APPENDIX B-11

DELINEATION SURVEYS FOR AREA 14 SOUTH

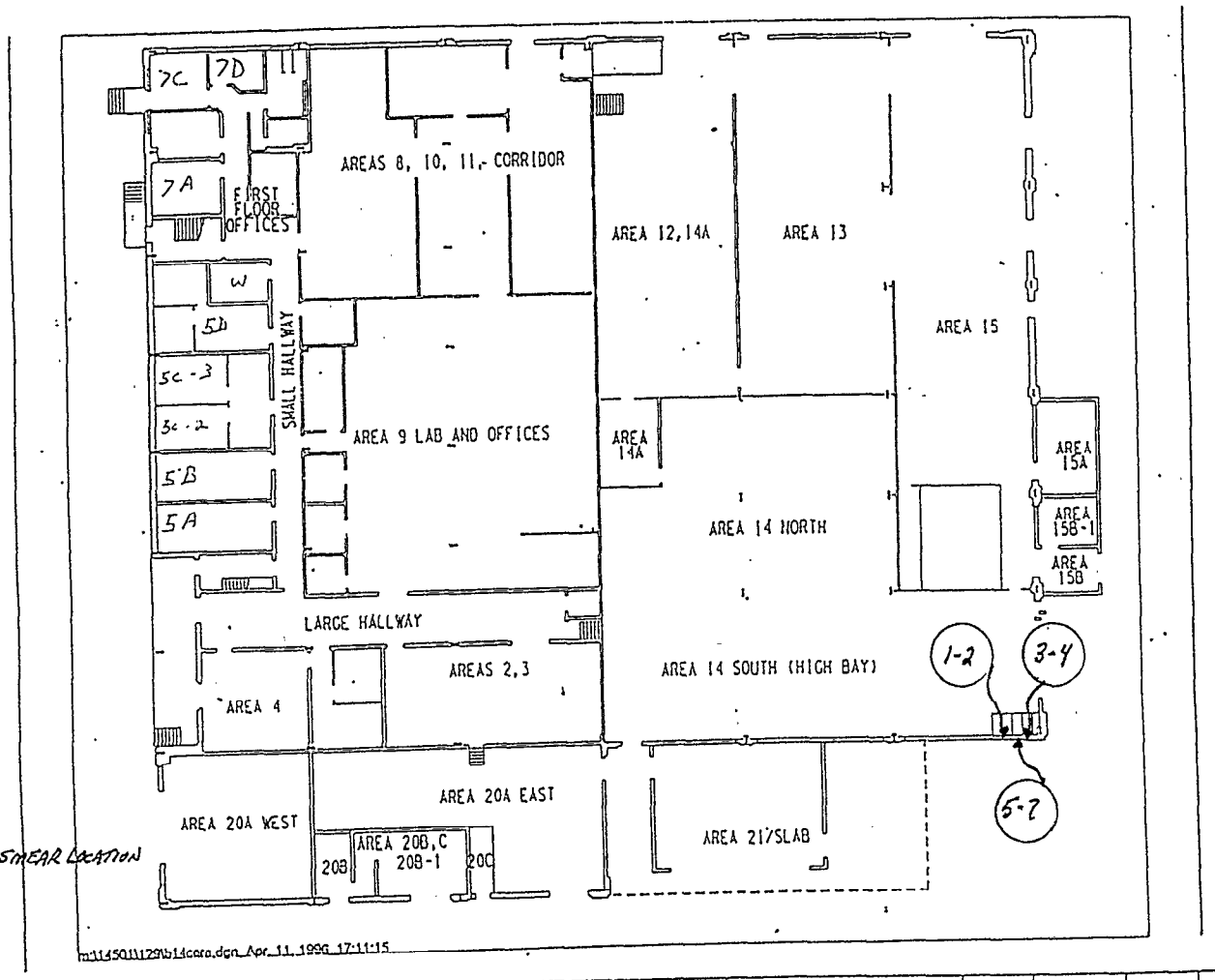
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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

Radiological Survey Form

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

Date / Time 3-26-97 1030	Tech William [illegible]	Instruments / sn (I) 2929	
Location / Purpose PRAXAIR SITE BLDG. #14		Survey # 168	RWP # N/A
AREA 14 OVERHEAD SMEAR SURVEY			



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
		I-BEAMS				
1	S	SEE MAP 2ND FL. LEVEL	2	6	79	52
2		2ND FL. LEVEL	1	2	62	-7
3		3RD FL. LEVEL	0	-1	57	-24
4		3RD FL. LEVEL	2	6	57	-24
5		4TH FL. LEVEL	1	2	66	7
6		4TH FL. LEVEL	0	-1	59	-17
7		4TH FL. LEVEL	0	-1	60	-14

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

Comments:

Scaler S/N (I) 2929	BKD	EFF	MDA
CT = 1MIN. Alpha:	156/300 = .22	.32	15
Tech William [illegible] Beta:	48129/300 = 64	.29	138

Review [illegible]

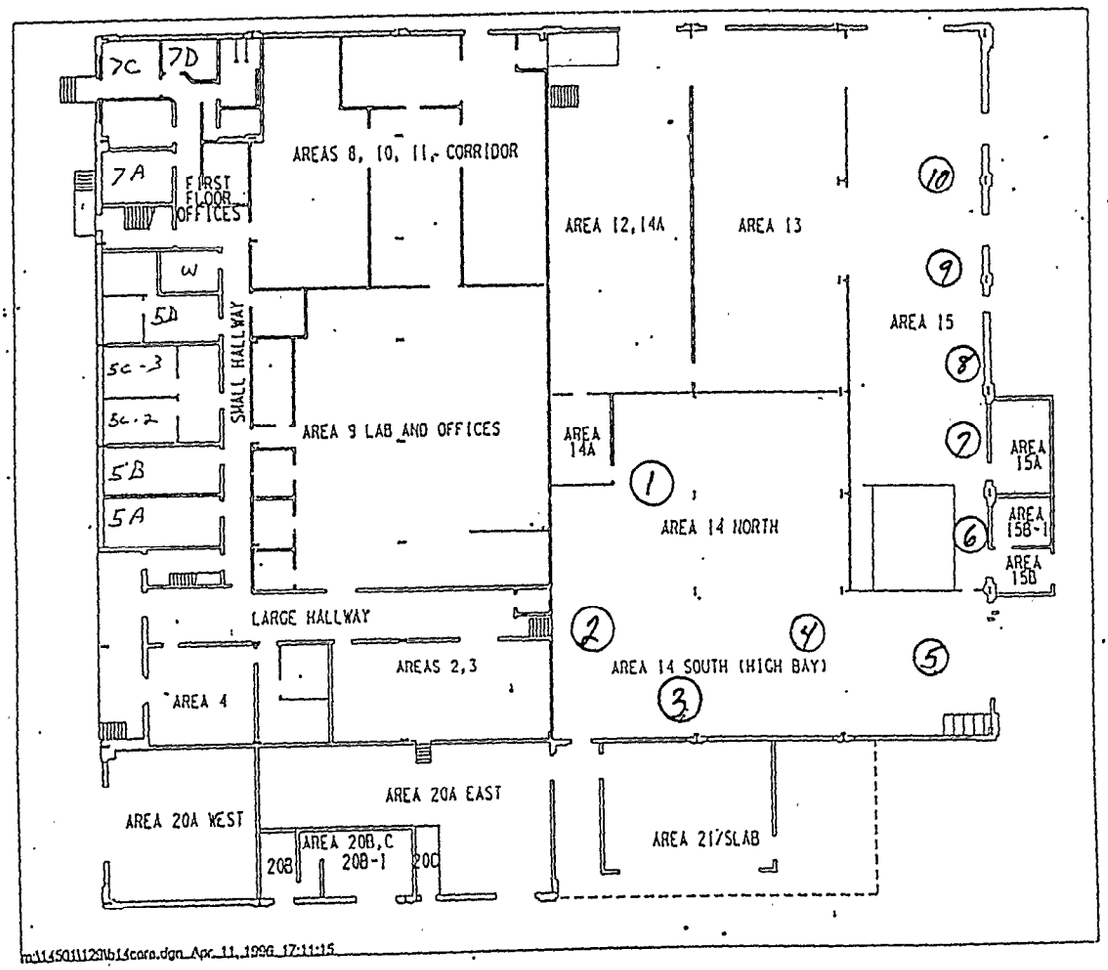
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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

Radiological Survey Form

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

Date / Time 4-10-97 1600	Tech W. [signature]	Instruments / sn (I) 2929 # 91234
Location / Purpose PRAXAIR BLDG. #14		Survey # 267 RWP # N/A
AREAS 14 & 15		



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DP
1	S	FLOOR AREA 14	1	2	52	-28	8	S	FLOOR AREA 15	2	5	73	41
2		↓	0	-1	61	0	9		↓	0	-1	46	-52
3			1	2	75	48	10			1	2	69	28
4			0	-1	60	-3			N/A				
5			1	-2	69	28							
6		FLOOR AREA 15	2	5	71	35							
7		↓	0	-1	53	-28							

Comments:

		BKD	EFF	MDA
Scaler S/N (I) 2929				
CT = 1 MIN.	Alpha:	187/700=.26	.32	16
Tech W. [signature]	Beta:	42957/700=61	.29	135

Review [signature]

HILBERT ASSOCIATES, INC.

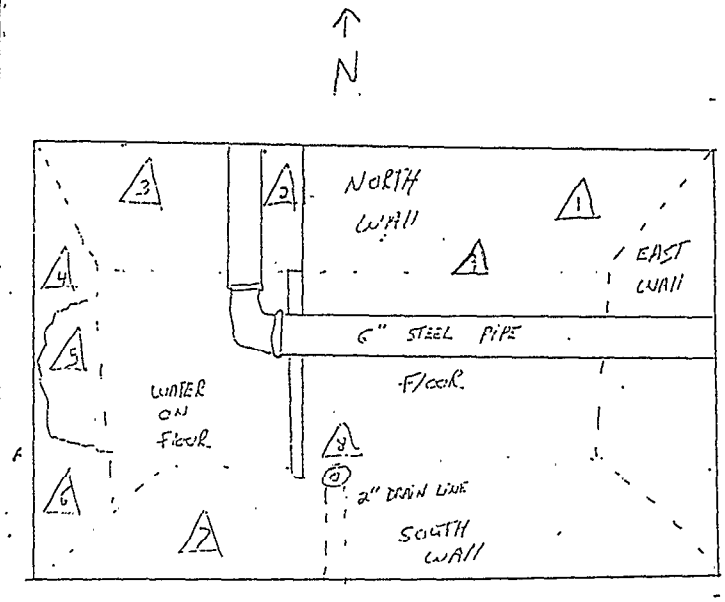
DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 6-11-97
LOCATION: BLD-14
AREA 14
SOUTH Pit Delineation
Survey # 445

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

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

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	1	NORTH WALL	60 - 90
2	2	NORTH WALL STEEL BRACE	
3		AND CONCRETE WALL	350-460
4	3	NORTH WALL	50-70
5	4	WEST WALL	60-90
6	5	SOIL	60-80
7	6	WEST WALL	50-60
8	7	SOUTH WALL	90-120
9	8	DRAIN LINE	60-90
10	9	BASE of NORTH WALL	180-200
11			
12		Note: Limited	
13		Access To Pit.	
14		only ≈ 50% Surveyed.	
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			



H.P. Mike Zigo 6-11-97

Instrument Model & s/n:	Ludlum 2221 A
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 0-21
Detector Area	cm2 15.5

Review

ENCL-C2.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

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

vey Date: 8/11/97
ation: B-14 A-14 (South)
scription: DELIA
urvey # 673

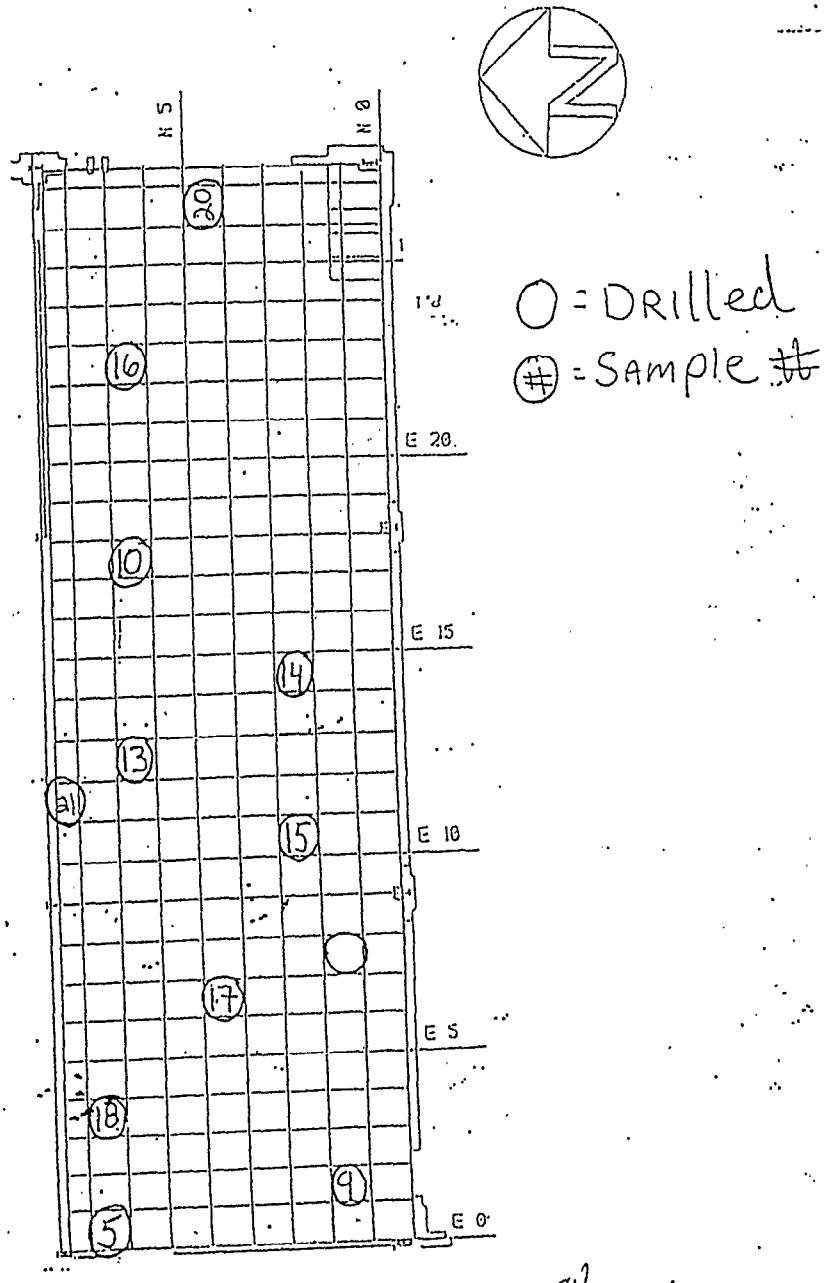
	alpha	beta-gamma
Instrument Model & s/n: 2221 "A"		
Detector Model & s/n:		
Calibration Date:		
Efficiency [Tc99] [SY90] [Th230]		
Detector Area (CM2)		

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	50-75
BACKGROUND COUNT TIME (MIN)		1 MIN
SAMPLE COUNT TIME (MIN)		1 MIN

Insert area map or sketch below

Technician: SMALLRIDGE / RS

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
5	H-1	Soil Sample @ 1 FT		76
		2 FT		120
		only 2 samples due to obstructions @ 3 FT		N/A
		4 FT		N/A
9	B-2	Soil Sample @ 1 FT		65-80
		2 FT		
		3 FT		
		4 FT		62
10	G-18	Soil Sample @ 1 FT		N/A
		No Samples @ 2 FT		N/A
		Due to @ 3 FT		N/A
		Obstructions @ 4 FT		N/A
3	G-13	No Sample Steel @ 1 FT		105
4	C-15	Soil Sample @ 1 FT		196
		@ 2 FT		N/A
		Obstruction @ 3 FT		N/A
		@ 4 FT		56-71
15	C-11	Soil Sample @ 1 FT		
		2 FT		
		3 FT		
		4 FT		53
16	G-23	Soil Sample @ 1 FT		70
		2 FT		66
		3 FT		52
		4 FT		81
17	E-7	Soil Sample @ 1 FT		60
		2 FT		73
		3 FT		73
		4 FT		73
18	H-4	Soil Sample @ 1 FT		N/A
		obstruction @ 2 FT		N/A
		3 FT		N/A
		4 FT		51
20	E-27	Soil Sample @ 1 FT		43
		2 FT		76
		3 FT		64
		4 FT		60
21	I-12	Soil Sample @ 1 FT		80
		2 FT		62
		3 FT		82
		4 FT		70
22	B-9	Soil Sample @ 1 FT		82
		2 FT		81
		3 FT		83
		4 FT		



NOTE: ALL READINGS G.C.P.M
BKG = 50-75 CPM

REVIEW

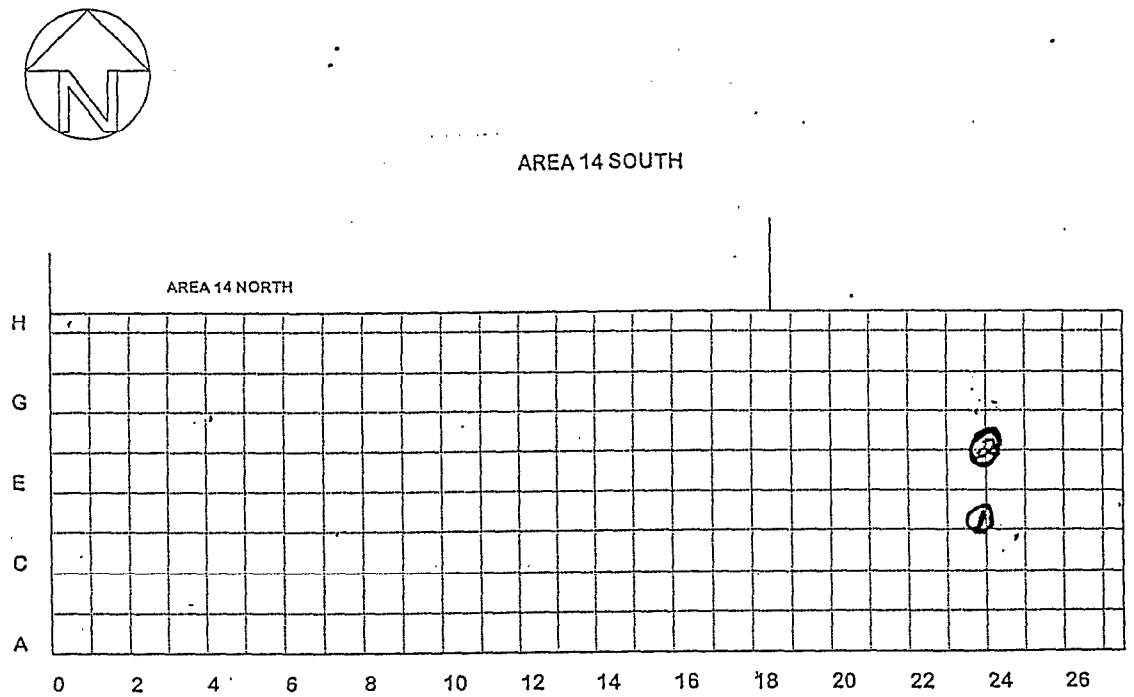
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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

Radiological Survey Form

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

Date / Time 9-17-97 2100	Tech W. [signature]	Instruments / sn L2221 w/44-9 89648
Location / Purpose PRAXAIR SITE B14 / AREA 14 S.E.		Survey # 786 RWP # ___
SOIL SAMPLE SURVEY		



1M X 1M GRID

Loc #	Loc	Type	Description	Gross	Λ DPM	~~Gross~~ BY CCPM	Beta DPM	Loc	Type	Description	Gross	Λ DPM	Gross	Beta D
784	1	D.P.	CORE BORE #1 0-1'			0 CCPM								
785	2		1-2'			0 CCPM								
786	3		2-3'	N		0 CCPM	N			N				
787	4		3-4'		A	0 CCPM	A			A				
788	5		CORE BORE #2 0-1'			0 CCPM								
789	6		1-2'			0 CCPM								

Comments:

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

Review [signature]

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

#812

Survey Date: 9-24-97
Location: B. 14 A 14 So. - EXTERIOR
Description: DELIN

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

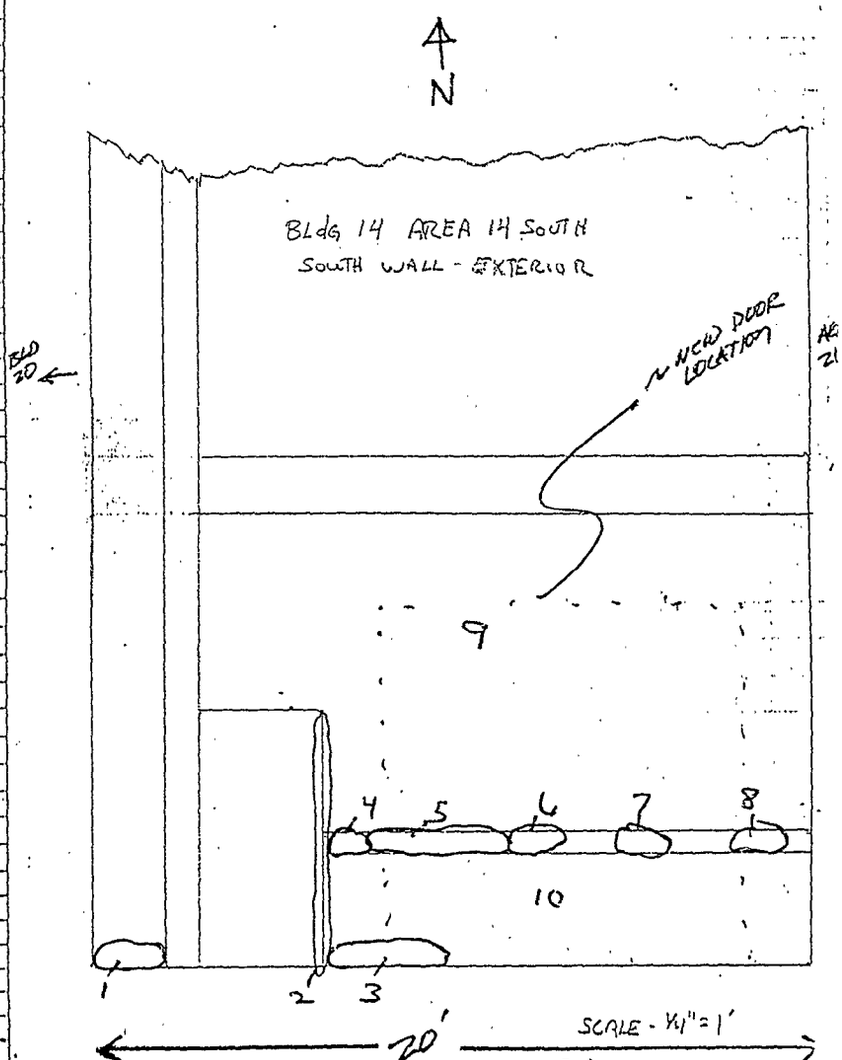
	alpha	beta-gamma
Instrument Model & s/n:	/	2221-B 86308
Detector Model & s/n:		
Calibration Date:		
Efficiency [Tc99] [SY90] [Th230]	/	0.19
Detector Area (CM2)		0.15

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

Insert area map or sketch below

RP Technician: D. Pitman / W. Jeske
C. HALLAM

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
1		BRICK WALL		350
2		METAL DOOR JAM		200-350
3		PAINTED BRICK WALL		200-600
4		Cement Ledge		200
5		Cement Ledge		300-1100
6		Cement Ledge		200-350
7		" "		350-700
8		" "		200
9		BRICK WALL TOP		60-120
10		BRICK WALL BOTTOM		60-120



REVIEW

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

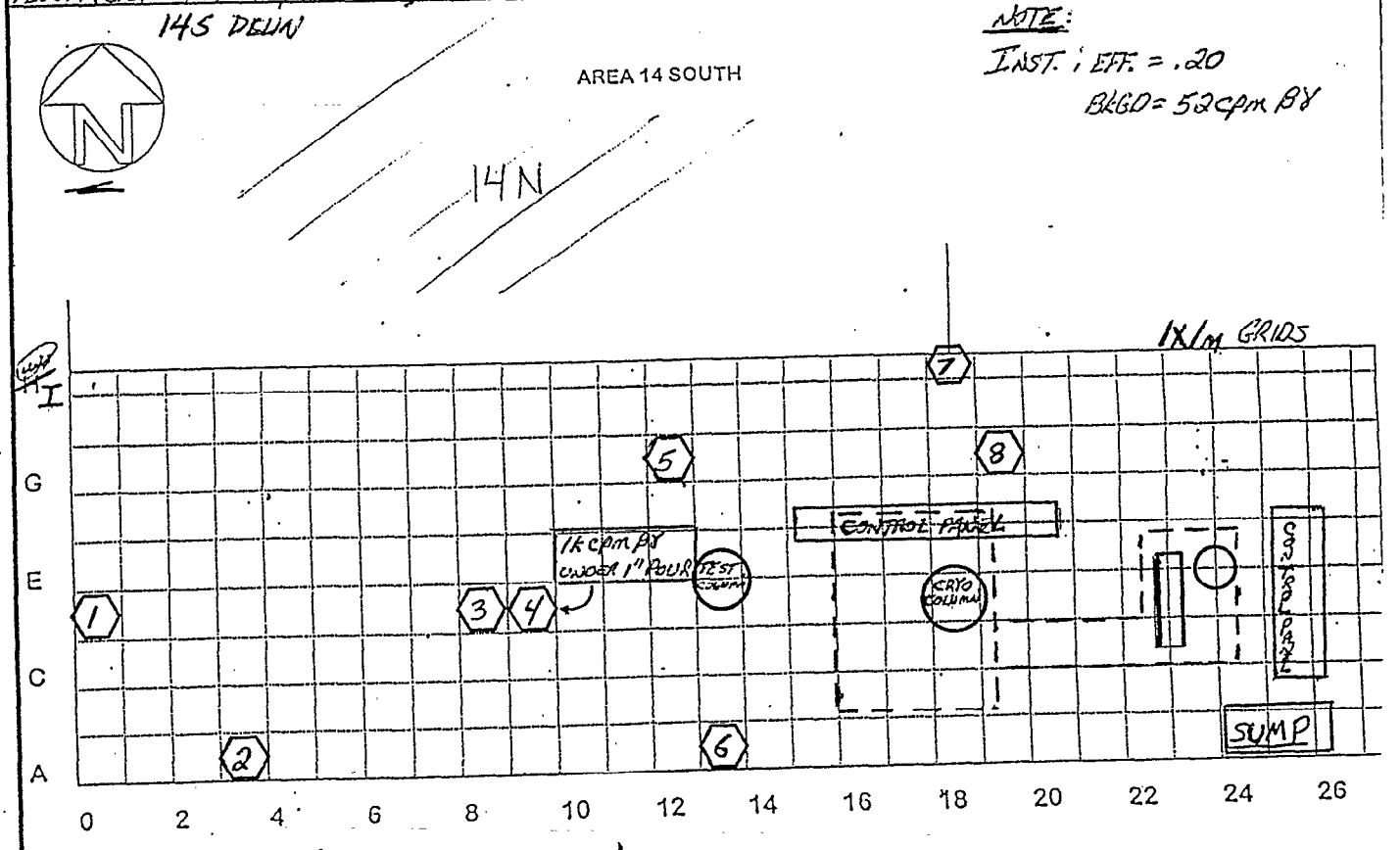
RADIOLOGICAL SURVEY

Project: PRAXAIR SITE
Area: AREA 14 SOUTH

Date/Time 9-23-97 2330	Tech William W. Jerke	Instrument / sn ©L2221 w/44-9 S9648
Location/ Purpose PRAXAIR SITE B14 AREA 14 SOUTH		Survey # 819 RWP# 04
FLOOR (CRACK, JOINT & TRENCH) DELINEATION		

14S DELIN

NOTE:
INST. ; EFF. = .20
BKGD = 52cpm βγ



KEY: ⟨#⟩ = AREA (CRACK, JOINT, OR TRENCH) DELINEATION

Loc	Type	Description	PRIOR TO CHIPPING CONCRETE Gross	β dpm	AFTER CHIPPING CONCRETE Gross	β dpm
1	D.P.	FOUNDATION UNDER FLOOR	278	7290	418	12k
2	↓	↓	250	6450	97	1450
3		OLD TRENCH	310	8300	8000	256k
4		CRACK	25k	805k	6000	192k
5		OLD TRENCH	172	3870	3000	95k
6		FOUNDATION UNDER FLOOR	1400	44k	126	2387
7		↓	160	3484	136	2700
8	↓	OLD TRENCH	156	3350	118	2130

Loc	Type	Description	Gross	β dpm	Gross	β dpm

N
A

Type:s = smearable, dp = direct probe

Comments:

Scalar S/N		BKG	EFF	MGA
CT=	DATE	α:		
Tech		β: A		

Review: [signature]

Encl 3.3 to HSP 210

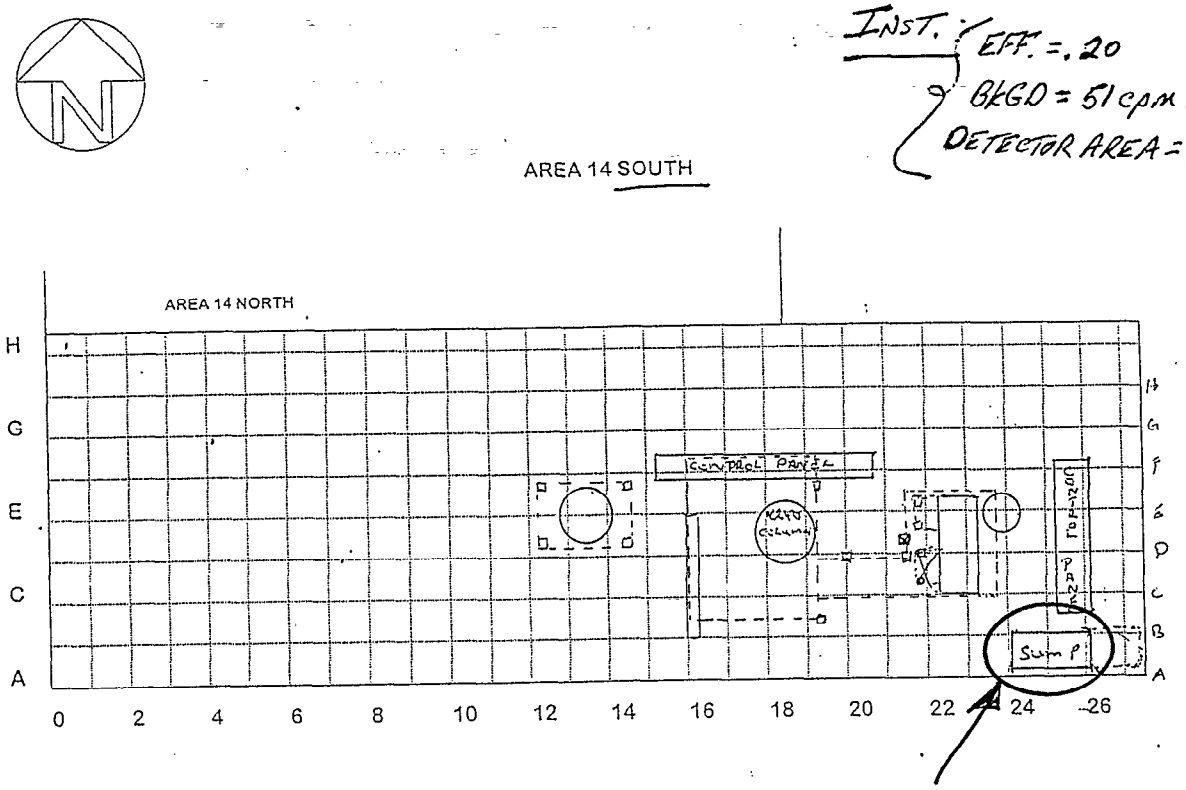
ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR SITE
Area: AREA 14 SOUTH EAST SUMP

Date/Time 9-25-97 2200	Tech William W. [illegible]	Instrument / sn ⓒ L2221 w/44-9
Location/ Purpose PRAXAIR SITE B14 AREA 14S SOUTH EAST AREA SUMP DELINEATION		Survey # 824 RWP# 04

INST.: EFF. = .20
BKGD = 51 cpm βγ
DETECTOR AREA = 15.5 cm²



NOTE: SAMPLES: #793 (C.O.C.) TAKEN @ EAST HALF OF SUMP 85% RUST & 15% DUST 1M X 1M GRID
#794 (C.O.C.) TAKEN @ WEST HALF OF SUMP 90% SOIL & 10% RUST

~~Loc~~ ft²	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
10 ft²	D.P.	S.E. SUMP SOUTH WALL	N		300 TO 500	8k TO 15k							
10 ft²	↓	S.E. SUMP NORTH WALL			300 TO 700	8k TO 21k							
5 ft²	↓	S.E. SUMP EAST WALL		A	200 TO 550	4800 TO 16k							
—	↓	EXTERNAL DRAIN PIPE (4") SOUTHSIDE			EXTERNAL 580	17k							

N A

N A

Type:s = smearable, dp = direct probe

Comments:

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

Review: [signature]

Encl 3.3 to HSP 210

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

14SW DELIN

Survey #825

Survey Date: 9-24-97
Location: B14 A14 SW. WEST END INTERIOR
Description: DELIN

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

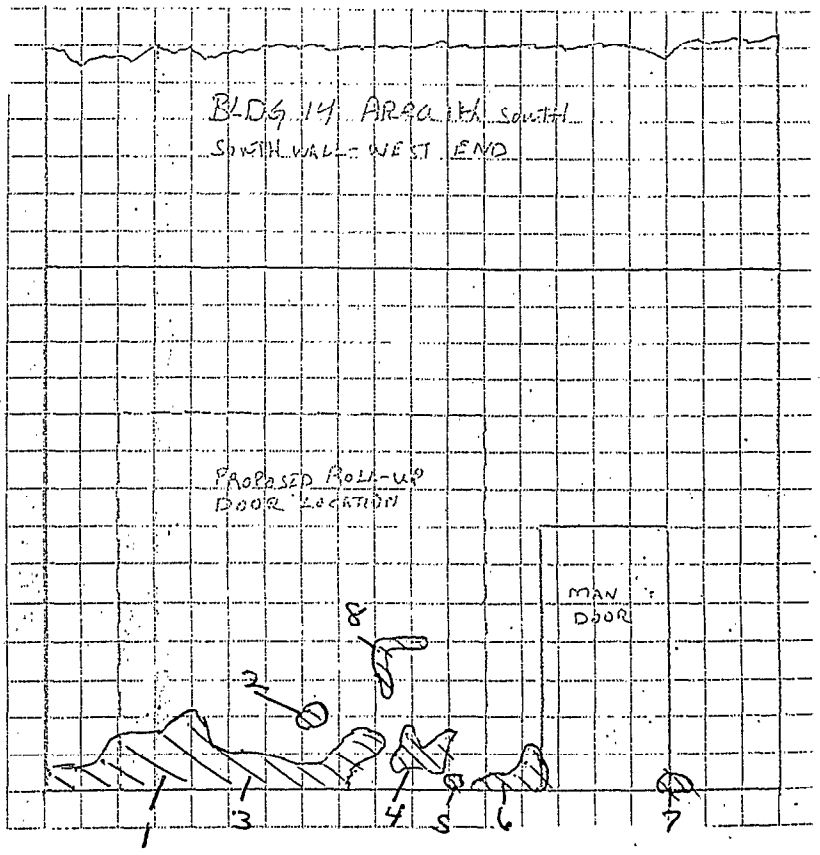
	alpha	beta-gamma
Instrument Model & s/n:		2221-B 86300
Detector Model & s/n:		44-9
Calibration Date:		8-12-97
Efficiency [Tc99] [SY90] [Th230]		0.19
Detector Area (CM2)		0.15

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

RP Technician: D. Pitman

Insert area map or sketch below

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
1		BRICK WALL		200-1500 cpm
2		" "		200
3		" "		1500
4		" "		250-350
5		" "		230
6		" "		200-300
7		DOOR FRAME		300
8		BRICK WALL		200



REVIEW

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey # 852

Survey Date: 10-8-97
Location: PRAXAIR RLD-14
Description: AREA-14 Delineation

	alpha	beta-gamma
Instrument Model & s/n: Ludlum		2221 #86313
Detector Model & s/n:	N/A	44-9
Calibration Date:		8-12-97
Efficiency (Tc99) (SY90) (Th230)		.19
Detector Area (CM2)		15.5

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

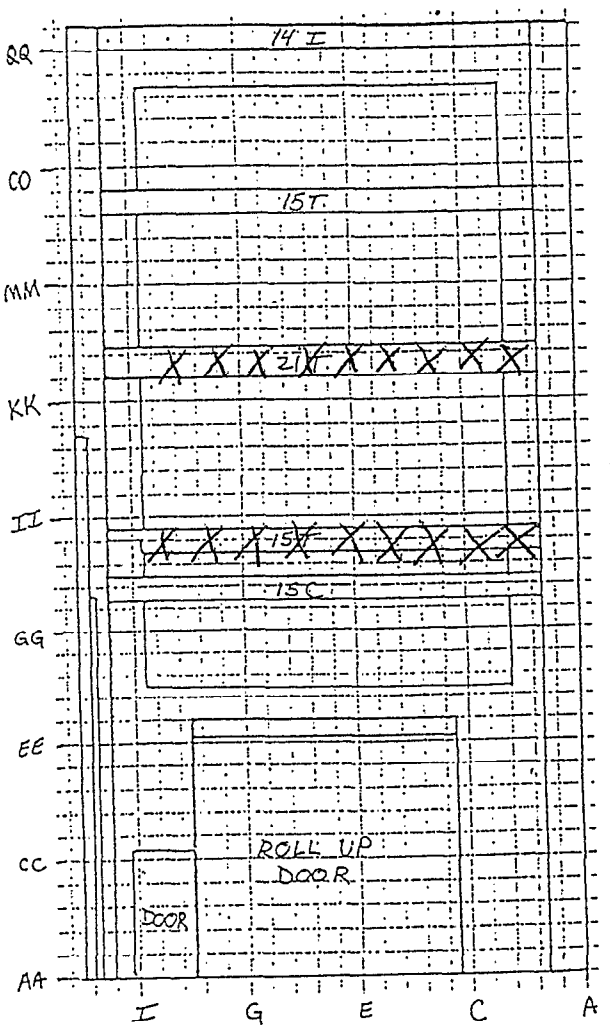
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	60
BACKGROUND COUNT TIME (MIN)		1
SAMPLE COUNT TIME (MIN)		1

RP Technician: M. Bigo

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
1	A-27-HH	BEAM HORIZ.	N/A	180-250
	B-27-HH			190-230
	C-27-HH			190-230
	D-27-HH			200-280
	E-27-HH			180-230
	F-27-HH			190-200
	G-27-HH			190-240
	H-27-HH			190-220
	I-27-HH			190-240
	A-27-KK	T BEAM HORIZ	N/A	200-200
	B-27-KK			200-350
	C-27-KK			150-230
	D-27-KK			180-240
	E-27-KK			180-230
	F-27-KK			180-230
	G-27-KK			210-240
	H-27-KK			180-220
	I-27-KK			180-220

Insert area map or sketch below

EAST WALL
AREA-14



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

REVIEW

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey # 853

Survey Date: 10-8-97
Location: RLD-14 PLAXAIR
Description: AREA - 14 Delineation

	alpha	beta-gamma
Instrument Model & s/n:		2221 #86313
Detector Model & s/n:	N/A	44-9
Calibration Date:		8-12-97
Efficiency (Tc99) (SY90) (Th230)		.19
Detector Area (CM2)		15.5

RP Technician: M. Yoge

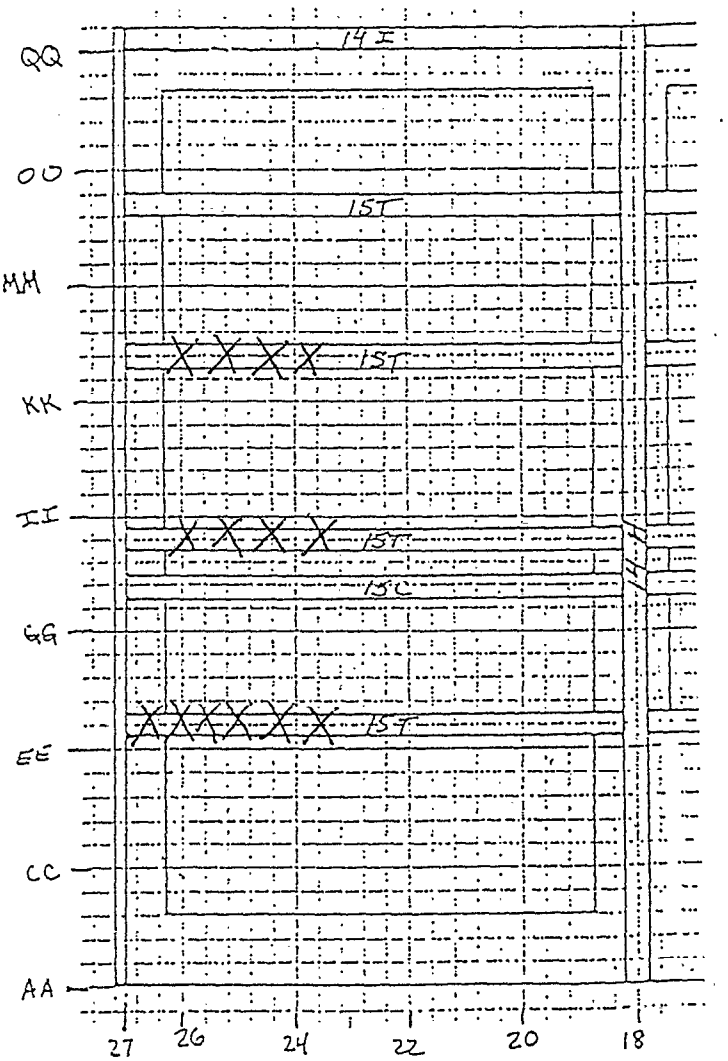
RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS		60
BACKGROUND COUNT TIME (MIN)	N/A	1
SAMPLE COUNT TIME (MIN)		1

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
1	A-23-EE	15" T BEAM HORZ.	N/A	200-450
2	A-24-EE			200-450
3	A-25-EE			190-450
4	A-26-EE			200-400
5	A-27-EE			200-400
6				
7	A-23-II	T-BEAM HORIZ.	N/A	200-350
8	A-24-II			200-300
9	A-25-II			180-350
10	A-26-II			150-350
11				
12	A-23-KK	T BEAM - HORIZ.	N/A	180-280
13	A-24-KK			200-320
14	A-25-KK			190-360
15	A-26-KK			190-350

Insert area map or sketch below

AREA 14 SOUTH
SOUTH WALL



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

REVIEW

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey Date: 10-8-97
Location: BLD-14 Radari
Description: AREA 14 Delineation

Survey # 854

	alpha	beta-gamma
Instrument Model & s/n: LUDLUM	N/A	2224 #86313
Detector Model, & s/n:		44-9
Calibration Date:		8-12-97
Efficiency (Tc99) (SY90) (Th230)		.17
Detector Area (CM2)		15.5

RP Technician: M. Bigo

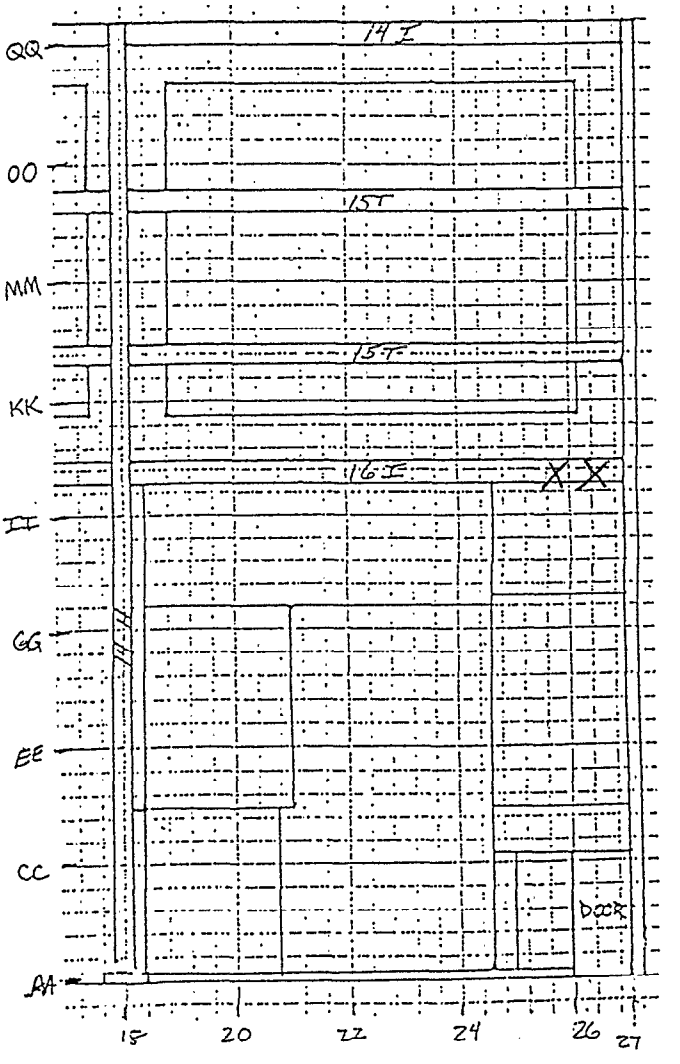
RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	60
BACKGROUND COUNT TIME (MIN)		1
SAMPLE COUNT TIME (MIN)		1

Insert area map or sketch below

AREA 14 SOUTH
NORTH WALL

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
1	I-26-II	I BEAM, HORIZ.	N/A	300-700
2	I-25-II	I BEAM HORIZ.	↓	300-700



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 Date: 10-9-97 Survey # 864
Location: PRAXAIR BD-14
Description: AREA-14 Delineation

	alpha	beta-gamma
Instrument Model & s/n:		2221 #2631
Detector Model & s/n:		44-9
Calibration Date:		8-12-97
Efficiency (Tc99) (SY90) (Th230)		
Detector Area (CM2)		15.5

RP Technician: M. Figo

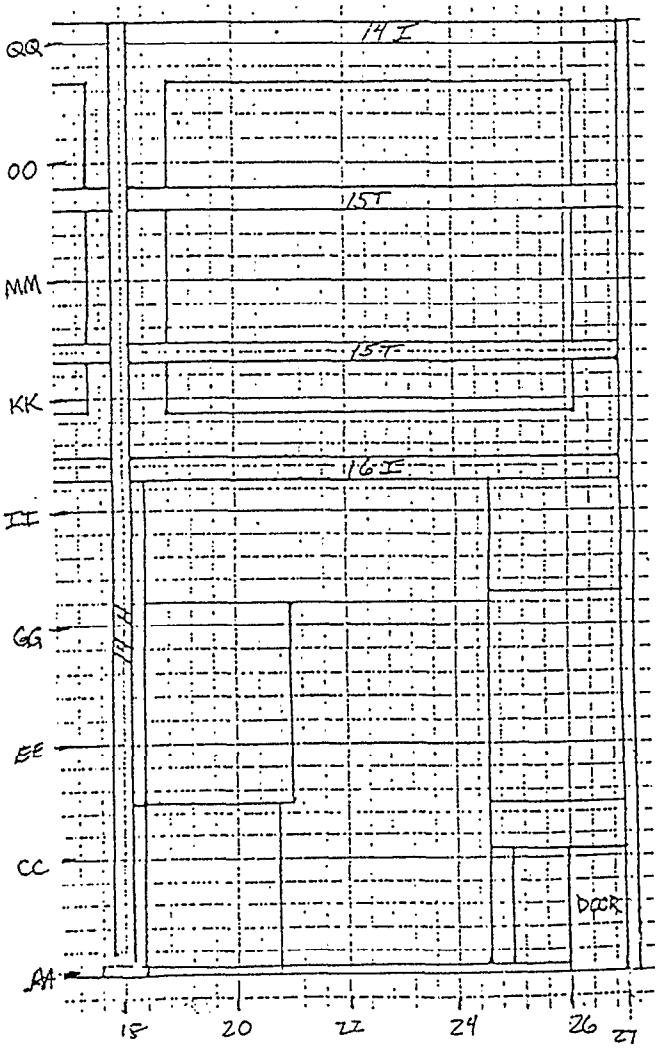
RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	63
BACKGROUND COUNT TIME (MIN)		1
SAMPLE COUNT TIME (MIN)		1

Insert area map or sketch below

AREA 14 SOUTH
NORTH WALL

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
1	I-24-KK	BEAM, HORIZ	N/A	200-280
2	I-25-KK	↓	↓	200-280
3	I-26-KK	↓	↓	200-300



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

REVIEW

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey Date: 10-9-97
Location: PRAXAIR BLD-14
Description: AREA-14 Decontamination

Survey # 865

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:	N/A	2221 #83313
Detector Model & s/n:		44-9
Calibration Date:		8-12-97
Efficiency [Tc99] [SY90] [Th230]		
Detector Area (CM2)		15.5

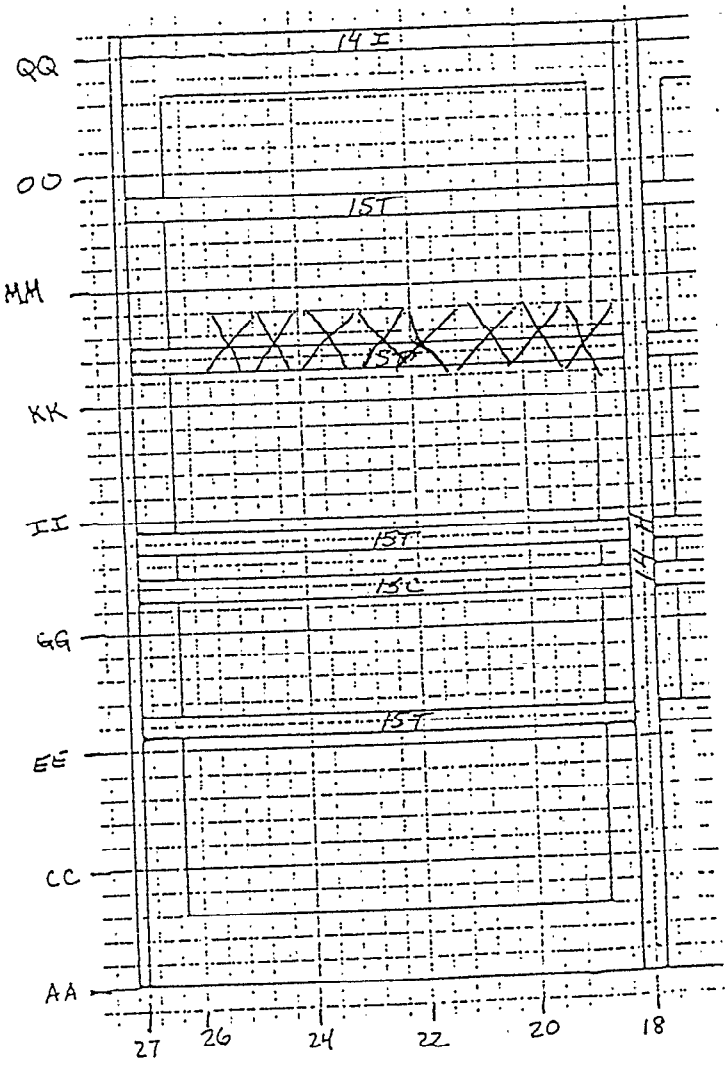
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	63
BACKGROUND COUNT TIME (MIN)		1
SAMPLE COUNT TIME (MIN)		1

RP Technician: M. Trigo

GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
A-22-LL	TEE-BEAM HORIZ.	N/A	180-240
A-23-LL			180-220
A-24-LL			220-240
A-25-LL			240-250
A-26-LL			240-250
A-19-LL	T BEAM. HORIZ.	N/A	200-300
A-20-LL			200-250
A-21-LL			190-350

Insert area map or sketch below

AREA 14 SOUTH
SOUTH WALL



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

REVIEW

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey #866

Survey Date: 10-9-97
Location: Plakair BLD-14
Description: AREA-14 Delineation

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:	N/A	2221 #8633
Detector Model & s/n:		44-9
Calibration Date:		8-12-97
Efficiency (Tc99) (SY90) (Th230)		
Detector Area (CM2)		15.5

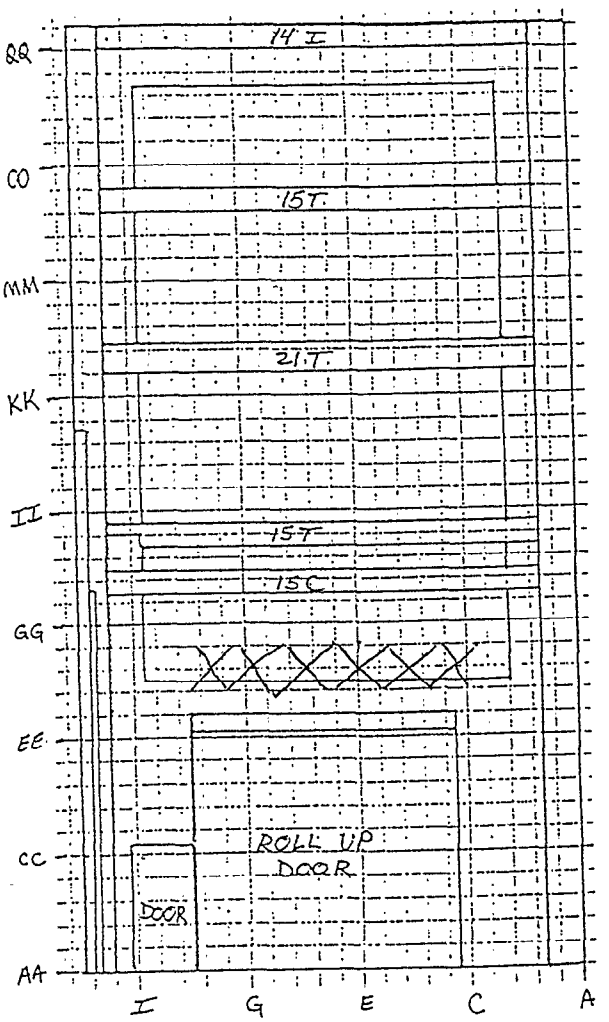
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	63
BACKGROUND COUNT TIME (MIN)		1
SAMPLE COUNT TIME (MIN)		1

RP Technician: M. Bigo

Insert area map or sketch below

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
1	H-27-FF	DOOR EDGE	N/A	200-600
2	G-27-FF			200-360
3	F-27-FF			200-300
4	E-27-FF			200-600
5	D-27-FF			200-500
6	C-27-FF			200-300
7	B-27-FF			180-250
8	A-27-FF			200-250

AREA-14
EAST WALL



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

REVIEW

SURVEY01.XLS

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

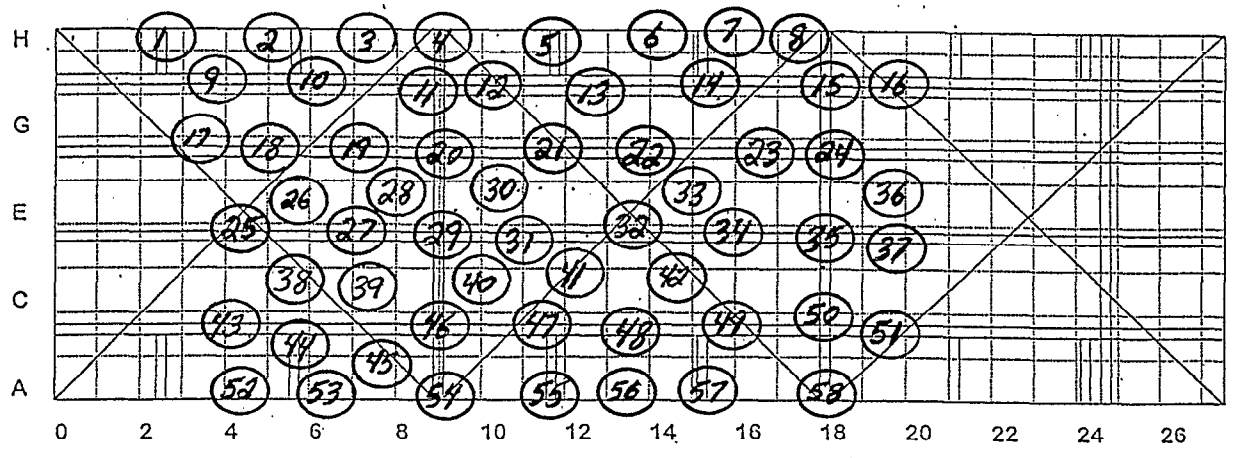
RADIOLOGICAL SURVEY

Project: PRAXAIR SITE
Area: B14 AREA 14 SOUTH OVERHEAD (I BEAMS)

Date/Time 10-9-97	Tech W. [illegible] / [illegible]	Instrument / sn (C) L2221 W/44-9 89648
Location/ Purpose PRAXAIR SITE B14 AREA 14 SOUTH		Survey # 867 RWP# ←
OVERHEAD (I BEAM) DELINEATION		

KEY:
(#) = AREA OF DIRECT PROBE MEASUREMENT FOR 1 MIN. COUNT β γ

AREA 14 SOUTH
CEILING



INST. (C)
EFF. = .20
BKGD. = 55 cpm β γ
DETECTOR ACTIVE AREA = 15.5 cm²

1M X 1M GRID

Loc	Type	Description	Vertical Surface Gross	Vertical Surface β dpm	Horizontal Surface Gross	Horizontal Surface β dpm	Loc	Type	Description	Vertical Surface Gross	Vertical Surface β dpm	Horizontal Surface Gross	Horizontal Surface β dpm
1	D.P.	EAST-WEST I BEAM 14"	180	4032	800	24k	10	D.P.	EAST-WEST I BEAM 14"	320	8548	1,100	34k
2	↑	↓	200	4677	600	18k	11	↓	NORTH-SOUTH I BEAM 22"	240	5968	440	15k
3			160	3387	550	16k	12		EAST-WEST I BEAM 14"	200	4677	620	18k
4			190	4355	740	22k	13		↓	160	3387	810	24k
5			240	5968	620	18k	14			180	4032	1,200	37k
6			150	3064	1,200	37k	15		NORTH-SOUTH I BEAM 22"	150	3065	1,800	56k
7			270	6836	1,600	50k	16		ANGLE IRON 4"x2½"	130	2419	1,300	40k
8			200	4677	950	29k	17		EAST-WEST I BEAM 14"	175	3871	720	22k
9	↓	↓	170	3710	1,500	47k	18	↓	↓	140	2742	1,100	34k

Type: s = smearable, dp = direct probe

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

Comments: *SEE REVERSE FOR FURTHER RESULTS OF SURVEY.

Review: [signature]

Encl 3.3 to HSP 210

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

RADIOLOGICAL CONTINUATION SURVEY FORM

867a

Project: PRAXAIR SITE
Area: 14 SOUTH - OVERHEAD

Date/Time 10/9/97 | Tech W. Lake | Instrument / sn (C) L2221 N/44-9 84648

Location/ Purpose PRAXAIR SITE 814 AREA 14 SOUTH | Survey # | RWP# —

(I BEAM) OVERHEAD DELINEATION

Loc	Type	Description	Vertical Surface Gross	Vertical Surface β dpm	Horizontal Surface Gross	Horizontal Surface β dpm	Loc	Type	Description	Vertical Surface Gross	Vertical Surface β dpm	Horizontal Surface Gross	Horizontal Surface β dpm
19	D.P.	EAST-WEST I BEAM 14"	230	5645	550	16k	50	D.P.	NORTH-SOUTH I BEAM 22"	130	2419	850	26k
20		NORTH-SOUTH I BEAM 22"	110	1774	620	18k	51		EAST-WEST I BEAM 14"	145	2903	920	28k
21		ANGLE IRON 4"x2½"	130	2419	480	14k	52		↓	520	15k	3,100	98k
22		EAST-WEST I BEAM 14"	150	3065	700	21k	53		↓	490	14k	4,200	134k
23		↓	170	3710	660	20k	54		ANGLE IRON 4"x2½"	310	8k	2,200	69k
24		NORTH-SOUTH I BEAM 22"	210	5000	1,300	40k	55		EAST-WEST I BEAM 14"	560	16k	3,600	114k
25		ANGLE IRON 4"x2½"	200	4677	910	28k	56		↓	400	11k	2,100	66k
26		CEILING	~~N~~ BN	A	110	1774	57		↓	250	6k	940	29k
27		EAST-WEST I BEAM 14"	160	3387	1,800	56k	58	↓	ANGLE IRON 4"x2½"	180	4032	630	19k
28		CEILING	N	A	130	2419							
29		NORTH-SOUTH I BEAM 22"	140	2742	1,200	37k							
30		CEILING	N	A	120	2097							
31		EAST-WEST I BEAM 14"	190	4355	1,500	47k							
32		ANGLE IRON 4"x2½"	210	5000	2,300	72k							
33		CEILING	N	A	135	2581							
34		EAST-WEST I BEAM 14"	155	3226	1,400	43k							
35		NORTH-SOUTH I BEAM 22"	140	2742	950	29k							
36		CEILING	N	A	110	1774							
37		EAST-WEST I BEAM 14"	130	2419	1,250	39k							
38		ANGLE IRON 4"x2½"	150	3065	1,100	34k							
39		CEILING	N		130	2419							
40		CEILING		A	120	2097							
41		ANGLE IRON 4"x2½"	170	3710	2,200	69k			N				
42		↓	150	3065	840	25k			A				
43		EAST WEST I BEAM 14"	600	18k	1,800	56k							
44		↓	400	11k	2,300	72k							
45		ANGLE IRON 4"x2½"	230	5645	1,600	50k							
46		NORTH-SOUTH I BEAM 22"	350	9516	2,600	82k							
47		EAST-WEST I BEAM 14"	240	5968	1,300	40k							
48		↓	550	16k	2,400	76k							
49	↓	ANGLE IRON 4"x2½"	210	5000	1,400	43k							

Type:s = smearable, dp = direct probe

Comments:

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

Review: [signature]

Encl 3.4 to HSP 210

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 881

C. HALLAM
Survey Date: 10-15-97
Location: B14 AREA 14 SOUTH
Description: LOWER 2 GRIDS OF WEST WALL

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:		IL2224/D
Detector Model & s/n:		L44-9
Calibration Date:		8-12-97
Efficiency [Tc99] [SY90] [Th230]		0.20
Detector Area (CM2)		15.5

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS		44
BACKGROUND COUNT TIME (MIN)		1
SAMPLE COUNT TIME (MIN)		NA-SCAN

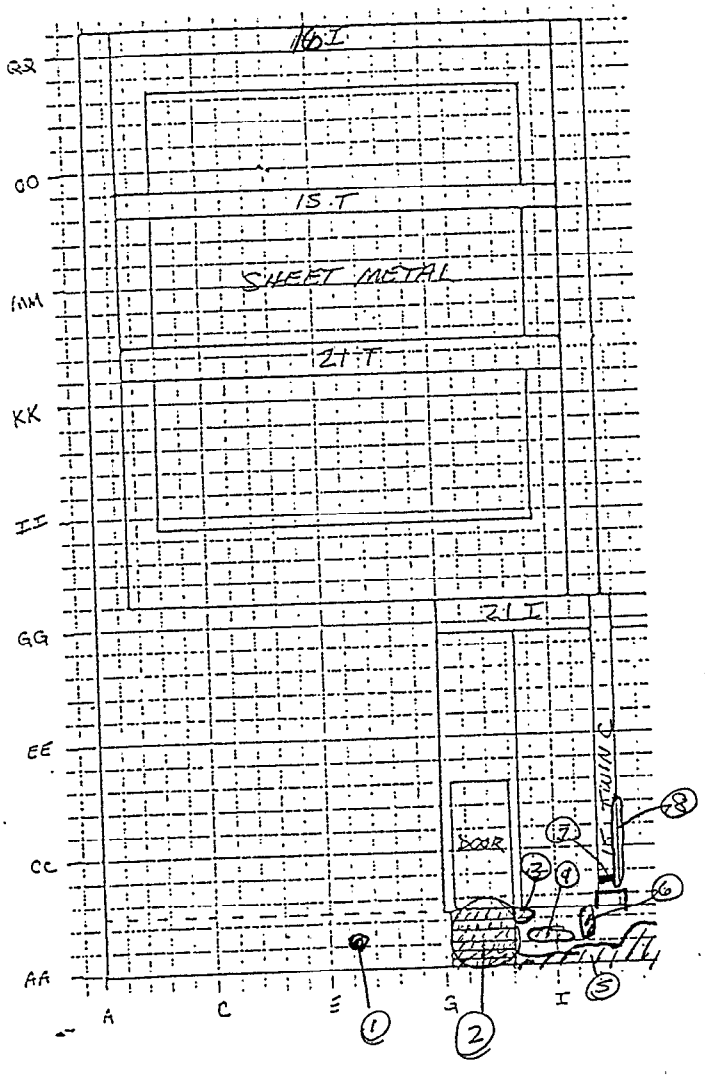
RP Technician:

Insert area map or sketch below

AREA 14 SOUTH
WEST WALL

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS	
1	E0/AA	KNEEWALL		220	
2	G0/AA	STEPS-VERT FACE		300-1500	48K
3	F0/AA	KNEE WALL		500	
4	H0/AA	KNEE WALL		200-400	
5	H0-~~I0~~/AA	KNEEWALL		200-2000*	65K
6	I0/AA	KNEE WALL		200-350	
7	I0/BB	BASE OF COLUMN		200-800	26K
8	I0/BB	RIVET INSIDE COLUMN		200-300	

* HIGHEST READING @ BASE OF WALL



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

REVIEW

SURVEY01.XLS

ION TECHNOLOGY, INC. DIRECT SURFACE MEASUREMENT

(scaler measurement)

C. HALLAM SURVEY # 883

Survey Date: 10-15-97
Location: B14 AREA 145 SOUTH WALL GRIDS 0 - 8
Description: LOWER WALL

	alpha	beta-gamma
Instrument Model & s/n:		22221/D
Detector Model & s/n:	A	144-9
Calibration Date:		8-12-97
Efficiency [Tc99] [SY90] [Tl200]	N	0.20
Detector Area (CM2)		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	A	44
BACKGROUND COUNT TIME (MIN)	N	1
SAMPLE COUNT TIME (MIN)		N/A - SCAN

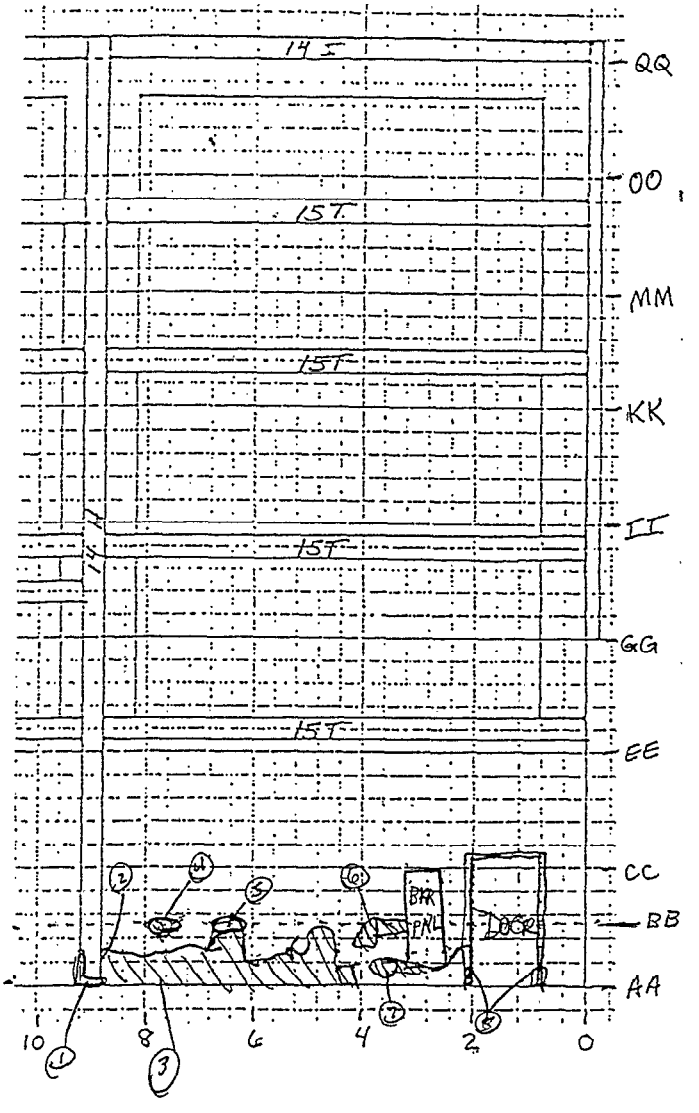
RP Technician:

Insert area map or sketch below

AREA 14 SOUTH
SOUTH WALL

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS	
1	A8-A9/AA	COLUMN (STEEL)		200-400	
2	A8/AA	COLUMN WEST FACE (BRICK)		200-1400*	45K
3	A4→A8/AA	BRICK WALL		200-2000*	65K
4	A7/AA	BRICK WALL		200-400	
5	A6/AA	BRICK WALL		200-350	
6	A3/AA	BRICK WALL		200-400	
7	A2-A3/AA	BRICK WALL		200-350	
8	A0-A2/AA	BASE OF DOOR FRAME		200-350	9.7K

*HIGHEST READING AT BASE OF WALL



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

REVIEW [signature]

SURVEY01.XLS

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

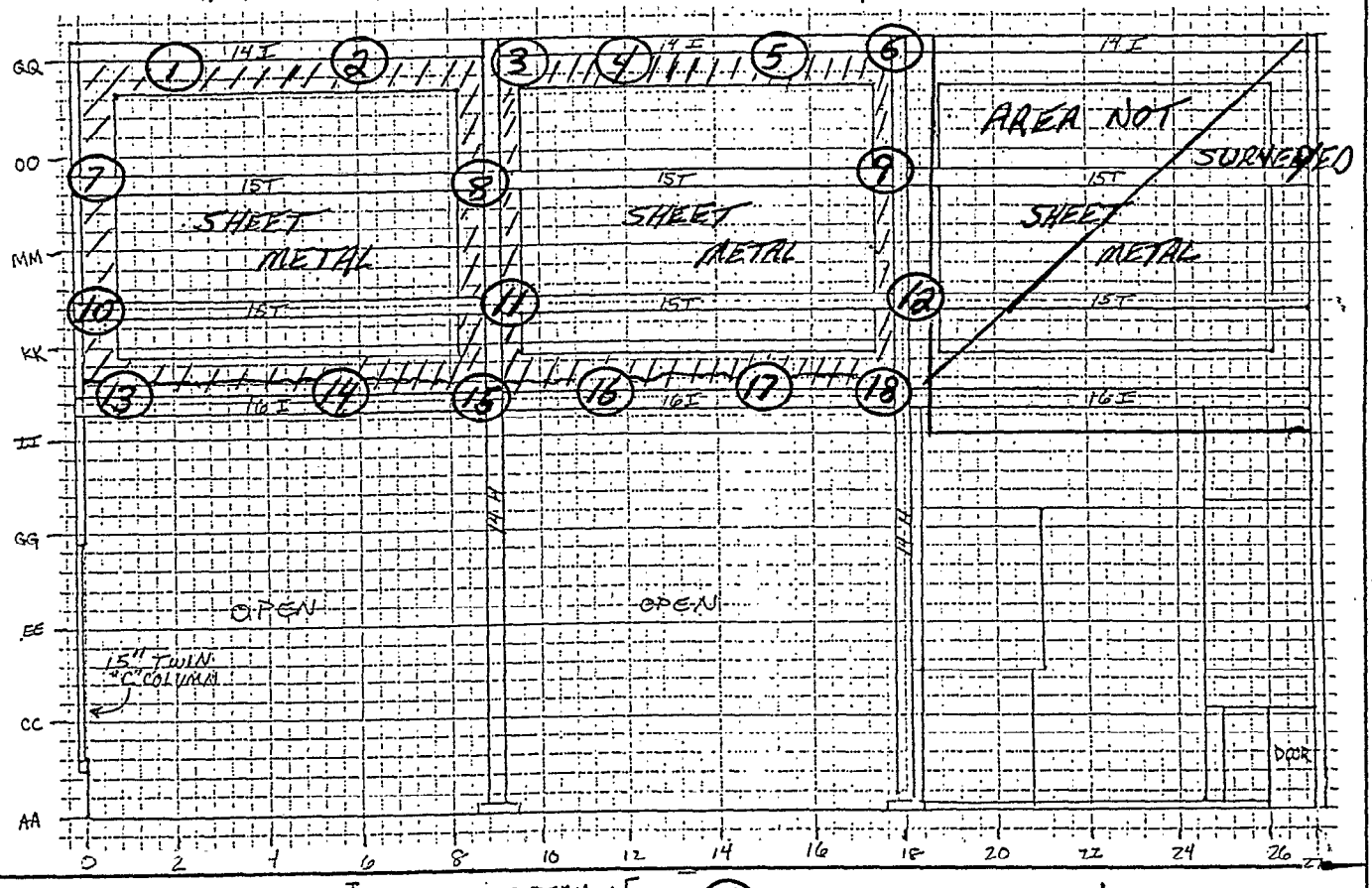
RADIOLOGICAL SURVEY

Project: PRAXAIR SITE
Area: 14 SOUTH

Date/Time 10-16-97	Tech [illegible]	Instrument / sn (C) L2221 W/44-9
Location/ Purpose PRAXAIR SITE B14 AREA 14 SOUTH.		Survey # 888 RWP# — N/A —
BRICK @ NORTH WALL DELINEATION SURVEY		

INST. (C): EFF. = .20
BKGD. = 50 cpm BY
DETECTOR ACTIVE AREA = 15.5 cm²

NORTH WALL



KEY: I = I BEAM → I; T = T BEAM → T; C = C BEAM → [; H = H BEAM → H; (#) = DIRECT PROBE MEASUREMENT LOCATION IN GROSS CPM BY; /// = BRICK SURFACE AREA

Loc	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	D.P.	BRICK AREA OF WALL			330	9k	10	D.P.	BRICK AREA OF WALL			190	4.5k
2					410	12k	11					380	11k
3					350	9.7k	12					440	12.5k
4			N		240	6k	13			N		210	5k
5				A	180	4k	14				A	185	4.4k
6					290	8k	15					235	6k
7					310	8.4k	16					370	10.6k
8					270	7k	17					260	6.8k
9					220	5.5k	18					385	11k

Types = smearable, dp = direct probe

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

Comments:

Review: [illegible]

Encl 3.3 to HSP 210

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

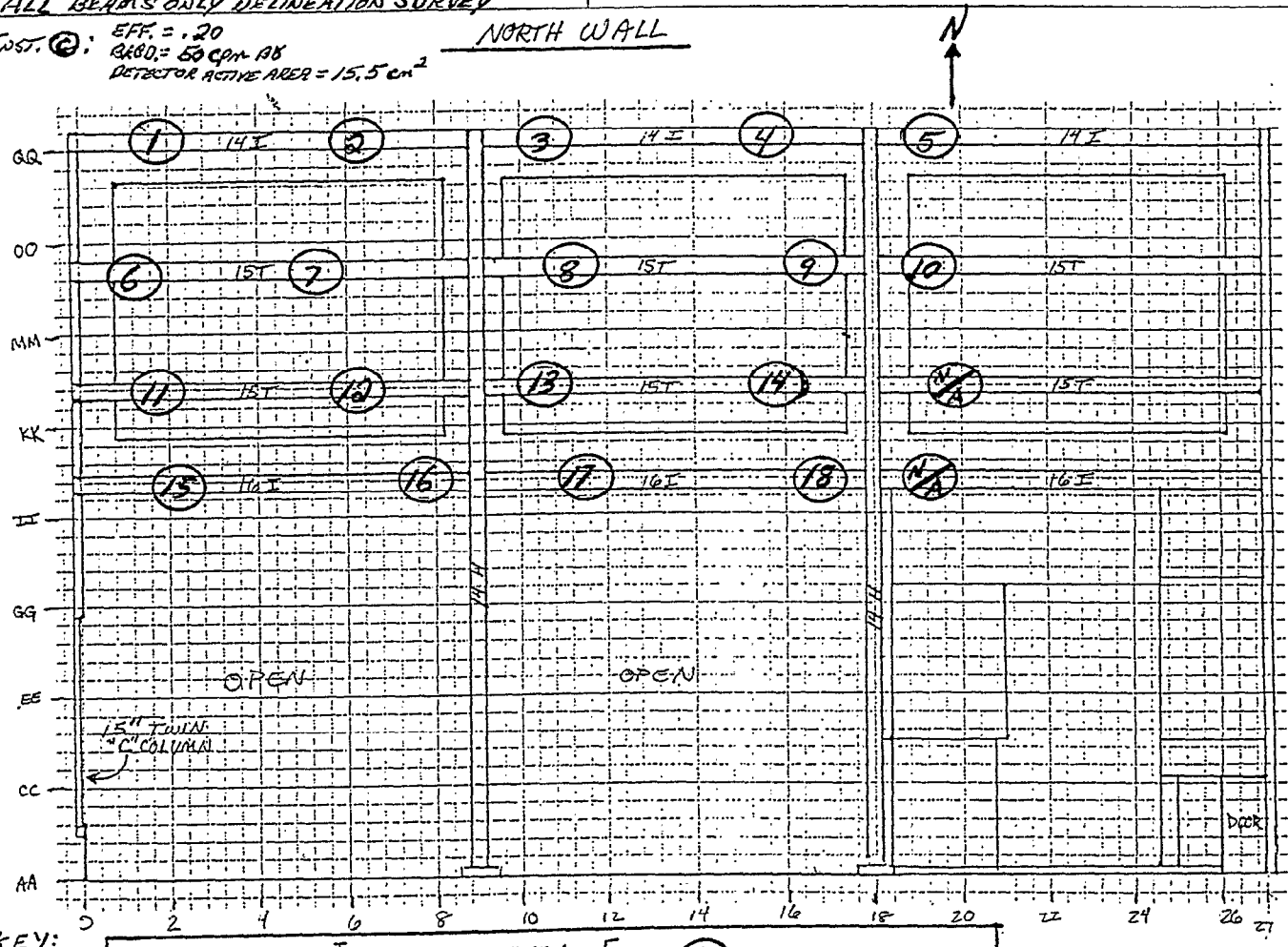
RADIOLOGICAL SURVEY

Project: PRAXAIR SITE
Area: 14 SOUTH

Date/Time 10-16-97	Tech W.H. [illegible]	Instrument / sn (C) L2221 W/44-9
Location/ Purpose PRAXAIR SITE B14 AREA 14 SOUTH (NORTH WALL)		Survey # 889 RWP# N/A
WALL BEAMS ONLY DELINEATION SURVEY		

INST. (C): EFF. = .20
BKGD.= 50 cpm AB
DETECTOR ACTIVE AREA = 15.5 cm²

NORTH WALL



KEY:
I = I BEAM →
T = T BEAM →
C = C BEAM →
H = H BEAM →
(#) = DIRECT PROBE MEASUREMENT LOCATION IN GROSS CPM β

Loc	Type	Description	VERTICAL Gross	VERTICAL β dpm	HORIZONTAL Gross	HORIZONTAL β dpm	Loc	Type	Description	VERTICAL Gross	VERTICAL β dpm	HORIZONTAL Gross	HORIZONTAL β dpm
1	D.P.	I BEAM EAST-WEST 14" I	210	5160	650	19k	10	D.P.	T BEAM EAST-WEST 15" T	150	3225	1,800	57k
2	↓	↓	180	4195	810	25k	11	↓	↓	180	4195	1,550	48k
3	↓	↓	220	5485	1700	53k	12	↓	↓	175	4035	940	29k
4	↓	↓	200	4840	720	22k	13	↓	↓	205	5000	1,100	34k
5	↓	↓	160	3550	640	19k	14	↓	↓	215	5325	850	26k
6	↓	T BEAM EAST-WEST 15" T	240	6130	1530	48k	15	↓	I BEAM EAST-WEST 16" I	195	4680	545	16k
7	↓	↓	170	3870	1,200	37k	16	↓	↓	180	4195	1,200	37k
8	↓	↓	215	5325	910	28k	17	↓	↓	210	5160	1660	52k
9	↓	↓	200	4840	1,450	45k	18	↓	↓	200	4840	2,150	68k

Types = smearable, dp = direct probe

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

Comments:

Review:

Encl 3.3 to HSP 210

ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0165

RADIOLOGICAL SURVEY

Project: PRAXAIR SITE
Area: 14 SOUTH

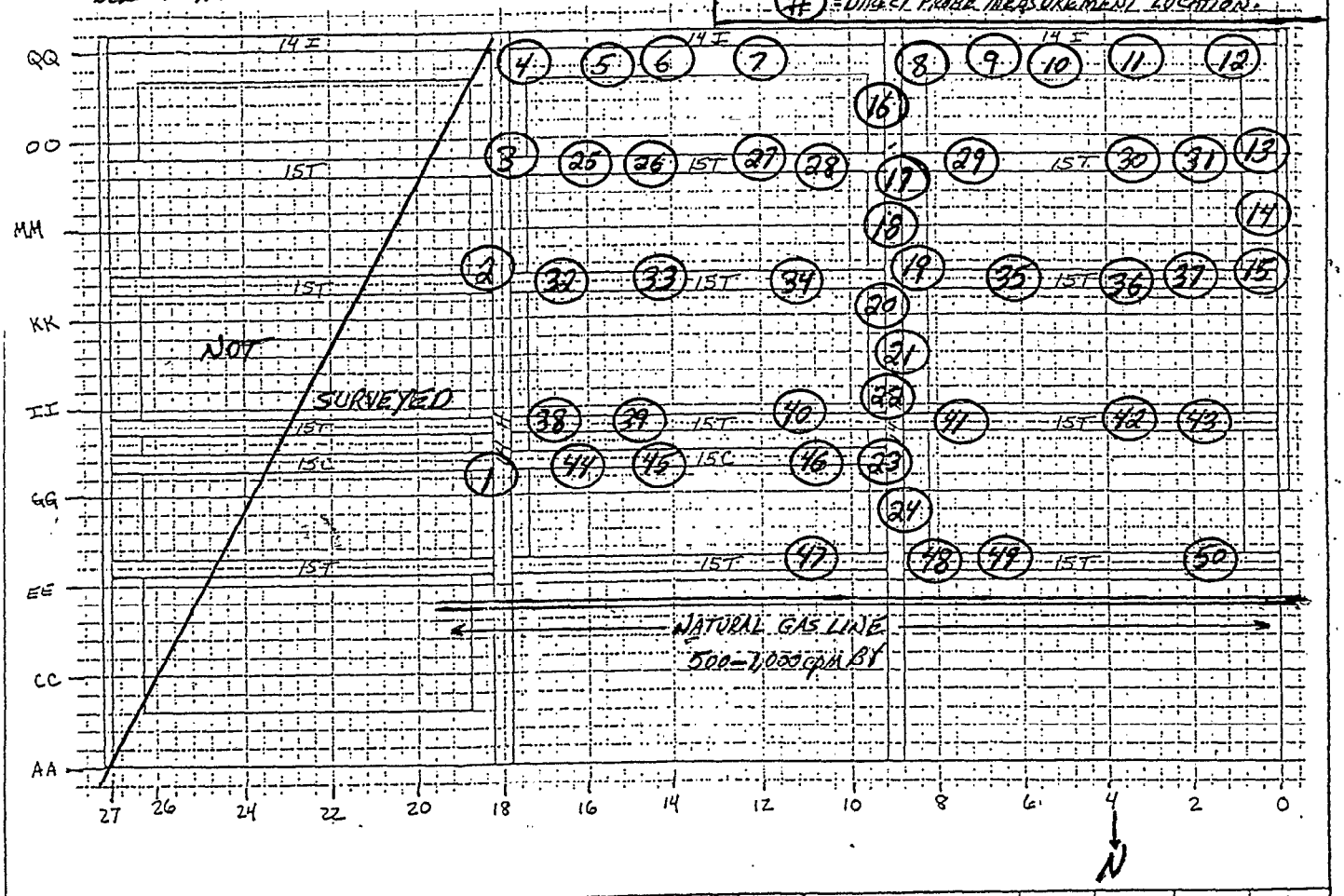
Date/Time 10-16-97 | Tech William W. [illegible] | Instrument / sn (C) L2221 W/44-9
Location/ Purpose PRAXAIR SITE B14 AREA 14 SOUTH | Survey # 890 | RWP# N/A

SOUTH WALL BRICK & BEAM DELINEATION SURVEY

INST: (C) EFF = .20
BKGD = 50 cpm BY
DETECTOR ACTIVE AREA = 15.5 cm²

SOUTH WALL

KEY: I = I BEAM → I C = C BEAM → [
T = T BEAM → T H = H BEAM → H
(#) = DIRECT PROBE MEASUREMENT LOCATION.



Loc	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	D.P.	SOUTH WALL BRICK SEE ABOVE			320	8710	10	D.P.	SOUTH WALL BRICK SEE ABOVE			220	5,484
2					210	5,161	11					280	7,419
3					275	7,258	12					160	3,548
4					250	6,452	13					320	8,710
5			N		315	8,548	14			N		260	6,774
6				A	420	12k	15				A	225	5,645
7					360	10k	16					210	5,161
8					240	6,129	17					400	11k
9					250	6,452	18					200	4,839

Types = smearable, dp = direct probe

Comments: *FOR FURTHER RESULTS SEE REVERSE.

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

Review: [signature]

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

RADIOLOGICAL CONTINUATION SURVEY FORM

Project: PRAXAIR SITE
Area: B14 AREA 14 SOUTH

Date/Time 10-16-97 | Tech William W. [illegible] | Instrument / sn © L2221 W/44-9 EFF=.20 BKGD=50 cpm BY / DECTOR ACTIVE AREA=15.5cm²

Location/ Purpose PRAXAIR SITE B14 AREA 14 SOUTH SOUTH WALL BRICK & BEAM DELINEATION SURVEY | Survey # 890 | RWP# N/A

Loc	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
19	D.P.	SOUTH WALL BRICK SEE MAP			315	8,548	50	D.P.	BEAM @ SOUTH WALL SEE MAP	N	A	920	28k
20					225	5,645							
21					210	5,161							
22					350	9,677							
23					450	13k							
24					315	8,548							
25		BEAM @ SOUTH WALL SEE MAP			460	13k							
26					520	15k							
27					450	13k							
28					800	24k							
29					620	18k							
30					940	29k							
31					1,200	37k							
32					530	15.5k							
33					730	22k							
34					510	15k							
35			N		1,400	44k							
36				A	830	25k							
37					960	29k							
38					285	7.6k			N				
39					620	18k			A				
40					590	17k							
41					440	13k							
42					750	22.6k							
43					880	27k							
44					620	18k							
45					380	11k							
46					450	13k							
47					910	28k							
48					790	24k							
49					460	13k							

Type: s = smearable, dp = direct probe

Comments: *SEE MAP ON REVERSE.

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

Review: [signature]

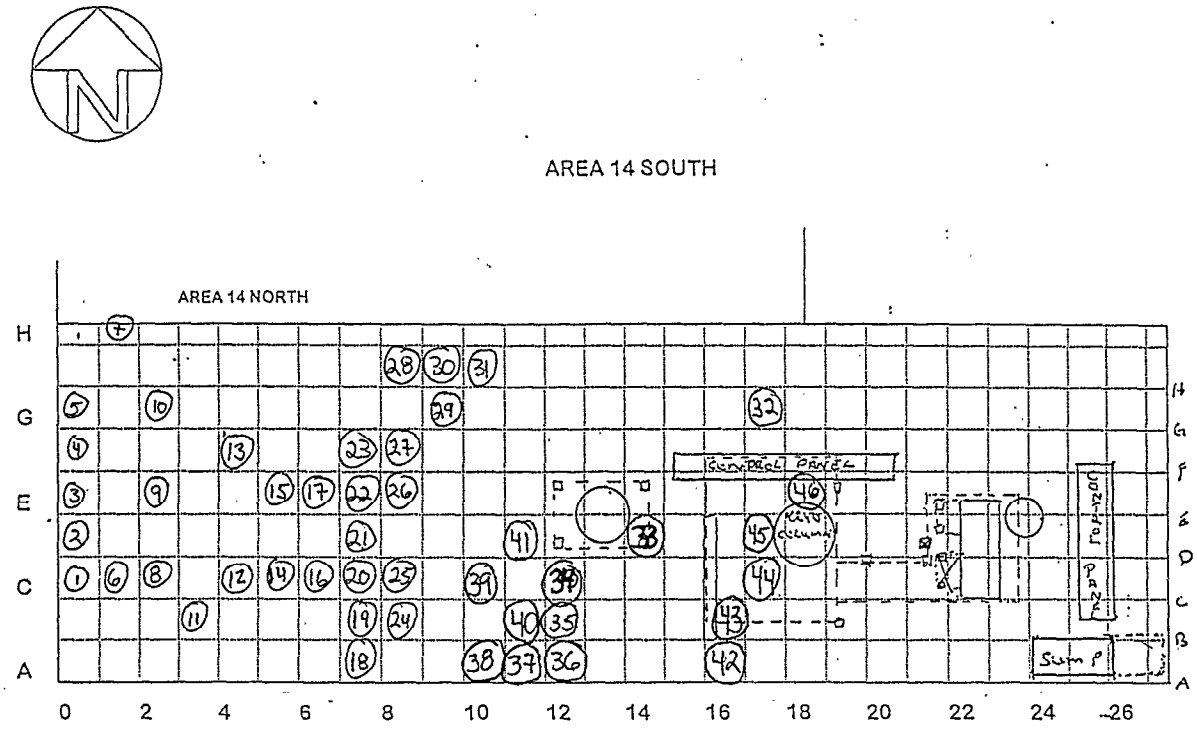
Encl 3.4 to HSP 210

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

RADIOLOGICAL SURVEY

Project: PRAX AIR
Area: B-14 AREA 14

Date/Time 10/15/97	Tech SMALLRIDGE	Instrument / sn 2221 / 78163 FLOOR MONITOR BKG=664	
Location/ Purpose B-14 A-14 / Delin Survey		Survey # 901	RWP# N/A



1M X 1M GRID

Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	D.P.	FLOOR Survey			7K dpm		10	D.P.	FLOOR Survey			5K	
2		See MAP			5K		11					4K	
3					3K		12					12K	
4					5K		13					4K	
5					5K		14					12K	
6					6K		15					4K	
7					5K		16					5K	
8					3K		17					3K	
9					10K		18					6K	

Type:s = smearable, dp = direct probe

Comments:

Scalar S/N		BKG	EFF	MDA
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 CONTINUATION SURVEY FORM

Project: PRAXAIR
Area: B-14 A-14 South

Date/Time 10/15/97	Tech	Instrument / sn 2221 78163
Location/ Purpose B-14 A-14 / Delin. Survey		Survey # 901 RWP# —

Loc	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
19	D.P.	Floor Survey			13K								
20		(See MAP)			14K								
21					7K								
22					3K								
23					10K								
24					5K								
25					6K								
26					13K								
27					23K								
28					30K								
29					7K								
30					20K								
31					15K								
32					3K								
33					6K								
34					28K								
35					10K								
36					65K								
37					40K								
38					35K								
39					3K								
40					70K								
41					15K								
42					5K								
43					4K								
44					7K								
45					6K								
46					3K								

Type:s = smearable, dp = direct probe

Comments:

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

Review:

Encl 3.4 to HSP 210

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey Date: 10/22/97
Location: BLDG 14 AREA 14 South (SouthWALL)
Description: DelN

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

Survey # 917

	alpha	beta-gamma
Instrument Model & s/n:	N/A	L-177/29243
Detector Model & s/n:		44-9/4220
Calibration Date:		Due 2/98
Efficiency [Tc99] [SY90] [Th230]		-19
Detector Area (CM2)		15.5

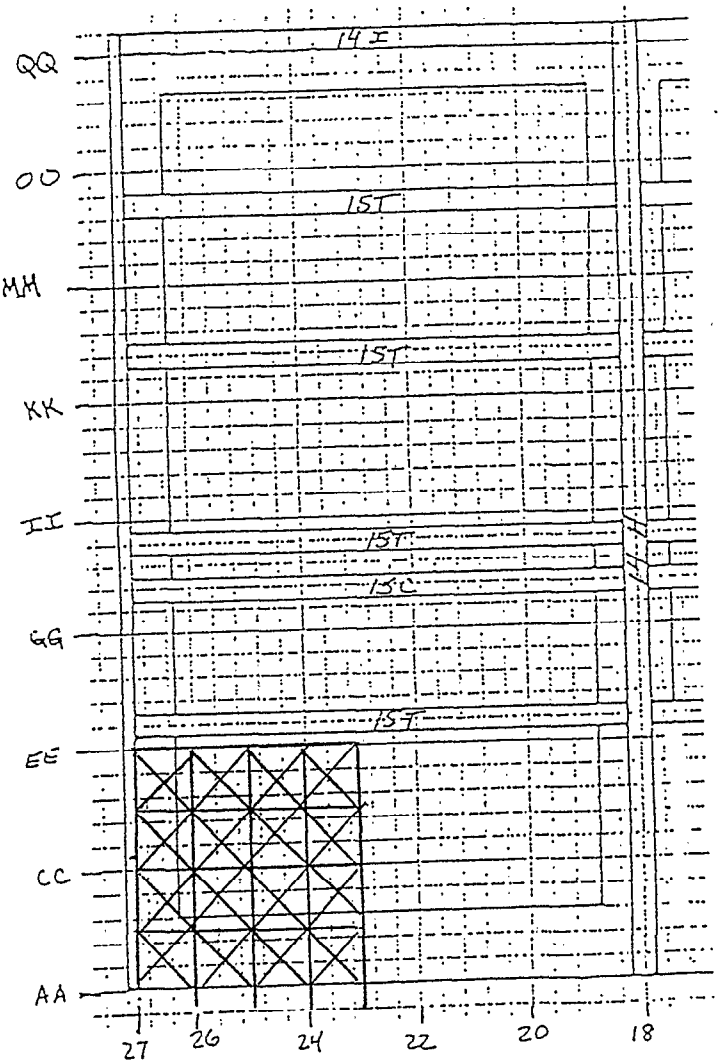
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	50
BACKGROUND COUNT TIME (MIN)		1MIN
SAMPLE COUNT TIME (MIN)		

RP Technician: SMALLRIDGE

Insert area map or sketch below

AREA 14 SOUTH
SOUTH WALL

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
1	AA-27	South WALL	N/A	250
	BB-27			195
	CC-27			175
	DD-27			175
	AA-26			200
	BB-26			150
	CC-26			150
	DD-26			150
	AA-25			250
	BB-25			150
	CC-25			175
	DD-25			150
	AA-24			200
	BB-24			150
	CC-24			150
	DD-24			150



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

NOTE ☒ D.P. AREA Surveyed

REVIEW

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

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

Survey Date: 10/22/97
Location: BLDG 14 AREA 14 South EASTWALL
Description: DeIN

Survey # 918

	alpha	beta-gamma
Instrument Model & s/n:	N/A	L-177/29243
Detector Model & s/n:		44-9/21220
Calibration Date:		due 2/98
Efficiency [Tc99] [SY90] [Th230]		.19
Detector Area (CM2)		15.5

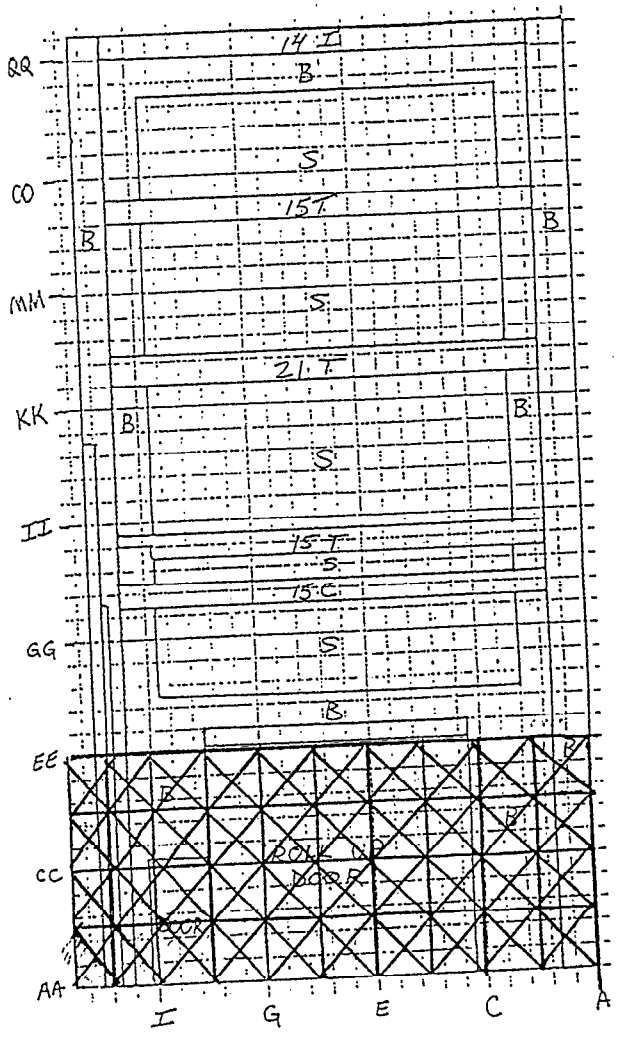
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	50
BACKGROUND COUNT TIME (MIN)		1MIN
SAMPLE COUNT TIME (MIN)		

RP Technician: SMALLRIDGE

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS per MIN
	DD-A	EAST WALL		150
	CC-A			150
	BB-A			150
	AA-A			200
	DD-B	DOOR (overhead)		125
	CC-B			125
	BB-B			125
	AA-B			125
	DD-C			100
	CC-C			100
	BB-C			100
	AA-C			125
	DD-D			100
	CC-D			100
	BB-D			100
	AA-D			100
	DD-E			100
	CC-E			100
	BB-E			100
	AA-E			125
	DD-F			100
	CC-F			100
	BB-F			100
	AA-F			100
	DD-G			100
	CC-G			100
	BB-G			100
	AA-G			100
	DD-H			75
	CC-H	DOOR		75
	BB-H			100
	AA-H			75
	DD-I			100
	CC-I			100
	BB-I			100
	AA-I			100
	DD-J	EAST WALL		125
	CC-J			150
	BB-J			125
	AA-J			175
			N/A	

Insert area map or sketch below

AREA 14 South
EAST WALL



Note: ☒ D.P. AREA Surveyed

REVIEW

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey Date: 10/22/97
Location: BLDG 14 AREA 14 South (North wall)
Description: Delin

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

Survey # 919

	alpha	beta-gamma
Instrument Model & s/n:	N/A	L-177 / 29243
Detector Model & s/n:		44-9 / 21220
Calibration Date:		Due 2/98
Efficiency (Tc99) (SY90) (Th230)		.19
Detector Area (CM2)		15.5

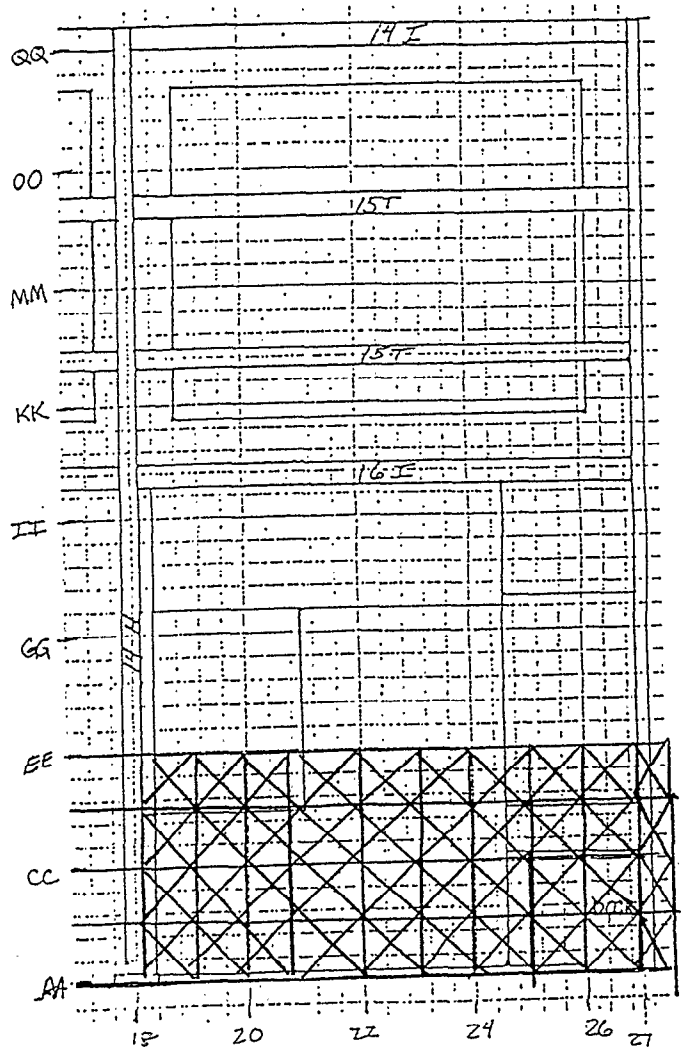
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	50
BACKGROUND COUNT TIME (MIN)		1 MIN
SAMPLE COUNT TIME (MIN)		

RP Technician: Small Ridge

Insert area map or sketch below

AREA 14 SOUTH
NORTH WALL

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS PER MIN
	DD-18	I-BEAM	N/A	1000
	CC-18			1500
	BB-18			1500
	AA-18			200
	DD-19	BRICK NORTH WALL		125
	CC-19			125
	BB-19			125
	AA-19			200
	DD-20			125
	CC-20			125
	BB-20			125
	AA-20			175
	DD-21			125
	CC-21			100
	BB-21			125
	AA-21			125
	DD-22			125
	CC-22			125
	BB-22			125
	AA-22			125
	DD-23			125
	CC-23			150
	BB-23			150
	AA-23			125
	DD-24			150
	CC-24			150
	BB-24			125
	AA-24			150
	DD-25			150
	CC-25			125
	BB-25			125
	AA-25			150
	DD-26			150
	CC-26			150
	BB-26			200
	AA-26	DOOR		125
	DD-27			150
	CC-27			125
	BB-27			150
	AA-27	BRICK		150



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

NOTE: ☒ D.P. AREA Surveyed

REVIEW

SURVEY01.XLS

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

RADIOLOGICAL SURVEY

Project: PRAXAIR SITE
Area: 14 SOUTHWEST

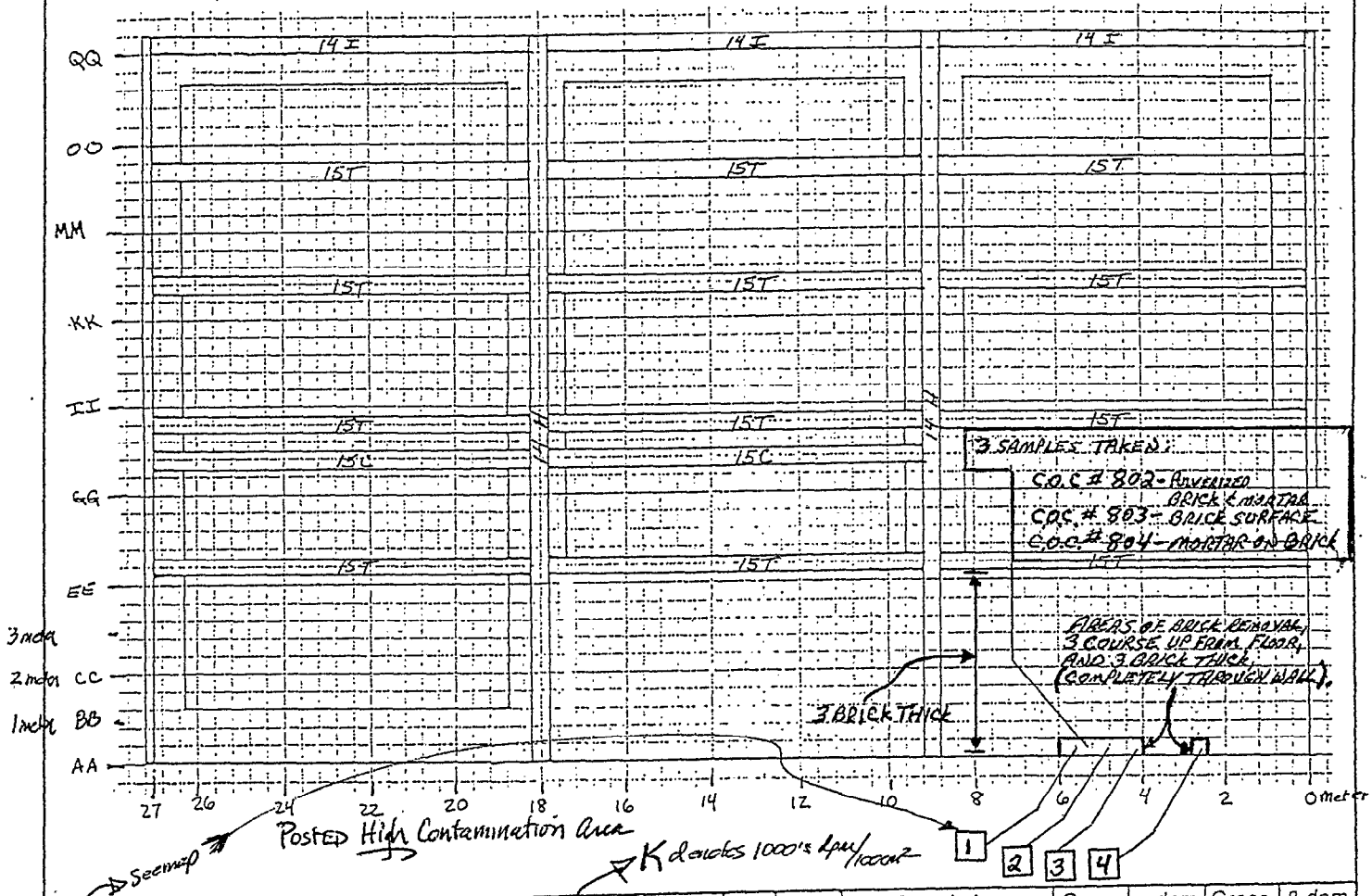
DETECTOR ACTIVE AREA = 15.5 cm²

Date/Time 11-12-97 0200 HRS.	Tech William W. Jacobs	Instrument / sn L2221# 86308 W/44-9# 48267 EFF. = .20 BKGD. = 50 CPM
Location/ Purpose PRAXAIR SITE B14 AREA 14 SOUTH		Survey # 1031 RWP# 02
SOUTH WALL BRICK & MORTAR - INFO. SURVEY		

Southwall Removal for installation of ROLLUP DOOR 10' x 10'

14SW — SOUTH WALL FACING SOUTH

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



Seemap

K denotes 1000's dpm/100cm²

Loc	Type	Description	Gross	α dpm	Gross cpm	β dpm 100cm²	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	D.P.	1st COURSE - 1st BRICK IN	yellow & GREEN	LIGHT IN COLOR	12k	385k	3	D.P.	3RD COURSE - 1st BRICK IN	YELLOW & GREEN IN	LIGHT COLOR	1k	31k
		2ND COURSE - 2ND BRICK IN			10k	320k			2ND COURSE - 2ND BRICK IN			3k	95k
		3RD COURSE - 3RD BRICK IN			8k	256k			1st COURSE - 3RD BRICK IN			25k	805k
		MORTAR ON BRICK	N		5k	160k	4		1st COURSE - 2ND BRICK IN	N		2k	63k
2		1st COURSE - 1st BRICK IN		A	10k	320k			2ND COURSE - 3RD BRICK IN		A	1k	31k
		2ND COURSE - 2ND BRICK IN			3k	95k			3RD COURSE - 1st BRICK IN			8k	256k
		3RD COURSE - 3RD BRICK IN			2k	63k			MORTAR ON BRICK			4k	127k
		MORTAR ON BRICK			6k	192k			N				
		N							A				
		A											

Type: s = smearable, dp = direct probe

Comments: * APPROX. 50% OF ALL internal BRICK TAKEN OUT WERE SATURATED (COMPLETELY THROUGH) WITH LEVELS UP TO 1k CCPM BY

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

Review: [signature]

Encl 3.3 to HSP 210

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 1034

Survey Date: 11/13/97 0200 HRS.
Location: PRAXAIR SITE B14 AREA 14 SOUTH CRANE
Description: DELINEATION SURVEY

	alpha	beta-gamma
Instrument Model & s/n:		C2221/86308
Detector Model & s/n:		44-9/48267
Calibration Date:	N	DUE: 2-7-98
Efficiency [Tc99] [SY90] [Th230]	A	.20
Detector Area (CM2)		15.5

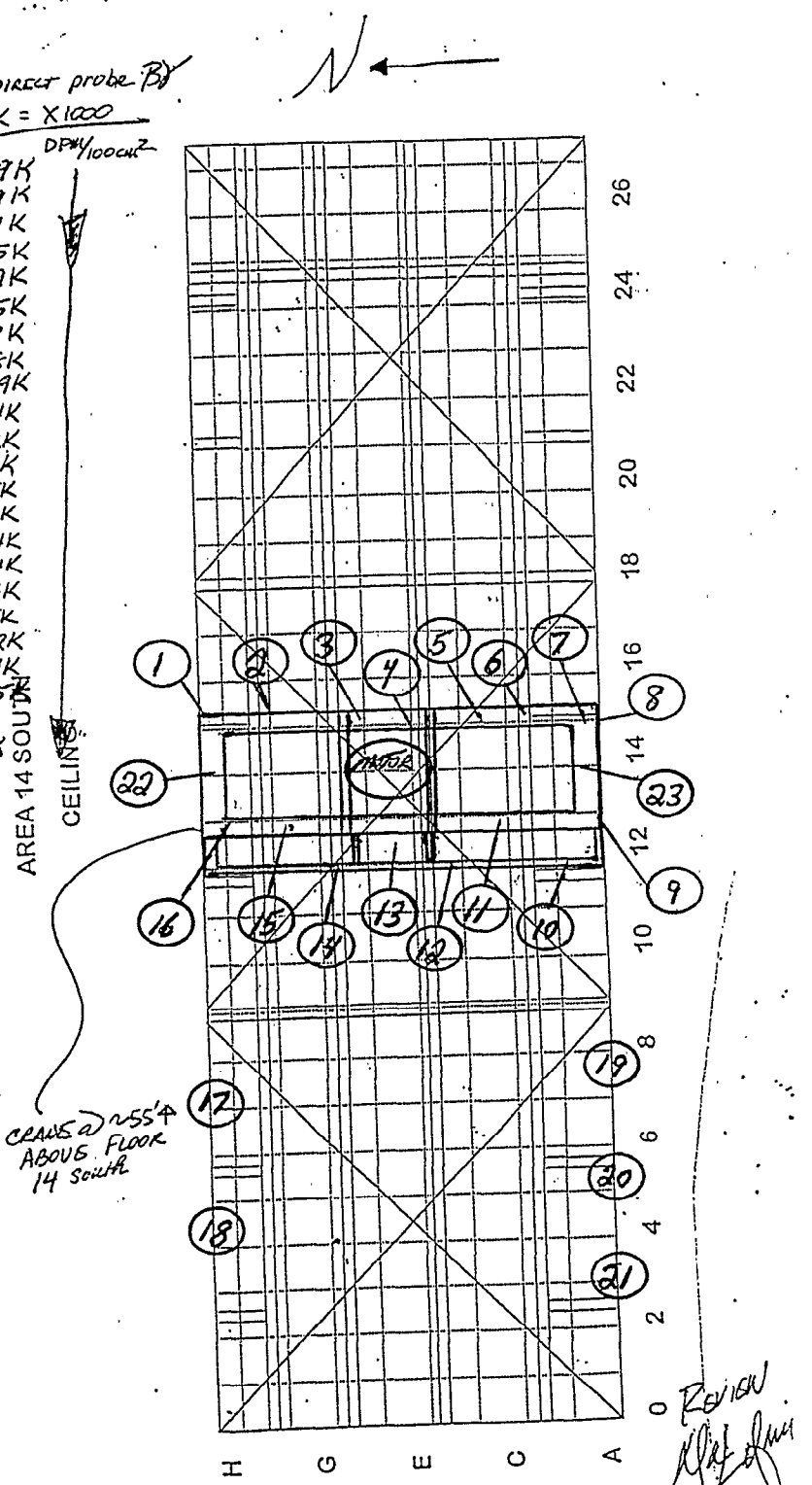
RADIATION MEASUREMENT: Alpha & Beta-Gamma
RESULTS REPORTED UNITS: gross cpm per probe area
MEASUREMENT TYPE: direct scaler measurements

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

RP Technician: William W. [signature]

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS (CPM)	DIRECT probe BY K = X1000 DPM/100cm²
1	SEE	GEAR & WHEEL		2,500	79K
2	MAP	CRANE BEAM EAST		1,250	39K
3				1,640	51K
4				1,125	35K
5				960	29K
6				1,430	45K
7				1,200	37K
8		GEAR & WHEEL		1,840	58K
9				4,350	139K
10		PLATFORM BEAM		1,400	44K
11		CRANE BEAM WEST		2,600	82K
12		PLATFORM BEAM		640	19K
13		WOOD FLOOR - PLATFORM	N	1,140	35K
14		PLATFORM BEAM	A	920	28K
15		CRANE BEAM WEST		2,330	74K
16		GEAR & WHEEL		2,650	84K
17		CRANE RAIL		1,400	44K
18		GREESE		820	25K
19				3,200	102K
20				4,100	131K
21				3,300	105K
22		CRANE BEAM NORTH		1,200	37K
23		CRANE BEAM SOUTH		3,500	111K

N A



REVIEW [signature]

SURVEY01.XLS

(scaler measurement)

Survey Date: 11-12-97
Location: Area 14 S South wall
Description: Delineation

Survey # 1041

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:	N/A	L-2221 #89648
Detector Model & s/n:		44-9 #048272
Calibration Date:		6-27-98
Efficiency [Tc99] [SY90] [Th230]		120
Detector Area (CM2)		15.5

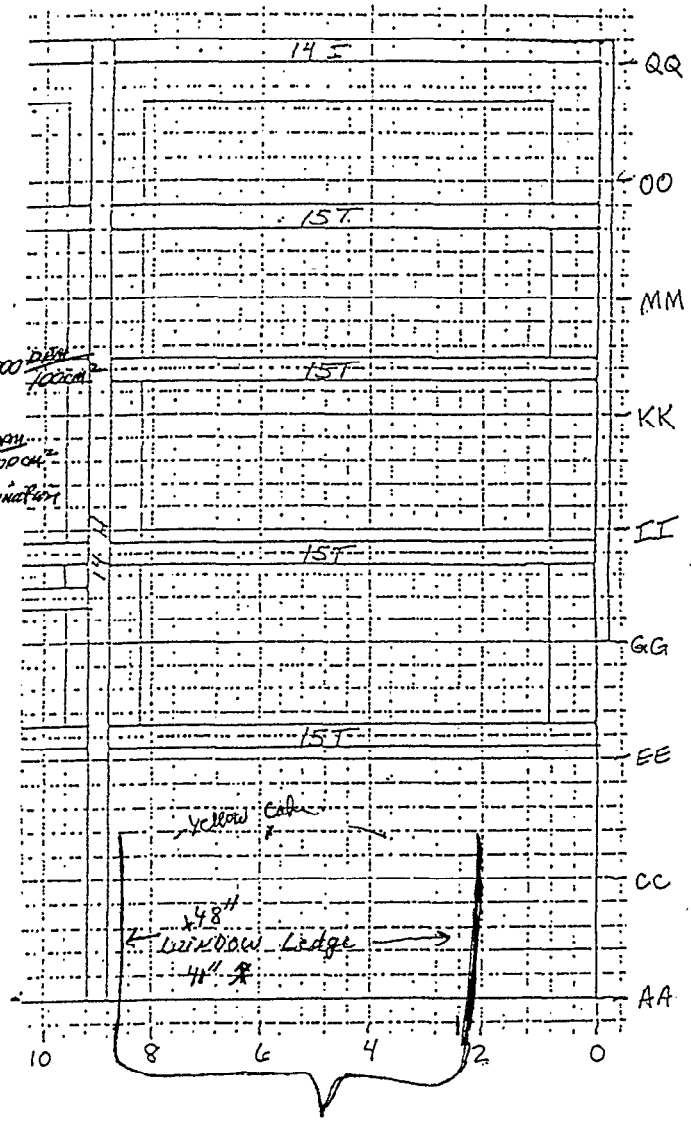
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	74
BACKGROUND COUNT TIME (MIN)		1
SAMPLE COUNT TIME (MIN)		1

RP Technician: M. Bigo

Insert area map or sketch below

AREA 14 SOUTH
SOUTH WALL

	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS C.P.M.
		Wall		
1	BB-8	WINDOW LEDGE		1200-1400 → MAX @ 45,161 DPM/100CM²
		Note: This Contamination is Between The Bricks and the window Ledge. This area was Removed on 11-13-97. Area of Contamination Started @ 41" off from The Floor and Goes To 48" off The Floor. The Area is ≈ 15-20 Ft. long. Only 10' of This was Removed.		
	4.3.	area Removed was Grids ~~BB-8 - BB-7~~ BB-7 - BB-5 - BB-4 - BB-3 and Part of BB-2. Also yellow Cake was found Between The Brick at the Grids CC - area. Ranges ≈ 1-2K C.p.M./15 cm² Probe. BY:		→ MAX @ ≈65,000 DPM/100CM²
		Note: Loose Contamination of 300 CCPM found on The Top of The window Ledge, when it was exposed.		→ 1500 DPM/100CM² Loose Contamination



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

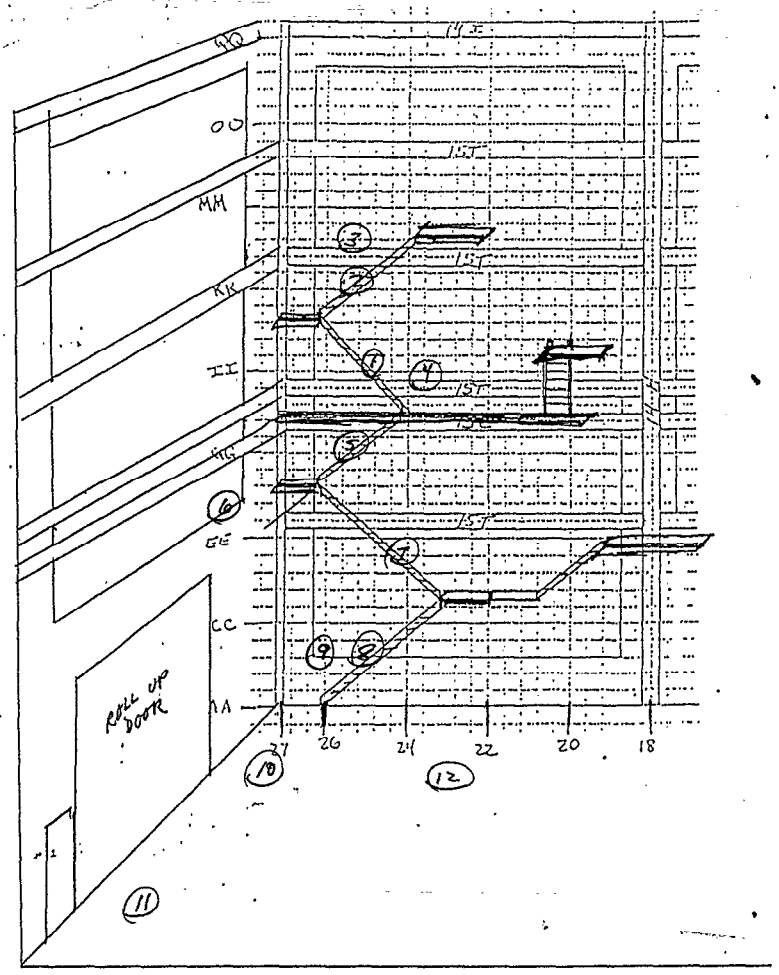
SURVEY01.XLS

'ON TECHNOLOGY, INC.
340 Maple Ave
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR BLDG 14
Area: 14 SOUTHEAST

Date/Time 3-17-98 / 2030	Tech C. HAHAM / C. Hall	Instrument / sn N/A
Location/ Purpose 14 SOUTHEAST POST WORK SURVEY FROM GVHD VACUUMING		Survey # 1272 RWP# 04
		N/A



Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	S	STEP	1	2	61	20	10	S	FLOOR	0	-1	50	-17
2		↓	0	-1	51	-13	11			0	-1	63	27
3		CHANNEL	1	2	61	20	12	↓	↓	2	4	57	7
4		↓	2	4	52	-10							
5		STEP	1	2	47	-27							
6		LEDGE	1	2	51	-13							
7		STEP	2	4	37	-60							
8		↓	0	-1	49	-20							
9	↓	LEDGE	0	-1	53	-7							

Type: s = smearable, dp = direct probe, O = SURVEY LOCATION

Comments: NONE

N/A

		BKD	EFF	MDA
Scalar S/N L2929 50718				
CT= 1 MIN DATE 3-	α:	0.46	0.35	17
Tech C. HAHAM	β:	55	0.30	124

Review: [signature]

Encl 3.3 to HSP 210

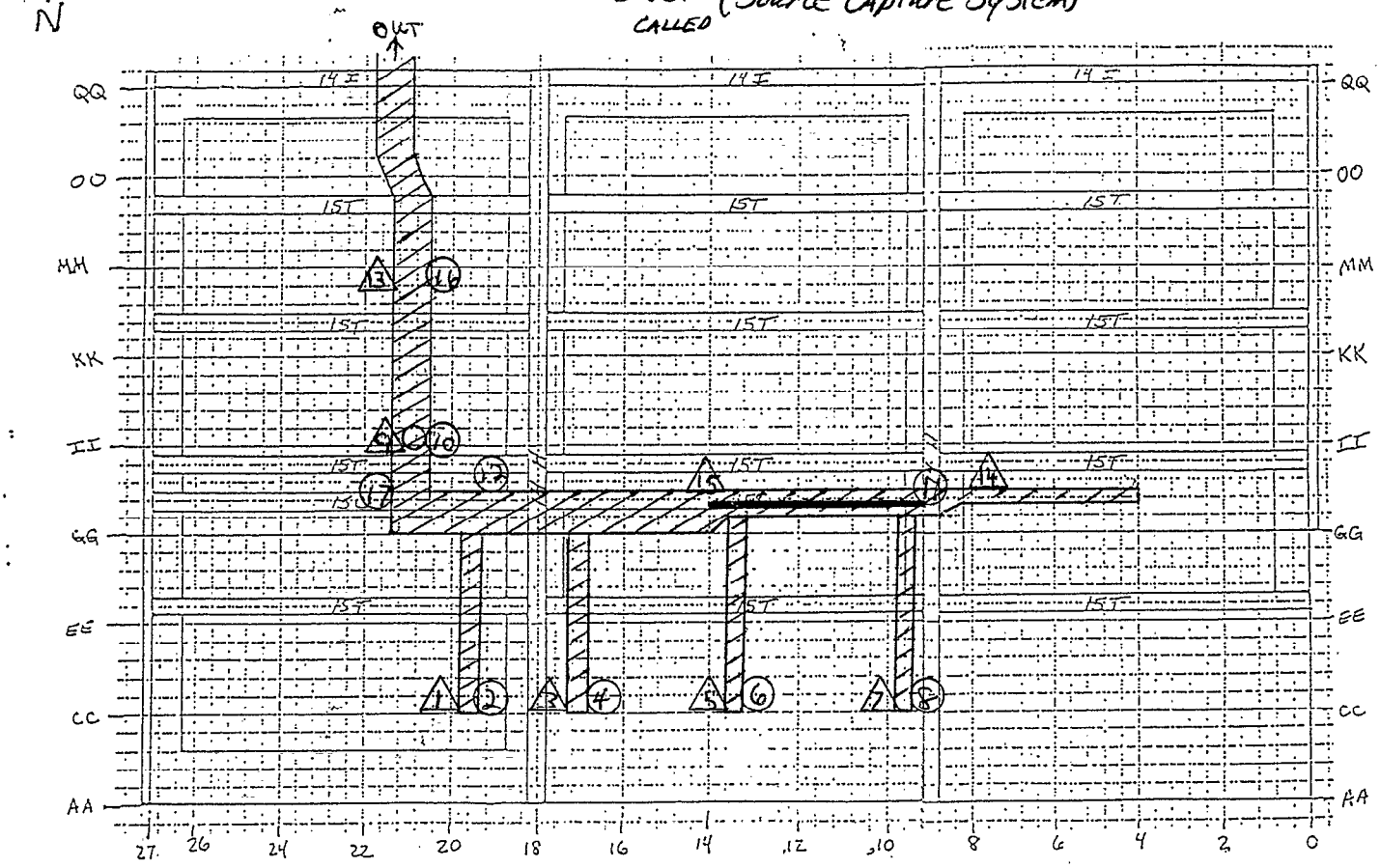
ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR
Area: BLDG 14

Date/Time 3-23-98	Tech D. PITMAN	Instrument / sn 2221 / 86308	
Location/ Purpose BLDG 14 AREA 14 SOUTH - SOUTH WALL		Survey # 1281	RWP# 02
RELEASE ~~Delineation~~			

AREA 14 SOUTH - SOUTH WALL
EXHAUST DUCT CALLED (Source Capture System)



Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	DP	INSIDE DUCT			65	110	10	S	INSIDE DUCT	0	-1	61	20
2	S		2	5	56	3	11	S	inside 2" PVC PIPE	0	-1	50	-17
3	DP				56	79	12	S	outside DUCT	2	5	50	-17
4	S		0	-1	49	-20	13	DP				45	41
5	DP				53	69	14	DP				62	100
6	S		2	5	60	17	15	DP				59	90
7	DP				64	107	16	S		0	-1	56	3
8	S		0	-1	61	20	17	S		1	2	63	27
9	DP				43	34							

Types = smearable, dp = direct probe

Comments: SCALER FOR DP 2221/86308 BKG 2 33cpm
EFF. 0.29

Scalar S/N 50718	BKD	EFF	MDA
CT= 1 DATE 3-23-98 α:	2234 / 5250 0.43	0.34	17
Tech D. PITMAN β:	290147 / 5250 55	0.30	124

Review:

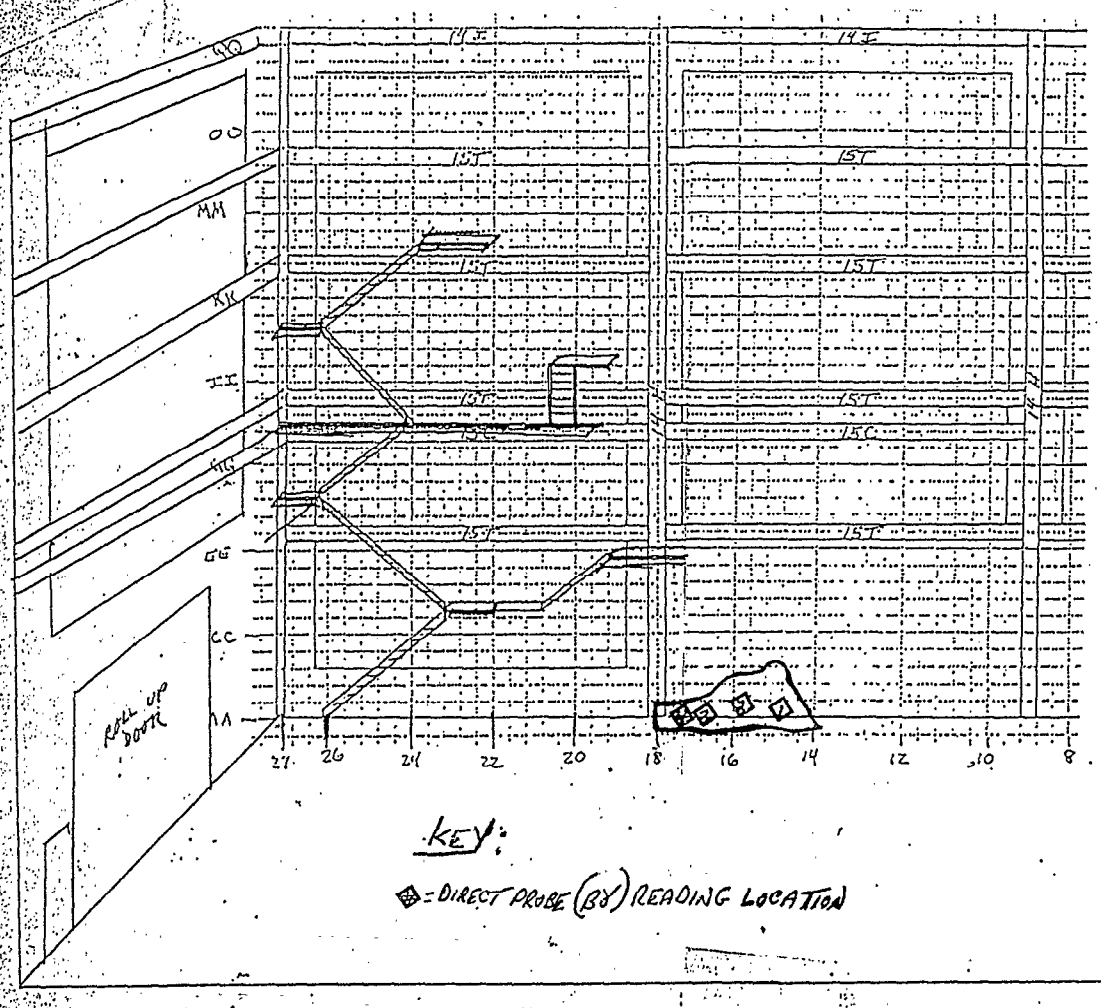
Encl 3.3 to HSP 210

ON TECHNOLOGY, INC.
540 Maple Ave
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR SITE
Area: B14 14 SOUTHEAST (SOUTH WALL)

Date/Time: 3/31/98 2230 | Tech: [signature] | Instrument / sn: L2221 #86314 W/44-9 #063A DETECTOR ACTIVE AREA = 15.5 cm²
Location/Purpose: B14 14SE SOUTH WALL DELINEATION SURVEY | Survey #: 1288 | EFF = .26 BKGD = 53 cpm BY/CAL DATE: 1-28-98 | RWP#: —



KEY:
◈ = DIRECT PROBE (BY) READING LOCATION

Loc	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β
1	D.P.	SEE ABOVE (GRIDS A-14AA THRU A-18AA)	N	A	200-400	3,665-8610			N				
2	↓	↓			250-600	4,890-14,000							
3					300-700	6,130-16,000							
4					300-800	6,130-19,000							
		N							A				
		A											

Type: s = smearable, dp = direct probe
Comments:

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

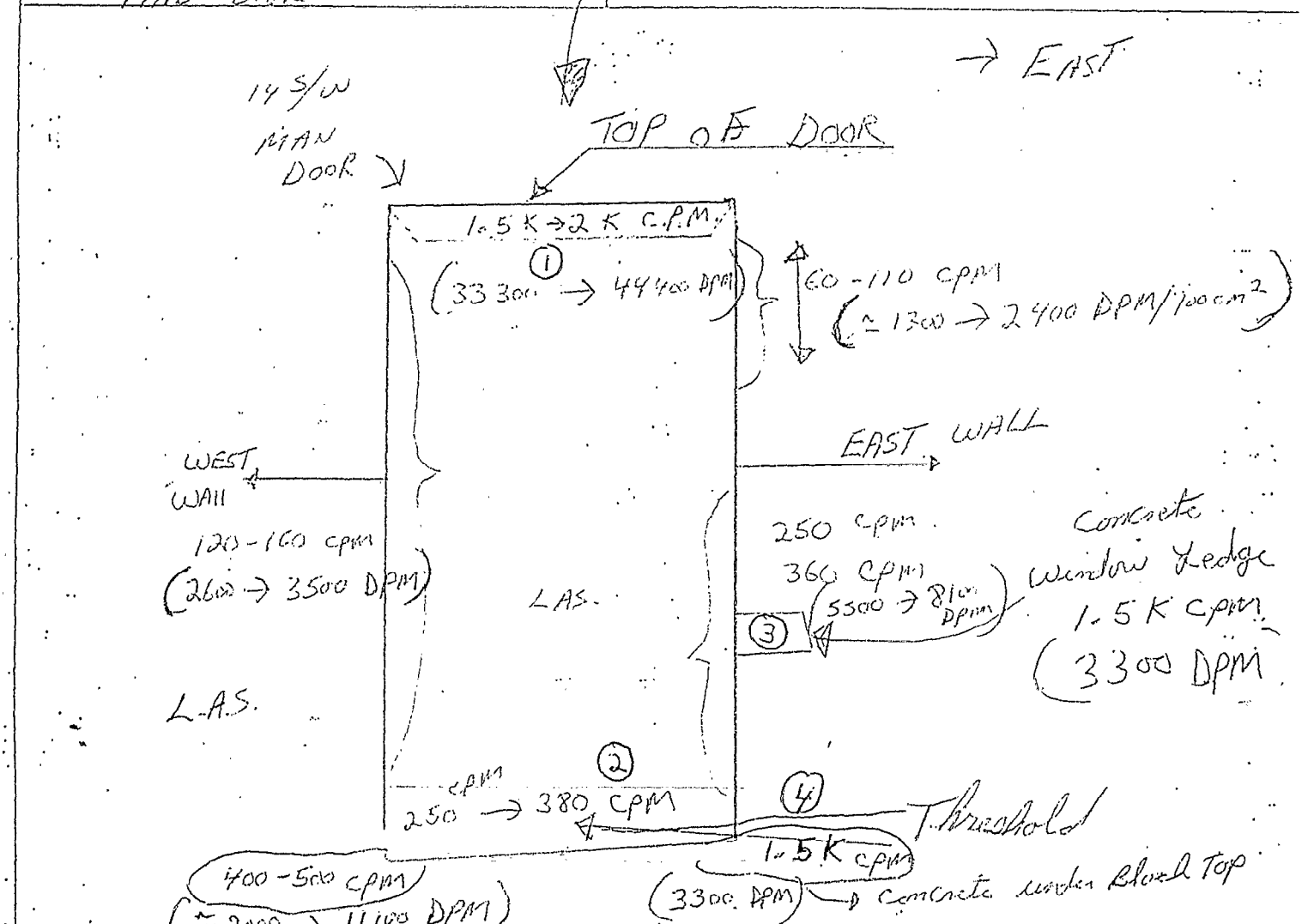
Review: [signature]

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

RADIOLOGICAL SURVEY

Project: BLD 14
Area: 14 SW Southwell MANDOOR

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



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

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

			BKD	EFF	MDA
Scalar S/N Z-2929 # 50718					
CT= 1	DATE 6-8-98	α:	81.54 / 1.58	.35	24
Tech M. Zigo		β:	29 3028/51	0.29	130

Review: [signature]

Encl 3.3 to HSP 210

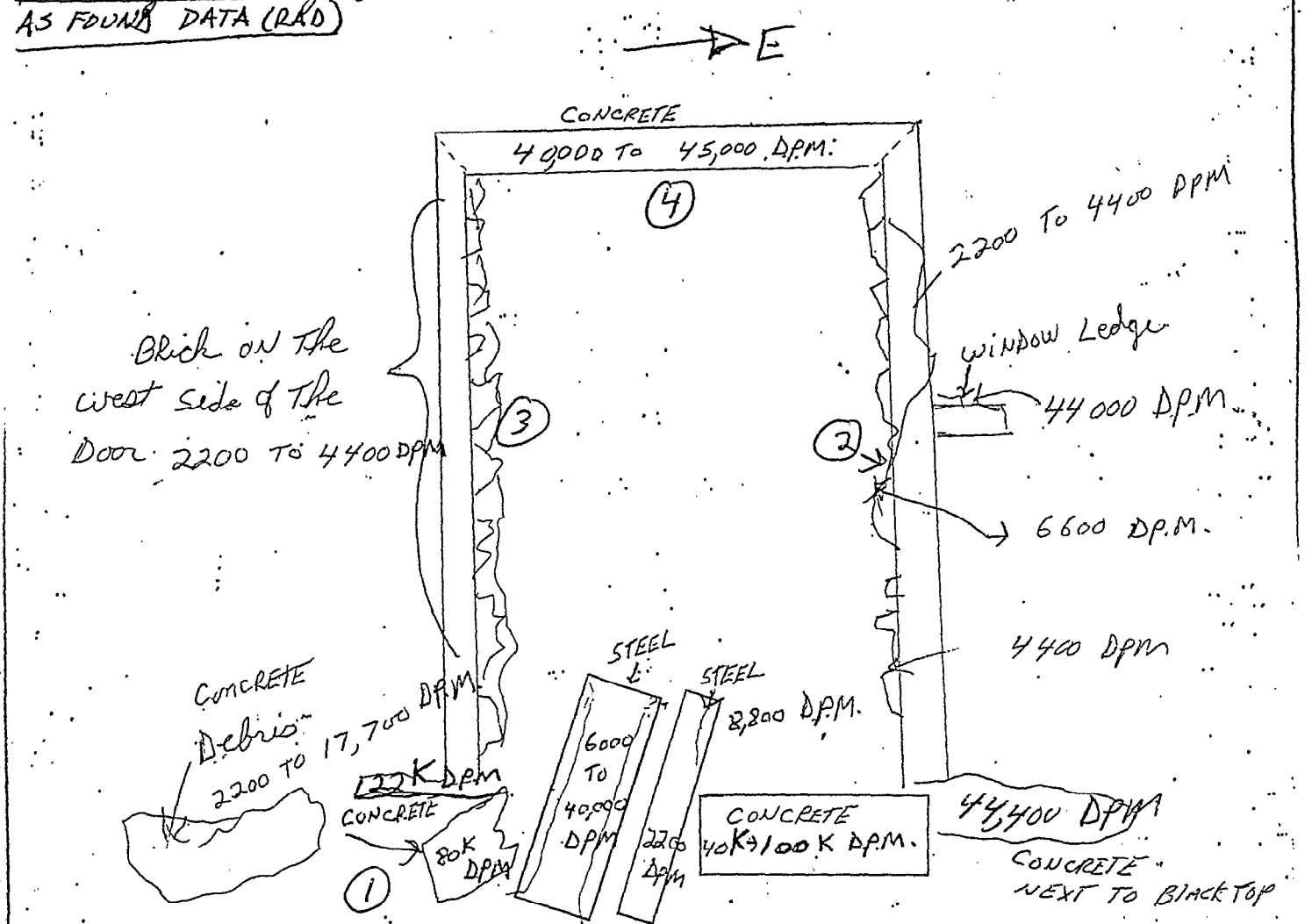
)N TECHNOLOGY, INC.
40 Maple Ave
aratoga Springs, NY
518) 584-0166

RADIOLOGICAL SURVEY

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

ate/Time 6-8-98 @ 2200	Tech M. Zigo	Instrument / sn Ludlum 2221 # 86308 / 44-9 #
ocation/ 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 A

N A

Type: s = smearable, dp = direct probe

Comments: 0 = denotes Swipe location

Scalar S/N Z-2929 # 50718		BKD	EFF	MDA
CT= 1	DATE 6-8-98 α:	8154/-158	0.35	24
Tech M. Zigo	β:	29823/52	0.29	1.30

Review: [signature]

Encl 3.3 to HSP 210

(scaler measurement)

Survey Date: 6-24-98
Location: 14 S/E
Description: INformational

Subslab REMEDIATION

	alpha	beta-gamma
Instrument Model & s/n:	N/A	2221 # 89648
Detector Model & s/n:		44-9 # 048272
Calibration Date:		12-30-97
Efficiency (Tc99) (SY90) (Th230)		.27
Detector Area (CM2)		15.5

RP Technician: M. Zigo

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

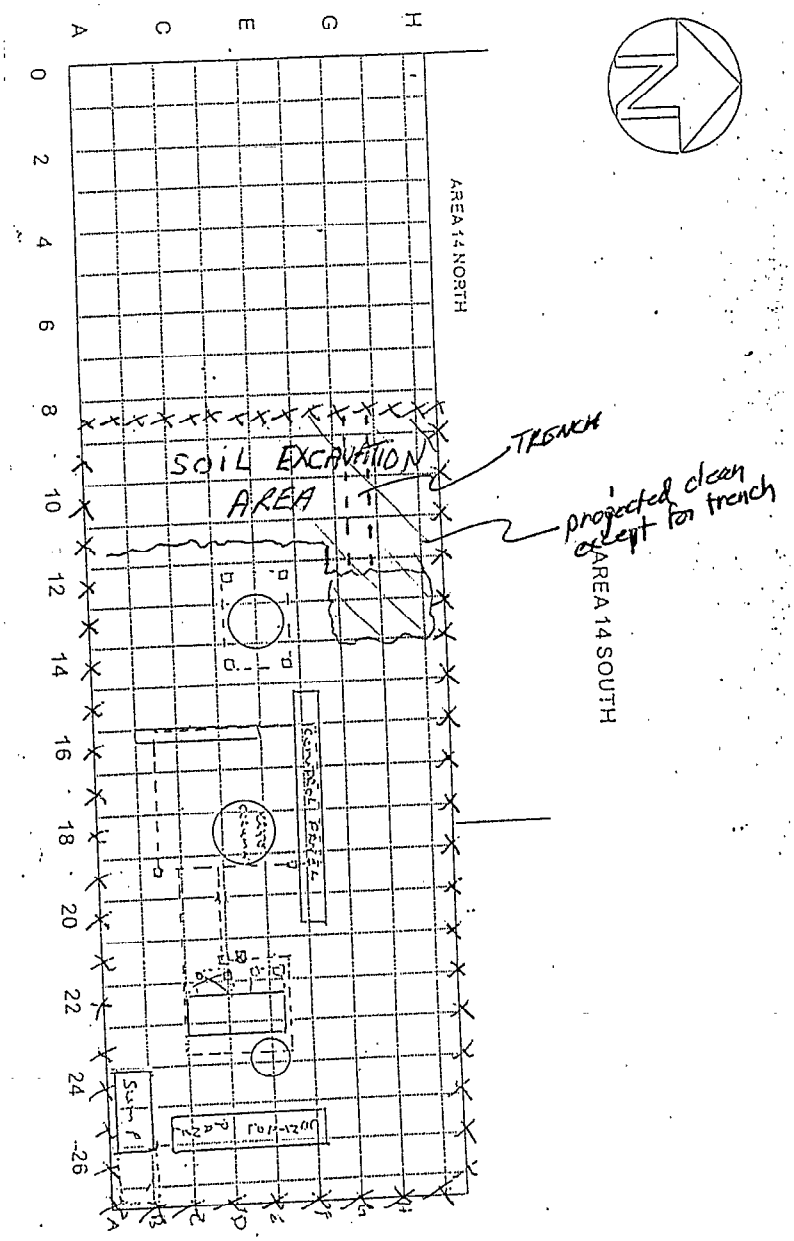
Survey # 1607

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	42
BACKGROUND COUNT TIME (MIN)		1
SAMPLE COUNT TIME (MIN)		1

Insert area map or sketch below

AREA 14 SOUTH

GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
	The soil under the concrete slabs that were removed in Grids A-9, A-10, A-11 was contaminated. Range from 300 cpm to 1200 c.p.m. along the south wall. The footing is contaminated 400 - 900 cpm. In Grids B-9, B-10, B-11 the soil under the concrete slabs ranged from 600 - 900 cpm. The soil under the slabs in Grid C-9, C-10, C-11 ranged from 300 - 500 cpm. The remaining soil with some spotty contamination levels of 300 - 400 cpm. The inside wall of an old trench ranged from 300 - 700 cpm located in Grid G-10 area. Three truck loads of concrete and one truck load of soil taken out of this area and moved to Bld. 30.		



REVIEW [signature]

SURVEY01.XLS

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey Date: 7-9-98
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 # 1704

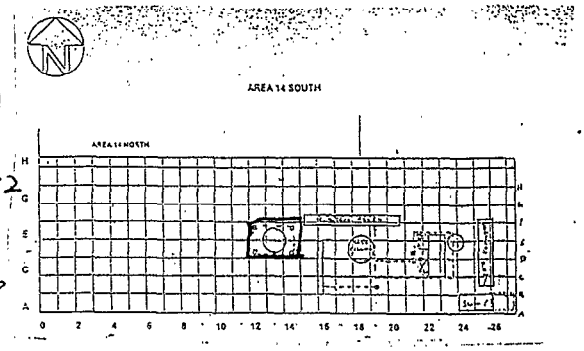
	alpha	beta-gamma
Instrument Model & s/n:		L-2221 #89648
Detector Model & s/n:	N/A	44-9 #048272
Calibration Date:		12-30-97
Efficiency [Tc99] [SY90] [Th230]		.26
Detector Area (CM2)		15.5

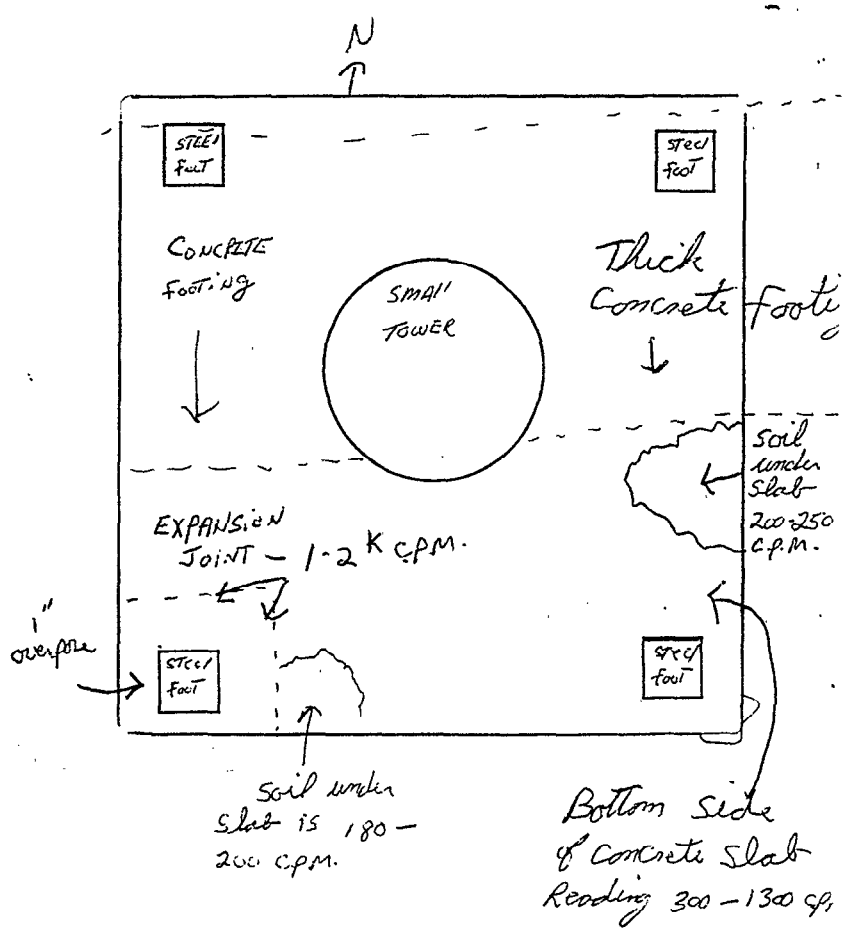
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	41
BACKGROUND COUNT TIME (MIN)		1
SAMPLE COUNT TIME (MIN)		1

RP Technician: M. Tigo

GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS/MIN.	DPM/100cm² Bγ
D-14	Soil under Slab		200-250	3944-5184
D-14	Bottom Side of The Concrete Slab is Reading		300-1300	6425-31,232
D-13	Soil under Slab is		180-200	3448-3944
D-12	Expansion Joint		1K-2K	23,790-48,598

N/A





REVIEW [signature]

SURVEY01.XLS

PRE-DECON SURVEY

Survey Date: 7-6-98
Location: AREA 14 S/E Footing Top of South wall
Description: Information

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

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

Survey # 1752

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS		43
BACKGROUND COUNT TIME (MIN)	N/A	1
SAMPLE COUNT TIME (MIN)		1

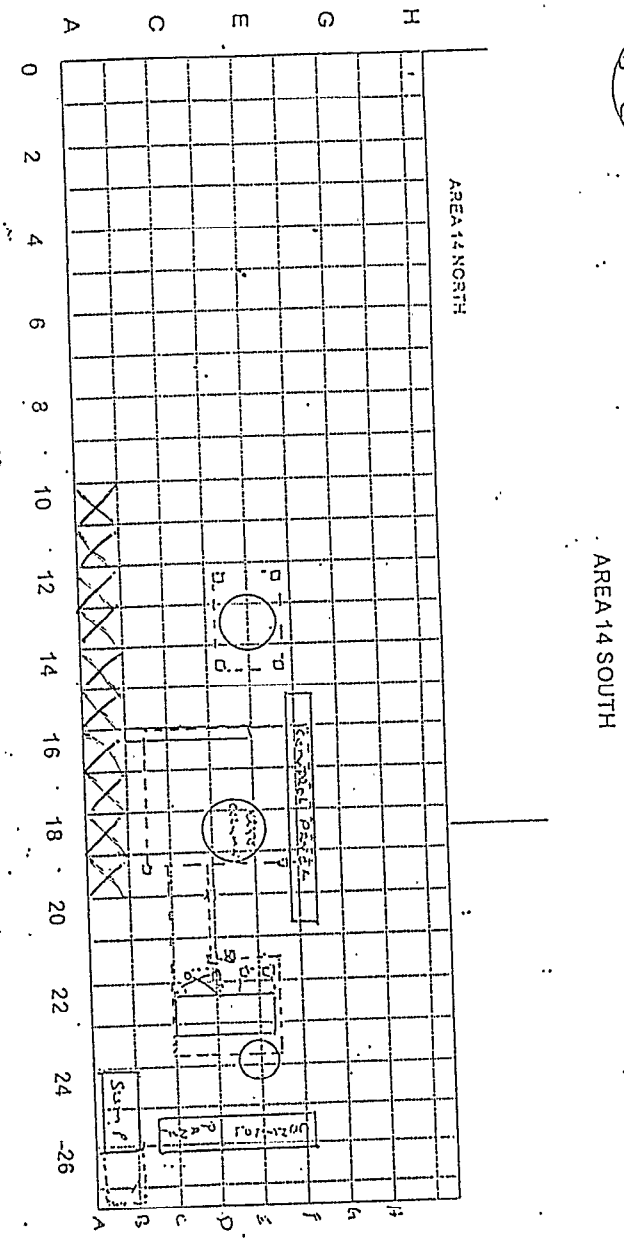
Insert area map or sketch below

AREA 14 SOUTH

P Technician: M. Bigo

PRE-DECON SURVEY

GRID	DESCRIPTION South wall	alpha GROSS COUNTS	beta-gamma GROSS COUNTS DPM/100 cm²
Grid			
A-10	Top of Footing		27,252
A-11	old Footing 3' wide		8,897
A-12	" " "		8,877
A-13	" " "	N/A	8,897
A-14	" " "		10,164
A-15	Top of Footing		10,164
A-16	Top of Footing		65,[illegible]
A-17	Top of Footing		132,472
A-18	Top of Pillar		10,164
A-19	Top of Footing		5,716



REVIEW

SURVEY01.XLS

(scaler measurement)

Survey Date: 07-09-98
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 1753

	alpha	beta-gamma
Instrument Model & s/n:		L-2220 # 86308
Detector Model & s/n:	N/A	44-9 # 37683
Calibration Date:		1-29-98
Efficiency (Tc99) (SY90) (Th230)		.27
Detector Area (CM2)		15.5

	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	71
BACKGROUND COUNT TIME (MIN)		1
SAMPLE COUNT TIME (MIN)		1

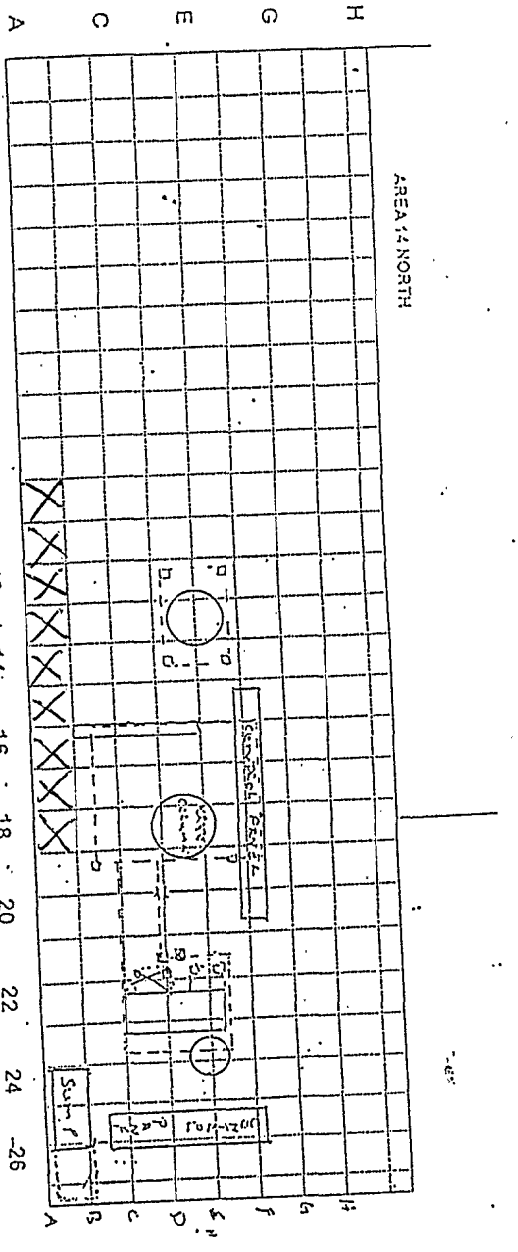
RP Technician: M. Zigo

14 South East Pre-Decon

GRID		DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
		Soil under Concrete		
		Floor from Grid A-10 →		
	A-18	along South wall Ranged		
		from 300-1800 cpm. The		
		Footing wall of the south wall		
		Ranged from 300 → 3200 cpm.		

Insert area map or sketch below

AREA-14 SOUTH



REVIEW

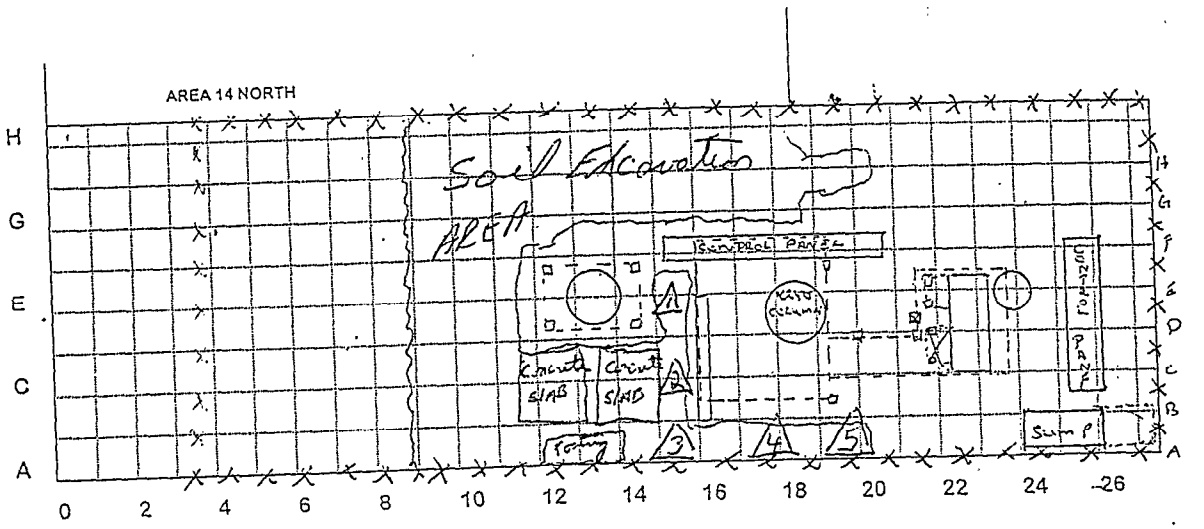
ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: Prahari Bld-14
Area: 14 S/E

Date/Time 7-2-98	Tech Sugo	Instrument / sn Z-2221 # 76308/44-9 # 37683	
Location/ Purpose 14 S/E		Survey # 1755	RWP# 01
Informational		BKg 46 EFF. .29	15.5 cm² probe

AREA 14 SOUTH



1M X 1M GRID

Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	D.P.	Soil			150	2313							
2	D.P.	Soil	N		230	4072							
3	D.P.	Soil		A	3000	65,701							
4	D.P.	Soil			500	10,097							
5	D.P.	Soil			150	2313							
		N							N		A		
		A											

Type:s = smearable, dp = direct probe

Comments:

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

Review: [signature]

Encl 3.3 to HSP 210