*A = I 12 1/4 19 3/4
*B = 15 1/4 7 1/4
*C = 9 13" 13" 12"
*D I 13" 10 1/2

Instrument Model & s/n:	L2221 / 86313
Detector Model & s/n:	44-9 / 91749
Calibration Date:	020796
Efficiency	0.21 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 132

C. HALLAM / [illegible]

SAMPLE DATE: 031897

LOCATION: BLDG 14 2ND FLOOR DELINEATE OVHD IBEAMS, INSIDE ~~WALLS~~ DRYWALL PARTITIONS

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

TOTAL BACKGROUND COUNTS	74
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION
1	03	IBEAM HORIZ (LEDGE), *A, 318 CPM
2	I5	IBEAM HORIZ (LEDGE), *A, 498 CPM
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
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39		
40		

W U S Q O M K I G E C A

*I BEAM SIZES

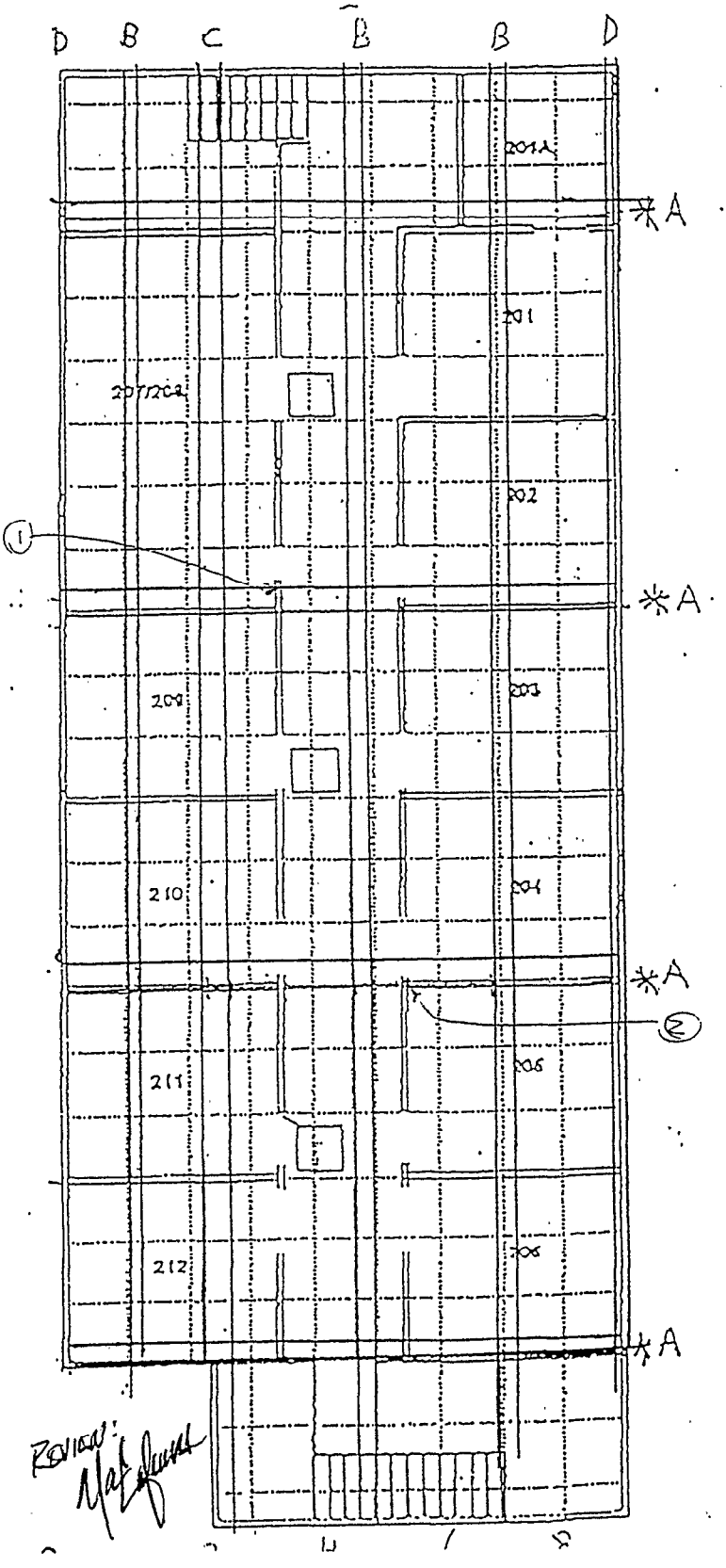
*A = I 19 3/4, 12 1/4

*B = 15 1/4, 7 1/4

*C = 9 I 12", 13", 13"

*D I 10 1/2, 13"

Instrument Model & s/n:	
Detector Model & s/n:	L2221 (D)
Calibration Date:	
Efficiency	0.21 cpm / dpm based on S/F90
Detector Area	15.5 cm2



REVIEW: [illegible]

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

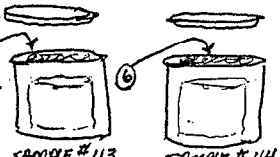
DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

C. HALLAM / [signature]

SURVEY # 224
SAMPLE DATE: 4-7-97
LOCATION: B14 2ND FLOOR OFFICE AREA OVHD CREEPLANK SAMPLING
MATERIAL CONSISTS OF GUNNITE/GYPSUM MIXED WITH FINE WOOD CHIPS

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

*SAMPLE #114 TAKEN @ SAME LOCATION AS SAMPLES 5 & 6 FROM 3-18-97. STARTING DEPTH OF 1/2" IS APPROXIMATE DUE TO UNEVEN SURFACE FROM PREVIOUS SAMPLES.



TOTAL BACKGROUND COUNTS	75
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN/SCAN

~~SAMPLE~~ SURVEY PT	LOCATION CODE	LOCATION DESCRIPTION
1	V8	CEILING, PRIOR TO SAMPLE 100-180 CPM (130 AVG)
2	V8	CEILING, POST SAMPLE @ 3/4" DEPTH 140-200 CPM (170 AVG)
3		SAMPLE #113 IN MARINELLI 140 CPM
4	O1	CEILING, PRIOR TO SAMPLE (@ ≈ 1/2" DEPTH*) 110-190 CPM (150 AVG)
5	O1	CEILING, POST SAMPLE (@ ≈ 1" DEPTH) 100-190 CPM (140 AVG)
6		SAMPLE #114 IN MARINELLI 166 CPM
7		
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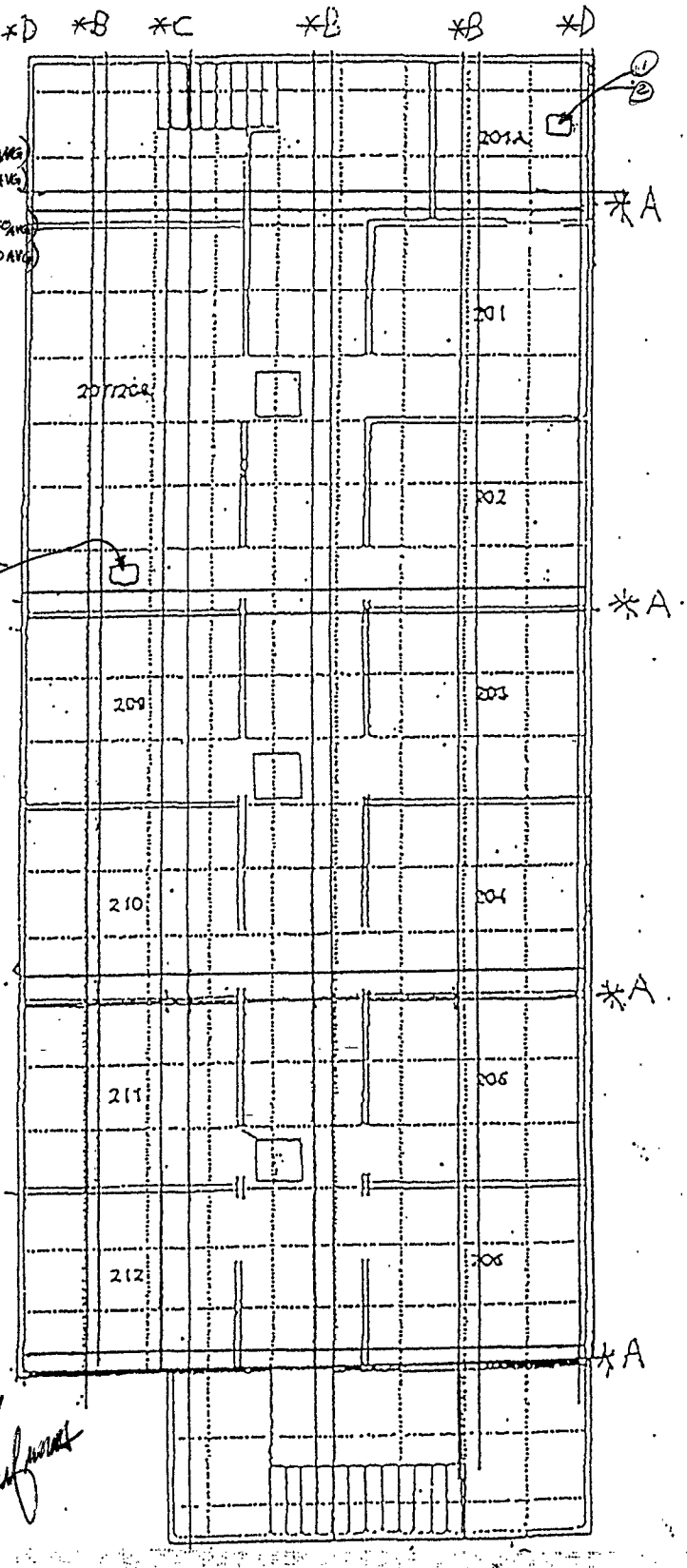
SAMPLE #113: 1, 2, 3
SAMPLE #114: 4, 5, 6



*I BEAM SIZES

*A = I 14 3/4, 12 1/4

*B = 15 1/4, 7 1/4

*C = 9, 13 1/2, 13 1/2, 12'

*D I 10 1/2, 13 1/2

Instrument Model & S/N	L22221 / B
Detector Model & S/N	
Calibration Date:	
Efficiency	[redacted] cpm / dpm based on S/Y90
Detector Area	[redacted] cm2

REVIEW [signature]

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

C. HALLAND/[illegible]

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 240
SAMPLE DATE: 4-7-97
LOCATION: B14 2ND FLOOR HVAC ROOM OVHD
CRETEPLANK SAMPLING

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

TOTAL BACKGROUND COUNTS	69
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN/SCAN

NOTE: CRETEPLANK CONSTRUCTION IN HVAC RMM FOUND TO BE ~~OFF~~ DIFFERENT FROM REST OF 2ND FLOOR OFFICE AREA WITH A FINER WIRE ~~PLACED~~ EMBEDDED 1/2" FROM SURFACE FOR HVAC ROOM VICE HEAVIER WIRE PLACED 3/4 - 1" DEEP IN OFFICE AREA CRETEPLANK. BOTH AREAS HAD SIMILAR MATERIAL CONISTING OF GUNNITE/GYPSOM MIXED WITH FINE WOOD CHIPS.

~~SAMPLE #~~ SURVEY PT	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS	
1	EE7/EE8	CEILING, PRIOR TO SAMPLE	140-210 CPM	(170 AVG)
2	EE7/EE8	CEILING, POST SAMPLE @ 1/2" DEPTH	140-210 CPM	(170 AVG)
3		SAMPLE # 111 IN MARINELLI	145 CPM	
4	EE7/EE8	CEILING POST SAMPLE @ 1" DEPTH	110-210 CPM	(160 AVG)
5		SAMPLE # 112 IN MARINELLI	147 CPM	
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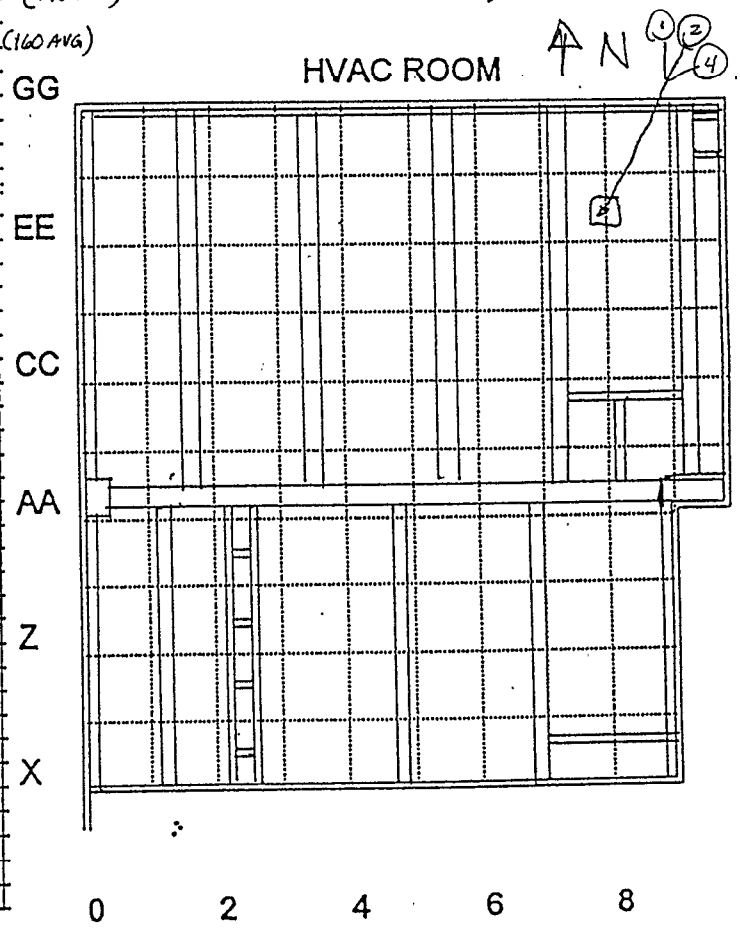
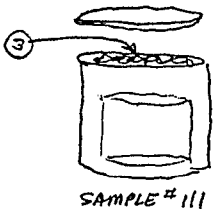
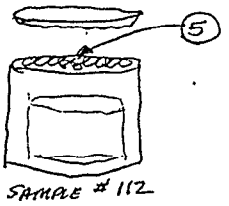
SAMPLE No. 111

SAMPLE No. 112





SAMPLE # 111
TIME: 0900



SAMPLE # 112
TIME: 0915

Instrument Model & s/n:	L2221/B
Detector Model & s/n:	
Calibration Date:	
Efficiency	0.20 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

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REVIEW [illegible]