APPENDIX C-11

VERIFICATION SURVEYS FOR AREA 14 SOUTH

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

RADIOLOGICAL SURVEY

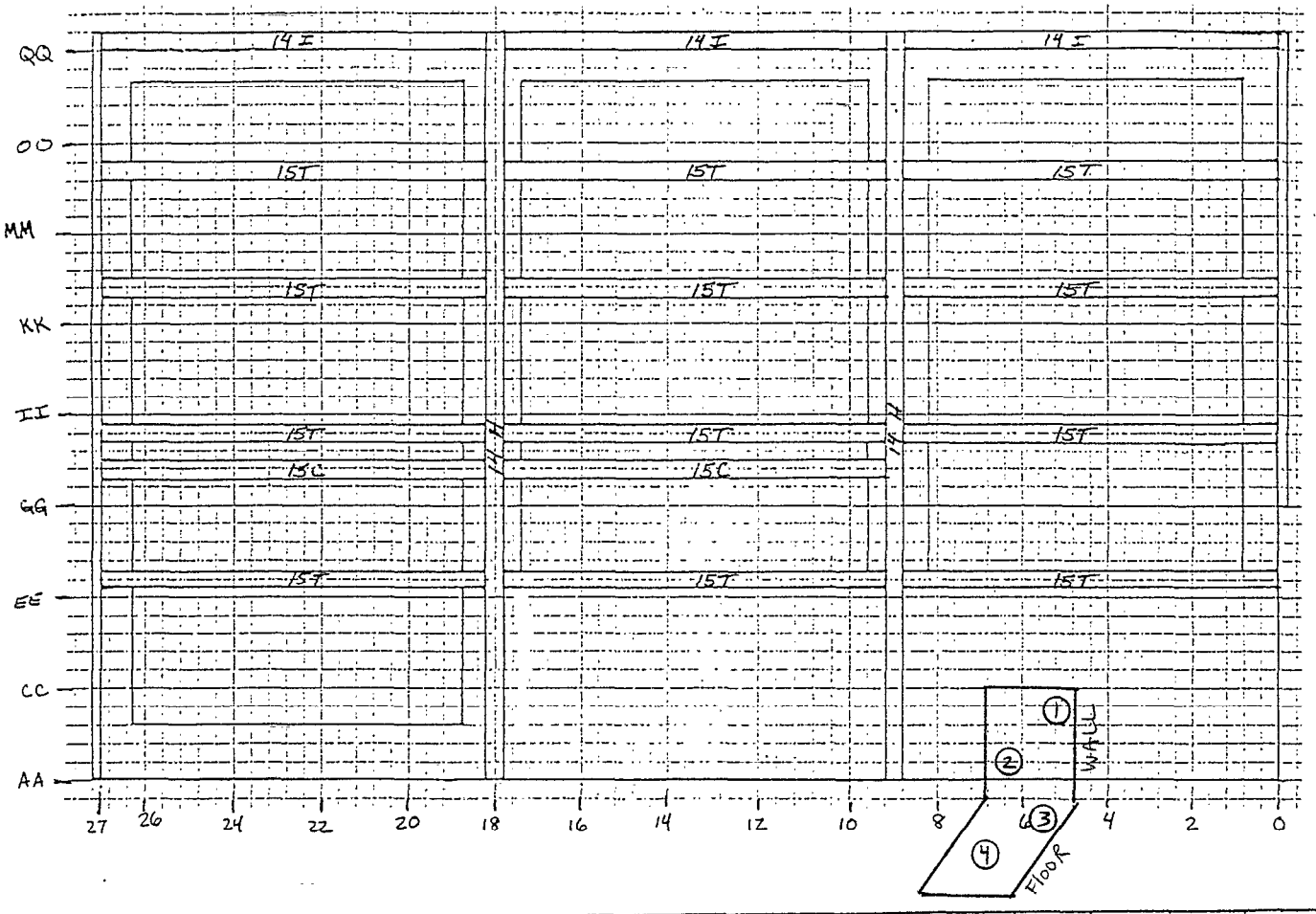
Project: PRAXAIR
Area: 14 SOUTH

Date/Time 11/5/97/0230	Tech SMALLRIDGE	Instrument/sn L-177/29243
Location/Purpose BLDG 14/AREA 14 South ~~Release~~ Survey	Survey # 982	RWP# 02
Verify before new Elect Panel installed		

Wall

SOUTH WALL

I = I BEAM → I C = C BEAM → [
T = T BEAM → T H = H BEAM → H



Loc	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
AA5	S	Release Survey	2	~~84~~ ~~45.7~~	60	-7							
AA6	S		0	-.5	54	-28							
A5	S		1	2.5	63	3.5							
A6	S		0	-.5	57	-17							

Types = smearable, dp = direct probe

Comments:

Scalar S/N 91234	BKD	EFF	MDA
CT=1/MIN DATE 11/5/97 α:	42/240 = .18	.32	15
Tech SMALLRIDGE β:	14760/240 62	.28	140

Review:

Encl 3.3 to HSP 210

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

14SW

Survey Date: 11/6/97
Location: B-14 A-14 South (South WALL)
Description: VERIFICATION

	alpha	beta-gamma
Instrument Model & s/n:	ESP 103027	2221 / 89648
Detector Model & s/n:	43-5 / 088097	44-9 / 86314
Calibration Date:	DUE 2/98	DUE 2/98
Efficiency [Tc99] [SY90] [Th230]	.13	.19
Detector Area (CM2)	50	15.5

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey # 1028

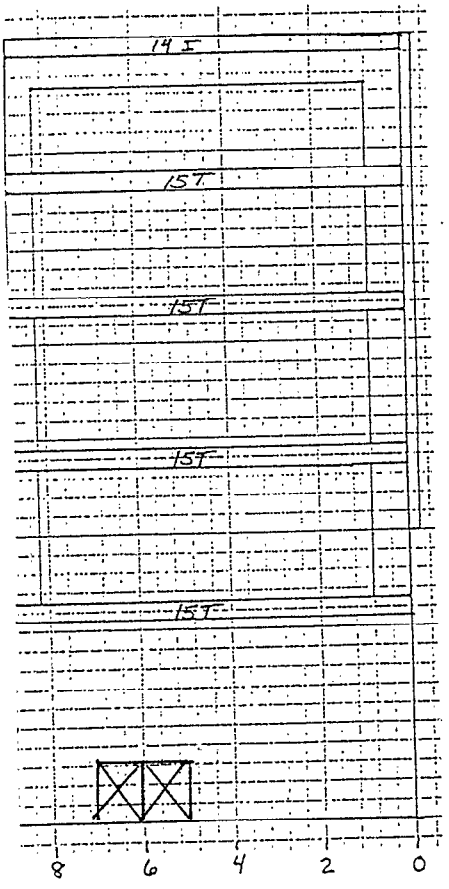
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	0	71
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

RP Technician: SMALLRIDGE

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS Per MIN
A	AA-5	Verification (WALL)	1	122
B			2	87
C			2	118
D			3	100
E			1	123
A	AA-6		N/A	123
B				98
C				111
D				114
E				98

Insert area map or sketch below

South WALL



REVIEW:

SURVEY01.XLS

(scaler measurement)

Survey #1043

Survey Date: 11-12-97
Location: AREA 14 South (South WALL)
Description: Verification

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1 #03027	L-2221 #89048
Detector Model & s/n:	43-5 #038097	44-9 #048272
Calibration Date:	2-10-98	12-27-97
Efficiency (Tc99) (SY90) (Th230)	.12	.20
Detector Area (CM2)	50 cm²	15.5 cm²

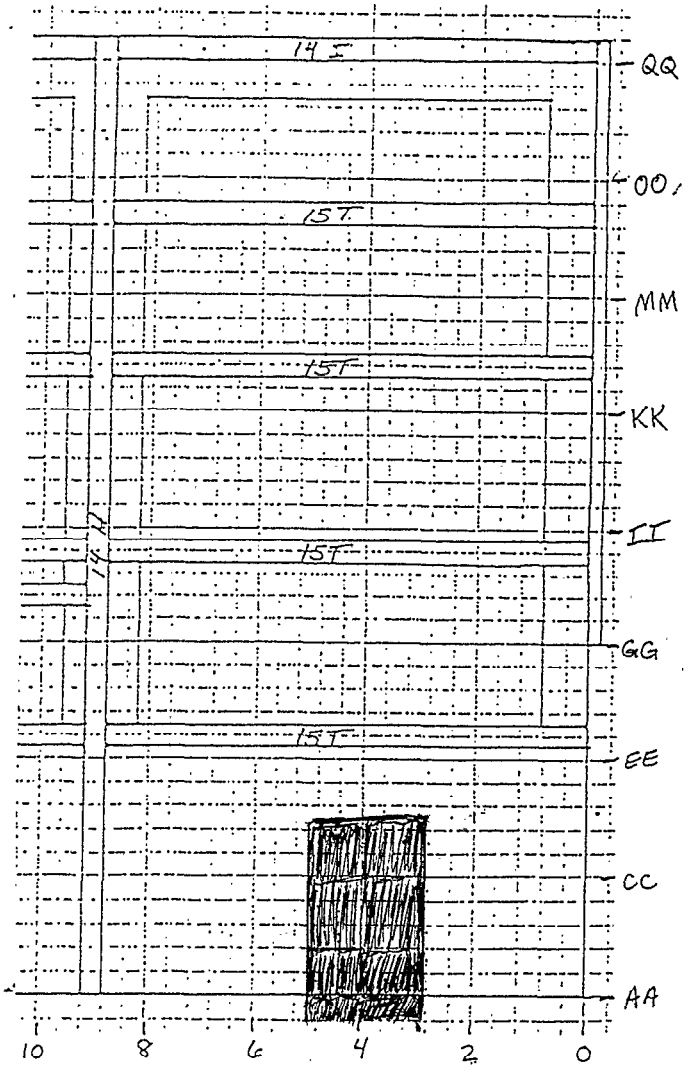
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	0	61
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: M. Zigo

Insert area map or sketch below

AREA 14 SOUTH
SOUTH WALL

GRID	DESCRIPTION		alpha GROSS COUNTS	beta-gamma GROSS COUNTS
	WALL VERIFICATION			
AA-3	WALL	A	1	140
		B	0	124
		C	2	129
		D	2	133
		E	0	153
AA-4	WALL	A		105
		B		129
		C		138
		D		127
		E		116
BB-3	WALL	A		116
		B		127
		C		132
		D		119
		E		122
BB-4	WALL	A		126
		B		119
		C		107
		D		129
		E		141
CC-3	WALL	A		119
		B		114
		C		117
		D		121
		E		123
CC-4	WALL	A		109
		B		114
		C		143
		D		127
		E		141
	DUP.			
BB-4	WALL	E		132



I = I BEAM → I
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H = H BEAM → H

NOTE: [A B C E D] DENOTES PROBE LOCATION

REVIEW

SURVEY01.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

#1056

ANALYSIS DATE: 11-18-97
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14S "Verification Survey" DOOR FRAME 10X10' Door

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)
1	CC/4	SOUTH WALL DOORWAY	A	0				A			
	CC/4		BG	64				BG			
2	CC/3		A	0				A			
	CC/3		BG	56				BG			
3	BB/4		A	2				A			
	BB/4		BG	59				BG			
4	BB/3		A	1				A			
	BB/3		BG	58				BG			
5	AA/4		A	0				A			
	AA/4		BG	59				BG			
6	AA/3		A	0				A			
	AA/3		BG	58				BG			
			A					A			
			BG					BG			
			A					A			
			BG					BG			
			A					A			
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			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):	0.35	cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.28	cpm / dpm based on Th230

D. Pitman

Background	Counts	Ct Time (min)	Rb	Date
Alpha	176	770	0.23	11-18-97
Beta-Gamma	45062	770	59	11-18-97

REVIEW

SWIPE.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 1134

VERIFICATION

Survey Date: 1-8-98
Location: B14 AREA 14 SOUTH WEST
Description: LOWER WEST WALL GRIDS A → F

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/03027	12221/86314
Detector Model & s/n:	143-5/088097	144-9/48266
Calibration Date:	2-10-97	12-3-97
Efficiency [Tc99] [SY90] [Th230]	0.18	0.21
Detector Area (CM2)	50	15.5

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	1	46
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

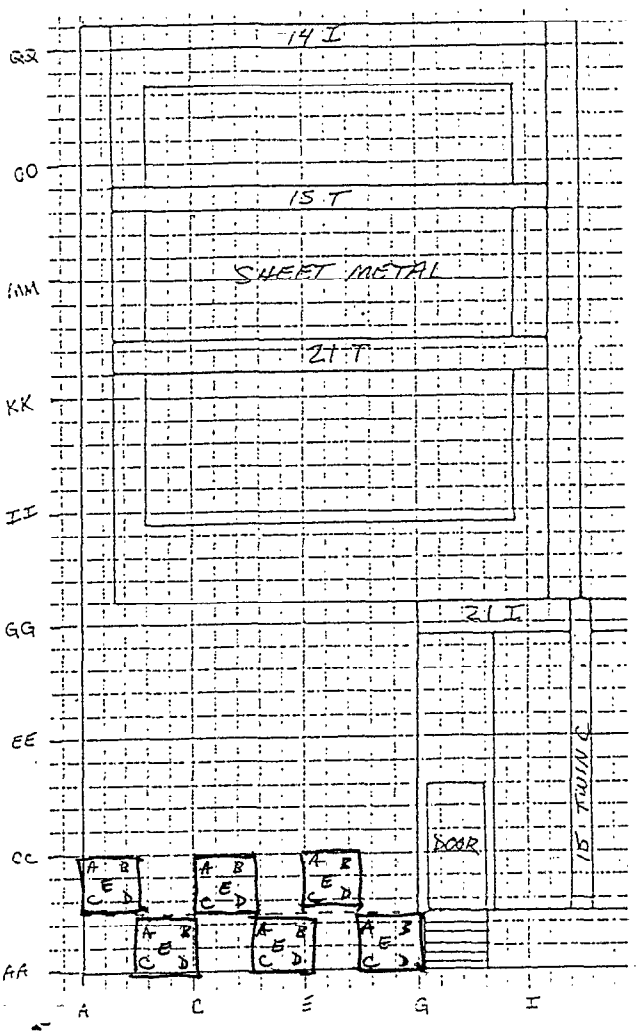
RP Technician: C. HALLAM / [signature]

→ ALL "0"

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
	A 0-BB			
1	A/BB	A-WALL		84
2		B		84
3		C		79
4		D		72
5		E		105
6	B/AA	A WALL		51
7		B		61
8		C		59
9		D		58
10		E		78
11	C/BB	A WALL		82
12		B		81
13		C		70
14		D		86
15		E		77
16	D/AA	A WALL	0	42
17		B	0	63
18		C	2	44
19		D	5	76
20		E	1	77
21	D/AA	E WALL - DUPLICATE	4	74
22	E/BB	A WALL		121
23		B		106
24		C		59
25		D		107
26		E		110
27	F/AA	A WALL		41
28		B		89
29		C		86
30		D		90
31		E		60
32	F/AA	E WALL - DUPLICATE		71

Insert area map or sketch below

AREA 14 SOUTH WEST WALL



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REVIEW [signature]

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 1149

Survey Date: 1/14/98 2100HRS
Location: PRAXAIR SITE B14 ~~H4~~ 14S WEST WALL STAIRCASE
Description: VERIFICATION SURVEY

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1 #93027	2221 # 86308
Detector Model, & s/n:	43-5 #088097	44-9 # 18267
Calibration Date:	2-10-97	2-7-97
Efficiency [Tc99] [SY90] [Th230]	.12	.20
Detector Area (CM2)	50	15.5

RP Technician: [signature]

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

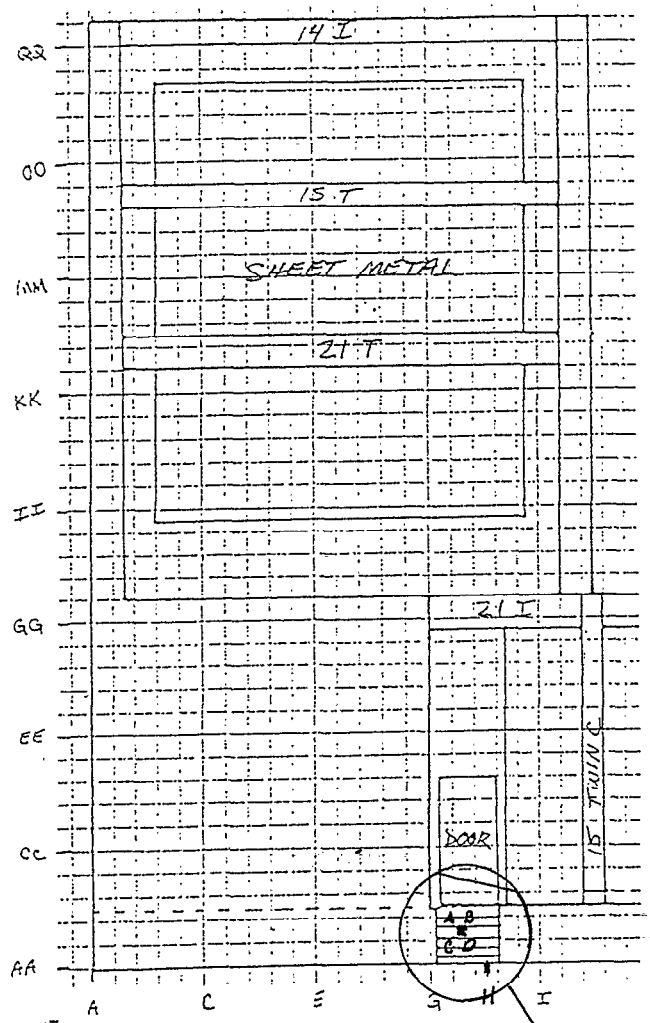
	α alpha	β/γ beta-gamma
TOTAL BACKGROUND COUNTS	1 CPM	53 CPM
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

#	GRID	DESCRIPTION	α alpha GROSS COUNTS	β/γ beta-gamma GROSS COUNTS
1	G-AA	B14 14S W. WALL STAIRS	1	86
2	↓	↓	1	109.
3			1	132
4			2	24
5			1	91

N/A

Insert area map or sketch below

AREA 14 SOUTH WEST WALL



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AREA OF STAIR CASE SURVEY

SURVEY01.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

1149-a

ANALYSIS DATE: 1-14-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14S WESTWALL STAIR CASE 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)
1	B-AA	B14 14S W. WALL STAIRS	A	1				A			
1	↓	↓	BG	63				BG			
			A					A			
			BG					BG			
			A					A			
			BG					BG			
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			A					A			
			BG					BG			

N/A

Instrument Model & s/n: L2929 #91234	M.2929 s/n 91234	
Detector Model & s/n: 10-43-1 #085270	M.43-10-1 s/n 085270	
Calibration Date: 2-7-97	2/7/97	
Efficiency BG (Beta/Gamma): .28	7715/9705	cpm / dpm based on S/Y90
Efficiency A (Alpha): .34	1071/3190	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	184	800	.23	1-14-98
Beta-Gamma	48147	800	60	1-14-98

SWIPE.XLS

14SW VERIFY (scaler measurement) #1235

Survey Date: 11-12-97
Location: AREA - 14 south SOUTH WALL — Prior to Ramp Installation for EQUIP
Description: VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
Instrument Model & s/n:		44B4gm 2221 89648
Detector Model & s/n:		44-9/48272
Calibration Date:		12-30-97
Efficiency (Tc99) (SY90) (Th230)		0.18
Detector Area (CM2)		~~150~~ 15

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS		38
BACKGROUND COUNT TIME (MIN)		1
SAMPLE COUNT TIME (MIN)		1

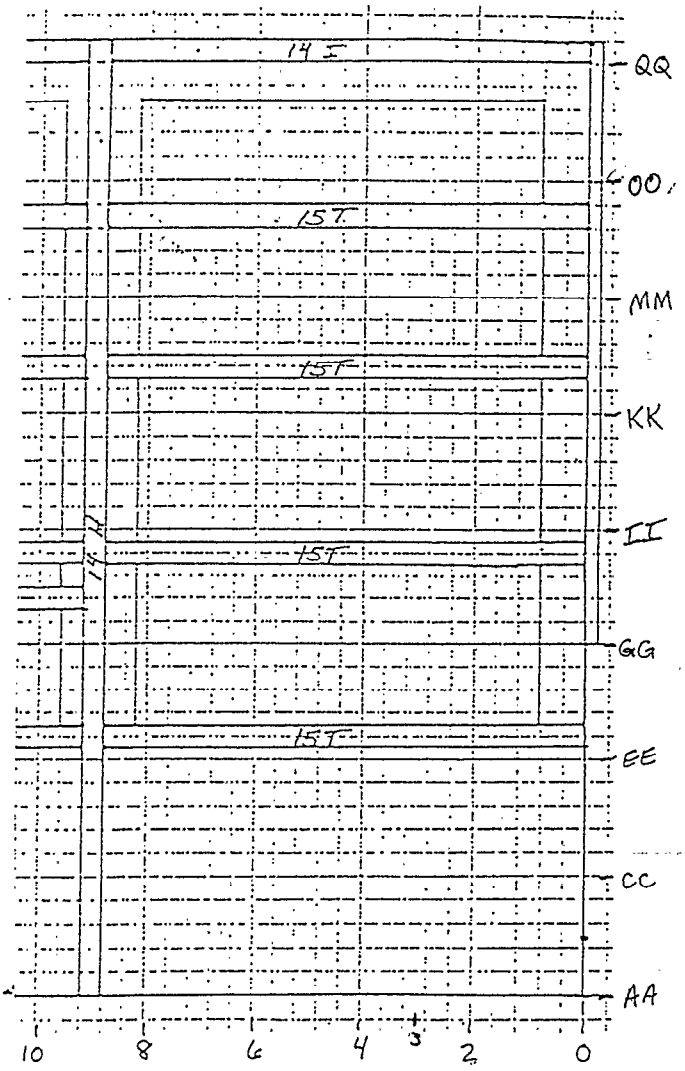
RP Technician: D. P. Trivas

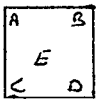
Insert area map or sketch below

GRID	DESCRIPTION		alpha GROSS COUNTS	beta-gamma GROSS COUNTS
-AA/3	Footing	A		48
		B		76
		C		55
		D		53
		E		68
-AA/2	Footing	A		68
		B		54
		C		52
		D		63
		E		52

14SW Foundation wall verification so gravel ramp could be installed for access

AREA 14 SOUTH SOUTH WALL





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SURVEY01.XLS

REVIEW

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

#1236

SMEAR MEASUREMENT ANALYSIS REPORT

14SW

SAMPLE DATE: 2-20-98
ANALYSIS DATE:
LOCATION: BLDG 14 AREA 14 SOUTH PRAXAIR

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	-AA/3	FOOTING	A	1	1						
1			BG	58	1						
2	-AA/2	FOOTING	A	0	1						
2			BG	53	1						
3			A		1						
3			BG		1						
4			A		1						
4			BG		1						
5			A		1						
5			BG		1						
6			A		1						
6			BG		1						
7			A		1						
7			BG		1						
8			A		1						
8			BG		1						
9			A		1						
9			BG		1						
10			A		1						
10			BG		1						
11			A		1						
11			BG		1						
12			A		1						
12			BG		1						
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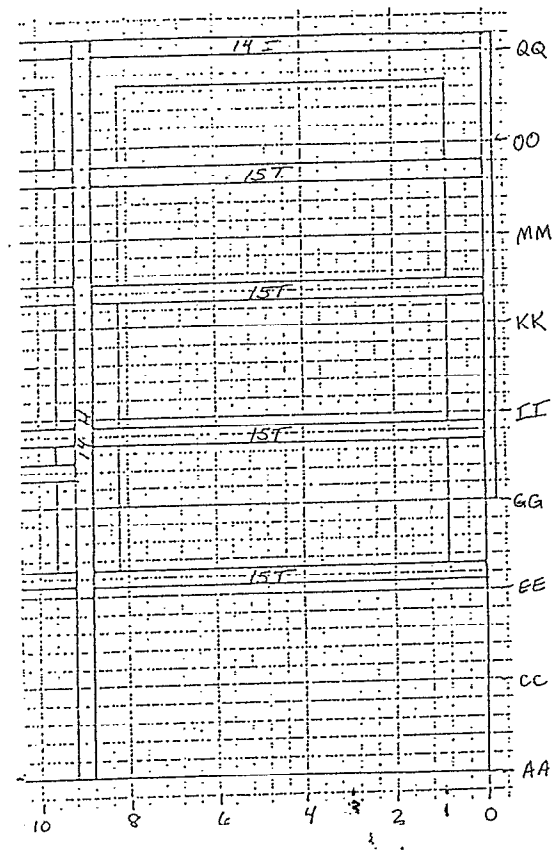
18			BG		1						
19			A		1						
19			BG		1						
20			A		1						
20			BG		1						

N

14 SOUTH
SOUTH WALL



Instrument Model & s/n:	M.2929 s/n 30718
Detector Model & s/n:	M.43-10-1 s/n 47713
Calibration Date:	10-9-97
Efficiency BG (Beta/Gamma): 0.28	cpm / dpm based on
Efficiency A (Alpha): 0.35	cpm / dpm based on

Background	Counts	Ct Time (min)	Rb	Date
Alpha	354/600 = 0.44	1		2-24-98
Beta-Gamma	4553/600 = 57	1		

SMEAR_AB.XLS

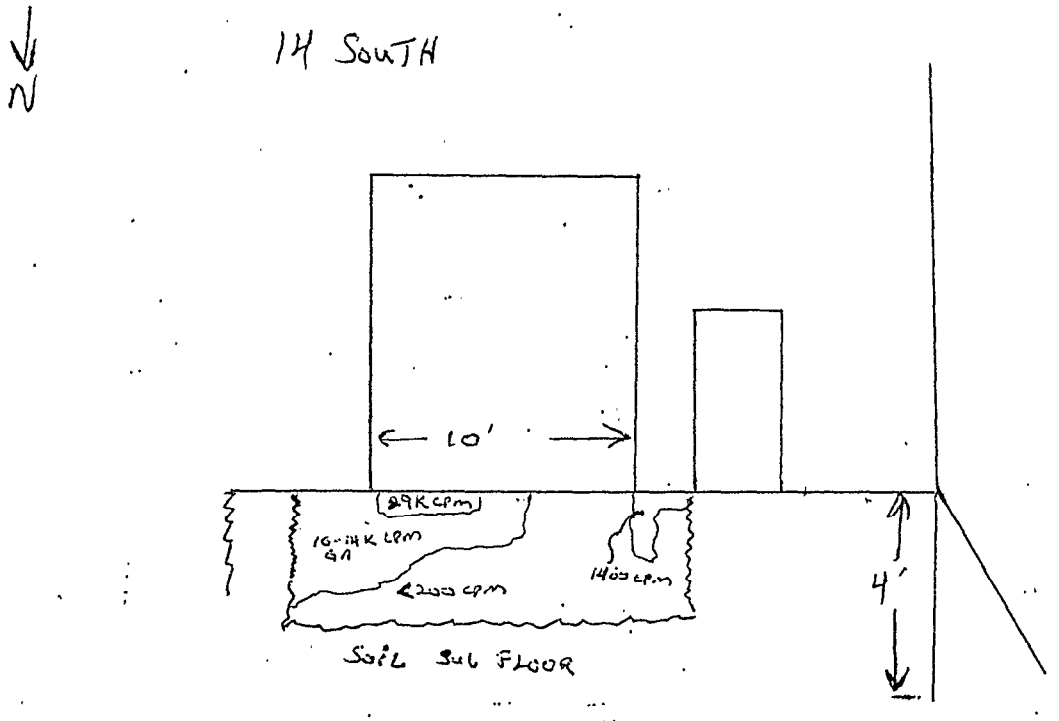
REVIEW

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

RADIOLOGICAL SURVEY

Project: PRAXAIR
Area: BLDG 14

Date/Time 2-20-98	Tech D. PITMAN	Instrument / sn 2221/89648	
Location/ Purpose 14 SOUTH/WEST Remediation		Survey # 1237	RWP# 02



FOOTING - DIRECT PROBE
PRE DECON SCAN

NOTE: ENTIRE DECON SURFACE < 200 CPM AFTER DECON

Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm

Type:s = smearable, dp = direct probe	Scalar S/N	BKD	EFF	MDA
Comments:	CT= DATE α:			
	Tech β:			

Review:

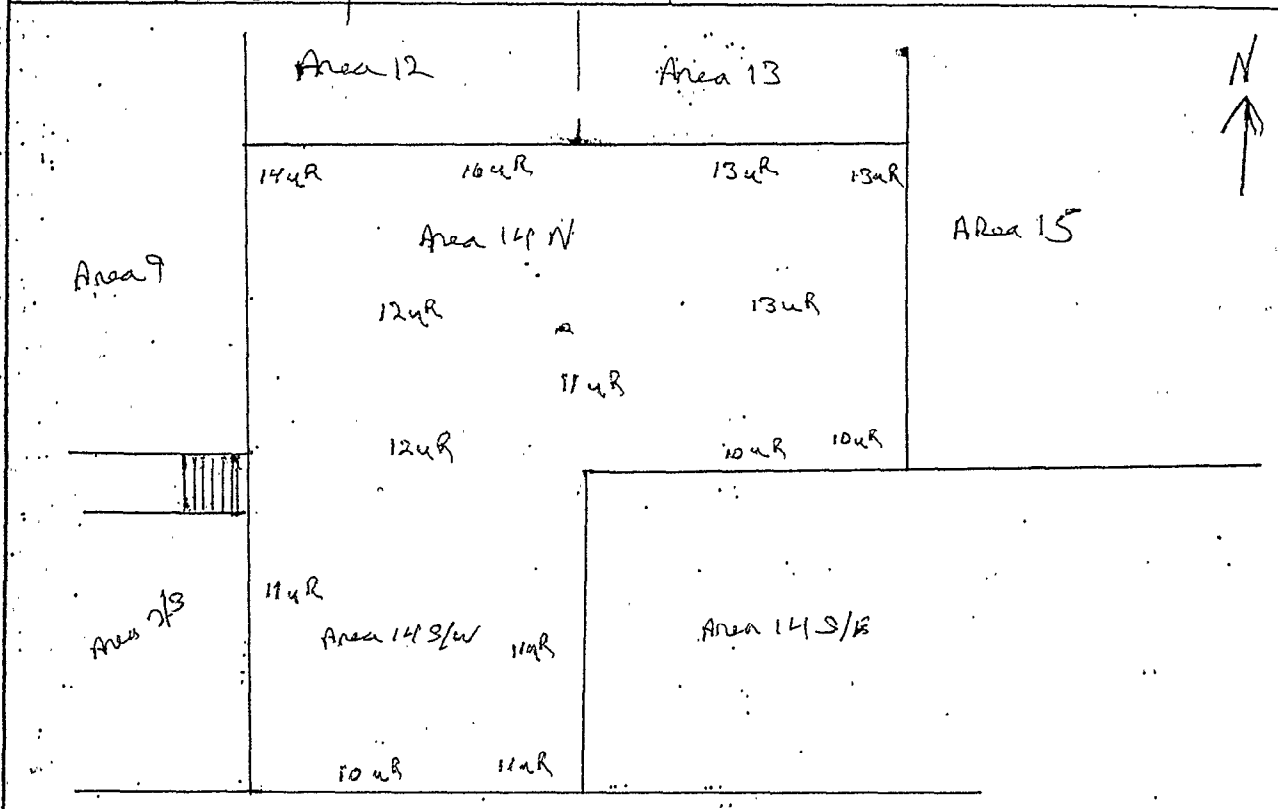
Encl 3.3 to HSP 210

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

RADIOLOGICAL SURVEY

Project: PRAXAIR
Area: BLDG 14

Date/Time 8-12-98	Tech D. PITMAN	Instrument / sn ~~238~~ M19 109994	
Location/ Purpose Area 14N, 14S-W RAD survey		Survey # 1265	RWP# N/A



NOTE ALL Dose RATES Recorded IN uR/hr @ waist Level And Represent General Area Readings.

Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm

Type:s = smearable, dp = direct probe	Scalar S/N	BKD	EFF	MDA
Comments:	CT= DATE α:			
	Tech β:			

Review: _____

Encl 3.3 to HSP 210

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

#1266

14SW

Survey Date: 3-5-98
Location: Bldg 14, Area 14 South
Description: Verification

POST IVC VERIFICATION TO COMPLETE 14N/SW

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

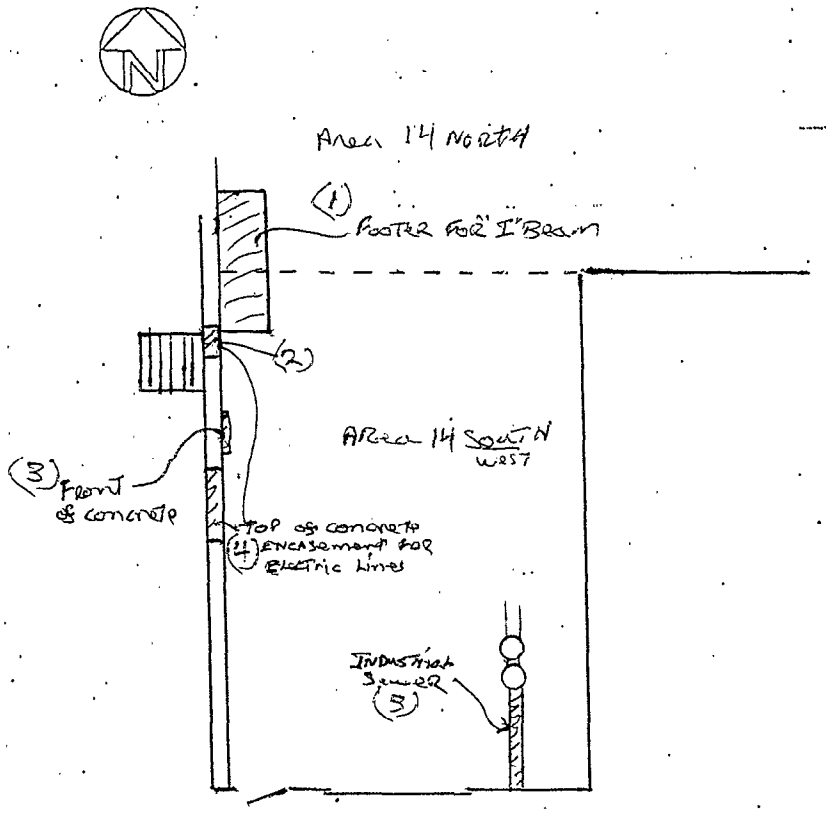
	alpha	beta-gamma
Instrument Model & s/n:	581-1/3027	2221/86308
Detector Model & s/n:	43-5/88097	44-9/37683
Calibration Date:	1-30-98	1-29-98
Efficiency [Tc99] [SY90] [Th230]	0.096	0.29
Detector Area (CM2)	~~0.096~~ 50	~~0.29~~ 16.5

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	1	53
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: D. Pitman

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	1	I" Beam footer	3	55
B			0	62
C			1	75
D			1	68
E			2	59
A	2	Top of concrete		79
B				85
C				77
D				76
E				90
A	3	Front of concrete		118
B				99
C				120
D				115
E				110
A	4	Top of concrete		48
B				56
C				38
D				95
E				80
A	5	Industr. Sewer		104
B				95
C				108
D				107
E				115

Insert area map or sketch below



Review

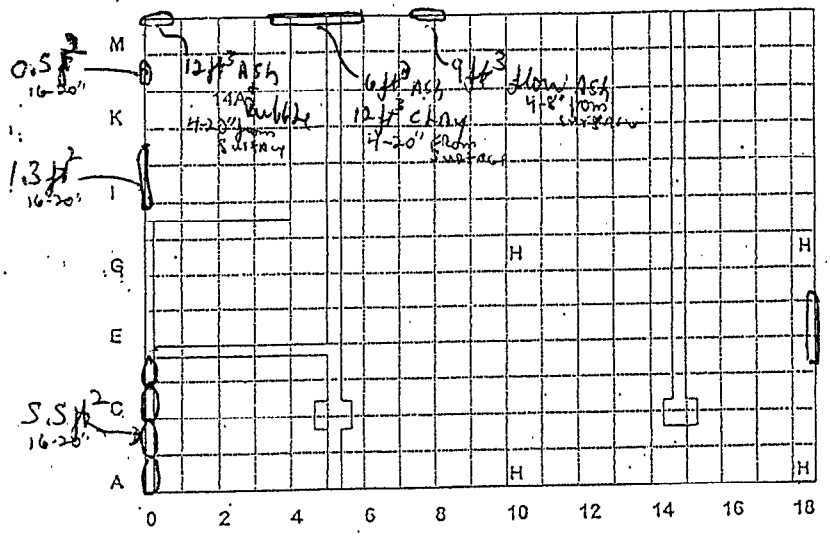
ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR
Area: BLDG 14

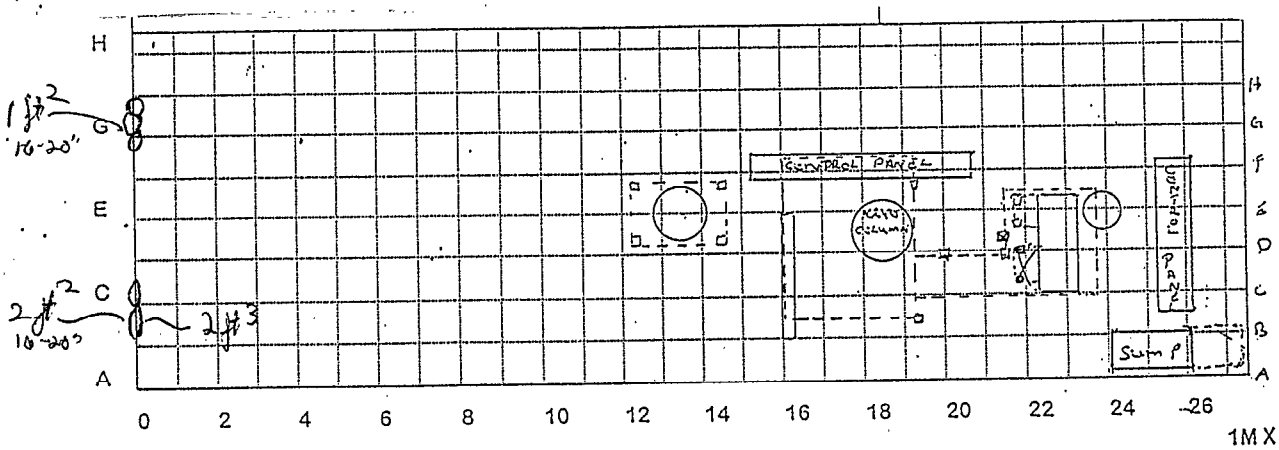
Date/Time 3-5-98	Tech D. PITMAN	Instrument / sn 2221/89648	
Location/ Purpose Area 14 NORTH, 14 SOUTH-WEST Verification		Survey # 1267	RWP# 02

AREA 14 NORTH



FLOOR-SUBSURFACE Identification of contaminated areas AFTER Remediation Effort...

AREA 14 SOUTH



1M X 1M GRID

Loc.	Type	Description	Gross	α dpm	Gross	β dpm
AA/E15	DP	14N CONCRETE UNDER WALL			2-300	600-985
AA/M9		BLACK FILL			2-1600	600-5985
AA/M3		BLACK FILL/CLAY			300-4K	965-15215
AA/M0		CONCRETE/BUBBLE			400-3100	1369-11754
AA/L0		CONCRETE FOOTING			2-300	600-985
AA/I0		↓			550-1500	1177-5600
AA/D0		CONCRETE FOOTING + CONDUIT			900-5000	3292-19062
AA/C0		CONCRETE + CONDUIT			900-3100	3292-17754
AA/B0		↓			600-2000	2138-7523

Loc	Type	Description	Gross	α dpm	Gross	β dpm
AA/A0	DP	14N CONCRETE + CONDUIT			6-1400	2138-5215
AA/B0	DP	14S CONCRETE, SOIL + CONDUIT			2-300	600-985
AA/C0	DP	14S CONCRETE/SOIL			3-500	985-1754
AA/G0	DP	14S KNEE WALL BY STEPS			400	1369
AA/G0	DP	14S KNEE WALL/FOOT INTERSECT			600	2138
AA/G0	DP	14S FOOTING FACE			250	792

Type:s = smearable, dp = direct probe

Comments:

Scalar S/N 89648	BKD	EFF	MDA	
CT= 9 DATE 3-5-98 α:	44	026	1.29	
Tech D. PITMAN β:				

Review:

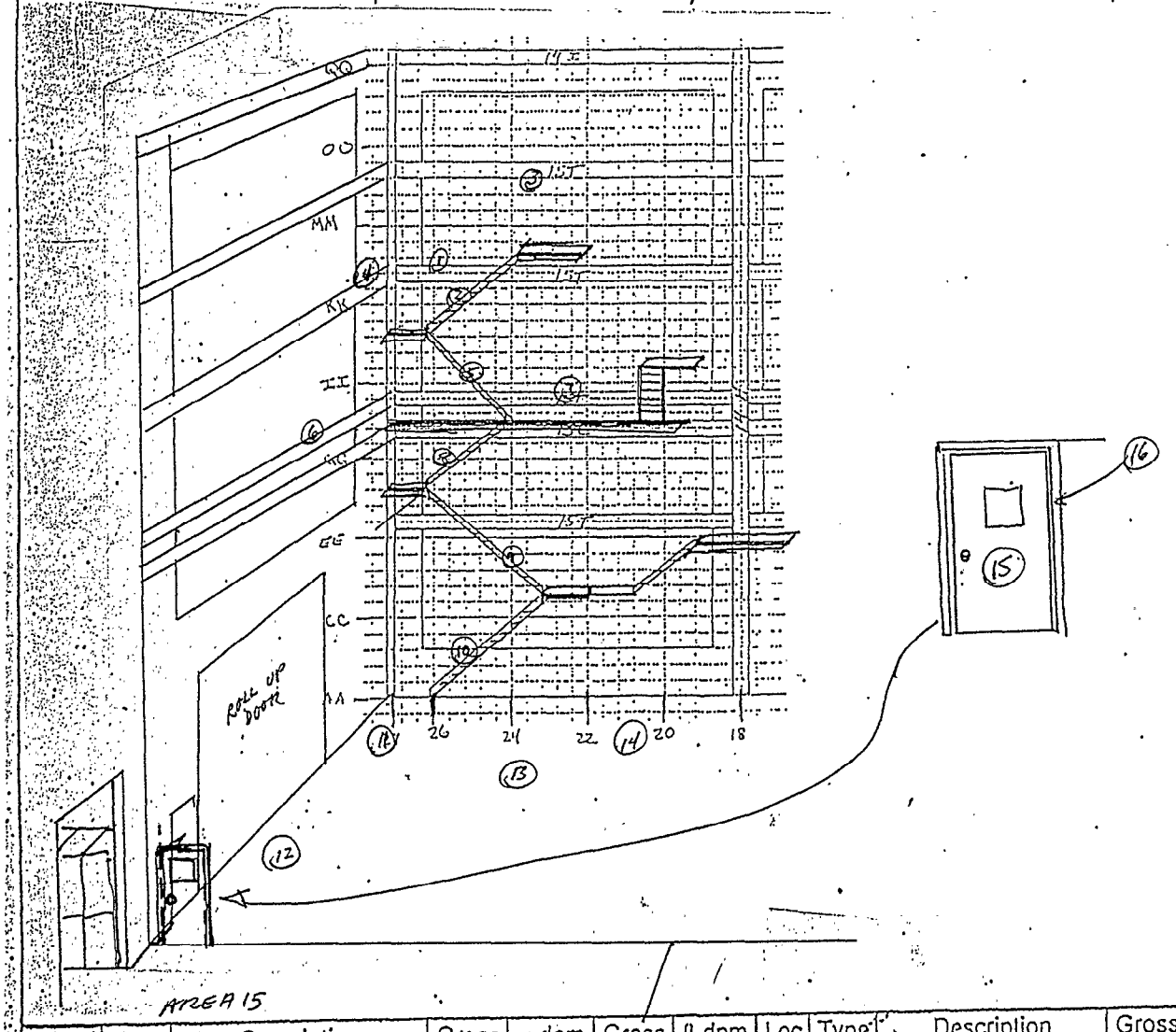
Encl 3.3 to HSP 210

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

RADIOLOGICAL SURVEY

Project: PRAXAIR 814
Area: 14 SOUTHEAST

Date/Time: 3-17-98/0300	Tech: CHAHAN/CHAN	Instrument / sn: 3-17-98 L2221/89648 L44-9/048272 EFF = 0.20 cpm/dpm BKD = 42 cpm
Location/ Purpose: AREA 14 SOUTHEAST/POST WORK SURVEY		Survey # 1268 RWP# 04
AFTER OVERHEAD VACUUMING		N/A



AREA 15

Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β.
1	S	CHANNEL	1	1	60	13	10	S	STEP	3	7	49	-2
2		STEP	1	1	60	13	11		FLOOR	0	-2	41	-2
3		3-17-98 CHANNEL LEDGE	2	4	50	-20	12			1	1	53	-1
4		CHANNEL	0	-2	51	-17	13	S		1	1	43	-1
5		STEP	1	1	59	10	14			1	1	64	2
6		CHANNEL	0	-2	66	33	15	DP	14/15 DOOR *			30-60	<
7			2	4	39	-57	16		14/15 DOOR FRAME *			30-60	<
8		STEP	0	-2	54	-7							
9			1	1	60	13							

Type: s = smearable, dp = direct probe, ○ = ~~SMEAR~~ SURVEY LOCATION

Comments: * 100% DIRECT SCAN OF DOOR/FRAME (ACCESSIBLE AREAS)

Scalar S/N L2929/50718	BKD	EFF	MDA
CT=1 MIN DATE 3/17/98 α:	0.55	0.33	19
Tech: CHAHAN/CHAN β:	56	0.30	125

Review:

HSP 210

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 1306

VERIFICATION

Survey Date: 4-9-98
Location: B14 A145/W
Description: - LOWER CRANE ASSEMBLY

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1 / 03028	LZ221 / 86313
Detector Model & s/n:	43-65 / 089812	LLL-9 / 048267
Calibration Date:	8-22-97	12-29-97
Efficiency (Tc99) (SY90) (Th230)	0.148	0.26
Detector Area (CM2)		15.5

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	3	42
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: C. HAILAM/

a b c d e = SURVEY GRID PATTERN ↑N

Insert area map or sketch below

AREA 14 SOUTH-LOWER CRANE ASSY

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
1	C3 a	CRANE BEAM-TOP		49
2	b	CRANE BEAM BOTTOM LEDGE		37
3	c	↓		39
4	d	CRANE BEAM - RAIL		62
5	e	EAST VERTICAL		36
6	E3 a	CRANE BEAM-TOP		35
7	b	CRANE BEAM-BOTTOM LEDGE		27
8	c	↓		30
9	d	CRANE BEAM - TOP		54
10	e	WEST VERTICAL		35
11	G3 a	CRANE BEAM-BOTTOM LEDGE		36
12	b	CRANE BEAM - RAIL		46
13	c	CRANE BEAM-TOP		33
14	d	CRANE BEAM - BOTTOM LEDGE		59
15	e	EAST VERTICAL		31
16	H3 a	CRANE BEAM-BOTTOM LEDGE	3	42
17	b	CRANE BEAM-TOP	0	27
18	c	CRANE BEAM-RAIL	2	39
19	d	CRANE BEAM BOTTOM LEDGE	2	46
20	e	WEST VERTICAL	1	42
21	H3 e	WEST VERTICAL	3	46
22				
23				
24				
25				
26				
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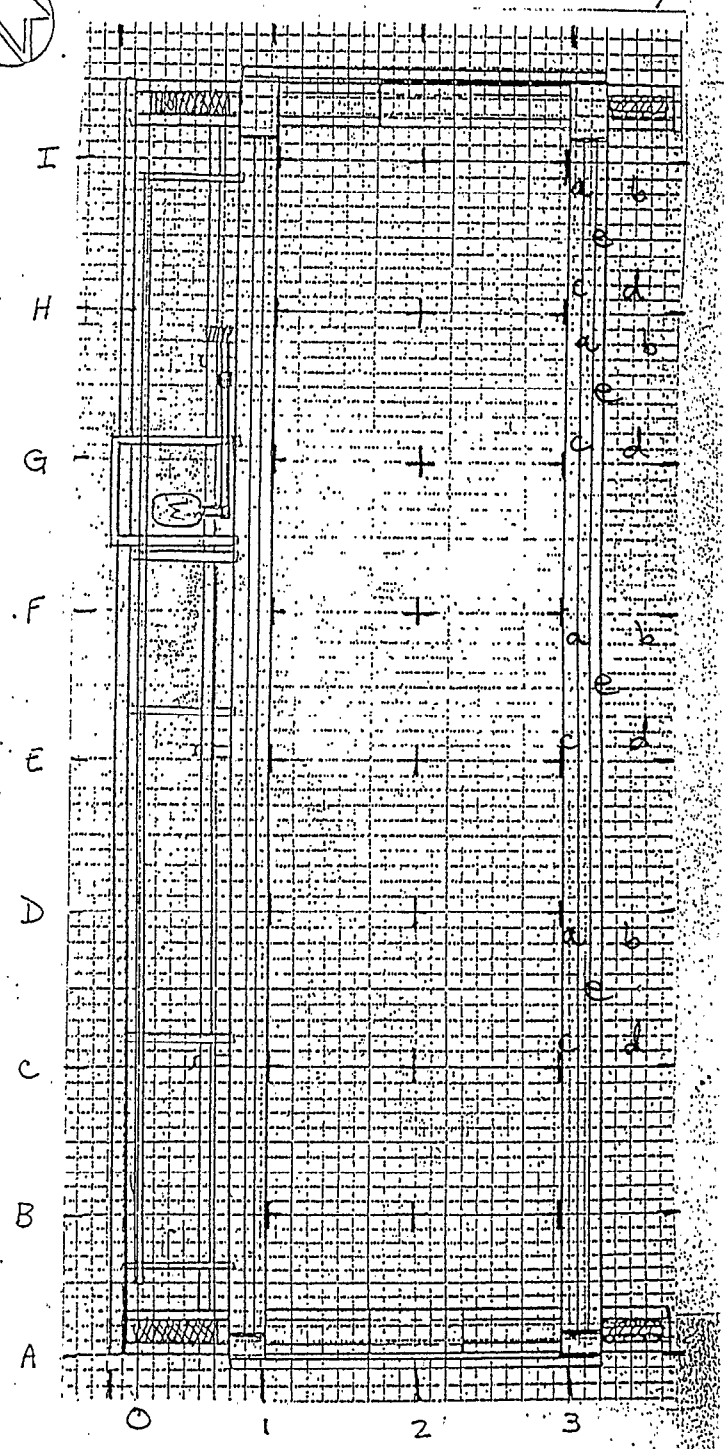


HILBE SSOCIATES, INC.

SMEAR MEASURE...NT ANALYSIS REPORT

SURVEY # 1307
SAMPLE DATE: 4-9-98
ANALYSIS DATE: 4-10-98
LOCATION: BLDG 14 AREA 14 S/W LOWER CRANE ASSEMBLY - EAST CRANE BEAM

VERIFICATION

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	C3	CRANE BEAM - TOP	A	1	↕					+/-		
1	C3	↓	BG	51	↓					+/-		
2	E3	CRANE BEAM - LOWER LEDGE	A	1						+/-		
2	E3	↓	BG	55						+/-		
3	G3	CRANE BEAM - LOWER LEDGE	A	1						+/-		
3	G3	↓	BG	68						+/-		
4	H3	CRANE BEAM - RAIL	A	2						+/-		
4	H3	↓	BG	56	↓					+/-		
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:	L2929 / 50718
Detector Model & s/n:	L43-10-1 / 041713
Calibration Date:	10-9-97
Efficiency BG (Beta/Gamma):	0.28 ~~0.33~~ 4-9-98 cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.33 cpm / dpm based on Th230

Background	Gr Counts	Ct Time (min)	Rb	Date
Alpha	4-9-98 ~~0~~ 4-9-98	240	0.41	4-9-98
Beta-Gamma	13355	240	56	4-9-98

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

Survey # 1310

Survey Date: 4-9-98 2200
Location:
Description: B14 14 S.W. OVER-HEAD VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha α	beta-gamma βγ
Instrument Model & s/n:	ESP-1 #03028	L2221 #86313
Detector Model & s/n:	43-65 #088842	44-9 #048267
Calibration Date:	8-22-97	3-24-98
Efficiency [Tc99] [SY90] [Th230]	.148	.26
Detector Area (CM2)	50	15.5

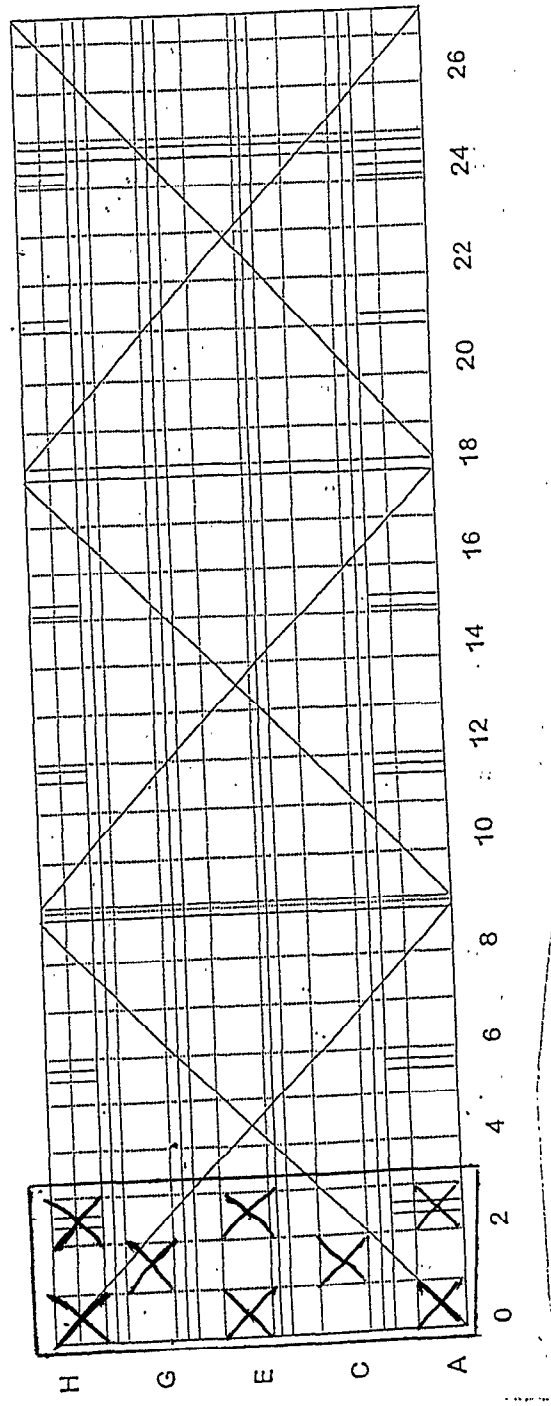
	α alpha	βγ beta-gamma
TOTAL BACKGROUND COUNTS	1 CPM	54
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

RP Technician: William W.

	GRID	DESCRIPTION	α alpha GROSS COUNTS	βγ beta-gamma GROSS COUNTS
1	A-0 A	B14 14 S.W. OVER HEAD		133
2	B			114
3	C			98
4	D			87
5	E			151
6	A-2 A		N/A	131
7	B			126
8	C			118
9	D			89
10	E			67
11	C-1 A		3	95
12	B		1	100
13	C		1	74
14	D		2	86
15	E		1	93
16	E-0 A			102
17	B			116
18	C			135
19	D		N/A	147
20	E			128
21	E-2 A			134
22	B			129
23	C			111
24	D			92
25	E			85
26	G-1 A		1	69
27	B		2	76
28	C		4	143
29	D		1	77
30	E		2	88
31	H-0 A			104
32	B			126
33	C			121
34	D		N/A	135
35	E			140
36	H-2 A			119
37	B			78
38	C			101
39	D			112
40	E			96
41	E-0 E	* DUP.		133
42	H-2 E	* DUP.		105
43				
44				

N/A

AREA 14 SOUTH CEILING



(scaler measurement)

SURVEY # 1311

Survey Date: 4-13-98 2200
Location: BLK 14 S.W. NORTH WALL
Description: VERIFICATION SURVEY

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha α	beta-gamma βγ
Instrument Model & s/n:	ESP-1 #03248	LB231 #10313
Detector Model & s/n:	43-65 #09982	44-9 #18267
Calibration Date:	8-22-98	3-24-98
Efficiency (Tc99) (SY90) (Th230)	.148	.26
Detector Area (CM2)	50	155

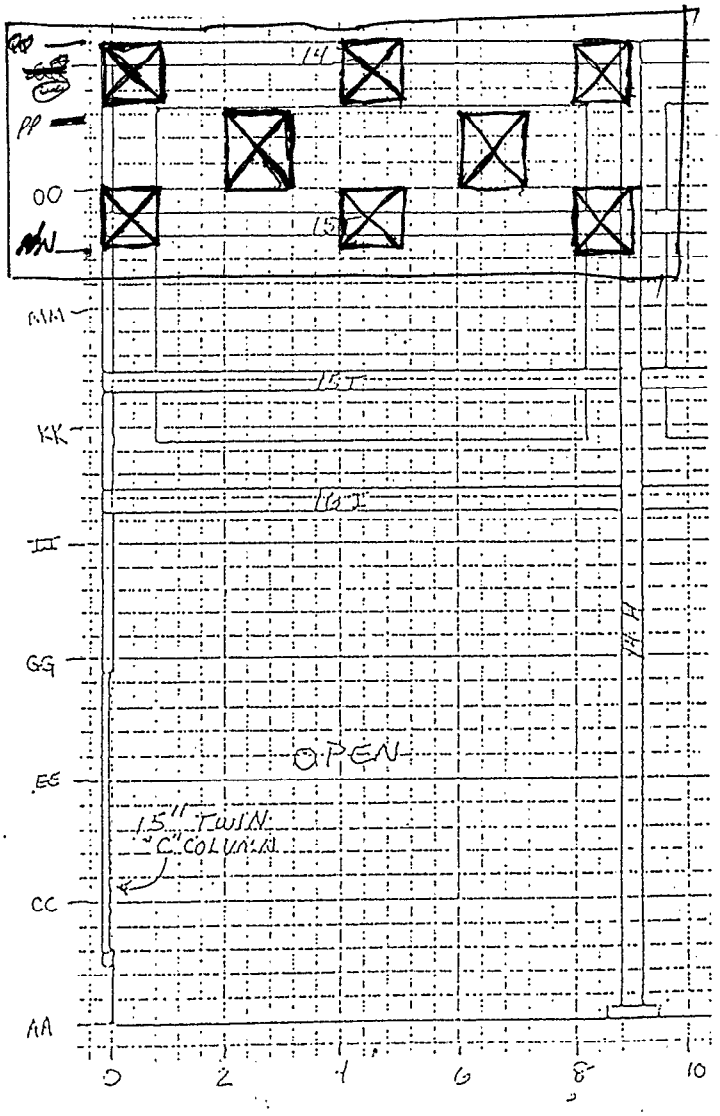
	α alpha	βγ beta-gamma
TOTAL BACKGROUND COUNTS	1 CPM	5 CPM
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

RP Technician: W. Steven W. [illegible]

#	GRID	DESCRIPTION	α alpha GROSS COUNTS	βγ beta-gamma GROSS COUNTS
1	H-0-NN A	BLK 14 S.W. NORTH WALL		125
2	B			114
3	C		N/A	89
4	D			106
5	E			137
6	H-0-PP A		1	129
7	B		3	122
8	C		1	91
9	D		1	103
10	E		2	131
11	H-2-OO A			60
12	B			55
13	C			66
14	D			54
15	E		N/A	122
16	H-4-NN A			141
17	B			103
18	C			135
19	D			109
20	E			68
21	H-4-PP A		2	54
22	B		1	86
23	C		4	93
24	D		1	81
25	E		1	75
26	H-6-OO A			69
27	B			70
28	C			75
29	D			84
30	E		N/A	79
31	H-8-NN A			92
32	B			89
33	C			80
34	D			75
35	E			91
36	H-8-PP A		1	81
37	B		2	84
38	C		1	89
39	D		3	99
40	E		2	102
41	H-4-NNE	* DUP.	N/A	73
42	H-8-PPE	* DUP.		111
		N/A		

Insert area map or sketch below

AREA 14 SOUTH
NORTH WALL



I = I BEAM → I
T = T BEAM → T
C = C BEAM → [
H = H BEAM/COLUMN → H

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 1312

Survey Date: 4-14-98
Location: B14 S.W. SOUTH WALL
Description: VERIFICATION SURVEY

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha α	beta-gamma βγ
Instrument Model & s/n:	ESA-1 #030228	L2221 #PR313
Detector Model & s/n:	43-65 #048817	44-9 #048267
Calibration Date:	8-22-97	~~8-29-97~~ 3-24-98
Efficiency (Tc99) (SY90) (Th230)	14.8%	26%
Detector Area (CM2)	50	15.5

	α alpha	βγ beta-gamma
TOTAL BACKGROUND COUNTS	1 CPM	54 CPM
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

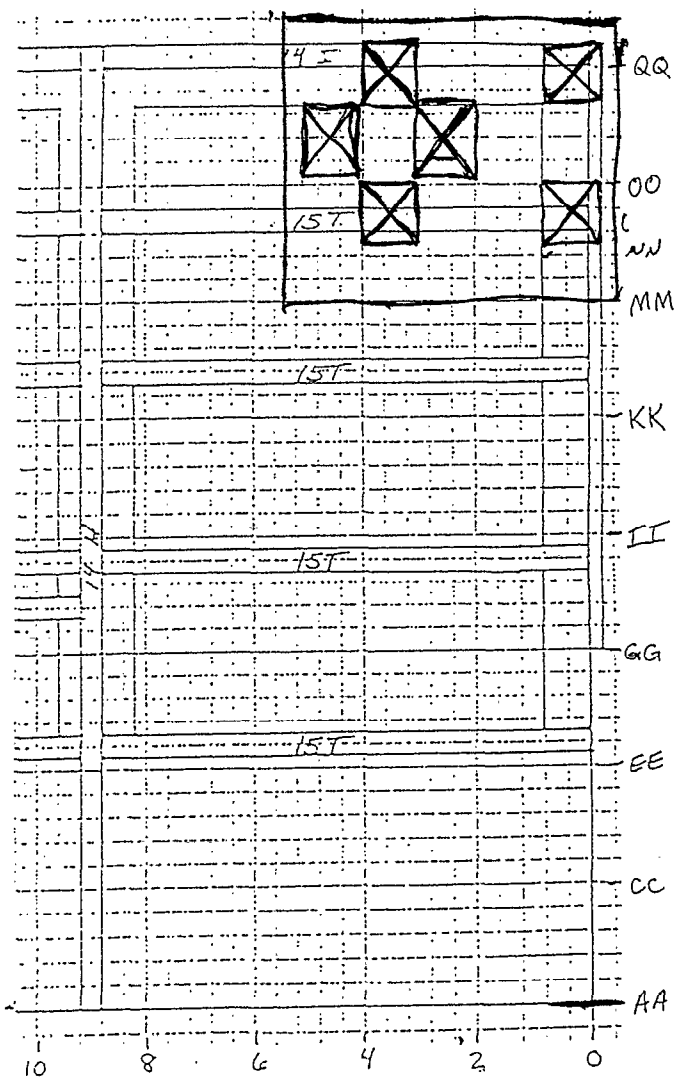
RP Technician: William W

#	GRID	DESCRIPTION	α alpha CROSS COUNTS	βγ beta-gamma CROSS COUNTS
1	A-3-00 A	B14 14 S.W. SOUTH WALL		146
2	B			122
3	C			109
4	D			98
5	E		N	82
6	A-3-PP A			118
7	B			147
8	C		A	129
9	D			93
10	E			74
11	A-3-NN A		1	91
12	B		1	86
13	C		1	65
14	D		2	74
15	E		1	83
16	A-2-00 A			121
17	B			116
18	C			128
19	D			104
20	E			94
21	A-0-PP A			126
22	B			100
23	C		N	81
24	D			75
25	E		A	68
26	A-0-NN A			56
27	B			62
28	C			71
29	D			80
30	E			61
31	A-2-00 E	*DUP.		88

N/A

Insert area map or sketch below

AREA 14 SOUTH
SOUTH-WALL



I = I BEAM →
T = T BEAM →
C = C BEAM →
H = H BEAM →

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

SURVEY # 1313

Survey Date: 4-15-98 1900
Location: B14 14 SW WEST WALL
Description: VERIFICATION SURVEY

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha α	beta-gamma βγ
Instrument Model & s/n:	ESP# 03028	LUAL # 86813
Detector Model & s/n:	43-65# 18077	44-9# 07267
Calibration Date:	8-22-97	~~12-29-97~~ 3-24-98
Efficiency [Tc99] [SY90] [Th230]	14.8	26
Detector Area (CM2)	50	15.5

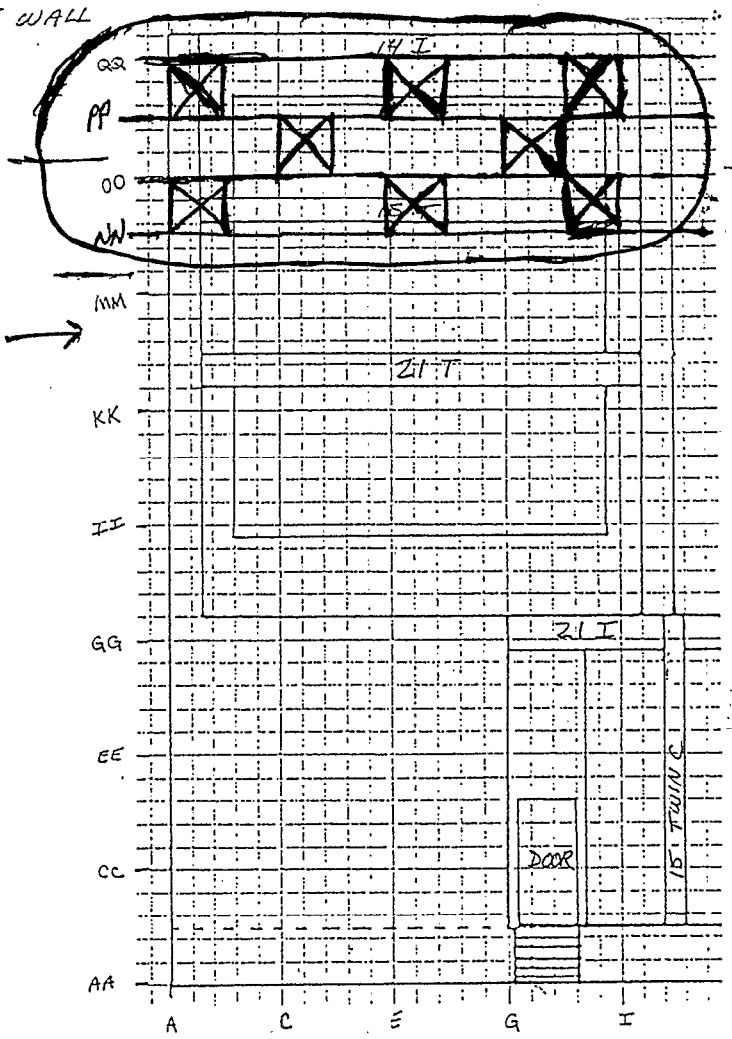
	alpha α	beta-gamma βγ
TOTAL BACKGROUND COUNTS	1 CPM	50 CPM
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

RP Technician: [signature]

#	GRID	DESCRIPTION	α alpha GROSS COUNTS	βγ beta-gamma GROSS COUNTS
1	A-0-PP	A B14/14SW WESTWALL		109
2		B		118
3		C	N/A	135
4		D		140
5		E		96
6	A-0-NN	A	2	111
7		B	2	128
8		C	4	143
9		D	1	115
10		E	1	92
11	C-0-00	A		63
12		B		71
13		C		59
14		D		67
15		E	N/A	56
16	E-0-PP	A		110
17		B		132
18		C		125
19		D		96
20		E		86
21	E-0-NN	A	1	99
22		B	2	106
23		C	1	75
24		D	2	89
25		E	1	112
26	G-0-00	A		64
27		B	N/A	77
28		C		87
29		D		58
30		E		81
31	H-0-PP	A	3	149
32		B	1	111
33		C	1	82
34		D	2	97
35		E	1	101
36	H-0-NN	A		124
37		B		117
38		C	N/A	92
39		D		85
40		E		96
41	F-0-PP	E	*DUP	71
42	H-0-NN	E	*DUP	103

N/A

WEST WALL



SURVEY01.XLS

(scaler measurement)

SURVEY # 1324

Survey Date: 4-21-98 2330
Location: PORTAIR SITE B14 14SW.
Description: NORTH WALL VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

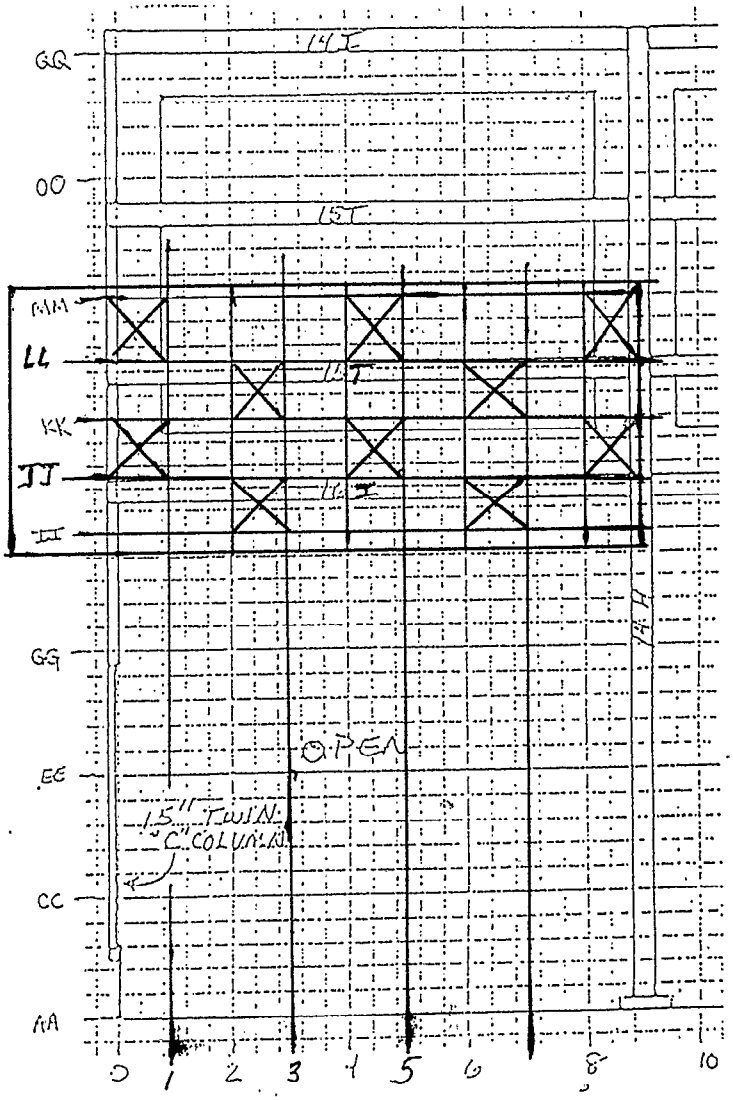
	α alpha	β/γ beta-gamma
Instrument Model & s/n:	Esp-1 103028	2241 # 163113
Detector Model & s/n:	43-65 #198812	44-9 # 048267
Calibration Date:	8-22-98	3-24-98
Efficiency (Tc99) (SY90) (Th230)	.148	~~.145~~ .26
Detector Area (CM2)	50	15.5

	α alpha	β/γ beta-gamma
TOTAL BACKGROUND COUNTS	1 CPM	50 CPM
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

RP Technician: W. Klein W. [signature]

Insert area map or sketch below
AREA 14 SOUTH
NORTH WALL

#	GRID	DESCRIPTION	α alpha GROSS COUNTS	β/γ beta-gamma GROSS COUNTS
1	H-0-JJ A	B14 14SW. NORTH WALL		142
2	B	BRICK		138
3	C			151
4	D		N	106
5	E			129
6	H-0-LL A			160
7	B		A	144
8	C			118
9	D			92
10	E			85
11	H-2-II A	STEEL	1	61
12	B		3	59
13	C		1	66
14	D	BRICK	2	101
15	E		1	84
16	H-2-KK A	STEEL		73
17	B			70
18	C			64
19	D		N	55
20	E			88
21	H-4-JJ A	BRICK		151
22	B	STEEL		62
23	C	BRICK		159
24	D	STEEL	A	53
25	E	STEEL		70
26	H-4-LL A	STEEL	3	68
27	B		1	84
28	C		1	76
29	D		4	56
30	E		1	62
31	H-6-II A	STEEL	2	73
32	B		2	85
33	C	BRICK	4	92
34	D		1	67
35	E		1	81
36	H-6-KK A	STEEL		63
37	B			74
38	C			57
39	D			83
40	E		N	69
41	H-8-II A	STEEL		118
42	B	BRICK		144
43	C	STEEL		167
44	D	BRICK		152
45	E	BRICK	A	136
46	H-8-LL A	STEEL		94
47	B	BRICK		125
48	C	STEEL		160
49	D	BRICK		82
50	E	BRICK	N/A	91
51	H-2-KK E	*DUP.		99
52	H-6-KK E	*DUP.		107



I = I BEAM → I
T = T BEAM → T
C = C BEAM → [
H = H BEAM/COLUMN → H

REVIEW [signature]

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 1325

Survey Date: 4-21-98 0100
Location: PRIMARY SITE B14 145W
Description: WEST WALL VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

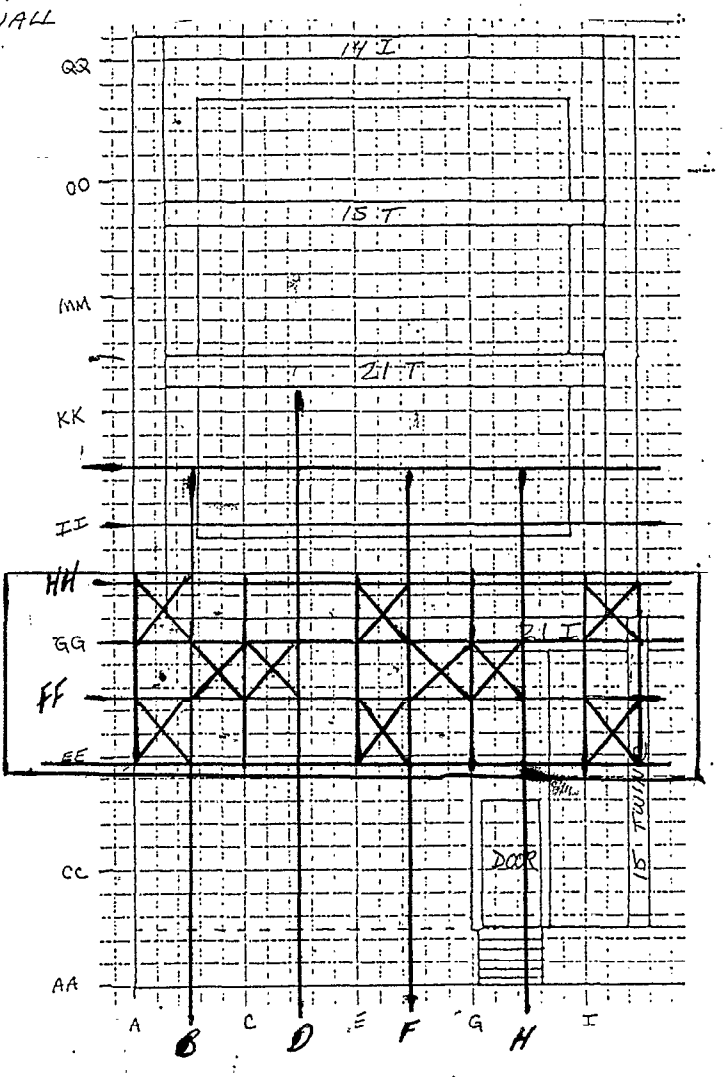
	α alpha	β/γ beta-gamma
Instrument Model & s/n:	ESP-1 #03048	2221 #66313
Detector Model & s/n:	43-65 #049912	44-9 #048267
Calibration Date:	5-22-97	3-24-98
Efficiency [Tc99] [SY90] [Th230]	.148	.26
Detector Area (CM2)	50	15.5

	α alpha	β/γ beta-gamma
TOTAL BACKGROUND COUNTS	1 CPM	50 CPM
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

RP Technician: William

#	GRID		DESCRIPTION	α alpha GROSS COUNTS	β/γ beta-gamma GROSS COUNTS
1	A-0-EE	A	B14 145.W. WEST WALL		146
2		B	STEEL		82
3		C	BRICK	N/A	135
4		D	BRICK		151
5		E	STEEL		94
6	A-0-GG	A		1	86
7		B		1	62
8		C		2	79
9		D	BRICK	3	138
10		E	BRICK	1	173
11	B-0-FF	A	BRICK		156
12		B			149
13		C			170
14		D		N/A	168
15		E	STEEL		71
16	C-0-FF	A			92
17		B			70
18		C			64
19		D	BRICK		112
20		E			129
21	E-0-EE	A	STEEL	2	61
22		B		2	75
23		C		2	86
24		D		3	92
25		E	BRICK	1	129
26	E-0-GG	A	BRICK		136
27		B			145
28		C			152
29		D		N/A	169
30		E			127
31	F-0-FF	A	BRICK		91
32		B			83
33		C			104
34		D			112
35		E			97
36	G-0-FF	A	STEEL		97
37		B	BRICK	5	176
38		C		4	162
39		D		2	151
40		E		4	183
41	I-0-EE	A	STEEL		116
42		B	BRICK		159
43		C			147
44		D		N/A	130
45		E			155
46	I-0-GG	A	STEEL		94
47		B	BRICK		68
48		C	STEEL		72
49		D	BRICK		95
50		E			101
51	C-0-FF	E	*DUP	N/A	134
52	G-0-FF	E	*DUP	5	179

WEST WALL



REVIEW

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 1329

Survey Date: 4-22-98 2100
Location: PRAXAIR SITE B14 145W.
Description: WEST WALL VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

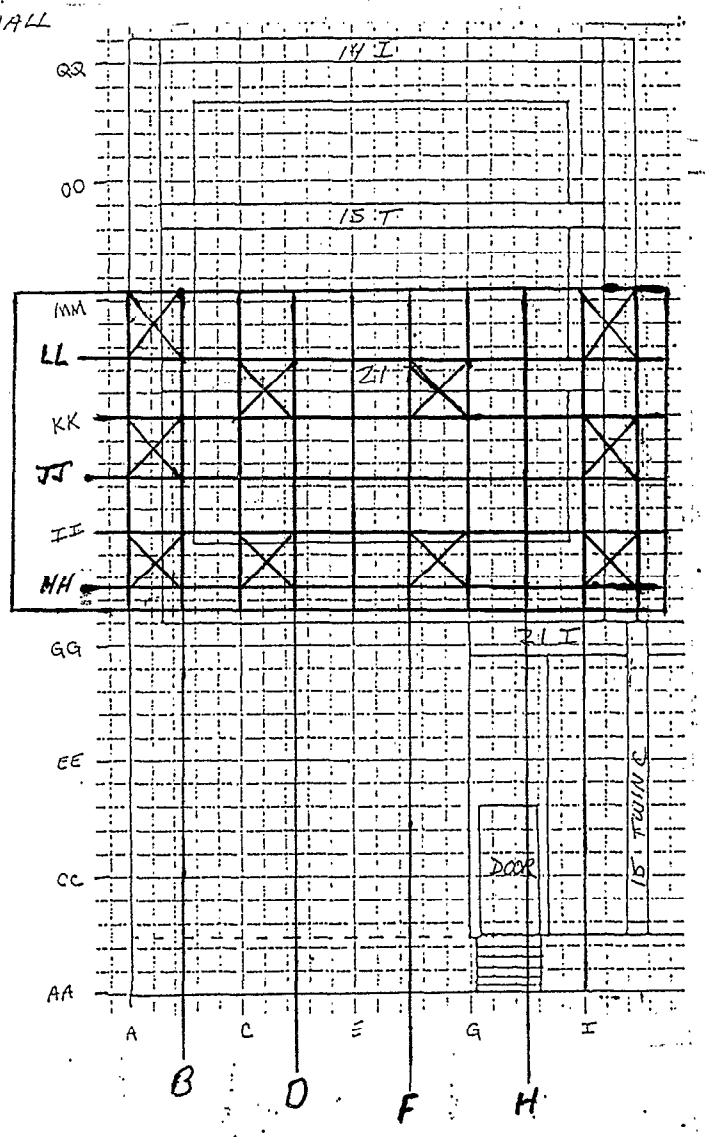
	α alpha	β bela-gamma
Instrument Model & s/n:	ESP-1 #03098	L2221 #86313
Detector Model & s/n:	43-65 #088812	HP-9 #048267
Calibration Date:	8-28-97	3-24-98
Efficiency (Tc99) (SY90) (Th230)	.148	.126
Detector Area (CM2)	50	15.5

	α alpha	β bela-gamma
TOTAL BACKGROUND COUNTS	1 CPM	50 CPM
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

RP Technician: William W

#	GRID	DESCRIPTION	α alpha GROSS COUNTS	β bela-gamma GROSS COUNTS
1	A-0-HH	A B14 145W WEST WALL BRICK	2	137
2		B STEEL	1	91
3		C BRICK	3	146
4		D STEEL	1	83
5		E BRICK	3	152
6	A-0-JJ	A BRICK		139
7		B STEEL		74
8		C BRICK		117
9		D STEEL		86
10		E BRICK	N	129
11	A-0-LL	A BRICK	A	143
12		B STEEL		101
13		C BRICK		116
14		D STEEL		74
15		E BRICK		112
16	C-0-HH	A STEEL	2	66
17		B STEEL	1	62
18		C BRICK	3	168
19		D BRICK	4	172
20		E BRICK	2	142
21	C-0-kk	A STEEL		99
22		B		104
23		C		67
24		D		93
25		E		88
26	F-0-HH	A STEEL	N	90
27		B STEEL	A	61
28		C BRICK		115
29		D BRICK		125
30		E BRICK		114
31	F-0-kk	A STEEL	1	81
32		B	2	59
33		C	2	64
34		D	1	101
35		E	2	55
36	I-0-HH	A BRICK		182
37		B		161
38		C		154
39		D		137
40		E		168
41	I-0-JJ	A BRICK		139
42		B STEEL		74
43		C STEEL	N	68
44		D BRICK	A	115
45		E STEEL		70
46	I-0-LL	A BRICK		122
47		B STEEL		102
48		C STEEL		77
49		D BRICK		186
50		E		
51	C-0-HH	E *DUP.		139
52	I-0-HH	E *DUP.		174

WEST WALL



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SURVEY01.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

#1335.

ANALYSIS DATE: 4-23-98 VERIFY
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 S/W
Verification Survey W. JESKE

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)
1	A-0	B14 14S.W. OVERHEAD	A	4				A			
↓	↓		BG	52				BG			
2	A-2		A	0				A			
↓	↓		BG	64				BG			
3	C-1		A	3				A			
↓	↓		BG	58				BG			
4	E-0		A	0				A			
↓	↓		BG	64				BG			
5	F-2		A	2				A			
↓	↓		BG	67				BG			
6	G-1		A	1				A			
↓	↓		BG	51				BG			
7	H-0		A	2				A			
↓	↓		BG	43				BG			
8	H-2		A	0				A			
↓	↓		BG	53				BG			
9	H-0-NN	B14 14S.W. NORTH WALL	A	0				A			
↓	↓		BG	63				BG			
10	H-0-PP		A	1				A			
↓	↓		BG	63				BG			
11	H-2-OO		A	1				A			
↓	↓		BG	67				BG			
12	H-4-NN		A	3				A			
↓	↓		BG	64				BG			
13	H-4-PP		A	1				A			
↓	↓		BG	65				BG			
14	H-6-OO		A	1				A			
↓	↓		BG	52				BG			
15	H-8-NN		A	0				A			
↓	↓		BG	79				BG			
16	H-8-PP		A	3				A			
↓	↓		BG	47				BG			
17	H-0-JJ		A	3				A			
↓	↓		BG	56				BG			
18	H-0-LL		A	0				A			
↓	↓		BG	66				BG			
19	H-2-II		A	1				A			
↓	↓		BG	65				BG			
20	H-2-kk		A	1				A			
↓	↓		BG	65				BG			

Instrument Model & s/n:	M.2929 s/n ~~91234~~ 50718	
Detector Model & s/n:	M.43-10-1 s/n ~~085270~~ 071713	
Calibration Date:	~~2/7/97~~ 10/9/97	
Efficiency BG (Beta/Gamma):	0.34	cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.29	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	~~330~~ 330	~~800~~ 800	~~0.41~~ 0.41	4-23-98
Beta-Gamma	~~45128~~ 45128	~~500~~ 500	~~56~~ 56	4-23-98

SWIPE.XLS

1336

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

ANALYSIS DATE: 4-27-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 S/W Verification Survey W. JESKE

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)
41	F-0-FF	B14 14 S.W. WEST WALL	A	2				A			
↓	↓		BG	66				BG			
42	G-0-FF		A	4				A			
↓	↓		BG	60				BG			
43	I-0-EE		A	1				A			
↓	↓		BG	47				BG			
44	I-0-GG		A	1				A			
↓	↓		BG	70				BG			
45	A-0-HH		A	2				A			
↓	↓		BG	61				BG			
46	A-0-JJ		A	3				A			
↓	↓		BG	64				BG			
47	A-0-LL		A	4				A			
↓	↓		BG	54				BG			
48	C-0-HH		A	3				A			
↓	↓		BG	59				BG			
49	C-0-KK		A	4				A			
↓	↓		BG	57				BG			
50	F-0-HH		A	3				A			
↓	↓		BG	57				BG			
51	F-0-KK		A	2				A			
↓	↓		BG	50				BG			
52	I-0-HH		A	1				A			
↓	↓		BG	59				BG			
53	I-0-JJ		A	3				A			
↓	↓		BG	54				BG			
54	I-0-LL		A	1				A			
↓	↓		BG	48				BG			
55	A-4-00	B14 14 S.W. SOUTH WALL	A	1				A			
↓	↓		BG	52				BG			
56	A-3-PP		A	4				A			
↓	↓		BG	58				BG			
57	A-3-NN		A	1				A			
↓	↓		BG	68				BG			
58	A-2-00		A	0				A			
↓	↓		BG	66				BG			
59	A-0-PP		A	1				A			
↓	↓		BG	51				BG			
60	A-0-NN		A	1				A			
↓	↓		BG	46				BG			

Instrument Model & s/n:	M.2929 s/n ~~91234~~ 50718	
Detector Model & s/n:	M.43-10-1 s/n ~~085270~~ 041713	
Calibration Date:	~~2/7/97~~ 10/9/97	
Efficiency BG (Beta/Gamma):	0.33	cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.28	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	1804	3900	0.46	4-27-98
Beta-Gamma	214626	3900	55	4-27-98

SWIPE.XLS

1337

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

ANALYSIS DATE:
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14S/W Verification Survey W. SESILE

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	H-4-JJ	B14 14S.W. NORTH WALL	A	3				A			
↓	↓		BG	46				BG			
22	H-4-LL		A	0				A			
↓	↓		BG	60				BG			
23	H-6-II		A	0				A			
↓	↓		BG	56				BG			
24	H-6-KK		A	0				A			
↓	↓		BG	49				BG			
25	H-8-JJ		A	3				A			
↓	↓		BG	64				BG			
26	H-8-LL		A	0				A			
↓	↓		BG	48				BG			
27	A-0-PP	B14 14S.W. WEST WALL	A	2				A			
↓	↓		BG	42				BG			
28	A-0-NN		A	3				A			
↓	↓		BG	51				BG			
29	C-0-PP		A	2				A			
↓	↓		BG	60				BG			
30	E-0-PP		A	1				A			
↓	↓		BG	59				BG			
31	E-0-NN		A	4				A			
↓	↓		BG	49				BG			
32	G-0-OO		A	3				A			
↓	↓		BG	59				BG			
33	H-0-PP		A	3				A			
↓	↓		BG	49				BG			
34	H-0-NN		A	1				A			
↓	↓		BG	63				BG			
35	A-0-EE		A	1				A			
↓	↓		BG	54				BG			
36	A-0-GG		A	2				A			
↓	↓		BG	45				BG			
37	B-0-FF		A	5				A			
↓	↓		BG	58				BG			
38	C-0-FF		A	5				A			
↓	↓		BG	66				BG			
39	E-0-EE		A	3				A			
↓	↓		BG	44				BG			
40	E-0-GG		A	0				A			
↓	↓		BG	47				BG			

Instrument Model & s/n:	M.2929 s/n ~~91234~~ 50718
Detector Model & s/n:	M.43-10-1 s/n ~~085270~~ 041713
Calibration Date:	~~2/7/97~~ 10/9/97
Efficiency BG (Beta/Gamma):	0.33 cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.28 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	1804	3900	0.46	4-27-98
Beta-Gamma	214626	3900	55	4-27-98

SWIPE.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

SURVEY # 1345

Survey Date: 4-27-98 2100
Location: PRAXAIR SITE B14 14 S.W. SOUTH WALL
Description: VERIFICATION SURVEY

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha α	beta-gamma β
Instrument Model & s/n:	ESP-1 #2348	L2221 #86313
Detector Model & s/n:	42-65 #089111	44-9 #048267
Calibration Date:	8-22-97	3-24-98
Efficiency (Tc99) (SY90) (Th230)	.148	.26
Detector Area (CM2)	50	15.5

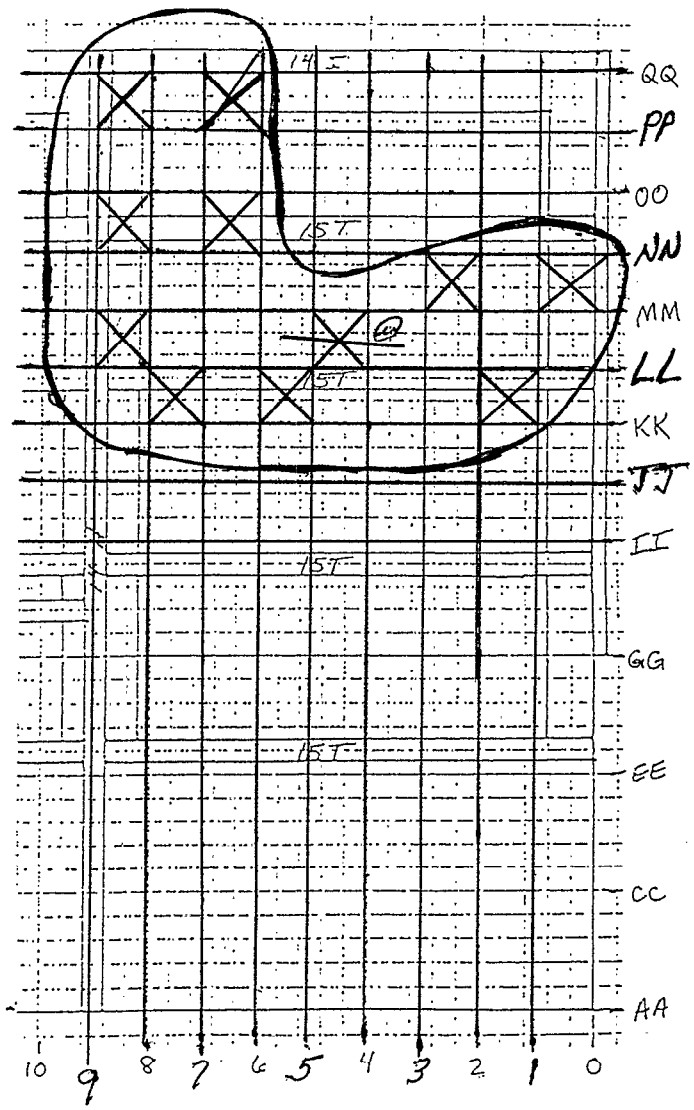
	α alpha	β β beta-gamma
TOTAL BACKGROUND COUNTS	1 CPM	51 CPM
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

RP Technician: William [illegible]

Insert area map or sketch below

AREA 14 SOUTH
SOUTH WALL

#	GRID		DESCRIPTION	α alpha GROSS COUNTS	β β beta-gamma GROSS COUNTS
1	A-8-PP	A	B14 14 S.W. SOUTH WALL BRICK		121
2		B	STEEL		114
3		C	BRICK	N/A	66
4		D	STEEL		81
5		E	STEEL		62
6	A-8-NN	A	BRICK	1	74
7		B	STEEL	1	53
8		C	BRICK	3	107
9		D	STEEL	2	89
10		E	BRICK	1	93
11	A-6-PP	A	BRICK		116
12		B	BRICK		124
13		C	STEEL		56
14		D	STEEL		67
15		E	STEEL	N/A	71
16	A-6-NN	A	STEEL		59
17		B	STEEL		63
18		C	STEEL		81
19		D	STEEL		55
20		E	STEEL		62
21	A-8-LL	A	BRICK	4	109
22		B	STEEL	1	74
23		C	BRICK	2	127
24		D	STEEL	1	65
25		E	BRICK	3	133
26	A-7-kk	A	STEEL		80
27		B	STEEL		68
28		C	STEEL		60
29		D	STEEL		51
30		E	STEEL	N/A	58
31	A-5-kk	A	STEEL		72
32		B	STEEL		84
33		C	STEEL		53
34		D	STEEL		67
35		E	STEEL		59
36	A-0-MM	A	BRICK	4	143
37		B	STEEL	1	101
38		C	BRICK	2	134
39		D	STEEL	1	73
40		E	BRICK	1	106
41	A-2-MM	A	STEEL		86
42		B	STEEL		51
43		C	STEEL		59
44		D	STEEL		67
45		E	STEEL	N/A	83
46	~~A-4-LL~~ kk	A	STEEL		34
47		B	STEEL		91
48		C	STEEL		62
49		D	STEEL		59
50		E	STEEL		65
51	A-6-NN	E	*DUP		68
52	A-0-MM	E	*DUP	1	118



I = I BEAM →
T = T BEAM →
C = C BEAM →
H = H BEAM →

SURVEY01.XLS

RA TECHNISCAN, INC. — DIRECT SURFACE MEASUREMENT RADIOLOGICAL REPORT

(scaler measurement)

SURVEY # 1346

Survey Date: 4-27-98 2345
Location: PRAXAIR SITE B14 145 S.W. SOUTH WALL
Description: VERIFICATION SURVEY

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha α	beta-gamma βγ
Instrument Model & s/n:	ESP-1 #03028	L2221 #86313
Detector Model & s/n:	43-65 #88917	44-9 #048267
Calibration Date:	8-22-97	3-24-98
Efficiency (Tc99) (SY90) (Th230)	.148	.26
Detector Area (CM2)	50	15.5

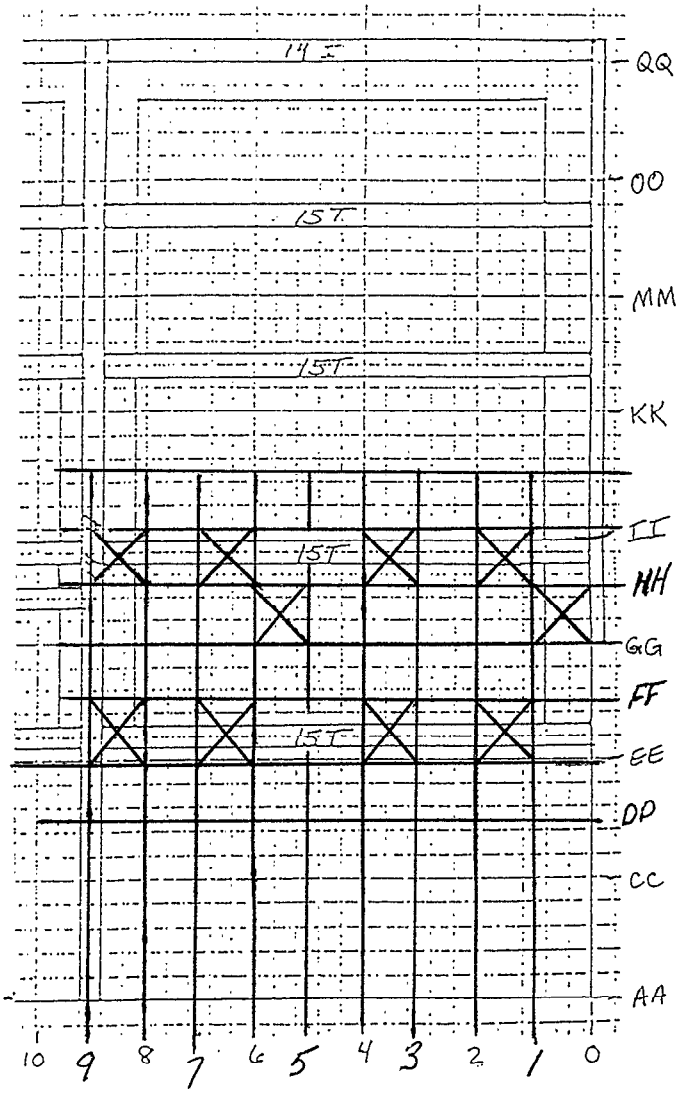
	α alpha	βγ beta-gamma
TOTAL BACKGROUND COUNTS	1 CPM	51 CPM
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

RP Technician: William W.

Insert area map or sketch below

AREA 14 SOUTH
SOUTH WALL

#	GRID		DESCRIPTION	α alpha GROSS COUNTS	βγ beta-gamma GROSS COUNTS
1	A-8-HH	A	B14 145 W. SOUTH WALL ~BRICK		129
2		B	STEEL		104
3		C	BRICK	N	115
4		D	STEEL		55
5		E	BRICK	A	109
6	A-6-HH	A	STEEL	1	102
7		B		1	118
8		C		2	71
9		D		1	56
10		E		1	80
11	A-5-GG	A	STEEL		66
12		B			61
13		C		N	25
14		D			52
15		E		N A	58
16	A-8-EE	A	BRICK		124
17		B	STEEL		107
18		C	BRICK		116
19		D	STEEL		173
20		E	BRICK		132
21	A-6-EE	A	STEEL	6	196
22		B		4	187
23		C	BRICK	2	123
24		D	BRICK	1	98
25		E	STEEL BRICK	2	159
26	A-3-HH	A	STEEL		64
27		B			59
28		C		N	22
29		D			56
30		E			51
31	A-1-HH	A	STEEL	A	63
32		B			52
33		C			74
34		D			66
35		E			85
36	A-0-GG	A	STEEL	1	54
37		B	BRICK	1	116
38		C	STEEL	1	91
39		D	BRICK	1	122
40		E	BRICK	1	107
41	A-3-EE	A	STEEL		194
42		B			161
43		C	BRICK		160
44		D	BRICK	N	56
45		E		N	131
46	A-1-EE	A	STEEL	A	146
47		B			167
48		C			183
49		D			86
50		E			59
51	A-8-EE	E	* DUP.	1	141
52	A-0-GG	E	* DUP.	1	94



I = I BEAM →
T = T BEAM →
C = C BEAM →
H = H BEAM →

SURVEY01.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 4-27-98 00 30
LOCATION:
PRAXAIR SITE B14 S.W.
SOUTH WALL I BEAM
POST DECON EFFORT
SURVEY # 1347
William W. [illegible]
Supplemental Standards

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

BY

TOTAL BACKGROUND COUNTS	51
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	SURFACE AREA	(MAX) BY DPM/100cm²	EST. AREA ft²
CONTAMINATED surface AREA A		NON-RAD (clean) Surface	40 %	3K	3 ft²
B	GRIDS	B14 14 SOUTH WEST @ SOUTH WALL	25 %	16K	1.0"
C	A-1-NN	TOP SIDE OF BOTTOM LEDGE ON	20 %	24K	1.5"
D	THRU	SOUTH SIDE OF BEAM	15 %	36K	1.0"
4	A-7-NN				
5					
6					
7		LOCATION DESCRIPTION	CPM	DPM/100cm² BY	
8			BY		
9	1	B14 14 S.W. SOUTH WALL:	76	620	
VERTICAL SURVEY	2	SOUTH SIDE OF I BEAM	83	794	
12	3	VERTICAL SURFACE.	68	422	
	4		92	1,017	
13	5		77	645	
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
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29					
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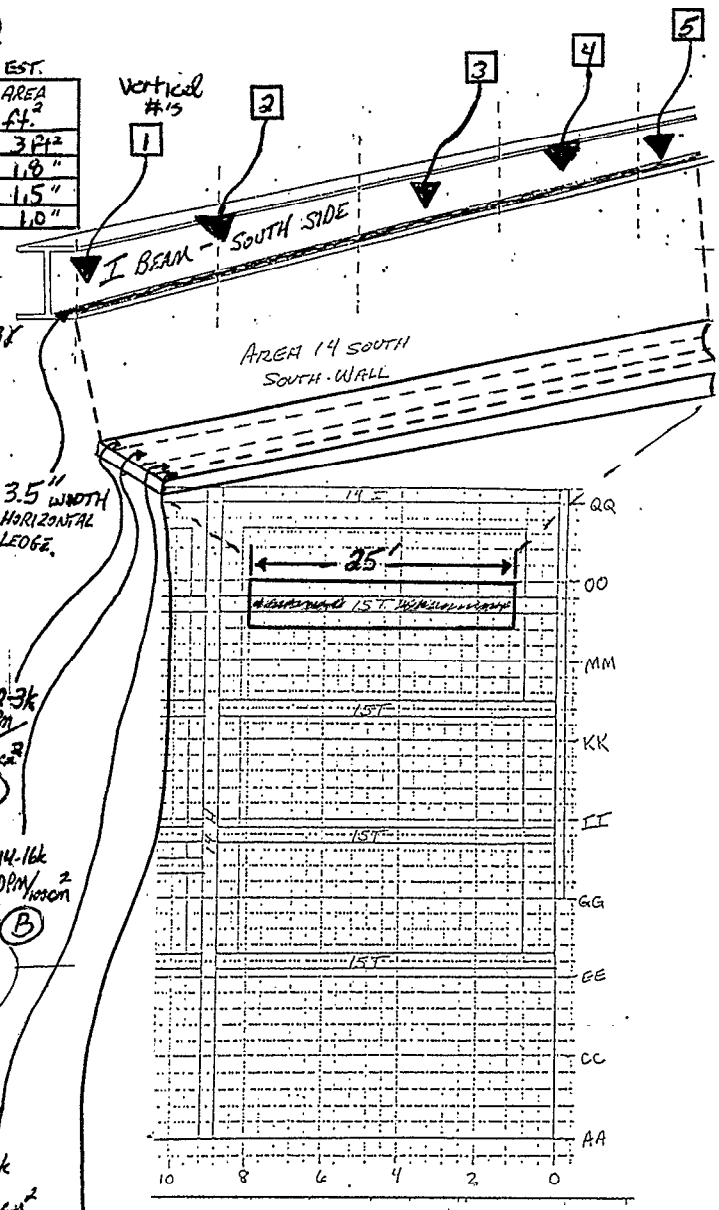
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					



BY

Instrument Model & s/n:	L2221 #86313
Detector Model & s/n:	44-9 #048267
Calibration Date:	3-24-98
Efficiency	cpm / dpm based on S/Y90 EFF = .26
Detector Area	cm2 = 15.5 cm²

Reviewed [illegible]

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey #1351

SAMPLE DATE: 4-27-98 0010
LOCATION: PRAXAIR SITE B14 14 SOUTH WEST - @ SOUTH WALL, SOUTH SIDE OF I BEAM (FACING S. wall) POST DECON EFFORT
SURVEY #
William W. [illegible]
Supplemental Standards"

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

TOTAL BACKGROUND COUNTS	@ Bβ 51
BACKGROUND COUNT TIME (MIN)	1 min.
SAMPLE COUNT TIME (MIN)	1 min.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	% OF SURFACE AREA	Bβ max. DPM/100cm2	SURFACE ft²
1 A		NON-RAD SURFACE AREA →	40%	5k	3
1 B	GRIDS	B14 14 S.W. - SOUTH WALL @ S. SIDE	60%	25k	4.5
2	A-1-kk	I BEAM.			
3	THRU				
4	A-7-kk				
5					
6			Bβ CPM	Bβ DPM/100cm2	
7					
8	1	B14 14 SOUTH WEST - SOUTH WALL	94	1050	
9	2	@ SOUTH SIDE OF I BEAM ON	107	1390	
10	3	VERTICAL SURFACE.	87	893	
11	4		93	1042	
12	5		75	596	
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
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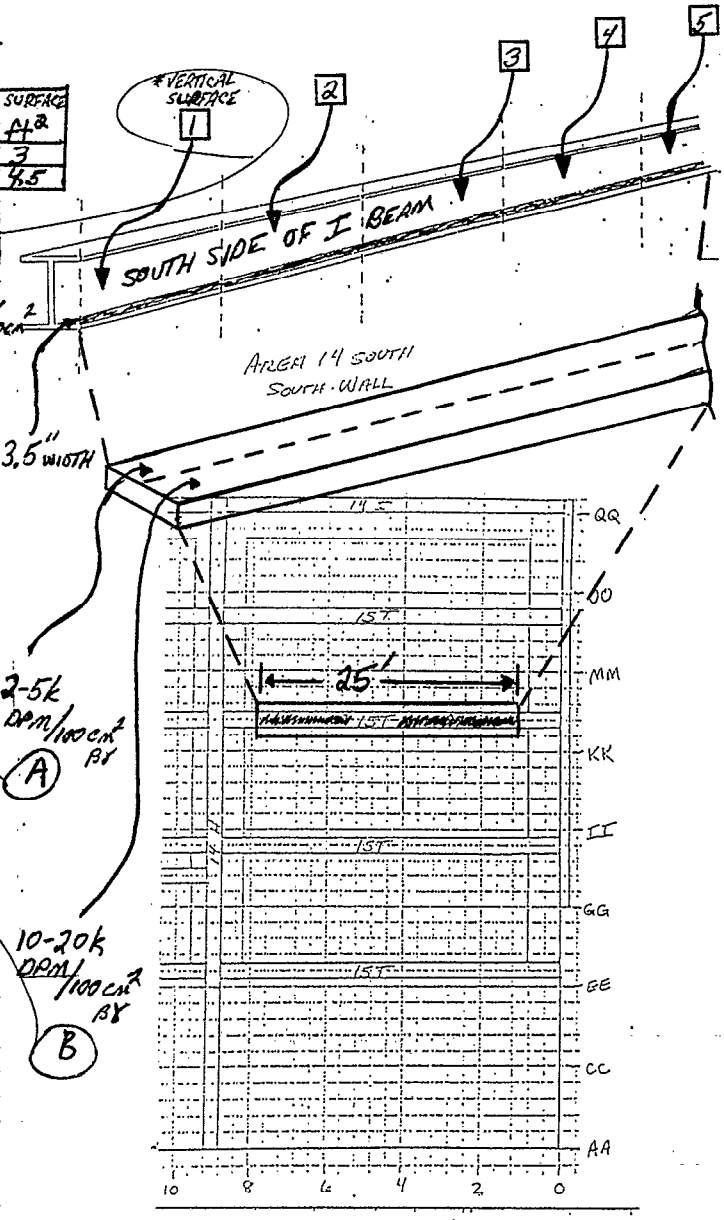
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

VERTICAL BEAM SURFACES



Bβ

Instrument Model & s/n:	L2221 #86313
Detector Model & s/n:	44-9 #048867
Calibration Date:	3-24-98
Efficiency	cpm / dpm based on S/Y90 EFF. = .26
Detector Area	cm2 = 15.5 cm²

Review [illegible]

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 4-28-98 0100
LOCATION: PRADAIR SITE B14 14 S.W. SOUTH SIDE OF I BEAM ALONG SOUTH WALL. POST DECON. SURVEY # 135H
William W.
"Supplemental Standards"

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

	BY
TOTAL BACKGROUND COUNTS	51
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	% OF SURFACE AREA	(MAX) BY DPM/100cm²	EST. ft.²
A *	GRIDS	B14 14 SOUTH WEST @ SOUTH SIDE	35%	5k	2.6
B *	A-1-HH	OF I BEAM @ SOUTH WALL	65%	19k	4.7
3	~~THRU~~ (W)				
4	THRU				
5	A-7-HH				
6					
7					
8			CPM BY	BY DPM/100cm²	
9					
10					
11					
12	1	B14 14 SOUTH WEST @	102	1266	
13	2	SOUTH SIDE OF BEAM	89	943	
14	3	VERTICAL SURFACE ON	72	521	
15	4	OR FACING SOUTH WALL	67	397	
16	5	↓ ↓ ↓	85	844	
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
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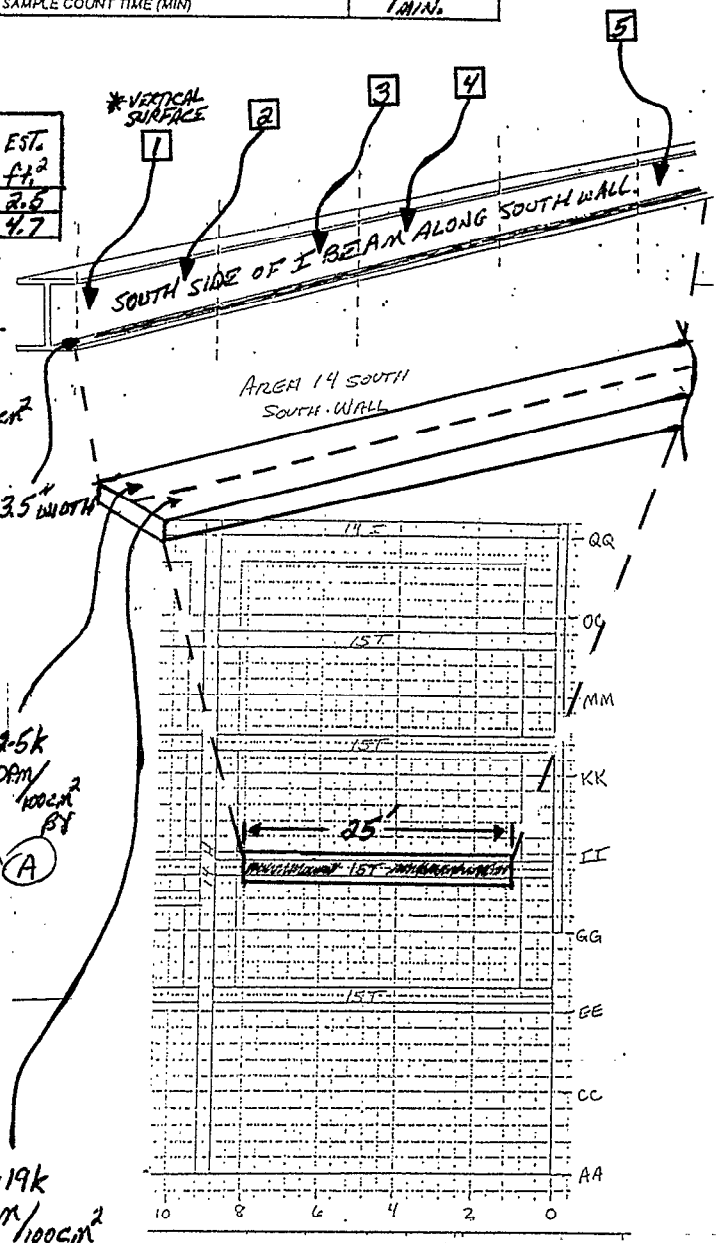
35					
36					
37					
38					
39					
40					

VERTICAL I BEAM SURFACE



2-5k DPM/100cm² BY (A)

10-19k DPM/100cm² BY (B)

BY

Instrument Model & s/n:	L 2221 # 86313
Detector Model & s/n:	44-9 # 048267
Calibration Date:	3-24-97
Efficiency	cpm / dpm based on S/Y90 EFF = .26
Detector Area	cm2 = 15.5 cm²

Zerwe

ENCL-C2.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey Date: 4-29-98
Location: 14 S/W CRANE
Description: VeRIF

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey # 1368

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/103028	2221/316389
Detector Model & s/n:	43-65/089912	44-9/37638
Calibration Date:	8/98	1-98
Efficiency (Tc99) (SY90) (Th230)	.14 .8 RS	.29
Detector Area (CM2)	50	15.5

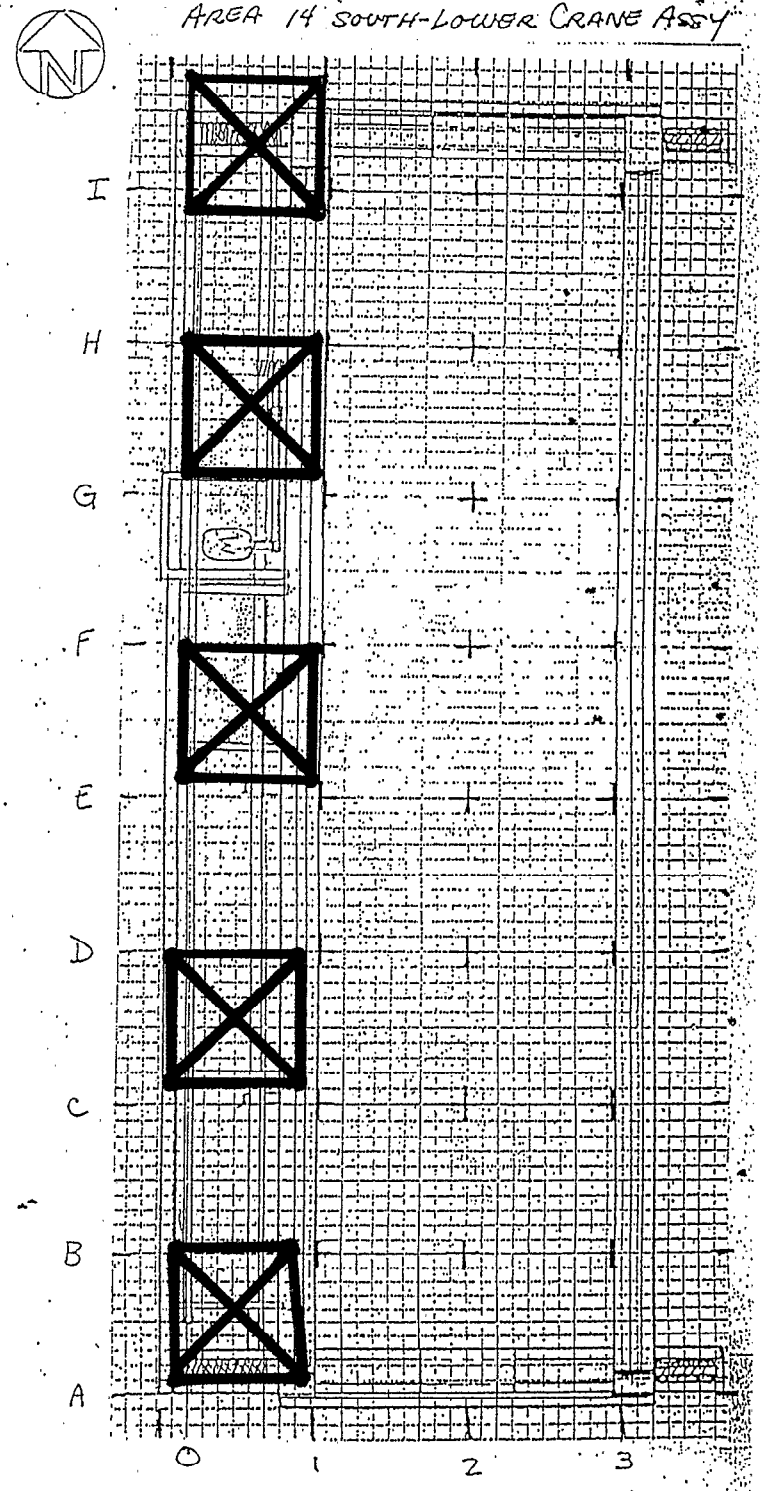
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	44 C.P.M
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

RP Technician: Smallridge

	GRID	DESCRIPTION CRANE Rail	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	I-0	CRANE (EAST Side)		45
B				47
C				51
D				44
E				42
A	I-0	CRANE (West Side)		56
B				37
C				55
D				53
E				47
A	G-0	CRANE (EAST Side)		42
B				39
C				44
D				43
E				50
A	G-0	CRANE (West Side)	Ø	52
B			1	39
C			2	43
D			3	33
E			2	51
A	E-0	CRANE (EAST Side)		51
B				57
C				48
D				37
E				41
A	E-0	CRANE (West Side		37
B				48
C				42
D				36
E				35
A	C-0	CRANE (EAST Side)		44
B				40
C				45
D				40
E				44
A	C-0	CRANE (West Side)		43
B				50
C				47
D				50
E				41
A	A-0	CRANE (EAST Side)		39
B				45
C				40
D				51
E				49
A	A-0	CRANE (West Side)		53
B				48
C				51
D				54
E				50
E	G-0	Dup		57
E	A-0	Dup		47
E	G-0	Dup		

Insert area map or sketch below

AREA 14 SOUTH-LOWER CRANE ASSY



Review

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

Survey Date: 4/29/98
Location: 14 S/W
Description: VERIF

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/03028	3221/86308
Detector Model & s/n:	43-65/08932	44-9/34608
Calibration Date:	8-98	1-98
Efficiency (Tc99) (SY90) (Th230)	.14	.29
Detector Area (CM2)	50	15.5

RP Technician: SmallRIDGE

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

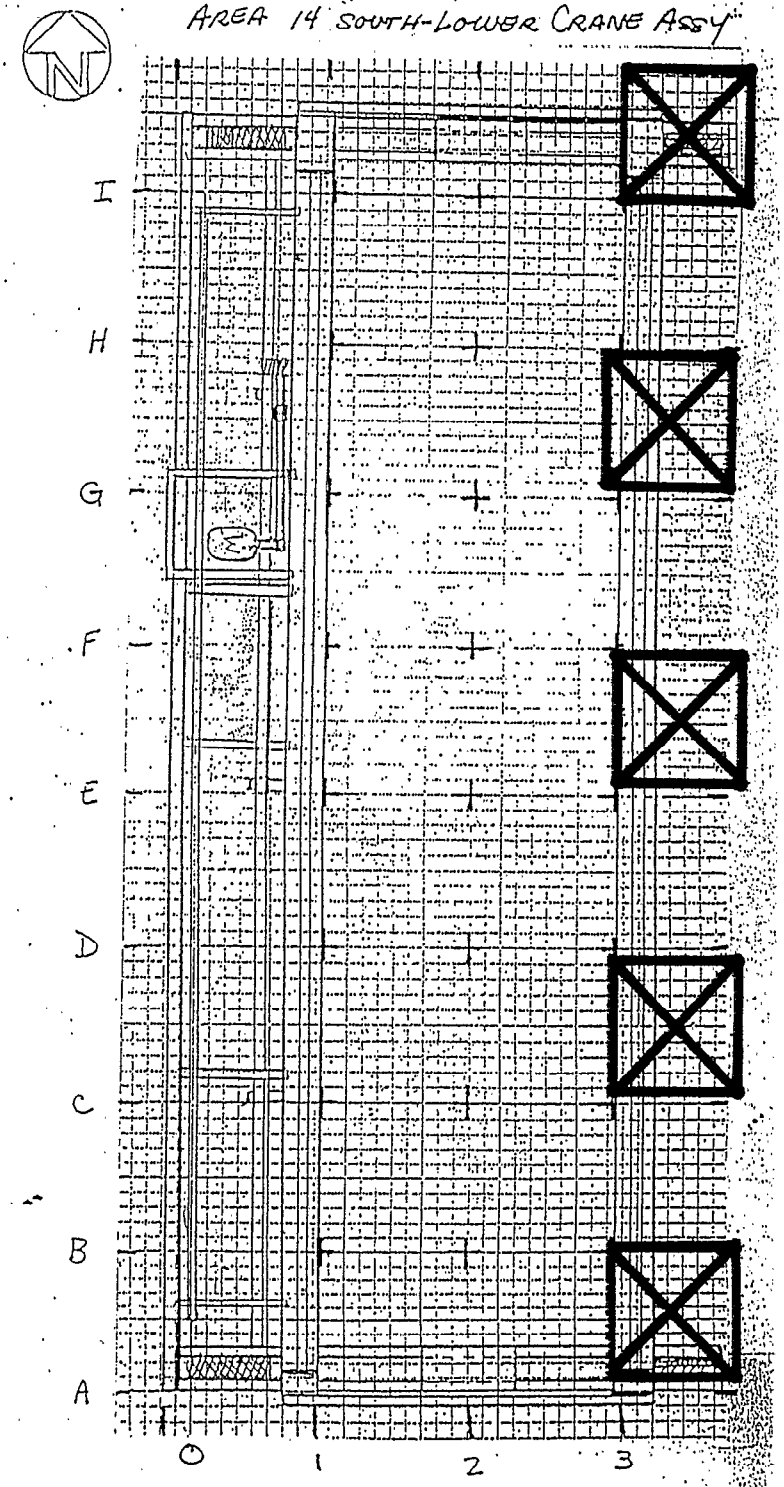
Survey # 1369

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	44 cpm
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

	GRID	DESCRIPTION Crane Rail	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	I-3	Rail (east)		40
B				39
C				41
D				44
E				43
A	I-3	Rail (west)		54
B				44
C				47
D				47
E				50
A	G-3	Rail (east)		49
B				36
C				29
D				45
E				53
A	G-3	Rail (west)	3	51
B			1	31
C			2	40
D			2	43
E			2	39
A	E-3	Rail (east)		38
B				50
C				51
D				43
E				42
A	E-3	Rail (west)		43
B				54
C				53
D				41
E				41
A	C-3	Rail (east)		40
B				55
C				43
D				40
E				50
A	C-3	Rail (west)		47
B				44
C				51
D				41
E				37
A	A-3	Rail (east)		46
B				51
C				42
D				48
E				35
A	A-3	Rail (west)		49
B				50
C				48
D				36
E				41
C	G-3	Dup		47
C	A-3	Dup		39
C	G-3	Dup		

Insert area map or sketch below

AREA 14 SOUTH-LOWER CRANE ASSY



ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey Date: 4/23/98
Location: 14 South / west
Description: Veri F

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey # 1370

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/03028	2221/89648
Detector Model & s/n:	43-65/089812	44-9/48272
Calibration Date:	8/98	12/97
Efficiency (Tc99) (SY90) (Th230)	.14 ~~.8~~ RS	.29
Detector Area (CM2)	50	15.5

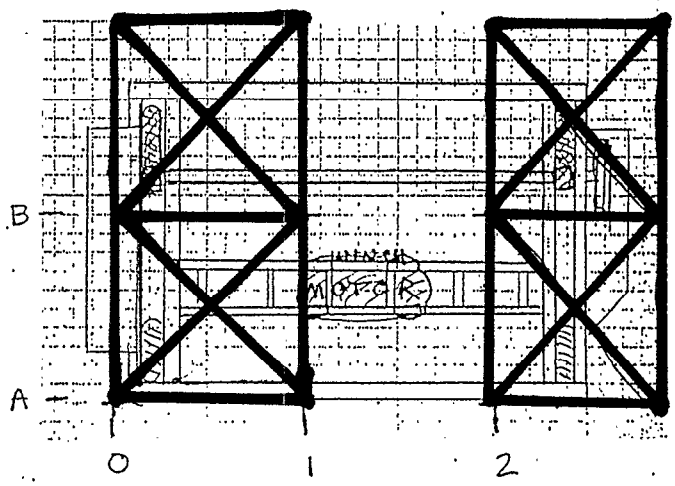
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	67
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

RP Technician: Smallridge

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	A-0	CRANE Assembly (Trolly)		71
B				52
C				53
D			N	60
E				56
A	A-2		A	66
B				55
C				54
D				63
E				59
A	B-0		2	67
B			2	61
C			1	73
D			Ø	60
E			Ø	40
A	B-2			66
B				54
C			N	64
D				63
E			A	72
E	A-0	Dup		39
E	B-2	Dup		60

Insert area map or sketch below

AREA 14 SOUTH
CRANE WINCH ASSEMBLY



ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey Date: 4-29-98
Location: 14 S/W CRANE
Description: VERIF

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1 / 03023	224 / 96308
Detector Model & s/n:	43-65 / 089812	44-9 / 37638
Calibration Date:	8/98	1-98
Efficiency [Tc99] [SY90] [Th230]	.14	.29
Detector Area (CM2)	50	15.5

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey # 1371

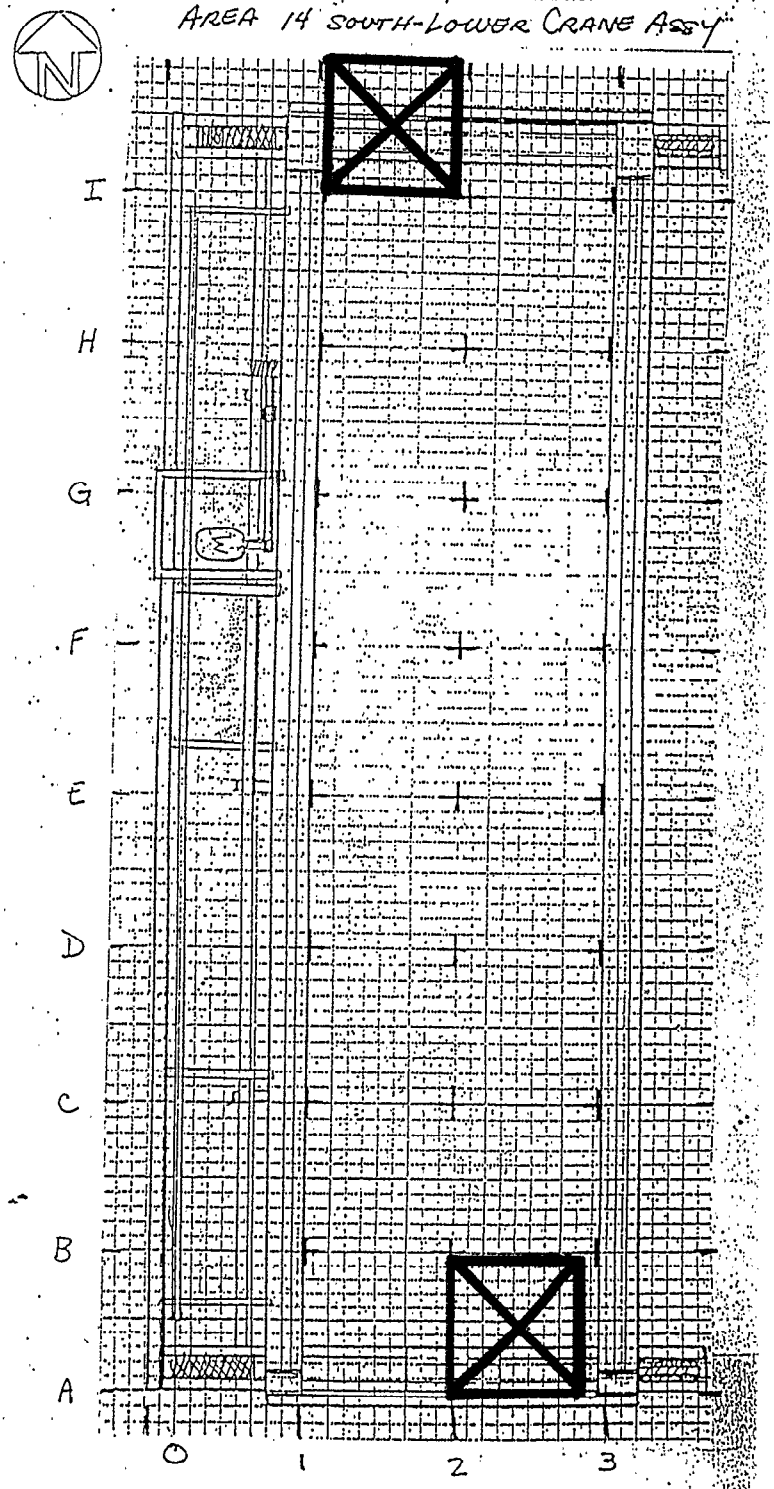
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	44 CPM
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

RP Technician: R. Smallridge

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	I-1	Crane (North)		50
B		I/S	N	32
C				32
D			A	41
E				55
A	I-1	CRANE (North)	Ø	40
B		O/S	3	49
C			3	49
D			Ø	5
E			1	56
A	A-2	CRANE (South)		6
B		I/S		54
C				41
D				38
E			N	45
A	A-2	CRANE (South)		50
B		O/S	A	39
C				38
D				47
E				35
A	I-1	Dup		45

Insert area map or sketch below

AREA 14 SOUTH-LOWER CRANE ASSY



I/S = Inside
O/S = Outside

SURVEY01.XLS

ION TECHNOLOGY, INC.

Survey # 1372
R. Smallridge

SMEAR MEASUREMENT ANALYSIS REPORT

ANALYSIS DATE: 4/30/98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area

Verification Survey

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

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION 14 S/W CRANE	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	I-0	CRANE (eastside)	A	0				A			
21	↓	↓	BG	60				BG			
22	I-0	CRANE (westside)	A	3				A			
22	↓	↓	BG	51				BG			
23	G-0	CRANE (east side)	A	2				A			
23	↓	↓	BG	50				BG			
24	G-0	CRANE (westside)	A	3				A			
24	↓	↓	BG	65				BG			
25	E-0	CRANE (east side)	A	0				A			
25	↓	↓	BG	51				BG			
26	E-0	CRANE (westside)	A	1				A			
26	↓	↓	BG	48				BG			
27	C-0	CRANE (east side)	A	2				A			
27	↓	↓	BG	62				BG			
28	C-0	CRANE (West Side)	A	1				A			
28	↓	↓	BG	43				BG			
29	A-0	CRANE (east side)	A	1				A			
29	↓	↓	BG	62				BG			
30	A-0	CRANE (westside)	A	1				A			
30	↓	↓	BG	60				BG			
31	I-1	CRANE (North) INSIDE	A	0				A			
31	↓	↓	BG	54				BG			
32	I-1	CRANE (North) outside	A	1				A			
32	↓	↓	BG	54				BG			
33	E-0	DUP	A	0				A			
33	↓	↓	BG	54				BG			
34			A					A			
34			BG					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 50718	
Detector Model & s/n:	M.43-10-1 s/n 041713	
Calibration Date:	10-9-97	
Efficiency BG (Beta/Gamma):	0.29	cpm / dpm based on S/Y90
Efficiency A (Alpha): 0.32	~~0.29~~ 0.25	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	329	800	.41	4/31/98
Beta-Gamma	44224	800	55	4/31/98

SWIPE.XLS

ION TECHNOLOGY, INC.

Survey # 1373

R. Smallridge

SMEAR MEASUREMENT ANALYSIS REPORT

ANALYSIS DATE: 4-30-98

LOCATION: Praxair, Tonawanda, NY

Bldg. 14, Area

Verification Survey

RADIATION MEASUREMENT: Alpha and Beta-gamma

RESULTS REPORTED UNITS: dpm per 100cm2

MEASUREMENT TYPE: Removable Contamination

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION 14 S/W CRane	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	I-3	CRane (east side)	A	1				A			
21	↓	↓	BG	46				BG			
22	I-3	CRane (west side	A	0				A			
22	↓	↓	BG	57				BG			
23	G-3	CRane (east Side)	A	0				A			
23	↓	↓	BG	55				BG			
24	G-3	CRane (west Side)	A	1				A			
24	↓	↓	BG	64				BG			
25	E-3	CRane (east Side)	A	1				A			
25	↓	↓	BG	66				BG			
25	E-3	CRane (west Side	A	3				A			
26	↓	↓	BG	67				BG			
27	C-3	CRane (east Side)	A	1				A			
27	↓	↓	BG	43				BG			
28	C-3	CRane (west Side)	A	0				A			
28	↓	↓	BG	49				BG			
29	A-3	CRane (east Side)	A	1				A			
29	↓	↓	BG	48				BG			
30	A-3	CRane (west Side)	A	0				A			
30	↓	↓	BG	56				BG			
31	A-2	CRANE (South) Inside	A	1				A			
31	↓	↓	BG	60				BG			
32	A-2	CRANE (South) outside	A	2				A			
32	↓	↓	BG	46				BG			
33	E-3	DUP	A	1				A			
33	↓	↓	BG	50				BG			
34			A					A			
34			BG					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 50718	
Delector Model & s/n:	M.43-10-1 s/n 041713	
Calibration Date:	10-9-97	
Efficiency BG (Beta/Gamma):	0.29	cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.32	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	329	800	.41	4/31/95
Beta-Gamma	44224	800	55	4/31/98

SWIPE.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scalar measurement)

SAMPLE DATE: 4-27-98 2200
LOCATION: PRAXAIR SITE B14 14S.W. NORTH SIDE OF I BEAM @ NORTH WALL. POST DECON EFFORT SURVEY # 1374
William W. [illegible]

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

	BY
TOTAL BACKGROUND COUNTS	52
BACKGROUND COUNT TIME (MIN)	1 min.
SAMPLE COUNT TIME (MIN)	1 min

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	% OF SURFACE AREA	dpm/100 cm² BY (BY) ~~GROSS SAMPLE COUNTS~~	TOTAL ft²
A	→	B14 14S.W. - NORTH SIDE	100%	6k upto 9k	7
1	H-1-kk	I BEAM @ NORTH WALL		*NOTE: k=1000	
2	THRU	-HORIZONTAL-		~~k = *1000~~ (w)	
3	H-7-kk				
4					
5					
6					
7					
8					
9				CPM	
10				88	
11 VERTICAL BEAM DATA	1	B14 14S.W. - NORTH SIDE		63	
12	2	OF I BEAM @ NORTH		78	
13	3	WALL. - VERTICAL -	N/A	69	
14	4			81	
15	5			77	
16					
17					
18					
19					
20					
21					
22					
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24					
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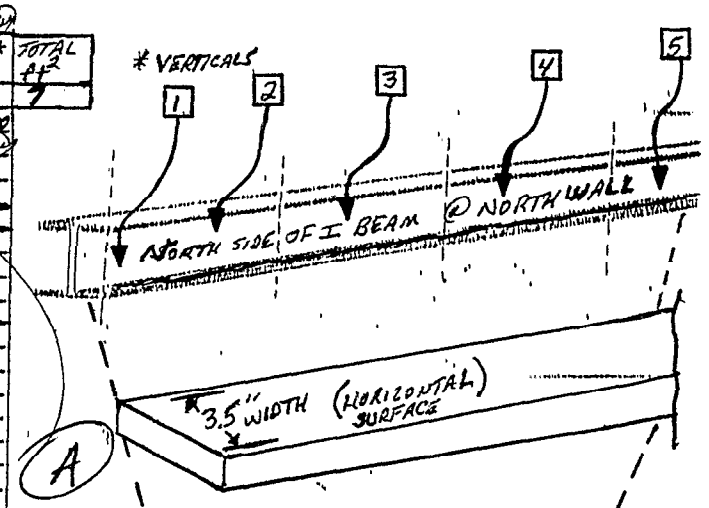
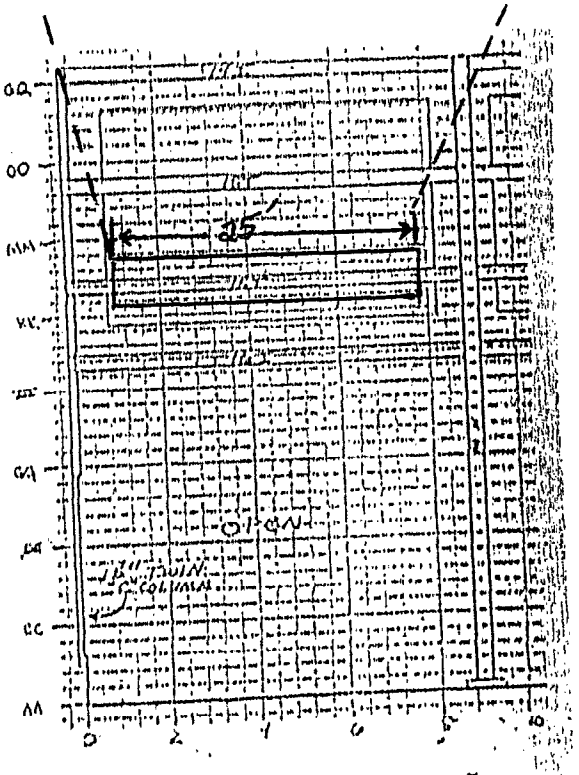
39					
40					





	BY
Instrument Model & s/N	L2221 # 86314
Detector Model & s/N	44-9 #063A
Calibration Date	1-28-98
Efficiency	cpm / dpm based on P/DO EFF. = .26
Detector Area	cm2 = 15.5 cm²

ENOL-C2.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

ANALYSIS DATE: 5/5/98
LOCATION: Praxair, Tonawanda, NY # 1375
Bldg. 14, Area 14SW North Wall smears

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)
1	JJ-9	14 SE NORTH WALL	A	0	1	5.8	-0.45	A	-1.3	3.7	16.6
1		14 SE NORTH WALL	BG	69	1	37.6	12.67	BG	45.2	58.2	134.3
2	JJ-10	14 SE NORTH WALL	A	5	1	5.8	4.55	A	13.0	12.5	16.6
2		14 SE NORTH WALL	BG	82	1	37.6	25.67	BG	91.7	63.4	134.3
3	JJ-11	14 SE NORTH WALL	A	0	1	5.8	-0.45	A	-1.3	3.7	16.6
3		14 SE NORTH WALL	BG	59	1	37.6	2.67	BG	9.5	53.8	134.3
4	JJ-12	14 SE NORTH WALL	A	4	1	5.8	3.55	A	10.1	11.2	16.6
4		14 SE NORTH WALL	BG	50	1	37.6	-6.33	BG	-22.6	52.5	134.3
5	JJ-13	14 SE NORTH WALL	A	2	1	5.8	1.55	A	4.4	7.9	16.6
5		14 SE NORTH WALL	BG	53	1	37.6	-3.33	BG	-11.9	52.5	134.3
6	JJ-14	14 SE NORTH WALL	A	1	1	5.8	0.55	A	1.6	5.6	16.6
6		14 SE NORTH WALL	BG	60	1	37.6	3.67	BG	13.1	54.2	134.3
7	JJ-15	14 SE NORTH WALL	A	0	1	5.8	-0.45	A	-1.3	3.7	16.6
7		14 SE NORTH WALL	BG	56	1	37.6	-0.33	BG	-1.2	52.5	134.3
8	JJ-16	14 SE NORTH WALL	A	0	1	5.8	-0.45	A	-1.3	3.7	16.6
8		14 SE NORTH WALL	BG	55	1	37.6	-1.33	BG	-4.8	52.5	134.3
9	JJ-19	14 SE NORTH WALL	A	0	1	5.8	-0.45	A	-1.3	3.7	16.6
9		14 SE NORTH WALL	BG	59	1	37.6	2.67	BG	9.5	53.8	134.3
10	JJ-20	14 SE NORTH WALL	A	1	1	5.8	0.55	A	1.6	5.6	16.6
10		14 SE NORTH WALL	BG	54	1	37.6	-2.33	BG	-8.3	52.5	134.3
11	JJ-21	14 SE NORTH WALL	A	2	1	5.8	1.55	A	4.4	7.9	16.6
11		14 SE NORTH WALL	BG	54	1	37.6	-2.33	BG	-8.3	52.5	134.3
12	JJ-22	14 SE NORTH WALL	A	0	1	5.8	-0.45	A	-1.3	3.7	16.6
12		14 SE NORTH WALL	BG	72	1	37.6	15.67	BG	56.0	59.4	134.3
13	JJ-23	14 SE NORTH WALL	A	0	1	5.8	-0.45	A	-1.3	3.7	16.6
13		14 SE NORTH WALL	BG	60	1	37.6	3.67	BG	13.1	54.2	134.3
14	JJ-24	14 SE NORTH WALL	A	0	1	5.8	-0.45	A	-1.3	3.7	16.6
14		14 SE NORTH WALL	BG	60	1	37.6	3.67	BG	13.1	54.2	134.3
15	JJ-25	14 SE NORTH WALL	A	5	1	5.8	4.55	A	13.0	12.5	16.6
15		14 SE NORTH WALL	BG	57	1	37.6	0.67	BG	2.4	52.9	134.3
16	JJ-26	14 SE NORTH WALL	A	1	1	5.8	0.55	A	1.6	5.6	16.6
16		14 SE NORTH WALL	BG	56	1	37.6	-0.33	BG	-1.2	52.5	134.3
17	JJ-27	14 SE NORTH WALL	A	0	1	5.8	-0.45	A	-1.3	3.7	16.6
17		14 SE NORTH WALL	BG	50	1	37.6	-6.33	BG	-22.6	52.5	134.3

Instrument Model & s/n:	M.2929 s/n 50718	
Detector Model & s/n:	M.43-10-1 /041713	
Calibration Date:		
Efficiency BG (Beta/Gamma):	0.280	cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.350	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	2295	5128	0.45	4/27/98
Beta-Gamma	288875	5128	56.3	4/27/98

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

ANALYSIS DATE: 5/5/98
LOCATION: Praxair, Tonawanda, NY # 1388
Bldg. 14, Area 14SW North Wall smears

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)
1	II-9	14 SE NORTH WALL	A	4	1	5.9	3.53	A	10.1	11.2	16.9
1		14 SE NORTH WALL	BG	67	1	37.3	11.57	BG	41.3	57.3	133.3
2	II-10	14 SE NORTH WALL	A	7	1	5.9	6.53	A	18.7	14.8	16.9
2		14 SE NORTH WALL	BG	72	1	37.3	16.57	BG	59.2	59.4	133.3
3	II-11	14 SE NORTH WALL	A	2	1	5.9	1.53	A	4.4	7.9	16.9
3		14 SE NORTH WALL	BG	84	1	37.3	28.57	BG	102.0	64.2	133.3
4	II-12	14 SE NORTH WALL	A	2	1	5.9	1.53	A	4.4	7.9	16.9
4		14 SE NORTH WALL	BG	62	1	37.3	6.57	BG	23.5	55.1	133.3
5	II-13	14 SE NORTH WALL	A	1	1	5.9	0.53	A	1.5	5.6	16.9
5		14 SE NORTH WALL	BG	64	1	37.3	8.57	BG	30.6	56.0	133.3
6	II-14	14 SE NORTH WALL	A	0	1	5.9	-0.47	A	-1.3	3.8	16.9
6		14 SE NORTH WALL	BG	53	1	37.3	-2.43	BG	-8.7	52.1	133.3
7	II-15	14 SE NORTH WALL	A	1	1	5.9	0.53	A	1.5	5.6	16.9
7		14 SE NORTH WALL	BG	69	1	37.3	13.57	BG	48.5	58.2	133.3
8	II-16	14 SE NORTH WALL	A	1	1	5.9	0.53	A	1.5	5.6	16.9
8		14 SE NORTH WALL	BG	57	1	37.3	1.57	BG	5.6	52.9	133.3
9	II-17	14 SE NORTH WALL	A	2	1	5.9	1.53	A	4.4	7.9	16.9
9		14 SE NORTH WALL	BG	61	1	37.3	5.57	BG	19.9	54.7	133.3
10	II-18	14 SE NORTH WALL	A	3	1	5.9	2.53	A	7.2	9.7	16.9
10		14 SE NORTH WALL	BG	58	1	37.3	2.57	BG	9.2	53.3	133.3
11	II-19	14 SE NORTH WALL	A	1	1	5.9	0.53	A	1.5	5.6	16.9
11		14 SE NORTH WALL	BG	60	1	37.3	4.57	BG	16.3	54.3	133.3
12	II-20	14 SE NORTH WALL	A	2	1	5.9	1.53	A	4.4	7.9	16.9
12		14 SE NORTH WALL	BG	55	1	37.3	-0.43	BG	-1.5	52.1	133.3
13	II-21	14 SE NORTH WALL	A	1	1	5.9	0.53	A	1.5	5.6	16.9
13		14 SE NORTH WALL	BG	60	1	37.3	4.57	BG	16.3	54.3	133.3
14	II-22	14 SE NORTH WALL	A	5	1	5.9	4.53	A	12.9	12.5	16.9
14		14 SE NORTH WALL	BG	68	1	37.3	12.57	BG	44.9	57.8	133.3
15	II-23	14 SE NORTH WALL	A	1	1	5.9	0.53	A	1.5	5.6	16.9
15		14 SE NORTH WALL	BG	55	1	37.3	-0.43	BG	-1.5	52.1	133.3
16	II-24	14 SE NORTH WALL	A	1	1	5.9	0.53	A	1.5	5.6	16.9
16		14 SE NORTH WALL	BG	56	1	37.3	0.57	BG	2.0	52.4	133.3
17	II-25	14 SE NORTH WALL	A	0	1	5.9	-0.47	A	-1.3	3.8	16.9
17		14 SE NORTH WALL	BG	50	1	37.3	-5.43	BG	-19.4	52.1	133.3
18	II-26	14 SE NORTH WALL	A	0	1	5.9	-0.47	A	-1.3	3.8	16.9
18		14 SE NORTH WALL	BG	59	1	37.3	3.57	BG	12.7	53.8	133.3
19	II-27	14 SE NORTH WALL	A	2	1	5.9	1.53	A	4.4	7.9	16.9
19		14 SE NORTH WALL	BG	46	1	37.3	-9.43	BG	-33.7	52.1	133.3

Instrument Model & s/n:	M.2929 s/n 50718
Detector Model & s/n:	M.43-10-1 /041713
Calibration Date:	
Efficiency BG (Beta/Gamma):	0.280 cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.350 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	377	800	0.47	4/27/98
Beta-Gamma	44345	800	55.4	4/27/98

(scaler measurement)

SURVEY #1394

Survey Date: 5-6-98 ~~0150~~ 1700
Location: PRAXAIR SITE B14 14 S.W. @ NORTH WALL
Description: VERIFICATION SURVEY

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha α	beta-gamma BY
Instrument Model & s/n:	ESA-1 #03078	2221 #86214
Detector Model & s/n:	43-65 #089812	44-9 #063A
Calibration Date:	8-22-97	1-28-98
Efficiency (Tc99) (SY90) (Th230)	.148	.26
Detector Area (CM2)	50	155

	α alpha	BY beta-gamma
TOTAL BACKGROUND COUNTS	1 ~~cpm~~	50
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN.

RP Technician: William W. [illegible]

"POST" IVC VERIFICATION

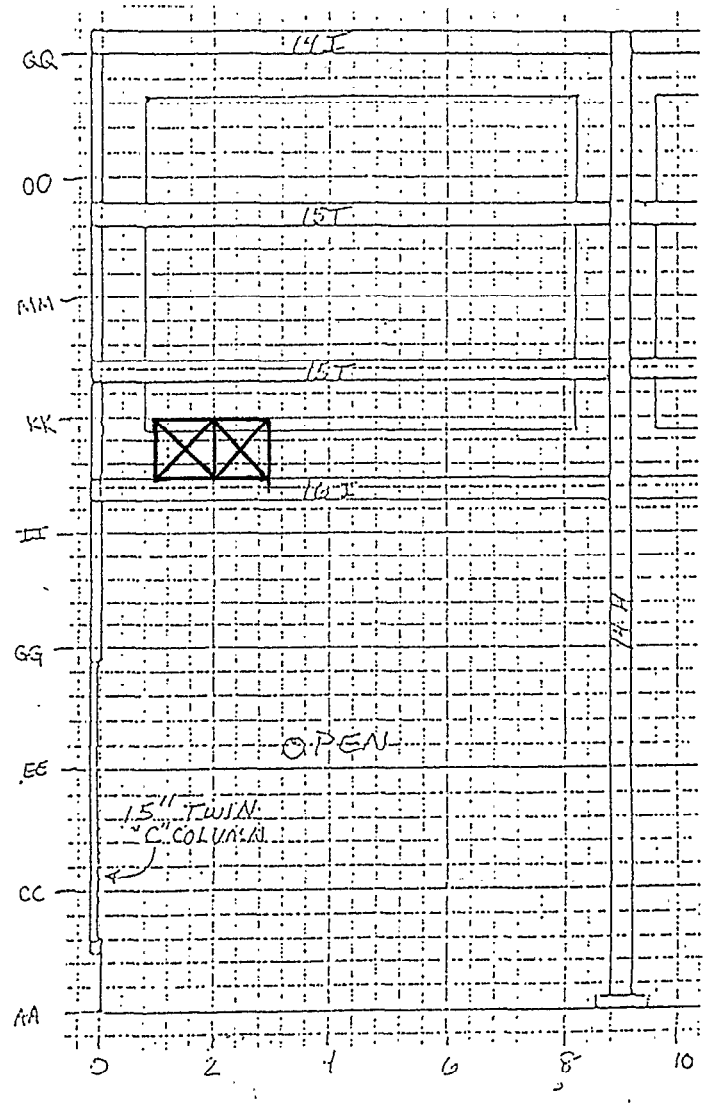
Insert area map or sketch below

AREA 14 SOUTH

NORTH WALL

#	GRID	DESCRIPTION	α alpha GROSS COUNTS	BY beta-gamma GROSS COUNTS
1	H-1-JJ	A B14 14 S.W.-NORTH WALL		122
2	B	STEEL & CONCRETE		93
3	C	INTERFACE		86
4	D			112
5	E		N/A	74
6	H-2-JJ	A		101
7	B			90
8	C			117
9	D			87
10	E			89

N/A



I = I BEAM → I
T = T BEAM → T
C = C BEAM → [
H = H BEAM/COLUMN → H

SURVEY01.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

Survey #1394a

ANALYSIS DATE: 5/6/98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14S/W NORTH WALL 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	H-1-JJ	STEEL & CONCRETE INTERFACE	A	1				A			
21	↓	@ NORTH WALL OF	BG	56				BG			
22	H-2-JJ	14S/W	A	0				A			
22	↓	↓	BG	49				BG			
23			A					A			
23			BG					BG			
24			A					A			
24			BG					BG			
25			A					A			
25			BG					BG			
26			A					A			
26			BG					BG			
27			A					A			
27			BG					BG			
28			A					A			
28			BG					BG			
29			A					A			
29			BG					BG			
30			A					A			
30			BG					BG			
31			A					A			
31			BG					BG			
32			A					A			
32			BG					BG			
33			A					A			
33			BG					BG			
34			A					A			
34			BG					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 50718	
Detector Model & s/n:	M.43-10-1 s/n 041713	
Calibration Date:	10-9-97	
Efficiency BG (Beta/Gamma):	.34	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.28	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	357	800	.45	5-6-98
Beta-Gamma	44305	800	.55	5-6-98

SWIPE.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

MK complete

Survey Date: 5/18/98
Location: 14 S/W overhead
Description: Verif

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey # 1420

	alpha	beta-gamma
Instrument Model & s/n:	ESP103028	2218 6314
Detector Model & s/n:	43-65/089812	44-9/063A
Calibration Date:	8-14-97	1/98
Efficiency (Tc99) (SY90) (Th230)	.14	.27
Detector Area (CM2)	50	15.5

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	1	39
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

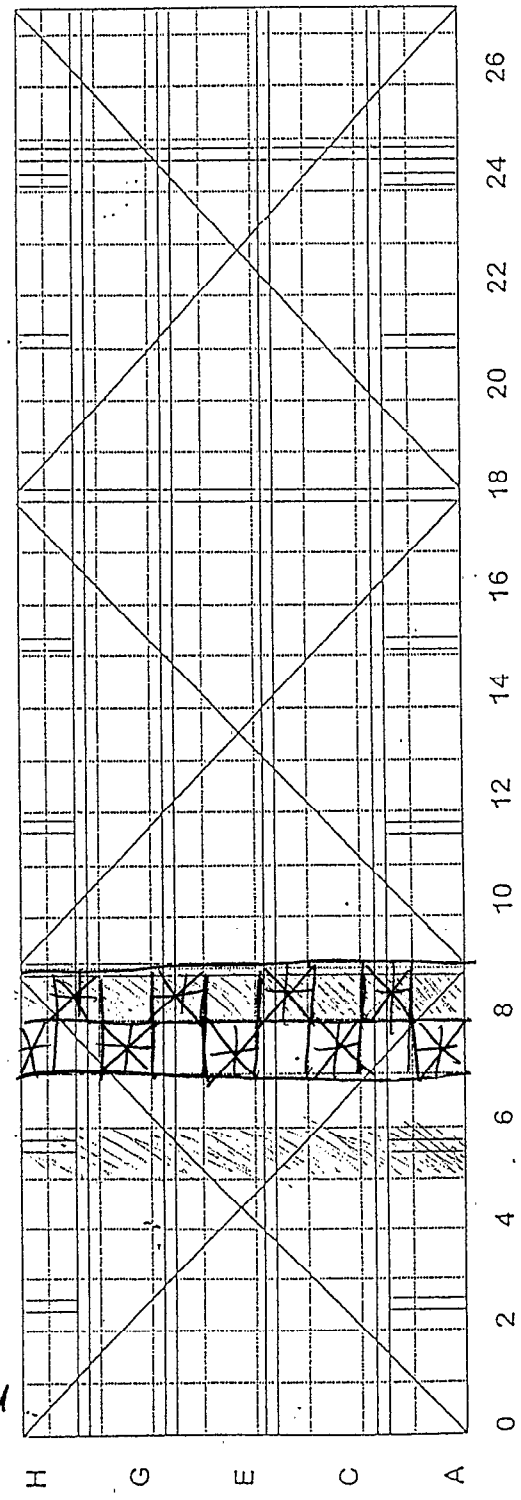
RP Technician: R. Smallridge

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	A-7	I-Beam		42
B		I-Beam		28
C		Crete plank		36
D		Crete plank		45
E		Crete plank		37
A	C-7	I-Beam		34
B		I-Beam		31
C		Angle Iron		42
D		Angle Iron		38
E		Crete plank		33
A	E-7	Crete plank		45
B		Crete plank		48
C		Crete plank		25
D		Crete plank		51
E		Crete plank		30
A	G-7	Crete plank		26
B		Crete plank		50
C		I-Beam		48
D		I-Beam		59
E		Crete plank		32
A	I-7	Crete plank	1	49
B		Crete plank	1	43
C		I-Beam	3	48
D		I-Beam	Ø	60
E		Crete plank	2	42
E	I-7	Dup		44
A	B-8	Angle Iron		50
B		Crete plank		24
C		I-Beam		40
D		I-Beam		52
E		Crete plank		37
A	D-8	I-Beam		42
B		Crete plank		48
C		Crete plank		39
D		Crete plank		44
E		Crete plank		31
A	F-8	I-Beam		56
B		Angle Iron		45
C		I-Beam		61
D		Angle Iron		47
E		Crete plank		47
A	H-8	I-Beam		42
B		Angle Iron		37
C		I-Beam		50
D		Crete plank		46
E		Crete plank		39
E	H-8	Dup		39

AREA 14 SOUTH

CEILING

Insert area map or sketch below



REVIEW

SURVEY01.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

14 S/W Smear Survey
Survey 1420a

ANALYSIS DATE: 5/18/98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area
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-7	overhead I-Beam	A	2				A			
21	↓	↓	BG	55				BG			
22	C-7	overhead Angle Iron	A	1				A			
22	↓	↓	BG	53				BG			
23	E-7	overhead crete plank	A	0				A			
23	↓	↓	BG	50				BG			
24	G-7	overhead I-Beam	A	1				A			
24	↓	↓	BG	51				BG			
25	I-7	overhead crete plank	A	0				A			
25	↓	↓	BG	40				BG			
26	B-8	overhead I-Beam	A	3				A			
26	↓	↓	BG	55				BG			
27	D-8	overhead creteplank	A	3				A			
27	↓	↓	BG	53				BG			
28	F-8	overhead I-Beam	A	3				A			
28	↓	↓	BG	60				BG			
29	H-8	overhead Angle Iron	A	1				A			
29	↓	↓	BG	71				BG			
30	H-8	Dup	A	2				A			
30	↓	↓	BG	23				BG			
31			A					A			
31			BG					BG			
32			A					A			
32			BG					BG			
33			A					A			
33			BG					BG			
34			A					A			
34			BG					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 50718	
Detector Model & s/n:	M.43-10-1 s/n 041713	
Calibration Date:	10-9-97	
Efficiency BG (Beta/Gamma):	.28	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.36	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	2807	5145	.55	5-18-98
Beta-Gamma	284600	5145	cc	5-18-98

Review [illegible]

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey Date: 5-11-98
Location: 14 S/W over head
Description: VeriF

	alpha	beta-gamma
Instrument Model & s/n:	ESP/03028	2221/86308
Detector Model & s/n:	4365/089812	44-9/37683
Calibration Date:	8-14-97	1-98
Efficiency [Tc99] [SY90] [Th230]	.14	.29
Detector Area (CM2)	50	15.5

RP Technician: R. Smallridge

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey # 1421

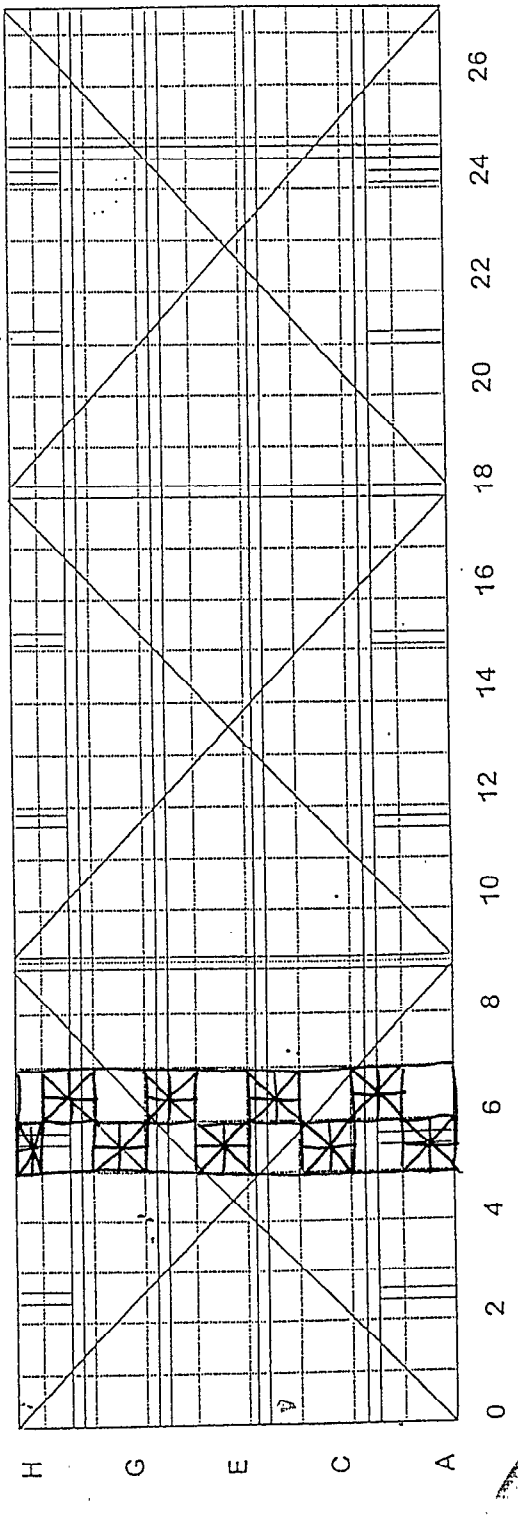
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	1 MIN	48
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	H-6	I-Beam		57
B		I-Beam		46
C		crete plank		52
D		crete plank		37
E		crete plank		53
A	F-6	I-Beam		34
B		I-Beam		45
C		ANGle IRON		50
D		crete plank		37
E		crete plank		46
A	D-6	I-Beam		51
B		I-Beam		60
C		crete plank		38
D		crete plank		39
E		crete plank		26
A	B-6	I-Beam		54
B		I-Beam		36
C		ANGle IRON		44
D		crete plank		53
E		crete plank		39
E	B-6	OUP		45
A	A-5	I-Beam		37
B		I-Beam		48
C		crete plank		52
D		crete plank		49
E		crete plank		60
A	C-5	Crete plank	1	50
B		Crete plank	2	38
C		Crete plank	2	41
D		Crete plank	3	43
E		Crete plank	0	36
A	E-5	Fan Housing		49
B		Fan Housing		38
C		Fan Housing		
D		Fan Housing		
E		Fan Housing		
A	G-5	crete plank		45
B		crete plank		51
C		crete plank		37
D		crete plank		42
E		crete plank		47
A	I-5	I-Beam		55
B		I-Beam		57
C		crete plank		42
D		crete plank		40
E		ANGle IRON		43
C	I-5	ANGle IRON (OUP)		58

Insert area map or sketch below

AREA 14 SOUTH

CEILING



REVIEW

SURVEY01.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

14 S/W Smear Survey # 1421a

ANALYSIS DATE: 5-11-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area

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	H-6	Overhead I-Beam	A	3				A			
21	↓	↓	BG	51				BG			
22	F-6	overhead Crete plank	A	3				A			
22	↓	↓	BG	62				BG			
23	D-6	I-Beam overhead	A	4				A			
23	↓	↓	BG	54				BG			
24	B-6	overhead Angle Iron	A	0				A			
24	↓	↓	BG	56				BG			
25	A-5	overhead Crete plank	A	1				A			
25	↓	↓	BG	65				BG			
26	C-5	overhead crete plank	A	3				A			
26	↓	↓	BG	72				BG			
27	E-5	Fan housing	A	2				A			
27	↓	↓	BG	48				BG			
28	G-5	overhead Crete plank	A	2				A			
28	↓	↓	BG	50				BG			
29	I-5	Overhead I-Beam	A	0				A			
29	↓	↓	BG	50				BG			
30	I-5	DUD	A	0				A			
30	↓	↓	BG	62				BG			
31			A					A			
31			BG					BG			
32			A					A			
32			BG					BG			
33			A					A			
33			BG					BG			
34			A					A			
34			BG					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 50718	
Detector Model & s/n:	M.43-10-1 s/n 041713	
Calibration Date:	10-9-97	
Efficiency BG (Beta/Gamma):	.29	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.34	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	2142	5150	0.42	5-11-98
Beta-Gamma	286184	5150	56	5-11-98

Review

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 050798
LOCATION: B14 Area 14SE South Wall (1426)

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

Instrument Model & s/n:		L2221/86308
Detector Model & s/n:		44-9/037683
Calibration Date:		1/29/98
Efficiency	0.29	cpm/dpm based on S/Y90
Detector Area	15.5	cm2

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

RCT: M. Zigo

SAMPLE #	LOCATION GRID	LOCATION DESCRIPTION	BACKGROUND COUNTS	GROSS SAMPL COUNTS	NET SAMPLE COUNT RATE (CPM)	RESULTS (dpm/100cm2)	95% ERROR (dpm/100cm2)	MDA (dpm/100cm2)
A	NN-18	Crane Rail	46	57	11	245	443	762
B			46	49	3	67	425	762
C			46	43	-3	-67	411	762
D			46	48	2	44	423	762
E			46	61	15	334	451	762
A	NN-19		46	53	7	156	434	762
B			46	54	8	178	436	762
C			46	46	0	0	418	762
D			46	43	-3	-67	411	762
E			46	64	18	400	457	762
A	NN-20		46	58	12	267	445	762
B			46	68	22	489	466	762
C			46	63	17	378	455	762
D			46	51	5	111	429	762
E			46	47	1	22	421	762
A	NN-21		46	63	17	378	455	762
B			46	54	8	178	436	762
C			46	57	11	245	443	762
D			46	61	15	334	451	762
E			46	63	17	378	455	762
A	NN-22		46	59	13	289	447	762
B			46	97	51	1135	521	762
C			46	54	8	178	436	762
D			46	64	18	400	457	762
E			46	58	12	267	445	762
A	NN-23		46	48	2	44	423	762
B			46	42	-4	-89	409	762
C			46	48	2	44	423	762
D			46	51	5	111	429	762
E			46	47	1	22	421	762
A	NN-24		46	39	-7	-156	402	762
B			46	54	8	178	436	762
C			46	68	22	489	466	762
D			46	107	61	1357	539	762
E			46	54	8	178	436	762
A	NN-25		46	51	5	111	429	762
B			46	49	3	67	425	762
C			46	53	7	156	434	762
D			46	66	20	445	461	762
E			46	61	15	334	451	762
A	NN-26		46	54	8	178	436	762
B			46	51	5	111	429	762
C			46	47	1	22	421	762
D			46	51	5	111	429	762
E			46	38	-8	-178	400	762
E	NN-21	DUP	46	54	8	178	436	762
E	NN-25	DUP	46	43	-3	-67	411	762

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 050798
LOCATION: B14 Area 14SE South Wall (1426)

RADIATION MEASUREMENT: Alpha
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

Instrument Model & s/n:		ESP-1/03028
Detector Model & s/n:		43-6/089812
Calibration Date:		8/22/97
Efficiency	0.150	cpm/dpm based on S/Y90
Detector Area	50	cm2

TOTAL BACKGROUND COUNTS	2
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

RP Technician: M. Zigo

SAMPLE #	LOCATION GRID	LOCATION DESCRIPTION	BACKGROUND COUNTS	GROSS SAMPL COUNTS	NET SAMPLE COUNT RATE (CPM)	RESULTS (dpm/100cm2)	±5% ERROR (dpm/100cm2)	MDA (dpm/100cm2)
NN-26	A	Crane Rail	2	0	-2	-27	37	124
	B		2	3	1	13	58	124
	C		2	3	1	13	58	124
	D		2	2	0	0	52	124
	E		2	3	1	13	58	124

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 051498
LOCATION: B14 Area 14SE South Wall (1427)

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

Instrument Model & s/n:		L2221/86308
Detector Model & s/n:		44-9/037683
Calibration Date:		1/29/98
Efficiency	0.29	cpm/dpm based on S/Y90
Detector Area	15.5	cm2

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

RCT: M. Zigo

SAMPLE #	LOCATION GRID	LOCATION DESCRIPTION	BACKGROUND COUNTS	GROSS SAMPL COUNTS	NET SAMPLE COUNT RATE (CPM)	RESULTS (dpm/100cm2)	95% ERROR (dpm/100cm2)	MDA (dpm/100cm2)
A	NN-9	Beam	46	41	-5	-111	407	762
B			46	39	-7	-156	402	762
C			46	53	7	156	434	762
D			46	47	1	22	421	762
E			46	41	-5	-111	407	762
A	OO-11	Tin Wall	46	57	11	245	443	762
B			46	49	3	67	425	762
C			46	54	8	178	436	762
D			46	51	5	111	429	762
E			46	43	-3	-67	411	762
A	NN-13	Beam	46	33	-13	-289	388	762
B			46	41	-5	-111	407	762
C			46	37	-9	-200	397	762
D			46	56	10	222	440	762
E			46	49	3	67	425	762
A	OO-15	Tin Wall	46	47	1	22	421	762
B			46	64	18	400	457	762
C			46	42	-4	-89	409	762
D			46	60	14	311	449	762
E			46	53	7	156	434	762
A	NN-17	Beam	46	31	-15	-334	383	762
B			46	42	-4	-89	409	762
C			46	42	-4	-89	409	762
D			46	46	0	0	418	762
E			46	51	5	111	429	762
E	OO-15	DUP	46	51	5	111	429	762

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

Survey Date: 5/28/98
Location: 14 S/W over head
Description: VERIF

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/03028	2221/86313
Detector Model & s/n:	43-65/085812	44-9/048267
Calibration Date:	8/98	5-5-98
Efficiency (Tc99) (SY90) (Th230)	.14	.28
Detector Area (CM2)	50	15.5

RP Technician: R. Smallridge

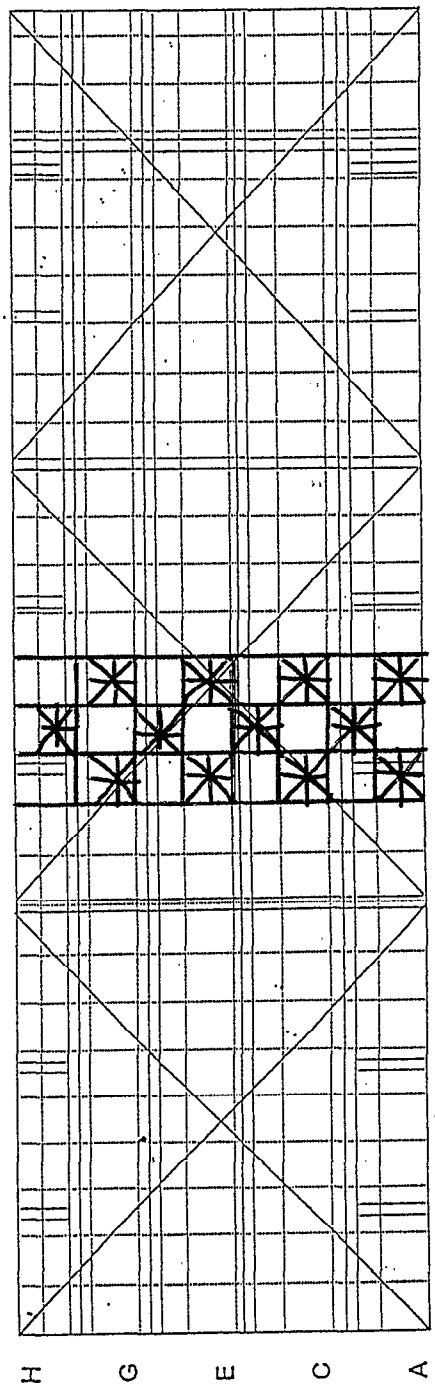
RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

SURVEY # 1467 (1 of 2)

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	49
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	A-11	I-Beam		50
B		I-Beam		55
C		crete plank		49
D		Crete plank		50
E		Angle Iron		55
A	C-11	I-Beam		46
B		I-Beam		58
C		Crete plank		58
D		Crete plank		49
E		Crete plank		40
A	E-11	Crete plank		62
B		Crete plank		54
C		Crete plank		60
D		Crete plank		65
E		Crete plank		69
A	G-11	I-Beam	0	75
B		I-Beam	1	79
C		Angle Iron	1	84
D		Angle Iron	3	80
E		Angle Iron	2	83
E	G-11	Dup	3	90
A	B-12	I-Beam		38
B		I-Beam		35
C		Crete plank		40
D		Crete plank		50
E		Crete plank		53
A	D-12	Angle Iron		64
B		I-Beam		68
C		Crete plank		49
D		Crete plank		48
E		Angle Iron		59
A	F-12	Angle Iron		65
B		Crete plank		51
C		Crete plank		49
D		Crete plank		40
E		Crete plank		55
A	H-12	Angle Iron		82
B		Angle Iron		90
C		I-Beam		95
D		I-Beam		98
E		Crete plank		50
A	A-13	I-Beam		47
B		I-Beam		49
C		Crete plank		50
D		Crete plank		49
E		Crete plank		46
A	C-13	I-Beam		61
B		I-Beam		58
C		Crete plank		56
D		Crete plank		40
E		Crete plank		47

AREA 14 SOUTH
CEILING



ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

Survey Date: 5/28/98
Location: 14 S/W overhead
Description: Verif

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/03028	2221/86373
Detector Model, & s/n:	4315/099812	44-9/048267
Calibration Date:	8/98	5-5-98
Efficiency [Tc99] [SY90] [Th230]	.14	.28
Detector Area (CM2)	50	15.5

RP Technician: R. Smallridge

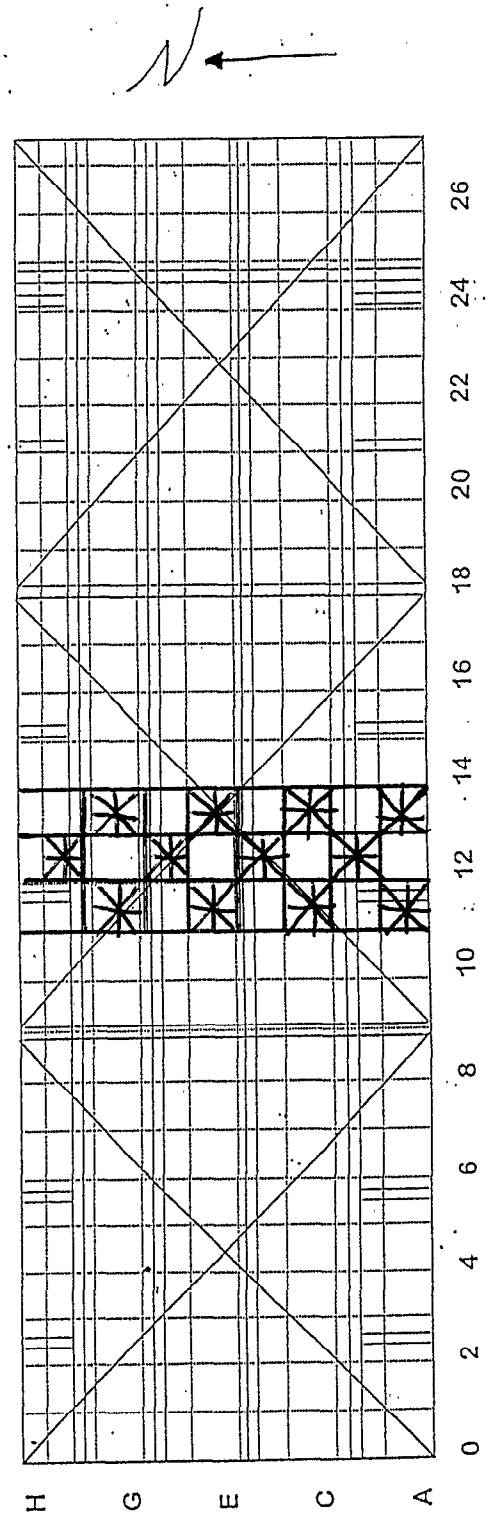
RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey # 1467 (2 of 2)

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	49
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	E-13	I-BEAM	N/A	69
B		I-BEAM		75
C		ANGLE IRON		73
D		ANGLE IRON		78
E		ANGLE IRON		85
A	G-13	crete plank	0	51
B		crete plank	0	49
C		ANGLE IRON	1	83
D		ANGLE IRON	2	81
E		I-BEAM	1	94
E	G-13	DUP		81

AREA 14 SOUTH
CEILING



ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

Survey # 1468
R. Smallridge 6/1/98

ANALYSIS DATE:
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 S/e ov 22 H0 ad
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-11	I - Beam	A	3				A			
21	↓	↓	BG	60				BG			
22	C-11	crete plank	A	2				A			
22	↓	↓	BG	61				BG			
23	E-11	crete plank	A	3				A			
23	↓	↓	BG	46				BG			
24	G-11	I - Beam	A	1				A			
24	↓	↓	BG	59				BG			
25	G-11	Dup	A	4				A			
25	B6-11	↓	BG	61				BG			
26	B-12	I - Beam	A	3				A			
26	↓	↓	BG	60				BG			
27	D-12	crete plank	A	1				A			
27	↓	↓	BG	51				BG			
28	F-12	crete plank	A	2				A			
28	↓	↓	BG	54				BG			
29	H-12	Angle Iron	A	0				A			
29	↓	↓	BG	58				BG			
30	A-13	I - Beam	A	3				A			
30	↓	↓	BG	49				BG			
31	C-13	~~E-13~~ I - Beam	A	0				A			
31	↓	↓	BG	58				BG			
32	E-13	I - Beam	A	0				A			
32	↓	↓	BG	54				BG			
33	G-13	Crete plank	A	1				A			
33	↓	↓	BG	60				BG			
34	G-13	Dup	A	1				A			
34	↓	↓	BG	51				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 50718
Detector Model & s/n:	M.43-10-1 s/n 041713
Calibration Date:	10-9-97
Efficiency BG (Beta/Gamma):	0.29 cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.34 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	5675	5160	1.1	6-1-98
Beta-Gamma	285711		[illegible]	

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 6-1-98 @ 2330
LOCATION: Bld-14
AREA 14 S/E
"NORTH WALL"
Post Decon effort
M. Zigo - Supplemental Stos

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

SURVEY # 1477

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

SAMPLE #	GRID LOCATION CODE	LOCATION DESCRIPTION	% OF SURFACE	D.P.M./100 CM² BY GROSS SAMPLE COUNTS
1	KK-9	NORTH SIDE OF I	100%	5K up To 10K
2	THRU	BEAM @ NORTH WALL		
3	KK-16	— HORIZONTAL —		21 LF
4		BACK SIDE AGAINST WALL		
5				
6				
7				
8				
9				DPM/100CM²
10	1	NORTH SIDE OF		#3 556
11	2	I BEAM @ NORTH		#3 890
12	3	WALL - VERTICAL -	N	#3 845
13	4		A	#3 578
14	5			#3 512
15	6			#3 1068
16	7			#3 489
17				
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20				
21				
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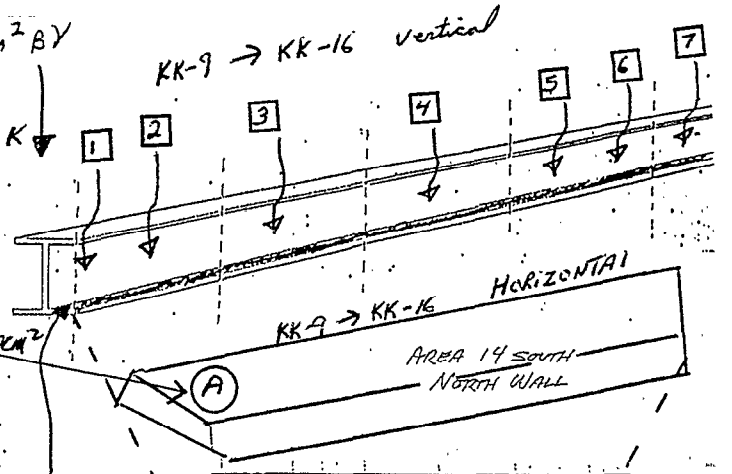
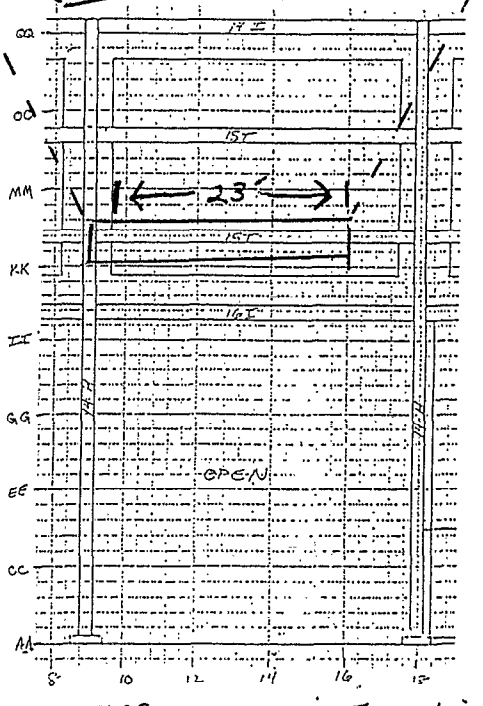
39				
40				

VERTICAL BEAM SURFACE





14 SE - MID SECTION FACING N into 14N

I = I BEAM → I
T = T BEAM → T
C = C BEAM → [
H = H BEAM → H

Instrument Model & s/n:	Ludlum 2221 # 86308 /
Detector Model & s/n:	44-9 # 37683
Calibration Date:	01-27-98
Efficiency	0.29 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

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HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 6-1-98 @ 2355
LOCATION: Bld - 14
AREA 14 S/E
"North wall"
Post Decon Effort
" M. Zigo "
Supplemental Standards

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements
Survey # 1478

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

SAMPLE #	LOCATION CODE (GRID)	LOCATION DESCRIPTION	c/o of Surface	GROSS SAMPLE COUNTS (DPM/100 CM² BG)
1	KK-17	NORTH SIDE of I	100%	5K up to 11.7K
2	THRU	BEAM @ NORTH WALL		
3	KK-21	— HORIZONTAL —		
4				
5				
6				
7				
8				
9				
10	1	NORTH SIDE of		~~[illegible]~~ 400
11	2	I BEAM @ NORTH	N/A	~~[illegible]~~ 467
12	3	WALL — VERTICAL -		~~[illegible]~~ 608
13	4			~~[illegible]~~ 289
14	5			~~[illegible]~~ 467
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
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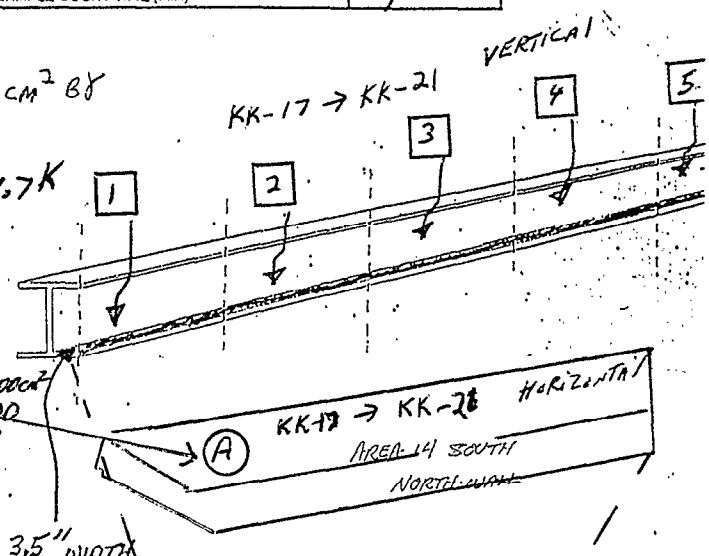
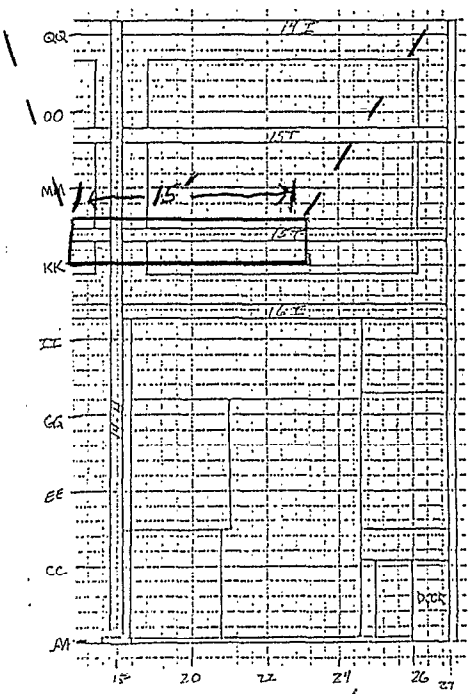
35				
36				
37				
38				
39				
40				

VERTICAL BEAM SURFACE





Instrument Model & s/n:	Ludlum 2221 # 86308
Detector Model & s/n:	44-9 # 27683
Calibration Date:	01-25-98 0-29
Efficiency	cpm / dpm based on S/Y90
Detector Area	cm2 15.5

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 6-1-98
LOCATION: B-14 Platform
AREA 14 S/E
"NORTH WALL"
POST DECON Effort -
M. Trigo

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

SURVEY # 1479

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

GRID. D.P.M./100 cm² β.γ.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	% OF SURFACE AREA	GROSS SAMPLE COUNTS
1	KK-22	NORTH SIDE OF I	100%	4K4P to 11K
2	TYPU	BEAM @ NORTH WAL		
3	KK-25	— HORIZONTAL —		
4		ONLY		
5				
6				
7				
8				
9				D.P.M./100cm²
10	1	NORTH SIDE OF	N	289
11	2	I BEAM @		265
12	3	NORTH WALL	A	600
13	4	- VERTICAL -		465
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
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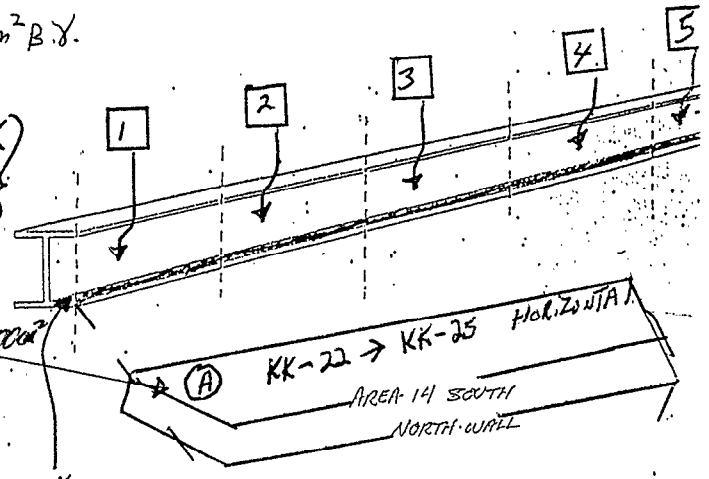
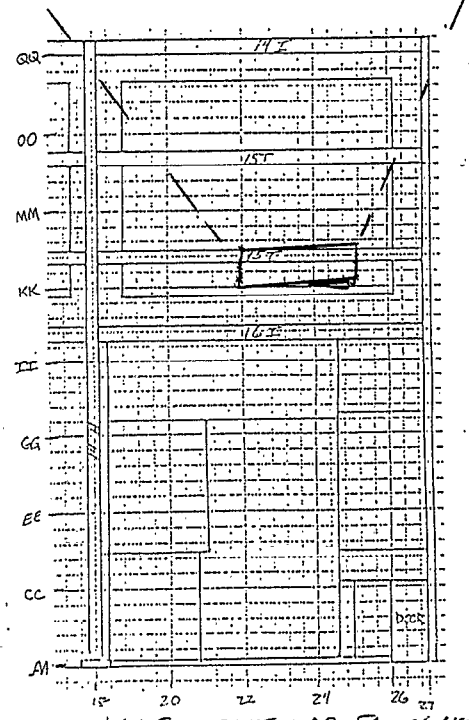
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				

Vertical BEAM SURFACE

3.5" WIDTH





14SE - EAST SIDE FACING North

I = I BEAM → I
T = T BEAM → T
C = C BEAM → [
H = H BEAM/COLUMN → H

Instrument Model & s/n:	Ludlum 2221 # 86308
Detector Model & s/n:	44-9 # 37683
Calibration Date:	01-29-98
Efficiency	cpm / dpm based on S/Y90 0.29
Detector Area	cm2 15.5

ENCL-C2.XLS

ION TECHNOLOGY, INC. — DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

SURVEY # 1480

Survey Date: 6-1-98
Location: PRAXAIR SITE B14 14 SOUTH WEST NORTH WALL
Description: HORIZONTAL SURFACE @ BOTTOM LEDGE OF I BEAM
VERIFICATION SURVEY

	alpha	beta-gamma
Instrument Model & s/n:	E1-1 #0028	L2221 #8634
Detector Model & s/n:	43-65 #0442	44-9 #083A
Calibration Date:	8-12-97	1-28-98
Efficiency (Tc99) (SY50) (Th230)	.148	.26
Detector Area (CM2)	50	15.5

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	0	50
BACKGROUND COUNT TIME (MIN)	1 MIN.	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.	1 MIN

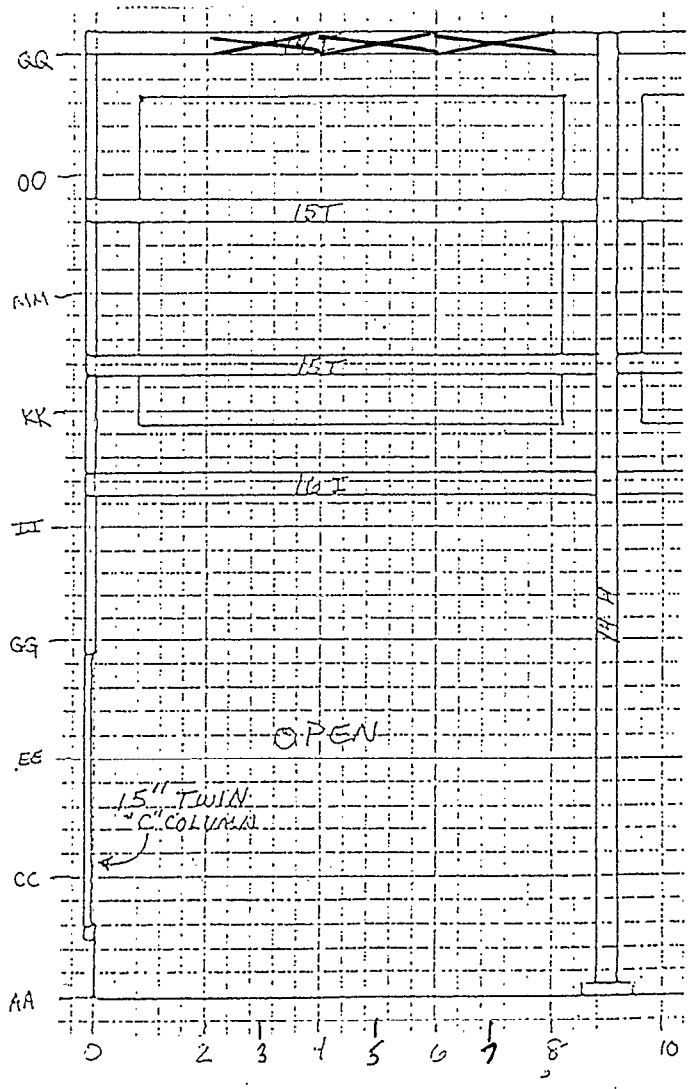
RP Technician: W.

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
1	H-2-99	A B14 14S. NORTH WALL		59
2		B I BEAM HORIZONTAL		62
3		C SURFACE	N/A	53
4		D		56
5		E		68
6	H-3-99	A	1	66
7		B	1	55
8		C	0	73
9		D	1	65
10		E	1	81
11	H-4-99	A		76
12		B		59
13		C		67
14		D		51
15		E		59
16	H-5-99	A		64
17		B	N/A	61
18		C		69
19		D		75
20		E		77
21		E DUPLICATE		60
22	H-6-99	A		83
23		B		53
24		C		78
25		D		74
26		E		65

* NOTE: ALL FIVE GRID POINTS OF EACH GRID (A THRU E) ARE MEASUREMENTS TAKEN @ BOTTOM LEDGE OF I BEAM.

Insert area map or sketch below

AREA 14 SOUTH
NORTH WALL



I = I BEAM → I
T = T BEAM → T
C = C BEAM → [
H = H BEAM/COLUMN → H

REVIEW

SURVEY01.XLS

(scaler measurement)

SAMPLE DATE: 6-2-98
LOCATION: Pr. Rai
BLD-14
AREA 14 S/E
EAST WALL
M. Zigo
"Supplemental" Standards

Survey

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

1498

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

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS D.P.M./100 cm2
1	A-KK	EAST SIDE of I BEAM	5K to 10K
2	THRU	@ EAST WALL	
3	I-KK	→ HORIZONTAL — 100%	
4		of SURFACE	
5			
6			
7			
8	1	EAST SIDE of	400
9	2	I BEAM @ EAST	600
10	3	WALL — VERTICAL	200
11	4		350
12	5		457
13	6		460
14	7		380
15	8		400
16	9		380
17	10		460
18			
19			
20			
21			
22			
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24			
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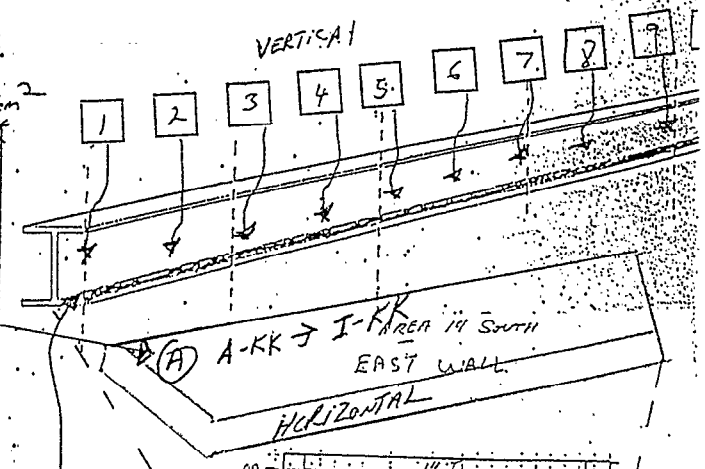
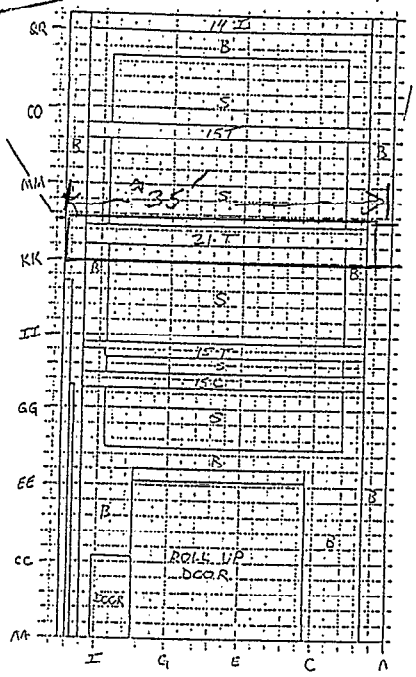




I = I BEAM → ⊥
T = T BEAM → ⊤
C = C BEAM → [
H = H BEAM → H

Instrument Model & s/n:	Ludlum 2221 # 86308
Detector Model & s/n:	44-9 # 37683
Calibration Date:	01-29-98
Efficiency	cpm / dpm based on S/Y90 0.29
Detector Area	cm2 15.5

ENCL-C2.XLS

(scaler measurement)

Survey Date: 5-26-98
Location: 14 S/E OVERHEAD
Description: Verification

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey # 1501

	alpha	beta-gamma	
Instrument Model & s/n: ESP-1 #	03028	L-2221 #	26308
Detector Model & s/n: 43-65	089812	44-9 #	37683
Calibration Date:	8-22-97	1-29-98	
Efficiency (Tc99) (SY90) (Th230)	.14	0.29	
Detector Area (CM2)	50	15.5	

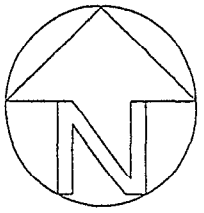
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	46
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: M. Zigo

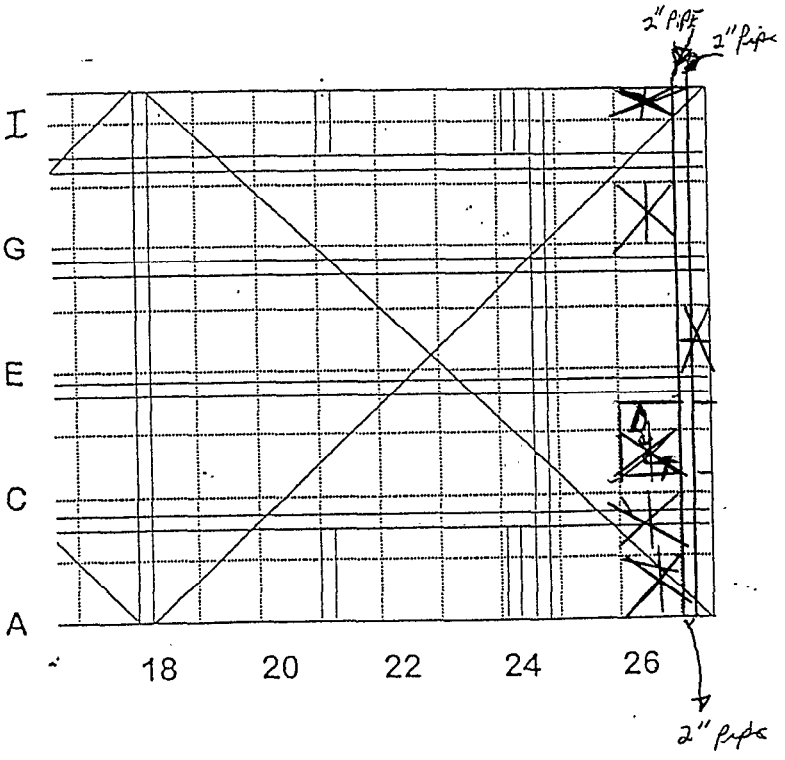
9/16/98 QQ not necessary for O/It

Insert area map or sketch below

#	GRID	DESCRIPTION		alpha GROSS COUNTS	beta-gamma GROSS COUNTS	
1	A-QQ-26	CROSS BRACE	A		43	A26
			B		46	
			C	N	46	
			D	A	44	
			E		53	
	B-QQ-26	I BEAM	A		49	B26
			B		46	
			C	N A	48	
			D		46	
			E		54	
	D-QQ-26	DUCT WORK	A		38	D26
			B		39	
			C	N	46	
			D	A	47	
			E		50	
	E-QQ-27	BEAM	A		36	E26
			B		58	
			C	N	49	
			D	A	63	
			E		49	
	G-QQ-26	Ceiling	A	2	98	G26
			B	2	87	
			C	1	56	
			D	2	68	
			E	2	96	
	I-QQ-26	2" PIPE	A		47	I26
			B	N	34	
			C	A	37	
			D		40	
			E		41	
	E-QQ-27	Pup	E	N/A	44	E27



AREA 14 SOUTH
CEILING



SURVEY01.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

#1503

ANALYSIS DATE: 6-3-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 S/E CEILING (Verification Survey) M.3160

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-QQ-26	OVERHEAD, BRACE	A	0				A			
21	A-QQ-26	BRACE	BG	56				BG			
22	B-QQ-26	I BEAM	A	0				A			
22	B-QQ-26	I BEAM	BG	68				BG			
23	D-QQ-26	DUCT WORK	A	0				A			
23	D-QQ-26	DUCT WORK	BG	68				BG			
24	E-QQ-26	BEAM	A	0				A			
24	E-QQ-26	BEAM	BG	57				BG			
25	G-QQ-25	Ceiling	A	0				A			
25	G-QQ-25	Ceiling	BG	44				BG			
26	E-QQ-27	2" Pipe	A	0				A			
26	E-QQ-27	2" Pipe	BG	43				BG			
27			A					A			
27			BG					BG			
28			A					A			
28			BG					BG			
29			A					A			
29			BG					BG			
30			A					A			
30			BG					BG			
31			A					A			
31			BG					BG			
32			A					A			
32			BG					BG			
33			A					A			
33			BG					BG			
34			A					A			
34			BG					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 50718	
Detector Model & s/n:	M.43-10-1 s/n 041713	
Calibration Date:	10-9-97	
Efficiency BG (Beta/Gamma):	0.29	cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.39	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	328	800	0.41	6-3-98
Beta/Gamma	[illegible]	[illegible]	[illegible]	[illegible]

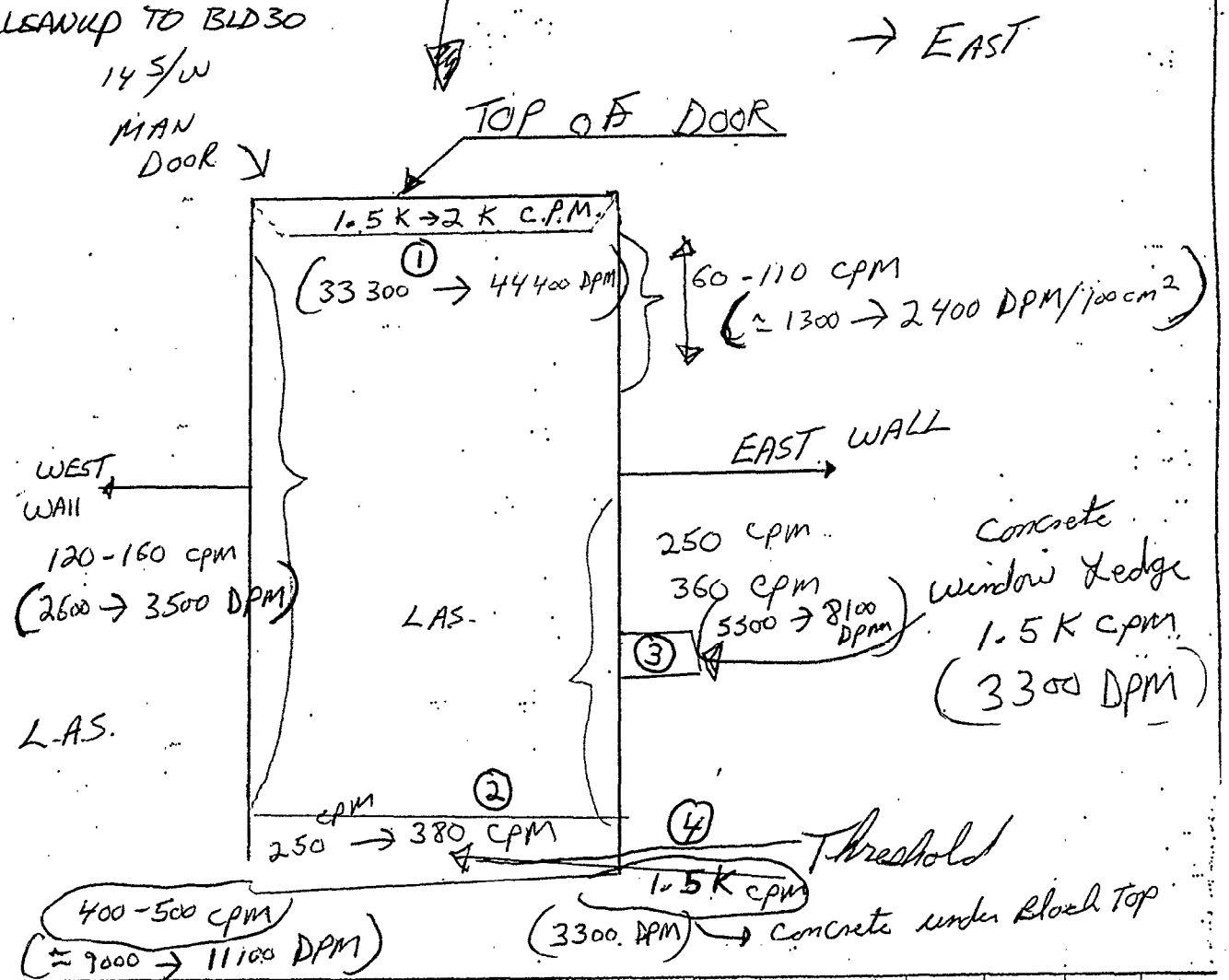
ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: BLD 14
Area: 14 SW Southwall MANDOOR

Date/Time 6-8-98	Tech M. Zigo	Instrument / sn X-2221 # 308
Location/ Purpose AREA 14 S/west MAN DOOR		Survey # 1514 RWP# 01

POST CLEANUP TO BLD30
14 S/W
MAN DOOR



Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	S	Top of Door	35	95	116	203							
2	S	Threshold	0	-5	63	21							
3	S	window Ledge	0	-5	67	34							
4	S	Concrete Bottom	1	-2	54	-10							
		N/A							N/A				

Type: s = smearable, dp = direct probe

Scalar S/N X-2929 # 50718	BKD	EFF	MDA
CT= 1 DATE 6-8-98 α:	81.54 / 1.58	.35	24
Tech M. Zigo β:	29 30 23/57	0.29	1.30

Comments: C.P.M. = Counts Per Min / 15 cm² Prob
L.A.S. = Large Area Swipe. Note No Detectable activity on The L.A.S.

Review: [signature]

Encl 3.3 to HSP 210

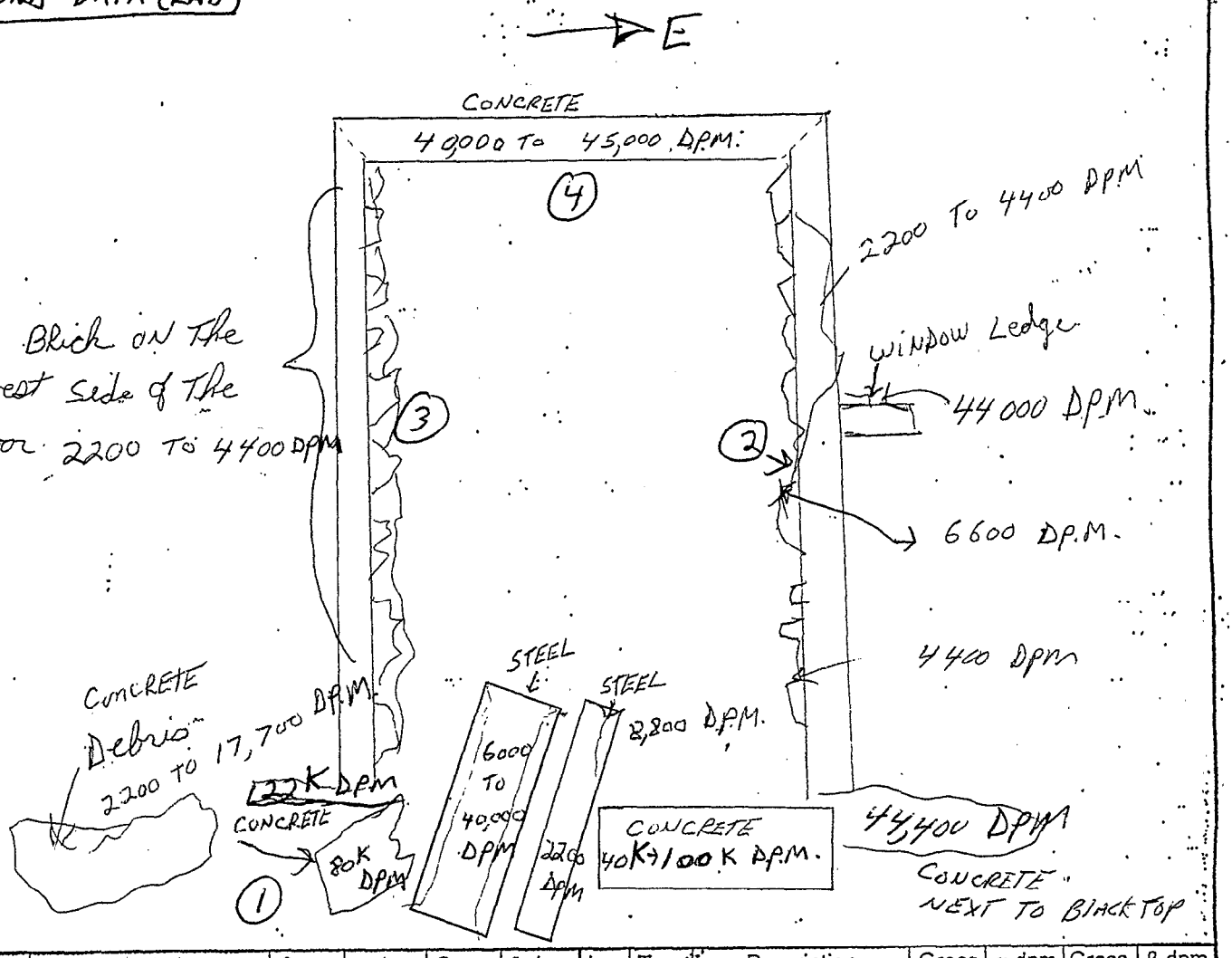
ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: Prohair - Bld-14
Area: 14 S/west Man Door

Date/Time 6-8-98 @ 2200	Tech M. Sugo	Instrument / sn Ludlum 2221 # 86308 / 44-9 #	
Location/ Purpose AREA 14 S/west		Survey # 1516	RWP# N/A
Preliminary Survey of MAN Door			

AS FOUND DATA (RAD)



Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	S	Floor	0	-5	67	34							
2	S	East wall	0	-5	59	7							
3	S	west wall	1	-2	63	21							
4	S	Top of Door	1	-2	91	117							
		N							N				
			A							A			

Type: s = smearable, dp = direct probe

Comments: 0 = denotes Swipe location

Scalar S/N 2-2929 # 50718	BKD	EFF	MDA	
CT= 1 DATE 6-8-98 α:	854/-155	0.35	24	
Tech M. Sugo β:	2983/52	0.29	30	

Review:

Encl 3.3 to HSP 210

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

Survey Date: 6/4/98
Location: 14 S/E over head
Description: Verif

	alpha	beta-gamma
Instrument Model & s/n:	ESP/03028	2221/86313
Detector Model & s/n:	43-65/089812	44-9/048267
Calibration Date:	8/98	5/98
Efficiency [Tc99] [SY90] [Th230]	.14	.28
Detector Area (CM2)	50	15.5

RP Technician: R. Smallridge

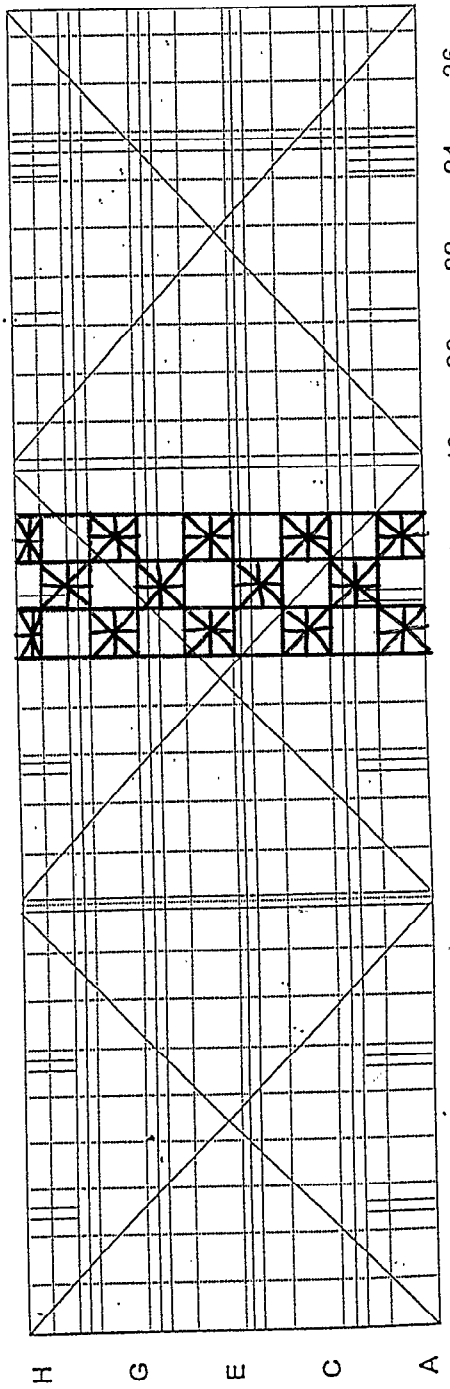
RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey # 1529

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	53
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	A-14	I-BEAM		34
B		I-BEAM		68
C		crete plank		35
D		crete plank		51
E		crete plank		48
A	C-14	crete plank		41
B		crete plank		32
C		crete plank		37
D		crete plank		28
E		crete plank		53
A	E-14	I-BEAM		37
B		I-BEAM		60
C		fan HOUSING		63
D		FAN HOUSING		32
E		I-BEAM		28
A	G-14	ANGLE IRON	1	45
B		crete plank	3	38
C		crete plank	3	33
D		crete plank	Ø	40
E		crete plank	1	39
A	I-14	ANGLE IRON		46
B		ANGLE IRON		54
C		I-BEAM		61
D		I-BEAM		54
E		crete plank		35
A	B-15	I-BEAM		43
B		I-BEAM		61
C		crete plank		37
D		ANGLE IRON		44
E		crete plank		42
A	D-15	crete plank		36
B		crete plank		34
C		I-BEAM		51
D		I-BEAM		55
E		crete plank		50
A	F-15	I-BEAM		65
B		I-BEAM		67
C		ANGLE IRON		58
D		crete plank		40
E		crete plank		45
e	F-15	DUP		49
A	H-15	crete plank		34
B		crete plank		41
C		crete plank		44
D		crete plank		39
E		crete plank		45
A	A-16	crete plank		54
B		crete plank		48
C		I-BEAM		61
D		I-BEAM		55
E		ANGLE IRON		53

Survey pattern



AREA 14 SOUTH
CEILING

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

Survey Date: 6-4-98
Location: 14 S/E over head
Description: Verif

	alpha	beta-gamma
Instrument Model & s/n:	ESP1 / 03028	2221 / 86313
Detector Model & s/n:	43-65 / 089912	44-9 / 048267
Calibration Date:	8/98	5/98
Efficiency [Tc99] [SY90] [Th230]	.14	.28
Detector Area (CM2)	50	15.5

RP Technician: Randy Smallridge

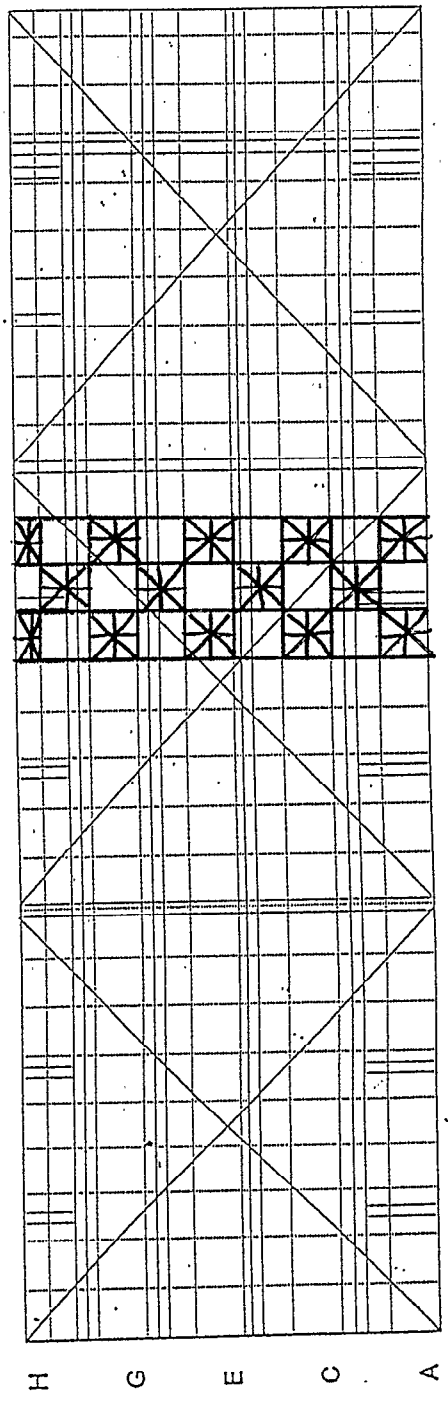
RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey #1529

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	53
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	C-16	I-Beam		66
B		I-Beam		59
C		Crete plank		48
D		Crete plank		43
E		Crete plank		50
A	E-16	I-Beam		58
B		I-Beam		58
C		Crete plank		46
D		Angle Iron		51
E		Crete plank		49
A	G-16	Crete plank	Ø	43
B		Crete plank	Ø	38
C		Crete plank	1	36
D		Crete plank	1	41
E		Crete plank	2	44
A	I-16	Angle Iron		60
B		Angle Iron		50
C		I-Beam		62
D		I-Beam		66
E		Crete plank		40
E	I-16	DUP		48

AREA 14 SOUTH
CEILING



SURVEY01.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

Survey # 1530

R. Smallridge

ANALYSIS DATE: 6-3-98

LOCATION: Praxair, Tonawanda, NY

Bldg. 14, Area 14 S/E over head 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-14	I-Beam	A	1				A			
21	↓	↓	BG	37				BG			
22	C-14	crete plank	A	2				A			
22	↓	↓	BG	51				BG			
23	E-14	I-Beam	A	0				A			
23	↓	↓	BG	59				BG			
24	G-14	ANGle IRON	A	0				A			
24	↓	↓	BG	60				BG			
25	I-14	ANGle IRON	A	0				A			
25	↓	↓	BG	51				BG			
26	B-15	I-Beam	A	1				A			
26	↓	↓	BG	51				BG			
27	D-15	crete plank	A	0				A			
27	↓	↓	BG	69				BG			
28	F-15	I-Beam	A	1				A			
28	↓	↓	BG	62				BG			
29	F-15	Dup	A	0				A			
29	↓	↓	BG	57				BG			
30	H-15	crete plank	A	0				A			
30	↓	↓	BG	51				BG			
31	A-16	crete plank	A	1				A			
31	↓	↓	BG	71				BG			
32	C-16	I-Beam	A	1				A			
32	↓	↓	BG	67				BG			
33	E-16	I-Beam	A	0				A			
33	↓	↓	BG	51				BG			
34	G-16	crete plank	A	0				A			
34	↓	↓	BG	52				BG			
35	I-16	ANGle IRON	A	0				A			
35	↓	↓	BG	55				BG			
36	I-16	Dup	A	1				A			
36	↓	↓	BG	54				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 50718
Detector Model & s/n:	M.43-10-1 s/n 041713
Calibration Date:	10-9-97
Efficiency BG (Beta/Gamma):	.29 cpm / dpm based on S/Y90
Efficiency A (Alpha):	[illegible] cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	328	800	.37	6-3-98
Beta-Gamma	[illegible]	800	[illegible]	[illegible]

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey Date: 6-15-98
Location: 14 S/EAST NORTH WALL — PLASTER TOP ~6" wide
Description: Verification

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey # 1540

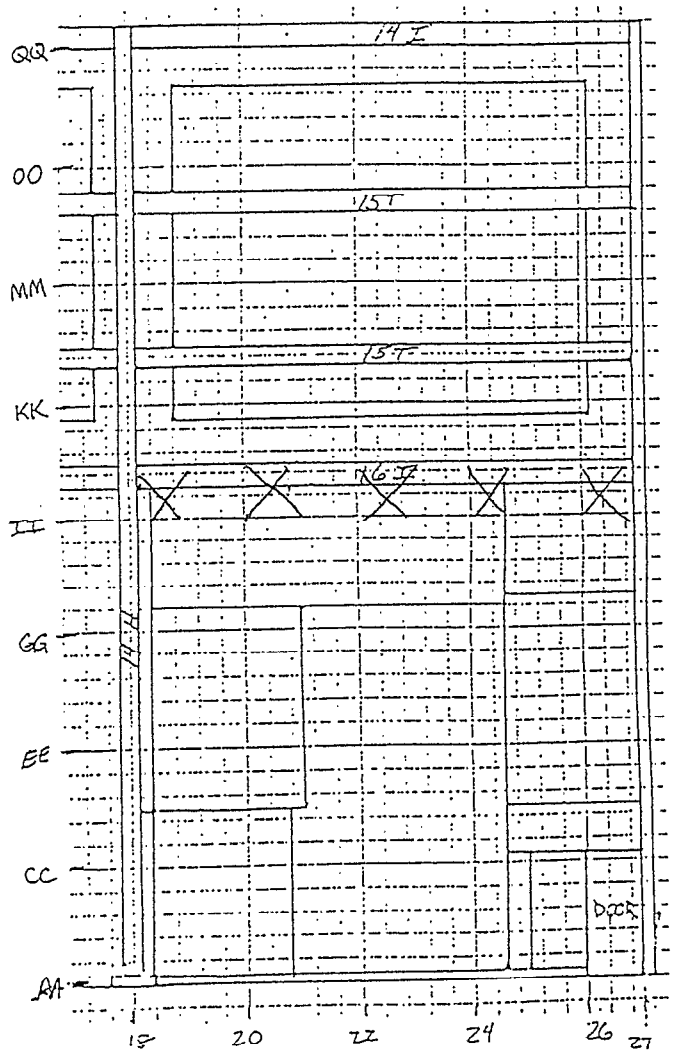
	alpha	beta-gamma
Instrument Model & s/n: ESP-1 #	03028	L-2221 # 86308
Detector Model & s/n: 43-65 #	89212	44-9 # 37683
Calibration Date:	8-22-97	1-29-98
Efficiency (Tc99) (SY90) (Th230)	15	.29
Detector Area (CM2)	50	15.5

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	41
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: M. Bigo

NORTH WALL

GRID	DESCRIPTION		alpha GROSS COUNTS	beta-gamma GROSS COUNTS
II-18	TOP of PLASTER WALL	A	N/A	68
		B		74
		C		87
		D		81
		E		78
II-20	TOP of PLASTER WALL	A	N/A	93
		B		86
		C		84
		D		78
		E		112
II-22	TOP of PLASTER WALL	A	N/A	69
		B		78
		C		74
		D		77
		E		86
II-24	TOP of PLASTER WALL	A	N/A	79
		B		64
		C		81
		D		73
		E		73
II-26	TOP of PLASTER WALL	A	3	78
		B	2	74
		C	2	83
		D	2	79
		E	3	86
II-24	DUP TOP of PLASTER	E	N/A	81



I = I BEAM → I
T = T BEAM → T
C = C BEAM → [
H = H BEAM/COLUMN → H

REVIEW

SURVEY01.XLS

ION TECHNOLOGY, INC. SMEAR MEASUREMENT ANALYSIS REPORT #1561

ANALYSIS DATE: 6-17-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 S/E overhead (Verification Survey) R. SMALLRIDGE

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-17	I-Beam	A	2				A			
21	↓	↓	BG	73				BG			
22	C-17	crete plank	A	0				A			
22	↓	↓	BG	62				BG			
23	E-17	crete plank	A	0				A			
23	↓	↓	BG	54				BG			
24	G-17	I-Beam	A	0				A			
24	↓	↓	BG	46				BG			
25	H-17	I-Beam	A	2				A			
25	↓	↓	BG	54				BG			
26	H-17	Dup	A	1				A			
26	↓	↓	BG	50				BG			
27	B-18	I-Beam	A	0				A			
27	↓	↓	BG	54				BG			
28	D-18	Crete plank	A	1				A			
28	↓	↓	BG	63				BG			
29	F-18	I-Beam	A	0				A			
29	↓	↓	BG	61				BG			
30	H-18	I-Beam	A	1				A			
30	↓	↓	BG	44				BG			
31	A-19	Angle Iron	A	2				A			
31	↓	↓	BG	66				BG			
32	C-19	crete plank	A	0				A			
32	↓	↓	BG	44				BG			
33	E-19	Crete plank	A	0				A			
33	↓	↓	BG	64				BG			
34	G-19	I-Beam	A	1				A			
34	↓	↓	BG	44				BG			
35	H-19	I-Beam	A	0				A			
35	↓	↓	BG	41				BG			
36	H-19	Dup	A	0				A			
36	↓		BG	62				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 50718
Detector Model & s/n:	M.43-10-1 s/n 041713
Calibration Date:	10-9-97
Efficiency BG (Beta/Gamma):	0.29 cpm / dpm based on S/Y90

Background	Counts	Ct Time (min)	Rb	Date
Alpha	2068 279727	5185	0.40 .54	6-22-98

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

Survey Date: 6-10-98
Location: 14 S/E OVERHEAD
Description: REKIF

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

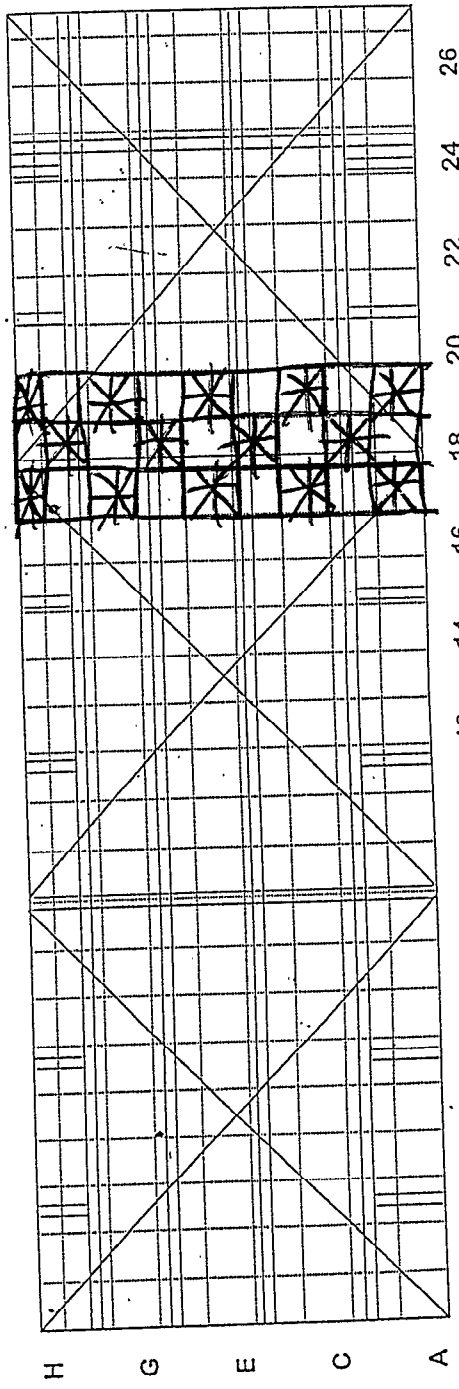
Survey # 1562

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/03028	2221/86213
Detector Model & s/n:	43-68/8992	44-9/048867
Calibration Date:	8/98	5-98
Efficiency [Tc99] [SY90] [Th230]	.14	.26
Detector Area (CM2)	50	15.5

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	36	1
BACKGROUND COUNT TIME (MIN)	1MIN	1MIN
SAMPLE COUNT TIME (MIN)	1MIN	1MIN

RP Technician: R. Smallridge

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	A-17	I-Beam		34
B		I-Beam		37
C		Crete Plank		39
D		Angle Iron		37
E		Crete Plank		33
A	C-17	Crete Plank		27
B		Crete Plank		37
C		Crete Plank		27
D		Crete Plank		37
E		Crete Plank		38
A	E-17	I-Beam		41
B		I-Beam		44
C		Crete Plank		28
D		Crete Plank		31
E		Crete Plank		36
A	G-17	I-Beam		54
B		I-Beam		48
C		Crete Plank		39
D		Crete Plank		36
E		Crete Plank		27
A	H-17	I-Beam	Ø	38
B		I-Beam		39
C		I-Beam	Ø	40
D		I-Beam	Ø	48
E		Crete	Ø	31
E	H-17	Dup	1	40
A	B-18	I-Beam		48
B		I-Beam		56
C		I-Beam		50
D		I-Beam		48
E		Crete Plank		39
A	D-18	Crete Plank		37
B		Crete Plank		41
C		I-Beam		52
D		I-Beam		56
E		I-Beam		50
A	F-18	Crete Plank		40
B		I-Beam		46
C		I-Beam		39
D		I-Beam		59
E		I-Beam		53
A	H-18	I-Beam		62
B		I-Beam		50
C		I-Beam		45
D		Crete Plank		47
E		I-Beam		54
A	A-19	Crete Plank		39
B		Angle Iron		40
C		I-Beam		45
D		I-Beam		44
E		Angle Iron		46



SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

Survey #1563

Survey Date: 6-10-98
Location: 14 S/E overhead
Description: Verification

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

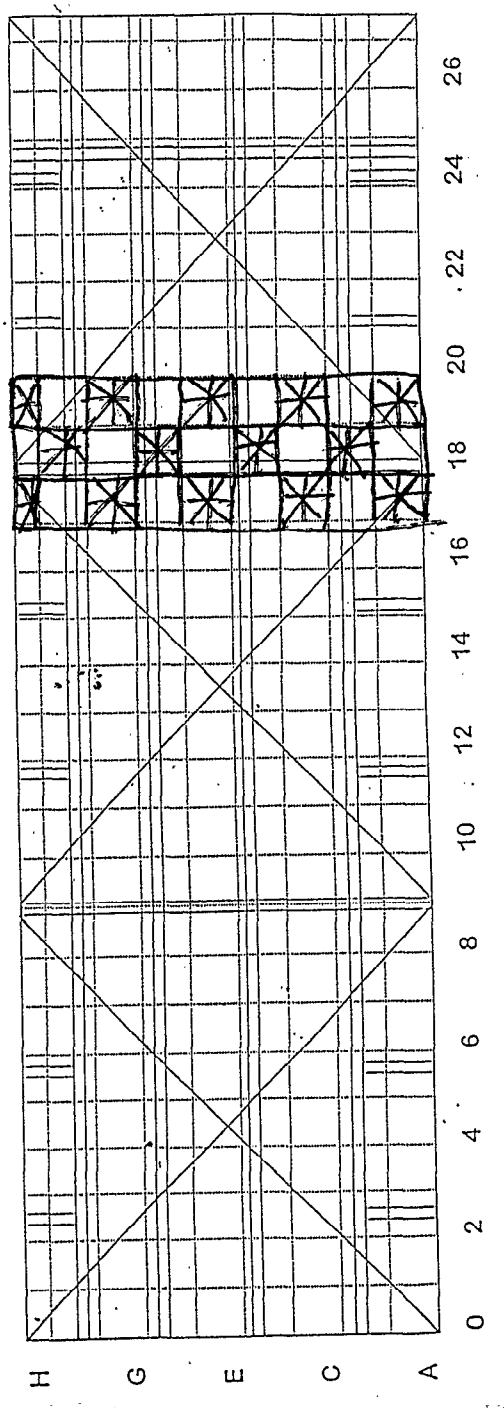
	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/03028	2221/86313
Detector Model & s/n:	43-68/9842	44-9/04267
Calibration Date:	8/98	5/98
Efficiency [Tc99] [SY90] [Th230]	.14	.26
Detector Area (CM2)	50	15

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	36	1
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

RP Technician: R. Smallridge

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	G-19	I-BEAM		34
B		I-BEAM		51
C		crete PLANK		47
D		crete PLANK		45
E		crete PLANK		50
A	E-19	crete PLANK		47
B		crete PLANK		49
C		crete PLANK		51
D		crete PLANK		40
E		crete PLANK		40
A	G-19	I-BEAM		57
B		I-BEAM		55
C		crete PLANK		50
D		crete PLANK		41
E		ANGLE IRON		45
A	H-19	I-BEAM	2	48
B		I-BEAM	3	50
C		I-BEAM	3	46
D		I-BEAM	1	49
E		ANGLE IRON	1	55
E	H-19	DUP		50

AREA 14 SOUTH
CEILING



SURVEY01.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

Survey # 1564

ANALYSIS DATE: 6-17-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 S/E OVERHEAD (Verification Survey) R. SMALLRIDGE

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-21	I-BEAM	A	2				A			
21	A-21		BG	71				BG			
22	C-21	CRATE PLANK	A	0				A			
22	C-21		BG	67				BG			
23	E-21	I-BEAM	A	1				A			
23	E-21		BG	52				BG			
24	G-21	I-BEAM	A	0				A			
24	G-21		BG	51				BG			
25	I-21	CRATE PLANK	A	2				A			
25	I-21		BG	57				BG			
26	I-21	DUP	A	1				A			
26	I-21	DUP	BG	61				BG			
27	B-22	I-BEAM	A	0				A			
27	B-22		BG	51				BG			
28	D-22	FAN HOUSING	A	0				A			
28	D-22		BG	60				BG			
29	F-22	CRATE PLANK	A	0				A			
29	F-22		BG	67				BG			
30	G-22	I-BEAM	A	1				A			
30	G-22		BG	54				BG			
31	A-23	I-BEAM	A	0				A			
31	A-23		BG	62				BG			
32	C-23	CRATE PLANK	A	1				A			
32	C-23		BG	63				BG			
33	E-23	CRATE PLANK	A	1				A			
33	E-23		BG	57				BG			
34	G-23	CRATE PLANK	A	1				A			
34	G-23		BG	56				BG			
35	I-23	CRATE PLANK	A	1				A			
35	I-23		BG	48				BG			
36	I-23	DUP	A	0				A			
36	I-23	DUP	BG	61				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 50718	
Detector Model & s/n:	M.43-10-1 s/n 041713	
Calibration Date:	10-9-97	
Efficiency BG (Beta/Gamma):	0.29	cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.37	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	2008	5.18	0.40	6-22-98
Beta-Gamma	27977	5.18	2.54	6-22-98

SWIPE.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

Survey Date: 6-17-98
Location: 14 S/E over head
Description: Vert F

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

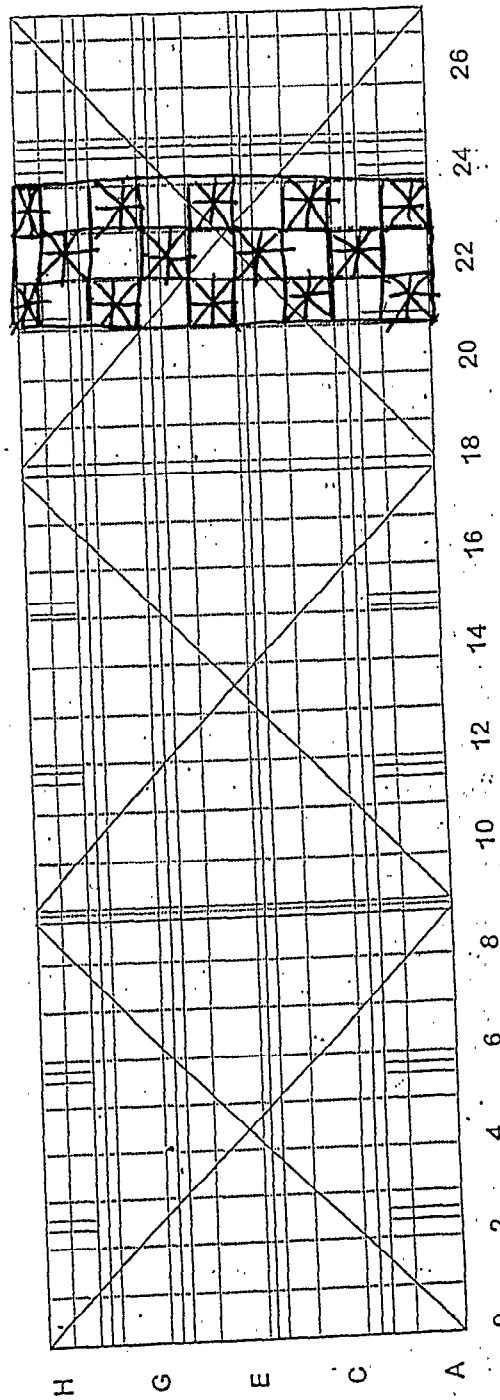
	alpha	beta-gamma
Instrument Model & s/n:	EP-1/030029	2221/99648
Detector Model & s/n:	43-65/039942	44-9/048272
Calibration Date:	8-98	12-97
Efficiency [Tc99] [SY90] [Th230]	.14	.26
Detector Area (CM2)	50	15

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	40
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

RP Technician: R. Smallridge Survey # 1565

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	A-21	I-BEAM		38
B		I-BEAM		42
C		crete PLANK		51
D		crete PLANK		50
E		crete PLANK		49
A	C-21	crete PLANK		32
B		crete PLANK		44
C		crete PLANK		47
D		crete PLANK		39
E		crete PLANK		33
A	E-21	I-BEAM		45
B		I-BEAM		47
C		crete PLANK		38
D		crete PLANK		52
E		crete PLANK		37
A	G-21	I-BEAM		43
B		I-BEAM		39
C		ANGLE IRON		61
D		crete PLANK		57
E		crete PLANK		52
A	I-21	crete PLANK	1	41
B		crete PLANK	Ø	36
C		crete PLANK	2	39
D		I-BEAM	3	45
E		I-BEAM	Ø	57
E	I-21	DUP	1	51
A	B-22	I-BEAM		43
B		I-BEAM		47
C		crete PLANK		39
D		crete PLANK		49
E		crete PLANK		54
A	D-22	FAN HOUSING		89
B		FAN HOUSING		119
C		FAN HOUSING		97
D		ANGLE IRON		101
E		ANGLE IRON		115
A	F-22	crete PLANK		38
B		crete PLANK		36
C		crete PLANK		49
D		crete PLANK		41
E		crete PLANK		39
A	G-22	I-BEAM		32
B		I-BEAM		39
C		crete PLANK		43
D		crete PLANK		48
E		crete PLANK		48
A	A-23	I-BEAM		51
B		I-BEAM		57
C		crete PLANK		32
D		I-BEAM		49
E		crete PLANK		38

AREA 14 SOUTH
CEILING



ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey Date: 6-17-98
Location: 14 S/E overhead
Description: Ver. F

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

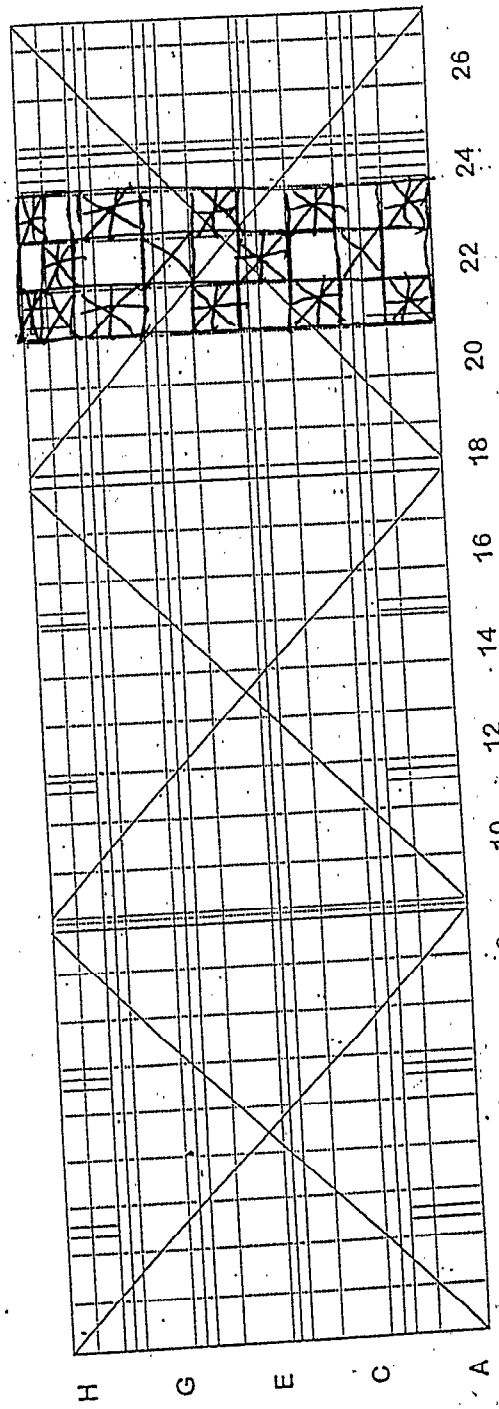
	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/03028	2224/89648
Detector Model & s/n:	43-65/089812	44-9/048872
Calibration Date:	8/98	12-97
Efficiency [Tc99] [SY90] [Th230]	.14	26
Detector Area (CM2)	50	15

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	1	49
BACKGROUND COUNT TIME (MIN)	1 MIN	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN	1 MIN

RP Technician: R. Smallridge Survey #1566

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	C-23	Crete PLANK		42
B		Crete PLANK		32
C		I-Beam		40
D		I-Beam		48
E		Crete PLANK		43
A	E-23	Crete PLANK		56
B		Crete PLANK		39
C		I-Beam		44
D		I-Beam		46
E		Crete PLANK		37
A	G-23	Crete PLANK		44
B		ANGLE IRON		62
C		I-Beam		55
D		I-Beam		56
E		ANGLE IRON		60
A	I-23	Crete PLANK		99
B		Crete PLANK		42
C		I-Beam		57
D		I-Beam		47
E		Crete PLANK		51
E	I-23	DUP		48

AREA 14 SOUTH
CEILING



14SW (scaler measurement) Survey # 1578

Survey Date: 6-23-98
Location: 14 S/W south wall (MAN DOOR) "POST" DECON
Description: Verification

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

P. 1 of 3

	alpha	beta-gamma
Instrument Model & s/n: ESP-1 I	03028	L-2221 # 86308
Detector Model & s/n: 43-65	089812	44-9 # 37683
Calibration Date:	8-22-97	1-29-98
Efficiency (Tc99) (SY90) (Th220)	.15	.29
Detector Area (CM2)	50 cm²	15.5

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	1	48
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: M. Trigo

MAN DOOR

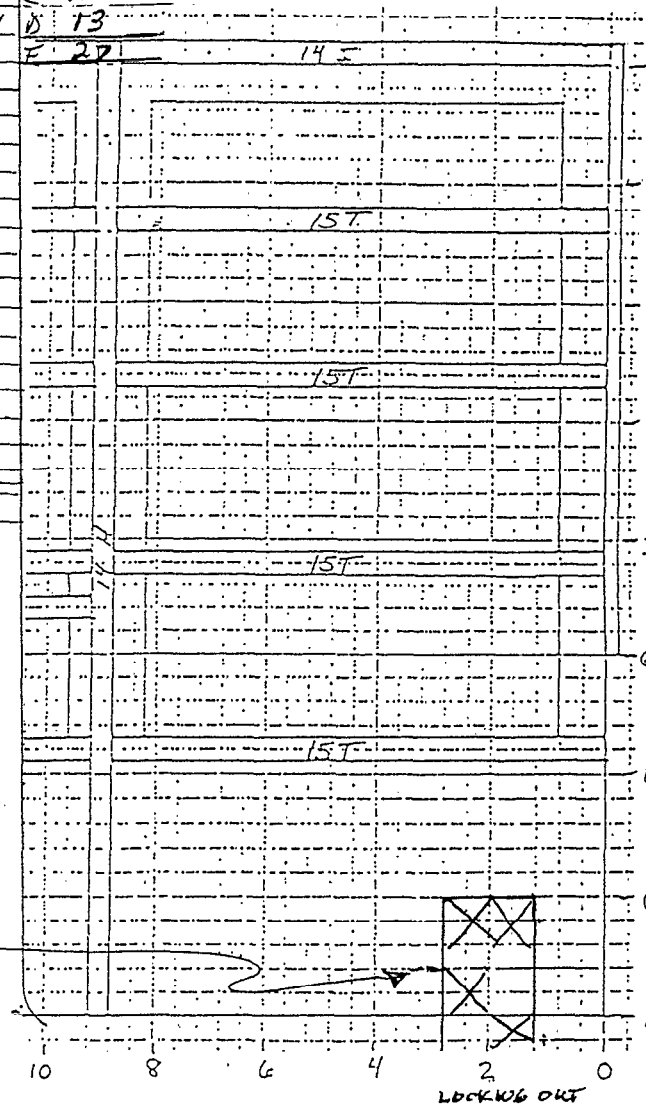
GRID	DESCRIPTION		alpha GROSS COUNTS	beta-gamma GROSS COUNTS	BETA-GAMMA DPM/100cm²	ALPHA DPM/100 cm²
~~AA~~ AA-1	CONCRETE Floor	A	0	87	A 867	A 0
A-		B	2	91	B 956	B 27
		C	2	67	C 423	C 27
		D	1	121	D 1624	D 13
		E	2	91	E 956	E 27
AA-2	Brick WALL	A	N/A	83	A 778	
		B		71	B 552	
		C		67	C 423	
		D		74	D 578	
		E		64	E 356	
BB-1	BRICK WALL	A	N/A	86	A 845	
		B		79	B 689	
		C		64	C 356	
		D		68	D 445	
		E		70	E 489	
BB-2	Brick WALL Top	A	N/A	67	A 422	
		B		91	B 956	
		C		64	C 356	
		D		67	D 423	
		E		76	E 623	
	Dup					
BB-2	Brick wall Top	E	N/A	64	E 356	

Note: The Brick Area was chipped after Repair Removed The steel door Frame. This area was deconed to < 5000 DPM/100 cm² BX and < 1000 Dpm/100cm² loose BX. The Contamination levels Removed from the surface of the Brick. There is No indication of further activity within the wall. } POST DECON Survey

Note: ≈ 1 Meter off the floor under the Windows ledge there is some TAR Paper which was reading ≈ 6000 — To 9000 Dpm/100 cm² BX direct reading.

Insert area map or sketch below

AREA 14 SOUTH SOUTH WALL



I = I BEAM →
T = T BEAM →
C = C BEAM →
H = H BEAM →

SURVEY01.XLS

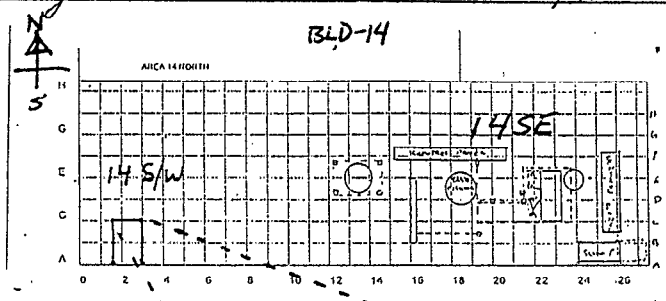
ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: Proxair Bld-14
Area: 14 S/W MAN DOOR
"POST" DECON SURVEY

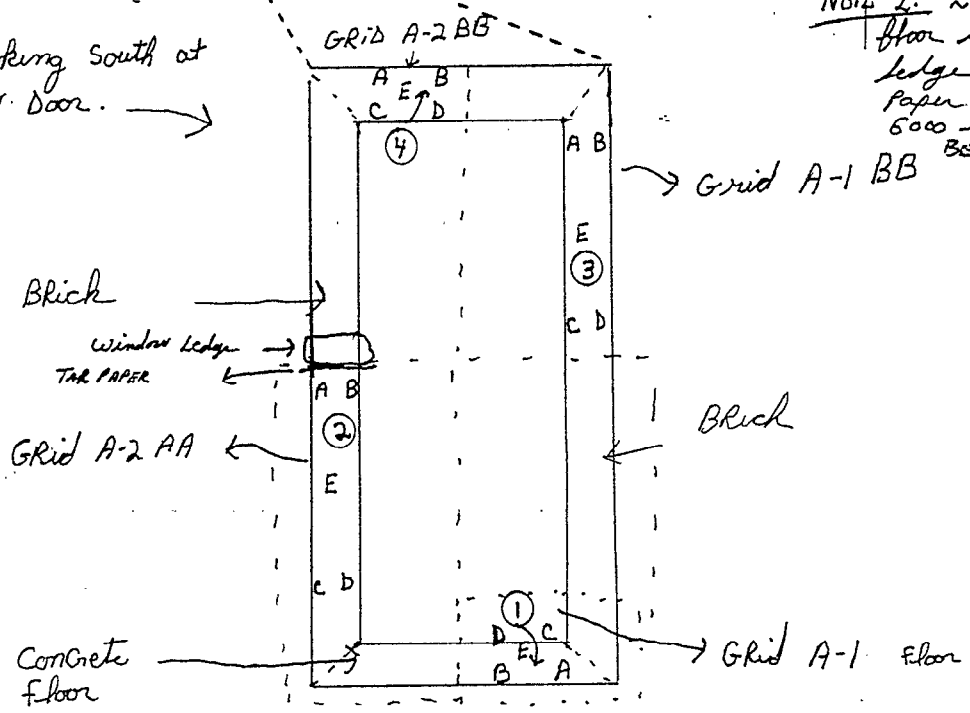
#1578
P. 2 of 3

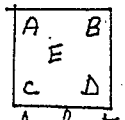
Date/Time 6-23-98	Tech M. Bugo	Instrument / sn L-2221 #86308/44-9 #37683 Eff. .29 BγC
Location/ Purpose AREA 14 S/W MAN DOOR		Survey # 1578 RWP# N/A
"Post" Decon Survey		ESP-1 #03028/43-65 #089812 Eff. .15 50 cm² Probe α



NOTE 1: All of Door was Direct Erisked. Range from BKG. (48cpm) - To 1600 DPM/100 cm² Bγ. General Range 300-500 DPM/100 cm² Bγ.

NOTE 2: ≈ one meter off the floor under a window ledge there is some TAR Paper which was reading ≈ 6000 - 9000 D.P.M/100 cm² Bγ. BEFORE Removed.





Prob locations within Grid

Loc	Type	Description		C.P.M. Gross	100 cm² α dpm	C.P.M. Gross	100 cm² β dpm	Loc	Type	Description		Gross	α dpm	C.P.M. Gross	100 cm² β dpm
A-1	D.P.	Concrete Floor	A	0	0	87	867	↓	↓	↓	E			64	356
			B	2	27	91	956	A-1BB	D.P.	Brick Face on	A			86	845
			C	2	27	67	423			West Side of	B			79	689
			D	1	13	121	1624			Door	C	N		64	356
	↓	↓	E	2	27	91	956				D		A	68	445
A-2AA	D.P.	Brick Face	A			83	778			↓	E			70	489
A-2AA	D.P.	on East Side	B			71	552	A-2BB	D.P.	Brick Face	A			67	422
	D.P.	of Door	C	N	A	67	423			@ Top of Door	B			91	958
↓	D.P.	↓	D			74	578		↓		C			64	356

Type:s = smearable, dp = direct probe

Comments: BγBKG = 48 cpm. α BKG = 1 CPM.

Probe Size Bγ = 15.5 cm²

Swipe Scalar S/N L-2929 #50718	BKD	EFF	MDA
CT= 1 DATE 6-23-98 α:	35/800 = .44	.34	17
Tech Pittman β:	43505/800 = 54.	.29	111

Review:

Encl 3.3 to HSP 210

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

RADIOLOGICAL CONTINUATION SURVEY FORM #1578

Project: Prapair Bld-14
Area: 14 S/W MAN DOOR
"POST" DECON SURVEY

Date/Time 6-23-98	Tech Bryan	Instrument / sn L-2221 # 86308/44-9 # 37683 Eff. = .29	
Location/ Purpose 14 S/W "Post" Decon Survey		Survey # 1578	RWP#
		ESP-1 # 03028/43-65 # 089812 Eff. = .15 50 cm² Probe	

Loc	Type	Description	Gross cpm/100cm²	α dpm	Gross cpm	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
A-2 BB	D.P.	Brick Face @ D			67	423							
	↓	Top of Door E			76	623							
N/A	N/A	N/A	N	A	N/A	N/A							
A-2 BB	D.P.	Dup. E			64	354							
		"Swipe" Results							N	A			
1	S	Concrete Floor	0	-1	57	10 DPM/100cm²							
2	S	Brick Face EAST	2	5	52	-7							
3	S	Brick Face west	0	-1	65	38							
4	S	Brick Face TOP	0	-1	49	-17							
				N				A					

Type:s = smearable, dp = direct probe

Comments: BY BKG = 48 cpm. α BKG = 1 cpm
Probe Swipe BY = 15.5 cm². O = swipe location

		BKD	EFF	MDA
Scalar S/N L-2929 # 50718				
CT= 1 DATE 6-23-98	α:	357/800 = .44	.34	.7
Tech Putman	β:	43505/800 = 54	.29	111

Review: [signature]

Encl 3.4 to HSP 210

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

Survey # 1579

ANALYSIS DATE: 6-23-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 S/W S. WALL - MAN DOOR Verification Survey M.2150

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	BB-1	S. WALL - BRICK - MAN DOOR	A	0	1			A			
21	BB-1	↓	BG	65	1			BG			
22	BB-2	S. WALL BRICK - MAN DOOR	A	0	1			A			
22	BB-2	↓	BG	49	1			BG			
23	AA-2	S. WALL - BRICK	A	2	1			A			
23	AA-2	↓	BG	52	1			BG			
24	A-1	CONCRETE FLOOR	A	0	1			A			
24	A-1	↓	BG	57	1			BG			
25			A					A			
25			BG					BG			
26			A					A			
26			BG					BG			
27			A					A			
27			BG					BG			
28			A					A			
28			BG					BG			
29			A					A			
29			BG					BG			
30			A					A			
30			BG					BG			
31			A					A			
31			BG					BG			
32			A					A			
32			BG					BG			
33			A					A			
33			BG					BG			
34			A					A			
34			BG					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 50718	
Detector Model & s/n:	M.43-10-1 s/n 041713	
Calibration Date:	10-9-97	
Efficiency BG (Beta/Gamma):	0.29	cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.34	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	352	800	0.44	6-23-98
Beta-Gamma	43505	800	54	6-23-98

SWIPE.XLS

(scaler measurement)

Survey Date: 07-08-98
Location: AREA-14 S/E
Description: Informational

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey # 1694

	alpha	beta-gamma
Instrument Model & S/N:		L-2221 # 86308
Detector Model & S/N:	N/A	44-9 # 37683
Calibration Date:		1-29-98
Efficiency (Tc99) (SY90) (Th230)		.29
Detector Area (CM2)		15.5

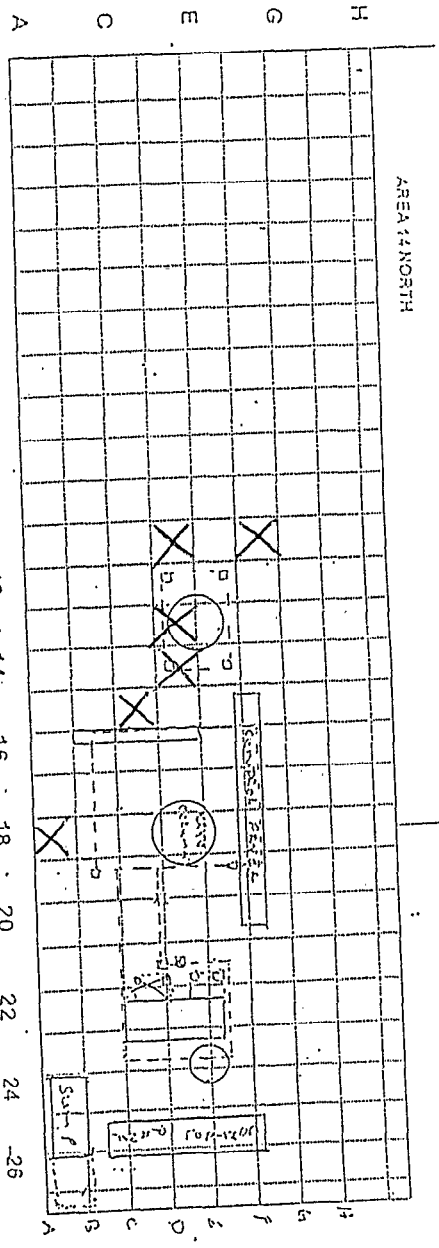
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	41
BACKGROUND COUNT TIME (MIN)		1
SAMPLE COUNT TIME (MIN)		1

RP Technician: M. Sigo

Insert area map or sketch below

AREA 14 SOUTH

GRID	DESCRIPTION Soil Samples	alpha GROSS COUNTS	beta-gamma GROSS COUNTS	COC #
D-11	Core sample under the Concrete Slab of the small Tower. 0-6" under the Slab, and ≈ 12" to 16" Horizontal Core.			#909
F-11	Core sample under the Concrete Slab of the small Tower. 0"-6" under the Slab and ≈ 12"-16" Horizontal Core.			#908
D-14	Core sample under the Concrete Slab of the small Tower, 0"-6" under the Slab, and ≈ 12"-16" Horizontal Core.			#906
D-13	Core sample under the Concrete Slab of the small Tower. 0"-6" under the Slab, and ≈ 12" to 16" Horizontal Core.			#907
D-14	Grab sample @ 12" in Grid D-14 Just ~~South of~~ EAST of Tower Slab.			#905
D14	0-6" under slab			#910
C15	0-6" under slab			#911
A18	12" in CLAY			#912



Review

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

#1703

ANALYSIS DATE: 7-8-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 S/E FLOOR (Verification Survey)

D. PITMAN

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	G - 17	FLOOR	A	0				A			
21	G - 17		BG	66				BG			
22	G - 19		A	3				A			
22	G - 19		BG	52				BG			
23	G - 21		A	0				A			
23	G - 21		BG	58				BG			
24	G - 23		A	2				A			
24	G - 23		BG	56				BG			
25	G - 25		A	2				A			
25	G - 25		BG	57				BG			
26	G - 27		A	1				A			
26	G - 27		BG	45				BG			
27	H - 18		A	1				A			
27	H - 18		BG	57				BG			
28	H - 20		A	0				A			
28	H - 20		BG	61				BG			
29	H - 22		A	4				A			
29	H - 22		BG	51				BG			
30	H - 24		A	0				A			
30	H - 24		BG	56				BG			
31	H - 26		A	2				A			
31	H - 26		BG	44				BG			
32	I - 19		A	0				A			
32	I - 19		BG	59				BG			
33	I - 21		A	1				A			
33	I - 21		BG	50				BG			
34	I - 23		A	0				A			
34	I - 23		BG	57				BG			
35	I - 25		A	2				A			
35	I - 25		BG	60				BG			
36	I - 27		A	1				A			
36	I - 27		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 50718
Detector Model & s/n:	M.43-10-1 s/n 041713
Calibration Date:	10-9-97
Efficiency BG (Beta/Gamma):	.28 cpm / dpm based on S/Y90
Efficiency A (Alpha):	[illegible]

Background	Counts	Ct Time (min)	Rb	Date
Alpha	332	800	.42	7/14/98

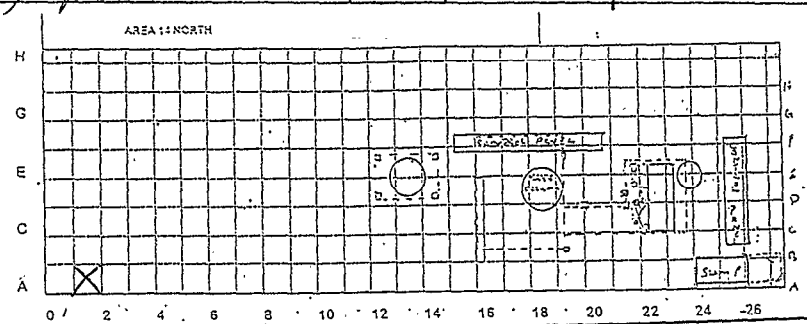
ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0166

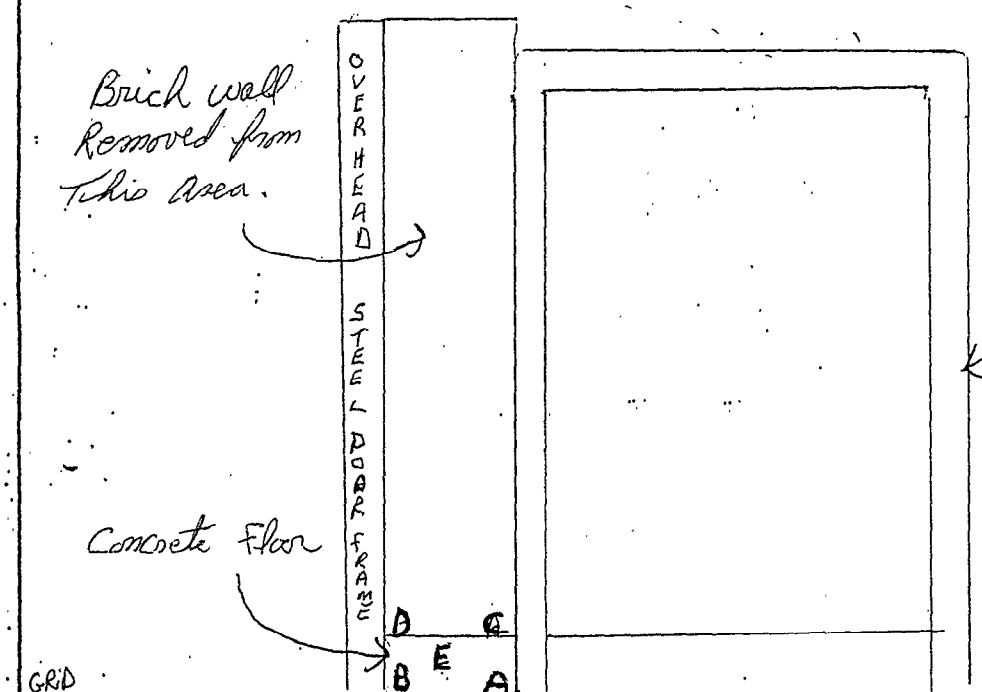
RADIOLOGICAL SURVEY

Project: Proteon
Area: Bld-14

Date/Time 7-14-98	Tech M. Zugo	Instrument / sn L-2221 # 89648 / 44-9 # 048272 EFF. .26
Location/ Purpose AREA 14 S/W		Survey # 1712 RWP# 01
POST DECON SURVEY of MAN DOOR AREA		BY BKG = 43 cpm.

VERIFICATION





AREA - 14 S/W
MAN Door on south wall looking South.

Wood Door Frame For MAN Door.

Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
A-1	D.P.	Floor A			87	1172							
		B			64	521							
		C			91	1191							
		D	N		81	943			N				
		E		A	68	620					A		
A-1	S	Floor			61	21							

Type:s = smearable, dp = direct probe

Comments:

Scalar S/N L-2929 #50718	BKD	EFF	MDA
CT= 1 DATE 7-14-98 α:	332/800 = .42	.31	.18
Tech M. Zugo β:	43667/800 = 55	.28	1133

Review: M. Ahmad

Encl 3.3 to HSP 210

(scaler measurement)

14 SE' Verification Grid Soil Samples

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey Date: 7-15-98
Location: AREA 14 S/E
Description: VERIFICATION of SOIL

Survey 1717

	Alpha	Beta-Gamma
Instrument Model & S/N:	N	
Detector Model & S/N:		
Calibration Date:		A
Efficiency (Tc99) (SY90) (Th230)		
Detector Area (CM2)		

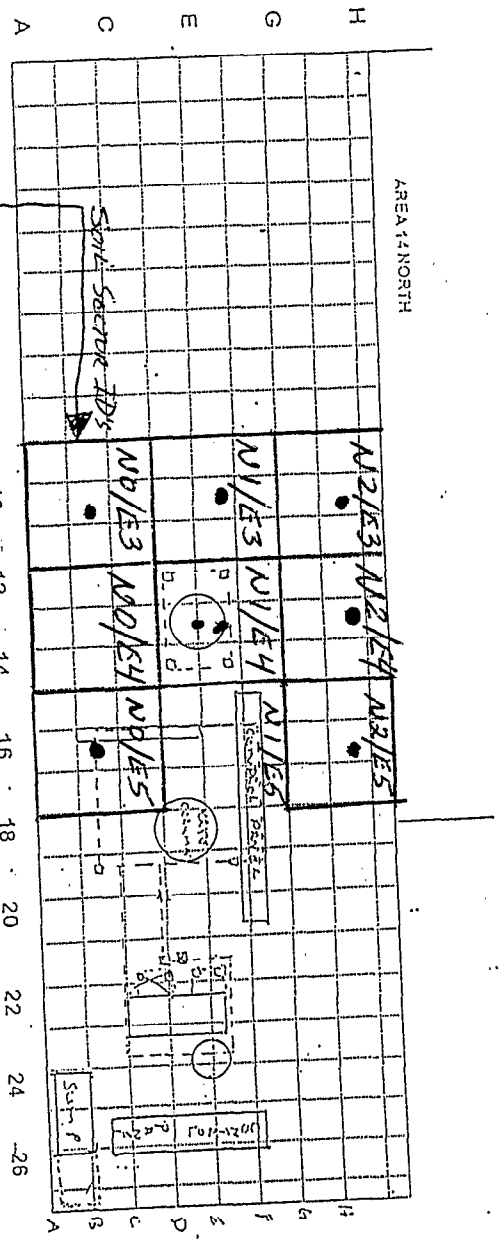
	Alpha	Beta-Gamma
TOTAL BACKGROUND COUNTS	N	
BACKGROUND COUNT TIME (MIN)		A
SAMPLE COUNT TIME (MIN)		

RP Technician: M. Tigo

Insert area map or sketch below

AREA 14 SOUTH
Soil Verification location MAP

GRID	DESCRIPTION	Alpha GROSS COUNTS	Beta-Gamma GROSS COUNTS
	All Samples were Composite of 3m x 3m Grids. The Center Grid marked on the Soil Sample Containers for F.D.		
SOIL SECTORS		COC #	
N0/E3	Grid B-10	915	80-120 cpm 13.2 pCi/g TU
N1/E3	Grid E-10	916	60-100 cpm 9.0 pCi/g TU
N2/E3	Grid H-10	917	60-110 cpm 14.5 pCi/g TU
N2/E4	Grid H-13	918	60-90 cpm 18.3 pCi/g TU
N2/E5	Grid H-16	919	60-100 c.p.m. 19.7 pCi/g TU
N1/E4	Grid E-13	920	60-80 cpm 6.9 pCi/g
N0/E5	Grid B-16	921	90-130 cpm 10.4 pCi/g



(scaler measurement)

Survey Date: 7-15-98
Location: BLDG 14 AREA 14 S/E FLOOR
Description: VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements
Survey # 1722

	alpha	beta-gamma
Instrument Model & s/n:	858-1/3028	2221/86308
Detector Model & s/n:	43-65/89812	44-9/37685-3
Calibration Date:	8-97	1-29-98
Efficiency (Tc99) (SY90) (Tl200)	0.15	0.29
Detector Area (CM2)	50 cm²	15.5 cm²

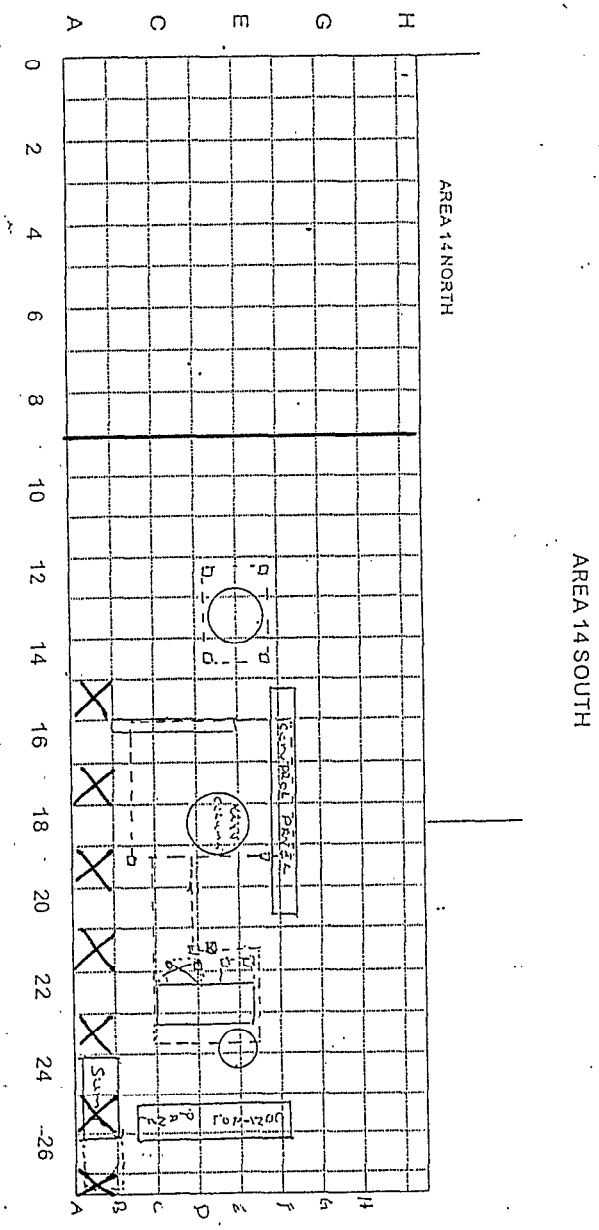
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	4	55
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: D. PITTMAN

Insert area map or sketch below

AREA 14 SOUTH

GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A-15 A	FLOOR		
B			
C			
D			
E			
A-17 A			
B			
C			
D			
E			121
A-19 A			125
B			129
C			119
D			132
E			
A-21 A			149
B			127
C			131
D			121
E			128
A-23 A		5	136
B		6	128
C		4	129
D		0	152
E		1	147
E	DUPLICATE	3	138
A-25 A	FLOOR		156
B			116
C			125
D			123
E			133
A-27 A			154
B			145
C			138
D			141
E			144



REVIEW

(scaler measurement)

Survey # 1723

Survey Date: 7-15-98
Location: BLDG 14 Area 14 S/E FLOOR
Description: VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
Instrument Model & s/n:	139-8 / 152-1/143-4	2221/86308
Detector Model & s/n:	43/65 A9812	44-9/37683
Calibration Date:	8-22-97	1-29-98
Efficiency (Tc99) (SY90) (Th230)	0.15	0.29
Detector Area (CM2)	50 cm²	15.5 cm²

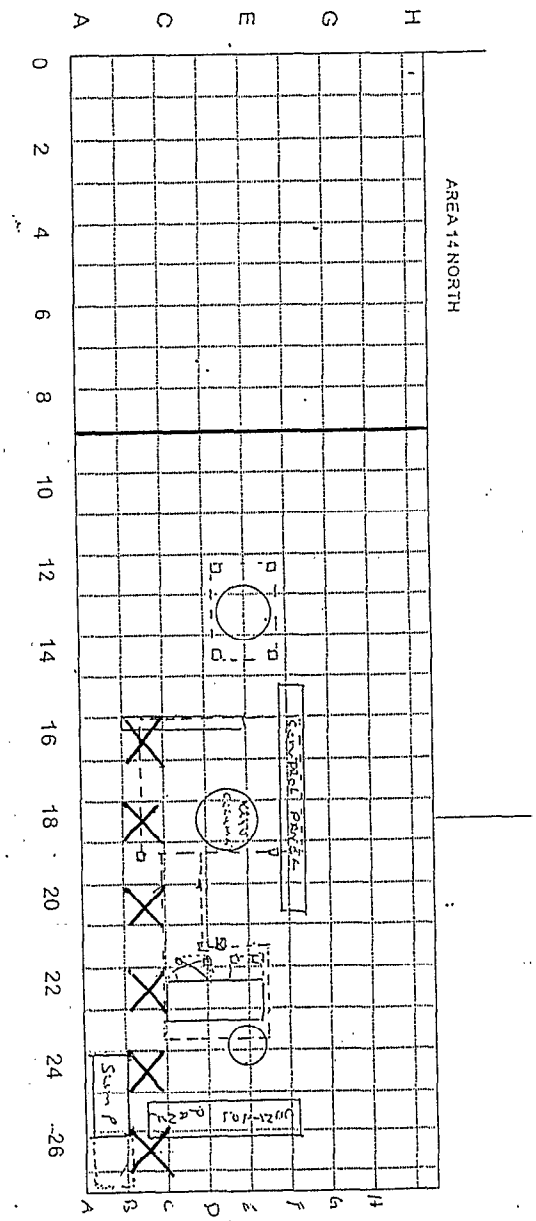
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	4	55
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: D. PITMAN

GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
B-16 A	FLOOR		137
B			139
C			146
D			127
E			130
B-18 A			129
B			143
C			148
D			156
E			132
B-20 A			131
B			139
C			122
D			140
E			140
B-22 A		4	147
B		4	145
C		3	156
D		1	132
E		4	135
E	DUPLICATE	2	148
B-24 A	FLOOR		117
B			115
C			122
D			121
E			134
B-26 A			136
B			129
C			141
D			147
E			149

Insert area map or sketch below

AREA 14 SOUTH



REVIEW

(scaler measurement)

Survey # 1724

Survey Date: 7-15-98
Location: BLDG 14 AREA 14 S/E FLOOR
Description: VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
Instrument Model & s/n:	239-1/3028	2221/[redacted]-86308
Detector Model & s/n:	43-65/[redacted]12	44-9/37683
Calibration Date:	8-22-97	1-29-98
Efficiency (Tc99) (SY90) (Th230)	0.15	0.29
Detector Area (CM2)	50 cm²	15.5 cm²

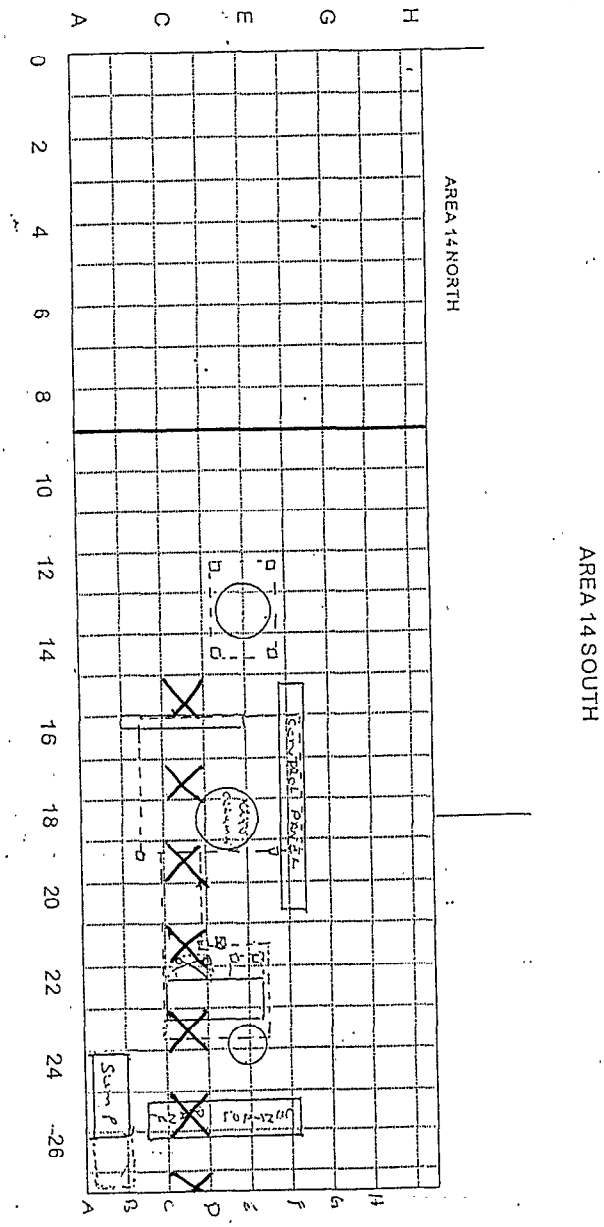
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	4	55
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: D. Pittman

Insert area map or sketch below

AREA 14 SOUTH

GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
C-15 A	FLOOR		112
B			124
C			119
D			127
E			125
C-17 A			130
B			127
C			129
D			135
E			123
C-19 A		3	159
B		0	147
C		2	132
D		1	133
E		1	133
E	DUPLICATE	0	135
C-21 A	FLOOR		140
B			120
C			119
D			126
E			124
C-23 A			129
B			131
C			135
D			152
E			158
C-25 A			141
B			148
C			145
D			137
E			135
C-27 A			143
B			144
C			141
D			150
E			162



Review

(scaler measurement)

Survey # 1725

Survey Date: 7-15-98
Location: BLD4 14 AREA 14 S/E FLOOR
Description: VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/3028	2221/86308
Detector Model & s/n: 43-65	44-9/3276	44-9/3276
Calibration Date:	6-22-97	1-29-98
Efficiency (Tc99) (SY90) (Tl200)	0.15	0.29
Detector Area (CM2)	50 cm²	15.5 cm²

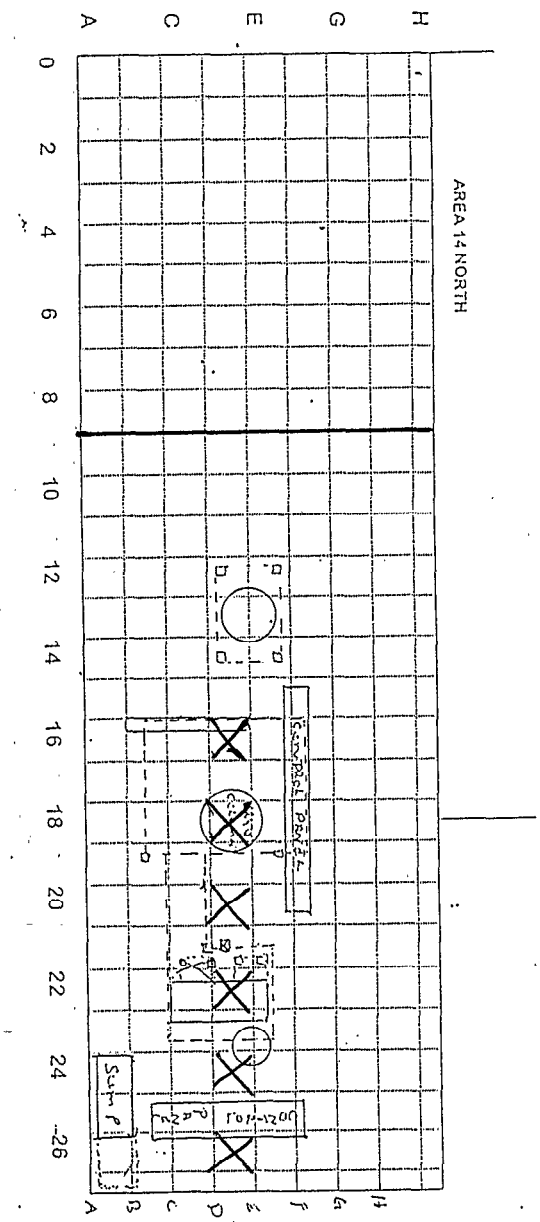
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	4	55
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: D. PITMAN

Insert area map or sketch below

AREA 14 SOUTH

GRID		DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
D-16	A	FLOOR		136
	B			131
	C			129
	D			130
	E			138
D-18	A			135
	B			135
	C			129
	D			124
	E			138
	E	DUPLICATE		142
D-20	A	FLOOR		153
	B			151
	C			147
	D			138
	E			127
D-22	A			129
	B			133
	C			144
	D			146
	E			136
D-24	A			129
	B			128
	C			135
	D			140
	E			146
D-26	A			132
	B			145
	C			147
	D			144
	E			149



REVIEW

SURVEY01.XLS

(scaler measurement)

Survey # 1726

Survey Date: 7-15-98
Location: BLDG 14 Area 14 S/E FLOOR
Description: VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
Instrument Model & s/n:	RSO-1/3028	2221/86308
Detector Model & s/n:	43-65/89812	44-9/37683
Calibration Date:	8-22-97	1-29-98
Efficiency [Tc99] [SY90] [Th230]	0.15	0.29
Detector Area (CM2)	50 cm²	15.5 cm²

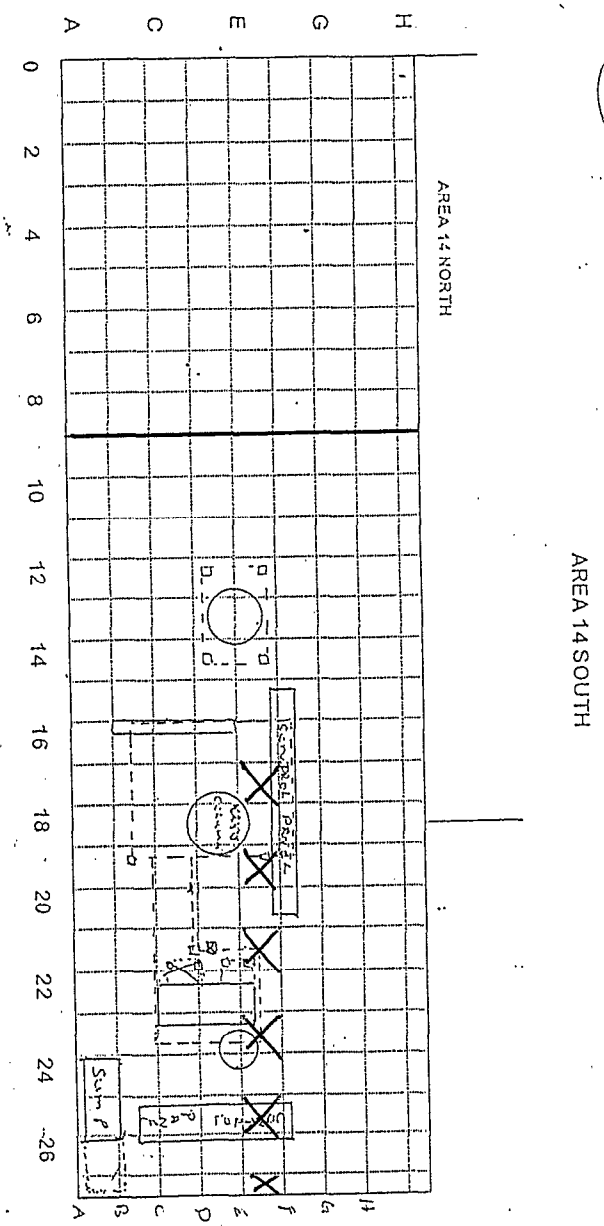
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	4	55
BACKGROUND COUNT TIME (min)	1	1
SAMPLE COUNT TIME (min)	1	1

RP Technician: D. PITMAN

GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
E-17 A	FLOOR	0	116
B		1	118
C		4	112
D		3	115
E		1	122
E	DUPLICATE	1	121
E-19 A	FLOOR		105
B			127
C			136
D			125
E			123
E-21 A			134
B			137
C			140
D			132
E			135
E-23 A			141
B			139
C			148
D			150
E			156
E-25 A			127
B			155
C			143
D			142
E			134
E-27 A			137
B			133
C			135
D			128
E			122

Insert area map or sketch below

AREA 14 SOUTH



Review [illegible]

(scaler measurement)

Survey # 1727

Survey Date: 7-15-98
Location: BLDG 14 AREA 14 S/E FLOOR
Description: VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
Instrument Model & S/n:	ESP-1/3038	2221/316308
Detector Model & s/n:	HP265/59812	44-9/326883
Calibration Date:	8-22-97	1-29-98
Efficiency (Tc99) (SY90) (Th230)	0.15	0.29
Detector Area (CM2)	50 cm²	15.5 cm²

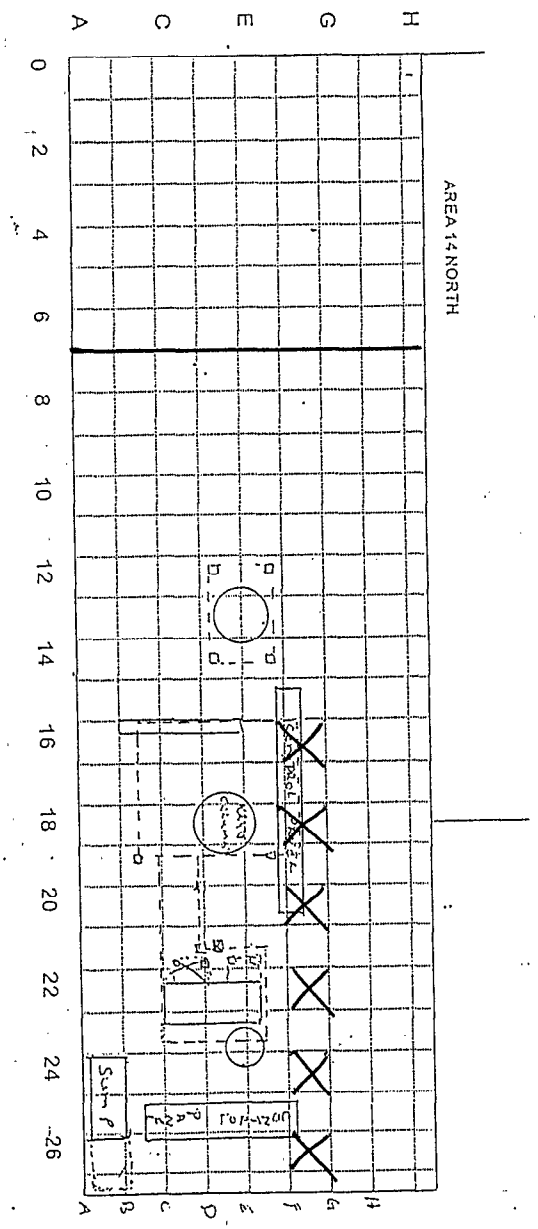
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	4	55
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: ~~M. Bise~~ D. PITMAN

Insert area map or sketch below

AREA 14 SOUTH

GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
F-16 A	FLOOR		99
B			97
C			107
D			119
E			112
F-18 A			113
B			110
C			117
D			117
E			106
F-20 A			94
B			89
C			97
D			102
E			114
F-22 A			117
B			111
C			108
D			122
E			116
F-24 A			113
B			105
C			108
D			94
E			95
F-26 A		2	97
B		1	103
C		1	112
D		0	113
E		2	120
E	DUPLILATE	3	115



REVIEW

(scaler measurement)

Survey # 1728

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey Date: 2-15-98
Location: BLDG 14 AREA 14 S/E FLOOR
Description: VARIFICATION

	alpha	beta-gamma
Instrument Model & s/n:	521/3028	2221/86308
Detector Model & s/n:	43-68/89812	44-9/37683
Calibration Date:	8-22-97	1-29-98
Efficiency (Tc99) (SY90) (Th230)	0.15	0.29
Detector Area (CM2)	50 cm²	15.5 cm²

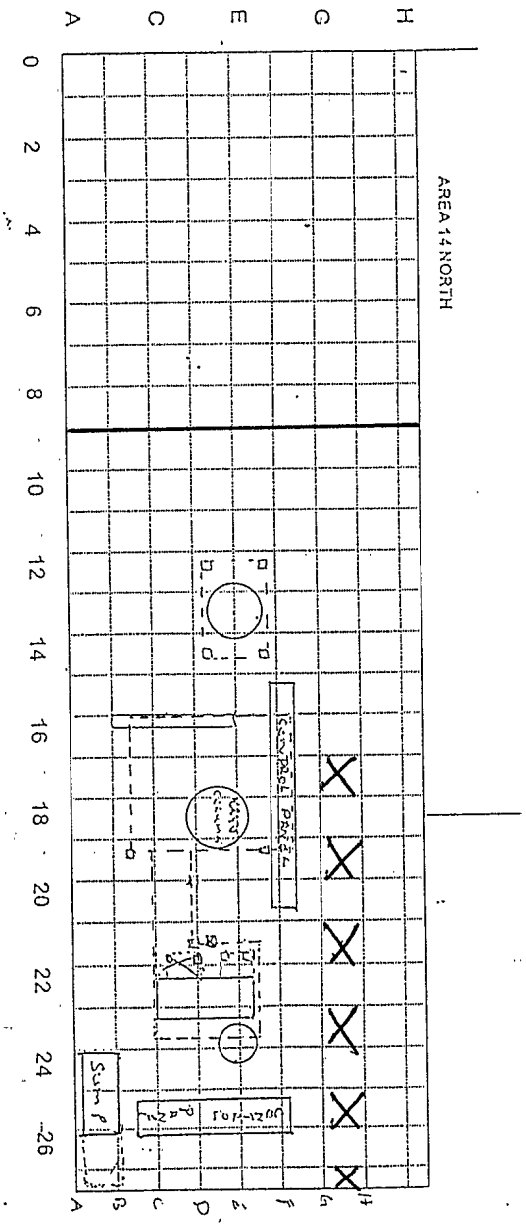
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	4	55
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: D. PITMAN

Insert area map or sketch below

AREA 14 SOUTH

GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
G-17 A	FLOOR		108
B			113
C			117
D			110
E			109
G-19 A			99
B			85
C			92
D			107
E			113
G-21 A			104
B			118
C			122
D			119
E			127
G-23 A			106
B			109
C			129
D			130
E			122
G-25 A		6	119
B		5	111
C		4	104
D		2	122
E		4	127
E	DUPLICATE	5	134
G-27 A	FLOOR		133
B			142
C			147
D			138
E			135



REVIEW

(scaler measurement)

Survey # 1729

Survey Date: 7-15-98
Location: BLDG 14 Area 14 S/E FLOOR
Description: VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/3028	2221/816303
Detector Model & s/n:	43-65/89813	44-9/37683
Calibration Date:	8-22-97	1-29-98
Efficiency (Tc99) (SY90) (Th230)	0.15	0.29
Detector Area (CM2)	50cm²	15.5cm²

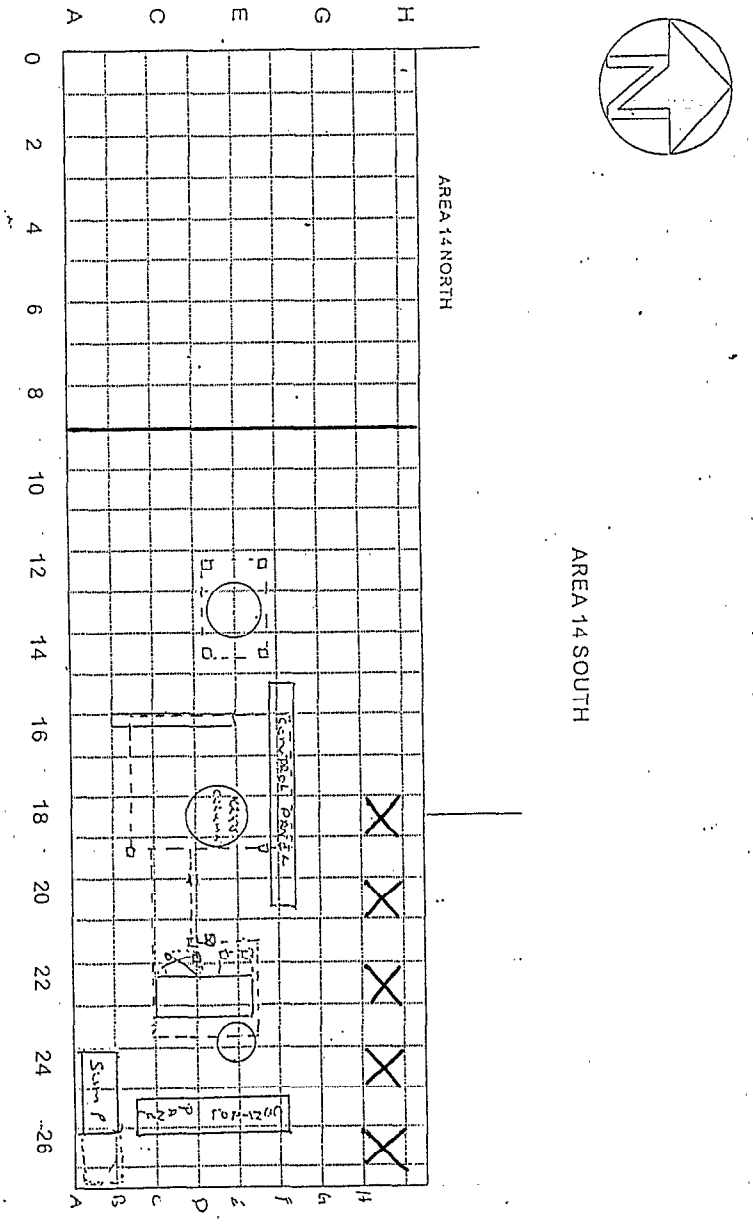
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	4	55
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: D. PITMAN

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
1	H-18 A	FLOOR		134
	B			139
	C			127
	D			146
	E			137
	H-20 A			137
	B			141
	C			143
	D			135
	E			137
	H-22 A			129
	B			127
	C			136
	D			140
	E			141
	H-24 A		SMEAR	136
	B			135
	C			124
	D			127
	E			129
	E	DUPLICATE		125
	H-26 A	FLOOR		131
	B			136
	C			143
	D			138
	E			149

Insert area map or sketch below

AREA 14 SOUTH



REVIEW

(scaler measurement)

Survey # 1730

Survey Date: 7-15-98
Location: BLDG 14 Area 14 S/E FLOOR
Description: VERIFICATION

	alpha	beta-gamma
Instrument Model & s/n:	2221/30??	2221/86308
Detector Model & s/n:	43-68/89812	44-9/37683
Calibration Date:	8-22-97	1-29-98
Efficiency [Tc99] [SY90] [Th230]	0.15	0.29
Detector Area (CM2)	50 cm²	15.5 cm²

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

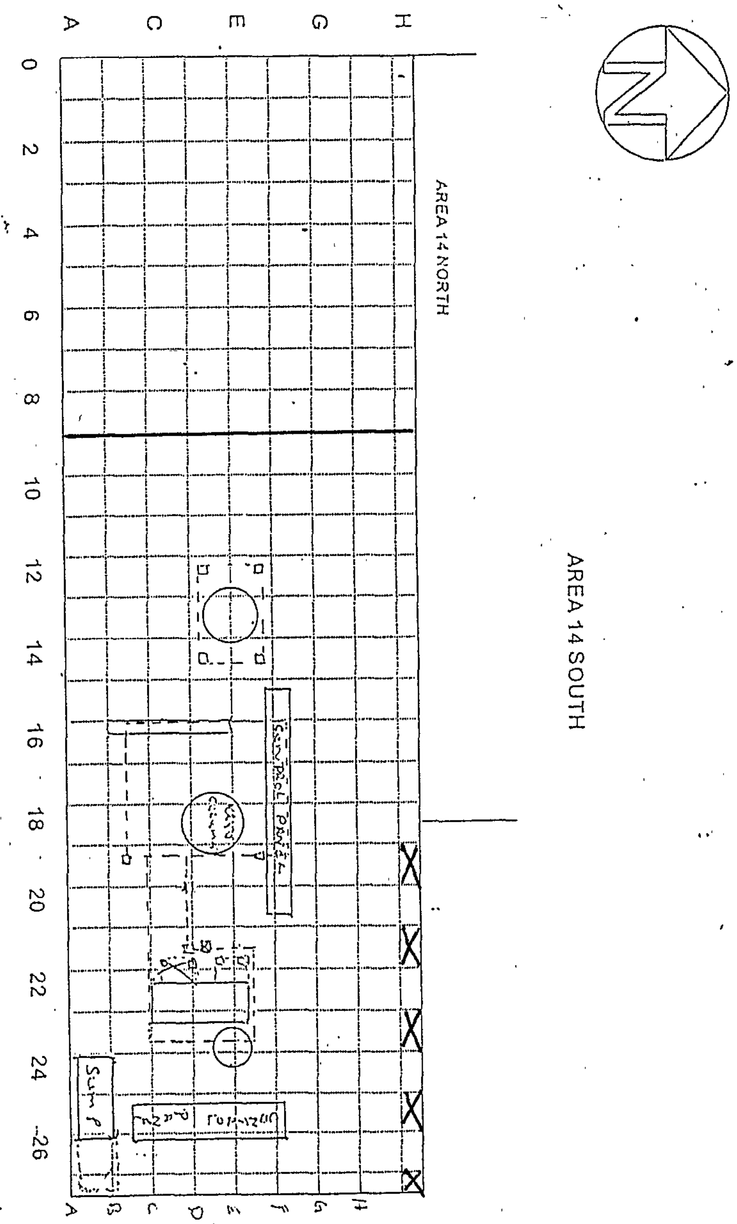
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	4	55
BACKGROUND COUNT TIME (min)	1	1
SAMPLE COUNT TIME (min)	1	1

RP Technician: D. PITMAN

Insert area map or sketch below

AREA 14 SOUTH

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
	I-19 A	FLOOR		119
	B			118
	C			123
	D			125
	E			119
	I-21 A			121
	B			125
	C			117
	D			116
	E			110
	I-23 A			122
	B			118
	C			130
	D			114
	E			133
	I-25 A			127
	B			129
	C			140
	D			141
	E			135
	I-27 A		0	136
	B		1	140
	C		3	143
	D		0	146
	E		2	138
	E	DUPLICATE	4	139



REVIEW [signature]

GHD/GXD1.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

Survey # 1731

ANALYSIS DATE: 7-15-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 S/E FLOOR (Verification Survey)

M.2150

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- 15	FLOOR	A	1				A			
21	A- 15		BG	60				BG			
22	A- 17		A	0				A			
22	A- 17		BG	55				BG			
23	A- 19		A	2				A			
23	A- 19		BG	40				BG			
24	A- 21		A	0				A			
24	A- 21		BG	50				BG			
25	A- 23		A	0				A			
25	A- 23		BG	57				BG			
26	A- 25		A	1				A			
26	A- 25		BG	52				BG			
27	A- 27		A	1				A			
27	A- 27		BG	46				BG			
28	B- 16		A	1				A			
28	B- 16		BG	57				BG			
29	B- 18		A	2				A			
29	B- 18		BG	58				BG			
30	B- 20		A	0				A			
30	B- 20		BG	45				BG			
31	B- 22		A	0				A			
31	B- 22		BG	59				BG			
32	B- 24		A	1				A			
32	B- 24		BG	62				BG			
33	B- 26		A	0				A			
33	B- 26		BG	48				BG			
34	C- 15		A	1				A			
34	C- 15		BG	61				BG			
35	C- 17		A	2				A			
35	C- 17		BG	61				BG			
36	C- 19		A	1				A			
36	C- 19		BG	48				BG			
37	C- 21		A	0				A			
37	C- 21		BG	58				BG			
38	C- 23		A	0				A			
38	C- 23		BG	58				BG			
39	C- 25		A	0				A			
39	C- 25		BG	51				BG			
40	C- 27		A	1				A			
40	C- 27		BG	46				BG			

Instrument Model & s/n:	M.2929 s/n 50718
Detector Model & s/n:	M.43-10-1 s/n 041713
Calibration Date:	~~10-8-97~~ 7/14/98
Efficiency BG (Beta/Gamma):	0.34 cpm / dpm based on SrY90
Efficiency A (Alpha):	0.28 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	326	800		7/16/98
Beta/Gamma	[illegible]	[illegible]		

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

Survey # 1732

ANALYSIS DATE: 7-15-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 S/E FLOOR (Verification Survey) M.3190

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	D - 16	FLOOR	A	1				A			
21	D - 16		BG	49				BG			
22	D - 18		A	0				A			
22	D - 18		BG	64				BG			
23	D - 20		A	1				A			
23	D - 20		BG	55				BG			
24	D - 22		A	1				A			
24	D - 22		BG	59				BG			
25	D - 24		A	0				A			
25	D - 24		BG	40				BG			
25	D - 26		A	1				A			
25	D - 26		BG	39				BG			
27	E - 17		A	0				A			
27	E - 17		BG	57				BG			
28	E - 19		A	1				A			
28	E - 19		BG	56				BG			
29	E - 21		A	0				A			
29	E - 21		BG	62				BG			
30	E - 23		A	0				A			
30	E - 23		BG	54				BG			
31	E - 25		A	0				A			
31	E - 25		BG	62				BG			
32	E - 27		A	1				A			
32	E - 27		BG	48				BG			
33	F - 16		A	1				A			
33	F - 16		BG	47				BG			
34	F - 18		A	3				A			
34	F - 18		BG	52				BG			
35	F - 20		A	0				A			
35	F - 20		BG	56				BG			
36	F - 22		A	0				A			
36	F - 22		BG	64				BG			
37	F - 24		A	0				A			
37	F - 24		BG	51				BG			
38	F - 26		A	1				A			
38	F - 26		BG	54				BG			
39			A					A			
39			BG					BG			
40			A					A			
40			BG					BG			

Instrument Model & s/n:	M.2929 s/n 50718
Detector Model & s/n:	M.43-10-1 s/n 041713
Calibration Date:	~~10-9-97~~ 7/16/98
Efficiency BG (Beta/Gamma):	.34 cpm / dpm based on S/Y90
Efficiency A (Alpha):	[illegible]

Background	Counts	Ct Time (min)	Rb	Date
Alpha	326	800		7/16/98

HEBEL ASSOCIATES, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

Survey # 1735

D. PITMAN

SAMPLE DATE: 7-15-98
ANALYSIS DATE:
LOCATION: BLDG 14 Area 14 S/E - FLOOR

VERIFICATION

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	A11	FLOOR	A	0						+/-		
1	A11		BG	61						+/-		
2	B10		A	2						+/-		
2	B10		BG	53						+/-		
3	B12		A	1						+/-		
3	B12		BG	55						+/-		
4	B14		A	1						+/-		
4	B14		BG	57						+/-		
5	C11		A	1						+/-		
5	C11		BG	59						+/-		
6	C13		A	1						+/-		
6	C13		BG	51						+/-		
7	D12		A	1						+/-		
7	D12		BG	62						+/-		
8	D14		A	3						+/-		
8	D14		BG	58						+/-		
9	E11		A	0						+/-		
9	E11		BG	54						+/-		
10	E13		A	0						+/-		
10	E13		BG	62						+/-		
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: M2929 S/N 50718
Detector Model & s/n: M 43-10-1 S/N 041713
Calibration Date: 7/16/98
Efficiency BG (Beta/Gamma): .29 cpm / dpm based on S/Y90
Efficiency A (Alpha): .34 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	241	500	.43	7/16/98
Beta-Gamma	4140	500	53.9	7/16/98

ENCL-C1.XLS

PAGE 1

(scaler measurement)

Survey #1736

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

Survey Date: 7-15-98
Location: BLDG 14 Area 14 S/E - FLOOR
Description: VERIFICATION

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/3028	2221/86308
Detector Model & s/n:	43-65/89812	44-9/37683
Calibration Date:	8-22-97	1-29-98
Efficiency (Tc99) (SY90) (Th230)	0.15	0.29
Detector Area (CM2)	50 cm²	15.5 cm²

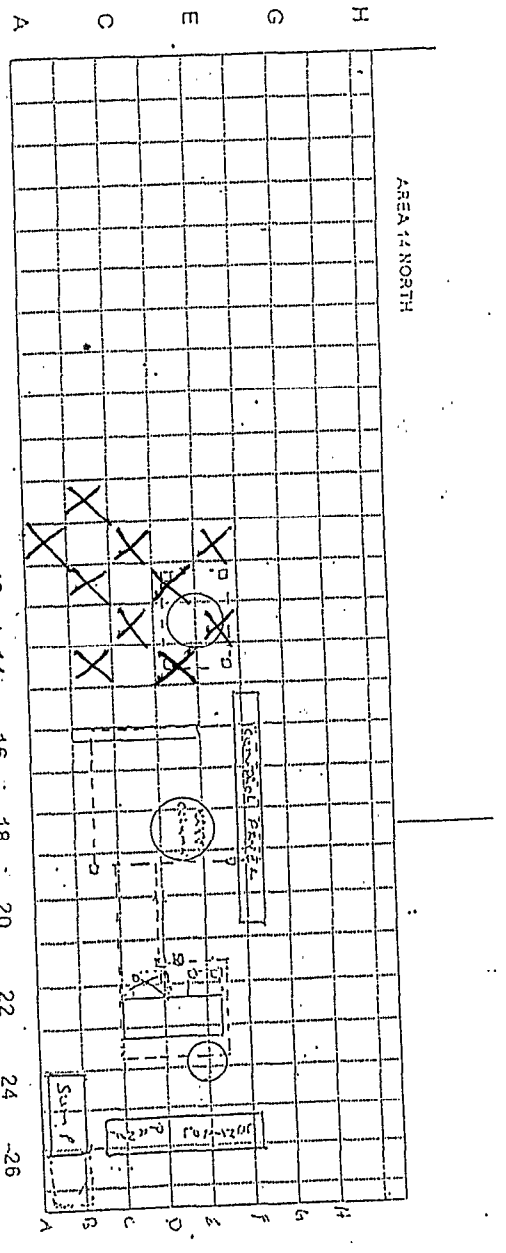
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	4	55
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

RP Technician: D. PITMAN

Insert area map or sketch below

AREA 14 SOUTH

GRID		DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A11	A	FLOOR-Concrete		121
	B			119
	C			127
	D			132
	E			125
B10	A			126
	B			115
	C			117
	D			110
	E			129
B12	A			135
	B			138
	C			131
	D			129
	E			136
B14	A			142
	B			138
	C			125
	D			120
	E			127
C11	A			133
	B			145
	C			128
	D			136
	E			138
C13	A			140
	B			131
	C			129
	D			136
	E			147
D12	A			116
	B			119
	C			110
	D			121
	E			125
D14	A			123
	B			129
	C			134
	D			128
	E			137
E11	A			142
	B			145
	C			136
	D			131
	E			149
E13	A		4	130
	B		1	128
	C		3	133
	D		2	139
	E		0	132
	E		2	140

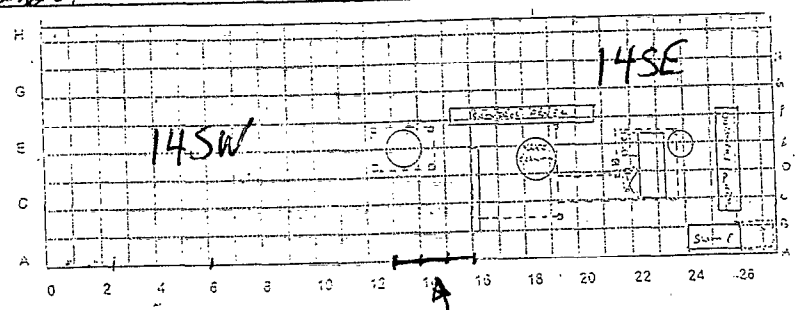


ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: Bradair
Area: Bld-14

Date/Time 7-15-98	Tech M. Sugo	Instrument / sn Z-2221 # 86308/44-9 # 37683 EFF.- .29
Location/ Purpose AREA 14 S/E - South WALL		Survey # 1737 RWP# 01
Supplemental Stander		BKG = 43 C.P.M.

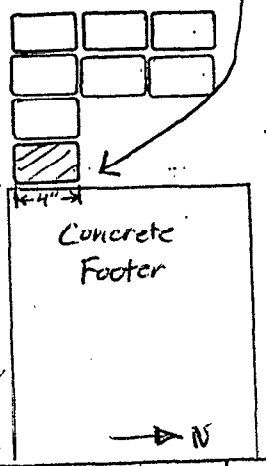


Grids A-13 → A-16 Still Have ≈ 5500 DPM To 13,300 DPM/100 cm² BY at Joint of Brick and Top of footing.

Bottom Brick is Saturated and Footing under Brick is ≈ 66 K ↔ 22K DPM/100 cm² BY

I believe that the Bottom Bricks from grid A-7 → A-K are Saturated and the footing under the Brick is Contaminated.

AREA -21
Total Sq. ft is ≈ 8ft² ↓
(4" x 27' ALONG 14SE SOUTH WALL)



Side View of AREA 14 S/E Footing wall and Brick wall.

Two Brick levels were Removed from The Top of The footing. The Top of the footing was also decontaminated. 66 K DPM TO ≈ 1700 DPM/100 cm² (PRE-DECON) (POST DECON)

South wall Footing. Vertical face was decontaminated from (PRE DECON) - 66K DPM TO ≈ 1700 DPM Per 100 cm² BY. (POST DECON)

Loc.	Type	Description	Gross	α dpm	Gross	β.dpm	Loc	Type	Description	Gross	α dpm	Gross	β.dpm
A-13	D.P.	Brick & Footing Joint			280	5271							
A-14	D.P.	" " "			320	6160							
A-15	D.P.	" " "			300	5716							
A-16	D.P.	" " "			600	12,388							
A-16	D.P.	" " "			640	13,278							

Types = smearable, dp = direct probe

Comments:

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

Review:

Encl 3.3 to HSP 210

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT Survey # 1740

(scaler measurement)

Survey Date: 7-17-98
Location: BLDG 14 Area 14 S/E Ceiling — POST IUC
Description: VERIFICATION

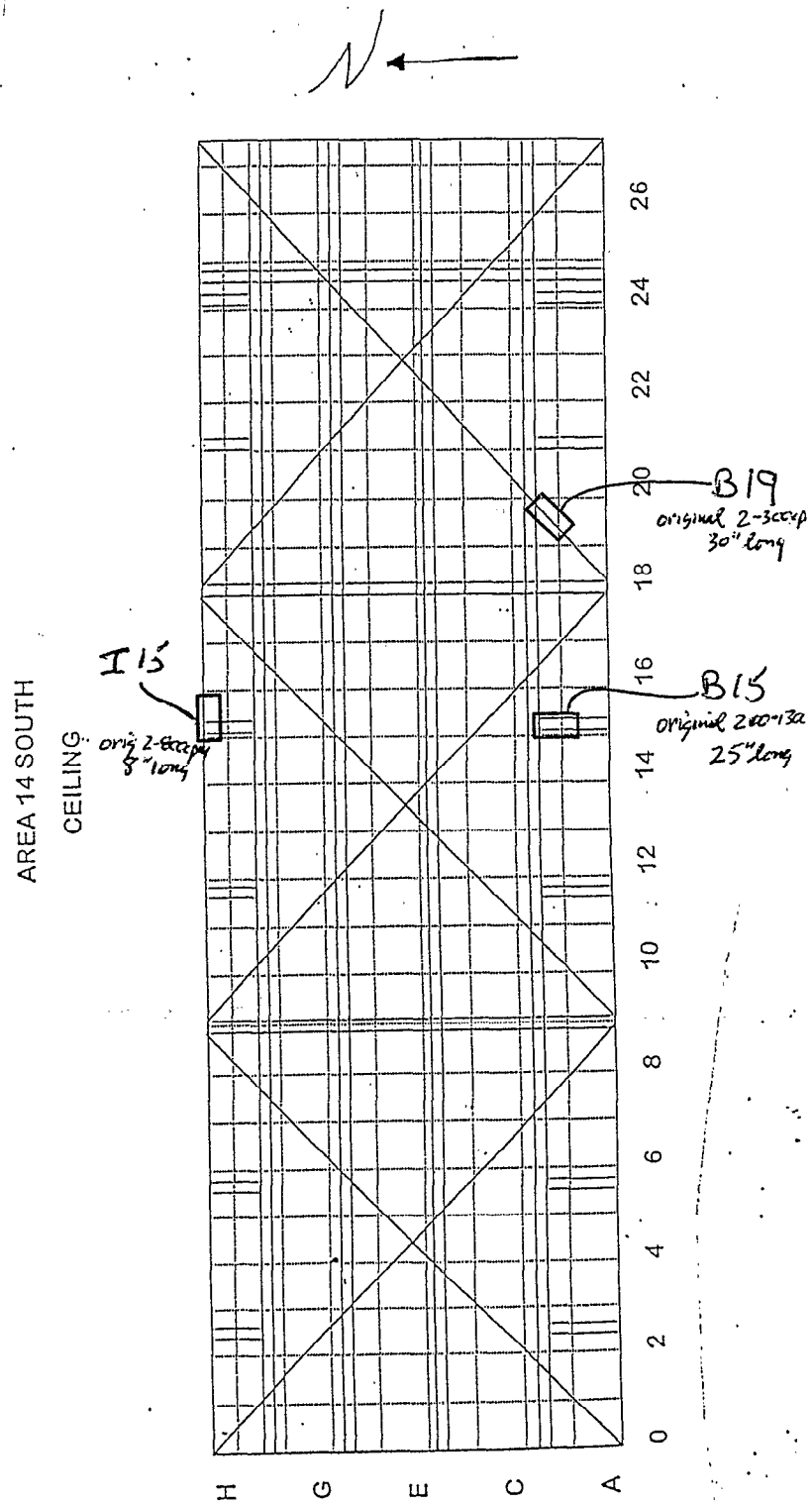
	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/3088	2221/86308
Detector Model, & s/n:	43-65/89812	44-9/37683
Calibration Date:	8-22-97	1-29-98
Efficiency [Tc99] [SY90] [Th230]	0.15	0.29
Detector Area (CM2)	50 cm²	15.5 cm²

RP Technician: D. PITMAN

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	51
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)		1

GRID		DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
I15	A	NORTH I-BEAM	1	80
	B		2	60
	C		0	68
	D		3	92
	E		0	81
B15	A	I-BEAM EAST SIDE		67
	B			69
	C			75
	D			77
	E			62
B15	A	I-BEAM WEST SIDE		86
	B			85
	C			76
	D			81
	E			68
B19	A	ANGLE IRON		59
	B			63
	C			65
	D			67
	E			79



...ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

Survey # 1241

ANALYSIS DATE: 7-17-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14S/E CEILING (Verification Survey) D. PITMAN

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	I15	NORTH I BEAM	A	0				A			
21	I15	↓	BG	48				BG			
22	B15	I-BEAM EAST SIDE	A	0				A			
22	B15	↓	BG	59				BG			
23	B15	I-BEAM WEST SIDE	A	0				A			
23	B15	↓	BG	61				BG			
24	B19	ANGLE IRON - T&P	A	0				A			
24	B19	↓	BG	54				BG			
25			A					A			
25			BG					BG			
26			A					A			
26			BG					BG			
27			A					A			
27			BG					BG			
28			A					A			
28			BG					BG			
29			A					A			
29			BG					BG			
30			A					A			
30			BG					BG			
31			A					A			
31			BG					BG			
32			A					A			
32			BG					BG			
33			A					A			
33			BG					BG			
34			A					A			
34			BG					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 50718
Detector Model & s/n:	M.43-10-1 s/n 041713
Calibration Date:	10-9-97
Efficiency BG (Beta/Gamma):	0.28 cpm / dpm based on Sr/Y90
Efficiency A (Alpha):	0.36 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	197	4530	0.90	7-20-98
Beta-Gamma	2455 16		54	

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

Survey #1782

ANALYSIS DATE: 7-27-98 145E
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 SOUTH CRANE (Verification Survey) D. PITMAN

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	C10	ANGLE IRON FRAME	A	0				A			
21			BG	58				BG			
22	E10		A	2				A			
22			BG	55				BG			
23	F10		A	4				A			
23			BG	54				BG			
24			A					A			
24			BG					BG			
25			A					A			
25			BG					BG			
26			A					A			
26			BG					BG			
27			A					A			
27			BG					BG			
28			A					A			
28			BG					BG			
29			A					A			
29			BG					BG			
30			A					A			
30			BG					BG			
31			A					A			
31			BG					BG			
32			A					A			
32			BG					BG			
33			A					A			
33			BG					BG			
34			A					A			
34			BG					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 50718
Detector Model & s/n:	M.43-10-1 s/n 041713
Calibration Date:	10-9-97
Efficiency BG (Beta/Gamma):	0.29 cpm / dpm based on S/Y90
Efficiency A (Alpha):	0.135 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	306	800	0.38	7-29-98
Beta-Gamma	44316		55	

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

Survey #1783.

14SE

Survey Date: 7-27-98
Location: BLDG 14 Area 14 South - crane maintainence PLATFORM Angle Iron
Description: Verification

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/3008	2221/86308
Detector Model & s/n:	43-65/39812	44-9/37683
Calibration Date:	8-22-97	1-29-98
Efficiency (Tc99) (SY90) (Th230)	0.15	0.29
Detector Area (CM2)	50	15.5

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	2	53
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

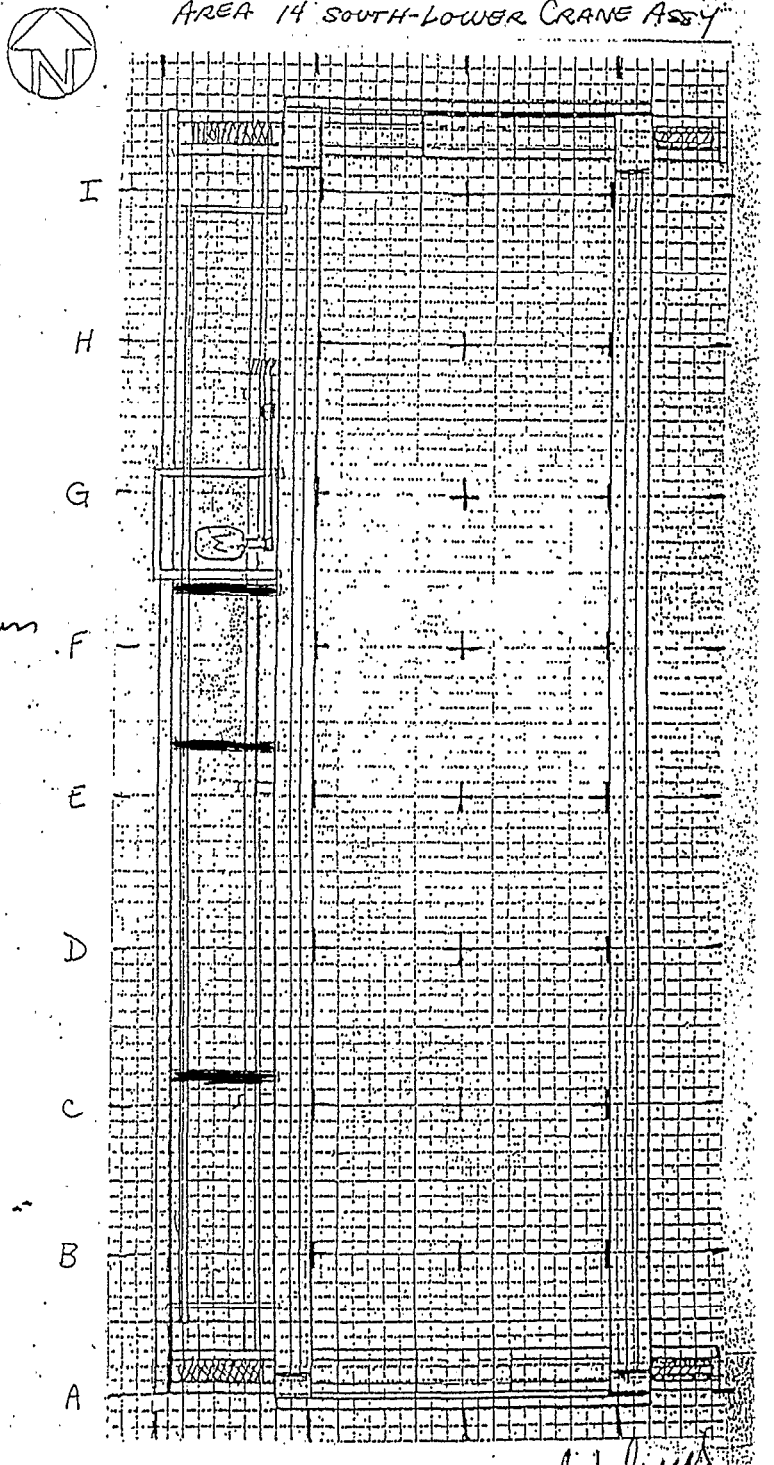
RP Technician: D. PITMAN

GRID		DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
E10	A	Angle Iron		51
	B			57
	C			48
	D			50
	E			55
F10	A		0	46
	B		0	56
	C		1	47
	D		0	42
	E		0	53
F10	A			55
	B			51
	C			49
	D			58
	E			53

NOTE: Maintainance Platform Wood Removed. Angle Iron Supports Decomed.

Insert area map or skotch below

AREA 14 SOUTH-LOWER CRANE ASSY



14SW

(scaler measurement)

No Survey #'s

Survey Date: 3-4-98
Location: BLDG 14 Area 14S, WEST WALL - Knee WALL
Description: VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

4111

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/3027	2221/86308
Detector Model, & s/n:	43-5/85809	44/9-37683
Calibration Date:	1-30-98	1-29-98
Efficiency (Tc99) (SY90) (Th230)	0.096	0.29
Detector Area (CM2)	50	15.5

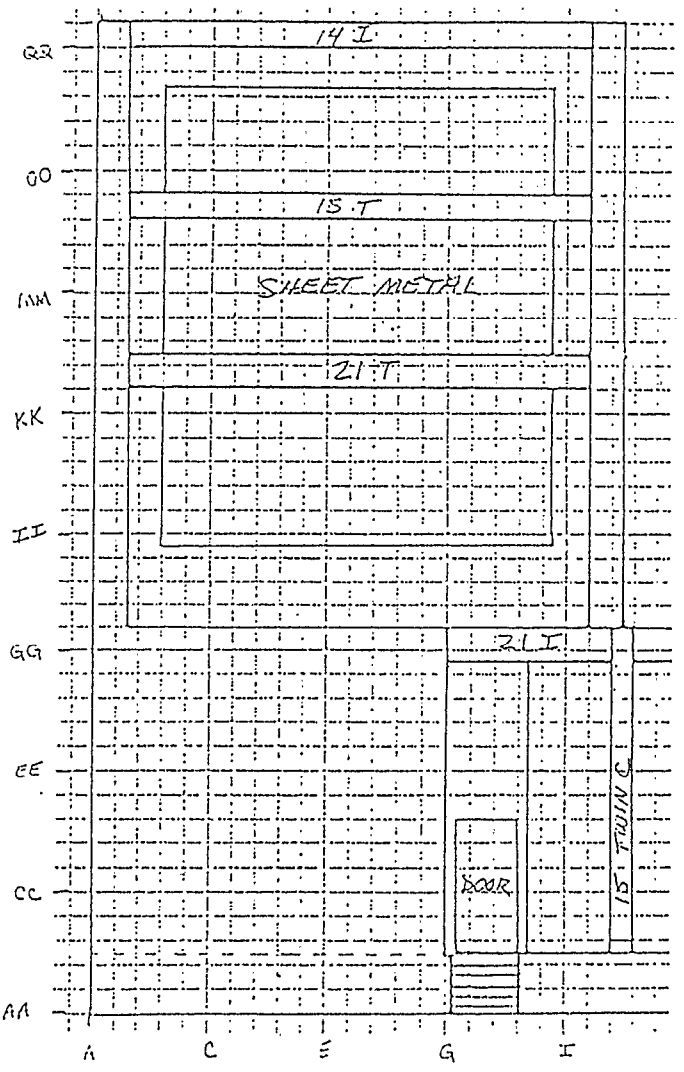
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	0	68
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

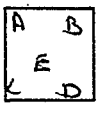
RP Technician: W. JOSKE

Insert area map or sketch below

GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A-AA/A/0	Knee WALL		79
B			41
C			52
D			69
E			57
A-AA/B/0			108
B			50
C			72
D			115
E			108
A-AA/C/0			54
B			56
C			60
D			67
E			65
A-AA/D/0		4	61
B		2	55
C		3	76
D		1	68
E		1	104
E	DUPLICATE	2	58
A-AA/E/0	Knee WALL		47
B			77
C			96
D			59
E			107
A-AA/F/0			65
B			91
C			89
D			95
E			104
A-AA/G/0			79
B			95
C			112
D			103
E			68
A-AA/H/0			80
B			68
C			120
D			140
E			158
A-AA/I/0		5	88
B		3	52
C		0	96
D		1	95
E		4	119
E	DUPLICATE	3	116

WEST WALL
Knee WALL
→ N





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ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

4112

ANALYSIS DATE: 4-28-98 1630
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 S.W. SOUTH WALL 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)
1	A-8-PP	B14 14S.W. SOUTH WALL	A	0	1			A			
↓	↓		BG	52				BG			
2	A-8-NN		A	2				A			
↓	↓		BG	54				BG			
3	A-6-PP		A	0				A			
↓	↓		BG	53				BG			
4	A-6-NN		A	3				A			
↓	↓		BG	63				BG			
5	A-7-LL		A	1				A			
↓	↓		BG	55				BG			
6	A-7-KK		A	1				A			
↓	↓		BG	50				BG			
7	A-5-KK		A	1				A			
↓	↓		BG	48				BG			
8	A-0-MM		A	0				A			
↓	↓		BG	64				BG			
9	A-2-MM		A	0				A			
↓	↓		BG	52				BG			
10	A-1-KK		A	2				A			
↓	↓		BG	61				BG			
11	A-8-HH		A	2				A			
↓	↓		BG	53				BG			
12	A-6-HH		A	2				A			
↓	↓		BG	70				BG			
13	A-5-GG		A	0				A			
↓	↓		BG	50				BG			
14	A-8-EE		A	2				A			
↓	↓		BG	46				BG			
15	A-3-HH		A	0				A			
↓	↓		BG	58				BG			
16	A-1-HH		A	1				A			
↓	↓		BG	44				BG			
17	A-0-GG		A	2				A			
↓	↓		BG	51				BG			
18	A-3-EE		A	1				A			
↓	↓		BG	48				BG			
19	A-6-EE		A	1				A			
↓	↓		BG	44				BG			
20	A-1-EE		A	0				A			
↓	↓		BG	46				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):	.29	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.34	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	441	800	.55	4-28-98
Beta-Gamma	43568	800	54	4-28-98

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14SW

(scaler measurement)

Survey Date: 3-4-98
Location: Bldg 14, Area 14 SOUTH - SOUTH WALL
Description: VERIFICATION

RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

4113

	alpha	beta-gamma
Instrument Model & s/n:	ESP-1/3027	2220/89648
Detector Model & s/n:	43-5/88097	44-9/148272
Calibration Date:	1-30-98	12-30-97
Efficiency [Tc99] [SY90] [Th230]	0.096	0.24
Detector Area (CM2)	50	15.5

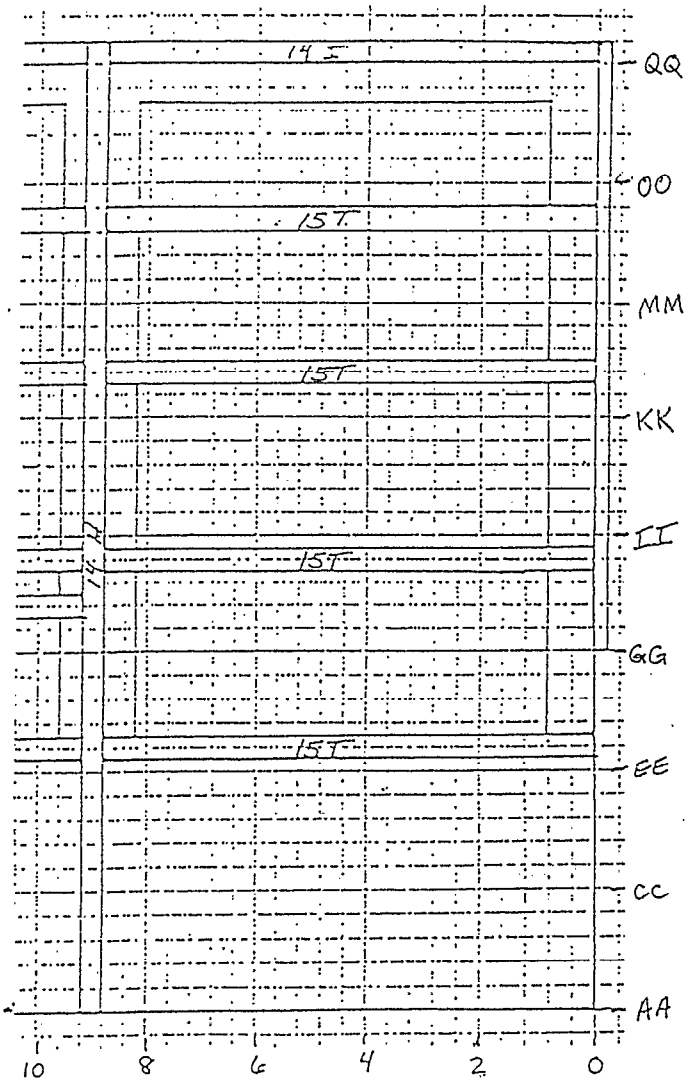
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	0	68
BACKGROUND COUNT TIME (MIN)	1	1
SAMPLE COUNT TIME (MIN)	1	1

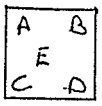
RP Technician: D. PITMAN

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A	AA/A/8	FOOTING		146
B				64
C				59
D				56
E				77
A	AA/A/7			76
B				69
C				75
D				52
E				55
A	AA/A/6			61
B				46
C				79
D				88
E				55
A	AA/A/1		6	64
B			5	59
C			6	11
D			3	63
E			1	84
A		DUPLICATE	2	98
B	AA/A/0	FOUNDATION		52
C				79
D				83
E				72
				63

Insert area map or sketch below

AREA 14 SOUTH
SOUTH WALL
Foundation





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ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

4114

14SW

ANALYSIS DATE: 3-4-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14S, SOUTH WALL Verification Survey D. Pitman.

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	-AA/A/0	Foundation wall	A	1				A			
21	-AA/A/0		BG	54				BG			
22	-AA/A/1		A	1				A			
22	-AA/A/1		BG	70				BG			
23	-AA/A/6		A	2				A			
23	-AA/A/6		BG	55				BG			
24	-AA/A/7		A	1				A			
24	-AA/A/7		BG	64				BG			
25	-AA/A/8		A	0				A			
25	-AA/A/8		BG	68				BG			
26			A					A			
26			BG					BG			
27			A					A			
27			BG					BG			
28			A					A			
28			BG					BG			
29			A					A			
29			BG					BG			
30			A					A			
30			BG					BG			
31			A					A			
31			BG					BG			
32			A					A			
32			BG					BG			
33			A					A			
33			BG					BG			
34			A					A			
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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: L 0989	M.2929 s/n ~~91234~~ 50718	
Detector Model & s/n:	M.43-10-1 s/n 085270	
Calibration Date:	2/7/97	
Efficiency BG (Beta/Gamma):	.25	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.35	cpm / dpm based on Th230

D. PITMAN

Background	Counts	Ct Time (min)	Rb	Date
Alpha	46	600		3/4/98
Beta-Gamma	57	600		3/4/98

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ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

14SW

4115

ANALYSIS DATE: 3-4-98
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14 South, West wall Verification Survey D. Pitman

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)
1	-AA/A/0	Knee wall	A	0				A			
1	-AA/A/0		BG	67				BG			
2	-AA/B/0		A	1				A			
2	-AA/B/0		BG	53				BG			
3	-AA/C/0		A	1				A			
3	-AA/C/0		BG	61				BG			
4	-AA/D/0		A	1				A			
4	-AA/D/0		BG	53				BG			
5	-AA/E/0		A	0				A			
5	-AA/E/0		BG	66				BG			
6	-AA/F/0		A	2				A			
6	-AA/F/0		BG	67				BG			
7	-AA/G/0		A	1				A			
7	-AA/G/0		BG	64				BG			
8	-AA/H/0		A	1				A			
8	-AA/H/0		BG	50				BG			
9	-AA/I/0		A	0				A			
9	-AA/I/0		BG	68				BG			
			A					A			
			BG					BG			
			A					A			
			BG					BG			
			A					A			
			BG					BG			
			A					A			
			BG					BG			
			A					A			
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			A					A			
			BG					BG			
			A					A			
			BG					BG			
			A					A			
			BG					BG			
			A					A			
			BG					BG			
			A					A			
			BG					BG			

Instrument Model & s/n:	M.2929 s/n ~~9[illegible]~~ 50718	
Detector Model & s/n:	M.43-10-1 s/n 085270	
Calibration Date:	2/7/97	
Efficiency BG (Beta/Gamma):	.25	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.35	cpm / dpm based on Th230

D. Pitman

Background	Counts	Ct Time (min)	Rb	Date
Alpha	.46	600		3/4/98
Beta-Gamma	57	600		3/4/98

SWIPE.XLS

ION TECHNOLOGY, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

4186

ANALYSIS DATE: 4-28-98 1630
LOCATION: Praxair, Tonawanda, NY
Bldg. 14, Area 14S.W. SOUTHWALL 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)
1	A-8-PP	B14 14S.W. SOUTHWALL	A	0	1			A			
↓	↓		BG	52				BG			
2	A-8-NN		A	2				A			
↓	↓		BG	54				BG			
3	A-6-PP		A	0				A			
↓	↓		BG	53				BG			
4	A-6-NN		A	3				A			
↓	↓		BG	63				BG			
5	A-8-LL		A	1				A			
↓	↓		BG	55				BG			
6	A-7-kk		A	1				A			
↓	↓		BG	50				BG			
7	A-5-kk		A	1				A			
↓	↓		BG	48				BG			
8	A-0-MM		A	0				A			
↓	↓		BG	64				BG			
9	A-2-MM		A	0				A			
↓	↓		BG	52				BG			
10	A-1-kk		A	3				A			
↓	↓		BG	61				BG			
11	A-8-HH		A	2				A			
↓	↓		BG	53				BG			
12	A-6-HH		A	2				A			
↓	↓		BG	70				BG			
13	A-5-GG		A	0				A			
↓	↓		BG	50				BG			
14	A-8-EE		A	2				A			
↓	↓		BG	46				BG			
15	A-3-HH		A	0				A			
↓	↓		BG	58				BG			
16	A-1-HH		A	1				A			
↓	↓		BG	44				BG			
17	A-0-GG		A	2				A			
↓	↓		BG	51				BG			
18	A-3-EE		A	1				A			
↓	↓		BG	48				BG			
19	A-6-EE		A	1				A			
↓	↓		BG	44				BG			
20	A-1-EE		A	0				A			
↓	↓		BG	46				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):	.59 .54	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.34	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	441	800	.55	4-28-98
Beta-Gamma	43568	800	54	4-28-98

SWIPE.XLS