APPENDIX C-3

VERIFICATION SURVEYS FOR LARGE HALLWAY

SURVEY # 358

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 5-21-97
LOCATION: PRAXAIR SITE
L. HALLWAY
OVER HEAD DELINEATION
PAINT CHIP COMP SURVEY,
PRE & POST OF SAMPLE SURFACE
@ I BEAM VERT. SURFACE.
I BEAM @
OVER HEAD

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	GROSS SAMPLE COUNTS PRE	GROSS SAMPLE COUNTS POST
1	B-14	4"x4" VERT. @ I BEAM	141	132
2	B-12		136	121
3	A-1		145	130
4				
5				
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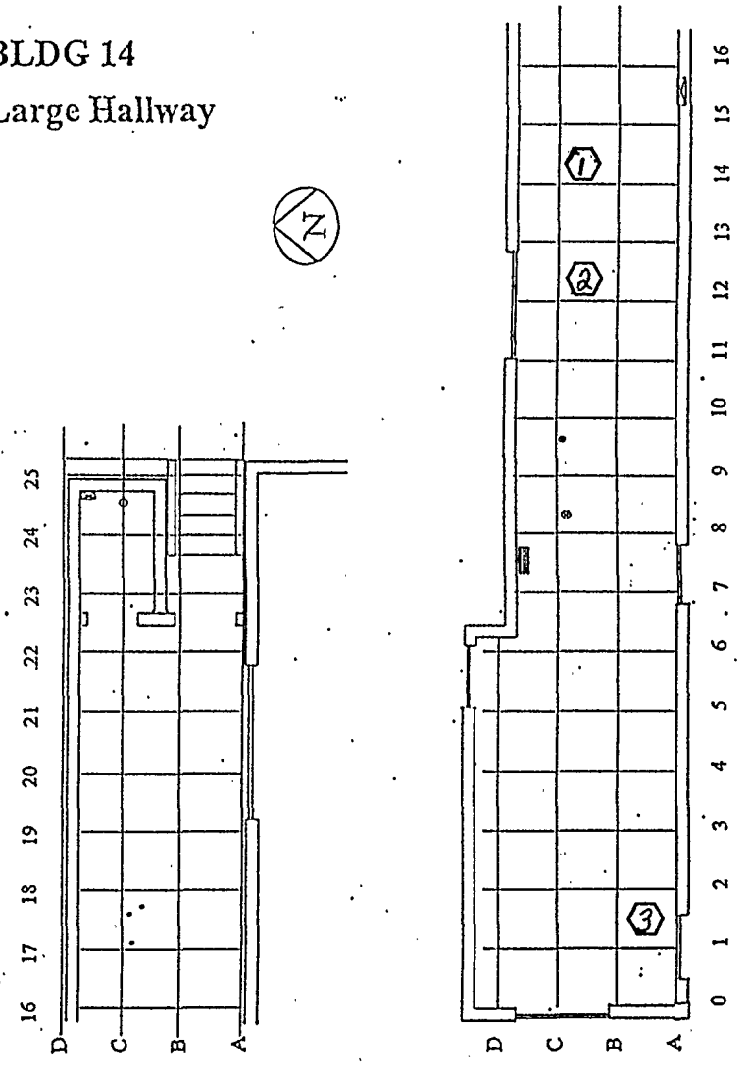
BLDG 14
Large Hallway



5-21-97
W.

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 02.XLS

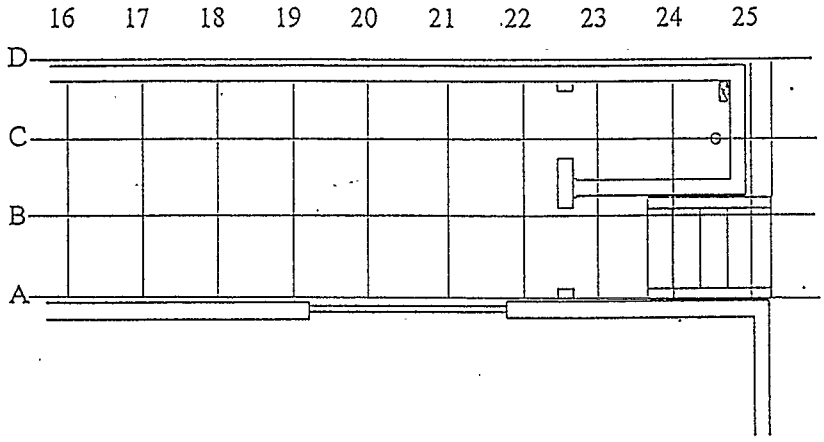
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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

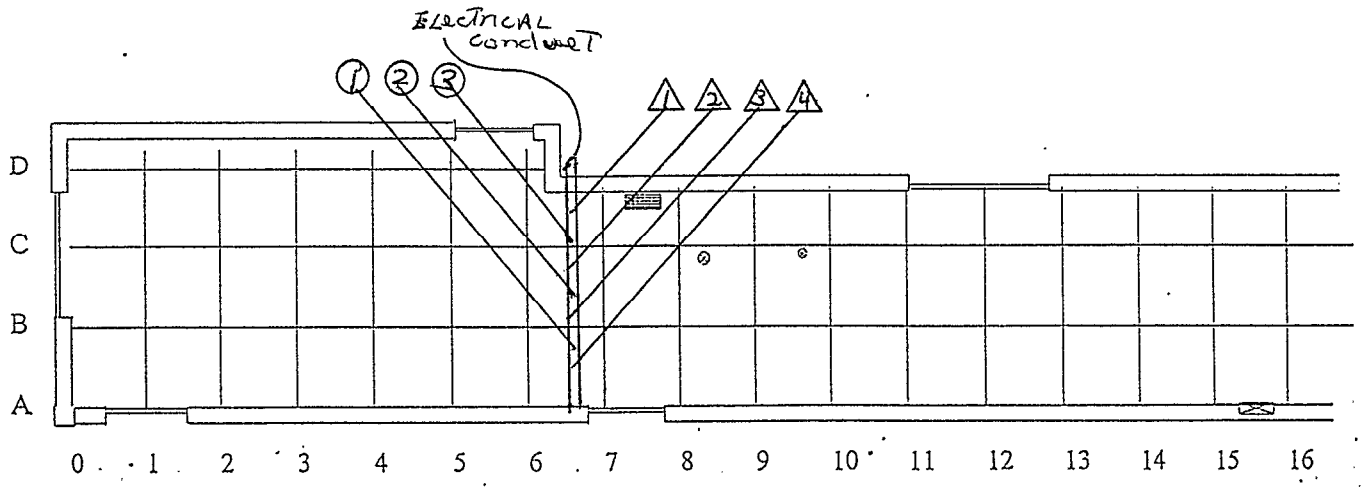
Radiological Survey Form

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

Date / Time 7-24-97/1100	Tech D. Pitman	Instruments / sn M2/44-9
Location / Purpose B14 Lg. Hallway		Survey # 579 RWP # 01
Elec. Conduit Decom Verification Survey		



BLDG 14
Large Hallway



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
1	S	conduit	0	-1	62	7							
2	S		2	5	52	-29							
3	S		1	2	52	-29							
1	DP				130	368							
2	DP				140	421							
3	DP				130	368							
4	DP				130	368							

Comments: M2/44-9 BKgd 60 cpm
EFF: 0.19

Scaler S/N Ludlum 2929 "I"	BKD	EFF	MDA
CT = 1 Alpha:	214/990	0.34	14
Tech M. Zigo Beta:	59047/990	0.28	138

Review

HILBE .SSOCIATES, INC.

SMEAR MEASURE.. _NT ANALYSIS REPORT

#4032

SAMPLE DATE: 9/9/97
ANALYSIS DATE: PRAXAIR SITE
LOCATION: B-14 LARGE HALL FLOOR

VERIFICATION SMEAR Survey

RADIATION MEASUREMENT: Alpha and Beta-gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: Removable Contamination

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
1	B-0	B-14 LG HALL Floor	A	0	1 MIN					+/-		
1	↓		BG	70						+/-		
2	A-2		A	0						+/-		
2	↓		BG	71						+/-		
3	C-2		A	1						+/-		
3	↓		BG	57						+/-		
4	B-4		A	2						+/-		
4	↓		BG	80						+/-		
5	B-8		A	1						+/-		
5	↓		BG	53						+/-		
6	C-10		A	0						+/-		
6	↓		BG	51						+/-		
7	B-12		A	0						+/-		
7	↓	↓	BG	62	↓					+/-		
8			A							+/-		
8			BG							+/-		
9			A							+/-		
9			BG							+/-		
10			A							+/-		
10			BG							+/-		
11			A							+/-		
11			BG							+/-		
12			A							+/-		
12			BG							+/-		
13			A							+/-		
13			BG							+/-		
14			A							+/-		
14			BG							+/-		
15			A							+/-		
15			BG							+/-		
16			A							+/-		
16			BG							+/-		
17			A							+/-		
17			BG							+/-		
18			A							+/-		
18			BG							+/-		
19			A							+/-		
19			BG							+/-		
20			A							+/-		
20			BG							+/-		

Instrument Model & s/n: 2929 / 91234
Detector Model & s/n: 43-10-1 / 85270
Calibration Date: Due 2-98
Efficiency BG (Beta/Gamma): .28 cpm / dpm based on S/Y90
Efficiency A (Alpha): .32 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	128	100		
Beta-Gamma	94413	100		

ION Technology, Inc.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

#4033

SAMPLE DATE: 9/6/97
LOCATION: Praxair, Tonawanda, NY
LARGE HALLWAY
OVER HEAD
VERIFICATION SURVEY
GRIDS A-0 THRU A-7

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

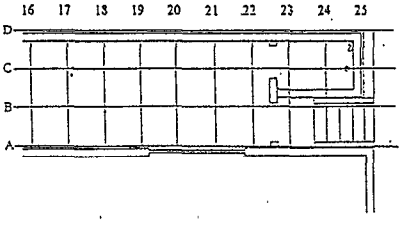
TOTAL BACKGROUND COUNTS	58
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

Entered 9/9/97 PJ

GRID: OVER HEAD — GROSS cpm BY

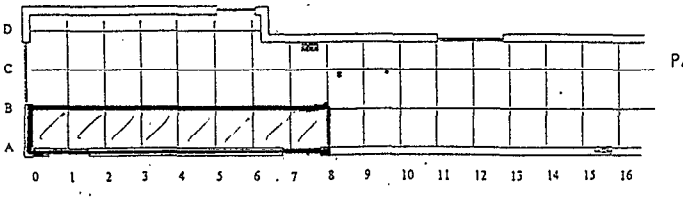
SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS	NET SAMPLE COUNT RATE (CPM)	RESULTS (DPM/100CM2)	95% ERROR (DPM/100CM2)	MDA (DPM/100CM2)
1	A-0 A	WEB – I BEAM	138	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2	B	CEILING	147	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3	C	TOP – CONDUIT	87	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4	D	LEDGE – I BEAM	126	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5	E	LEDGE – ANGLE IRON	131	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	A-1 A	CEILING	153	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7	B	TOP – CONDUIT	92	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8	C	TOP – INS. PIPE	71	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9	D	LEDGE – ANGLE IRON	54	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10	E	LEDGE – I BEAM	89	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11	A-2 A	BOLTS – I BEAM	78	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12	B	TOP – INS. PIPE	106	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13	C	WEB – I BEAM	120	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
14	D	CEILING	134	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	E	TOP – CONDUIT	118	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16	A-3 A	CEILING	162	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17	B	LEDGE – I BEAM	146	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
18	C	TOP – INS. PIPE	53	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
19	D	VALVE	66	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
20	E	CEILING	139/141 OUP	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
21	A-4 A	TOP – INS. PIPE	70	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
22	B	TOP – METAL PIPE	53	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
23	C	VERT. – I BEAM	151	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
24	D	JOINT – CEILING	148	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
25	E	TOP – INS. PIPE	47	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
26	A-5 A	TOP – CONDUIT	69	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
27	B	TOP – METAL PIPE	115	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
28	C	CEILING	145	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
29	D	BOTTOM – I BEAM	156	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30	E	LEDGE – ANGLE IRON	137	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
31	A-6 A	BOTTOM – INS. PIPE	83	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
32	B	TOP – METAL PIPE	64	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
33	C	CEILING	136	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
34	D	LEDGE – I BEAM	127	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
35	E	@ ~~S. WALL~~ CEILING	149	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
36	A-7 A	TOP – INS. PIPE	68	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
37	B	TOP – METAL PIPE	74	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
38	C	S. WALL	81	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
39	D	VERT. – I BEAM	132	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
40	E	BOTTOM – INS. PIPE	86/93 OUP	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

NOTE: SURVEY PATTERNS ARE AS FOLLOWS: A B E C D



BLDG 14
Large Hallway

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	15.5 cm2



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ION Technology, Inc.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

4034

SAMPLE DATE: 9/6/97
LOCATION: Praxair, Tonawanda, NY
LARGE HALLWAY
OVERHEAD
VERIFICATION SURVEY

GRIDS A-8 THRU A-15

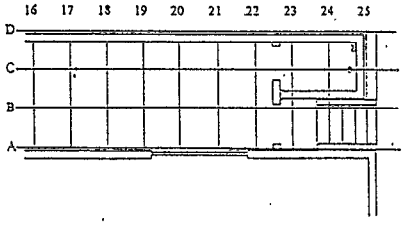
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

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

Entered 9/12/97

	GRID	OVERHEAD	β GROSS CPM				
SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS	NET SAMPLE COUNT RATE (CPM)	RESULTS (DPM/100CM2)	95% ERROR (DPM/100CM2)	MDA (DPM/100CM2)
1	A-8 A	CEILING	143	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2	B	TOP – INS. PIPE	122	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3	C	TOP – METAL PIPE	86	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4	D	S. WALL	93	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5	E	TOP – INS. PIPE	64	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	A-9 A	ELBOW – CONDUIT	48	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7	B	SPRINKLER	39	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8	C	TOP INS. PIPE	56	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9	D	S. WALL	97	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10	E	WEB – I BEAM	166	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11	A-10 A	LEDGE – I BEAM	144	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12	B	TOP – METAL PIPE	91	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13	C	TOP CONDUIT	98	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
14	D	S. WALL	106	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	E	LEDGE – ANGLE IRON	78	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16	A-11 A	LEDGE – I BEAM	73	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17	B	CEILING	102	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
18	C	TOP CONDUIT	90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
19	D	VERT. – I BEAM	111	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
20	E	TOP – INS. PIPE	102/110 DUP.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
21	A-12 A	CEILING	135	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
22	B	TOP – METAL PIPE	116	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
23	C	TOP – METAL PIPE	101	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
24	D	S. WALL	118	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
25	E	BOTTOM – I BEAM	136	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
26	A-13 A	CEILING	145	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
27	B	LEDGE – ANGLE IRON	113	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
28	C	TOP – INS. PIPE	126	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
29	D	TOP – CONDUIT	104	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30	E	LEDGE – I BEAM	97	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
31	A-14 A	TOP – INS. PIPE	58	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
32	B	TOP – INS. PIPE	69	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
33	C	CEILING	119	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
34	D	S. WALL	88	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
35	E	TOP – CONDUIT	73	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
36	A-15 A	CEILING	127	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
37	B	BOTTOM – INS. PIPE	109	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
38	C	LEDGE – I BEAM	138	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
39	D	S. WALL	82	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
40	E	METAL PIPE	70/62 DUP.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

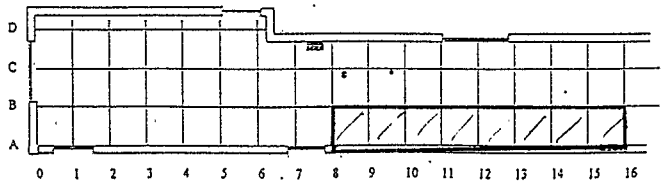
NOTE: SURVEY POINTS PER GRID ARE AS FOLLOWS: A B C D E



BLDG 14
Large Hallway

N

Instrument Model & s/n:	(B) LB221 4/44-9
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	15.5 cm2



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ION Technology, Inc.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

#4035

SAMPLE DATE: 9/6/97
LOCATION: Praxair, Tonawanda, NY
LARGE HALL WAY
OVER HEAD
VERIFICATION SURVEY

GRIDS A-16 THRU A-23

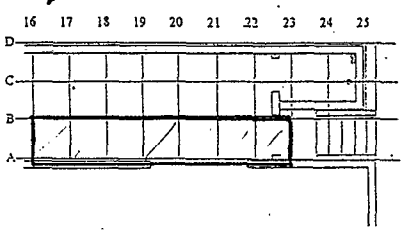
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

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

Entered R.C.
9/13/97

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS (βγ GROSS CPM)	NET SAMPLE COUNT RATE (CPM)	RESULTS (DPM/100CM2)	95% ERROR (DPM/100CM2)	MDA (DPM/100CM2)
1	A-16 A	INSIDE - VENT. DUCT	52	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2	B	TOP - AIR HANDLER	64	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3	C	TOP - INS. PIPE	46	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4	D	TOP - METAL PIPE	68	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5	E	S. WALL	99	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	A-17 A	CEILING	116	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7	B	WEB - I BEAM	133	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8	C	S. WALL	94	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9	D	TOP - INS. PIPE	107	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10	E	CEILING	140	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11	A-18 A	TOP - METAL PIPE	78	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12	B	INS. PIPE	99	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13	C	LEDGE - I BEAM	106	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
14	D	S. WALL	94	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	E	LEDGE - ANGLE IRON	102	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16	A-19 A	CEILING	110	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17	B	I BEAM	115	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
18	C	INS. PIPE	93	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
19	D	S. WALL	125	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
20	E	JOINT - CEILING	23/67 DUP.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
21	A-20 A	BOLTS - I BEAM	62	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
22	B	CEILING	88	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
23	C	TOP - METAL PIPE	79	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
24	D	S. WALL	89	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
25	E	TOP - INS. PIPE.	90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
26	A-21 A	CEILING	101	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
27	B	TOP - CONDUIT	88	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
28	C	BOLTS - I BEAM	142	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
29	D	LEDGE - I BEAM	114	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30	E	CEILING	97	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
31	A-22 A	TOP - METAL PIPE	63	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
32	B	LEDGE - I BEAM	148	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
33	C	S. WALL	126	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
34	D	VERT. - I BEAM	152	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
35	E	CEILING	104	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
36	A-23 A	TOP - METAL PIPE	51	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
37	B	CEILING	132	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
38	C	LEDGE - I BEAM	124	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
39	D	S. WALL	94	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
40	E	CEILING	118/120 DUP.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

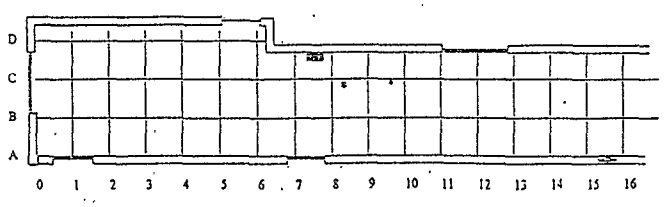
NOTE: SURVEY POINTS PER GRID ARE AS FOLLOWS: A B E C D



BLDG 14
Large Hallway

N

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	15.5 cm2



BGBLANK.XLS

ION Technology, Inc.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

#4036

SAMPLE DATE: 9/6/97
LOCATION: Praxair, Tonawanda, NY
LARGE HALLWAY
OVERHEAD
VERIFICATION SURVEY

GRIDS B-0 THRU B-7

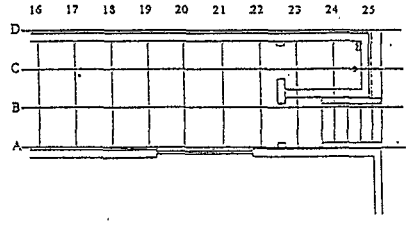
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

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

Entered RW. 9/5/97

	GRID	OVERHEAD	B8 GROSS CPM				
SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS	NET SAMPLE COUNT RATE (CPM)	RESULTS (DPM/100CM2)	95% ERROR (DPM/100CM2)	MDA (DPM/100CM2)
1	B-0 A	LEDGE - I BEAM	130	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2	B	CEILING	92	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3	C	VERT. - I BEAM	116	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4	D	TOP - INS. PIPE	56	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5	E	TOP - METAL PIPE	48	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	B-1 A	INS. PIPE	51	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7	B	LEDGE - I BEAM	109	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8	C	TOP - CONDUIT	63	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9	D	BOTTOM - INS. PIPE	74	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10	E	TOP - METAL PIPE	89	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11	B-2 A	LEDGE - I BEAM	105	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12	B	CEILING	114	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13	C	TOP - CONDUIT	95	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
14	D	VERT. - I BEAM	139	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	E	TOP - INS. PIPE	127	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16	B-3 A	TOP - INS. PIPE	86	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17	B	TOP - CONDUIT	91	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
18	C	CEILING	108	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
19	D	~~TOP~~ LEDGE - I BEAM	146	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
20	E	TOP - CONDUIT	71/65 OVR	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
21	B-4 A	TOP - INS. PIPE	85	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
22	B	TOP - CONDUIT	96	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
23	C	VALVE	68	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
24	D	LEDGE - I BEAM	126	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
25	E	CEILING	107	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
26	B-5 A	WEB - I BEAM	158	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
27	B	TOP - INS. PIPE	120	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
28	C	TOP - INS. PIPE	83	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
29	D	TOP - METAL PIPE	76	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30	E	CEILING	87	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
31	B-6 A	TOP - CONDUIT	79	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
32	B	VERT. - I BEAM	114	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
33	C	TOP - INS. PIPE	80	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
34	D	LEDGE - I BEAM	72	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
35	E	VALVE	52	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
36	B-7 A	BOTTOM - I BEAM	83	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
37	B	CEILING	96	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
38	C	TOP CONDUIT	49	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
39	D	CEILING	69	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
40	E	TOP INS. PIPE	58/61 OVR	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

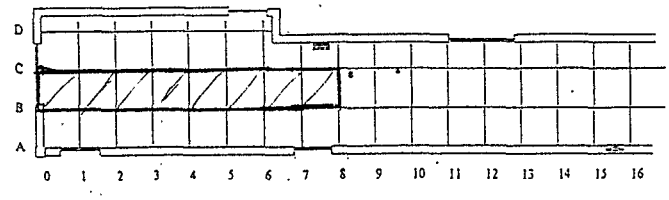
NOTE: SURVEY POINTS PER GRID ARE AS FOLLOWS: A B E C D



BLDG 14
Large Hallway

N

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	15.5 cm2



ION Technology, Inc.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

#4037

SAMPLE DATE: 9/6/97
LOCATION: Praxair, Tonawanda, NY
LARGE HALLWAY
OVER HEAD
VERIFICATION SURVEY

GRIDS B-8 THRU B-15

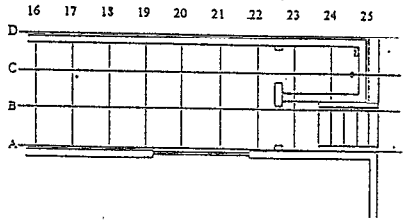
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

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

ENTERED

SAMPLE #	GRID LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS (GROSS CPM)	NET SAMPLE COUNT RATE (CPM)	RESULTS (DPM/100CM2)	95% ERROR (DPM/100CM2)	MDA (DPM/100CM2)
1	B-8 A	LEDGE - I BEAM	85	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2	B	CEILING	124	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3	C	TOP - CONDUIT	48	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4	D	TOP - INS. PIPE	56	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5	E	TOP - INS. PIPE	82	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	B-9 A	VALVE	71	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7	B	CEILING	89	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8	C	LEDGE - I BEAM	98	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9	D	METAL PIPE	64	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10	E	CEILING	106	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11	B-10 A	VERT. - I BEAM	93	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12	B	TOP - CONDUIT	85	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13	C	TOP - INS. PIPE	116	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
14	D	TOP - INS. PIPE	49	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	E	CEILING	86	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16	B-11 A	TOP - CONDUIT	73	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17	B	LEDGE - ~~PIPE~~ ANGLE IRON	58	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
18	C	TOP - INS. PIPE	67	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
19	D	VERT. - I BEAM	88	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
20	E	SPRINKLER	73 / 65 DUP.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
21	B-12 A	TOP - AIR DUCT	62	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
22	B	TOP - METAL PIPE	75	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
23	C	TOP - INS. PIPE	45	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
24	D	TOP - INS. PIPE	56	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
25	E	VALVE	58	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
26	B-13 A	LEDGE - I BEAM	96	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
27	B	CEILING	104	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
28	C	TOP - CONDUIT	82	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
29	D	TOP - METAL PIPE	61	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30	E	TOP - INS. PIPE	83	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
31	B-14 A	BOTTOM - INS. PIPE	75	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
32	B	CEILING	89	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
33	C	BOTTOM - I BEAM	123	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
34	D	TOP - CONDUIT	60	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
35	E	SPRINKLER	77	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
36	B-15 A	CEILING	89	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
37	B	LEDGE - I BEAM	166	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
38	C	TOP - METAL PIPE	67	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
39	D	TOP - CONDUIT	81	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
40	E	CEILING	149 / 136 DUP.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

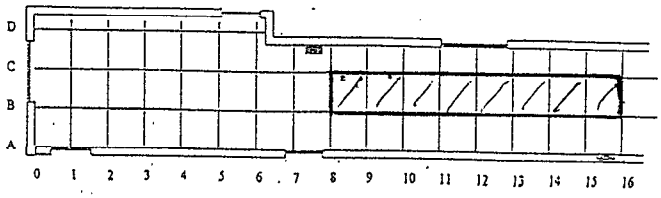
NOTE: SURVEY POINTS PER GRID ARE AS FOLLOWS: A B C E D



BLDG 14
Large Hallway

N

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	15.5 cm2



ION Technology, Inc.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

4038

SAMPLE DATE: 9/6/97
LOCATION: Praxair, Tonawanda, NY
LARGE HALLWAY
OVER HEAD
VERIFICATION SURVEY
GRIDS B-16 THRU B-23

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

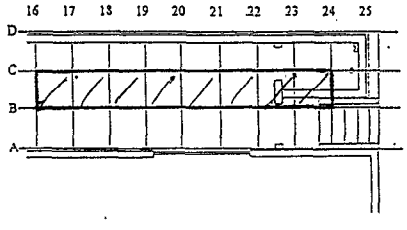
TOTAL BACKGROUND COUNTS	58
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

Entered R.W. 7/8/97

GRID | OVER HEAD | BY GROSS CPM

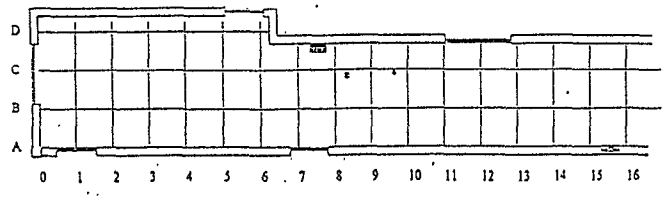
SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS	NET SAMPLE COUNT RATE (CPM)	RESULTS (DPM/100CM2)	95% ERROR (DPM/100CM2)	MDA (DPM/100CM2)
1	B-16 A	TOP - INS. PIPE	58	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2	B	CEILING	63	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3	C	TOP - CONDUIT	71	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4	D	LEDGE - I BEAM	94	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5	E	TOP - INS. PIPE	86	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	B-17 A	LEDGE - ANGLE IRON	103	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7	B	TOP - INS. PIPE	82	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8	C	VERT. - I BEAM	64	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9	D	BOTTOM - INS. PIPE	68	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10	E	TOP - CONDUIT	48	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11	B-18 A	CEILING	97	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12	B	TOP - AIR DUCT	61	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13	C	LEDGE - I BEAM	55	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
14	D	LEDGE - ANGLE IRON	62	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	E	TOP - METAL PIPE	84	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16	B-19 A	TOP - INS. PIPE	103	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17	B	JOINT - CEILING	125	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
18	C	TOP - INS. PIPE	90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
19	D	TOP - METAL PIPE	73	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
20	E	LEDGE - I BEAM	87/94 DUP	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
21	B-20 A	TOP - CONDUIT	60	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
22	B	TOP - INS. PIPE	80	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
23	C	TOP - INS. PIPE	89	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
24	D	CEILING	94	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
25	E	TOP - CONDUIT	73	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
26	B-21 A	TOP - METAL PIPE	68	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
27	B	BOTTOM - INS. PIPE	59	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
28	C	CEILING	96	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
29	D	TOP - CONDUIT	58	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30	E	TOP - INSUL. PIPE	66	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
31	B-22 A	CEILING	88	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
32	B	LEDGE - I BEAM	112	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
33	C	TOP - INS. PIPE	91	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
34	D	VERT. - I BEAM	83	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
35	E	TOP - METAL PIPE	68	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
36	B-23 A	CEILING	118	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
37	B	LEDGE - I BEAM	57	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
38	C	TOP - INS. PIPE	76	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
39	D	TOP - CONDUT	45	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
40	E	TOP - METAL PIPE	73/86 DUP	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

NOTE: SURVEY POINTS PER GRID ARE AS FOLLOWS: A B E C D



BLDG 14
Large Hallway

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	155.5 cm2



BGBLANK.XLS

ION Technology, Inc.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 9/6/97
LOCATION: Praxair, Tonawanda, NY

LARGE HALLWAY
OVER HEAD
VERIFICATION SURVEY

GRIDS C-0 THRU C-7

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

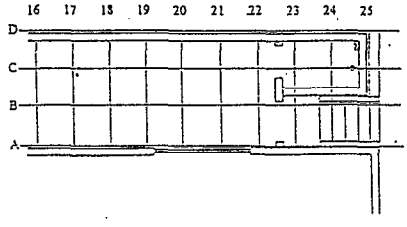
#4039

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

Entered R.W 9/9/97

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS	NET SAMPLE COUNT RATE (CPM)	RESULTS (DPM/100CM2)	95% ERROR (DPM/100CM2)	MDA (DPM/100CM2)
	GRID	OVER HEAD	BK GROSS CPM				
1	C-0 A	I BEAM	134	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2	B	CEILING	151	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3	C	CONDUIT	122	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4	D	CEILING	131	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5	E	CONDUIT	119	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	C-1 A	CEILING	146	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7	B	PIPE	86	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8	C	I BEAM	102	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9	D	CEILING	117	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10	E	CONDUIT	93	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11	C-2 A	I BEAM	88	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12	B	PIPE	115	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13	C	INS. PIPE	90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
14	D	PIPE	84	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
15	E	ANGLE IRON	87	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16	C-3 A	CEILING	121	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17	B	I BEAM	136	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
18	C	CONDUIT	82	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
19	D	CEILING	147	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
20	E	INS. PIPE	81 / 95 DUP.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
21	C-4 A	PIPE	102	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
22	B	CEILING	153	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
23	C	CONDUIT	96	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
24	D	CEILING	127	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
25	E	INS. PIPE	81	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
26	C-5 A	I BEAM	148	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
27	B	CEILING	150	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
28	C	CONDUIT	84	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
29	D	I BEAM	114	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30	E	ANGLE IRON	83	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
31	C-6 A	PIPE	106	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
32	B	I BEAM	123	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
33	C	CEILING	141	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
34	D	CONDUIT	93	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
35	E	CEILING	89	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
36	C-7 A	I BEAM	86	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
37	B	CONDUIT	79	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
38	C	CEILING	137	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
39	D	PIPE	84	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
40	E	CEILING	126 / 118 DUP.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

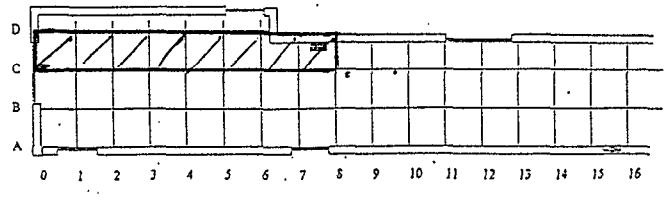
NOTE: SURVEY POINTS PER GRID ARE AS FOLLOWS: A B C E D



BLDG 14
Large Hallway

N

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	155 cm2



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HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 9/6/97
LOCATION: BLDG 14 Large Hallway
VERIFICATION (α)
@ OVERHEAD

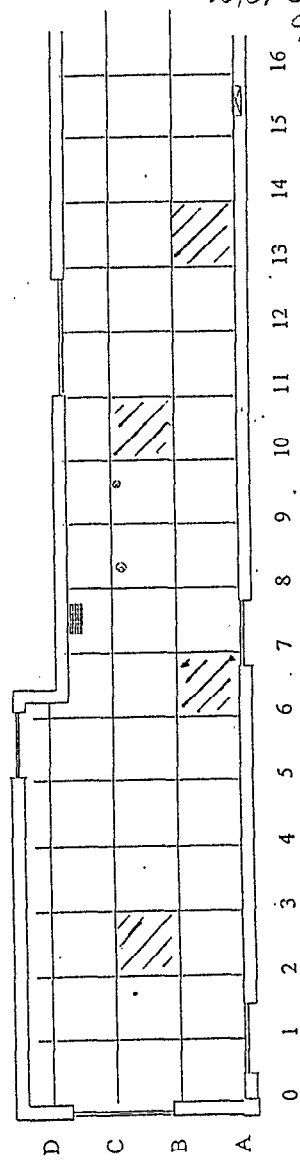
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scalar measurements

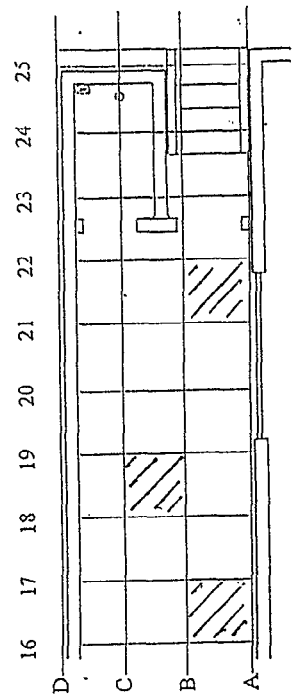
4040

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

Entered R.G. 9/9/97

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS α
1	B-2	LEDGE - I BEAM	1
2		CEILING	5
3		TOP - CONDUIT	2
4		VERT. - I BEAM	1
5		TOP - INS. PIPE	1
6	A-6	TOP - INS. PIPE	2
7		TOP - METAL PIPE	2
8		CEILING	4
9		LEDGE - I BEAM	3
10		CEILING	7
11	B-10	VERT. - I BEAM	1
12		TOP - CONDUIT	3
13		TOP - INS. PIPE	1
14		TOP - INS. PIPE	1
15		CEILING	4
16	A-13	CEILING	3
17		LEDGE - ANGLE IRON	1
18		TOP - INS. PIPE	2
19		TOP - CONDUIT	2
20		LEDGE - I BEAM	2 /2 DUP
21	A-16	INSIDE - VENT. DUCT	1
22		TOP - AIR HANDLER	1
23		TOP - INS. PIPE	2
24		TOP - METAL PIPE	1
25		SOUTH WALL	3
26	B-18	CEILING	6
27		TOP - AIR DUCT	1
28		LEDGE - I BEAM	1
29		LEDGE - ANGLE IRON	1
30		TOP - METAL PIPE	2
31	A-21	CEILING	3
32		TOP - CONDUIT	1
33		BOLTS - I BEAM	1
34		LEDGE - I BEAM	2
35		CEILING	4
36			
37			
38		N	
39		A	
40			





N

Instrument Model & s/n:	
Detector Model & s/n:	(F) ESP-1 a)/43-5
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .12
Detector Area	cm2 = 50cm²

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

#4041

Entered R.W 9/9/97

RADIATION MEASUREMENT: Alpha and Beta-gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: Removable Contamination

ANALYSIS DATE: 9/8/97 R.W.
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area LARGE HALLWAY

Verification Survey

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (DPM/100CM2)	ERROR (95% LEVEL)	MDA (DPM/100CM2)
21	A-0	LARGE HALL OVERHEAD	A	0	1 min			A			
21	↓		BG	53				BG			
22	A-1		A	0				A			
22	↓		BG	60				BG			
23	A-2		A	0				A			
23	↓		BG	62				BG			
24	A-3		A	0				A			
24	↓		BG	62				BG			
25	A-4		A	0				A			
25	↓		BG	70				BG			
26	A-5		A	0				A			
26	↓		BG	40				BG			
27	A-6		A	1				A			
27	↓		BG	62				BG			
28	A-7		A	0				A			
28	↓		BG	65				BG			
29	A-8		A	0				A			
29	↓		BG	50				BG			
30	A-9		A	0				A			
30	↓		BG	57				BG			
31	A-10		A	0				A			
31	↓		BG	48				BG			
32	A-11		A	0				A			
32	↓		BG	65				BG			
33	A-12		A	0				A			
33	↓		BG	51				BG			
34	A-13		A	0				A			
34	↓		BG	67				BG			
35	A-14		A	0				A			
35	↓		BG	68				BG			
36	A-15		A	0				A			
36	↓		BG	61				BG			
37	A-16		A	0				A			
37	↓		BG	63				BG			
38	A-17		A	0				A			
38	↓		BG	53				BG			
39	A-18		A	0				A			
39	↓		BG	51				BG			
40	A-19		A	0				A			
40	↓		BG	58				BG			

Instrument Model & s/n:	M.2929 s/n 91234	
Detector Model & s/n:	M.43-10-1 s/n 085270	
Calibration Date:	2/7/97	
Efficiency BG (Beta/Gamma):	.28	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.30	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	18	1 min		
Beta-Gamma	61	1 min		

SWIPE.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

#4042 Entered R.W 1/3/97

NALYSIS DATE:
OCATION: Praxair, Tonawanda, NY
ldg. 14, Area LARGE HALLWAY Verification Survey

RADIATION MEASUREMENT: Alpha and Beta-gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: Removable Contamination

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (DPM/100CM2)	ERROR (95% LEVEL)	MDA (DPM/100CM2)
21	A-20	LARGE HALL OVERHEAD	A	0				A			
21	↓		BG	68				BG			
22	A-21		A	0				A			
22	↓		BG	48				BG			
23	A-22		A	0				A			
23	↓		BG	61				BG			
24	A-23		A	0				A			
24	↓		BG	65				BG			
25	B-0		A	0				A			
25	↓		BG	64				BG			
26	B-1		A	1				A			
26	↓		BG	58				BG			
27	B-2		A	0				A			
27	↓		BG	57				BG			
28	B-3		A	0				A			
28	↓		BG	61				BG			
29	B-4		A	0				A			
29	↓		BG	61				BG			
30	B-5		A	1				A			
30	↓		BG	50				BG			
31	B-6		A	1				A			
31	↓		BG	53				BG			
32	B-7		A	0				A			
32	↓		BG	54				BG			
33	B-8		A	0				A			
33	↓		BG	77				BG			
34	B-9		A	0				A			
34	↓		BG	52				BG			
35	B-10		A	1				A			
35	↓		BG	65				BG			
36	B-11		A	1				A			
36	↓		BG	73				BG			
37	B-12		A	0				A			
37	↓		BG	38				BG			
38	B-13		A	0				A			
38	↓		BG	54				BG			
39	B-14		A	1				A			
39	↓		BG	52				BG			
40	B-15		A	0				A			
40	↓	↓	BG	64				BG			

Instrument Model & s/n:	M.2929 s/n 91234	
Detector Model & s/n:	M.43-10-1 s/n 085270	
Calibration Date:	2/7/97	
Efficiency BG (Beta/Gamma):	.28	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.32	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	18	1 min		
Beta-Gamma	61	1 min		

SWIPE.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

#4043

Entered R.W. 9/9/97

ANALYSIS DATE: 9/8/97
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area LARGE HALLWAY

Verification Survey

RADIATION MEASUREMENT: Alpha and Beta-gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: Removable Contamination

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (DPM/100CM2)	ERROR (95% LEVEL)	MDA (DPM/100CM2)
21	B-16	LARGE HALL OVERHEAD	A	0				A			
21	↓		BG	65				BG			
22	B-17		A	0				A			
22	↓		BG	56				BG			
23	B-18		A	1				A			
23	↓		BG	62				BG			
24	B-19		A	0				A			
24	↓		BG	62				BG			
25	B-20		A	0				A			
25	↓		BG	69				BG			
26	B-21		A	0				A			
26	↓		BG	56				BG			
27	B-22		A	0				A			
27	↓		BG	64				BG			
28	B-23		A	0				A			
28	↓		BG	65				BG			
29	C-0		A	0				A			
29	↓		BG	64				BG			
30	C-1		A	0				A			
30	↓		BG	74				BG			
31	C-2		A	0				A			
31	↓		BG	58				BG			
32	C-3		A	1				A			
32	↓		BG	63				BG			
33	C-4		A	1				A			
33	↓		BG	55				BG			
34	C-5		A	1				A			
34	↓		BG	61				BG			
35	C-6		A	0				A			
35	↓		BG	47				BG			
36	C-7	↓	A	0				A			
36	↓		BG	57				BG			
37			A					A			
37	↓		BG					BG			
38			A					A			
38	↓		BG					BG			
39			A					A			
39	↓		BG					BG			
40			A					A			
40	↓		BG					BG			

Instrument Model & s/n:	M.2929 s/n 91234	
Detector Model & s/n:	M.43-10-1 s/n 085270	
Calibration Date:	2/7/97	
Efficiency BG (Beta/Gamma):	.28	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.32	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	18	1 min		
Beta-Gamma	61	1 min		

SWIPE.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

#4044

Entered R.W. 8/18/97

DUP. SWIPES

NALYSIS DATE: 4/8/97

OCATION: Praxair, Tonawanda, NY

ldg. 14, Area LARGE HALLWAY OVERHEAD Verification Survey

RADIATION MEASUREMENT: Alpha and Beta-gamma

RESULTS REPORTED UNITS: dpm per 100cm2

MEASUREMENT TYPE: Removable Contamination

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (DPM/100CM2)	ERROR (95% LEVEL)	MDA (DPM/100CM2)
21	A-3	LARGE HALL OVERHEAD DUP.	A	1				A			
21	↓		BG	56				BG			
22	A-7		A	1				A			
22	↓		BG	67				BG			
23	A-11		A	0				A			
23	↓		BG	53				BG			
24	A-15		A	0				A			
24	↓		BG	71				BG			
25	A-19		A	0				A			
25	↓		BG	55				BG			
26	A-23		A	1				A			
26	↓		BG	61				BG			
27	B-3		A	0				A			
27	↓		BG	59				BG			
28	B-7		A	0				A			
28	↓		BG	56				BG			
29	B-11		A	0				A			
29	↓		BG	67				BG			
30	B-15		A	0				A			
30	↓		BG	57				BG			
31	B-19		A	0				A			
31	↓		BG	65				BG			
32	B-23		A	1				A			
32	↓		BG	61				BG			
33	C-3		A	0				A			
33	↓		BG	51				BG			
34	C-7		A	0				A			
34	↓		BG	58				BG			
35			A					A			
35	↓		BG					BG			
36			A					A			
36	↓		BG					BG			
37			A					A			
37	↓		BG					BG			
38			A					A			
38	↓		BG					BG			
39			A					A			
39	↓		BG					BG			
40			A					A			
40	↓		BG					BG			

Instrument Model & s/n:	M.2929 s/n 91234	
Detector Model & s/n:	M.43-10-1 s/n 085270	
Calibration Date:	2/7/97	
Efficiency BG (Beta/Gamma):	.24	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.82	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	18	1 min		
Beta-Gamma	61	min		

SWIPE.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

#4045

SAMPLE DATE: 9-9-97
LOCATION: PRAXAIR SITE
B-14 LARGE HALL FLOOR
VERIFICATION

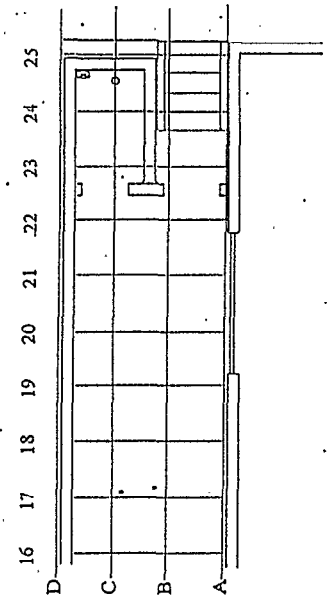
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

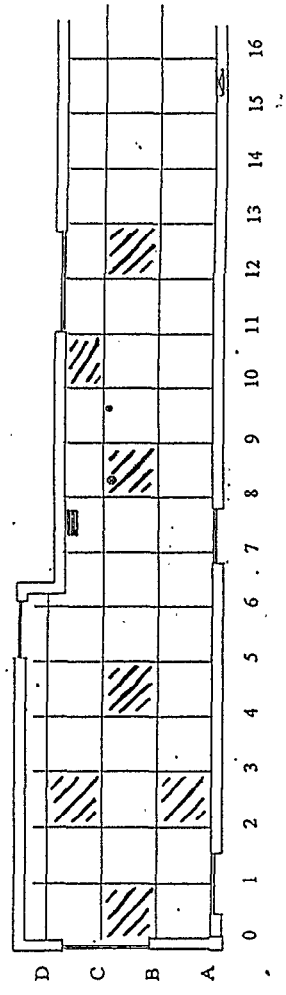
	α	βγ
TOTAL BACKGROUND COUNTS	1	64
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

Fathead
9/10/97 RW

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS α	GROSS SAMPLE COUNTS βγ
1	B-0	A B-14 L. HALL FLOOR		98
2		B		86
3		C		122
4		D	N	137
5		E		141
6	A-2	A	A	82
7		B		98
8		C		87
9		D		96
10		E		124
11	C-2	A	4	156
12		B	1	142
13		C	1	161
14		D	3	150
15		E	2	149
16	B-4	A		116
17		B		103
18		C		115
19		D		171
20		E		162
21	B-8	A		158
22		B		149
23		C	N	137
24		D		155
25		E		121
26	C-10	A	A	86
27		B		129
28		C		137
29		D		143
30		E		89
31	B-12	A		74
32		B		123
33		C		107
34		D		95
35		E		126
36				
37		N		
38		A		
39				
40				
	B-4	E DUP.		159

BLDG 14
Large Hallway





William W
9-9-97

Instrument Model & s/n: (βγ) © L2221 W/44-9
Detector Model & s/n: (α) (F) ESP-1 W/435
Calibration Date:
Efficiency cpm / dpm based on S/rad (βγ) = .20 / (α) = .12
Detector Area cm2 (βγ) = 15.5 / (α) = 50

ENCL-C2.XLS

HILBE ASSOCIATES, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

#4046

SAMPLE DATE: 9/9/97
ANALYSIS DATE: PRAXAIR SITE
LOCATION: B-14 LARGE HALL FLOOR

VERIFICATION SMEAR Survey

RADIATION MEASUREMENT: Alpha and Beta-gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: Removable Contamination

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
1	B-0	B-14 LG Hall Floor	A	0	1 MIN					+/-		
1	↓		BG	70						+/-		
2	A-2		A	0						+/-		
2	↓		BG	71						+/-		
3	C-2		A	1						+/-		
3	↓		BG	57						+/-		
4	B-4		A	2						+/-		
4	↓		BG	80						+/-		
5	B-8		A	1						+/-		
5	↓		BG	53						+/-		
6	C-10		A	0						+/-		
6	↓		BG	51						+/-		
7	B-12		A	0						+/-		
7	↓		BG	62						+/-		
8			A							+/-		
8			BG							+/-		
9			A							+/-		
9			BG							+/-		
10			A							+/-		
10			BG							+/-		
11			A							+/-		
11			BG							+/-		
12			A							+/-		
12			BG							+/-		
13			A							+/-		
13			BG							+/-		
14			A							+/-		
14			BG							+/-		
15			A							+/-		
15			BG							+/-		
16			A							+/-		
16			BG							+/-		
17			A							+/-		
17			BG							+/-		
18			A							+/-		
18			BG							+/-		
19			A							+/-		
19			BG							+/-		
20			A							+/-		
20			BG							+/-		

Instrument Model & s/n: 2929 / 91234
Detector Model & s/n: 43-10-1 / 85270
Calibration Date: Due 2-98
Efficiency BG (Beta/Gamma): .28 cpm / dpm based on S/Y90
Efficiency A (Alpha): .32 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	128	100		
Beta-Gamma	44113	100		

ENCL-C1.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

#4047

SAMPLE DATE: 9-8-97
LOCATION: PRAXAIR SITE
B-14 LARGE HALL
FLOOR VERIFICATION

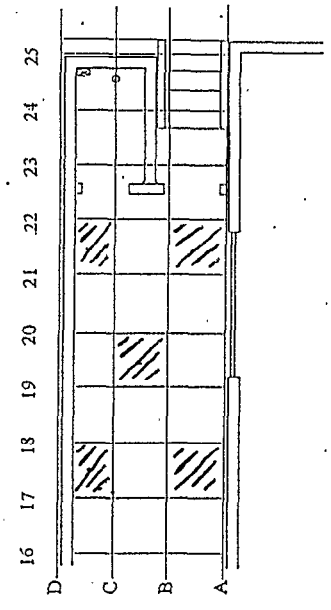
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

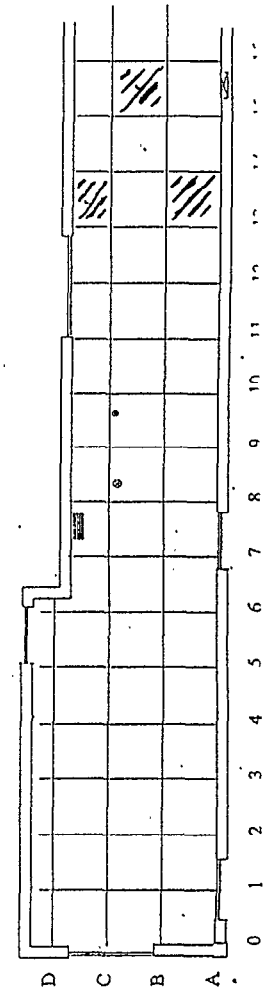
	α	βγ
TOTAL BACKGROUND COUNTS	1	67
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

entered 9/10/97 MK

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS	α
1	A-13	A L. HALL FLOOR	161	
2		B	147	
3		C	140	
4		D	~~127~~ 171	
5		E	134	
6	C-13	A	168	
7		B	162	
8		C	177	
9		D	153	
10		E	124	
11	B-15	A	183	6
12		B	156	4
13		C	149	4
14		D	135	2
15		E	151	2
16	A-17	A	189	
17		B	144	
18		C	162	
19		D	170	
20		E	168	
21	C-17	A	143	
22		B	126	
23		C	158	
24		D	157	
25		E	148	
26	B-19	A	161	
27		B	173	
28		C	148	
29		D	122	
30		E	145	
31	A-21	A	165	
32		B	154	
33		C	128	
34		D	139	
35		E	159	
36	C-21	A	160	
37		B	152	
38		C	141	
39		D	150	
40		E	167	
	A-17	E	DUP.	159
	C-21	E	DUP.	173

BLDG 14
Large Hallway





William W. [illegible]
9-8-97

Instrument Model & s/n: (A) L2221 w/44-9 (βγ)
Detector Model & s/n: ESA-1 w/43-5 (α)
Calibration Date:
Efficiency: cpm / dpm based on SX90 = .20 βγ / .12 α
Detector Area: cm2 = 50 cm² (α) / 155 cm² (βγ)

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

#4048

SAMPLE DATE: 9-8-97
ANALYSIS DATE:
LOCATION: PRAXAIR SITE B-14 LARGE HALL FLOOR VERIFICATION

RADIATION MEASUREMENT: Alpha and Beta-gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: Removable Contamination

entered 9/10/97 MK

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
1	A-13	B-14 L. HALL FLOOR	A	0						+/-		
1	↓	↓	BG	65						+/-		
2	C-13	↓	A	1						+/-		
2	↓	↓	BG	62						+/-		
3	B-15	↓	A	0						+/-		
3	↓	↓	BG	75						+/-		
4	A-17	↓	A	0						+/-		
4	↓	↓	BG	57						+/-		
5	C-17	↓	A	0						+/-		
5	↓	↓	BG	64						+/-		
6	B-19	↓	A	0						+/-		
6	↓	↓	BG	57						+/-		
7	A-21	↓	A	0						+/-		
7	↓	↓	BG	63						+/-		
8	C-21	↓	A	1						+/-		
8	↓	↓	BG	61						+/-		
9			A							+/-		
9			BG							+/-		
10			A							+/-		
10			BG							+/-		
11			A							+/-		
11			BG							+/-		
12			A							+/-		
12			BG							+/-		
13			A							+/-		
13			BG							+/-		
14			A							+/-		
14			BG							+/-		
15			A							+/-		
15			BG							+/-		
16			A							+/-		
16			BG							+/-		
17			A							+/-		
17			BG							+/-		
18			A							+/-		
18			BG							+/-		
19			A							+/-		
19			BG							+/-		
20			A							+/-		
20			BG							+/-		

N

A

Instrument Model & s/n: (I) 2929
Detector Model & s/n:
Calibration Date:
Efficiency BG (Beta/Gamma): .28 cpm / dpm based on S/Y90
Efficiency A (Alpha): .33 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	147	700		
Beta-Gamma	43174	700		

HILBE ..SSOCIATES, INC.

SMEAR MEASURE...NT ANALYSIS REPORT

Entered 9/10/97 RW

#4049

SAMPLE DATE: 9-9-97
ANALYSIS DATE: PRAXAIR SITE B-14 LARGE HALL
LOCATION: NORTH WALL

VERIFICATION SMEAR SURVEY

RADIATION MEASUREMENT: Alpha and Beta-gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: Removable Contamination

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
1	D-0 AA	B-14 L. HALL WALL NORTH	A	0						+/-		
1	↓	↓	BG	59						+/-		
2	D-1 BB		A	2						+/-		
2	↓		BG	59						+/-		
3	D-2 AA		A	0						+/-		
3	↓		BG	62						+/-		
4	D-3 BB		A	0						+/-		
4	↓		BG	58						+/-		
5	D-4 AA		A	1						+/-		
5	↓		BG	76						+/-		
6	D-5 BB		A	1						+/-		
6	↓		BG	72						+/-		
7	C-6 AA		A	2						+/-		
7	↓		BG	52						+/-		
8	C-7 BB		A	0						+/-		
8	↓		BG	59						+/-		
9	C-8 AA		A	1						+/-		
9	↓		BG	74						+/-		
10	C-9 BB		A	0						+/-		
10	↓		BG	63						+/-		
11	C-10 AA		A	1						+/-		
11	↓		BG	69						+/-		
12	C-11 BB		A	1						+/-		
12	↓		BG	68						+/-		
13	C-12 AA		A	1						+/-		
13	↓		BG	64						+/-		
14	C-13 BB		A	0						+/-		
14	↓		BG	60						+/-		
15	C-14 AA		A	0						+/-		
15	↓		BG	64						+/-		
16	C-15 BB		A	0						+/-		
16	↓		BG	61						+/-		
17	C-16 AA		A	5						+/-		
17	↓		BG	55						+/-		
18	C-17 BB		A	0						+/-		
18	↓		BG	71						+/-		
19	C-18 AA		A	0						+/-		
19	↓		BG	51						+/-		
20	C-19 BB		A	1						+/-		
20	↓	↓	BG	76						+/-		
	C-19 BB	DUP.	A	0								
	↓		BG	62								

Instrument Model & s/n: 2929 /91234
Detector Model & s/n: 43-10-1 /85270
Calibration Date: Due 2-98
Efficiency BG (Beta/Gamma): .28 cpm/dpm based on S/Y90
Efficiency A (Alpha): .32 cpm/dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	128	700		
Beta-Gamma	4413	700		

HILBE ASSOCIATES, INC.

SMEAR MEASURE...NT ANALYSIS REPORT

SAMPLE DATE: 4-9-97
ANALYSIS DATE: PRAXAIR SITE B-14 L.HALL WAY WALL (NORTH)
LOCATION:

RADIATION MEASUREMENT: Alpha and Beta-gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: Removable Contamination

#4050

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
1	C-20 AA	B-14 L.HALL WALL (NORTH)	A	0						+/-		
1	↓	↓	BG	69						+/-		
2	C-21 BB	↓	A	1						+/-		
2	↓	↓	BG	50						+/-		
3	C-22 AA	↓	A	0						+/-		
3			BG	67						+/-		
4			A							+/-		
4			BG							+/-		
5			A							+/-		
5			BG							+/-		
6			A							+/-		
6			BG							+/-		
7			A							+/-		
7			BG							+/-		
8			A							+/-		
8			BG							+/-		
9			A							+/-		
9			BG							+/-		
10			A							+/-		
10			BG							+/-		
11			A							+/-		
11			BG							+/-		
12			A							+/-		
12			BG							+/-		
13			A							+/-		
13			BG							+/-		
14			A							+/-		
14			BG							+/-		
15			A							+/-		
15			BG							+/-		
16			A							+/-		
16			BG							+/-		
17			A							+/-		
17			BG							+/-		
18			A							+/-		
18			BG							+/-		
19			A							+/-		
19			BG							+/-		
20			A							+/-		
20			BG							+/-		

Instrument Model & s/n: 2929 / 91234
Detector Model & s/n: 43-10-1 / 85270
Calibration Date: Due 2-98
Efficiency BG (Beta/Gamma): .28 cpm / dpm based on S/Y90
Efficiency A (Alpha): .33 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	128	700		
Beta-Gamma	4413	700		

HILBE- ASSOCIATES, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

C. Hallom.

Entered 9/10/97 #4051

SAMPLE DATE: 9-9-97
ANALYSIS DATE: PRAXAIR SITE B-14
LOCATION: L. HALL WALL (SOUTH)

VERIFICATION SMEAR SURVEY

RADIATION MEASUREMENT: Alpha and Beta-gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: Removable Contamination

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
1	A-0 AA	B-14 L. HALL WALL (SOUTH)	A	1	1 MIN					+/-		
1	↓		BG	64						+/-		
2	A-1 BB		A	2						+/-		
2	↓		BG	52						+/-		
3	A-2 AA		A	0						+/-		
3	↓		BG	66						+/-		
4	A-3 BB		A	3						+/-		
4	↓		BG	67						+/-		
5	A-4 AA		A	0						+/-		
5	↓		BG	67						+/-		
6	A-5 BB		A	0						+/-		
6	↓		BG	74						+/-		
7	A-6 AA		A	1						+/-		
7	↓		BG	52						+/-		
8	A-7 BB		A	1						+/-		
8	↓		BG	58						+/-		
9	A-8 AA		A	1						+/-		
9	↓		BG	61						+/-		
10	A-9 BB		A	1						+/-		
10	↓		BG	79						+/-		
11	A-10 AA		A	0						+/-		
11	↓		BG	59						+/-		
12	A-11 BB		A	0						+/-		
12	↓		BG	77						+/-		
13	A-12 AA		A	2						+/-		
13	↓		BG	80						+/-		
14	A-13 BB		A	0						+/-		
14	↓		BG	62						+/-		
15	A-14 AA		A	4						+/-		
15	↓		BG	66						+/-		
16	A-15 BB		A	0						+/-		
16	↓		BG	83						+/-		
17	A-16 AA		A	0						+/-		
17	↓		BG	64						+/-		
18	A-17 BB		A	0						+/-		
18	↓		BG	57						+/-		
19	A-18 AA		A	0						+/-		
19	↓		BG	60						+/-		
20	A-19 BB		A	2						+/-		
20	↓		BG	63						+/-		
	A-19 BB	DUP	A/BG	1 / 71								

Instrument Model & s/n: 2929 / 91234
Detector Model & s/n: 43-10-1 85270
Calibration Date: Due 2-98
Efficiency BG (Beta/Gamma): .28 cpm / dpm based on S/Y90
Efficiency A (Alpha): .32 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	128	700		
Beta-Gamma	44113	700		

HILBE... ASSOCIATES, INC.

SMEAR MEASURE...NT ANALYSIS REPORT

SAMPLE DATE: 9-9-97
ANALYSIS DATE: PRAXAIR SITE B-14
LOCATION: L. HALL WALL (SOUTH)

RADIATION MEASUREMENT: Alpha and Beta-gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: Removable Contamination

4052

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
1	A-20AA	B-14 L. HALL WALL (SOUTH)	A	0						+/-		
1	↓		BG	72						+/-		
2	A-21BB		A	0						+/-		
2	↓		BG	59						+/-		
3	A-22AA		A	2						+/-		
3	↓		BG	64						+/-		
4	A-23BB		A	0						+/-		
4	↓		BG	65						+/-		
5			A							+/-		
5			BG							+/-		
6			A							+/-		
6			BG							+/-		
7			A							+/-		
7			BG							+/-		
8			A							+/-		
8			BG							+/-		
9			A							+/-		
9			BG							+/-		
10			A							+/-		
10			BG							+/-		
11			A							+/-		
11			BG							+/-		
12			A							+/-		
12			BG							+/-		
13			A							+/-		
13			BG							+/-		
14			A							+/-		
14			BG							+/-		
15			A							+/-		
15			BG							+/-		
16			A							+/-		
16			BG							+/-		
17			A							+/-		
17			BG							+/-		
18			A							+/-		
18			BG							+/-		
19			A							+/-		
19			BG							+/-		
20			A							+/-		
20			BG							+/-		

Instrument Model & s/n: 2929 / 91234
Detector Model & s/n: 43-10-1 / 85270
Calibration Date: Due 2-98
Efficiency BG (Beta/Gamma): .28 cpm / dpm based on S/Y90
Efficiency A (Alpha): .32 cpm / dpm based on Th230

Background	Counts	CT Time (min)	RD	Date
Alpha	128	700		
Beta-Gamma	44113	700		

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

#4053

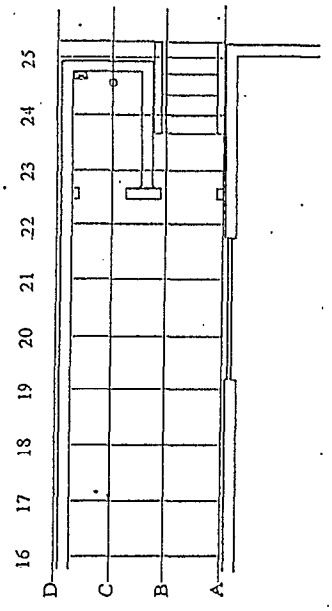
SAMPLE DATE: 9-9-97
LOCATION: PRAXAIR SITE
B-14 LARGE HALL
SOUTH WALL VERIFICATION

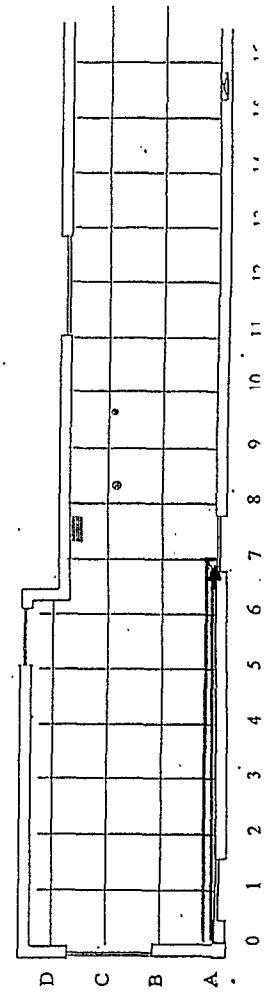
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

	α	βγ
TOTAL BACKGROUND COUNTS	1	64
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS α	GROSS SAMPLE COUNTS βγ
		← A (GRID POINT)		
1	A-0 AA	B-14 L. HALL WALL (SOUTH)		104
2		B		126
3		C		97
4		D		89
5		E	N	133
6	A-1 BB	A	A	121
7		B		125
8		C		114
9		D		109
10		E		86
11	A-2 AA	A	3	93
12		B	1	82
13		C	2	101
14		D	2	124
15		E	4	139
16	A-3 BB	A		152
17		B		84
18		C		96
19		D		130
20		E		128
21	A-4 AA	A		119
22		B		142
23		C		132
24		D		108
25		E		80
26	A-5 BB	A		93
27		B		113
28		C	N	127
29		D	A	154
30		E		107
31	A-6 AA	A		87
32		B		93
33		C		104
34		D		125
35		E		118
36	A-7 BB	A		145
37		B		112
38		C		142
39		D		116
40		E		85
	A-3 BB	E DUP.		134
	A-7 BB	E DUP.		92

BLDG 14
Large Hallway





William W. [illegible]
9-9-97

Instrument Model & s/n:	(βγ)	(E) L2221/W449
Detector Model & s/n:	(α)	(F) ESP-1 W/43-5
Calibration Date:		
Efficiency		cpm / dpm based on Sr/Y90 βγ=.30/α=.12
Detector Area		cm2 βγ=15.5 α 50

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HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

#4054

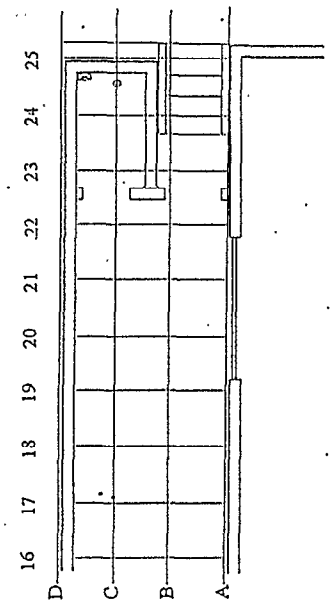
SAMPLE DATE: 9-9-97
LOCATION: PRAXAIR SITE
B-14 LARGE HALL
SOUTH WALL VERIFICATION

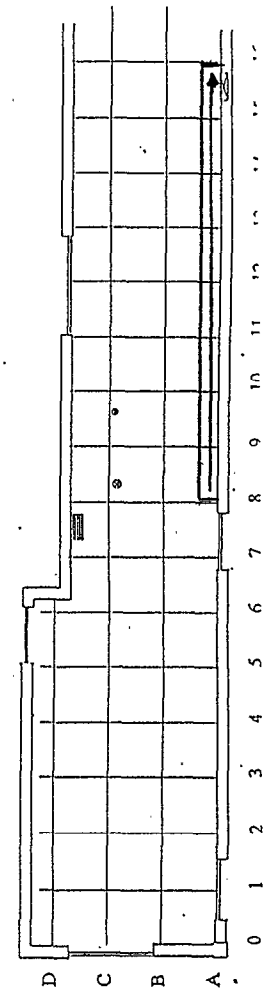
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

	α	Bγ
TOTAL BACKGROUND COUNTS	1	64
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

SAMPLE #	LOCATION CODE		LOCATION DESCRIPTION	GROSS SAMPLE COUNTS α	Bγ
1	A-8 AA	A	(B-14 L. HALL WALL SOUTH)	4	98
2		B		2	114
3		C		4	122
4		D		3	135
5		E		1	84
6	A-9 BB	A			98
7		B			118
8		C			129
9		D			148
10		E			122
11	A-10 AA	A			126
12		B			79
13		C			149
14		D			110
15		E			122
16	A-11 BB	A			103
17		B			118
18		C			133
19		D			127
20		E			96
21	A-12 AA	A		N	89
22		B			84
23		C		A	116
24		D			135
25		E			104
26	A-13 BB	A			112
27		B			131
28		C			100
29		D			91
30		E			86
31	A-14 AA	A			111
32		B			81
33		C			99
34		D			125
35		E			143
36	A-15 BB	A			132
37		B			127
38		C			92
39		D			88
40		E			116
	A-11 BB	E	DUP.		87
	A-15 BB	E	DUP.		122

BLDG 14
Large Hallway





William W.
9-9-97

Instrument Model & s/n:	(Bγ) (C) L2221 w/44-9
Detector Model & s/n:	(α) (F) ESP-1 w/43-5
Calibration Date:	
Efficiency	cpm / dpm based on S/N90 (Bγ) = .20 / (α) = .12
Detector Area	cm2 (Bγ) = 15.5 / (α) = 50

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

4055

SAMPLE DATE: 9-9-97
LOCATION: PRAXAIR SITE
B-14 LARGE HALL
SOUTH WALL VERIFICATION

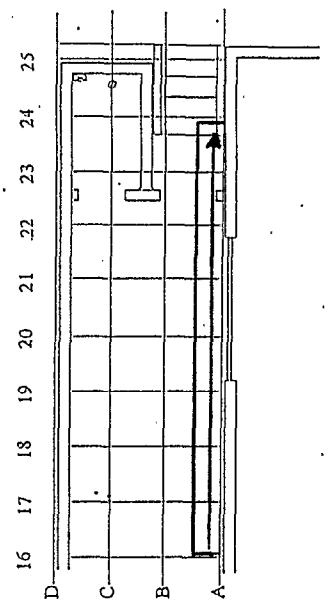
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

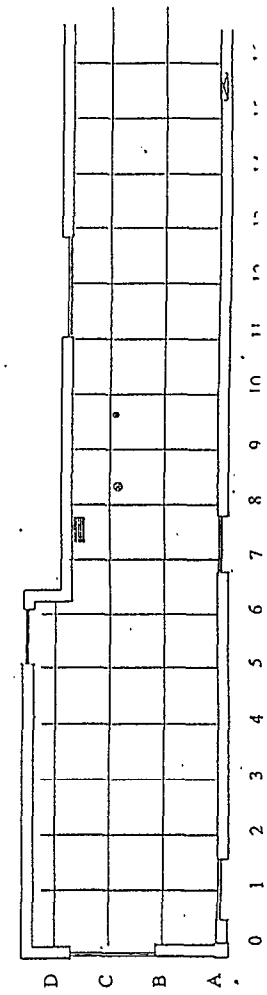
	α	βγ
TOTAL BACKGROUND COUNTS	1	64
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

Entered rec:
9/10/97

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS α	GROSS SAMPLE COUNTS βγ
1	A-16 AA	A B-14 L. HALL WALL (SOUTH)		118
2		B		126
3		C		104
4		D		97
5		E		82
6	A-17 BB	A		69
7		B		84
8		C		134
9		D		147
10		E		132
11	A-18 AA	A		138
12		B		135
13		C		139
14		D		145
15		E	N	150
16	A-19 BB	A		111
17		B	A	124
18		C		93
19		D		106
20		E		119
21	A-20 AA	A		127
22		B		131
23		C		140
24		D		149
25		E		84
26	A-21 BB	A		96
27		B		88
28		C		158
29		D		121
30		E		93
31	A-22 AA	A	5	114
32		B	2	125
33		C	2	100
34		D	4	109
35		E	4	123
36	A-23 BB	A		120
37		B	N	152
38		C		118
39		D	A	135
40		E		134
	A-19 BB	E	DUP.	127
	A-23 BB	E	DUP.	144

BLDG 14
Large Hallway





William W.
9-9-97

Instrument Model & s/n:	(βγ) (C) L2221 w/44-9
Detector Model & s/n:	(α) (F) ESP-1 w/43-5
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 (βγ) = .20 / (α) = .12
Detector Area	cm2 (βγ) = 15.5 (α) = 50

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 9-9-97
LOCATION: PRAXAIR SITE
B-14 LARGE HALL
NORTH WALL VERIFICATION

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

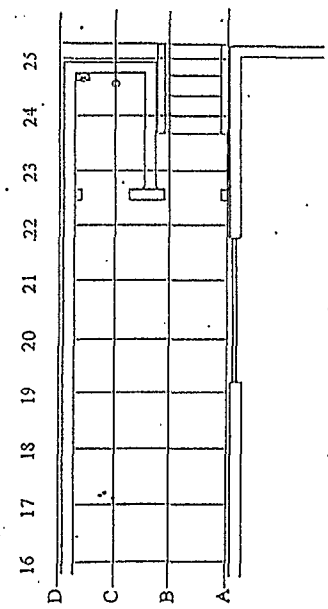
#4056

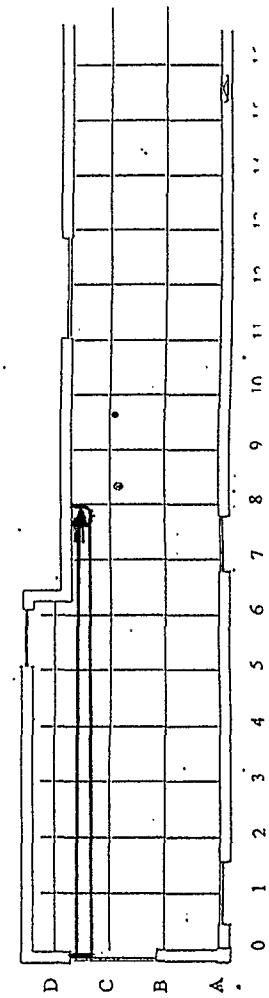
	α	Bβ
TOTAL BACKGROUND COUNTS	1	64
BACKGROUND COUNT TIME (MIN)	1 min.	1 min.
SAMPLE COUNT TIME (MIN)	1 min.	1 min.

Entered 9/10/97

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS α	GROSS SAMPLE COUNTS Bβ
1	D-0 AA	A B-14 L.HALL WALL (NORTH)	N	101
2		B		114
3		C		131
4		D	A	125
5		E		96
6	D-1 BB	A	3	84
7		B	3	92
8		C	1	118
9		D	2	122
10		E	4	134
11	D-2 AA	A		109
12		B		129
13		C		143
14		D		100
15		E		91
16	D-3 BB	A		75
17		B		152
18		C		143
19		D		121
20		E		138
21	D-4 AA	A		116
22		B		120
23		C		107
24		D		149
25		E		161
26	D-5 BB	A	N	101
27		B		135
28		C	A	115
29		D		69
30		E		87
31	C-6 AA	A		98
32		B		102
33		C		166
34		D		123
35		E		138
36	C-7 BB	A		117
37		B		94
38		C		85
39		D		106
40		E		129
	D-3 BB	E DUP.		149
	C-7 BB	E DUP.		116

BLDG 14
Large Hallway





William W. [signature]
9-9-97

Instrument Model & s/n: (Bβ) (C) 2221 W/44-9
Detector Model & s/n: (α) (F) ESP-1 W/43-5
Calibration Date:
Efficiency cpm / dpm based on Sr/90 (Bβ) = .20 / (α) = .12
Detector Area cm2 (Bβ) = 15.5 / (α) = 50

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

4057

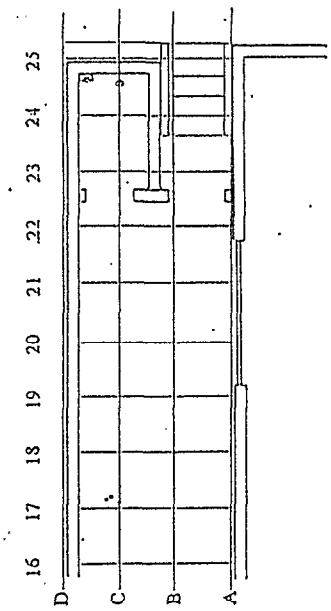
SAMPLE DATE: 9-9-97
LOCATION: PRAXAIR SITE
B-14 LARGE HALL
NORTH WALL VERIFICATION

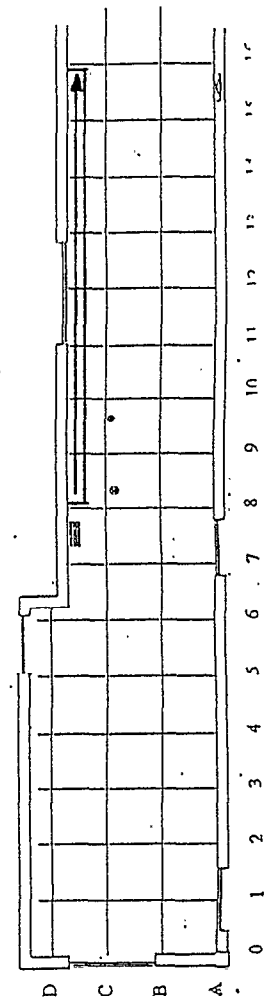
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

	α	βγ
TOTAL BACKGROUND COUNTS	1	64
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS α	GROSS SAMPLE COUNTS βγ
1	C-8 AA	A B-14 L. HALL WALL (NORTH)		143
2		B		132
3		C		99
4		D		106
5		E		122
6	C-9 BB	A		137
7		B		91
8		C		101
9		D		114
10		E		87
11	C-10 AA	A		84
12		B		73
13		C		68
14		D		107
15		E		133
16	C-11 BB	A		111
17		B	N	120
18		C		123
19		D	A	134
20		E		127
21	C-12 AA	A		118
22		B		141
23		C		137
24		D		121
25		E		114
26	C-13 BB	A		109
27		B		97
28		C		86
29		D		88
30		E		149
31	C-14 AA	A		131
32		B		124
33		C		102
34		D		90
35		E		84
36	C-15 BB	A	2	101
37		B	1	111
38		C	2	123
39		D	4	118
40		E	1	129
	C-11 BB	E DUP.		136
	C-15 BB	E DUP.		114

BLDG 14
Large Hallway





William W.
9-9-97

Instrument Model & s/n: (βγ) (C) L2221 N/44-9
Detector Model & s/n: (α) (F) ESP-1 N/43-5
Calibration Date:
Efficiency cpm / dpm based on Sr/90 (βγ) = .20 / (α) = .12
Detector Area cm2 (βγ) = 15.5 / (α) = 50

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

4058

SAMPLE DATE: 9-9-97
LOCATION: PRAXAIR SITE
B-14 LARGE HALL
NORTH WALL VERIFICATION

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

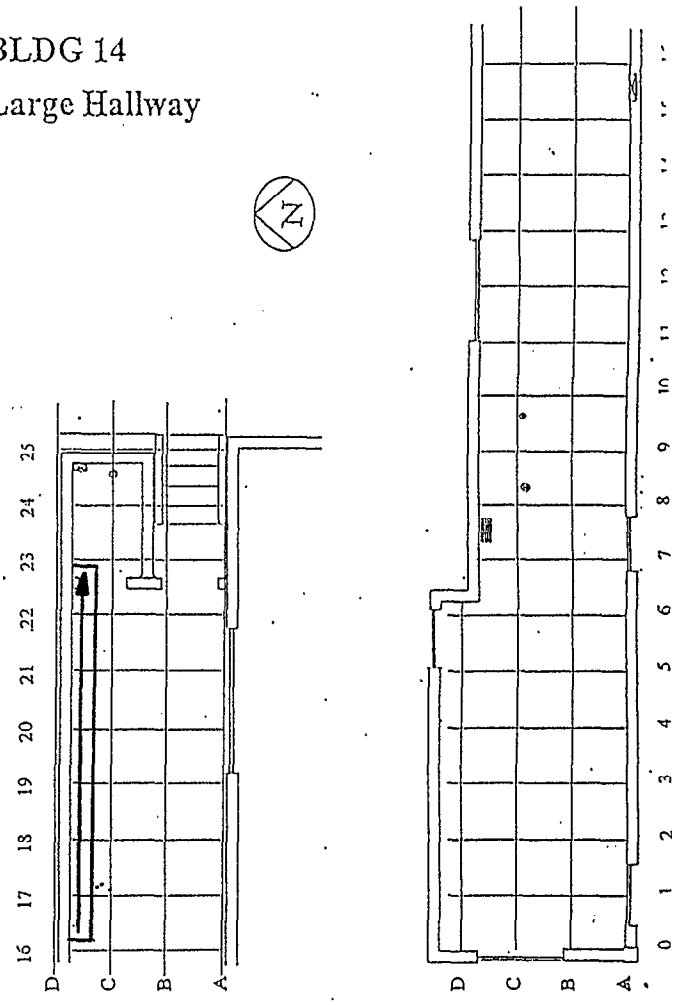
	α	βγ
TOTAL BACKGROUND COUNTS	1	64
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

Entered L.C.
9/10/97

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS α	GROSS SAMPLE COUNTS βγ
1	C-16AA	A B-14 L.HALL WALL (NORTH)		138
2		B		126
3		C		110
4		D		94
5		E		87
6	C-17BB	A		80
7		B		91
8		C		109
9		D	N	76
10		E	A	119
11	C-18AA	A		146
12		B		96
13		C		134
14		D		129
15		E		151
16	C-19BB	A		143
17		B		109
18		C		88
19		D		79
20		E		136
21	C-20AA	A	4	141
22		B	6	161
23		C	3	127
24		D	1	111
25		E	2	75
26	C-21BB	A		87
27		B		92
28		C		116
29		D		133
30		E	N	140
31	C-22AA	A	A	119
32		B		146
33		C		132
34		D		107
35		E		104
36				
37				
38		N		
39		A		
40				

C-19 BB E DUP. 122

BLDG 14
Large Hallway



William W
9-9-97

Instrument Model & s/n:	(βγ) (C) L2221 w/44-9
Detector Model & s/n:	(α) (F) ESP-1 w/43-5
Calibration Date:	
Efficiency	cpm / dpm based on Sr/90 (βγ) = .20 / (α) = .12
Detector Area	cm2 (βγ) = 15.5 / (α) = 50

ENCL-C2.XLS

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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

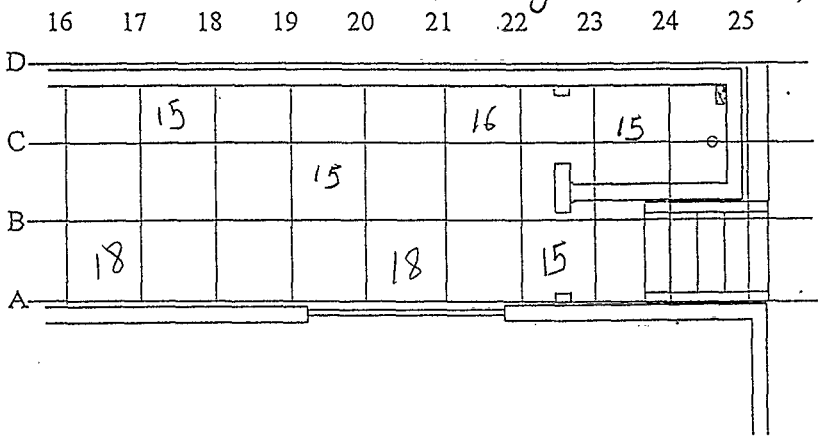
4059

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

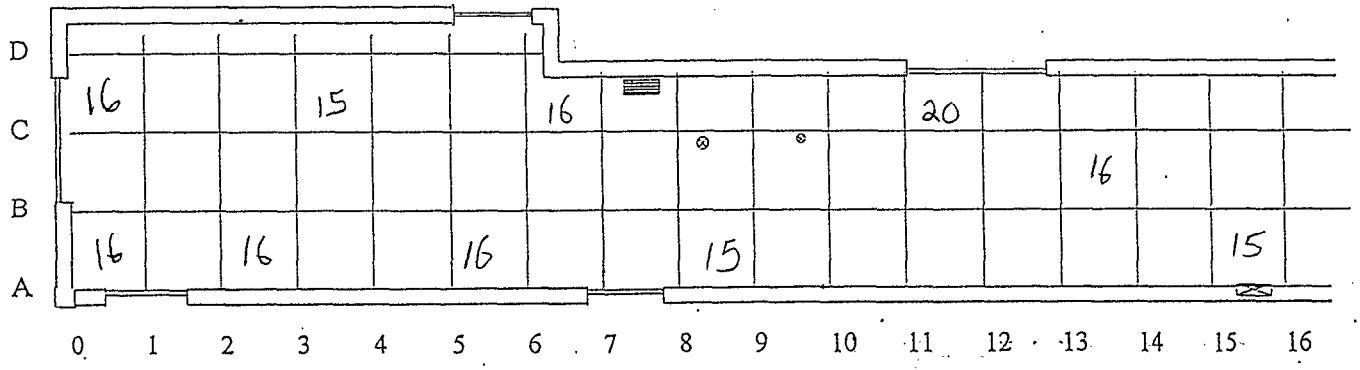
Date / Time 9-12-97 @ 0300	Tech M. Zeigs	Instruments / sn Ludlum M-19 "G"
Location / Purpose Large Hall, Radiation 4R Survey		Survey # / RWP # N/A

All Readings are Fm 4R/HR @ 1 Meter.



BLDG 14

Large Hallway



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM

Comments:	Scaler S/N		BKD	EFF	MDA
	CT #	Alpha:			
	Tech	Beta:			

Review

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

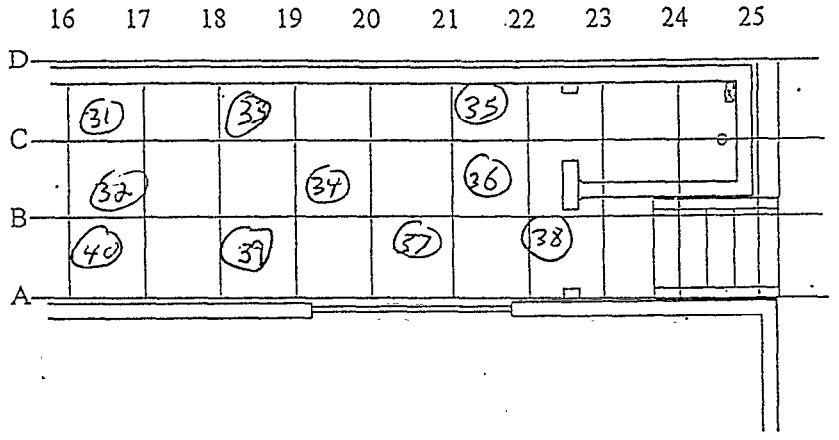
IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

#4185

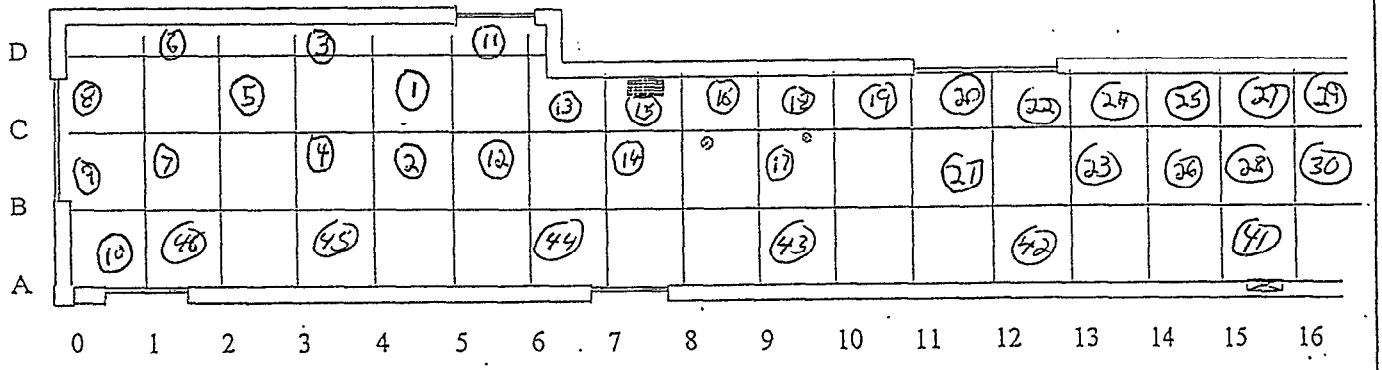
Radiological Survey Form p. 1 of 2

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

Date / Time 3-10-97 @ 1015	Tech M. Sige	Instruments / sn Ludlum 2221 B	BKD 60 cpm
Location / Purpose Large Hall way: Under floor		Survey # 057 EP 11/10/98	RWP # 01
Title: FRBE Release of Control Zone.			



BLDG 14
Large Hallway



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
1	S	Under Floor	0	-0.6	40	-78.6	8	S	Under Floor	0	-0.6	66	14.3
2	S	Tile IN	0	-0.6	71	32.1	9	S	Tile on	0	-0.6	70	28.6
3	S	Large Hall way.	0	-0.6	71	32.1	10	S	Floor.	0	-0.6	53	-32.1
4	S	on floor.	0	-0.6	61	-3.6	11	S		1	2.4	60	-7.1
5	S		0	-0.6	51	-39.3	12	S		0	-0.6	58	-14.3
6	S		0	-0.6	67	17.9	13	S		0	-0.6	58	-14.3
7	S		0	-0.6	74	42.9	14	S		0	-0.6	41	-75

Comments: Large area smears Taken IN and outside Controle Zone. No detectable activity. SEE CONTINUATION SHEET.	Scaler S/N Ludlum 2929 I	BKD	EFF	MDA
	CT = 1 min. Alpha:	.2	-33	
	Tech M. Sige Beta:	62	-28	

Review

ION TECHNOLOGY, INC.

Bldg. 14, Praxair Site

RADIOLOGICAL SURVEY CONTINUATION FORM

4185
p. 2 of 2

Date / Time: 3-10-97 @ 11 00	Tech.: M. Trigo	Instruments/sn: Ludlum 2221 B
Location / Purpose: LARGE Hall way. under Floor Tile. For Release of a C.S.C.A.		Survey No.: 057 RWP No.: 01

Loc.	Type	Description	Gross	α DPM	Gross	β DPM	Loc.	Type	Description	Gross	α DPM	Gross	β DPM
15	S	UNDER Floor tile	0	-0.6	81	67.8	39	S	(outside) Chem	0	-0.6	71	32.1
16	S	on CONCRETE floor.	0	-0.6	80	64.2	40	S	Zone.	0	-0.6	63	3.6
17	S		0	-0.6	63	3.6	41	S		0	-0.6	68	21.4
18	S		0	-0.6	68	21.4	42	S		0	-0.6	70	28.6
19	S		0	-0.6	57	-17.9	43	S		0	-0.6	71	32.1
20	S		0	-0.6	63	3.6	44	S		0	-0.6	74	42.9
21	S		0	-0.6	71	32.1	45	S		0	-0.6	62	0
22	S		0	-0.6	75	46.4	46	S		0	-0.6	58	-14.3
23	S		0	-0.6	75	46.4							
24	S		0	-0.6	55	-25							
25	S		0	-0.6	57	-17.9							
26	S		0	-0.6	56	-21.4							
27	S		1	2.4	54	-28.6							
28	S		0	-0.6	69	25							
29	S		0	-0.6	62	0							
30	S		0	-0.6	61	-3.6							
31	S		0	-0.6	55	-25							
32	S		0	-0.6	47	-53.6							
33	S		0	-0.6	53	-32.1							
34	S		0	-0.6	63	3.6							
35	S		0	-0.6	57	-17.9							
36	S		0	-0.6	71	32.1							
37	S		0	-0.6	71	32.1							
38	S		0	-0.6	63	3.6							

Comments:

REVIEW