APPENDIX B-10

DELINEATION SURVEYS FOR AREA 14 NORTH

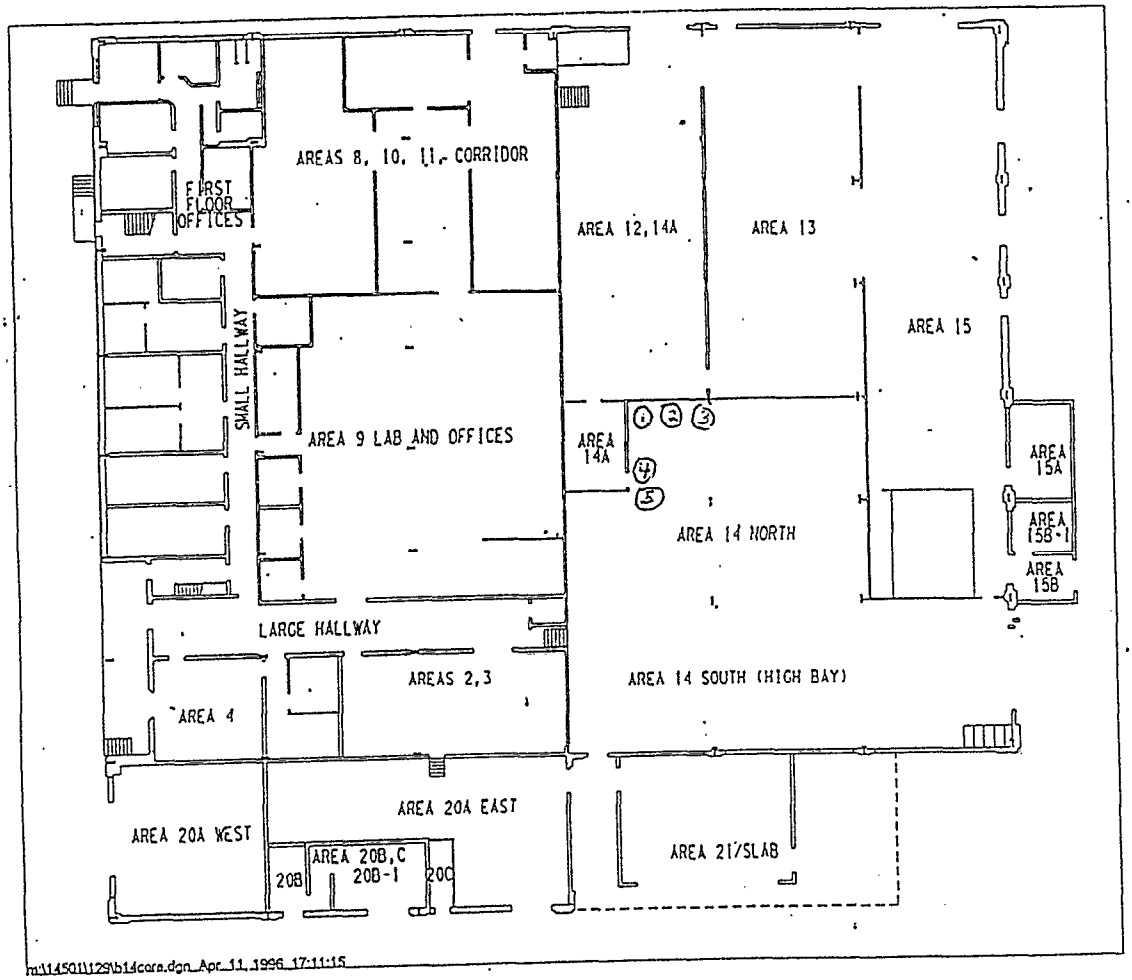
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

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 3-31-97 @ 0815	Tech M. Sigo
Instruments / sn Ludlum 2929 I	
Location / Purpose Area 14 North.	Survey # 184 RWP # N/A
Contamination Survey	



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
1	S	Floor	0	-1	74	17							
2	S	↓	2	6	81	41			N				
3	S		1	3	53	-55			A				
4	S		2	6	61	-28							
5	S	↓	2	6	55	-48							
		N											
		A											

Comments: S = Smear
O = Location of the Smear.

Scaler S/N Ludlum 2929 I	BKG	EFF	MDA
CT = 1 Alpha:	372/4705	.32	15
Tech M. Sigo Beta:	323263/4705	.29	143

Review

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: 8/11/97
Location: B-14 A 14 (NORTH)
Description: Del IN 672
Survey #

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

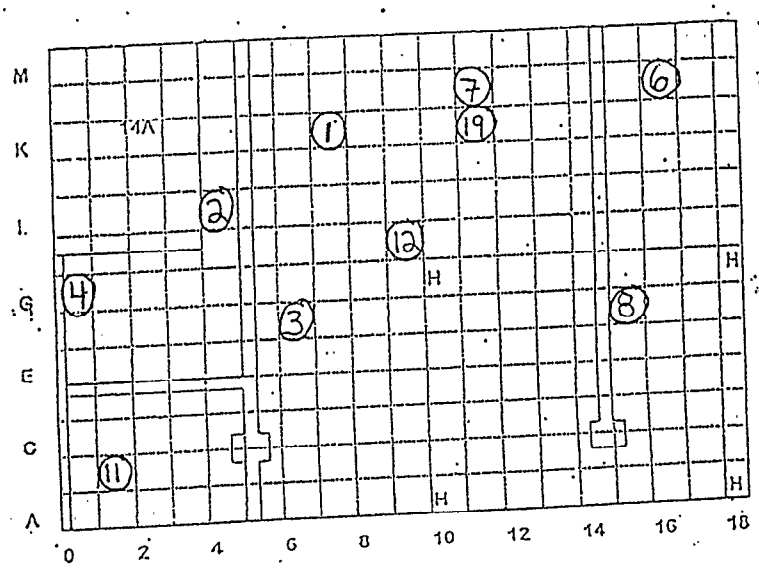
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	50-75
BACKGROUND COUNT TIME (MIN)		1 MIN
SAMPLE COUNT TIME (MIN)		1 MIN

Technician: SMALLRIDGE/RS

GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS
K-8	Soil Sample @ 1 FT		60-80
	2 FT		
	3 FT		
	4 FT		65
I-5	ONLY 1 Sample due to obstruction		60-100.
F-7	Soil Sample @ 1 FT		
	2 FT		
	3 FT		
	4 FT		60-850
G-1	Soil Sample @ 1 FT		
	2 FT		
	3 FT		N/A
	obstruction @ 4 FT		68-85
I-17	Soil Sample @ 1 FT		
	2 FT		
	3 FT		
	4 FT		N/A
L-12	No Sample/obstruction		67-425
F-16	Soil Sample @ 1 FT		
	2 FT		
	3 FT		
	4 FT		104-900
B-2	Soil Sample @ 1 FT		
	2 FT		
	3 FT		
	4 FT		67-81
H-10	Soil Sample @ 1 FT		
	2 FT		
	3 FT		
	4 FT		69
K-12	Soil Sample @ 1 FT		75
	2 FT		65
	3 FT		69
	4 FT		

Insert area map or skatch below

AREA 14 NORTH



○=DRILLED

(#)=Sample #

Note: ALL READING G.C.P.M
BKG = 50.-75 cpm

REVIEW

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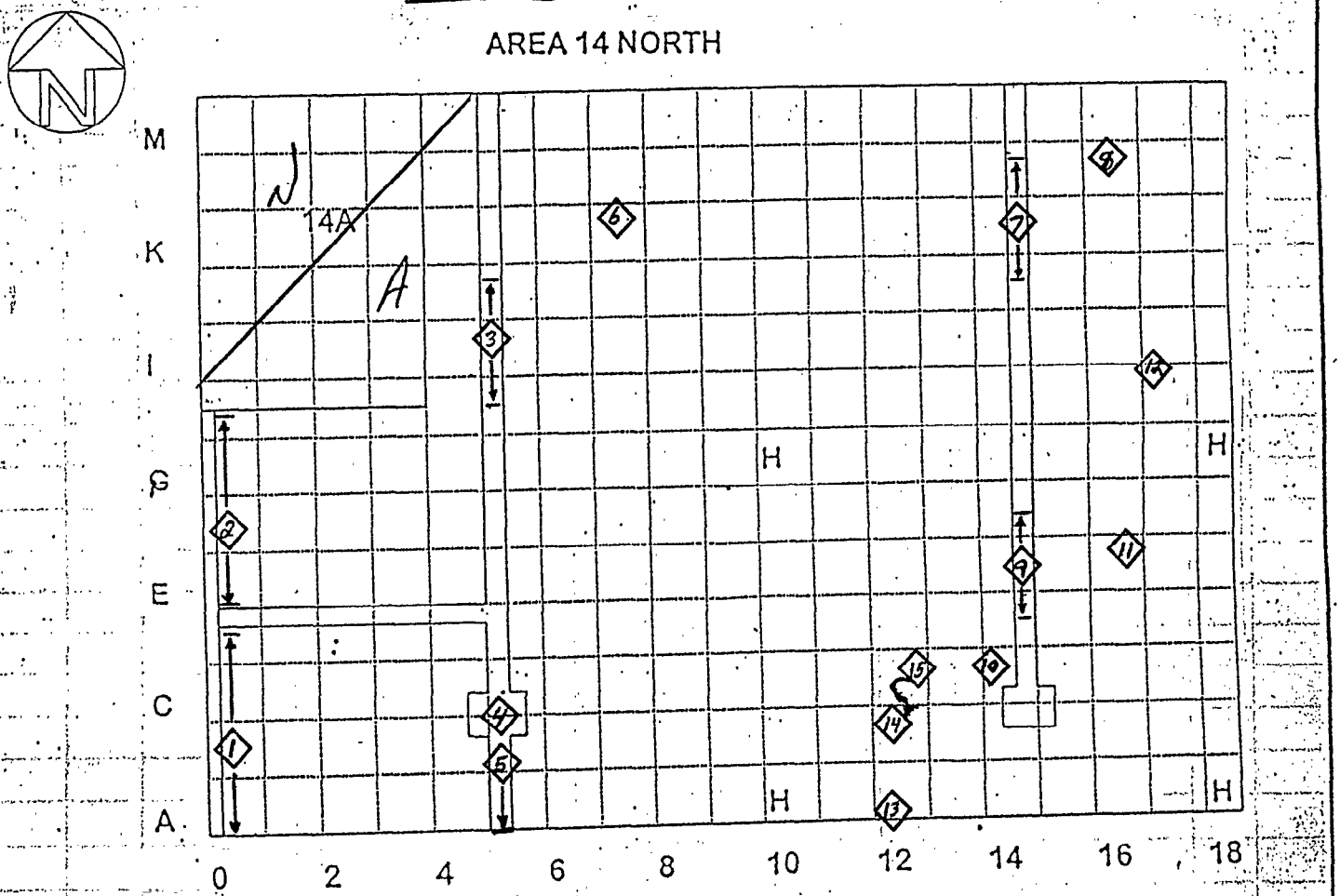
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR SITE
Area: 14 NORTH

Date/Time 9-16-97 2100 | Tech W. [illegible] | Instrument / sn (E) L2221 w/44-9 89648
Location/ Purpose PRAXAIR SITE B14 AREA 14 NORTH | Survey # 785 | RWP# —
FLOOR (CRACK, PIT, & TRENCH) DELINEATION

AREA 14 NORTH



NOTE: EFF. = .20 BKGD = 42 cpm βγ

Loc.	Type	Description	Gross	α dpm	Gross	β dpm
1	D.P.	@ WALL & FLOOR JOINT			1-2k	63k
2		↓			1-2k	63k
3		WALLS OF TRENCH			5-15k	483k
4		↓	N		3-500	15k
5		↓		A	3-500	15k
6		FLOOR JOINT			550	15k
7		WALLS OF TRENCH			1-3k	95k
9	↓	WALLS OF TRENCH			1-3k	95k

Loc	Type	Description	Gross	α dpm	Gross	β dpm
10	D.P.	FLOOR CRACK			1-1.5k	47k
11	D.P.	FLOOR CRACK			2-300	8k
12		FLOOR CRACK			500-1k	31k
13		FLOOR CRACK	N		7k	225k
14		FLOOR DRAIN		A	4k	129k
15	↓	DRAIN LINE @ DRAIN			1.5k	47k

Types = smearable, dp = direct probe

Comments:

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

Review:

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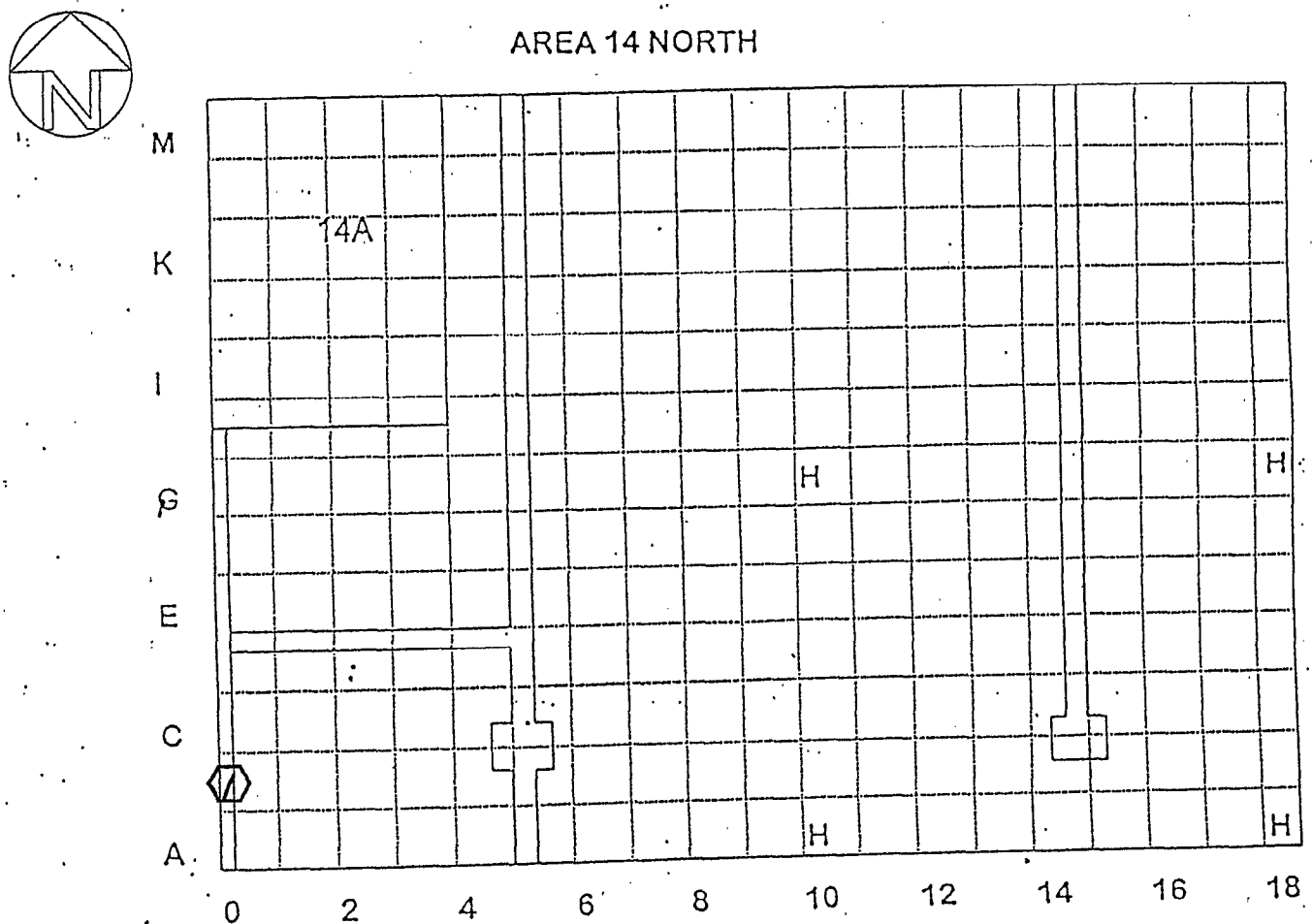
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR SITE
Area: AREA 14 NORTH

Date/Time 9-23-97 0100	Tech William A. [illegible]	Instrument / sn (C) L2221 W/44-9 89648	
Location/ Purpose PRAXAIR SITE B14 AREA 14 NORTH		Survey # 820	RWP# —
FLOOR			

AREA 14 NORTH



KEY:
(#) = AREA OF DELINEATION

Loc.	Type	Description	PRIOR TO CHIPPING Gross	PRIOR TO CHIPPING α dpm	AFTER CHIPPING Gross	AFTER CHIPPING β dpm
1	O.A	FOUNDATION / WATER FLOOR	1600	50k	4200	134k

Loc	Type	Description	Gross	α dpm	Gross	β dpm

Type: s = smearable, dp = direct probe

Comments:

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

Review:

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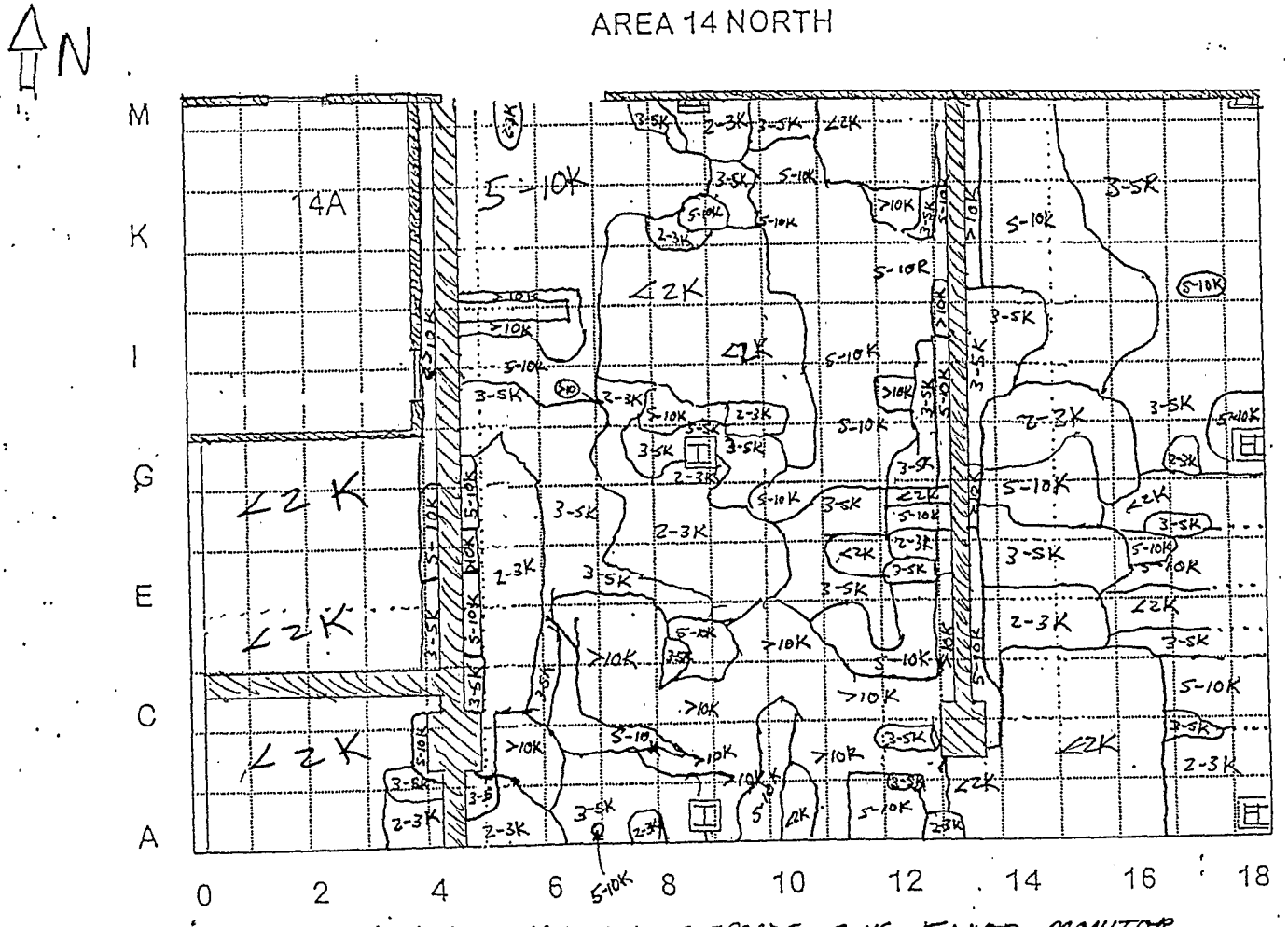
Saratoga Springs, NY
518) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR B14
Area: 14 NORTH

Date/Time 10-8-97 / 2030	Tech C. HALLAM/	Instrument / sn L2221 / L43-37 / FLOOR MONITOR 7813 EFF=0.20 BKGD= 906 cpm
Location/ Purpose AREA 14 NORTH / FLOOR DELINEATION	Survey # 855	RWP# N/A

AREA 14 NORTH



ALL READINGS AS SHOWN IN GROSS CPM BY DIRECT PROBE USING FLOOR MONITOR

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

Types = smearable, dp = direct probe

Comments:

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

Review:

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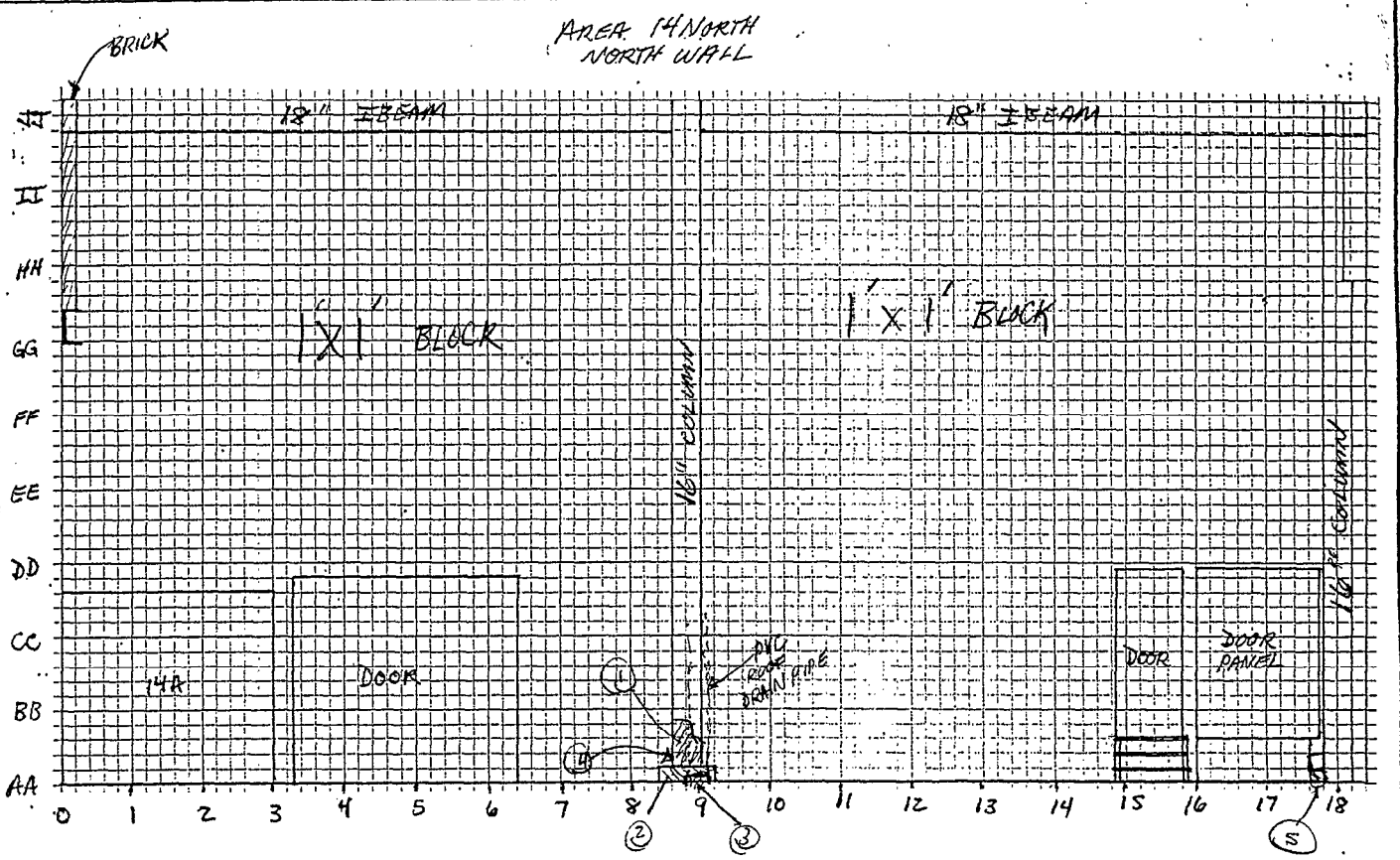
RADIOLOGICAL SURVEY

Project: PRAXAIR
Area: B14 A14N NORTHWALL

Date/Time 10-16-97 / 1930	Tech C. HALLAM / [illegible]	Instrument / sn L2221 / D L44-9 Cal Due 8-12-98 EFF = 0.19
Location/ Purpose AREA 14N / NORTHWALL		Survey # 886 BKGD = 43 cpm RWP# N/A
DELINEATION OF LOWER 2 GRIDS		



Loc.	Type	Description	AREA ~~Gross~~	~~α dpm~~	Gross	MAX β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	DP	COLUMN (STEEL)	2.5 ft²		200-400	11K							
2		COLUMN BASE (CURB)	4.5 ft² ~~0.5 ft²~~		600-2000	65K							
3		BASE OF DRAIN PIPE (STEEL)	0.5 ft²		300-600								
4		COLUMN FILL	0.5 ft²		200-400								
5		BASE OF WALL (CURB)	0.5 ft²		200-300								

Type: s = smearable, dp = direct probe

Comments:

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

Review: [signature]

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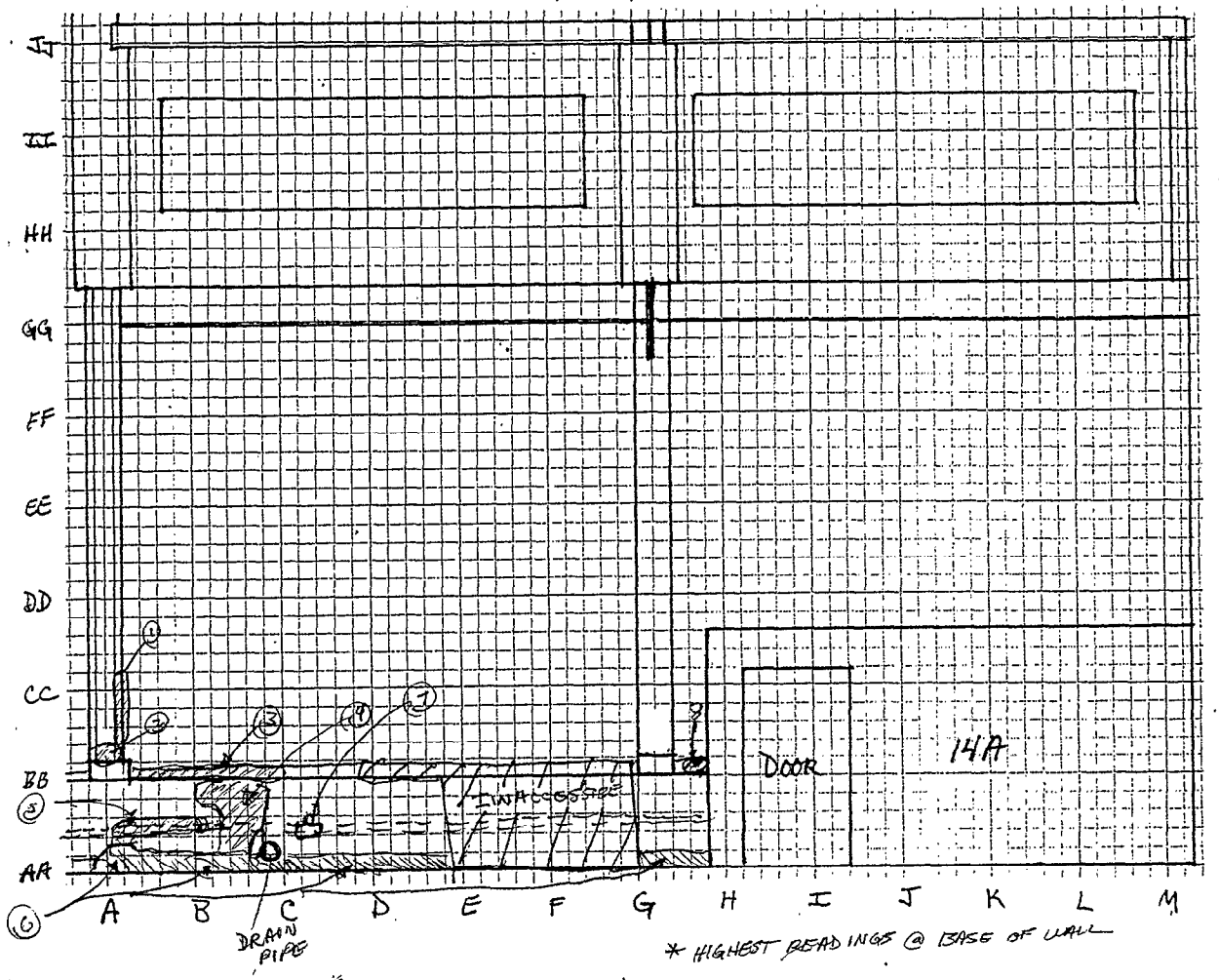
RADIOLOGICAL SURVEY

Project: B14
Area: 14N WEST WALL

Date/Time 10-16-97 / 2130	Tech C. Hartman / [illegible]	Instrument / sn L2221 / 6	L44-9 8-12-98 EFF = 0.19
Location/ Purpose AREA 14 NORTH/WEST WALL		Survey # 887	BKGD = 43 CPM RWP# N/A
DELINEATION OF LOWER 2 GRIDS			



Loc.	Type	Description	Area Gross	α dpm	Gross	β dpm
1	DP	RIVET HEADS/BRACE	1.0 ft²		200-350	9.7K
2		COLUMN FILL (CONCRETE)	0.5 ft²		200-1000	32K
3		TOP OF KNEE WALL	6 ft²		200-350	
4		SIDE OF KNEE WALL	5ft²		200-700	
5		KNEEWALL BEHIND PIPE	1.5ft²		200-400	
6		BASE OF KNEE WALL	5ft²		300-2000*	
7		STEAM PIPE "TEE"	0.5ft²		200-400	
8	DP	TOP OF KNEE WALL	1 ft²		200-350	

Loc	Type	Description	Gross	α dpm	Gross	β dpm

Type:s = smearable, dp = direct probe

Comments:

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

Review:

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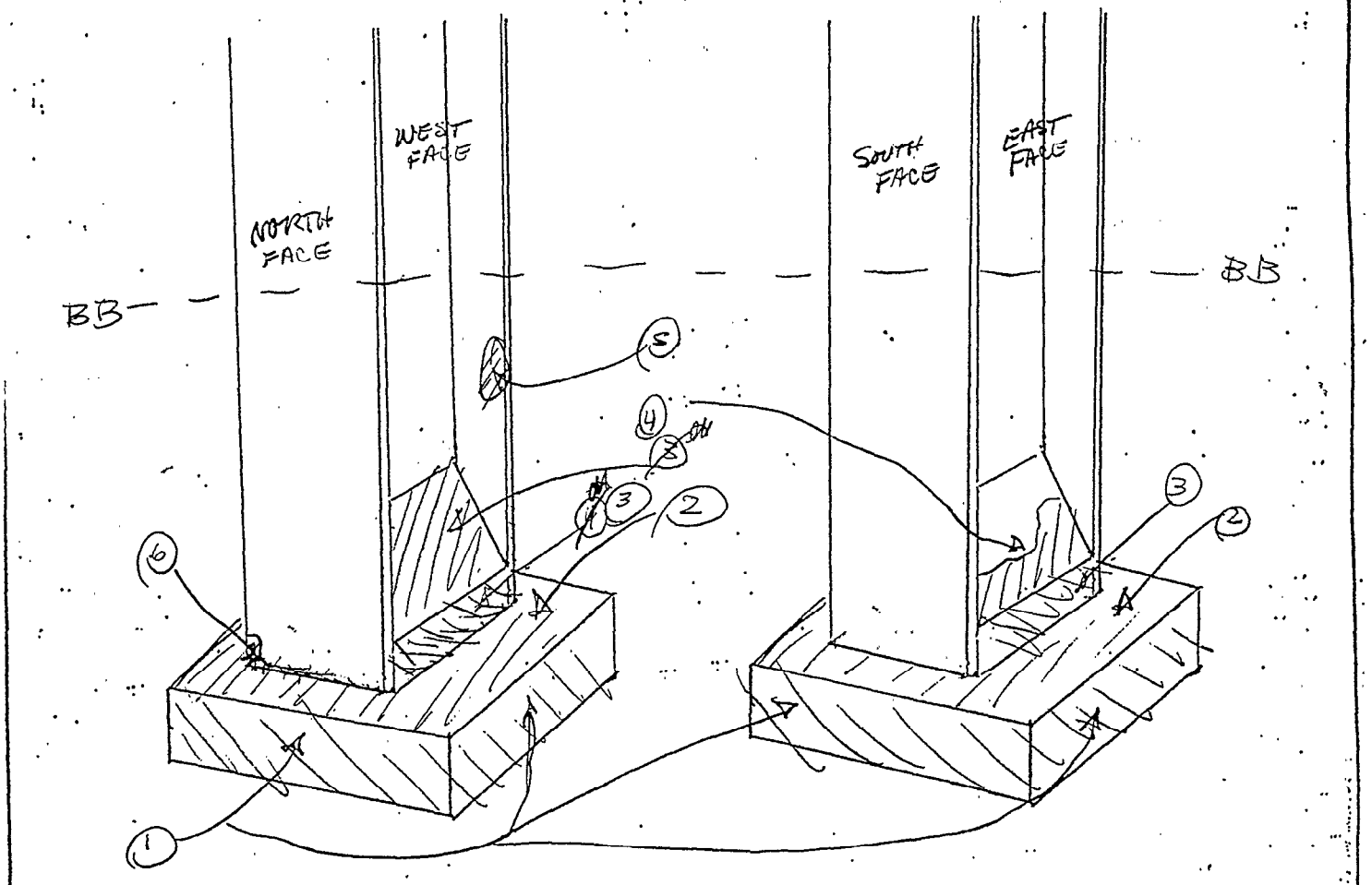
RADIOLOGICAL SURVEY

Project: PRAXAIR B14
Area: 14 NORTH

Date/Time 10-17-97 / 0030	Tech [illegible]	Instrument / sn L2224 / D 144-9 EFF = 0.19	BKGD = 43
Location/ Purpose GRID G8 COLUMN DELINEATION		Survey # 891	RWP# N/A



Loc.	Type	Description	Gross α dpm	Gross β dpm (MAX)
1	DP	SIDE OF BASE (CONCRETE)		600 - 3000 / 97K
2		TOP OF BASE		200 - 800 / 26K
3		SIDE OF COLUMN FILL (CONCRETE)		300 - 600 / 19K
4		SLOPED COLUMN FILL		200 - 500 / 16K
5		COLUMN (STEEL)		200 - 350 / 11K
6	↓	COLUMN		300 / 10K

Loc	Type	Description	Gross	α dpm	Gross	β dpm

Types: s = smearable, dp = direct probe

Comments:

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

Review:

Encl 3.3 to HSP 210

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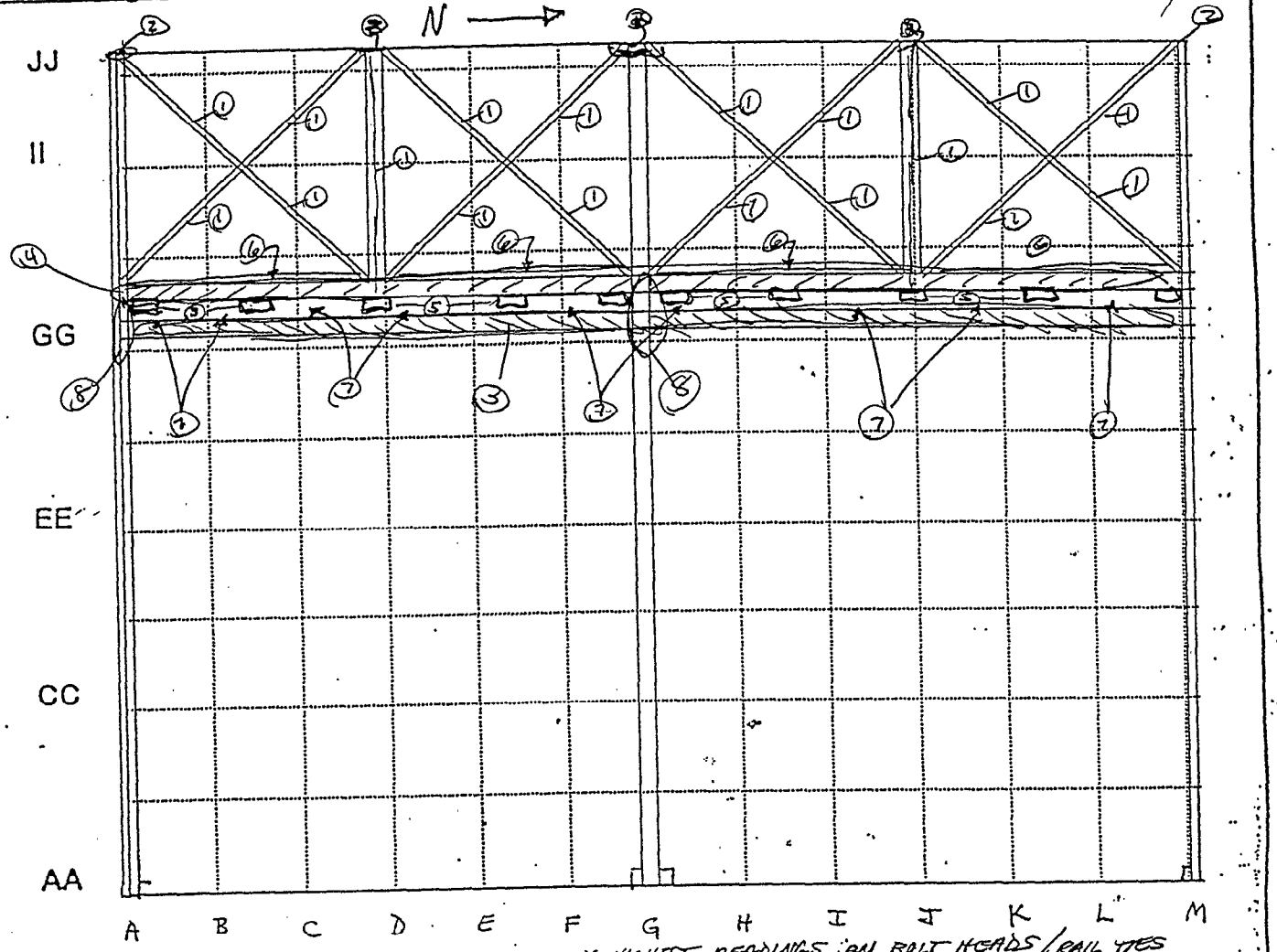
atoga Springs, NY
8) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR B14
Area: 14 NORTH

/Time 10-17-97 / 0200	Tech C. HALLAM / [illegible]	Instrument / sn L2221/0 L44-9 EFF = 0.19 BKGD = 43
ation/ Purpose CENTER CRANE RAILS / EAST FACE DELINEATION		Survey # 892 RWP# N/A



* HIGHEST READINGS ON BOLT HEADS / RAIL TIES

Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	DP	ANGLE IRON-HORIZ			180-400	CPM	7	DP	CRANE RAIL VERT (LOWER 4-6") & BOLTS			150-300	
		ANGLE IRON-VERT			150-350 *		8	DP	JOICE PLATE			200-500 *	16K
2		JOICE PLATES - HORIZ			200-600								
3		CRANE RAIL LOWER LEDGE			250-700	23K							
4		CRANE RAIL - TOP			150-350 *								
5		CRANE RAIL CROSS BEAM-TOP			500-1000	32K							
		CRANE RAIL CROSSBEAM-SIDE			150-400								
6		ANGLE IRON HORIZ			200-450								
		ANGLE IRON VERT			180-300								

N/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

N TECHNOLOGY, INC.
0 Maple Ave
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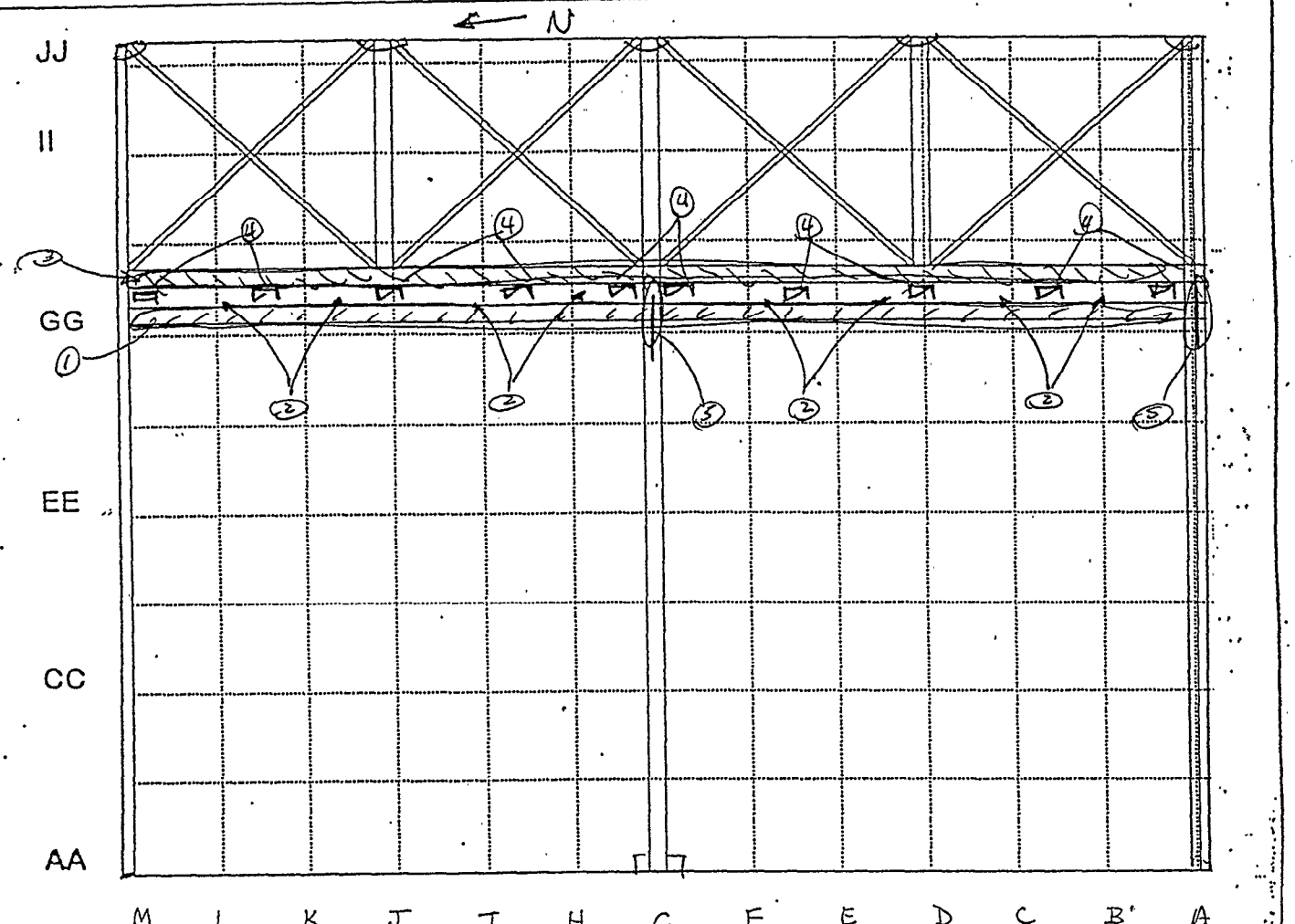
18) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR B14
Area: 14 NORTH

le/Time 10-17-97 / 0200	Tech W. ZEKE / C. HAUAM / C. Hah	Instrument / sn L2221/D L44-9 EFF = 0.19 BKGD = 43
cation/ Purpose CENTER CRANERAILS / WEST FACE		Survey # 893 RWP# N/A



* = HIGHEST READINGS ON BOLT HEADS / ~~TIES~~ RAIL TIES

Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	DP	CRANE RAIL LOWERLEDGE			200 - 600	cpm							
2		CRANE RAIL VERT (LOWER 4"-16") & BOLTS		N	150 - 350 *	9.7K							
3		TOP OF CRANE RAIL			150 - 350 *								
4		CROSS BEAMS - TOP			500 - 1000	32K							
5		JOICE PLATE			150 - 400 *								

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

Review: [signature]

Encl 3.3 to HSP 210

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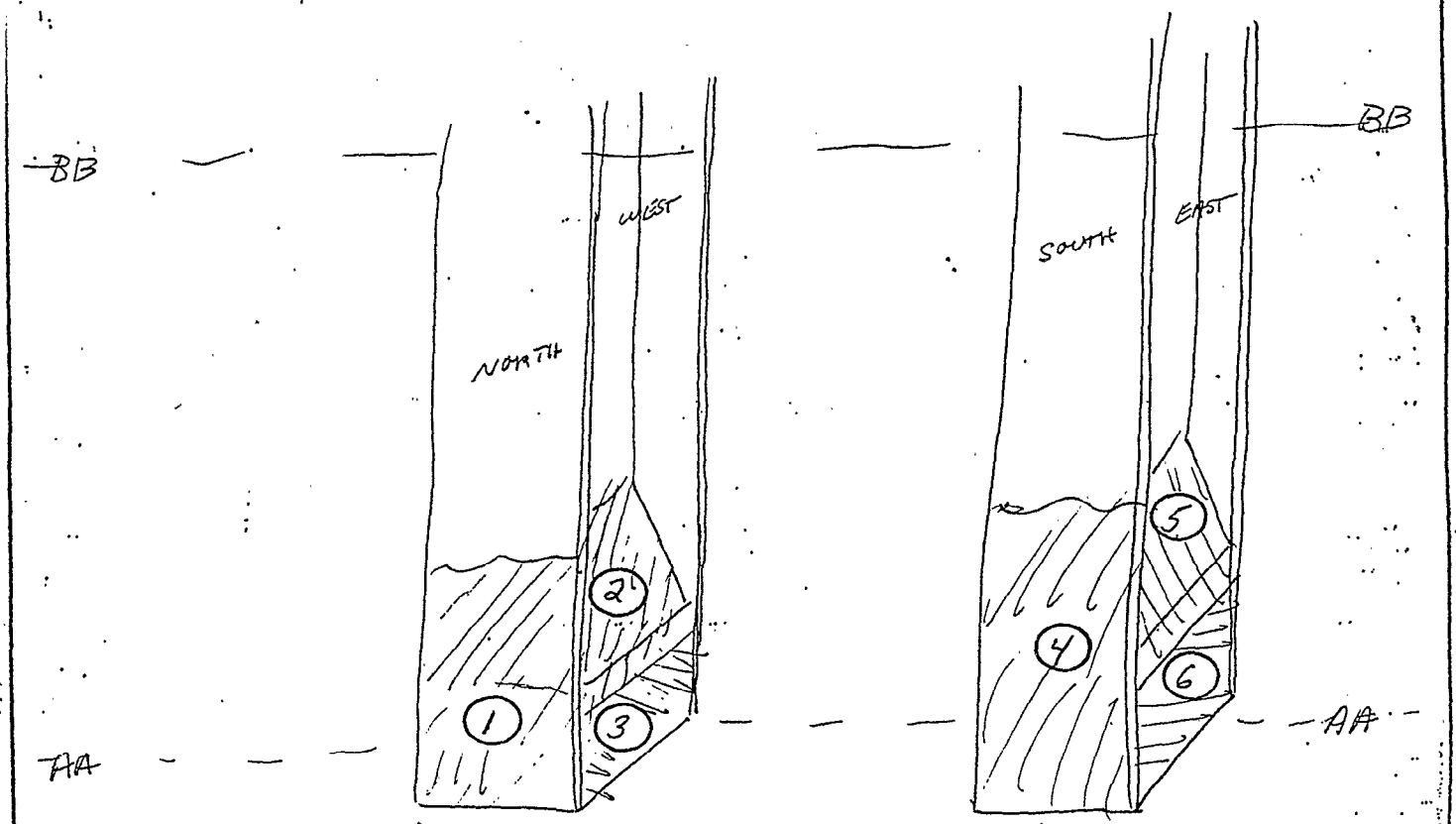
340 Maple Ave
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR B14
Area: 14 NORTH

Date/Time 10-17-97 / 0130	Tech W. JOSKE / R. HAMANN
Location/ Purpose GRID A8 COLUMN DELINEATION	Instrument / sn L2221 / D L44-9 EFF 0.19 BKGD = 43 cpm
	Survey # 294 RWP# N/A



Loc.	Type	Description	Gross	α dpm	Gross	β dpm
1	D.P.	SEE ABOVE			200-300	UPTO 8K
2					200-300	UPTO 8K
3					200-300	UPTO 8K
4					200-300	UPTO 14.5K
5					200-400	~UPTO 11K
6						
		N A				

Loc	Type	Description	Gross	α dpm	Gross	β dpm
		N A				

Type:s = smearable, dp = direct probe

Comments:

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

Review:

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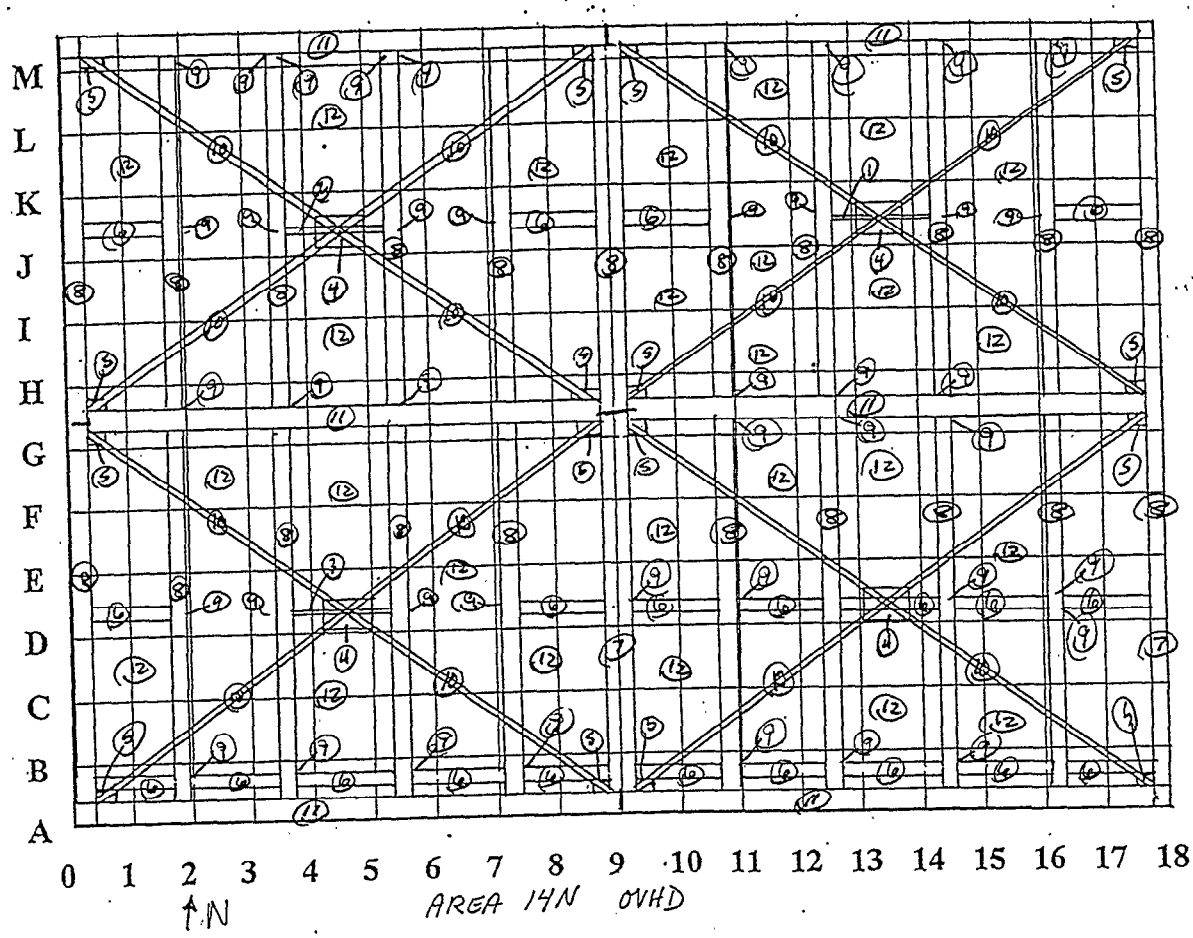
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR B14
Area: 14 NORTH

Date/Time 10-17-97 / ~~2030~~ 2034 ~~10-17-97~~	Tech C. HALLAM / [illegible]	Instrument / sn L2221/D L449	EFF = 0.19 BKGD = 43
Location/ Purpose CEILING DELINEATION		Survey # 695	RWP# N/A



* = HIGHEST READINGS ON BOLT HEADS

Loc.	Type	Description	Gross	α dpm	Gross CPM	β dpm
1	DP	C-BEAM (5"x2") LOWER LEDGE			200 - 350	11K
		C BEAM TOP			150 - 250	6.5K
2		C-BEAM (6x2) LOWER LEDGE			250 - 350	
		C-BEAM TOP			150 - 250	
3		C-BEAM 5x2 LOWER LEDGE			200 - 300	
		C-BEAM TOP			150 - 250	
4		CORNER JOICE PLATES - TOP			200 - 500	
5		CORNER JOICE PLATES - TOP			150-600 CPM	*18K
6	✓	8" EAST-WEST I BEAM - LOWER LEDGE			250 - 500	14.5K

Loc	Type	Description	Gross	α dpm	Gross CPM	β dpm
6	DP	8" EAST-WEST I BEAM LOWER 2"-4"			150 - 250	
7		8" NORTH-SOUTH I BEAMS LOWER LEDGE			200 - 500	
8		8" NORTH-SOUTH I BEAMS LOWER 2-4" VERT			150 - 250	
		10" NORTH-SOUTH I BEAMS LOWER LEDGE			200 - 600	
		LOWER 2"-4"			150 - 250	
9		BOLT HEADS ON VERTICLE			180 - 400	
10		ANGLE IRON - TOP			200 - 700	22K
		ANGLE IRON - SIDES			100 - 220	*
11	✓	18" I BEAM - LOWER LEDGE			200 - 600	

Type: s = smearable, dp = direct probe

Comments:

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

Review:

Encl 3.3 to HSP 210

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Saratoga Springs, NY
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RADIOLOGICAL CONTINUATION SURVEY FORM

Project: PRAXAIR B14
Area: 14 NORTH

Date/Time 10-17-97 / 2030	Tech C. [illegible]	Instrument / sn
Location/ Purpose CENTER CRANE RAIL 14 CEILING DELINEATION		Survey # 895 RWP#

Loc	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
11 14A	DP	18" IBEAM LOWER 2-6"			150-250								
12	↓	CEILING (CRETE PLANK)			100-150								

Types: s = smearable, dp = direct probe

Comments:

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

Review: _____

Encl 3.4 to HSP 210

ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

Survey Date: 10/15/97
Location: B-14 A-14N (EAST WALL
Description: Delin Survey

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

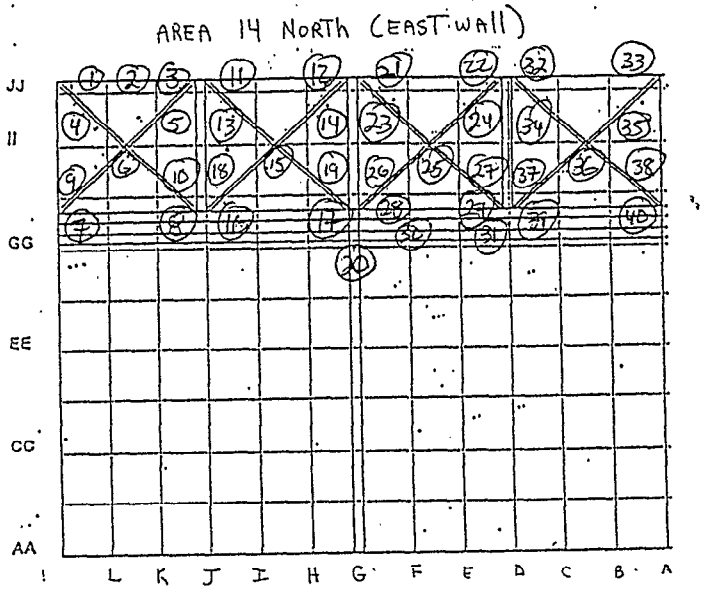
	alpha	beta-gamma
Instrument Model & s/n:		L-177/29243
Detector Model & s/n:		44-9/16220
Calibration Date:	N/A	Aug 2/98
Efficiency [Tc99] [SY90] [Th230]		.19
Detector Area (CM2)		15.5

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

Insert area map or sketch below

RP Technician: SMALLRIDGE Survey #898

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS PER MIN
(1)	JJ-L	I-BEAM		300
(2)	JJ-K	↓		300
(3)	JJ-J	↓		300
(4)	II-L	WALL & X member		200
(5)	II-J	↓		225
(6)	HH-K	↓		300
(7)	GG-L	CRANE RAIL		250
(8)	GG-J	↓		275
(9)	GG-L	WALL & X member		300
(10)	GG-J	↓		200
(11)	JJ-I	I-BEAM		325
(12)	JJ-G	↓		250
(13)	II-I	WALL & X member		250
(14)	II-G	↓		200
(15)	HH-H	↓		200
(16)	GG-I	CRANE RAIL		250
(17)	GG-G	↓		300
(18)	GG-I	WALL & X member		300
(19)	GG-I	↓		250
(20)	GG-G	LG I BEAM		175
(21)	JJ-F	I-BEAM		200
(22)	JJ-D	↓		300
(23)	II-F	WALL & X member		200
(24)	II D	↓		300
(25)	HH-E	↓		250
(26)	HH-F	↓		175
(27)	HH-D	↓		200
(28)	GG-F	CRANE RAIL		300
(29)	GG-D	↓		500
(30)	GG-F	WALL & X member		175
(31)	GG-D	↓		175
(32)	JJ-C	I-BEAM		200
(33)	JJ-A	↓		275
(34)	II-C	WALL & X member		175
(35)	II-A	↓		200
(36)	HH-B	↓		200
(37)	HH-C	↓		175
(38)	HH-A	↓		200
(39)	GG-C	CRANE RAIL		200
(40)	GG-A	↓		250



NOTE: Highest D.P. READING
500 G.C.P.M.

(#) = Direct probe Reading Location

REVIEW

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: 10/15/97
Location: B-14 A-14N (EAST WALL)
Description: Del N Survey

	alpha	beta-gamma
Instrument Model & s/n:	N/A	L-177/29243
Detector Model & s/n:		44-9/16220
Calibration Date:		Due 2/98
Efficiency [Tc99] [SY90] [Th230]		.19
Detector Area (CM2)		15.5

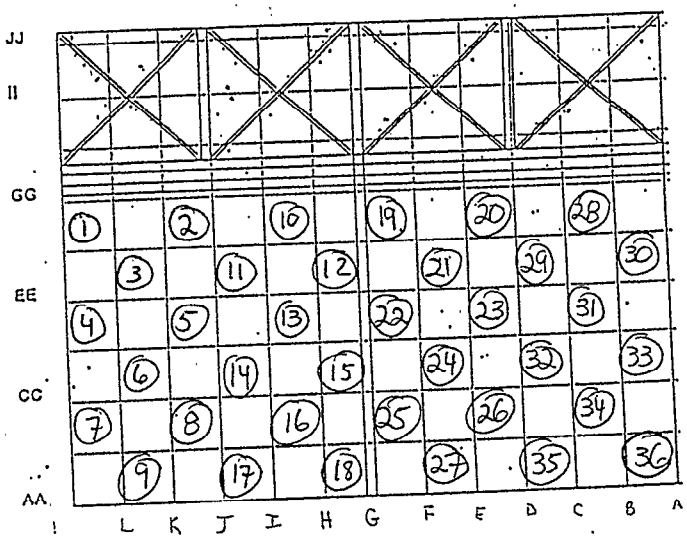
	alpha	beta-gamma
TOTAL BACKGROUND COUNTS	N/A	75
BACKGROUND COUNT TIME (MIN)		1 MIN
SAMPLE COUNT TIME (MIN)		

RP Technician: SMALLRIDGE Survey # 899-

Insert area map or sketch below

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS PER MIN
(1)	FF-L	BRICK WALL (EAST)		200
(2)	FF-J			175
(3)	EE K			175
(4)	DD L			150
(5)	DD J			150
(6)	CC K			175
(7)	BB L			200
(8)	BB J			175
(9)	AA K			150
(10)	FF-H			175
(11)	EE-I			175
(12)	EE-G			200
(13)	DD-H			150
(14)	CC-I			125
(15)	CC-G			150
(16)	BB-H			150
(17)	AA-J			150
(18)	AA-G			150
(19)	FF-F			175
(20)	FF-D			150
(21)	EE-E			150
(22)	DD-F			150
(23)	DD-D			150
(24)	CC-E			150
(25)	BB-F			175
(26)	BB-D			150
(27)	AA-E			175
(28)	FF-B			150
(29)	EE-BC			150
(30)	EE-A			150
(31)	DD-B			175
(32)	CC-C			175
(33)	CC-A			150
(34)	BB-B			150
(35)	AA-C			150
(36)	AA-A			

AREA 14 NORTH (EAST WALL)



Note (#) = Direct probe reading LOCATION

Highest D.P. Reading 200 G.C.P.M

REVIEW

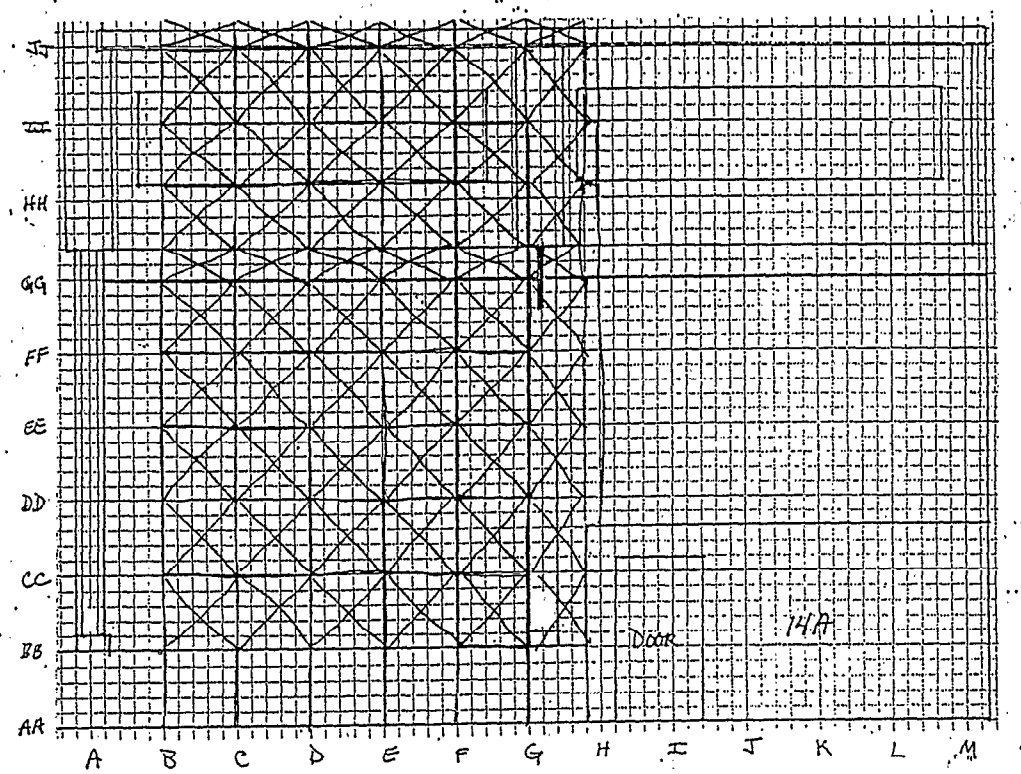
SURVEY01.XLS

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

RADIOLOGICAL SURVEY

Project: PRAXAIR
Area: B-14 A-14 WEST WALL

Date/Time 10/16/97/2200	Tech SMALLRIDGE	Instrument / sn 2221-29243	BKG = 50 CPM
Location/ Purpose AREA 14 NORTH/WEST WALL DG INSTALL		Survey # 900	RWP# N/A



Loc.	Type	Description	Gross	α dpm	Gross	β dpm
JJ-B	D.P.	I-BEAM			150	
JJ-C		↓			200	
JJ-D		↓		N	150	
II-B		BRICK ANGLEIRON			150	
II-C		↓			200	
II-D		↓		A	200	
HH-B		ANGLEIRON/BRICK			150	
HH-C		↓			150	
HH-D	↓	↓			150	

Loc	Type	Description	Gross	α dpm	Gross	β dpm
GG-B	D.P	CRANE RAIL			275	
GG-C		↓			250	
GG-A		↓		N	250	
GG-B		I-BEAM			275	
GG-C		↓			250	
GG-D		↓		A	275	
FF-B		BRICK			150	
FF-C		↓			150	
FF-D	↓	↓			150	

Types = smearable, dp = direct probe

Comments: NOTE ☒ Area Surveyed

Scalar S/N N/A — 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 WEST WALL

Date/Time 10/16/97 2200 Tech SMALLEY/OLES Equipment / sn 2221 - 29243
Location/ Purpose AREA 14N / WEST WALL Survey # 900 RWP# N/A

Loc	Type	Description	Gross	α dpm	Gross	β dpm
EEB	D.P.	BRICK			150	
EEC		↓			150	
EED		↓			200	
DD-B		BRICK			150	
DD-C		↓			175	
DD-D		↓			200	
CC-B		BRICK			200	
CC-C		↓			175	
CC-D		↓			200	
BB-B		BRICK			250	
BB-C		↓			250	
BB-D		↓			200	
JJ-E		I-BEAM			150	
JJ-F		↓			200	
II-E		BRICK/ANGLEIRON			150	
II-F		↓			200	
HH-E		ANGLEIRON/BRICK			200	
HH-F		↓			150	
GG-E		CRANE RAIL			200	
GG-F		↓			200	
GG-E		I-BEAM			350	
GG-F		↓			300	
FF-E		BRICK			200	
FF-F		↓			175	
EE-E		BRICK			150	
EE-F		↓			150	
DD-E		BRICK			175	
DD-F		↓			150	
CC-E		BRICK			175	
CC-F		↓			200	
BB-E	↓	BRICK			200	

Loc	Type	Description	Gross	α dpm	Gross	β dpm
BB-F	D.P.	BRICK			250	
JJG		I-BEAM			200	
IIG		BRICK/ANGLEIRON			175	
HHG		ANGLEIRON/BRICK			200	
GG-9		CRANE RAIL			250	
GG-9		I-BEAM			275	
FF-9		BRICK			175	
EE-9		BRICK			200	
DD-9		BRICK			200	
CC-9		BRICK			150	
BB-9	↓	BRICK			200	

Type: B = Smearable, D = Direct Probe

Comments:

Scaler S/N: DKD: EFF: MDA:
CT= DATE α:
Tech β:

Review:

Encl 3.4 to HSP 210

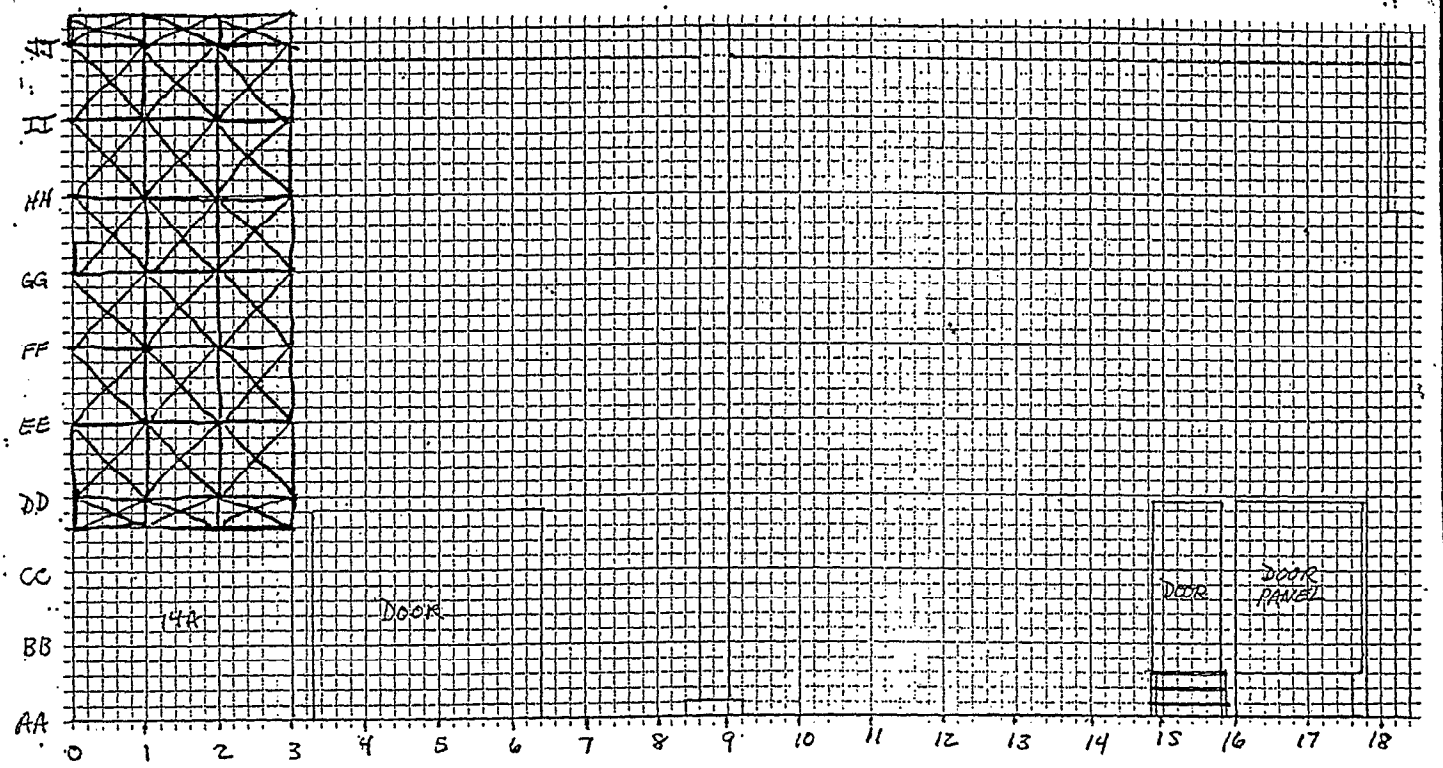
N TECHNOLOGY, INC.
:0 Maple Ave
aratoga Springs, NY
:18) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR
Area: BLDG 14 AREA 14 (NORTH WALL)

ate/Time 10/21/97/1900	Tech SMALLRIDGE	Instrument / sn L-177/29243	BKG = 50 CPM
cation/ Purpose BLDG-14 AREA 14 NORTH WALL DelTN		Survey # 913	RWP# N/A

AREA 14 NORTH NORTH WALL



CT. per MIN

Loc.	Type	Description	Gross	α dpm	Gross	β dpm
CC-0	D.P.	BRICK (NORTH WALL)			150	N/A
CC-1					150	
CC-2					160	
DD-0					175	
DD-1					150	
DD-2					150	
EE-0					200	
EE-1					150	
EE-2					150	

Loc.	Type	Description	Gross	α dpm	Gross	β dpm
FF-0	D.P.	BRICK (NORTH WALL)			175	N/A
FF-1					200	
FF-2					150	
GG-0					150	
GG-1					150	
GG-2					175	
HH-0					150	
HH-1					175	
HH-2					150	

Type: s = smearable, dp = direct probe

Comments: NOTE: ☒ AREA Surveyed

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

Review:

Encl 3.3 to HSP 210

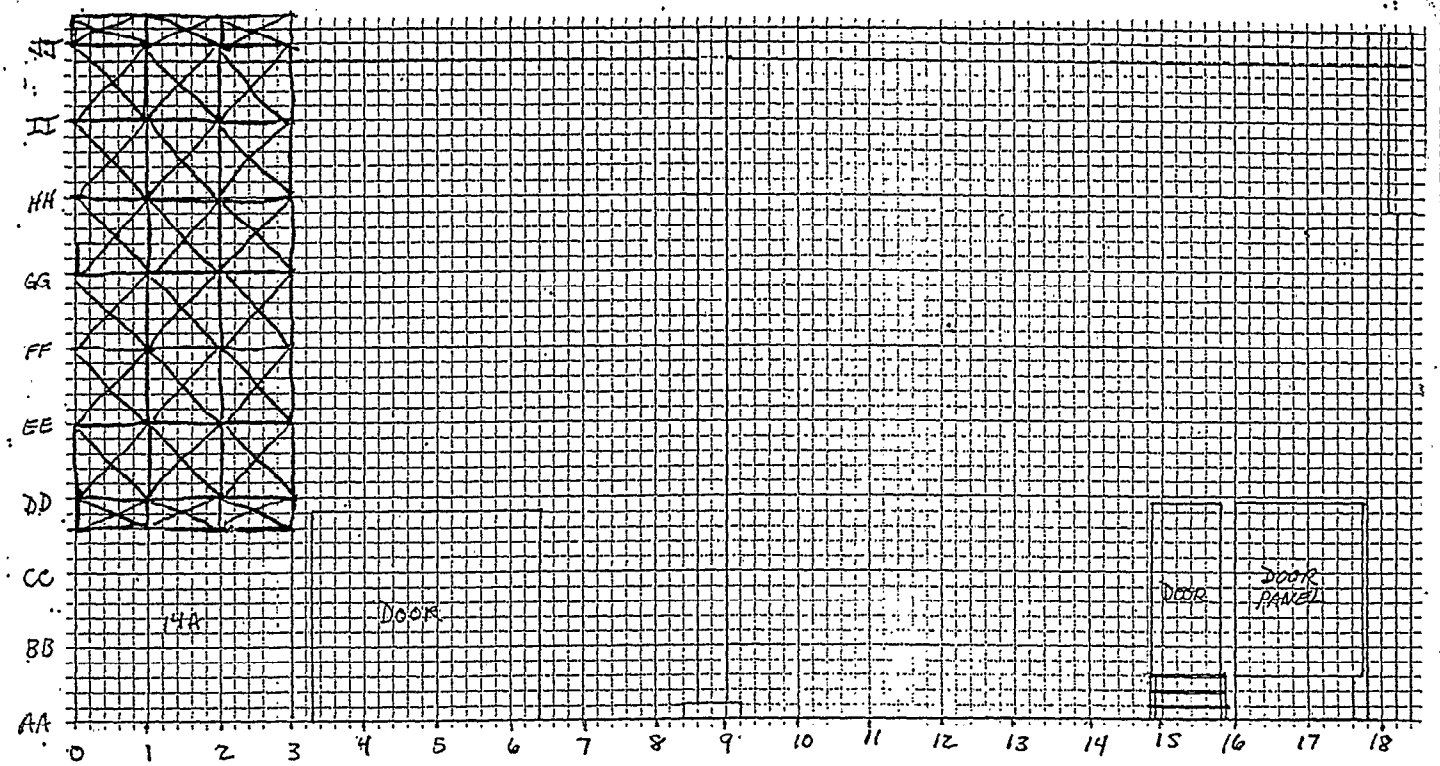
)N TECHNOLOGY, INC.
40 Maple Ave
aratoga Springs, NY
518) 584-0166

RADIOLOGICAL SURVEY

Project: PRAXAIR
Area: BLDG 14 AREA 14 (North WALL)

ate/Time 10/21/97/1900	Tech SMALLRIDGE	Instrument / sn L-177 / 29243	BKG = 50 cpm
ocation/ Purpose BLDG-14 AREA 14 NORTH WALL DeIN		Survey # 913	RWP# N/A

AREA 14 NORTH
NORTH WALL



CT per MIN

Loc.	Type	Description	Gross	α dpm	Gross	β dpm
CC-0	D.P.	BRICK (NORTH WALL)			150	N/A
CC-1					150	
CC-2					160	
DD-0					175	
DD-1					150	
DD-2					150	
EE-0					200	
EE-1					150	
EE-2					150	

Loc.	Type	Description	Gross	α dpm	Gross	β dpm
FF-0	D.P.	BRICK (NORTH WALL)			175	N/A
FF-1					200	
FF-2					150	
GG-0					150	
GG-1					150	
GG-2					175	
HH-0					150	
HH-1					175	
HH-2					150	

Types = smearable, dp = direct probe

Comments: NOTE: ☒ AREA Surveyed

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

Review:

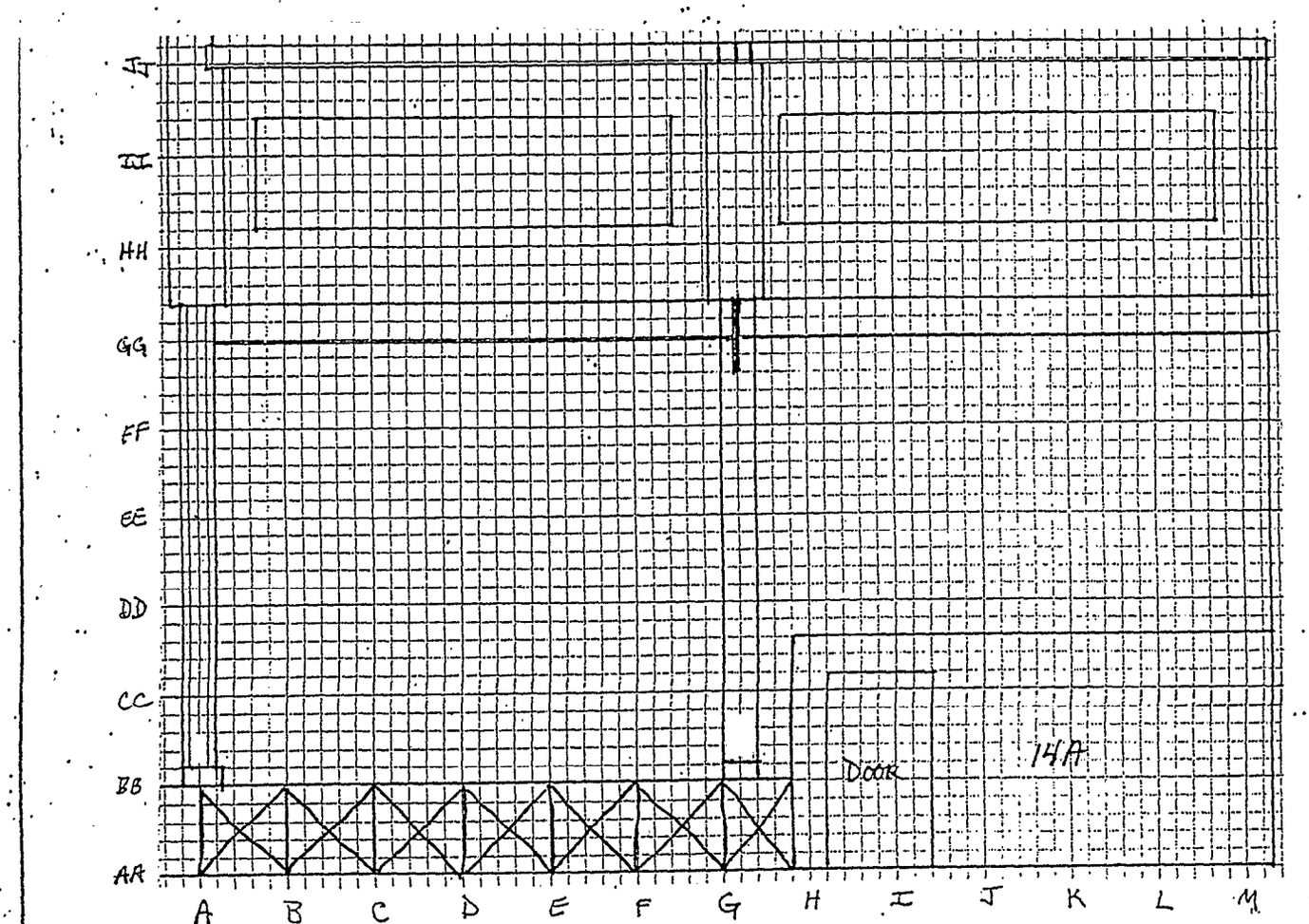
Encl 3.3 to HSP 210

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

RADIOLOGICAL SURVEY

Project: BLD 14
Area: 14N

Date/Time 10/21/97 /2230	Tech SMALLRIDGE	Instrument / sn L-177 /29243 BKG-50
Location/ Purpose AREA 14 NORTH/WEST WALL DELINEATION		Survey # 914 RWP# N/A



Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
AA-A	D.P.	KNEE WALL (WEST WALL)			500								
AA-B					500								
AA-C					600								
AA-D					700								
AA-E					600								
AA-F					600								
AA-G	↓	↓			600								
		N											
			A										

Types = smearable, dp = direct probe

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

Comments: NOTE: ☒ AREA Surveyed

Review:

Encl 3.3 to HSP 210

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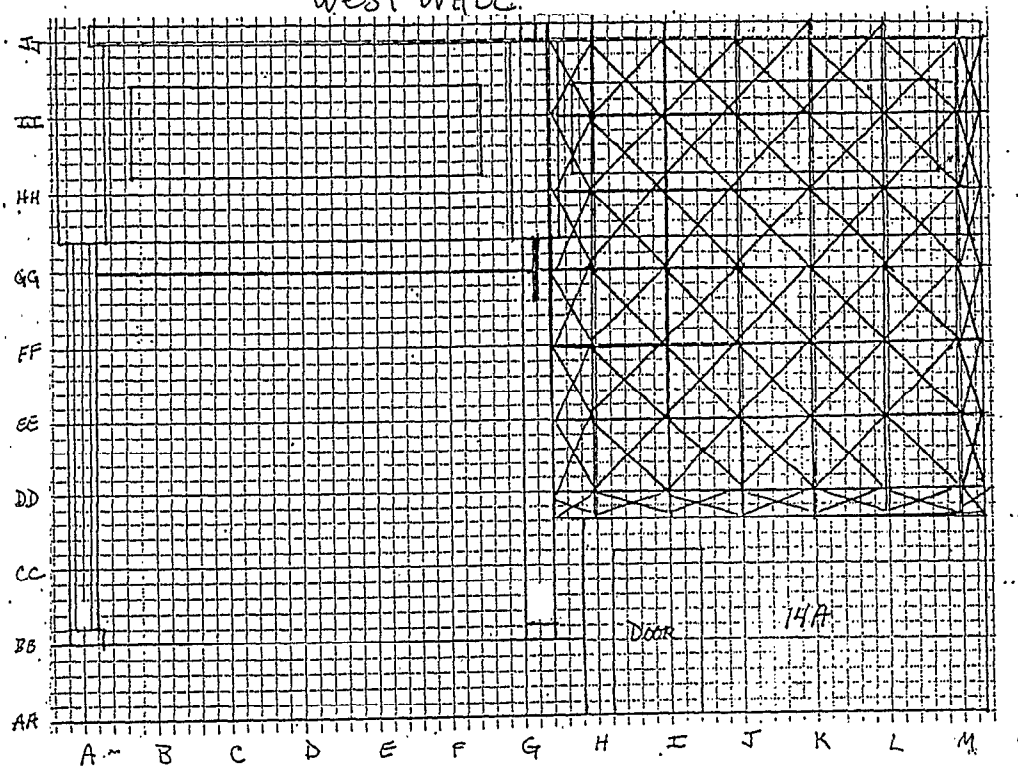
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: PRAX AIR
Area: B-14 A-14 West WALL

Date/Time 10/21/97 / 2130	Tech SMALLRIDGE	Instrument/sn L-177 / 29243	BKG=50 C.P.M
Location/ Purpose AREA 14 NORTH/WEST WALL DELINEATION		Survey # 915	RWP# N/A

West WALL.



Loc.	Type	Description	Gross	α dpm	Gross	β dpm
CC-G	D.P.	BRICK			200	N/A
DD-G		↓			150	
EE-G		↓			200	
HA-G		BRICK			200	
II-G					150	
JJ-G		I-BEAM			300	
CC-H		BRICK			200	
DD-H		↓			150	
EE-H	↓	↓			150	

Loc	Type	Description	Gross	α dpm	Gross	β dpm
FF-H	D.P.	BRICK			150	N/A
GG-H		CRANE RAIL			400	
HH-H		I-BEAM			300	
FF-H		BRICK			150	
JJ-H		I-BEAM			300	
CC-I		BRICK				
DD-I						
EE-I						
FF-I	↓	↓				

Types = smearable, dp = direct probe

Comments: Note ☒ AREA Surveyed

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

Review:

Encl 3.3 to HSP 210

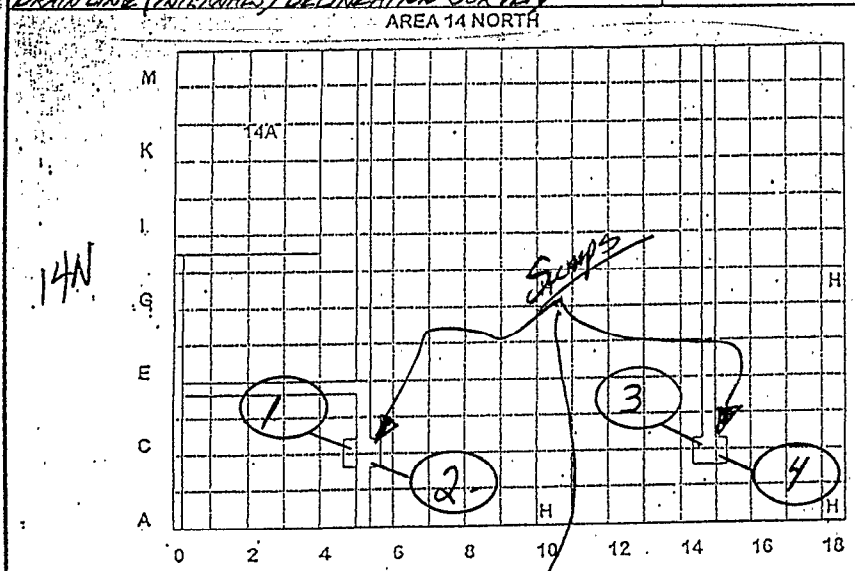
ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0166

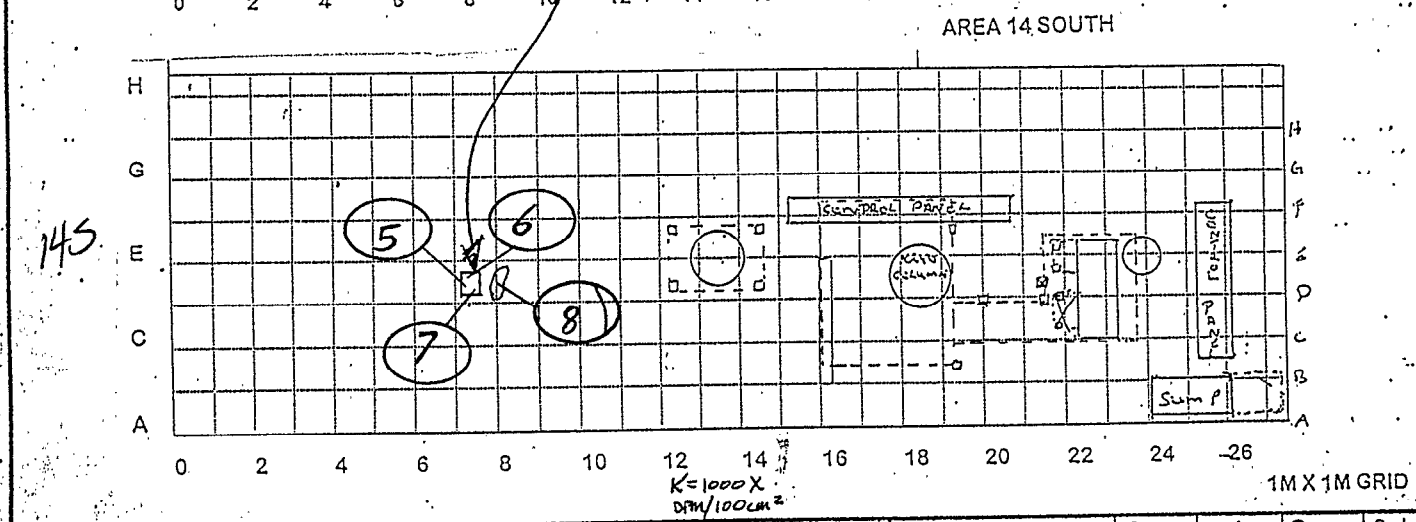
RADIOLOGICAL SURVEY

Project: PRAXAIR SITE
Area: AREA 14 NORTH & SOUTH

CAL DUE: 2-7-98
EFF. = .20
BKGD = 50 CPM BY

Date/Time 11/13/97 2130 HRS.	Tech William W. [illegible]	Instrument / sn L2221 #86308 W/44-9 #48267 ACTIVE AREA FOR DETECTOR = 15.5 cm
Location/ Purpose PRAXAIR SITE B14 AREA 14 NORTH & SOUTH		Survey # 1040 RWP# — 04
DRAIN LINE (INTERNALS) DELINEATION SURVEY		





NOTE: *DRAIN LINE INTERNALS: ALL MEASUREMENTS RECORDED, WERE TAKEN @ TOP & SIDES NOT BOTTOM DUE TO WATER, DEBRIS, & SLUDGE BEING PRESENT.

KEY: (#) = DIRECT PROBE MEASUREMENT LOCATION (1 MIN. COUNT TIME IN CPM BY)

Loc.	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
1	D.P.	DRAIN LINE INT.			1,100	34k							
2		↓			640	19k							
3		EXT. OF DRAIN (CAPPED)			3,200	102k							
4		DRAIN LINE INT.	N		1,650	52k							
5		↓		A	1,920	60k							
6					1,340	42k			N				
7		↓			420	12k			A				
8	↓	FLOOR SURFACE: UNDER TOP POUR	TOP on concrete		2k TO 5k	63k-160k							
		N A											

Type: s = smearable, dp = direct probe

Comments:

Scalar S/N		BKD	EFF	MDA
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 # 1131

Survey Date: 1/8/97 1900 HRS.
Location: PRAXAIR SITE B14 14N. FAR EAST CROSS MEMBERS UNDER CRANERAIL.
Description: INFO. SURVEY

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

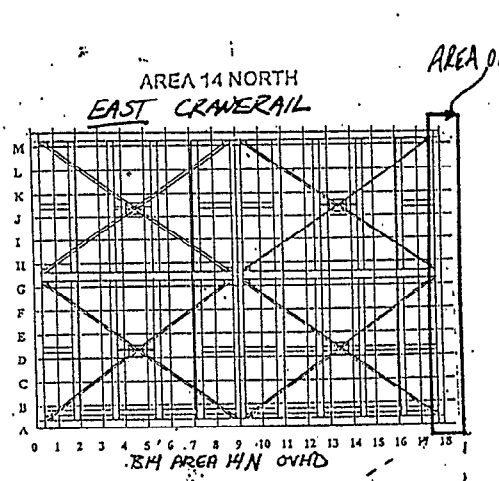
	alpha	beta-gamma B4
Instrument Model & s/n:		L2221 #86313
Detector Model,& s/n:		44-9 #48207
Calibration Date:	N/A	12/19/97
Efficiency [Tc99] [SY90] [Th230]		.20
Detector Area (CM2)		15.5

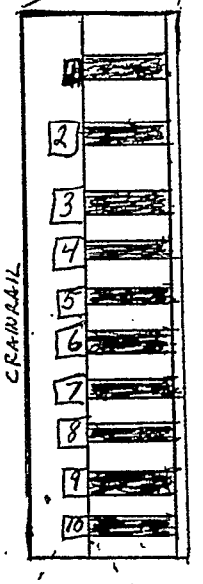
RP Technician: William W.

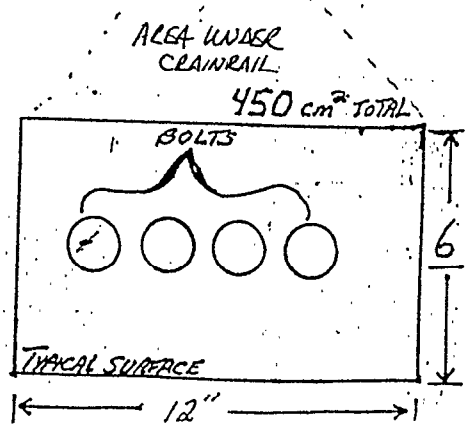
	alpha	beta-gamma B4
TOTAL BACKGROUND COUNTS		53 CPM
BACKGROUND COUNT TIME (MIN)	N/A	1 MIN.
SAMPLE COUNT TIME (MIN)		1 MIN.

Insert area map or skotch below

#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS	DPM/100cm²
1		CROSS MEMBERS UNDER CRANE RAIL		470	13.4K
2				450	12.8K
3				260	6.7K
4				330	9.0K
5	N/A		N/A	455	13.0K
6				435	12.3K
7				195	4.6K
8				295	7.8K
9				420	11.8K
10				210	5.0K







ION TECHNOLOGY, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

SURVEY # 1139

Survey Date: 1-12-98 2300 HRS.
Location: PRAXAIR SITE B14 14N. CENTER & CRANE RAIL CROSS MEMBERS (ENDS UNDER BEAM)
Description: INFO. SURVEY

	alpha	beta-gamma
Instrument Model & s/n:		L2221 # 86314
Detector Model & s/n:		44.9 # 48266
Calibration Date:	N	12-3-97
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 cpm
BACKGROUND COUNT TIME (MIN)	N	1 MIN.
SAMPLE COUNT TIME (MIN)	A	1 MIN.

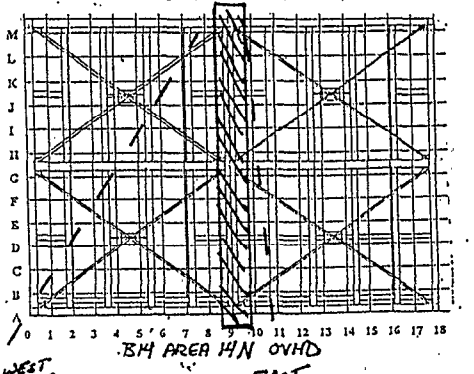
RP Technician: William W...

Insert area map or sketch below

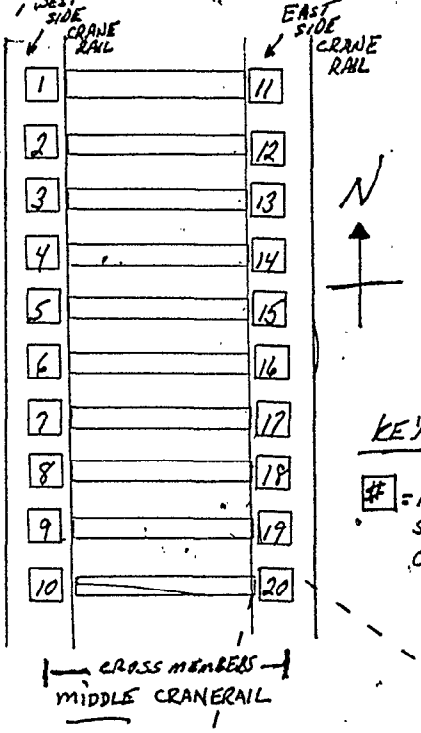
#	GRID	DESCRIPTION	alpha GROSS COUNTS	beta-gamma GROSS COUNTS	DPM/100cm²
1		CENTER CRANE RAILS		890	27K
2	1	B14 14N - CROSS MEMBERS		280	7.4K
3				470	13.5K
4				350	9.7K
5				⑤ 250 550	16.1K
6				250	6.5K
7				280	7.4K
8				260	6.8K
9				230	5.8K
10	N		N	340	9.4K
11	A		A	⑩ 390	11K
12				350	9.7K
13				290	7.4K
14				320	8.7K
15				240	6.1K
16				285	7.6K
17				190	4.5K
18				225	5.6K
19				285	7.6K
20				340	9.4K

N
A

AREA 14 NORTH
MIDDLE CRANERAIL



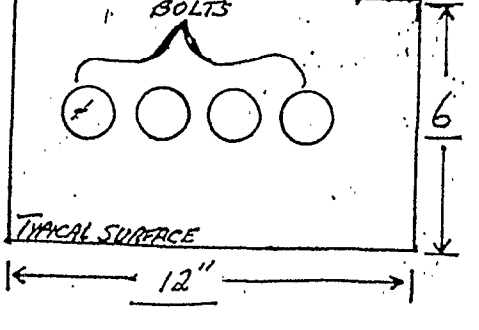
B14 AREA 14N OVHD



KEY:

[#] = AREA OF CROSS MEMBER SURVEYED UNDER CRANE RAIL BEAM.

CROSS MEMBERS
MIDDLE CRANERAIL



REVIEW

SURVEY01.XLS