APPENDIX C-6

VERIFICATION SURVEYS FOR AREAS 8, 10, AND 11

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

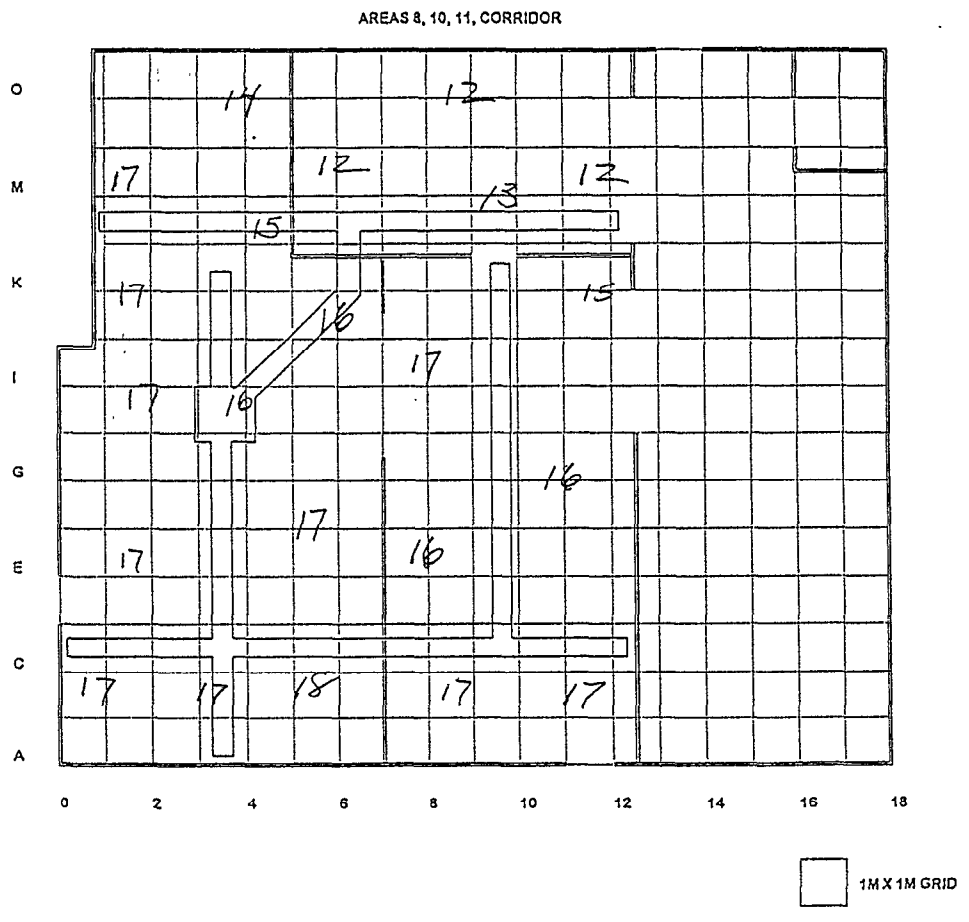
IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

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 4-14-97/0800	Tech C. HALLAM/	Instruments / sn LUD M-19/G
Location / Purpose PRAXAIR BLDG 14 AREAS 8, 10, & 11		Survey # 264 RWP # N/A
VERIFICATION/POST DECON RADIATION SURVEY		

AREAS 8, 10, 11, CORRIDOR



BKGD = 11 uR/hr

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

Comments: ALL READINGS IN uR/hr GENERAL AREA

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

Review

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-27-97
LOCATION: PRAXAIR SITE
B-14 AREA'S 8 & 10 FLOOR
α VERIF.

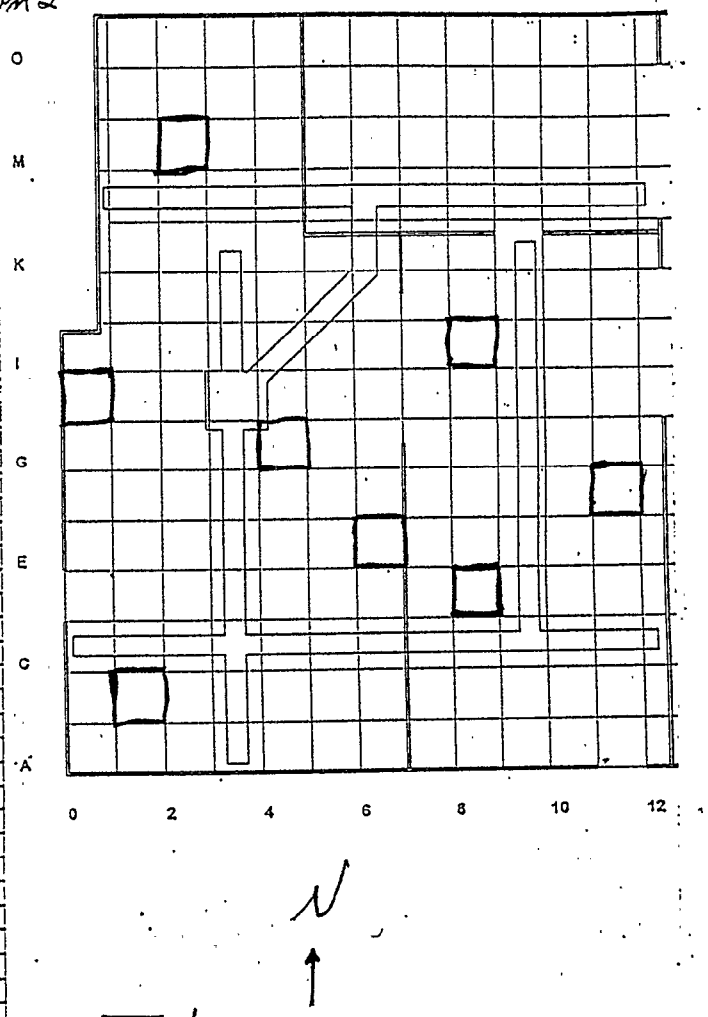
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

#185

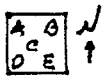
TOTAL BACKGROUND COUNTS	1
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS CPM α
1	E-7 A		3
2	E-7 B		2
3	E-7 C		3
4	E-7 D		2
5	E-7 E		1
6	F-0 A		15
7	F-0 B		1
8	F-0 C		1
9	F-0 D		1
10	F-0 E		3
11	D-8 A		4
12	D-8 B		4
13	D-8 C		10
14	D-8 D		13
15	D-8 E		6
16	F-11 A		6
17	F-11 B		4
18	F-11 C		6
19	F-11 D		4
20	F-11 E		5
21	I-8 A		0
22	I-8 B		3
23	I-8 C		2
24	I-8 D		3
25	I-8 E		6
26	M-2 A		2
27	M-2 B		3
28	M-2 C		2
29	M-2 D		3
30	M-2 E		1
31	B-1 A		2
32	B-1 B		3
33	B-1 C		2
34	B-1 D		1
35	B-1 E		4
36	G-4 A		4
37	G-4 B		2
38	G-4 C		4
39	G-4 D		3
40	G-4 E		5

AREAS 8, 10, 11 [redacted]



NOTE: SURVEY PATTERN FOR GRIDS ARE AS FOLLOWS:



Instrument Model & s/n:	(F) ESR1 w/43-5
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .12
Detector Area	cm2 = 50

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-20-97
LOCATION: B-14 AREA'S 8 & 10 FLOOR SURVEY VERIFICATION

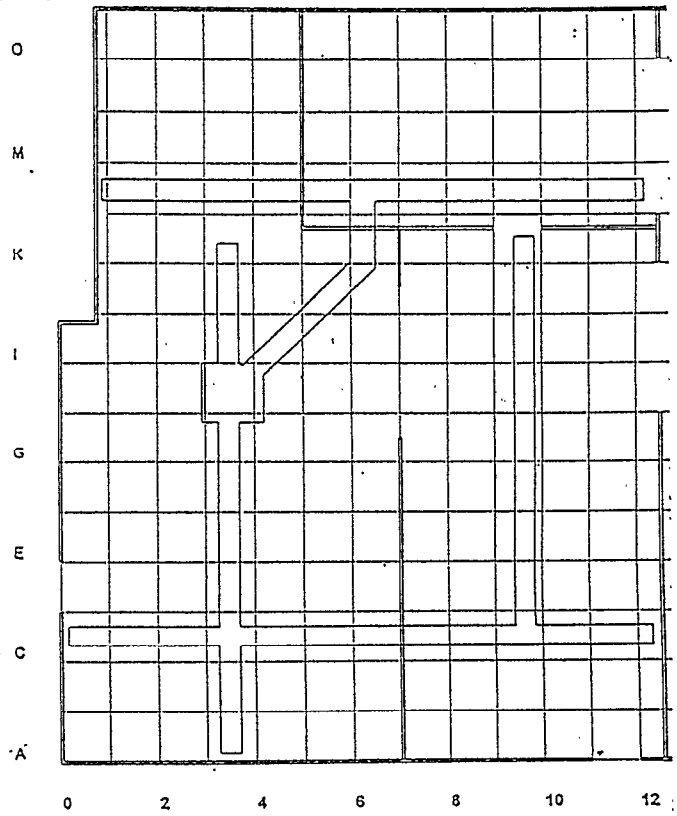
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

4001

TOTAL BACKGROUND COUNTS	900
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS CPM BY
1		A-0	1346
2		A-0	1281
3		A-1	1292
4		A-1	1259
5		A-2	1530
6		A-2	1512
7		A-3	1225
8		A-3	1158
9		A-4	1571
10		A-4	1476
11		A-5	1408
12		A-5	1469
13		A-6	1480
14		A-6	1597
15		A-7	1286
16		A-7	1531
17		A-8	1340
18		A-8	1586
19		A-9	1447
20		A-9	1294
21		A-10	1356
22		A-10	1587
23		A-11	1296
24		A-11	1276
25		A-12	1336
26		A-12	1243
27		B-0	1405
28		B-0	1387
29		B-1	1271
30		B-1	1248
31		B-2	1321
32		B-2	1590
33		B-3	1362
34		B-3	1121
35		B-4	1570
36		B-4	1599
37		B-5	1554
38		B-5	1560
39		B-6	1718
40		B-6	1498

AREAS 8, 10, 11 [redacted]



D.U.P. COUNT: GRIDS A-9 1327
B-6 1383

3-20-97

Instrument Model & s/n:	(J) L2221 W/43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 425

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-20-97
LOCATION: B-14 AREA'S 8 & 10 FLOOR SURVEY VERIFICATION

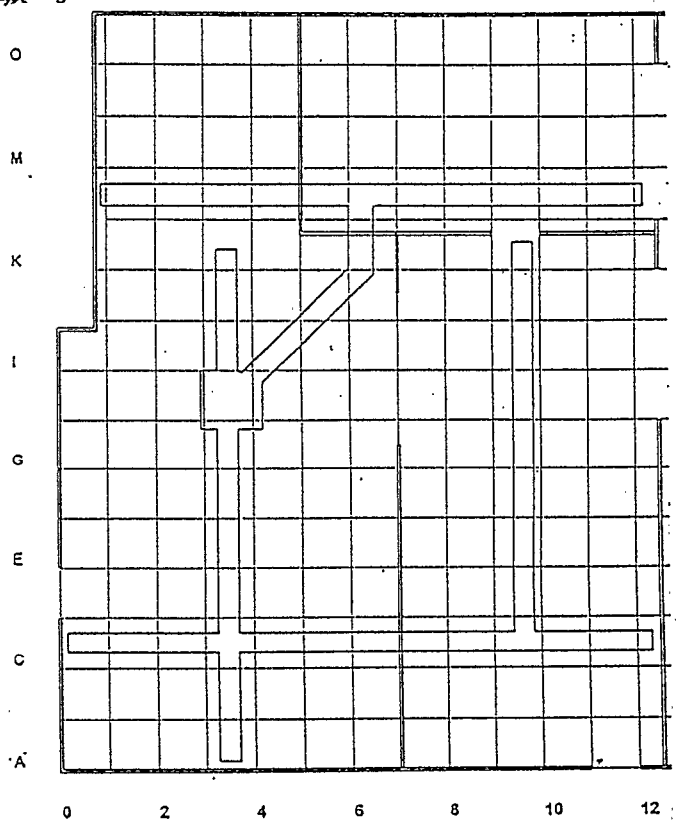
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

4002

TOTAL BACKGROUND COUNTS	900
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS CPM B8
1		B-7	1446
2		B-7	1387
3		B-8	1558
4		B-8	1430
5		B-9	1415
6		B-9	1423
7		B-10	1641
8		B-10	1448
9		B-11	1278
10		B-11	1376
11		B-12	1221
12		B-12	1840
13		C-0	1291
14		C-0	1287
15		C-1	1253
16		C-1	1158
17		C-2	1221
18		C-2	1328
19		C-3	1144
20		C-3	1111
21		C-4	1048
22		C-4	1538
23		C-5	1209
24		C-5	1367
25		C-6	1873
26		C-6	1482
27		C-7	2681
28		C-7	1906
29		C-8	1108
30		C-8	1397
31		C-9	1364
32		C-9	1152
33		C-10	903
34		C-10	1297
35		C-11	1418
36		C-11	1221
37		C-12	1549
38		C-12	1391
39		N/A	
40			

AREAS 8, 10, 11 [redacted]



D.U.P. GRIDS: C-3 1086
C-12 1427

W.
3-20-97

Instrument Model & s/n:	(5) L2221 W/43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 425

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2

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-20-97
LOCATION: B-14 AREA'S 8 & 10 FLOOR SURVEY / VERIFICATION

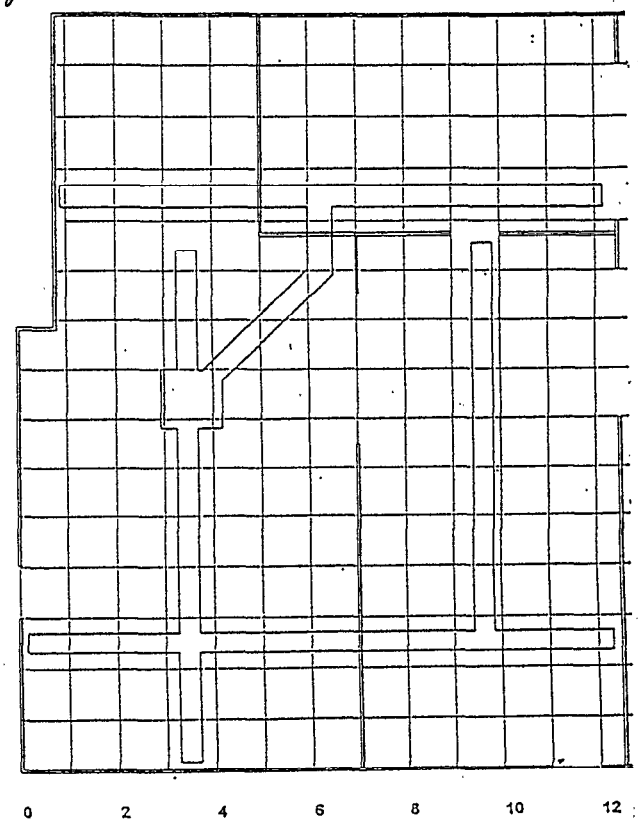
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: cpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

#4003

TOTAL BACKGROUND COUNTS	900
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS CPM βγ
1		D-0	1293
2		D-0	1326
3		D-1	1354
4		D-1	1293
5		D-2	1437
6		D-2	1471
7		D-3	1408
8		D-3	1370
9		D-4	1484
10		D-4	1313
11		D-5	1542
12		D-5	1667
13		D-6	1916
14		D-6	1781
15		D-7	1580
16		D-7	1606
17		D-8	1713
18		D-8	1410
19		D-9	1040
20		D-9	1083
21		D-10	1870
22		D-10	2174
23		D-11	1913
24		D-11	2131
25		D-12	1747
26		D-12	2140
27		E-0	1982
28		E-0	1835
29		E-1	1374
30		E-1	1871
31		E-2	1448
32		E-2	1456
33		E-3	1583
34		E-3	1431
35		E-4	1363
36		E-4	1442
37		E-5	1421
38		E-5	1374
39		E-6	1552
40		E-6	1588

AREAS 8, 10, 11 [redacted]



DUP. COUNTS: GRIDS D-9 1126
E-6 1402

W.
3-20-97

Instrument Model & s/n:	(I) L2221 W/43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 425

ENCL-C2.XLS

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

4004

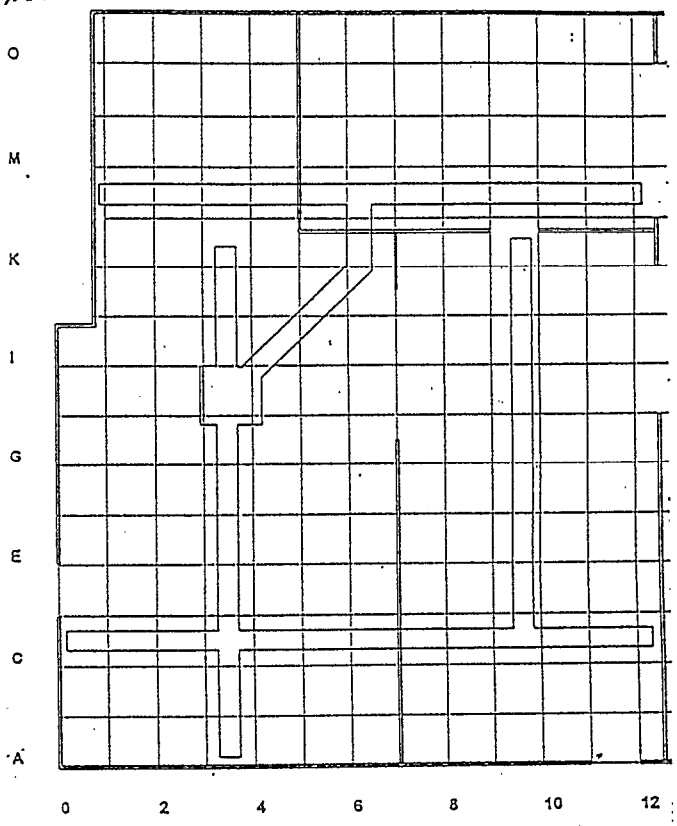
SAMPLE DATE: 3-20-97
LOCATION: B-14 AREA'S 8 & 10
FLOOR SURVEY
VERIF.

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

TOTAL BACKGROUND COUNTS	900
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS CPM BY
1		E-7	1469
2		E-7	1577
3		E-8	1306
4		E-8	1351
5		E-9	1214
6		E-9	1319
7		E-10	1259
8		E-10	1574
9		E-11	1386
10		E-11	1359
11		E-12	1790
12		E-12	1832
13		F-0	1844
14		F-0	1646
15		F-1	1123
16		F-1	1280
17		F-2	1563
18		F-2	1415
19		F-3	1486
20		F-3	1464
21		F-4	1466
22		F-4	1420
23		F-5	1487
24		F-5	1375
25		F-6	2096
26		F-6	1873
27		F-7	1514
28		F-7	1535
29		F-8	1427
30		F-8	1381
31		F-9	1028
32		F-9	1103
33		F-10	1370
34		F-10	1444
35		F-11	1568
36		F-11	1467
37		F-12	1898
38		F-12	1680
39		N/A	
40			

AREAS 8, 10, 11 [redacted]



D.U.P. COUNTS @ GRIDS : F-3 1437
F-12 1591

3-20-97

Instrument Model & s/n:	L2221 / N 43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 425

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-20-97
LOCATION:
B-14 AREA'S 8 & 10
(FLOOR SURVEY
VERIFICATION

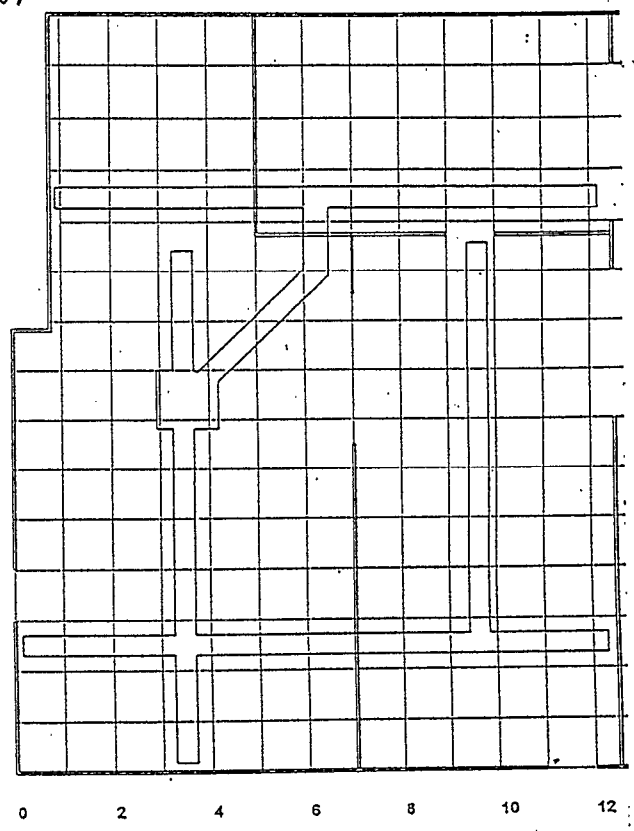
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

4005

TOTAL BACKGROUND COUNTS	900
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS	CAM BY
1		G-0	2176	O
2		G-0	1898	
3		G-1	1101	
4		G-1	1287	
5		G-2	1368	M
6		G-2	1409	
7		G-3	1388	
8		G-3	1392	
9		G-4	1308	K
10		G-4	1410	
11		G-5	1387	
12		G-5	1431	
13		G-6	1411	
14		G-6	1448	I
15		G-7	1554	
16		G-7	1683	
17		G-8	1620	
18		G-8	1422	G
19		G-9	1645	
20		G-9	1431	
21		G-10	1218	
22		G-10	1336	E
23		G-11	1335	
24		G-11	1421	
25		G-12	1448	
26		G-12	1418	C
27		H-0	2150	
28		H-0	1822	
29		H-1	2086	
30		H-1	2153	A
31		H-2	1397	
32		H-2	2083	
33		H-3	1432	
34		H-3	1562	
35		H-4	1248	
36		H-4	1181	
37		H-5	1264	
38		H-5	1414	
39		H-6	1368	
40		H-6	1274	

AREAS 8, 10, 11 [redacted]



D.U.P. COUNT @ GRIDS: G-9 1478
H-6 1287

3-20-97

Instrument Model & s/n:	(I) L2221 / W43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 425

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-20-97
LOCATION: B-14 AREA'S 8 & 10
FLOOR SURVEY
VERIF.

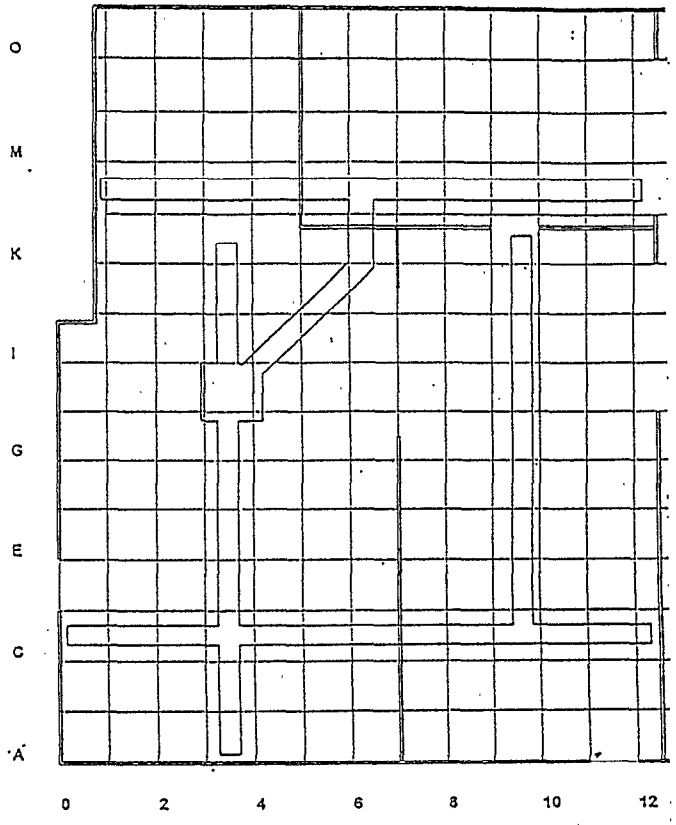
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

4006

TOTAL BACKGROUND COUNTS	900
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS CPM BY
1		H-7	1386
2		H-7	1694
3		H-8	1459
4		H-8	1370
5		H-9	1637
6		H-9	1741
7		H-10	1432
8		H-10	1345
9		H-11	1382
10		H-11	1590
11		H-12	1324
12		H-12	1407
13		I-0	1586
14		I-0	1604
15		I-1	1487
16		I-1	1461
17		I-2	1408
18		I-2	1527
19		I-3	1283
20		I-3	1076
21		I-4	1408
22		I-4	1444
23		I-5	1281
24		I-5	1288
25		I-6	1307
26		I-6	1304
27		I-7	1224
28		I-7	1290
29		I-8	1645
30		I-8	1536
31		I-9	1062
32		I-9	1022
33		I-10	1295
34		I-10	1326
35		I-11	1404
36		I-11	1605
37		I-12	1460
38		I-12	1508
39		N/A	
40			

AREAS 8, 10, 11 [redacted]



D.U.P. COUNTS @ GRIDS I-3 1040
I-12 1583

W.
3-20-97

Instrument Model & s/n:	(J) L2221/43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 425

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-20-97
LOCATION:
B-14 AREA'S 8 & 10
FLOOR SURVEY
VERIF.

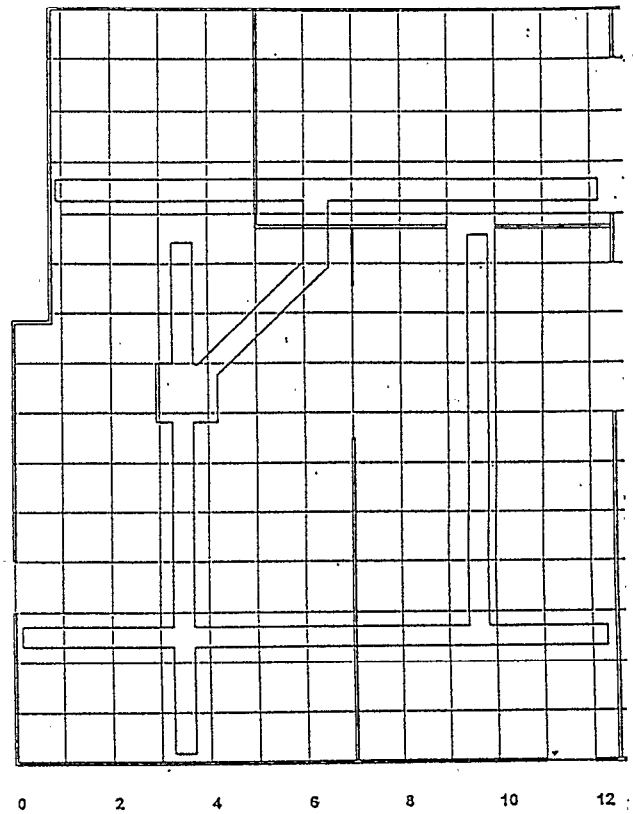
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

4007

TOTAL BACKGROUND COUNTS	900
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS CPM BK
1		J-0	1046
2		J-0	1039
3		J-1	1533
4		J-1	1504
5		J-2	1471
6		J-2	1480
7		J-3	1031
8		J-3	1108
9		J-4	1312
10		J-4	1526
11		J-5	1286
12		J-5	1214
13		J-6	1417
14		J-6	1384
15		J-7	1432
16		J-7	1390
17		J-8	1318
18		J-8	1485
19		J-9	1103
20		J-9	1043
21		J-10	1307
22		J-10	1268
23		J-11	1386
24		J-11	1308
25		J-12	1473
26		J-12	1391
27		K-0	1009
28		K-0	1047
29		K-1	1152
30		K-1	1256
31		K-2	1638
32		K-2	1262
33		K-3	1834
34		K-3	1810
35		K-4	1536
36		K-4	1627
37		K-5	1366
38		K-5	1348
39		K-6	1407
40		K-6	1421

AREAS 8, 10, 11 [redacted]



D.U.P. COUNTS @ GRIDS: J-9 1106
K-6 1381

3-20-97

Instrument Model & s/n:	(J) L2221 W/43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 425

ENCL-C2.XLS

7

(scaler measurement)

SAMPLE DATE: 3-20-97
LOCATION: B-14 AREA'S 8 & 10 FLOOR SURVEY VERIF.

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

4008

TOTAL BACKGROUND COUNTS	900
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

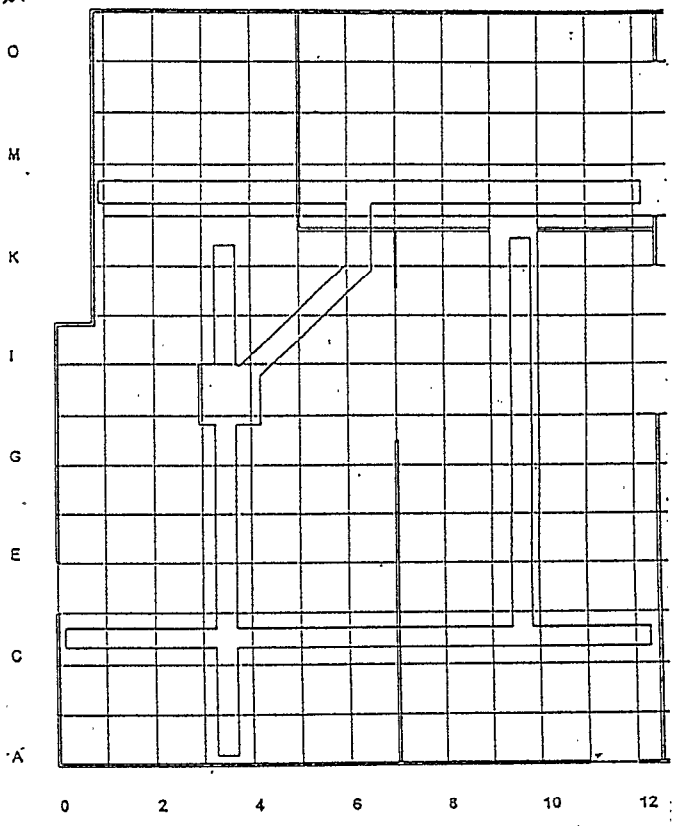
SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS CPM BK
1		K-7	1406
2		K-7	1464
3		K-8	1387
4		K-8	1293
5		K-9	1160
6		K-9	1027
7		K-10	1223
8		K-10	1247
9		K-11	1492
10		K-11	1322
11		K-12	1658
12		K-12	1586
13		L-1	1688
14		L-1	1007
15		L-2	1028
16		L-2	1116
17		L-3	1182
18		L-3	1071
19		L-4	1204
20		L-4	1103
21		M-1	1041
22		M-1	1217
23		M-2	1474
24		M-2	1506
25		M-3	1428
26		M-3	1406
27		M-4	1479
28		M-4	1354
29		N-1	1478
30		N-1	1391
31		N-2	1516
32		N-2	1496
33		N-3	1484
34		N-3	1526
35		N-4	1346
36		N-4	1022
37		O-1	1512
38		O-1	1425
39		O-2	1374
40		O-2	1264

O.U.P. COUNTS @ GRIDS: L-4 1208
O-2 1196

3-20-97

Instrument Model & s/n:	
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 425

AREAS 8, 10, 11 [redacted]



DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-20-97
LOCATION: B-14 AREA'S 8 & 10
FLOOR SURVEY
VERIF.

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

4009

TOTAL BACKGROUND COUNTS	900
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1		0-3	1407
2		0-3	1422
3		0-4	1781
4		0-4	1854
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
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27			
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29			
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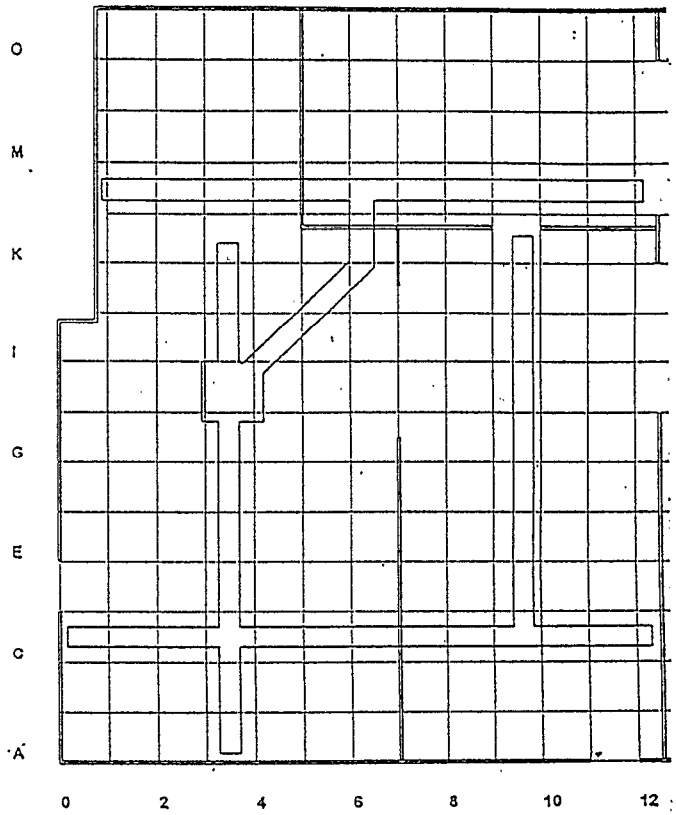
32			
33			
34			
35			
36			
37			
38			
39			
40			

AREAS 8, 10, 11 [redacted]



3-20-97

Instrument Model & s/n:	(T) L2221 W/43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 425

HILB .SSOCIATES, INC.

4010

SMEAR MEASUR. .NT ANALYSIS REPORT

SAMPLE DATE: 3-20-97
ANALYSIS DATE: 3-20-97
LOCATION: B-14 AREA 8'10 FLOOR (Verif.)

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

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
1	A-0		A	0	1					+/-		
1	A-0		BG	62						+/-		
2	A-1		A	0						+/-		
2	A-1		BG	54						+/-		
3	A-2		A	0						+/-		
3	A-2		BG	64						+/-		
4	A-3		A	1						+/-		
4	A-3		BG	64						+/-		
5	A-4		A	1						+/-		
5	A-4		BG	61						+/-		
6	A-5		A	0						+/-		
6	A-5		BG	61						+/-		
7	A-6		A	0						+/-		
7	A-6		BG	58						+/-		
8	A-7		A	0						+/-		
8	A-7		BG	53						+/-		
9	A-8		A	1						+/-		
9	A-8		BG	55						+/-		
10	A-9		A	1						+/-		
10	A-9		BG	56						+/-		
11	A-10		A	0						+/-		
11	A-10		BG	62						+/-		
12	A-11		A	0						+/-		
12	A-11		BG	67						+/-		
13	A-12		A	0						+/-		
13	A-12		BG	55						+/-		
14	B-0		A	0						+/-		
14	B-0		BG	54						+/-		
15	B-1		A	0						+/-		
15	B-1		BG	58						+/-		
16	B-2		A	0						+/-		
16	B-2		BG	58						+/-		
17	B-3		A	0						+/-		
17	B-3		BG	56						+/-		
18	B-4		A	0						+/-		
18	B-4		BG	73						+/-		
19	B-5		A	0						+/-		
19	B-5		BG	62						+/-		
20	B-6		A	0						+/-		
20	B-6		BG	76						+/-		

- D.U.P. SMEAR; B-6 A/BG 1/53

Instrument Model & s/n:	LB124M 2929	91234
Detector Model & s/n:	43-10-1	035270
Calibration Date:	2-7-97	
Efficiency BG (Beta/Gamma):	.29	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.33	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	158	700	0-2	3-20-97
Beta-Gamma	44223	700	700 x 63	

HILB ASSOCIATES, INC. #4011

SMEAR MEASUREMENT ANALYSIS REPORT

SAMPLE DATE: 3-20-97
ANALYSIS DATE:
LOCATION: B-14 AREA 8&10 FLOOR (Verif.)

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

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
1	B-7		A	0						+/-		
1	B-7		BG	58						+/-		
2	B-8		A	1						+/-		
2	B-8		BG	50						+/-		
3	B-9		A	0						+/-		
3	B-9		BG	47						+/-		
4	B-10		A	0						+/-		
4	B-10		BG	63						+/-		
5	B-11		A	1						+/-		
5	B-11		BG	58						+/-		
6	B-12		A	0						+/-		
6	B-12		BG	65						+/-		
7	C-0		A	1						+/-		
7	C-0		BG	61						+/-		
8	C-1		A	0						+/-		
8	C-1		BG	68						+/-		
9	C-2		A	1						+/-		
9	C-2		BG	61						+/-		
10	C-3		A	1						+/-		
10	C-3		BG	61						+/-		
11	C-4		A	1						+/-		
11	C-4		BG	59						+/-		
12	C-5		A	0						+/-		
12	C-5		BG	73						+/-		
13	C-6		A	0						+/-		
13	C-6		BG	55						+/-		
14	C-7		A	0						+/-		
14	C-7		BG	79						+/-		
15	C-8		A	0						+/-		
15	C-8		BG	50						+/-		
16	C-9		A	0						+/-		
16	C-9		BG	59						+/-		
17	C-10		A	0						+/-		
17	C-10		BG	60						+/-		
18	C-11		A	0						+/-		
18	C-11		BG	46						+/-		
19	C-12		A	0						+/-		
19	C-12		BG	66						+/-		
20	D-0		A	0						+/-		
20	D-0		BG	65						+/-		
-DUP-	D-0		A	0								
			BG	55								

Instrument Model & s/n:	Ludlum 2929	91234
Detector Model & s/n:	43-10-1	085270
Calibration Date:	2-7-97	
Efficiency BG (Beta/Gamma):	.29	cpm / dpm based on S/Y90
Efficiency A (Alpha):	.33	cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	158	700	0.2	3-20-97
Beta-Gamma	44,223	700	63	

HILB. SSOCIATES, INC. # 4012

SMEAR MEASUR...NT ANALYSIS REPORT

SAMPLE DATE: 3-20-97
ANALYSIS DATE:
LOCATION: B-14 AREA 8'10 FLOOR (Verify)

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

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
1	D-1		A	2						+/-		
1	D-1		BG	59						+/-		
2	D-2		A	2						+/-		
2	D-2		BG	64						+/-		
3	D-3		A	0						+/-		
3	D-3		BG	66						+/-		
4	D-4		A	0						+/-		
4	D-4		BG	71						+/-		
5	D-5		A	2						+/-		
5	D-5		BG	73						+/-		
6	D-6		A	1						+/-		
6	D-6		BG	77						+/-		
7	D-7		A	0						+/-		
7	D-7		BG	62						+/-		
8	D-8		A	0						+/-		
8	D-8		BG	48						+/-		
9	D-9		A	1						+/-		
9	D-9		BG	69						+/-		
10	D-10		A	0						+/-		
10	D-10		BG	51						+/-		
11	D-11		A	0						+/-		
11	D-11		BG	66						+/-		
12	D-12		A	0						+/-		
12	D-12		BG	62						+/-		
13	E-0		A	1						+/-		
13	E-0		BG	70						+/-		
14	E-1		A	0						+/-		
14	E-1		BG	51						+/-		
15	E-2		A	0						+/-		
15	E-2		BG	59						+/-		
16	E-3		A	0						+/-		
16	E-3		BG	61						+/-		
17	E-4		A	0						+/-		
17	E-4		BG	65						+/-		
18	E-5		A	0						+/-		
18	E-5		BG	56						+/-		
19	E-6		A	0						+/-		
19	E-6		BG	65						+/-		
20	E-7		A	0						+/-		
20	E-7		BG	57						+/-		

D.U.P. SMEAR; E-7 ~~A 88~~ 1 BG 63

Instrument Model & s/n: LUDLUM 2929 91239
Detector Model & s/n: 43-10-1
Calibration Date: 2-7-97
Efficiency BG (Beta/Gamma): .29 cpm / dpm based on S/Y90
Efficiency A (Alpha): .33 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	158	700	0.2	3-26-97
Beta-Gamma	44223	700	63	

ENCL-C1.XLS

HILB . .SSOCIATES, INC.

4013

SMEAR MEASUR .NT ANALYSIS REPORT

SAMPLE DATE: 3-20-97
ANALYSIS DATE:
LOCATION: PRAXAIR SITE BLDG. #14 AREA'S 8 & 10 FLOOR (Verif)

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	E-8		A	1						+/-		
1	E-8		BG	55						+/-		
2	E-9		A	0						+/-		
2	E-9		BG	55						+/-		
3	E-10		A	0						+/-		
3	E-10		BG	63						+/-		
4	E-11		A	0						+/-		
4	E-11		BG	53						+/-		
5	E-12		A	0						+/-		
5	E-12		BG	59						+/-		
6	F-0		A	1						+/-		
6	F-0		BG	53						+/-		
7	F-1		A	0						+/-		
7	F-1		BG	81						+/-		
8	F-2		A	0						+/-		
8	F-2		BG	59						+/-		
9	F-3		A	0						+/-		
9	F-3		BG	65						+/-		
10	F-4		A	0						+/-		
10	F-4		BG	52						+/-		
11	F-5		A	0						+/-		
11	F-5		BG	62						+/-		
12	F-6		A	0						+/-		
12	F-6		BG	73						+/-		
13	F-7		A	0						+/-		
13	F-7		BG	54						+/-		
14	F-8		A	0						+/-		
14	F-8		BG	71						+/-		
15	F-9		A	0						+/-		
15	F-9		BG	65						+/-		
16	F-10		A	0						+/-		
16	F-10		BG	67						+/-		
17	F-11		A	1						+/-		
17	F-11		BG	59						+/-		
18	F-12		A	0						+/-		
18	F-12		BG	66						+/-		
19	G-0		A	2						+/-		
19	G-0		BG	59						+/-		
20	G-1		A	0						+/-		
20	G-1		BG	68						+/-		

O.U.P. SMEAR: G-1 A/BG 2/56

Instrument Model & s/n: LUDLUM 2929 91234
Detector Model & s/n: 43-10-1 085270
Calibration Date: 2-7-97
Efficiency BG (Beta/Gamma): .29 cpm / dpm based on S/Y90
Efficiency A (Alpha): .33 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	158	700	0.2	3-20-97
Beta-Gamma	44223	700	63	

4014

HILB ASSOCIATES, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

SAMPLE DATE: 3-20-97
ANALYSIS DATE:
LOCATION: PRAXAIR SITE BLDG #14 AREA'S 8 & 10 FLOOR (Very)

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	G-2		A	0						+/-		
1	G-2		BG	64						+/-		
2	G-3		A	0						+/-		
2	G-3		BG	62						+/-		
3	G-4		A	0						+/-		
3	G-4		BG	51						+/-		
4	G-5		A	0						+/-		
4	G-5		BG	66						+/-		
5	G-6		A	0						+/-		
5	G-6		BG	54						+/-		
6	G-7		A	0						+/-		
6	G-7		BG	66						+/-		
7	G-8		A	0						+/-		
7	G-8		BG	52						+/-		
8	G-9		A	1						+/-		
8	G-9		BG	65						+/-		
9	G-10		A	0						+/-		
9	G-10		BG	59						+/-		
10	G-11		A	0						+/-		
10	G-11		BG	71						+/-		
11	G-12		A	1						+/-		
11	G-12		BG	54						+/-		
12	H-0		A	1						+/-		
12	H-0		BG	59						+/-		
13	H-1		A	1						+/-		
13	H-1		BG	68						+/-		
14	H-2		A	0						+/-		
14	H-2		BG	57						+/-		
15	H-3		A	0						+/-		
15	H-3		BG	58						+/-		
16	H-4		A	0						+/-		
16	H-4		BG	54						+/-		
17	H-5		A	0						+/-		
17	H-5		BG	58						+/-		
18	H-6		A	0						+/-		
18	H-6		BG	57						+/-		
19	H-7		A	1						+/-		
19	H-7		BG	57						+/-		
20	H-8		A	1						+/-		
20	H-8		BG	59						+/-		

D.U.P. SMEAR: H-8 A/BG 2/66

Instrument Model & s/n: LuDLUM 2929 91234
Detector Model & s/n: 43-10-1 085270
Calibration Date: 2-7-97
Efficiency BG (Beta/Gamma): .29 cpm / dpm based on S/Y90
Efficiency A (Alpha): .33 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	158	700	0-2	3-20-97
Beta-Gamma	44223	700	63	

4015

HILB. ASSOCIATES, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

SAMPLE DATE: 3-20-97
ANALYSIS DATE:
LOCATION: PRAXAIR SITE BLDG #14 AREA'S 8 & 10 FLOOR (Verify)

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	H-9		A	1						+/-		
1	H-9		BG	59						+/-		
2	H-10		A	0						+/-		
2	H-10		BG	70						+/-		
3	H-11		A	0						+/-		
3	H-11		BG	58						+/-		
4	H-12		A	0						+/-		
4	H-12		BG	63						+/-		
5	I-0		A	0						+/-		
5	I-0		BG	61						+/-		
6	I-1		A	1						+/-		
6	I-1		BG	75						+/-		
7	I-2		A	1						+/-		
7	I-2		BG	80						+/-		
8	I-3		A	0						+/-		
8	I-3		BG	73						+/-		
9	I-4		A	0						+/-		
9	I-4		BG	67						+/-		
10	I-5		A	0						+/-		
10	I-5		BG	77						+/-		
11	I-6		A	1						+/-		
11	I-6		BG	76						+/-		
12	I-7		A	0						+/-		
12	I-7		BG	59						+/-		
13	I-8		A	0						+/-		
13	I-8		BG	58						+/-		
14	I-9		A	0						+/-		
14	I-9		BG	46						+/-		
15	I-10		A	0						+/-		
15	I-10		BG	57						+/-		
16	I-11		A	0						+/-		
16	I-11		BG	49						+/-		
17	I-12		A	0						+/-		
17	I-12		BG	49						+/-		
18	J-1		A	0						+/-		
18	J-1		BG	82						+/-		
19	J-2		A	0						+/-		
19	J-2		BG	66						+/-		
20	J-3		A	1						+/-		
20	J-3		BG	53						+/-		

O.U.P. SMEAR: J-3 A/BG 1/70

Instrument Model & s/n: Ludlum 2929 91234
Detector Model & s/n: 43-10-1 025270
Calibration Date: 2-7-97
Efficiency BG (Beta/Gamma): .29 cpm / dpm based on S/Y90
Efficiency A (Alpha): .33 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	158	700	0.2	3-20-97
Beta-Gamma	44223	700	63	

ENCL-C1.XLS

4016

HILBL ASSOCIATES, INC.

SMEAR MEASUREMENT ANALYSIS REPORT

SAMPLE DATE: 3-20-97
ANALYSIS DATE:
LOCATION: PRAXAIR SITE BLDG #14 AREAS 8 & 10 FLOOR (Verify)

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	J-4		A	0						+/-		
1	J-4		BG	60						+/-		
2	J-5		A	1						+/-		
2	J-5		BG	66						+/-		
3	J-6		A	0						+/-		
3	J-6		BG	70						+/-		
4	J-7		A	0						+/-		
4	J-7		BG	61						+/-		
5	J-8		A	0						+/-		
5	J-8		BG	57						+/-		
6	J-9		A	0						+/-		
6	J-9		BG	66						+/-		
7	J-10		A	0						+/-		
7	J-10		BG	56						+/-		
8	J-11		A	0						+/-		
8	J-11		BG	77						+/-		
9	J-12		A	2						+/-		
9	J-12		BG	59						+/-		
10	K-1		A	0						+/-		
10	K-1		BG	60						+/-		
11	K-2		A	0						+/-		
11	K-2		BG	54						+/-		
12	K-3		A	1						+/-		
12	K-3		BG	49						+/-		
13	K-4		A	0						+/-		
13	K-4		BG	63						+/-		
14	K-5		A	1						+/-		
14	K-5		BG	65						+/-		
15	K-6		A	0						+/-		
15	K-6		BG	61						+/-		
16	K-7		A	1						+/-		
16	K-7		BG	41						+/-		
17	K-8		A	0						+/-		
17	K-8		BG	54						+/-		
18	K-9		A	0						+/-		
18	K-9		BG	66						+/-		
19	K-10		A	1						+/-		
19	K-10		BG	64						+/-		
20	K-11		A	0						+/-		
20	K-11		BG	58						+/-		

O.U.P. SMEAR: K-11 A/BG 0/41

Instrument Model & s/n: Ludlum 2929 91234
Detector Model & s/n: 43-10-1 085270
Calibration Date: 2-7-97
Efficiency BG (Beta/Gamma): .29 cpm / dpm based on S/Y90
Efficiency A (Alpha): .33 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	158	700	0.2	3-20-97
Beta-Gamma			63	

ENCL-C1.XLS

4017

HILBL SSOCIATES, INC.

SMEAR MEASURE.. ..NT ANALYSIS REPORT

SAMPLE DATE: 3-20-97
ANALYSIS DATE:
LOCATION: PRAXAIR SITE BLDG. #14 AREA'S 8 & 10 FLOOR (Verif)

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	K-12		A	0						+/-		
1	K-12		BG	51						+/-		
2	M-1		A	0						+/-		
2	M-1		BG	55						+/-		
3	M-2		A	0						+/-		
3	M-2		BG	64						+/-		
4	M-3		A	0						+/-		
4	M-3		BG	63						+/-		
5	M-4		A	0						+/-		
5	M-4		BG	61						+/-		
6	N-1		A	0						+/-		
6	N-1		BG	50						+/-		
7	N-2		A	0						+/-		
7	N-2		BG	64						+/-		
8	N-3		A	0						+/-		
8	N-3		BG	54						+/-		
9	N-4		A	0						+/-		
9	N-4		BG	46						+/-		
10	O-1		A	1						+/-		
10	O-1		BG	62						+/-		
11	O-2		A	0						+/-		
11	O-2		BG	62						+/-		
12	O-3		A	0						+/-		
12	O-3		BG	62						+/-		
13	O-4		A	0						+/-		
13	O-4		BG	67						+/-		
14			A							+/-		
14			BG							+/-		
15			A							+/-		
15			BG							+/-		
16			A							+/-		
16			BG		N					+/-		
17			A							+/-		
17			BG							+/-		
18			A			A				+/-		
18			BG							+/-		
19			A							+/-		
19			BG							+/-		
20			A							+/-		
20			BG							+/-		

D.U.P. SMEAR: O-4 A/BG 0/62

Instrument Model & s/n: LUDLUM 2929 91234
Detector Model & s/n: 43-10-1 085270
Calibration Date: 2-7-97
Efficiency BG (Beta/Gamma): .29 cpm / dpm based on S/Y90
Efficiency A (Alpha): .33 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	158	700	0.2	3-20-97
Beta-Gamma	44223	700	63	

ENCL-C1.XLS

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-24-97
LOCATION: PRAXAIR SITE BLDG #14
(AREA 10, NORTH & EAST WALLS (GRIDS AA & BB)
VERIF. SURVEY

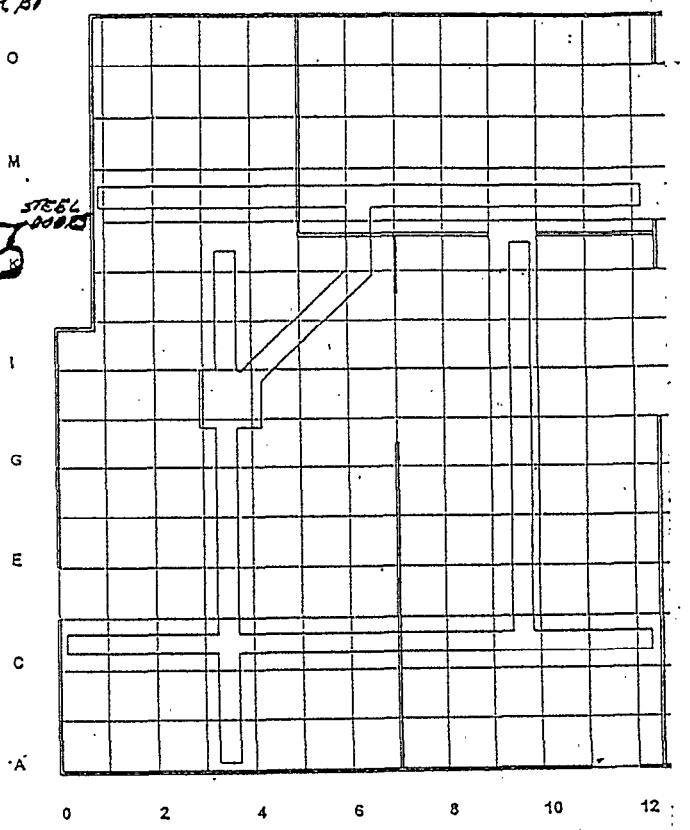
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

#4018

TOTAL BACKGROUND COUNTS	900
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS cpm BY
1	AA-A-12	EAST WALL SEE GRID MAP	1801
2	B-12		1914
3	C-12		1652
4	D-12		1944
5	E-12		1812
6	F-12		1797
7	G-12		1311
8	H-12		874
9	I-12		814
10	J-12		853
11	K-12		1374
12	BB A-12		1422
13	B-12		1390
14	C-12		1275
15	D-12		1355
16	E-12		1441
17	F-12		1426
18	G-12		1357
19	H-12		758
20	I-12		684
21	J-12		783
22	K-12		1765
23	AA-K-7	NORTH WALL	1792
24	K-8		1344
25	K-9		1213
26	K-10		1937
27	K-11		1951
28	K-12		1960
29	BB-K-7		2148
30	K-8		1906
31	K-9		1327
32	K-10		1964
33	K-11		2037
34	K-12		1794
35			
36			
37		N	
38			
39		A	
40			

AREAS 8, 10, 11 [redacted]



– DUP READINGS ARE AS FOLLOWS: AA-I-12 = 937 cpm BY – SMEAR #35
AA-K-11 = 1843 cpm BY – SMEAR #36

William [signature]
3-24-97

Instrument Model & s/n:	(J) L2221 w/43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 425

(scaler measurement)

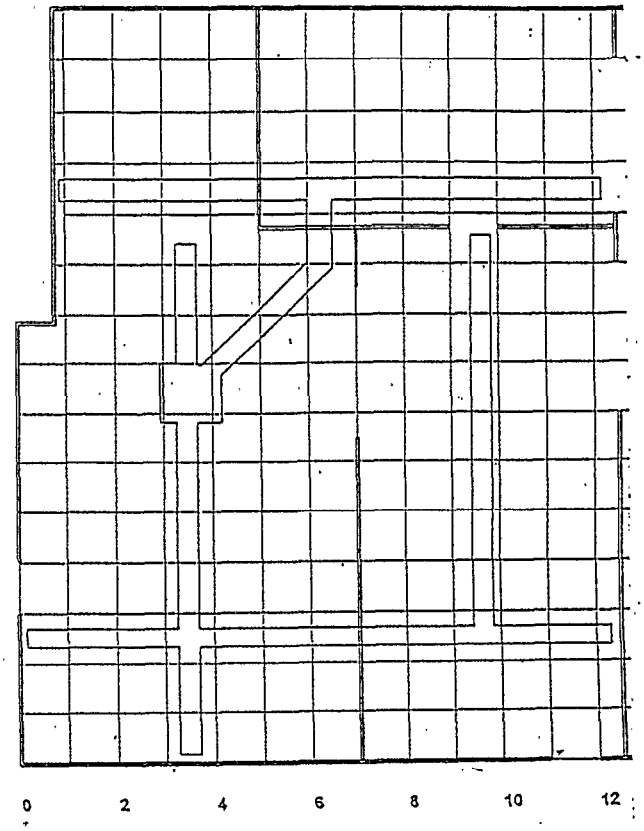
SAMPLE DATE: 3-24-97
LOCATION: PRAXAIR SITE BLDG. #14
AREA 10, WALLS (AA & BB GRIDS)
SOUTH & WEST
VERIFICATION SURVEY

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements # 4019

TOTAL BACKGROUND COUNTS	900
BACKGROUND COUNT TIME (MIN)	1MIN
SAMPLE COUNT TIME (MIN)	1MIN.

SAMPLE #		LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
37	1	AA-A-7	WEST WALL SEE GRID MAP	1743
38	2	B-7		1771
39	3	C-7		1750
40	4	D-7		1740
41	5	E-7		1699
42	6	F-7		1594
43	7	G-7		1572
44	8	J-7		1677
45	9	K-7		1594
46	10	BB-A-7		1561
47	11	B-7		1693
48	12	C-7		1647
49	13	D-7		1508
50	14	E-7		1648
51	15	F-7		1471
52	16	G-7		1574
53	17	J-7		1593
54	18	K-7		1633
55	19	AA-A-7	SOUTH WALL SEE GRID MAP	1494
56	20	A-8		1652
57	21	A-9		1510
58	22	A-10		1690
59	23	A-11		1684
60	24	A-12		1483
61	25	BB-A-7		1222
62	26	A-8		1539
63	27	A-9		1629
64	28	A-10		1557
65	29	A-11		1662
66	30	A-12		1714
	31			
	32			
	33			
	34		N	N
	35		A	A
	36			
	37			
	38			
	39			
	40			

AREAS 8, 10, 11 [redacted]



VERIF. 2ND OR RECOUNT: GRID # AA-J7 = 1736 - SMEAR # 67
GRID # BB-A8 = 1711 - SMEAR # 68

W
3-24-97

Instrument Model & s/n:	(J) L2221 w/43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 425

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-25-97
LOCATION: BLDG. #14 AREA 8
WALL SURVEY (VERIF.)

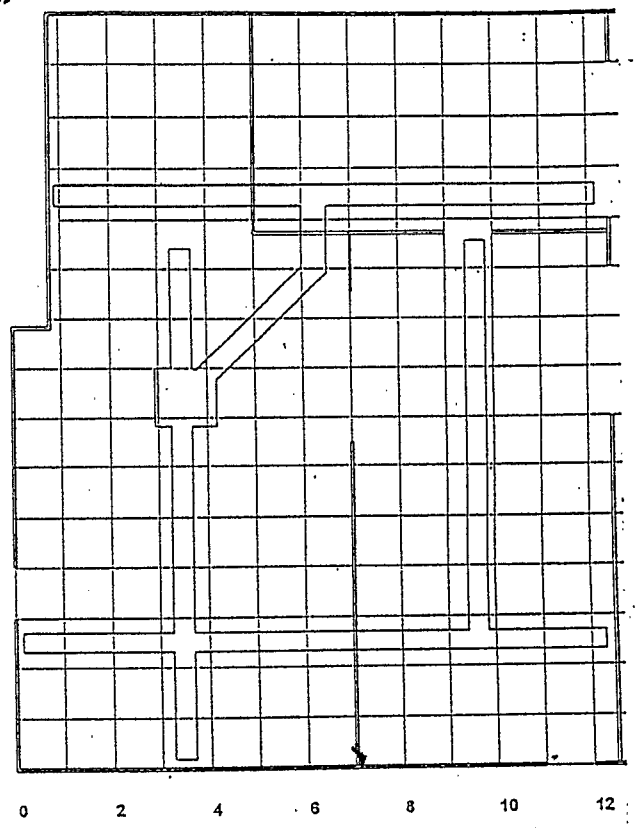
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

4020

TOTAL BACKGROUND COUNTS	900
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #		LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS CPM BY
69	1	AA-A-0	AREA 8 SOUTH WALL	1797
70	2	A-2		1997
71	3	A-4		1696
72	4	A-6		1868
73	5	BB-A-0		1859
74	6	A-2		1667
75	7	A-4		1652
76	8	A-6		1835
77	9	AA-0-1	NORTH WALL	1803
78	10	0-3		1682
79	11	0-4		1771
80	12	BB-0-1		1841
81	13	0-3		1598
82	14	0-4		786
83	15	AA-B-0	WEST WALL	1353
84	16	C-0		1405
85	17	E-0		1539
86	18	G-0		1534
87	19	I-0		1781
88	20	K-0		1796
89	21	M-0		1575
90	22	BB-B-0		1436
91	23	C-0		1395
92	24	E-0		1494
93	25	G-0		1595
94	26	I-0		1616
95	27	K-0		1706
96	28	M-0		1483
97	29	AA-B-6	EAST WALL	1898
98	30	D-6		2684
99	31	F-6		1874
100	32	K-6		1430
101	33	K-5	NORTH WALL	1355
102	34	M-5	EAST WALL	1607
103	35	BB-B-6		1268
104	36	0-6		1710
105	37	F-6		1480
106	38	K-6		1592
107	39	K-5	NORTH WALL	1395
108	40	M-5	EAST WALL	1523

AREAS 8, 10, 11 [redacted]



→ DUP READINGS ARE AS FOLLOWS: AA-0-3 = 608 cpm BY - SMEAR #109
AA-K-6 = 1508 cpm BY - SMEAR #110

W. [illegible]
3-25-97

Instrument Model & s/n:	INST. (J) L2221 N/43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 425

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-27-97
LOCATION: PRAXAIR SITE
B-14 AREA'S 8 & 10 WALLS
& VERIF.

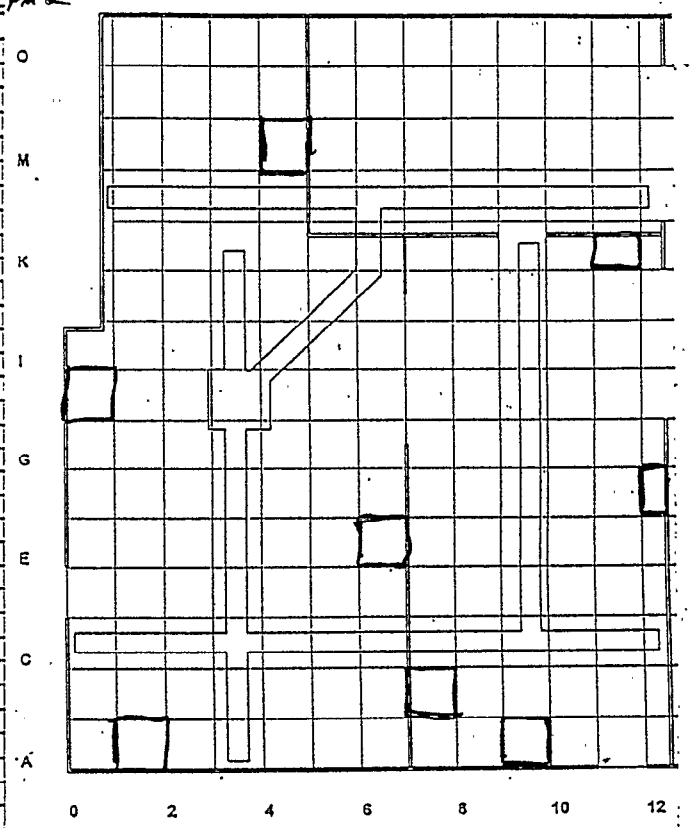
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

#4021

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

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS cpm 2
1 AA	H-O A		1
2	B		1
3	C		2
4	D		0
5	E		3
6 BB	A-1 A		5
7	B		2
8	C		4
9	D		0
10	E		4
11 AA	M-4 A		5
12	B		1
13	C		2
14	D		2
15	E		2
16 BB	F-6 A		4
17	B		2
18	C		1
19	D		3
20	E		3
21 AA	G-7 A		4
22	B		1
23	C		0
24	D		1
25	E		3
26 BB	A-9 A		1
27	B		0
28	C		2
29	D		0
30	E		3
31 AA	O-12 A		1
32	B		3
33	C		1
34	D		2
35	E		0
36 BB	K-10 A		2
37	B		6
38	C		1
39	D		0
40	E		0

AREAS 8, 10, 11 [redacted]



NOTE: SURVEY PATTERN FOR GRIDS ARE AS FOLLOWS: A B C D E FACING GRID.

W
3-27-97

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

HILB ASSOCIATES, INC. #4022

SMEAR MEASUREMENT ANALYSIS REPORT

SAMPLE DATE: 3-24-97
ANALYSIS DATE:
LOCATION: B-14 AREA'S 8 & 10 WALL VERIF. SURVEY

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

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
1	AA-A-12		A	0						+/-		
1	A-12		BG	41						+/-		
2	B-12		A	0						+/-		
2	B-12		BG	53						+/-		
3	C-12		A	1						+/-		
3	C-12		BG	52						+/-		
4	D-12		A	3						+/-		
4	D-12		BG	34						+/-		
5	E-12		A	0						+/-		
5	E-12		BG	51						+/-		
6	F-12		A	1						+/-		
6	F-12		BG	47						+/-		
7	G-12		A	0						+/-		
7	G-12		BG	42						+/-		
8	H-12		A	1						+/-		
8	H-12		BG	45						+/-		
9	I-12		A	0						+/-		
9	I-12		BG	46						+/-		
10	J-12		A	0						+/-		
10	J-12		BG	47						+/-		
11	K-12		A	0						+/-		
11	K-12		BG	51						+/-		
12	BB-A-12		A	1						+/-		
12	A-12		BG	50						+/-		
13	B-12		A	0						+/-		
13	B-12		BG	49						+/-		
14	C-12		A	0						+/-		
14	C-12		BG	54						+/-		
15	D-12		A	0						+/-		
15	D-12		BG	45						+/-		
16	E-12		A	1						+/-		
16	E-12		BG	51						+/-		
17	F-12		A	1						+/-		
17	F-12		BG	54						+/-		
18	G-12		A	0						+/-		
18	G-12		BG	48						+/-		
19	H-12		A	0						+/-		
19	H-12		BG	60						+/-		
20	I-12		A	1						+/-		
20	I-12		BG	52						+/-		

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

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

ENCL-C1.XLS

W
3-24-97

HILB ASSOCIATES, INC. # 4023

SMEAR MEASUREMENT ANALYSIS REPORT

SAMPLE DATE: 3-24-97
ANALYSIS DATE: B-14 AREA's 8 & 10 WALL VERIF. SURVEY
LOCATION:

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)
21 1		BB-J-12		A	0	1					+/-		
21 1		J-12		BG	33						+/-		
22 2		K-12		A	0						+/-		
22 2		K-12		BG	49						+/-		
23 3		AA-K-7		A	2						+/-		
23 3		K-7		BG	52						+/-		
24 4		K-8		A	0						+/-		
24 4		K-8		BG	38						+/-		
25 5		K-9		A	0						+/-		
25 5		K-9		BG	51						+/-		
26 6		K-10		A	1						+/-		
26 6		K-10		BG	47						+/-		
27 7		K-11		A	1						+/-		
27 7		K-11		BG	50						+/-		
28 8		K-12		A	0						+/-		
28 8		K-12		BG	45						+/-		
29 9		BB-K-7		A	1						+/-		
29 9		K-7		BG	49						+/-		
30 10		K-8		A	0						+/-		
30 10		K-8		BG	42						+/-		
31 11		K-9		A	1						+/-		
31 11		K-9		BG	37						+/-		
32 12		K-10		A	1						+/-		
32 12		K-10		BG	45						+/-		
33 13		K-11		A	1						+/-		
33 13		K-11		BG	33						+/-		
34 14		K-12		A	0						+/-		
34 14		K-12		BG	46						+/-		
35 15	*	AA-I-12	D.U.P. SMEAR	A	0						+/-		
35 15		AA-I-12	↓	BG	47						+/-		
36 15	*	AA-K-11	D.U.P. SMEAR	A	0						+/-		
36 15		AA-K-11	↓	BG	50						+/-		
37 17		AA-A-7		A	1						+/-		
37 17		A-7		BG	45						+/-		
38 18		B-7		A	0						+/-		
38 18		B-7		BG	48						+/-		
39 19		C-7		A	1						+/-		
39 19		C-7		BG	53						+/-		
40 20		D-7		A	0						+/-		
40 20		D-7		BG	49						+/-		

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

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

ENCL-C1.XLS

3-24-97

HILB_ ASSOCIATES, INC. #4024

SMEAR MEASUR_ _NT ANALYSIS REPORT

SAMPLE DATE: 3-24-97
ANALYSIS DATE: B-14 AREA'S 8&10 WALL VERIF. SURVEY
LOCATION:

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)
41	1	AA-E-7		A	0						+/-		
41	1	E-7		BG	45						+/-		
42	2	F-7		A	1						+/-		
42	2	F-7		BG	46						+/-		
43	3	G-7		A	0						+/-		
43	3	G-7		BG	51						+/-		
44	4	J-7		A	1						+/-		
44	4	J-7		BG	49						+/-		
45	5	k-7		A	0						+/-		
45	5	k-7		BG	44						+/-		
46	6	AB-A-7		A	1						+/-		
46	6	A-7		BG	41						+/-		
47	7	B-7		A	0						+/-		
47	7	B-7		BG	47						+/-		
48	8	C-7		A	1						+/-		
48	8	C-7		BG	50						+/-		
49	9	D-7		A	0						+/-		
49	9	D-7		BG	41						+/-		
50	10	E-7		A	0						+/-		
50	10	E-7		BG	45						+/-		
51	11	F-7		A	0						+/-		
51	11	F-7		BG	52						+/-		
52	12	G-7		A	1						+/-		
52	12	G-7		BG	43						+/-		
53	13	J-7		A	0						+/-		
53	13	J-7		BG	45						+/-		
54	14	k-7		A	0						+/-		
54	14	K-7		BG	55						+/-		
55	15	AA-A-7		A	0						+/-		
55	15	A-7		BG	45						+/-		
56	16	A-8		A	0						+/-		
56	16	A-8		BG	47						+/-		
57	17	A-9		A	1						+/-		
57	17	A-9		BG	51						+/-		
58	18	A-10		A	1						+/-		
58	18	A-10		BG	41						+/-		
59	19	A-11		A	0						+/-		
59	19	A-11		BG	45						+/-		
60	20	A-12		A	0						+/-		
60	20	A-12		BG	49						+/-		

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

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

ENCL-C1.XLS

3-24-97

HILL ASSOCIATES, INC. #4025

SMEAR MEASUREMENT ANALYSIS REPORT

SAMPLE DATE: 3-24-97
ANALYSIS DATE:
LOCATION: B-14 AREA'S 8 & 10 WALL VERIF. SURVEY

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

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
61 1	BB-A-7		A	0						+/-		
61 1	A-7		BG	43						+/-		
62 2	A-8		A	0						+/-		
62 2	A-8		BG	47						+/-		
63 3	A-9		A	0						+/-		
63 3	A-9		BG	51						+/-		
64 4	A-10		A	1						+/-		
64 4	A-10		BG	49						+/-		
65 5	A-11		A	0						+/-		
65 5	A-11		BG	45						+/-		
66 6	A-12		A	2						+/-		
66 6	A-12		BG	49						+/-		
67 7 *	AA-J-7	DUP. SMEAR	A	1						+/-		
67 7	AA-J-7	↓	BG	50						+/-		
68 8 *	BB-A-8	DUP. SMEAR	A	1						+/-		
68 8	BB-A-8	↓	BG	46						+/-		
69 9	AA-A-0		A	0						+/-		
69 9	A-0		BG	43						+/-		
70 10	A-2		A	1						+/-		
70 10	A-2		BG	46						+/-		
71 11	A-4		A	2						+/-		
71 11	A-4		BG	59						+/-		
72 12	A-6		A	0						+/-		
72 12	A-6		BG	48						+/-		
73 13	BB-A-0		A	1						+/-		
73 13	A-0		BG	47						+/-		
74 14	A-2		A	2						+/-		
74 14	A-2		BG	51						+/-		
75 15	A-4		A	1						+/-		
75 15	A-4		BG	48						+/-		
76 16	A-6		A	0						+/-		
76 16	A-6		BG	56						+/-		
77 17	AA-0-1		A	1						+/-		
77 17	0-1		BG	42						+/-		
78 18	0-3		A	2						+/-		
78 18	0-3		BG	48						+/-		
79 19	0-4		A	1						+/-		
79 19	0-4		BG	50						+/-		
80 20	BB-0-1		A	0						+/-		
80 20	0-1		BG	50						+/-		

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

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

ENCL-C1.XLS

3-24-97

HILL ASSOCIATES, INC. #4026

SMEAR MEASUREMENT ANALYSIS REPORT

SAMPLE DATE: 3-25-97
ANALYSIS DATE:
LOCATION: B-14-'AREAS 8&10 WALL VERIF. SURVEY

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

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION(1)	RADIATION TYPE	GROSS SAMPLE (COUNTS)	COUNT TIME (MIN)	MDCR (CPM)	NET SAMPLE COUNT RATE (CPM)	RADIATION TYPE	RESULTS (PER 100CM2)		ERROR (95% LEVEL)	MDA (PER 100CM2)
81 1	BB-0-3		A	0						+/-		
81 1	0-3		BG	51						+/-		
82 2	0-4		A	0						+/-		
82 2	0-4		BG	58						+/-		
83 3	AA-B-0		A	1						+/-		
83 3	B-0		BG	49						+/-		
84 4	C-0		A	1						+/-		
84 4	C-0		BG	43						+/-		
85 5	E-0		A	0						+/-		
85 5	E-0		BG	47						+/-		
86 6	G-0		A	0						+/-		
86 6	G-0		BG	54						+/-		
87 7	I-0		A	1						+/-		
87 7	I-0		BG	48						+/-		
88 8	k-0		A	0						+/-		
88 8	k-0		BG	51						+/-		
89 9	M-0		A	1						+/-		
89 9	M-0		BG	47						+/-		
90 10	BB-B-0		A	2						+/-		
90 10	B-0		BG	44						+/-		
91 11	C-0		A	1						+/-		
91 11	C-0		BG	42						+/-		
92 12	E-0		A	0						+/-		
92 12	E-0		BG	41						+/-		
93 13	G-0		A	0						+/-		
93 13	G-0		BG	51						+/-		
94 14	I-0		A	1						+/-		
94 14	I-0		BG	45						+/-		
95 15	K-0		A	1						+/-		
95 15	K-0		BG	38						+/-		
96 16	M-0		A	1						+/-		
96 16	M-0		BG	43						+/-		
97 17	AA-B-6		A	0						+/-		
97 17	B-6		BG	47						+/-		
98 18	D-6		A	1						+/-		
98 18	D-6		BG	48						+/-		
99 19	F-6		A	2						+/-		
99 19	F-6		BG	50						+/-		
100 20	K-6		A	1						+/-		
100 20	K-6		BG	42						+/-		

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

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

ENCL-C1.XLS

3-25-97

HILB... ...SSOCIATES, INC. # 4027

SMEAR MEASUR...NT ANALYSIS REPORT

SAMPLE DATE: 3-25-97
ANALYSIS DATE: B-14' AREAS 8&10 WALL VERIF. SURVEY.
LOCATION:

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)
101 1	AA-~~0-8~~ K-5		A	0						+/-		
101 1	AA-K-5		BG	49						+/-		
102 2	↓ M-5		A	1						+/-		
102 2	↓ M-5		BG	41						+/-		
103 3	BB-B-6		A	0						+/-		
103 3	B-6		BG	49						+/-		
104 4	D-6		A	0						+/-		
104 4	D-6		BG	48						+/-		
105 5	F-6		A	0						+/-		
105 5	F-6		BG	48						+/-		
106 6	K-6		A	1						+/-		
106 6	K-6		BG	51						+/-		
107 7	K-5		A	2						+/-		
107 7	K-5		BG	49						+/-		
108 8	M-5		A	0						+/-		
108 8	M-5		BG	57						+/-		
109 9 *	AA-0-3	DUP. SMEAR	A	1						+/-		
109 9	AA+0-3	↓	BG	49						+/-		
110 10 *	AA-K-6	DUP SMEAR	A	1						+/-		
110 10	AA-K-6	↓	BG	54						+/-		
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:
Detector Model & s/n:
Calibration Date:
Efficiency BG (Beta/Gamma): cpm / dpm based on S/Y90
Efficiency A (Alpha): cpm / dpm based on Th230

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

ENCL-C1.XLS

W. [signature]
3-25-97

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-25-97
LOCATION: PRAXAIR BLDG #14
AREAS 8 & 10 OVERHEAD
VERIF. SURVEY

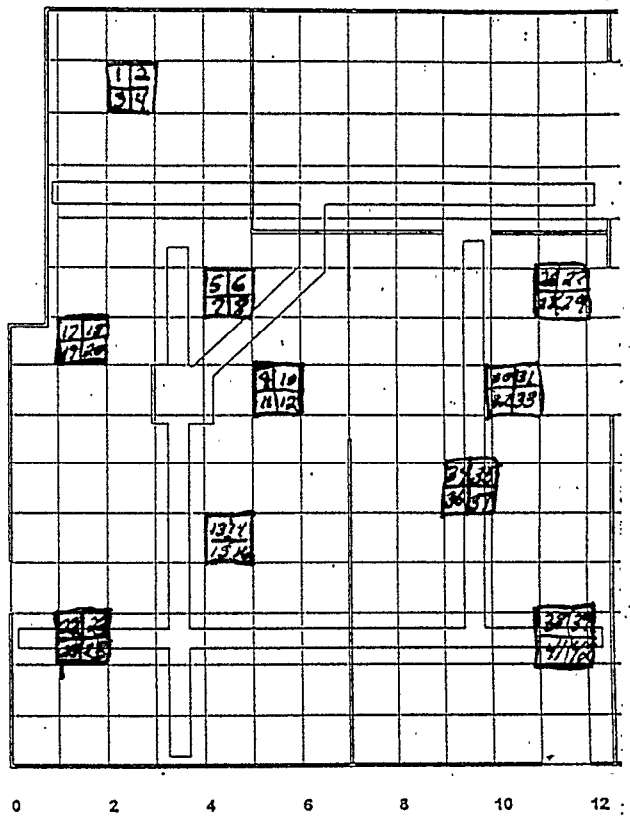
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

#4028

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

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
	N-2		86
1	SEE MAP	I BEAM HORIZONTAL	89 CPM
2	N-2	ELECTRICAL CONDUIT	78
3	N-2	PIPE CHASE INSULATION	115
4	N-2	METAL VALVE	84
5	J-5	AIR DUCT EXTERNAL	101
6	J-5	~~FAN~~ TRACKER WALL INTERNAL	137
7	J-5	AIR HANDLER UNIT INTERNAL	99
8	J-5	PIPE CHASE INSULATED	76
9	H-5	AIR DUCT EXTERNAL TOP	127
10	H-5	PIPE CHASE INSULATED	118
11	H-5	CONDUIT	83
12	H-5	METAL PIPE	71
13	E-4	AIR DUCT TOP EXTERNAL	76
14	E-4	AIR DUCT TOP EXTERNAL	88
15	E-4	I BEAM HORIZONTAL	73
16	E-4	ANGLE IRON HORIZONTAL	64
17	I-1	AIR DUCT TOP EXTERNAL	93
18	I-1	I BEAM HORIZONTAL	105
19	I-1	METAL PIPE	70
20	I-1	HOIST RAIL	67
21	I-1	HOIST RAIL -DUP-	75
22	C-1	I. BEAM HORIZONTAL	106
23	C-1	VENT. DUCT	97
24	C-1	CEILING	146
25	C-1	PIPE (SPRINKLER)	89
26	J-11	I BEAM HORIZONTAL	98
27	J-11	INSULATED PIPE	103
28	J-11	10" METAL PIPE	93
29	J-11	1" PIPE METAL	102
30	H-10	I BEAM HORIZONTAL	111
31	H-10	INSULATED PIPE	94
32	H-10	10" METAL PIPE	106
33	H-10	CEILING	143
34	F-9	6" METAL PIPE	108
35	F-9	AIR VENT. UNIT-EXTERNAL	96
36	F-9	INSULATED PIPE	93
37	F-9	~~LIGHT FIXTURE~~ CEILING	168
38	C-11	CEILING	145
39	C-11	I BEAM HORIZONTAL	121
40	C-11	-DUP- I BEAM HORIZONTAL	109
41	C-11	CHAIN HOIST	87
42	C-11	ELECTRICAL CONDUIT	76

AREAS 8, 10, 11 [redacted]



William Cole
3-25-97

Instrument Model & s/n:	INST. ⓪ L2221
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .21
Detector Area	cm2 = 10.5

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-25-97
LOCATION: PRAXAIR BLDG. #14
(AREAS 8 & 10 OVERHEAD
VERIF. SURVEY

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

4029

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

SAMPLE #		LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS CPM Bβ
	1	N/A	~~ELECTRICAL CONDUIT~~	
	2		~~2 HAND RAIL~~	
	3			
43	4	B-7	CEILING	156
44	5	B-7	I BEAM HORIZONTAL	127
45	6	B-7	I BEAM HORIZONTAL	114
46	7	B-7	CEILING	141
47	8	A-11	PIPE CHASE	83
48	9	A-11	CONDUIT	95
49	10	A-11	CEILING	138
50	11	A-11	I. BEAM HORIZONTAL	99
51	12	J-3	1" METAL PIPE	86
52	13	J-3	INSULATED PIPE	109
53	14	J-3	AIR DUCT VERTICAL EXT.	91
54	15	J-3	I BEAM VERTICAL	111
55	16	E-7	4" BEAM	85
56	17	E-7	1" METAL PIPE	118
57	18	E-7	CONDUIT	97
58	19	E-7	CEILING	161
59	20	I-7	AREA 8 E. WALL ABOVE DOOR	114
60	21	I-7	-DUP-	93
61	22	I-7	AREA 8 E. WALL ABOVE DOOR	121
62	23	I-7	AREA 10 WEST WALL ABOVE DOOR	91
63	24	I-7	AREA 10 WEST WALL ABOVE DOOR	112
	25			
	26			
	27			
	28			
	29			
	30			
	31			
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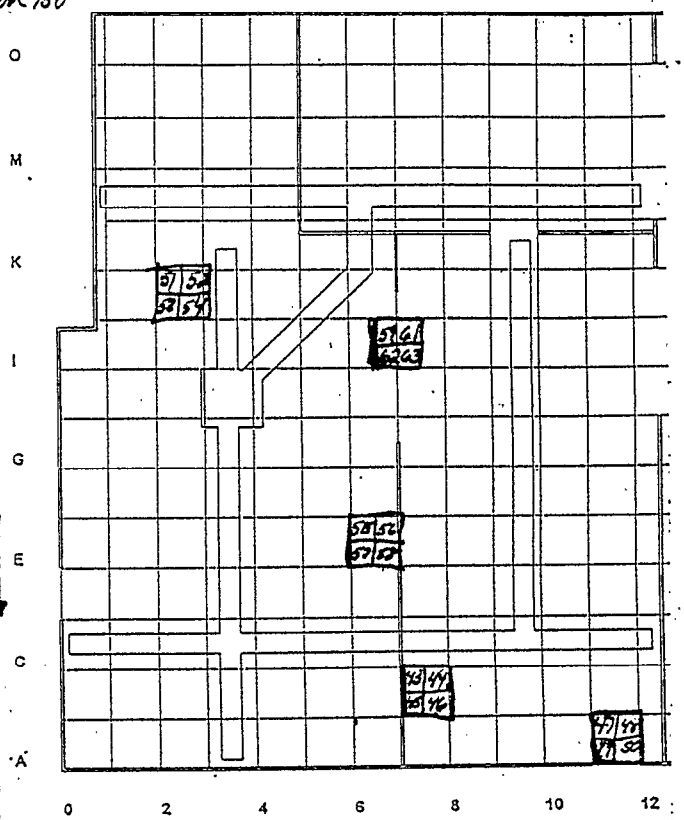
	37			
	38			
	39			
	40			

N/A

AREAS 8, 10, 11 [redacted]



William Fox
3-25-97

Instrument Model & s/n:	INST. (0) L2221
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .21
Detector Area	cm2 = 15.5

4030

HILBE .SSOCIATES, INC.

SMEAR MEASURE..._NT ANALYSIS REPORT

SAMPLE DATE: 3-25-97
ANALYSIS DATE:
LOCATION: B-14 AREA'S 8 & 10 OVERHEAD SURVEY 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	N-2	0	A							+/-		
1	N-2	40	BG							+/-		
2	J-5	4	A							+/-		
2	J-5	49	BG							+/-		
3	H-5	0	A							+/-		
3	H-5	47	BG							+/-		
4	E-4	1	A							+/-		
4	E-4	49	BG							+/-		
5	I-1	1	A							+/-		
5	I-1	33	BG							+/-		
6	C-1	0	A							+/-		
6	C-1	57	BG							+/-		
7	J-11	I 15m. 0	A							+/-		
7	J-11	48	BG							+/-		
8	H-10	0	A							+/-		
8	H-10	47	BG							+/-		
9	F-9	2	A							+/-		
9	F-9	54	BG							+/-		
10	C-11	4	A							+/-		
10	C-11	47	BG							+/-		
11	B-7	1	A							+/-		
11	B-7	49	BG							+/-		
12	A-11	0	A							+/-		
12	A-11	49	BG							+/-		
13	J-3	0	A							+/-		
13	J-3	56	BG							+/-		
14	E-7	1	A							+/-		
14	E-7	66	BG							+/-		
15	I-7	0	A							+/-		
15	I-7	45	BG							+/-		
16			A							+/-		
16			BG							+/-		
17			A							+/-		
17		N/A	BG							+/-		
18			A							+/-		
18			BG							+/-		
19			A							+/-		
19			BG							+/-		
20			A							+/-		
20			BG							+/-		

Instrument Model & s/n: 2929 / 50118
Detector Model & s/n: 43-10-1 / 41713
Calibration Date: 10-15-96
Efficiency BG (Beta/Gamma): .40 cpm / dpm based on S/Y90
Efficiency A (Alpha): .27 cpm / dpm based on Th230

Background	Counts	Ct Time (min)	Rb	Date
Alpha	64	60		3-31-97
Beta-Gamma	7827	60		

ENCL-C1.XLS

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-24-97
LOCATION: B-14 AREA'S 8 & 10
(α) VERIFICATION SURVEY

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

4031

TOTAL BACKGROUND COUNTS	0 CPM
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	F-0	FLOOR	1
2	E-2	FLOOR	8
3	I-4	VENT DUCT - OVERHEAD	0
4	I-9	FLOOR	0
5	F-8	FLOOR	2
6	F-11	FLOOR	0
7	F-6-AA	WALL	6
8			
9			
10			
11			
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15			
16			
17			
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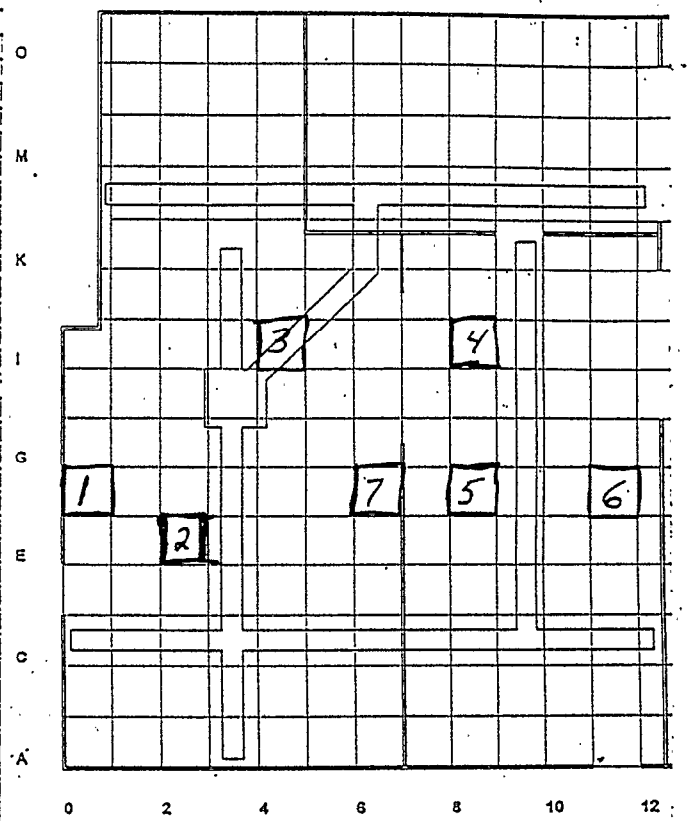
AREAS 8, 10, 11 [redacted]



W
3-24-97

Instrument Model & s/n:	(F) ESP-1 W/43-5
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .13
Detector Area	cm2 =