Appendix G

Building 31 Data Package

Molycorp Washington, PA

Building 31 Data Package

This data package contains final status survey information for Building 31, Molycorp, Washington, PA site.

Field data collection forms, survey report forms, statistical test results, and comparisons to release limits are provided.

Summary

During the final status survey of Building 31, elevated radioactivity was identified in multiple localized areas on the concrete floor and on several structural support components of the building (purlins).

It was determined that the activity identified on the floor was fixed into the concrete, and will require surface removal of the concrete in the identified areas. The activity identified on the purlins was also determined to be fixed contamination.

The areas on the purlins, identified as contaminated, have been marked with a bright florescent paint and recorded as being contaminated in a log controlled by the project manager. These contaminated purlins will remain in place until building demolition.

Elevated levels of background radiation, from soil radioactivity, continued to be a presence during survey activities of Building 31.

Results from the final status survey of Building 31 provides evidence that release criteria have been met, demonstrates that residual radioactivity is below the unrestricted use criteria, and confirms that Building 31 is suitable for unrestricted use, excluding the contaminated purlins that will be removed just prior to building demolition.

	DDO-138 Radiation Protection Survey Report	Site: Molycorp / Washington, PA

Section 1: Survey Information BUILDING 31 AFFECTED SURVEY

Date:	Time:	Location:	Survey Issue Log Number:
5-2-02	0830	BLDG 31	02-0138

RWP Number:	Purpose of Survey: ☐ RWP ☐ Routine Survey ☐ Unconditional Release ☐ Other:	Page 1 of 15

Survey Title:

BKGDS FOR STATIC READINGS

	α	β⁻
FLOOR	2.4	78
WALL	3.7	8
BLOCK	3.7	49
WOOD	1.6	8

2224-1/129463 used on Floor

MDA: β⁻ 476 α 64

2360/156371 USED ON walls

MDA: β⁻ 180 α 76

Smear's 47-69 AND 1-15 & 16-30 EXTERIOR WALLS counted with 2929/152202 C 1-18

BKGD β⁻ 47 α .13

MDA: β⁻ 156 α 12

see Below FOR CAL DUE. AND EFFY.

CAL DUE: 8-6-02

EFFY. N/A

Bkgd Readings: 8 microR MODEL 19 S/N 115 870

Smear Number	Beta dpm/100cm²	Alpha dpm/100cm²
1		
2		
3		
4		
5		
6		
7		
8	N/A	
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		

Legend:
00 = mRem/h gamma; 00 C = mRem/h gamma contact; ① = Smear Location; ▽ = Air Sample Location; -X-X-X- = Rope, Boundary, or Barrier
00 β = mRem/h beta; 00 βC = mRem/h beta contact; –①– = Large Area Wipe; □ = Bulk Material Sample

Section 2: Instrument Used

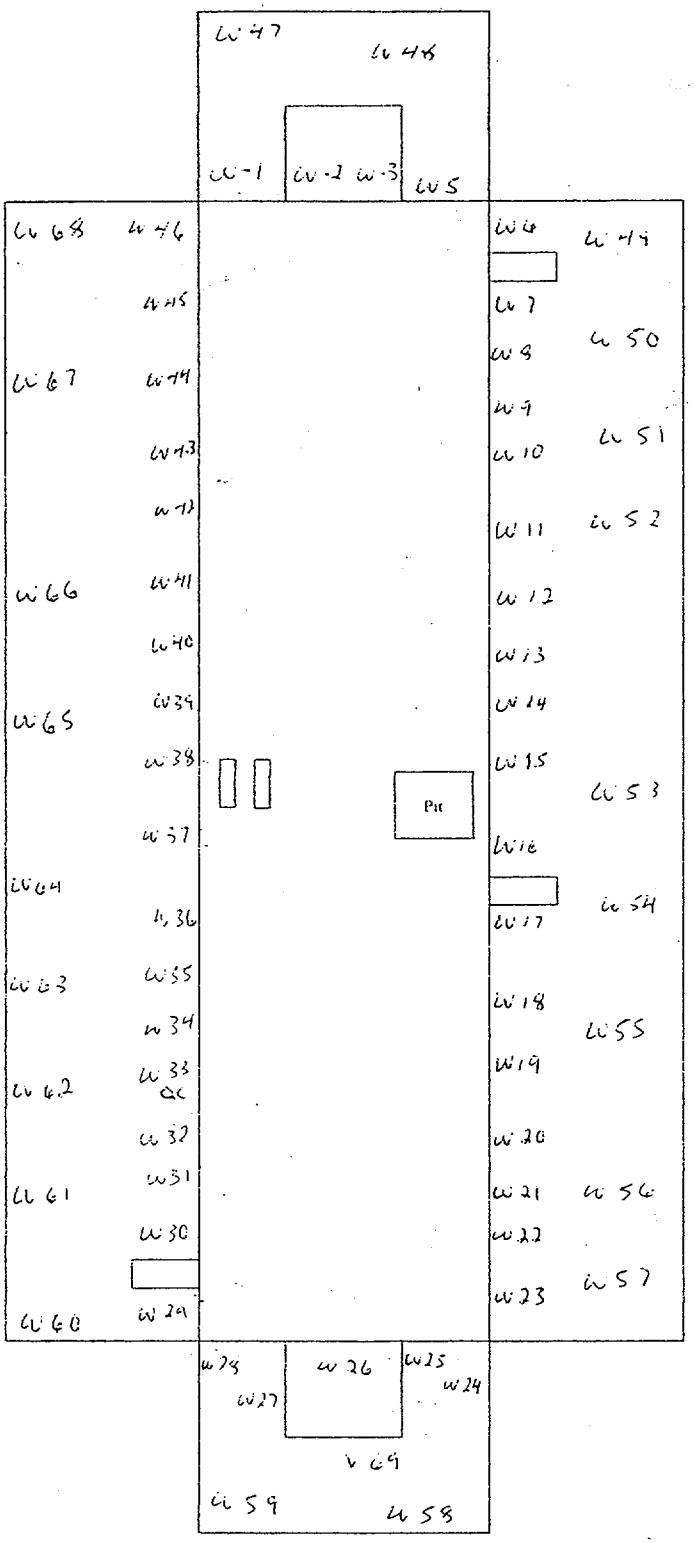
Instrument Model/SN:	Cal Due Date:	Probe Model/SN:	Cal Due Date:	Detector Eff.: (cpm/dpm) β⁻/α	MDA: β⁻/α	Other β⁻ BKGD α
2350-1/95359	8-6-02	43-37/092503	8-6-02	.27/.207	202/26	1694/16
2350-1/117566	8-6-02	43-106/123866	8-6-02	.248/.211	667/40	307/.8
2929/152202	2-6-03	43-10/156519	2-6-03	.165/.344	152/12	45/.12
2360/156371	8-15-02	43-89/164832	8-5-02	.089/.153	See	ABOVE
2224-1/129463	8-6-02	43-89/169230	8-6-02	.092/.154	see	ABOVE

Section 3: Review and Approval

Survey Performed By (Sign):	Area Posted and/or Barricaded:	Date and Time:
Mark Blanco / Steve Fib / Justin Trimble	☐ Yes ☐ No ☒ Not Required	5-2-02 / 0830
Radiation Safety Officer (Print Name & Sign):		**Date and Time:**
Mike McDonald		5-15-02 0940

#02-0138

Building 31
North



Interior

Scale:
4m x 4m

02-0138

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #31 Interior Walls

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date
	Steve Filo	Steve Filo	5-2-02

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
W-1	350	6	284	240	7	9	-.34	24
W-2	250	10	268	228	10	9	-.34	-24
W-3	300	6	230	228	1	9	-.34	61
W-4	280	4	249	209	5	9	-.34	42
W-5	270	5	204	196	3	9	2.6	6
W-6	411	14	294	259	27	9	2.6	18
W-7	435	6	322	222	9	9	2.6	12
W-8	520	7	409	231	5	9	-.34	6
* W-9	650	20	458	259	25	9	-.34	-6
* W-10	600	12	393	259	39	9	-.34	42
W-11	500	26	239	222	18	9	-.34	-6
W-12	410	25	316	270	36	9	-.34	-6
* W-13	520	7	307	238	12	9	-.34	12
W-14	420	4	212	203	8	9	2.6	18
W-15	360	10	248	230	13	9	-.34	-6
* W-16	400	16	301	279	16	11	2.6	18
* W-17	350	7	271	252	4	11	2.6	6
* W-18	430	10	296	301	14	11	-.34	18
W-19	370	12	319	284	31	11	-.34	12
W-20	340	2	237	247	7	11	-.34	18
W-21	510	14	295	262	37	11	2.6	18
* W-22	550	40	339	270	48	11	-.34	6
W-23	450	10	279	260	13	11	2.6	6
W-24	400	2	304	257	4	10	-.34	0
* W-25	800	4	401	223	69	10	2.6	24
W-26	360	2	212	225	4	10	-.34	-6
W-27	360	2	267	233	0	10	2.6	12

* pinton
W8 - steel plate

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg 31 Interior Walls

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
* W-28	500	12	305	244	20	10	-.34	6
W-29	380	4	266	220	2	11	2.6	0
* W-30	540	2	471	222	114	12	2.6	-30
W-31	290	8	257	231	1	12	-.34	12
W-32	520	12	380	281	17	13	-.34	-6
W-33	340	7	265	242	5	12	-.34	67
W-33QC	—	—	255	245	2	12	-.34	18
W-34	400	3	324	290	2	12	-.34	-6
* W-35	700	12	267	268	0	12	2.6	-24
* W-36	1000	8	623	301	62	13	2.6	48
W-37	390	2	294	276	1	13	-.34	0
* W-38	1000	4	692	294	151	12	-.34	-12
W-39	380	2	255	274	4	12	-.34	18
W-40	300	4	254	291	4	13	-.34	67
W-41	330	2	284	285	1	13	-.34	-6
W-42	400	2	292	293	6	10	-.34	0
* W-43	720	4	488	288	56	10	2.6	18
* W-44	670	12	493	291	38	9	-.34	6
W-45	330	4	227	235	7	9	2.6	12
W-46	320	2	266	251	2	9	-.34	0

* = PerLins
39, 42, 45 - steel plate

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg # 31 Upper Walls

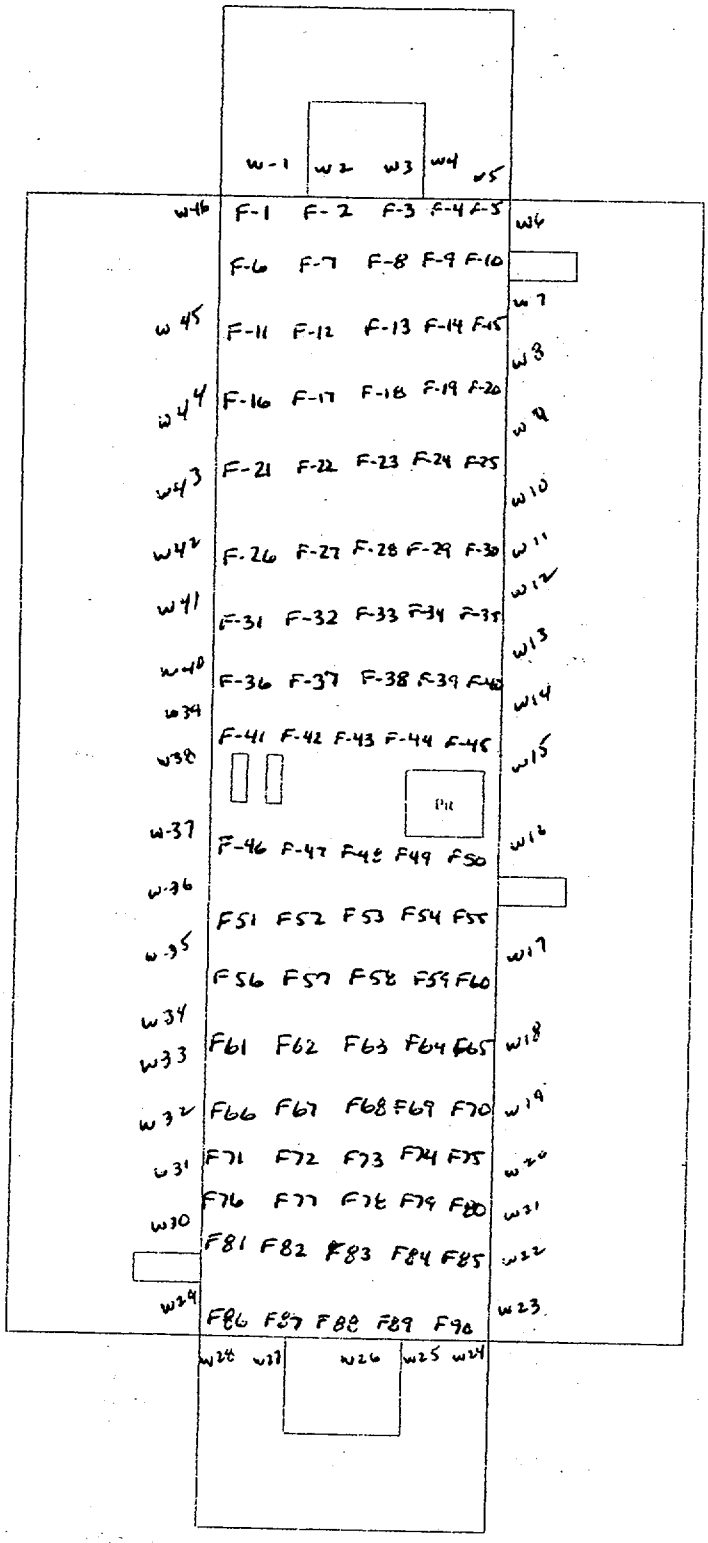
Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
* W-47	360	1	377	230	39	9	2.5	-90
W-48	300	1	252	229	3	8	5.4	0
* W-49	300	5	274	270	14	6	5.4	-78
W-50	320	0	260	223	6	6	2.5	-60
W-51	280	1	225	244	5	7	2.5	-78
W-52	380	1.2	415	269	8	7	2.5	48
W-53	295	0	272	226	5	7	-.4	-12
* W-54	500	9	602	375	26	7	-.4	0
W-55	260	1	251	253	12	8	5.4	18
W-56	260	1	224	218	4	8	2.5	-42
W-57	280	0	241	250	4	7	-.4	60
W-58	300	0	267	226	0	8	-.4	-18
W-59	300	1	313	244	0	10	-.4	-6
* W-60	580	5	639	361	10	10	5.4	-18
W-61	300	2	259	206	0	8	-.4	0
W-62	300	1	273	252	4	10	2.5	-6
W-63	290	2	255	245	4	10	2.5	-18
W-64	305	0	261	256	2	9	-.4	18
W-65	300	0	263	265	4	9	-.4	42
W-66	310	1	296	269	2	8	-.4	0
W-67	300	0	259	254	1	9	-.4	-6
W-68	310	1	263	221	1	8	-.4	-6
vent-69	290	0	295	280	3	8	-.4	12

* Perlin's

Building 31
North



Interior

Scale:
4m x 4m

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #31 FLOORS

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
F-1	3000	20	597	371	71	10	2.5	18
F-2	2370	26	453	373	4	10	-.34	0
F-3	2010	17	537	451	8	10	-.34	-18
F-4	1670	16	403	320	11	10	-.34	54
F-5	2170	20	412	268	20	10	-.34	-103
F-6	3370	41	720	400	25	10	5.4	-66
F-7	1570	15	368	333	10	10	-.34	12
F-8	1790	14	420	311	1	10	-.34	-12
F-9	2030	18	451	315	12	9	-.34	18
F-10	2050	22	455	293	24	8	-.34	48
F-11	2210	56	355	309	15	10	-.34	-36
F-12	2040	21	472	321	9	10	-.34	0
F-13	2002	19	417	307	14	10	-.34	-30
F-14	2060	20	403	207	11	11	2.5	24
F-15	2010	18	509	315	18	10	5.4	78
F-16	2430	14	507	417	7	10	-.34	109
F-17	2670	18	490	396	16	10	-.34	-42
F-18	2270	31	549	317	22	10	-.34	48
F-19	2020	30	813	340	50	9	-.34	42
F-20	3260	65	418	311	9	9	-.34	18
F-21	1950	16	457	371	4	11	-.34	12
F-22	2360	18	554	419	11	11	-.34	82
F-23	3160	25	416	330	15	12	-.34	-30
F-24	2780	50	672	608	7	12	-.34	18
F-25	2520	56	405	357	9	12	-.34	18
F-26	5260	50	991	456	51	14	5.4	-30
F-27	2510	26	496	350	8	14	-.34	24

02-0138

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #31 FLOORS

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
F-28	2540	17	438	333	18	10	-.34	-30
F-29	2950	20	683	277	41	10	-.34	-36
F-30	1740	16	372	268	11	10	-.34	72
F-31	3260	46	692	382	14	13	-.34	-60
F-32	2730	15	1613	328	19	13	2.5	12
F-33	1540	17	398	306	12	11	2.5	109
F-34	1910	16	426	281	12	13	2.5	-48
F-35	2380	19	587	456	1	13	-.34	-72
F-36	3330	36	634	330	30	12	-.34	-6
F-37	2630	22	523	338	11	12	-.34	-30
F-38	1970	14	424	308	4	12	2.5	48
F-39	2400	34	403	259	12	12	-.34	-12
F-40	4050	53	635	307	11	12	-.34	18
F-41	31000	127	1634	495	59	12	-.34	42
F-42	32000	78	7722	680	137	12	14	-18
F-43	2120	15	401	274	4	12	5.4	-24
F-44	2330	22	489	311	5	11	-.34	24
F-45	3830	69	641	274	36	11	5.4	-24
F-46	33000	50	9182	1006	64	17	8.4	-24
F-47	23300	42	3542	539	10	16	-.34	-6
F-48	2120	9	375	304	7	11	-.34	6
F-49	1950	14	454	296	13	10	2.3	54
F-50	2380	23	480	286	15	11	-.34	-42
F-51	46800	900	8880	814	817	14	.75	200
F-52	3390	37	942	410	37	13	-.3	-24
F-53	2240	17	446	313	4	12	-.34	24
F-54	3430	20	689	286	13	12	-.34	-30

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #31 FLOORS

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
F-55	2460	115	442	295	6	11	-.34	0
F-56	18200	146	732	301	46	13	5.4	12
F-57	2270	16	420	323	6	12	2.3	54
F-58	2130	29	388	318	6	11	2.3	-30
F-59	1910	26	385	264	3	11	2.3	72
F-60	2800	17	355	284	6	10	2.3	-30
F-61	5110	58	893	298	27	13	2.3	24
F-62	2070	20	455	328	10	13	-.34	-30
F-63	1830	21	376	282	4	12	2.3	42
F-64	1820	23	374	287	4	12	2.3	42
F-65	3650	31	693	316	22	12	2.3	12
F-66	12600	105	1986	380	31	13	8.4	24
F-67	2110	27	377	264	9	12	-.34	-18
F-68	1870	16	297	269	5	12	-.34	30
F-68 QC	—	—	326	279	3	12	-.34	-12
F-69	2450	42	481	294	8	12	-.34	-48
F-70	3450	39	736	331	11	13	-.34	-42
F-71	5250	42	824	351	17	13	2.3	30
F-72	4520	40	1203	355	19	12	2.3	-36
F-73	2000	54	307	282	5	12	2.3	-12
F-74	2140	24	386	306	9	13	2.3	-24
F-75	5450	63	414	293	5	13	-.34	30
F-76	5060	61	1019	289	13	12	-.34	-24
F-77	2150	23	404	311	10	12	-.34	-30
F-78	2180	18	421	294	5	12	-.34	-12
F-79	7260	247	1570	421	120	12	40	115
F-80	11400	69	1885	421	56	13	2.3	109

02-0138

Radiological Survey Results - Survey Location Indicator

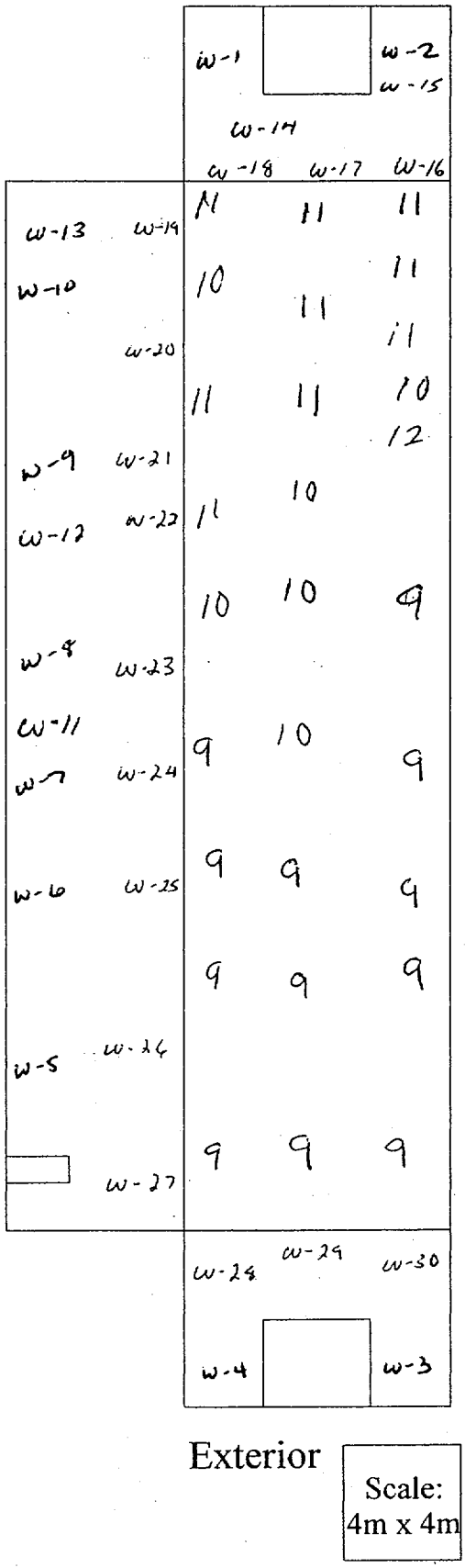
Survey Area Information: Bldg #31 FLOORS

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
F-81	4020	47	768	286	5	11	2.3	42
F-82	2010	44	383	322	5	11	-.34	24
F-83	2250	20	396	273	9	12	-.34	-18
F-84	9350	74	1656	379	32	12	-.34	12
F-85	10300	116	1423	358	63	14	2.3	36
F-86	5480	153	5226	339	11	13	-.34	18
F-87	5080	76	753	310	25	13	5.4	0
F-88	3800	30	822	309	10	13	-.34	24
F-89	3950	64	1059	349	83	12	8.4	36
F-90	11100	153	2164	435	86	12	5.4	12

Building 31
North



Exterior

Scale:
4m x 4m

02-0138

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #31 Exterior Walls

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
W - 1	320	5	231	228	4	9	-.4	18
W - 2			194	206	7	7	-.4	48
W - 3			265	249	2	11	-.4	48
W - 4	320	11	239	240	5	11	-.4	-60
W - 5			271	230	7	13	-.4	-12
W - 6			261	274	6	13	-.4	-42
W - 7	410	3	277	251	6	13	2.5	24
W - 8			272	281	2	13	-.4	24
W - 9			264	274	3	12	-.4	0
W - 10	400	4	303	279	12	11	-.4	24
W - 11			256	245	3	9	-.4	12
W - 12			248	256	4	10	-.4	0
W - 13			240	202	3	12	2.5	-12
W - 14			245	249	0	12	-.4	-6
W - 15			248	225	8	12	-.4	6

02-0138

Radiological Survey Results - Survey Location Indicator

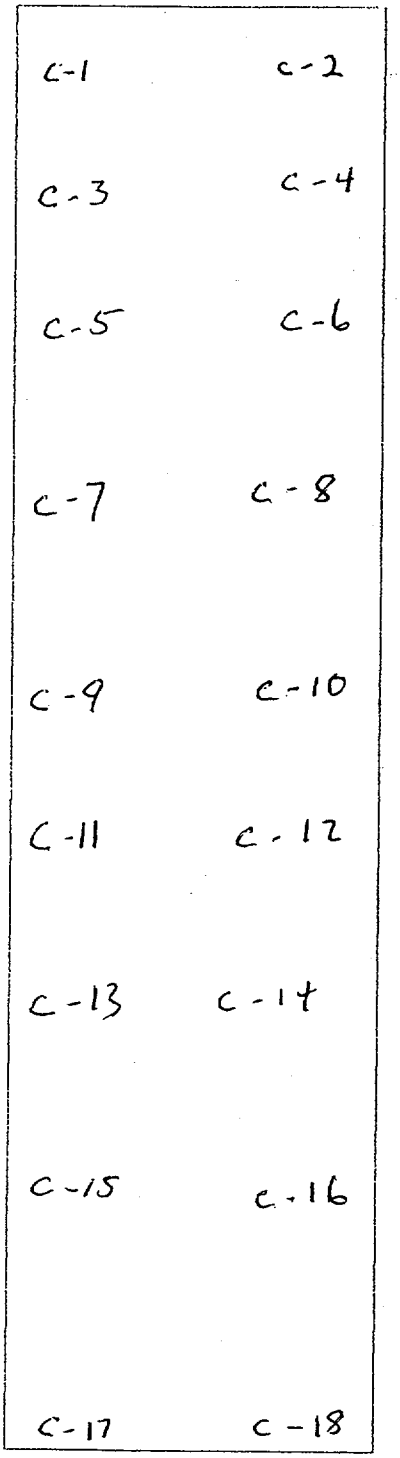
Survey Area Information: Bldg #31 Exterior WAlls

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
W-16	390	1	401	374	6	8	-.4	18
W-17	370	0	331	334	3	9	-.4	-12
W-18	385	1	431	382	5	10	-.4	-18
W-19	250	0	263	244	8	10	-.4	6
W-20	260	1	289	252	6	10	-.4	-42
W-21	285	0	293	266	9	10	-.4	0
W-22	320	1	314	278	6	10	2.5	60
W-23	272	1	269	243	5	10	-.4	-30
W-24	260	2	276	246	4	9	-.4	-6
W-25	295	0	294	248	6	8	-.4	12
W-26	300	1	299	268	6	9	-.4	-18
W-27	280	1	276	237	5	9	-.4	42
W-28	300	0	372	306	2	8	-.4	-6
W-29	285	1	334	297	1	9	-.4	6
W-30	310	0	345	322	0	9	-.4	0

Building 31
North



Ceiling

Scale:
4m x 4m

02-0138

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg # 31 Ceiling

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date
	Steve Filo	Steve Filo	5-2-02

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
C-1	250	0	269	236	1	7	-.4	-18
C-1QC			252	228	1	7	-.4	-48
C-2	205	1	216	239	2	8	-.4	18
* C-3	400	1	431	301	10	8	-.4	78
C-4	200	1	254	242	1	7	-.4	-36
C-5	250	1	285	277	2	7	-.4	-60
C-6	280	1	246	238	1	7	-.4	-24
C-7	260	0	286	279	0	8	-.4	0
C-8	250	0	231	230	2	8	-.4	24
C-9	240	0	259	264	2	8	-.4	48
C-10	280	0	238	233	3	8	-.4	12
* C-11	410	2	440	282	20	8	2.5	-30
C-12	240	0	265	267	2	8	-.4	-18
C-13	260	0	253	237	1	7	-.4	-18
C-14	320	1	244	248	2	7	-.4	121
C-15	300	0	241	299	1	7	-.4	60
C-16	300	0	300	230	1	8	-.4	-90
C-17	230	1	263	260	0	8	-.4	-54
C-18	260	1	266	265	4	7	-.4	-36

* Beam

DDO-138 Radiation Protection Survey Report

Site: Molycorp / Washington, PA

Section 1: Survey Information

Date:	Time:	Location:	Survey Issue Log Number
05/14/02	1600	BLDG 31	02-0202

RWP Number: N/A

Purpose of Survey: ☐ RWP ☐ Routine Survey ☐ Unconditional Release ☐ Other:

Page 1 of 4

Survey Title: Average Hot Spots

Smear Number	Beta dpm/100cm²	Alpha dpm/100cm²
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		

N/A

Bkgd Readings: N/A

Legend:

00 = mRem/h gamma | 00 C = mRem/h gamma contact | ⓘ = Smear Location | ▽ = Air Sample Location | -X-X-X- = Rope, Boundary, or Barrier

00 β = mRem/h beta | 00 βC = mRem/h beta contact | --ⓘ-- = Large Area Wipe | = Bulk Material Sample

Section 2: Instrument Used

Instrument Model/SN:	Cal Due Date:	Probe Model/SN:	Cal Due Date:	Detector Eff.: (cpm/dpm) β	Detector Eff.: (cpm/dpm) α	MDA: β⁻	MDA: α	Other (β<E>) β⁻	Other (β<E>) α
2360/164680	07/09/02	43-89/118544	08/06/02	0.133	0.164	119	71	8	3.7

N/A

Section 3: Review and Approval

Survey Performed By (Sign): Michael A. Blamach

Area Posted and/or Barricaded: ☐ Yes ☐ No ☒ Not Required

Date and Time: 05/14/02 1600

Radiation Safety Officer (Print Name & Sign):

Date and Time:

Survey #
02-0202
Bldg 31

C-16

$$704\left(\frac{100}{10{,}000}\right) + (-134)\left(1-\frac{100}{10{,}000}\right)$$

$$7 + (-133)$$

β^- −126 dpm Ave. α −63 dpm Ave.

W-59

$$\overset{693}{\cancel{262}}\left(\frac{100}{10{,}000}\right) + 262\left(1-\frac{100}{10{,}000}\right)$$

$$7 + 259$$

β^- 266 dpm Ave α 532 dpm Ave.

W-61

$$511\left(\frac{100}{10{,}000}\right) + 205\left(1-\frac{100}{10{,}000}\right)$$

$$5 + 203$$

β^- 208 dpm Ave α 416 dpm Ave

W-28

$$659\left(\frac{100}{10{,}000}\right) + (-85)\left(1-\frac{100}{10{,}000}\right)$$

$$7 + (-84)$$

β^- −77 dpm Ave $\cancel{-39}$ −39 dpm Ave

61

Bldg. 31

Survey #: 02-0202

Radiological Survey Results - Calculational Sheet

Location	β Static (unsh) (cpm)	β Static (sh) (cpm)	Gross β	Minus Bkgd = (Net β)	Net β dpm/100 cm²	
C-16	254	255	-1	-9	-79	
	238	228	10	2	18	
	250	249	1	-7	-62	
	241	233	8	Ø	Ø	
	233	242	-9	-17	-150	
	250	266	-16	-24	-212	
	253	246	4	-4	-35	
	254	249	5	-3	-27	
C-16	261	267	-6	-14	-124	
					-671 /	-134
W-59	232	234	-1	-9	-79	
	288	251	37	29	257	
	265	240	25	17	150	
	265	243	22	14	124	
	296	257	39	31	274	
	248	224	24	16	142	
	252	227	25	17	150	
	273	264	9	1	9	
W-59	285	245	40	32	283	
					1310 /	262
W-61	290	261	29	21	186	
	256	238	18	10	88	
	266	259	7	-1	-9	
	248	256	-8	-16	-142	
	274	238	36	28	248	
	263	258	5	-3	27	
	239	219	20	12	106	
	257	221	36	28	248	
W-61	272	233	39	31	274	
					1026 /	205

Instrument Model/SN:	Probe Model/SN:	Detector Eff.: (cpm/dpm)
2360/164680	43-89/118544	α 0.164 β 0.133

Material	Bkgd
WALL	α 3.7 β 8

Bldg 51

Survey #
02-0202

Radiological Survey Results - Calculational Sheet

Location	β Static (unsh) (cpm)	β Static (sh) (cpm)	Gross β	Minus Bkgd = (Net β)	Net β dpm/100 cm²
W-28	277	264	13	5	44
	263	274	-11	-19	-168
	252	266	-14	-22	-195
	249	246	3	-5	-44
	281	257	24	16	142
	243	243	0	0	0
	259	255	4	-4	-35
	248	259	-11	-19	-168
W-28	218	249	-31	-39	-345
					-769

-85

Instrument Model/SN:	Probe Model/SN:	Detector Eff.: (cpm/dpm)
2360 164680	43-89 118544	α .164 β- .113

Material	Bkgd
WALL	α .317 β- 8

Results of Surface Scans
Molycorp - Building 31 Foundation Only Survey Unit (Affected Area)

Building Floor

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F1	3000	1306	20	4
F2	2370	676	26	10
F3	2010	316	17	1
F4	1670	-24	16	0
F5	2170	476	20	4
F6	3370	1676	41	25
F7	1570	-124	15	-1
F8	1790	96	14	-2
F9	2030	336	18	2
F10	2050	356	22	6
F11	2210	516	56	40
F12	2040	346	21	5
F13	2020	326	19	3
F14	2060	366	20	4
F15	2010	316	18	2
F16	2430	736	14	-2
F17	2670	976	18	2
F18	2270	576	31	15
F19	2020	326	30	14
F20	3260	1566	65	49
F21	1950	256	16	0
F22	2360	666	18	2
F23	3160	1466	25	9
F24	2780	1086	50	34
F25	2520	826	56	40
F26	5260	3566	50	34
F27	2510	816	26	10
F28	2540	846	17	1
F29	2950	1256	20	4
F30	1740	46	16	0
F31	3260	1566	46	30
F32	2730	1036	15	-1
F33	1540	-154	17	1
F34	1910	216	16	0
F35	2380	686	19	3
F36	3330	1636	36	20
F37	2630	936	22	6
F38	1970	276	14	-2
F39	2400	706	34	18
F40	4050	2356	53	37
F41	31000	29306	127	111
F42	32000	30306	78	62
F43	2120	426	15	-1
F44	2330	636	22	6
F45	3830	2136	69	53
F46	33000	31306	50	34
F47	23300	21606	42	26
F48	2120	426	9	-7

F49	1950	256	14	-2
F50	2380	686	23	7
F51	468000	466306	900	884
F52	3390	1696	37	21
F53	2240	546	17	1
F54	3430	1736	20	4
F55	2460	766	115	99
F56	18200	16506	146	130
F57	2270	576	16	0
F58	2130	436	29	13
F59	1910	216	26	10
F60	2800	1106	17	1
F61	5110	3416	58	42
F62	2070	376	20	4
F63	1830	136	21	5
F64	1820	126	23	7
F65	3650	1956	31	15
F66	12600	10906	105	89
F67	2110	416	27	11
F68	1870	176	16	0
F69	2450	756	42	26
F70	3450	1756	39	23
F71	5250	3556	42	26
F72	4520	2826	40	24
F73	2000	306	54	38
F74	2140	446	24	8
F75	5450	3756	63	47
F76	5060	3366	61	45
F77	2150	456	23	7
F78	2180	486	18	2
F79	7260	5566	247	231
F80	11400	9706	69	53
F81	4020	2326	47	31
F82	2010	316	44	28
F83	2250	556	20	4
F84	9350	7656	74	58
F85	103000	101306	116	100
F86	5480	3786	153	137
F87	5080	3386	76	60
F88	3800	2106	30	14
F89	3950	2256	64	48
F90	11100	9406	153	137

All floor scans performed with Ludlum 239-1F (2350-1 No.95359)
with 43-37 No. 92503

Floor Monitor Info:
Scan MDA Beta - 202 dpm/detector area
Scan MDA Alpha - 26 dpm/detector area
Scan background Beta - 1694 cpm
Scan background Alpha - 16 cpm
Detector Eff. Beta - .27
Detector Eff. Alpha - .207

Elevated Scan Readings
Molycorp - Building 31 Foundation Only Survey Unit (Affected Area)

Location (see map)	Beta Scan net cpm	Alpha Scan net cpm
F11		40
F20		49
F24		34
F25		40
F26	3566	34
F40		37
F41	29306	111
F42	30306	62
F45		53
F46	31306	34
F47	21606	
F51	466306	884
F55		99
F56	16506	130
F61	3416	42
F66	10906	89
F71	3556	
F72	2826	
F73		38
F75	3756	47
F76	3366	45
F79	5566	231
F80	9706	53
F84	7656	58
F85	101306	100
F86	3786	137
F87	3386	60
F89		48
F90	9406	137

Direct Measurements (Total Activity)
Molycorp - Building 31 Foundation Only Survey Unit (Affected Area)

Building Floor (Interior)

Location	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm^2)	Uncertainty 95% CL	MDA (dpm/100cm^2)	Direct Alpha (1) (dpm/100cm^2)
F1	597	371	226	78	148	1609	371	476	3217
F2	453	373	80	78	2	22	268	476	43
F3	537	451	86	78	8	87	273	476	174
F4	403	320	83	78	5	54	270	476	109
F5	412	268	144	78	66	717	317	476	1435
F6	720	400	320	78	242	2630	425	476	5261
F7	368	333	35	78	-43	-467	226	476	-935
F8	420	311	109	78	31	337	291	476	674
F9	451	315	136	78	58	630	312	476	1261
F10	455	293	162	78	84	913	330	476	1826
F11	355	309	46	78	-32	-348	237	476	-696
F12	472	321	151	78	73	793	322	476	1587
F13	417	307	110	78	32	348	292	476	696
F14	403	207	196	78	118	1283	353	476	2565
F15	509	315	194	78	116	1261	351	476	2522
F16	507	417	90	78	12	130	276	476	261
F17	490	396	94	78	16	174	279	476	348
F18	549	317	232	78	154	1674	375	476	3348
F19	813	340	473	78	395	4293	500	476	8587
F20	418	311	107	78	29	315	290	476	630
F21	457	371	86	78	8	87	273	476	174
F22	554	419	135	78	57	620	311	476	1239
F23	416	330	86	78	8	87	273	476	174
F24	672	608	64	78	-14	-152	254	476	-304
F25	405	357	48	78	-30	-326	239	476	-652
F26	991	456	535	78	457	4967	527	476	9935
F27	496	350	146	78	68	739	319	476	1478
F28	438	333	105	78	27	293	288	476	587
F29	683	277	406	78	328	3565	469	476	7130
F30	372	268	104	78	26	283	287	476	565
F31	692	382	310	78	232	2522	420	476	5043
F32	513	328	185	78	107	1163	345	476	2326

F33	398	306	92	78	14	152	278	476	304
F34	426	281	145	78	67	728	318	476	1457
F35	587	456	131	78	53	576	308	476	1152
F36	634	330	304	78	226	2457	416	476	4913
F37	523	338	185	78	107	1163	345	476	2326
F38	424	308	116	78	38	413	297	476	826
F39	403	259	144	78	66	717	317	476	1435
F40	635	307	328	78	250	2717	429	476	5435
F41	1634	495	1139	78	1061	11533	743	476	23065
F42	7722	680	7042	78	6964	75696	1798	476	151391
F43	401	274	127	78	49	533	305	476	1065
F44	489	311	178	78	100	1087	341	476	2174
F45	641	274	367	78	289	3141	449	476	6283
F46	9182	1006	8176	78	8098	88022	1936	476	176043
F47	3542	539	3003	78	2925	31793	1183	476	63587
F48	375	304	71	78	-7	-76	260	476	-152
F49	454	296	158	78	80	870	327	476	1739
F50	480	286	194	78	116	1261	351	476	2522
F51	8880	814	8066	78	7988	86826	1923	476	173652
F52	942	410	532	78	454	4935	526	476	9870
F53	446	313	133	78	55	598	309	476	1196
F54	689	286	403	78	325	3533	467	476	7065
F55	442	295	147	78	69	750	320	476	1500
F56	732	301	431	78	353	3837	481	476	7674
F57	420	323	97	78	19	207	282	476	413
F58	388	318	70	78	-8	-87	259	476	-174
F59	385	264	121	78	43	467	301	476	935
F60	355	284	71	78	-7	-76	260	476	-152
F61	893	298	595	78	517	5620	553	476	11239
F62	455	328	127	78	49	533	305	476	1065
F63	376	282	94	78	16	174	279	476	348
F64	374	287	87	78	9	98	274	476	196
F65	693	316	377	78	299	3250	454	476	6500
F66	1986	380	1606	78	1528	16609	874	476	33217
F67	377	264	113	78	35	380	294	476	761
F68	297	269	28	78	-50	-543	219	476	-1087
F69	481	294	187	78	109	1185	347	476	2370
F70	736	331	405	78	327	3554	468	476	7109
F71	824	351	473	78	395	4293	500	476	8587
F72	1203	355	848	78	770	8370	648	476	16739

F73	307	282	25	78	-53	-576	216	476	-1152
F74	386	306	80	78	2	22	268	476	43
F75	414	293	121	78	43	467	301	476	935
F76	1019	289	730	78	652	7087	606	476	14174
F77	404	311	93	78	15	163	279	476	326
F78	421	294	127	78	49	533	305	476	1065
F79	1570	421	1149	78	1071	11641	746	476	23283
F80	1885	421	1464	78	1386	15065	837	476	30130
F81	768	286	482	78	404	4391	504	476	8783
F82	383	322	61	78	-17	-185	251	476	-370
F83	396	273	123	78	45	489	302	476	978
F84	1656	379	1277	78	1199	13033	784	476	26065
F85	1420	358	1062	78	984	10696	719	476	21391
F86	526	339	187	78	109	1185	347	476	2370
F87	753	310	443	78	365	3967	486	476	7935
F88	822	309	513	78	435	4728	518	476	9457
F89	1059	349	710	78	632	6870	598	476	13739
F90	2164	435	1729	78	1651	17946	906	476	35891

All building interior floor direct measurements were performed with
2224-1 No. 129463 and 43-89 No. 169230

	Beta	Alpha
Floor Efficiency	0.092	0.154
Floor Background (cpm)	78	2.4
Floor MDA (dpm/100 cm2)	476	64

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Elevated Direct Measurements (Total Activity) and Averaging Results
Molycorp - Building 31 Foundation Only Survey Unit (Affected Area)

Building Floor (Interior)

Location	Direct Beta (dpm/100cm^2)	Direct Alpha (dpm/100cm^2)	Over Area (cm^2)	Exceeds Limits Maximum	Exceeds Limits Average	Averaged Value (over 1 m^2)	Within Limits? Yes/No
F1	1609	3217				Marked for removal/remediation	
F5		1435				Marked for removal/remediation	
F6	2630	5261				Marked for removal/remediation	
F9		1261				Marked for removal/remediation	
F10		1826				Marked for removal/remediation	
F12		1587				Marked for removal/remediation	
F14	1283	2565				Marked for removal/remediation	
F15	1261	2522				Marked for removal/remediation	
F18	1674	3348				Marked for removal/remediation	
F19	4293	8587				Marked for removal/remediation	
F22		1239				Marked for removal/remediation	
F26	4967	9935				Marked for removal/remediation	
F27		1478				Marked for removal/remediation	
F29	3565	7130				Marked for removal/remediation	
F31	2522	5043				Marked for removal/remediation	
F32	1163	2326				Marked for removal/remediation	
F34		1457				Marked for removal/remediation	
F35		1152				Marked for removal/remediation	
F36	2457	4913				Marked for removal/remediation	
F37	1163	2326				Marked for removal/remediation	
F39		1435				Marked for removal/remediation	
F40	2717	5435				Marked for removal/remediation	
F41	11533	23065				Marked for removal/remediation	
F42	75696	151391				Marked for removal/remediation	
F43		1065				Marked for removal/remediation	
F44	1087	2174				Marked for removal/remediation	
F45	3141	6283				Marked for removal/remediation	
F46	88022	176043				Marked for removal/remediation	
F47	31793	63587				Marked for removal/remediation	
F49		1739				Marked for removal/remediation	

F50	1261	2522	Marked for removal/remediation
F51	86826	173652	Marked for removal/remediation
F52	4935	9870	Marked for removal/remediation
F53		1196	Marked for removal/remediation
F54	3533	7065	Marked for removal/remediation
F55		1500	Marked for removal/remediation
F56	3837	7674	Marked for removal/remediation
F61	5620	11239	Marked for removal/remediation
F62		1065	Marked for removal/remediation
F65	3250	6500	Marked for removal/remediation
F66	16609	33217	Marked for removal/remediation
F69	1185	2370	Marked for removal/remediation
F70	3554	7109	Marked for removal/remediation
F71	4293	8587	Marked for removal/remediation
F72	8370	16739	Marked for removal/remediation
F76	7087	14174	Marked for removal/remediation
F78		1065	Marked for removal/remediation
F79	11641	23283	Marked for removal/remediation
F80	15065	30130	Marked for removal/remediation
F81	4391	8783	Marked for removal/remediation
F84	13033	26065	Marked for removal/remediation
F85	10696	21391	Marked for removal/remediation
F86	1185	2370	Marked for removal/remediation
F87	3967	7935	Marked for removal/remediation
F88	4728	9457	Marked for removal/remediation
F89	6870	13739	Marked for removal/remediation
F90	17946	35891	Marked for removal/remediation

Removable Surface Activity Measurements
Molycorp - Building 31 Foundation Only Survey Unit (Affected Area)

Building Floor

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA	Instrument Number
F1	18	22.9	152	2.5	5.3	12	1
F2	0	10.3	152	-0.3	1.8	12	1
F3	-18	22.9	152	-0.3	1.8	12	1
F4	54	36.9	152	-0.3	1.8	12	1
F5	-103	50.0	152	-0.3	1.8	12	1
F6	-66	40.5	152	5.4	7.8	12	1
F7	12	19.6	152	-0.3	1.8	12	1
F8	-12	19.6	152	-0.3	1.8	12	1
F9	18	22.9	152	-0.3	1.8	12	1
F10	48	35.0	152	-0.3	1.8	12	1
F11	-36	30.7	152	-0.3	1.8	12	1
F12	0	10.3	152	-0.3	1.8	12	1
F13	-30	28.4	152	-0.3	1.8	12	1
F14	24	25.8	152	2.5	5.3	12	1
F15	78	43.8	152	5.4	7.8	12	1
F16	109	51.4	152	-0.3	1.8	12	1
F17	-42	32.9	152	-0.3	1.8	12	1
F18	48	35.0	152	-0.3	1.8	12	1
F19	42	32.9	152	-0.3	1.8	12	1
F20	18	22.9	152	-0.3	1.8	12	1
F21	12	19.6	152	-0.3	1.8	12	1
F22	82	44.9	152	-0.3	1.8	12	1
F23	-30	28.4	152	-0.3	1.8	12	1
F24	18	22.9	152	-0.3	1.8	12	1
F25	18	22.9	152	-0.3	1.8	12	1
F26	-30	28.4	152	5.4	7.8	12	1
F27	24	25.8	152	-0.3	1.8	12	1
F28	-30	28.4	152	-0.3	1.8	12	1
F29	-36	30.7	152	-0.3	1.8	12	1
F30	72	42.2	152	-0.3	1.8	12	1
F31	-60	38.8	152	-0.3	1.8	12	1
F32	12	19.6	152	-0.3	1.8	12	1
F33	109	51.4	152	2.5	5.3	12	1

F34	-48	35.0	152	2.5	5.3	12	1
F35	-72	42.2	152	2.5	5.3	12	1
F36	-6	15.7	152	-0.3	1.8	12	1
F37	-30	28.4	152	-0.3	1.8	12	1
F38	48	35.0	152	2.5	5.3	12	1
F39	-12	19.6	152	-0.3	1.8	12	1
F40	18	22.9	152	-0.3	1.8	12	1
F41	42	32.9	152	-0.3	1.8	12	1
F42	-18	22.9	152	14	12.5	12	1
F43	-24	25.8	152	5.4	7.8	12	1
F44	24	25.8	152	-0.3	1.8	12	1
F45	-24	25.8	152	5.4	7.8	12	1
F46	-24	25.8	152	8.4	9.7	12	1
F47	-6	15.8	156	-0.3	1.8	12	2
F48	6	15.8	156	-0.3	1.8	12	2
F49	54	37.0	156	2.3	5.1	12	2
F50	-42	33.0	156	-0.3	1.8	12	2
F51	200	69.0	156	0.75	2.9	12	2
F52	-24	25.9	156	-0.3	1.8	12	2
F53	24	25.9	156	-0.3	1.8	12	2
F54	-30	28.4	156	-0.3	1.8	12	2
F55	0	10.5	156	-0.3	1.8	12	2
F56	12	19.7	156	5.4	7.8	12	2
F57	54	37.0	156	2.3	5.1	12	2
F58	-30	28.4	156	2.3	5.1	12	2
F59	72	42.3	156	2.3	5.1	12	2
F60	-30	28.4	156	2.3	5.1	12	2
F61	24	25.9	156	2.3	5.1	12	2
F62	-30	28.4	156	-0.3	1.8	12	2
F63	42	33.0	156	2.3	5.1	12	2
F64	42	33.0	156	2.3	5.1	12	2
F65	12	19.7	156	2.3	5.1	12	2
F66	24	25.9	156	8.4	9.7	12	2
F67	-18	23.0	156	-0.3	1.8	12	2
F68	30	28.4	156	-0.3	1.8	12	2
F69	-48	35.0	156	-0.3	1.8	12	2
F70	-42	32.9	152	-0.3	1.8	12	1
F71	30	28.4	152	2.3	5.1	12	1
F72	-36	30.7	152	2.3	5.1	12	1
F73	-12	19.6	152	2.3	5.1	12	1
F74	-24	25.8	152	2.3	5.1	12	1
F75	30	28.4	152	-0.3	1.8	12	1

F76	-24	25.8	152	-0.3	1.8	12	1
F77	-30	28.4	152	-0.3	1.8	12	1
F78	-12	19.6	152	-0.3	1.8	12	1
F79	115	52.8	152	40	21.1	12	1
F80	109	51.4	152	2.3	5.1	12	1
F81	42	32.9	152	2.3	5.1	12	1
F82	24	25.8	152	-0.3	1.8	12	1
F83	-18	22.9	152	-0.3	1.8	12	1
F84	12	19.6	152	-0.3	1.8	12	1
F85	36	30.7	152	2.3	5.1	12	1
F86	18	22.9	152	-0.3	1.8	12	1
F87	0	10.3	152	5.4	7.8	12	1
F88	24	25.8	152	-0.3	1.8	12	1
F89	36	30.7	152	8.4	9.7	12	1
F90	12	19.6	152	5.4	7.8	12	1

#1 - Ludlum 2929 No. 152202 with 43-10
No. 156519 Info:

	Beta	Alpha
Background (cpm)	45	0.12
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	152	12

#2 - Ludlum 2929 No. 152202 with 43-10
No. 156519 Info:

	Beta	Alpha
Background (cpm)	47	0.13
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	156	12

Elevated Removable Surface Activity Measurements
Molycorp - Building 31 Foundation Only Survey Unit (Affected Area)

No elevated removable surface activity was reported above limits.

Exposure Rate Measurements
Molycorp - Building 31 Foundation Only Survey Unit (Affected Area)

Building Floor

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
F1	10	2
F2	10	2
F3	10	2
F4	10	2
F5	10	2
F6	10	2
F7	10	2
F8	10	2
F9	9	1
F10	8	0
F11	10	2
F12	10	2
F13	10	2
F14	11	3
F15	10	2
F16	10	2
F17	10	2
F18	10	2
F19	9	1
F20	9	1
F21	11	3
F22	11	3
F23	12	4
F24	12	4
F25	12	4
F26	14	6
F27	14	6
F28	10	2
F29	10	2
F30	10	2
F31	13	5
F32	13	5
F33	11	3
F34	13	5
F35	13	5
F36	12	4
F37	12	4
F38	12	4
F39	12	4
F40	12	4
F41	12	4
F42	12	4
F43	12	4
F44	11	3
F45	11	3
F46	17	9

F47	16	8
F48	11	3
F49	10	2
F50	11	3
F51	14	6
F52	13	5
F53	12	4
F54	12	4
F55	11	3
F56	13	5
F57	12	4
F58	11	3
F59	11	3
F60	10	2
F61	13	5
F62	13	5
F63	12	4
F64	12	4
F65	12	4
F66	13	5
F67	12	4
F68	12	4
F69	12	4
F70	13	5
F71	13	5
F72	12	4
F73	12	4
F74	13	5
F75	13	5
F76	12	4
F77	12	4
F78	12	4
F79	12	4
F80	13	5
F81	11	3
F82	11	3
F83	12	4
F84	12	4
F85	14	6
F86	13	5
F87	13	5
F88	13	5
F89	12	4
F90	12	4

Background dose rate: 8 uR/hr with Model 19, No.115870

Summary of Building Surface Direct Reading (Total Activity) Results
Molycorp - Building 31 Foundation Only Survey Unit (Affected Area)

Including all building interior and exterior measurements

Beta				Alpha			
n	$\bar{x}$	s	μ_α	n	$\bar{x}$	s	μ_α
33	73	288.9	158.4	33	146	577.8	316.8

$t_{1-\alpha}$ 1.696

Guidelines/Conditions Satisfied?	
Beta	Alpha
Yes	Yes

Summary of Exposure Rate Measurements
Molycorp - Building 31 Foundation Only Survey Unit (Affected Area)

Including all building interior and exterior measurements (uR/hr)

n	$\bar{x}$	s	μ_α
90	3.6	1.5	3.9

$t_{1-\alpha}$ 1.665

Guidelines/Conditions Satisfied?
Yes

Results of Surface Scans
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W1	350	43	6	5.2
W2	250	-57	10	9.2
W3	30	-277	6	5.2
W4	280	-27	4	3.2
W5	270	-37	5	4.2
W6	411	104	14	13.2
W7	435	128	6	5.2
W8	520	213	7	6.2
W9	650	343	20	19.2
W10	600	293	12	11.2
W11	500	193	26	25.2
W12	410	103	25	24.2
W13	520	213	7	6.2
W14	420	113	4	3.2
W15	360	53	10	9.2
W16	400	93	16	15.2
W17	350	43	7	6.2
W18	430	123	10	9.2
W19	370	63	12	11.2
W20	340	33	2	1.2
W21	510	203	14	13.2
W22	550	243	40	39.2
W23	450	143	10	9.2
W24	400	93	2	1.2
W25	800	493	4	3.2
W26	360	53	2	1.2
W27	360	53	2	1.2
W28	500	193	12	11.2
W29	380	73	4	3.2
W30	540	233	2	1.2
W31	290	-17	8	7.2
W32	520	213	12	11.2
W33	340	33	7	6.2
W34	400	93	3	2.2
W35	700	393	12	11.2
W36	1000	693	8	7.2
W37	390	83	2	1.2
W38	1000	693	4	3.2
W39	380	73	2	1.2
W40	300	-7	4	3.2
W41	330	23	2	1.2
W42	400	93	2	1.2
W43	720	413	4	3.2
W44	670	363	12	11.2
W45	330	23	4	3.2
W46	320	13	2	1.2
W47	360	53	1	0.2
W48	300	-7	1	0.2

W49	300	-7	5	4.2
W50	320	13	0	-0.8
W51	280	-27	1	0.2
W52	380	73	1.2	0.4
W53	295	-12	0	-0.8
W54	500	193	2	1.2
W55	260	-47	1	0.2
W56	260	-47	1	0.2
W57	280	-27	0	-0.8
W58	300	-7	0	-0.8
W59	300	-7	1	0.2
W60	580	273	5	4.2
W61	300	-7	2	1.2
W62	300	-7	1	0.2
W63	290	-17	2	1.2
W64	305	-2	0	-0.8
W65	300	-7	0	-0.8
W66	310	3	1	0.2
W67	300	-7	0	-0.8
W68	310	3	1	0.2
V69	290	-17	0	-0.8

All interior wall scans performed with Ludlum 2350-1 No.117566
with 43-106 No. 133866

Scan MDA Beta - 667 dpm/detector area
Scan MDA Alpha - 40 dpm/detector area
Scan background Beta - 307 cpm
Scan background Alpha - .8 cpm
Detector Eff. Beta - .248
Detector Eff. Alpha - .211

Results of Surface Scans
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Ceiling (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
C1	250	-57	0	-0.8
C2	205	-102	1	0.2
C3	400	93	1	0.2
C4	300	-7	1	0.2
C5	250	-57	1	0.2
C6	280	-27	1	0.2
C7	260	-47	0	-0.8
C8	250	-57	0	-0.8
C9	240	-67	0	-0.8
C10	280	-27	0	-0.8
C11	410	103	2	1.2
C12	240	-67	0	-0.8
C13	260	-47	0	-0.8
C14	320	13	1	0.2
C15	300	-7	0	-0.8
C16	300	-7	0	-0.8
C17	230	-77	1	0.2
C18	260	-47	1	0.2

Ceiling scans performed with Ludlum 2350-1 No.117566 with 43-106 No. 133866

Scan MDA Beta - 667 dpm/detector area
Scan MDA Alpha - 40 dpm/detector area
Scan background Beta - 307 cpm
Scan background Alpha - .8 cpm
Detector Eff. Beta - .248
Detector Eff. Alpha - .211

Results of Surface Scans
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Walls and Roof)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W1	320	13	5	4.2
W2				
W3				
W4	320	13	11	10.2
W5				
W6				
W7	410	103	3	2.2
W8				
W9				
W10	400	93	4	3.2
W11				
W12				
W13				
W14				
W15				
W16	390	83	1	0.2
W17	370	63	0	-0.8
W18	385	78	1	0.2
W19	250	-57	0	-0.8
W20	260	-47	1	0.2
W21	285	-22	0	-0.8
W22	320	13	1	0.2
W23	272	-35	1	0.2
W24	260	-47	2	1.2
W25	295	-12	0	-0.8
W26	300	-7	1	0.2
W27	280	-27	1	0.2
W28	300	-7	0	-0.8
W29	285	-22	1	0.2
W30	310	3	0	-0.8

All exterior scans performed with Ludlum 2350-1 No.117566 with 43-106 No. 133866

Scan MDA Beta - 667 dpm/detector area
Scan MDA Alpha - 40 dpm/detector area
Scan background Beta - 307 cpm
Scan background Alpha - .8 cpm
Detector Eff. Beta - .248
Detector Eff. Alpha - .211

Elevated Scan Readings
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Location (see map)	Beta Scan net cpm	Alpha Scan net cpm
W1		5.2
W2		9.2
W3		5.2
W4		3.2
W5		4.2
W6		13.2
W7		5.2
W8		6.2
W9		19.2
W10		11.2
W11		25.2
W12		24.2
W13		6.2
W14		3.2
W15		9.2
W16		15.2
W17		6.2
W18		9.2
W19		11.2
W21		13.2
W22		39.2
W23		9.2
W25		3.2
W28		11.2
W29		3.2
W31		7.2
W32		11.2
W33		6.2
W34		2.2
W35		11.2
W36	693	7.2
W38	693	3.2
W40		3.2
W43		3.2
W44		11.2
W45		3.2
W49		4.2
W60		4.2
EW1		4.2
EW4		10.2
EW7		2.2
EW10		3.2

Direct Measurements (Total Activity)
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Walls (Interior)

Location	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm^2)	Uncertainty 95% CL	MDA (dpm/100cm^2)	Direct Alpha (1) (dpm/100cm^2)
W1	284	240	44	8	36	409	161	180	818
W2	268	228	40	8	32	364	154	180	727
W3	230	228	2	8	-6	-68	70	180	-136
W4	249	209	40	8	32	364	154	180	727
W5	204	196	8	8	0	0	89	180	0
W6	294	259	35	8	27	307	146	180	614
W7	322	222	100	8	92	1045	231	180	2091
W8	406	231	175	8	167	1898	301	180	3795
W9	458	259	199	8	191	2170	320	180	4341
W10	393	259	134	8	126	1432	265	180	2864
W11	239	222	17	8	9	102	111	180	205
W12	316	270	46	8	38	432	164	180	864
W13	307	238	69	8	61	693	195	180	1386
W14	212	203	9	8	1	11	92	180	23
W15	248	230	18	8	10	114	114	180	227
W16	301	279	22	8	14	159	122	180	318
W17	271	252	19	8	11	125	116	180	250
W18	296	301	-5	8	-13	-148	39	180	-295
W19	319	284	35	8	27	307	146	180	614
W20	237	247	-10	8	-18	-205	31	180	-409
W21	295	262	33	8	25	284	143	180	568
W22	339	270	69	8	61	693	195	180	1386
W23	279	260	19	8	11	125	116	180	250
W24	304	257	47	8	39	443	165	180	886
W25	401	223	178	8	170	1932	304	180	3864
W26	212	225	-13	8	-21	-239	50	180	-477
W27	167	233	-66	8	-74	-841	170	180	-1682
W28	305	244	61	8	53	602	185	180	1205
W29	266	220	46	8	38	432	164	180	864
W30	471	222	249	8	241	2739	357	180	5477
W31	257	231	26	8	18	205	130	180	409
W32	380	281	99	8	91	1034	230	180	2068

W33	265	242	23	8	15	170	124	180	341
W34	324	290	34	8	26	295	144	180	591
W35	267	268	-1	8	-9	-102	59	180	-205
W36	623	301	322	8	314	3568	405	180	7136
W37	294	276	18	8	10	114	114	180	227
W38	692	294	398	8	390	4432	449	180	8864
W39	255	274	-19	8	-27	-307	74	180	-614
W40	254	291	-37	8	-45	-511	120	180	-1023
W41	284	285	-1	8	-9	-102	59	180	-205
W42	292	293	-1	8	-9	-102	59	180	-205
W43	488	288	200	8	192	2182	321	180	4364
W44	493	291	202	8	194	2205	323	180	4409
W45	227	235	-8	8	-16	-182	0	180	-364
W46	266	251	15	8	7	80	107	180	159
W47	377	230	147	8	139	1580	277	180	3159
W48	252	229	23	8	15	170	124	180	341
W49	274	270	4	8	-4	-45	77	180	-91
W50	260	223	37	8	29	330	149	180	659
W51	225	244	-19	8	-27	-307	74	180	-614
W52	415	269	146	8	138	1568	276	180	3136
W53	272	226	46	8	38	432	164	180	864
W54	602	375	227	8	219	2489	341	180	4977
W55	251	253	-2	8	-10	-114	55	180	-227
W56	224	218	6	8	-2	-23	83	180	-45
W57	241	250	-9	8	-17	-193	22	180	-386
W58	267	226	41	8	33	375	156	180	750
W59	313	244	69	8	61	693	195	180	1386
W60	639	361	278	8	270	3068	377	180	6136
W61	259	206	53	8	45	511	174	180	1023
W62	273	252	21	8	13	148	120	180	295
W63	255	245	10	8	2	23	94	180	45
W64	261	256	5	8	-3	-34	80	180	-68
W65	263	265	-2	8	-10	-114	55	180	-227
W66	296	269	27	8	19	216	132	180	432
W67	259	254	5	8	-3	-34	80	180	-68
W68	263	221	42	8	34	386	157	180	773
W69	295	280	15	8	7	80	107	180	159

All building interior wall direct measurements were performed with
2360 No. 156371 and 43-89 No. 164832

	Beta	Alpha
Wall Efficiency	0.088	0.153
Wall Background (cpm)	8	3.7
Wall MDA (dpm/100 cm2)	180	76

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Direct Measurements (Total Activity)
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Ceiling (Interior)

Location	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm2)	Uncertainty 95% CL	MDA (dpm/100cm2)	Direct Alpha (1) (dpm/100cm2)
C1	269	236	33	8	25	284	143	180	568
C2	216	239	-23	8	-31	-352	86	180	-705
C3	431	301	130	8	122	1386	262	180	2773
C4	254	242	12	8	4	45	100	180	91
C5	285	277	8	8	0	0	89	180	0
C6	246	238	8	8	0	0	89	180	0
C7	286	279	7	8	-1	-11	86	180	-23
C8	231	230	1	8	-7	-80	67	180	-159
C9	259	264	-5	8	-13	-148	39	180	-295
C10	238	233	5	8	-3	-34	80	180	-68
C11	440	282	158	8	150	1705	287	180	3409
C12	265	267	-2	8	-10	-114	55	180	-227
C13	253	237	16	8	8	91	109	180	182
C14	244	248	-4	8	-12	-136	45	180	-273
C15	241	299	-58	8	-66	-750	157	180	-1500
C16	300	230	70	8	62	705	197	180	1409
C17	263	260	3	8	-5	-57	74	180	-114
C18	266	265	1	8	-7	-80	67	180	-159

All ceiling direct measurements were performed with 2360
No. 156371 and 43-89 No. 164832

	Beta	Alpha
Ceiling Efficiency	0.088	0.153
Ceiling Background (cpm)	8	3.7
Ceiling MDA (dpm/100 cm2)	180	76

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Direct Measurements (Total Activity)
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Walls)

Location	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm2)	Uncertainty 95% CL	MDA (dpm/100cm2)	Direct Alpha (1) (dpm/100cm2)
W1	231	228	3	8	-5	-57	74	180	-114
W2	194	206	-12	8	-20	-227	45	180	-455
W3	265	249	16	8	8	91	109	180	182
W4	239	240	-1	8	-9	-102	59	180	-205
W5	270	230	40	8	32	364	154	180	727
W6	261	274	-13	8	-21	-239	50	180	-477
W7	277	251	26	8	18	205	130	180	409
W8	272	281	-9	8	-17	-193	22	180	-386
W9	264	274	-10	8	-18	-205	31	180	-409
W10	303	279	24	8	16	182	126	180	364
W11	256	245	11	8	3	34	97	180	68
W12	248	256	-8	8	-16	-182	0	180	-364
W13	240	202	38	8	30	341	151	180	682
W14	245	249	-4	8	-12	-136	45	180	-273
W15	248	225	23	8	15	170	124	180	341
W16	401	374	27	8	19	216	132	180	432
W17	331	334	-3	8	-11	-125	50	180	-250
W18	431	382	49	8	41	466	168	180	932
W19	263	244	19	8	11	125	116	180	250
W20	289	252	37	8	29	330	149	180	659
W21	293	266	27	8	19	216	132	180	432
W22	314	278	36	8	28	318	148	180	636
W23	269	243	26	8	18	205	130	180	409
W24	276	246	30	8	22	250	137	180	500
W25	294	248	46	8	38	432	164	180	864
W26	299	268	31	8	23	261	139	180	523
W27	276	237	39	8	31	352	153	180	705
W28	372	306	66	8	58	659	192	180	1318
W29	334	297	37	8	29	330	149	180	659
W30	345	322	23	8	15	170	124	180	341

All building exterior direct measurements were performed with 2360 No. 156371 and 43-89 No. 164832

	Beta	Alpha
Efficiency	0.088	0.153
Background (cpm)	8	3.7
MDA (dpm/100 cm2)	180	76

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Elevated Direct Measurements (Total Activity) and Averaging Results
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Wall and Ceiling (Interior)

Location	Direct Beta (dpm/100cm^2)	Direct Alpha (dpm/100cm^2)	Over Area (cm^2)	Exceeds Limits Maximum	Exceeds Limits Average	Averaged Value (over 1 m^2)	Within Limits? Yes/No
W7	1045	2091				Marked for removal/remediation	
W8	1898	3795				Marked for removal/remediation	
W9	2170	4341				Marked for removal/remediation	
W10	1432	2864				Marked for removal/remediation	
W13		1386				Marked for removal/remediation	
W22		1386				Marked for removal/remediation	
W25	1932	3864				Marked for removal/remediation	
W28		1205				Marked for removal/remediation	
W30	2739	5477				Marked for removal/remediation	
W32	1034	2068				Marked for removal/remediation	
W36	3568	7136				Marked for removal/remediation	
W38	4432	8864				Marked for removal/remediation	
W43	2182	4364				Marked for removal/remediation	
W44	2205	4409				Marked for removal/remediation	
W47	1580	3159				Marked for removal/remediation	
W52	1568	3136				Marked for removal/remediation	
W54	2489	4977				Marked for removal/remediation	
W59		1386	100	No	Yes	532	Yes
W60	3068	6136				Marked for removal/remediation	
W61		1023	100	No	Yes	416	Yes
C3	1386	2773				Marked for removal/remediation	
C11	1705	3409				Marked for removal/remediation	
C16		1409	100	No	Yes	63	Yes

Elevated Direct Measurements (Total Activity) and Averaging Results
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Wall (Exterior)

Location	Direct Beta (dpm/100cm^2)	Direct Alpha (dpm/100cm^2)	Over Area (cm^2)	Exceeds Limits Maximum	Exceeds Limits Average	Averaged Value (over 1 m^2)	Within Limits? Yes/No
W28		1318	100	No	Yes	-39	Yes

Removable Surface Activity Measurements
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA	Instrument Number
W1	24	25.8	152	-0.3	1.8	12	1
W2	-24	25.8	152	-0.3	1.8	12	1
W3	61	39.1	152	-0.3	1.8	12	1
W4	42	32.9	152	-0.3	1.8	12	1
W5	6	15.7	152	2.6	5.4	12	1
W6	18	22.9	152	2.6	5.4	12	1
W7	12	19.6	152	2.6	5.4	12	1
W8	6	15.7	152	-0.3	1.8	12	1
W9	-6	15.7	152	-0.3	1.8	12	1
W10	42	32.9	152	-0.3	1.8	12	1
W11	-6	15.7	152	-0.3	1.8	12	1
W12	-6	15.7	152	-0.3	1.8	12	1
W13	12	19.6	152	-0.3	1.8	12	1
W14	18	22.9	152	2.6	5.4	12	1
W15	-6	15.7	152	-0.3	1.8	12	1
W16	18	22.9	152	2.6	5.4	12	1
W17	6	15.7	152	2.6	5.4	12	1
W18	18	22.9	152	-0.3	1.8	12	1
W19	12	19.6	152	-0.3	1.8	12	1
W20	18	22.9	152	-0.3	1.8	12	1
W21	18	22.9	152	2.6	5.4	12	1
W22	6	15.7	152	-0.3	1.8	12	1
W23	6	15.7	152	2.6	5.4	12	1
W24	0	10.3	152	-0.3	1.8	12	1
W25	24	25.8	152	2.6	5.4	12	1
W26	-6	15.7	152	-0.3	1.8	12	1
W27	12	19.6	152	2.6	5.4	12	1
W28	6	15.7	152	-0.3	1.8	12	1
W29	0	10.3	152	2.6	5.4	12	1
W30	-30	28.4	152	2.6	5.4	12	1
W31	12	19.6	152	-0.3	1.8	12	1
W32	-6	15.7	152	-0.3	1.8	12	1
W33	67	40.8	152	-0.3	1.8	12	1

W34	-6	15.7	152	-0.3	1.8	12	1
W35	-24	25.8	152	2.6	5.4	12	1
W36	48	35.0	152	2.6	5.4	12	1
W37	0	10.3	152	-0.3	1.8	12	1
W38	-12	19.6	152	-0.3	1.8	12	1
W39	18	22.9	152	-0.3	1.8	12	1
W40	67	40.8	152	-0.3	1.8	12	1
W41	-6	15.7	152	-0.3	1.8	12	1
W42	0	10.3	152	-0.3	1.8	12	1
W43	18	22.9	152	2.6	5.4	12	1
W44	6	15.7	152	-0.3	1.8	12	1
W45	12	19.6	152	2.6	5.4	12	1
W46	0	10.3	152	-0.3	1.8	12	1
W47	-90	46.9	152	2.5	5.3	12	1
W48	0	10.3	152	5.4	7.8	12	1
W49	-78	43.8	152	5.4	7.8	12	1
W50	-60	38.8	152	2.5	5.3	12	1
W51	-78	43.8	152	2.5	5.3	12	1
W52	48	35.0	152	2.5	5.3	12	1
W53	-12	19.6	152	-0.4	2.1	12	1
W54	0	10.3	152	-0.4	2.1	12	1
W55	18	22.9	152	5.4	7.8	12	1
W56	-42	32.9	152	2.5	5.3	12	1
W57	60	38.8	152	-0.4	2.1	12	1
W58	-18	22.9	152	-0.4	2.1	12	1
W59	-6	15.7	152	-0.4	2.1	12	1
W60	-18	22.9	152	5.4	7.8	12	1
W61	0	10.3	152	-0.4	2.1	12	1
W62	-6	15.7	152	2.5	5.3	12	1
W63	-18	22.9	152	2.5	5.3	12	1
W64	18	22.9	152	-0.4	2.1	12	1
W65	42	32.9	152	-0.4	2.1	12	1
W66	0	10.3	152	-0.4	2.1	12	1
W67	-6	15.7	152	-0.4	2.1	12	1
W68	-6	15.7	152	-0.4	2.1	12	1
W69	12	19.6	152	-0.4	2.1	12	1

#1 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	45	0.12
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	152	12

#2 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	47	0.13
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	156	12

Removable Surface Activity Measurements
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Ceiling (Interior)

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA	Instrument Number
C1	-18	23.0	156	-0.4	2.1	12	2
C2	18	23.0	156	-0.4	2.1	12	2
C3	78	43.9	156	-0.4	2.1	12	2
C4	-36	30.8	156	-0.4	2.1	12	2
C5	-60	38.8	156	-0.4	2.1	12	2
C6	-24	25.9	156	-0.4	2.1	12	2
C7	0	10.5	156	-0.4	2.1	12	2
C8	24	25.9	156	-0.4	2.1	12	2
C9	48	35.0	156	-0.4	2.1	12	2
C10	12	19.7	156	-0.4	2.1	12	2
C11	-30	28.4	156	2.5	5.3	12	2
C12	-18	23.0	156	-0.4	2.1	12	2
C13	-18	23.0	156	-0.4	2.1	12	2
C14	121	54.1	156	-0.4	2.1	12	2
C15	60	38.8	156	-0.4	2.1	12	2
C16	-90	47.0	156	-0.4	2.1	12	2
C17	-54	37.0	156	-0.4	2.1	12	2
C18	-36	30.8	156	-0.4	2.1	12	2

#1 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	45	0.12
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	152	12

#2 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	47	0.13
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	156	12

Removable Surface Activity Measurements
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Walls and Roof)

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA	Instrument Number
W1	18	23	156	-0.4	2.1	12	2
W2	48	35	156	-0.4	2.1	12	2
W3	48	35	156	-0.4	2.1	12	2
W4	-60	39	156	-0.4	2.1	12	2
W5	-12	20	156	-0.4	2.1	12	2
W6	-42	33	156	-0.4	2.1	12	2
W7	24	26	156	2.5	5.3	12	2
W8	24	26	156	-0.4	2.1	12	2
W9	0	11	156	-0.4	2.1	12	2
W10	24	26	156	-0.4	2.1	12	2
W11	12	20	156	-0.4	2.1	12	2
W12	0	11	156	-0.4	2.1	12	2
W13	-12	20	156	2.5	5.3	12	2
W14	-6	16	156	-0.4	2.1	12	2
W15	6	16	156	-0.4	2.1	12	2
W16	18	23	156	-0.4	2.1	12	2
W17	-12	20	156	-0.4	2.1	12	2
W18	-18	23	156	-0.4	2.1	12	2
W19	6	16	156	-0.4	2.1	12	2
W20	-42	33	156	-0.4	2.1	12	2
W21	0	11	156	-0.4	2.1	12	2
W22	60	39	156	2.5	5.3	12	2
W23	-30	28	156	-0.4	2.1	12	2
W24	-6	16	156	-0.4	2.1	12	2
W25	12	20	156	-0.4	2.1	12	2
W26	-18	23	156	-0.4	2.1	12	2
W27	42	33	156	-0.4	2.1	12	2
W28	-6	16	156	-0.4	2.1	12	2
W29	6	16	156	-0.4	2.1	12	2
W30	0	11	156	-0.4	2.1	12	2

#1 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	45	0.12
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	152	12

#2 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	47	0.13
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	156	12

Elevated Removable Surface Activity Measurements
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

No elevated removable surface activity was reported above limits.

Exposure Rate Measurements
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Walls (Interior)

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
W1	9	1
W2	9	1
W3	9	1
W4	9	1
W5	9	1
W6	9	1
W7	9	1
W8	9	1
W9	9	1
W10	9	1
W11	9	1
W12	9	1
W13	9	1
W14	9	1
W15	9	1
W16	11	3
W17	11	3
W18	11	3
W19	11	3
W20	11	3
W21	11	3
W22	11	3
W23	11	3
W24	10	2
W25	10	2
W26	10	2
W27	10	2
W28	10	2
W29	11	3
W30	12	4
W31	12	4
W32	13	5
W33	12	4
W34	12	4
W35	12	4
W36	13	5
W37	13	5
W38	12	4
W39	12	4
W40	13	5
W41	13	5
W42	10	2
W43	10	2
W44	9	1
W45	9	1
W46	9	1
W47	9	1

W48	8	0
W49	6	-2
W50	6	-2
W51	7	-1
W52	7	-1
W53	7	-1
W54	7	-1
W55	8	0
W56	8	0
W57	7	-1
W58	8	0
W59	10	2
W60	10	2
W61	8	0
W62	10	2
W63	10	2
W64	9	1
W65	9	1
W66	8	0
W67	9	1
W68	8	0
W69	8	0

Background dose rate: 8 uR/hr with Model 19, No.115870

Exposure Rate Measurements
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Ceiling (Interior)

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
C1	7	-1
C2	7	-1
C3	8	0
C4	7	-1
C5	7	-1
C6	7	-1
C7	8	0
C8	8	0
C9	8	0
C10	8	0
C11	8	0
C12	8	0
C13	7	-1
C14	7	-1
C15	7	-1
C16	8	0
C17	8	0
C18	7	-1

Background dose rate: 8 uR/hr with Model 19, No.115870

Exposure Rate Measurements

Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Walls)

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
W1	9	1
W2	7	-1
W3	11	3
W4	11	3
W5	13	5
W6	12	4
W7	13	5
W8	13	5
W9	12	4
W10	11	3
W11	9	1
W12	10	2
W13	12	4
W14	12	4
W15	12	4
W16	8	0
W17	9	1
W18	10	2
W19	10	2
W20	10	2
W21	10	2
W22	10	2
W23	10	2
W24	9	1
W25	8	0
W26	9	1
W27	9	1
W28	8	0
W29	9	1
W30	9	1

Background dose rate: 8 uR/hr with Model 19, No.115870

Exposure Rate Measurements
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Roof)

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
see map	11	3
see map	11	3
see map	11	3
see map	10	2
see map	11	3
see map	11	3
see map	11	3
see map	11	3
see map	10	2
see map	11	3
see map	10	2
see map	12	4
see map	10	2
see map	10	2
see map	9	1
see map	9	1
see map	10	2
see map	9	1
see map	9	1
see map	9	1
see map	9	1
see map	9	1
see map	9	1
see map	9	1
see map	9	1
see map	9	1
see map	9	1

Background dose rate: 8 uR/hr with Model 19, No.115870

Summary of Building Surface Direct Reading (Total Activity) Results
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Including all building interior and exterior measurements

Beta				Alpha			
n	$\bar{x}$	s	μ_α	n	$\bar{x}$	s	μ_α
93	60	253.9	103.8	93	120	507.9	207.7

$t_{1-\alpha}$ 1.665

Guidelines/Conditions Satisfied?

Beta	Alpha
Yes	Yes

Summary of Exposure Rate Measurements
Molycorp - Building 31 Survey Unit Excluding Foundation (Affected Area)

Including all building interior and exterior measurements (uR/hr)

n	$\bar{x}$	s	μ_α
144	1.5	1.7	1.8

$t_{1-\alpha}$ 1.657

Guidelines/Conditions Satisfied?
Yes

Appendix H

Building 37 Data Package

Molycorp Washington, PA

Building 37 Data Package

This data package contains final status survey information for Building 37, Molycorp, Washington, PA site.

Field data collection forms, survey report forms, statistical test results, and comparisons to release limits are provided.

Summary

No anomalies were reported during the survey of Building 37. Elevated levels of background radiation, from soil radioactivity, continued to be a presence during survey activities.

Results from the final status survey of Building 37 provides evidence that release criteria have been met, demonstrates that residual radioactivity is below the unrestricted use criteria, and confirms that Building 37 is suitable for unrestricted use.

DDO-138 Radiation Protection Survey Report

Site: Molycorp / Washington, PA

Section 1: Survey Information

Date:	Time:	Location:	Survey Issue Log Number
5-14-02	1430	Bldg 37 North Floor	02-0193

RWP Number: N/A

Purpose of Survey: ☐ RWP ☐ Routine Survey ☐ Unconditional Release ☒ Other:

Page 1 of 5

Survey Title: F.S.S. Bldg 37 North Floor AFCEE+Eel

Smear Number	Beta dpm/100cm²	Alpha dpm/100cm²
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		

Bkgd Readings:

Legend:

00 = mRem/h gamma | 00 C = mRem/h gamma contact | ⦶ = Smear Location | ▽ = Air Sample Location | -X-X-X- = Rope, Boundary, or Barrier

00 β = mRem/h beta | 00 βC = mRem/h beta contact | —D— = Large Area Wipe | = Bulk Material Sample

Section 2: Instrument Used

Instrument Model/SN:	Cal Due Date:	Probe Model/SN:	Cal Due Date:	Detector Eff.: (cpm/dpm)	MDA:	Other Bkgd
2350/95359	8-6-02	43-37/092503	8-6-02	β .27 α .207	β 190 α 16	β 503 α 6.6
2360/164680	7-9-02	43-89/118544	8-6-02	β .113 α .164	β 387 α 60	78 2.4
2929/715563	6-19-02	43-10/127216	6-19-02	β .239 α .35	β 126 α 11	68 13
19/22526						9-11 μR/hr

Section 3: Review and Approval

Survey Performed By (Sign): [signature]

Area Posted and/or Barricaded: ☐ Yes ☐ No ☒ Not Required

Date and Time: 5-14-02 1430

Radiation Safety Officer (Print Name & Sign): Mike McDonald [signature]

Date and Time: 5-16-02 1040

Radiological Survey Results - Survey Location Indicator

02-0193

Survey Area Information:

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
~~U~~-1	1780	8	383	263	7	10	2.4	4
~~U~~-2	1820	7	347	271	5	10	2.4	-4
~~U~~-3	1800	5	332	269	4	10	-.37	67
~~U~~-4	1740	10	390	279	8	10	-.37	38
~~U~~-5	1810	4	338	286	3	12	-.37	-8
~~U~~-6	1850	14	384	262	3	10	-.37	25
~~U~~-7	1980	11	404	276	4	10	-.37	13
~~U~~-8	1940	11	402	303	7	10	2.4	8
~~U~~-9	1880	10	410	266	6	10	2.4	71
~~U~~-10	1850	10	380	248	8	12	2.4	-29
~~U~~-11	1910	5	570	271	11	12	2.4	13
~~U~~-12	1900	15	382	293	4	9	8.2	38
~~U~~-13	1850	17	350	244	6	10	-.37	50
~~U~~-14	1950	8	405	270	4	9	-.37	-8
~~U~~-15	2040	8	467	307	4	10	-.37	-4
~~U~~-16	1950	7	363	304	3	10	-.37	0
~~U~~-17	1860	5	392	307	3	10	-.37	84
~~U~~-17 QC			389	314	3	10	2.4	29
~~U~~-18	2100	10	474	291	4	12	2.4	4
~~U~~-19	2050	12	433	311	4	12	-.37	4
~~U~~-20	1980	8	399	266	4	9	-.37	67
~~U~~-21	1950	4	371	283	3	9	-.37	25
~~U~~-22	1990	5	350	279	4	4	2.4	13
~~U~~-23	1940	5	363	268	4	10	-.37	38
~~U~~-24	1930	4	408	293	3	10	-.37	-13
~~U~~-25	2110	14	433	271	1	10	-.37	-8
~~U~~-26	1990	10	374	258	10	10	-.37	8

Radiological Survey Results - Survey Location Indicator 02-0193

Survey Area Information:

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
27	1940	10	377	307	4	10	2.4	109
28	1980	10	382	278	4	10	2.4	4
29	2010	8	401	287	5	10	2.4	29
30	1900	14	395	241	3	10	2.4	-4
31	1950	12	345	252	5	10	2.4	-8
32	1950	11	272	274	2	10	-.37	67
33	1930	18	379	259	8	9	5.2	25
34	2000	9	432	303	12	9	-.37	84
35	1990	6	398	284	7	10	-.37	71
36	2010	10	314	267	4	10	-.37	4
37	1995	10	448	350	13	10	5.3	50
38	2020	10	370	252	6	10	2.4	-13
39	2000	12	387	307	10	9	2.4	-4
40	2100	11	432	312	5	9	2.4	38
41	2040	11	378	361	5	9	-.37	0
42	1950	9	395	277	3	11	-.37	84
43	1990	6	442	279	7	11	-.37	8
44	1980	6	417	287	15	10	-.37	8
45	1990	10	368	268	5	9	-.37	0
46	2000	13	373	313	4	10	2.4	25
47	2020	10	441	332	3	10	2.4	13
48	1960	9	384	292	5	10	2.4	38
49	1870	8	400	272	3	12	5.3	13
50	1855	8	465	361	8	12	-.37	29
51	1875	17	404	355	5	12	8.2	-8
52	1890	12	438	356	4	12	-.37	8
53	1920	12	424	306	5	12	-.37	13

Radiological Survey Results - Survey Location Indicator

02-0193

Survey Area Information:

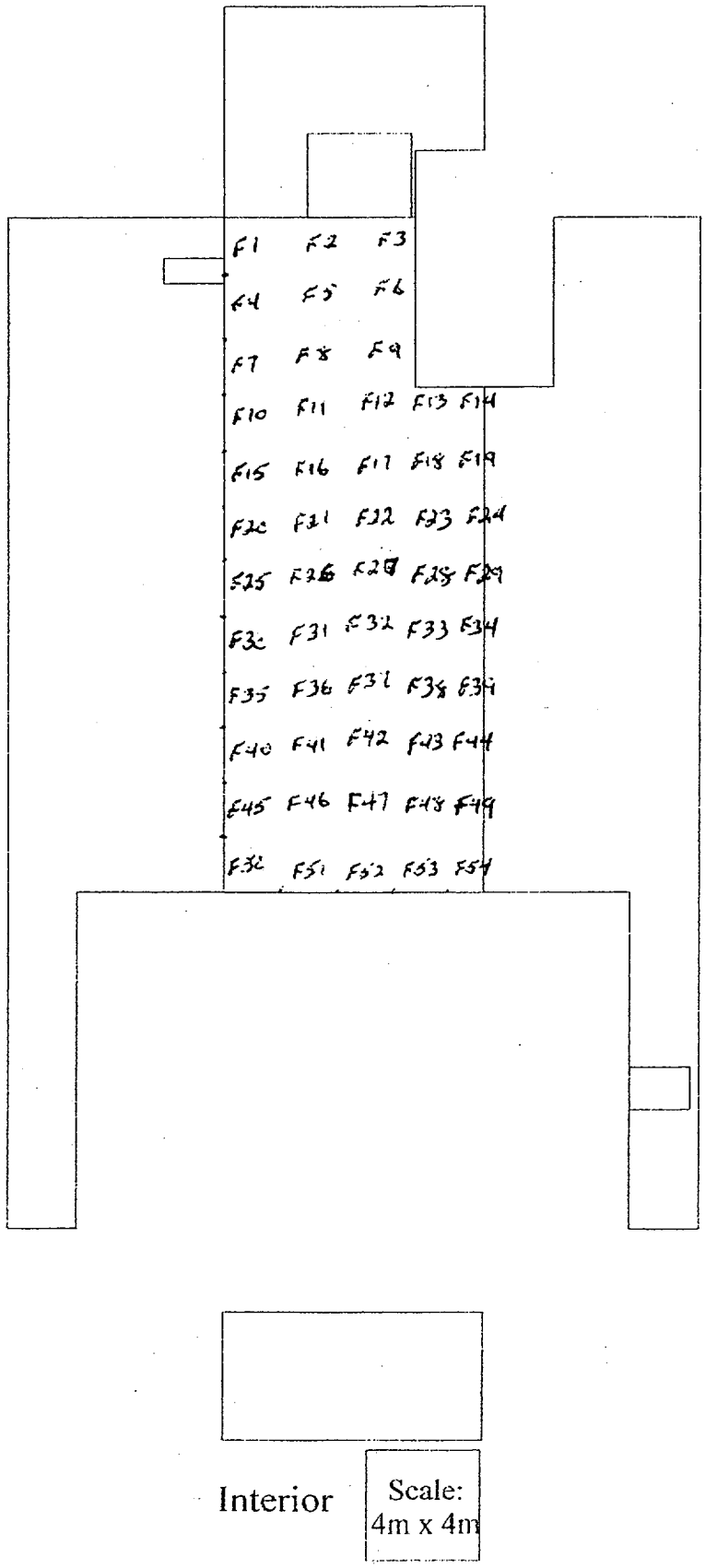
Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
6-54	1880	5	405	332	8	12	-.37	25

Building 37
North

02-0193



DDO-138 Radiation Protection Survey Report

Site: Molycorp / Washington, PA

Section 1: Survey Information

Date:	Time:	Location:	Survey Issue Log Number
5-14-02	1230	Bldg 37	02-0193

RWP Number: N/A

Purpose of Survey: ☐ RWP ☐ Routine Survey ☐ Unconditional Release ☒ Other:

Page 1 of 10

Survey Title: F.S.S. Bldg 37 UNAFFECTED

Floor in North Room of Bldg 37 Surveyed as AFFECTED SEE Survey # 02-0193 For RESULTS

Floor Bkgds β 78 α 2.4

MDA 387 60

Smear Number	Beta dpm/100cm²	Alpha dpm/100cm²
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13	N	
14		A
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		

Bkgd Readings:

Legend:

00 = mRem/h gamma | 00 C = mRem/h gamma contact | ⓘ = Smear Location | ▽ = Air Sample Location | -X-X-X- = Rope, Boundary, or Barrier

00 β = mRem/h beta | 00 βC = mRem/h beta contact | —D— = Large Area Wipe | = Bulk Material Sample

Section 2: Instrument Used

Instrument Model/SN:	Cal Due Date:	Probe Model/SN:	Cal Due Date:	Detector Eff.: (cpm/dpm)	MDA:	Other Bkgd
2929/115563	6-19-02	43-10/127216	6-19-02	α .35 β .229	α 11 β 126	α .13 β 65
2360/164680	7-9-02	43-59/118544	8-6-02	β .113 / α .164	β 140 / α 71	β 8 / α 3.7
2350/117566	8-6-02	43-106/133566	8-6-02	β .248 / α .211	β 686 / α 40	325 / .8
2350/95359	8-6-02	43-37/092503	8-6-02	β .27 / α .227	β 190 / α 76	1503 / 6.6
19/22526	8-6-02					

Section 3: Review and Approval

Survey Performed By (Sign): [signature]

Area Posted and/or Barricaded: ☐ Yes ☐ No ☒ Not Required

Date and Time: 5-14-02 1230

Radiation Safety Officer (Print Name & Sign): Mike McDonald [signature]

Date and Time: 5-16-02 1040

Radiological Survey Results - Survey Location Indicator

02-0192

Survey Area Information:

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
W-1	360	1.4	311	292	1	12	2.4	46
W-2	380	2.2	302	318	1	12	2.4	0
W-3	345	1.2	332	288	2	12	2.4	13
W-4	350	1.8	296	270	4	16	2.4	38
W-5	290	2.2	191	196	6	9	-.37	21
W-6	320	2.6	258	269	4	9	-.37	-13
W-7	320	2.4	251	212	4	9	5.3	8
W-7 QC			255	237	4	9	2.4	4
W-8	320	2.8	215	197	5	10	-.37	17
W-9	360	1.8	270	243	14	10	-.37	54
W-10	300	1.2	277	230	1	10	-.37	-4
W-11	280	1.0	238	241	3	10	-.37	25
* W-12	360	2.2	301	240	3	10	-.37	8
* W-13	380	2.4	338	251	3	10	2.4	-29
* W-14	380	2.6	326	266	3	10	2.4	63
W-15	290	1	225	231	7	10	-.37	21
W-16	280	0	232	214	1	10	-.37	13
W-17	300	2	234	217	9	12	-.37	80
* W-18	440	3	356	268	4	12	-.37	0
* W-19	290	1	364	295	4	12	5.3	-4
* W-20	300	2.2	350	271	4	12	-.37	13
W-21	280	2.1	215	253	8	12	-.37	-21
W-22	290	1.2	213	227	2	10	-.37	25
W-23	290	1.4	196	209	4	10	-.37	17
W-24	300	1.6	201	190	3	10	-.37	0
W-25	290	1.6	241	217	4	9	-.37	13
W-26	290	1.2	245	238	0	10	2.4	38

*= CINDER BLOCK

Radiological Survey Results - Survey Location Indicator

02-0192

Survey Area Information:

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
W-27	280	1.2	203	217	1	10	2.4	88
W-28	300	2.8	288	251	1	8	-.37	-29
W-29	300	4.2	258	223	1	10	-.37	17
W-30	320	3.6	276	241	1	8	-.37	54
F-1	1900	8	288	297	2	12	-.37	54
F-2	1920	9	431	418	1	14	2.4	17
F-3	1940	8	351	337	1	12	-.37	13
F-4	1910	11	427	401	1	12	-.37	-4
F-4 QC			354	336	3	12	2.4	-33
F-5	1860	10	324	325	4	12	-.37	-17
F-6	1900	10	354	350	2	12	-.37	25
F-7	1850	8	373	359	2	15	-.37	-13
F-8	1880	9	355	379	1	12	2.4	25
F-9	1950	8	373	380	1	14	-.37	8
F-10	1800	6	383	361	1	14	2.4	38
F-11	1740	7	367	353	1	12	2.4	-8
F-12	1770	6	353	287	3	14	-.37	63
F-13	1670	7	352	253	2	10	-.37	42
F-14	1740	7	320	223	3	10	-.37	4
F-15	1770	4	365	264	4	10	2.4	21
F-16	1700	9	331	252	1	10	-.37	38
F-17	1810	9	336	263	1	10	-.37	46
F-18	1780	10	307	205	4	10	2.4	-4
F-19	1750	7	346	232	3	10	2.4	-8
F-20	1800	7	381	262	2	10	-.37	8
F-21	1790	5	399	280	1	10	-.37	13

Radiological Survey Results - Survey Location Indicator

02-0192

Survey Area Information:

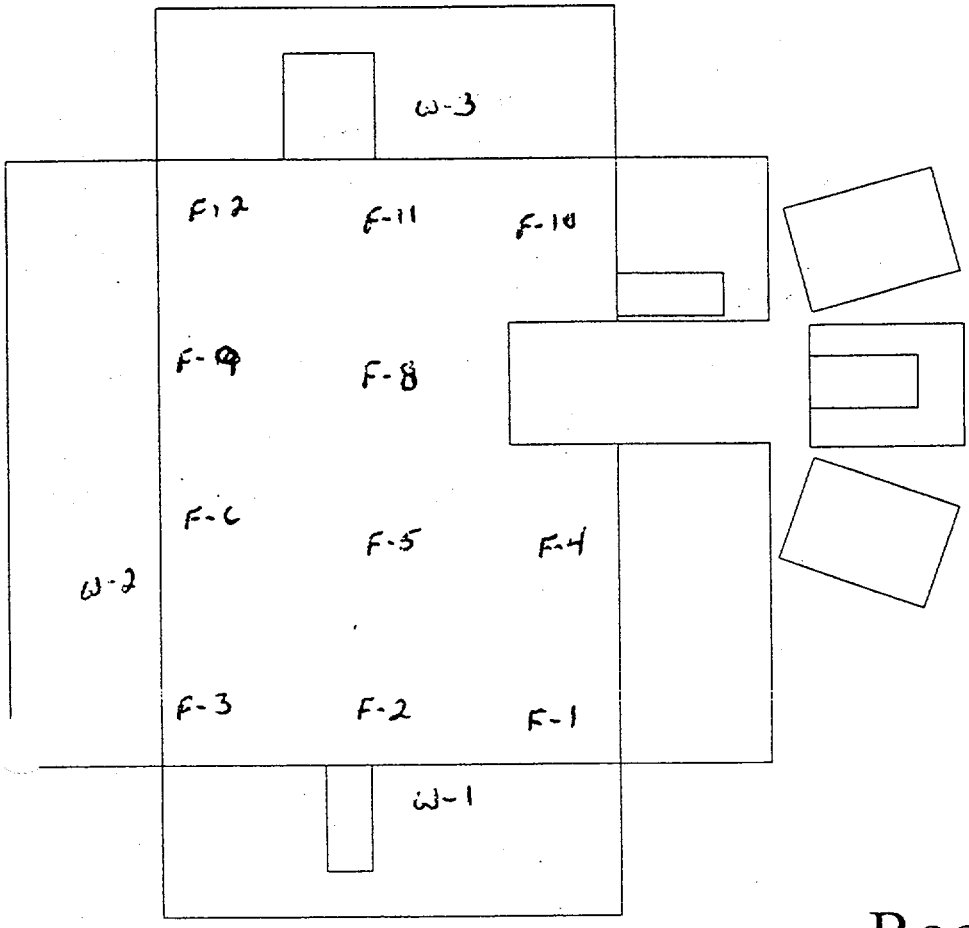
Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
F-22	1690	15	319	226	1	10	-.37	-13
F-23	1700	8	341	256	4	10	2.4	-4
F-24	1760	6	361	273	3	10	2.4	50
F-25	1740	10	359	256	8	10	2.4	8
F-26	1790	7	337	255	5	10	-.37	25
F-27	1750	5	314	292	1	10	-.37	38
F-28	1700	5	513	402	9	12	2.4	17
F-29	1810	4	355	285	1	10	5.2	33
F-30	1820	9	551	452	5	12	2.4	-4
W-1	250	1	206	213	4	10	-.37	-4
W-2	290	2	198	204	6	10	-.37	50
W-3	300	2	254	246	3	12	5.2	38
W-4	310	2	245	247	3	12	2.4	25

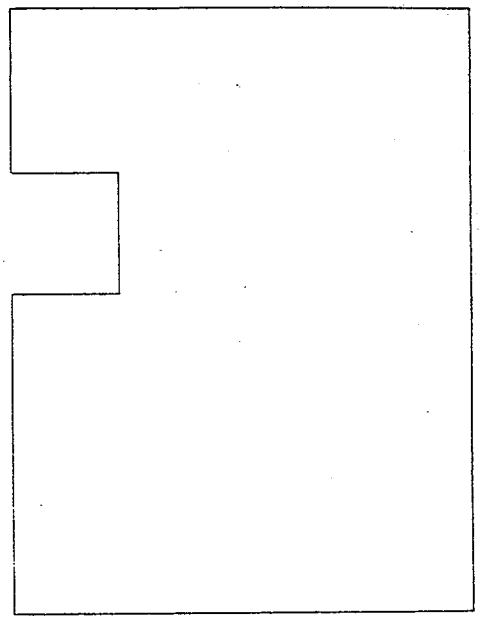
1/3

Building 37
South Room



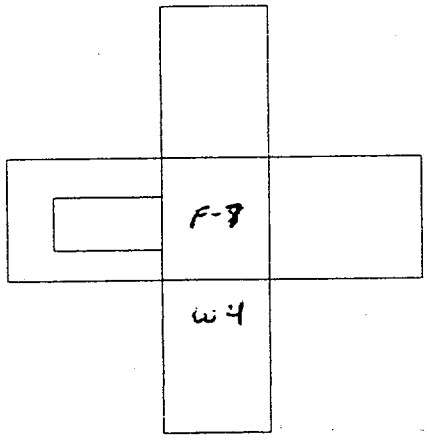
Interior

South Room

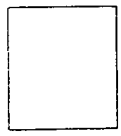


Ceiling

Room Closet



Interior

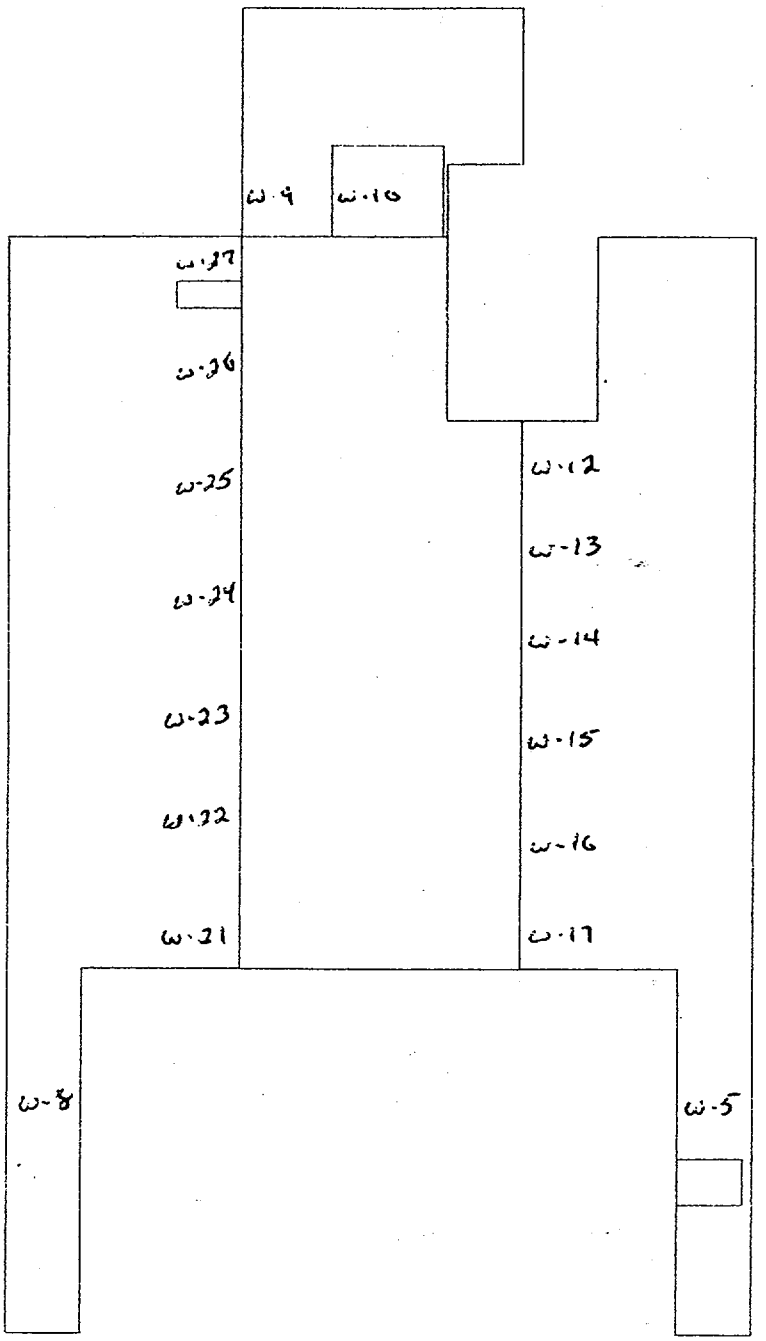


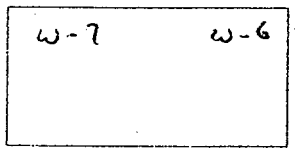
Ceiling

Scale:
4m x 4m

02-0192

Building 37
North



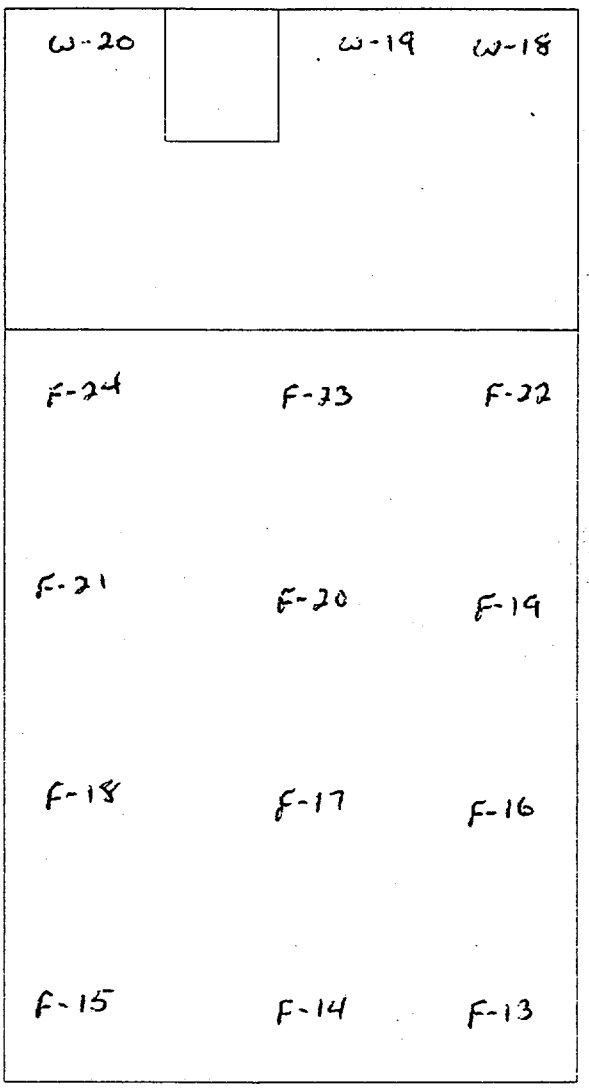


Interior

Scale:
4m x 4m

02-0192

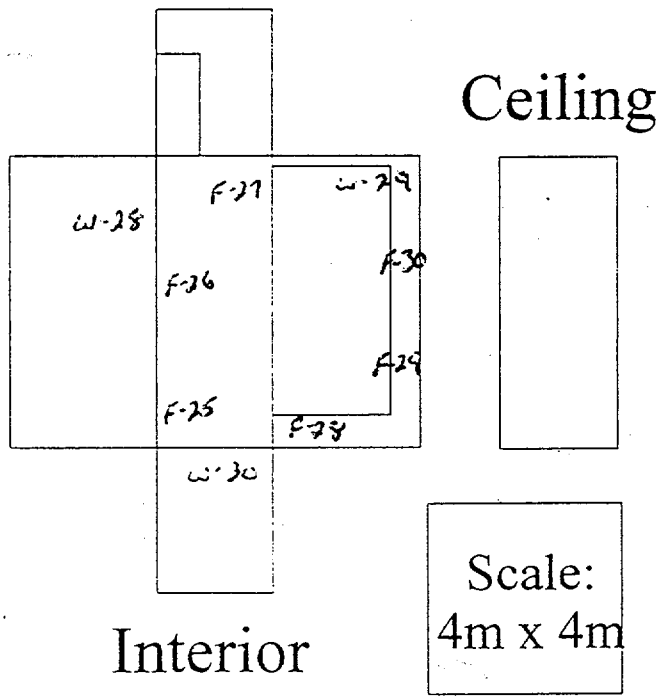
Building 37
South Room



Exterior

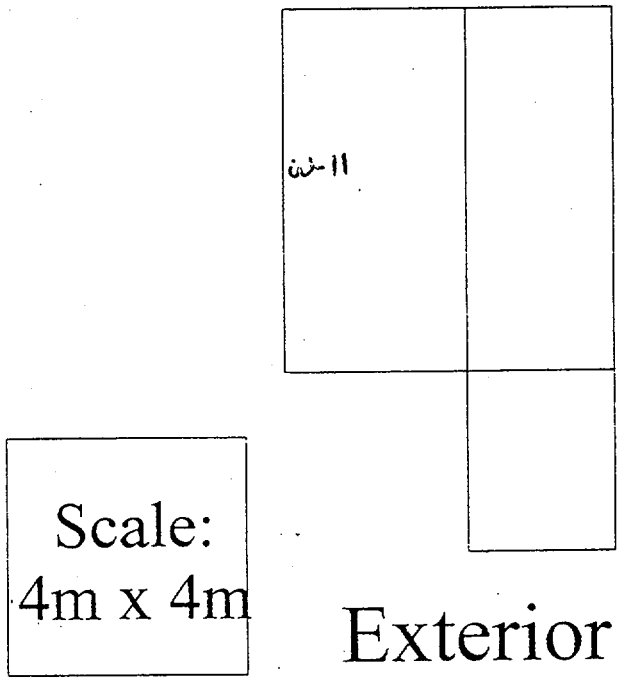
Scale:
4m x 4m

Building 37
North Room



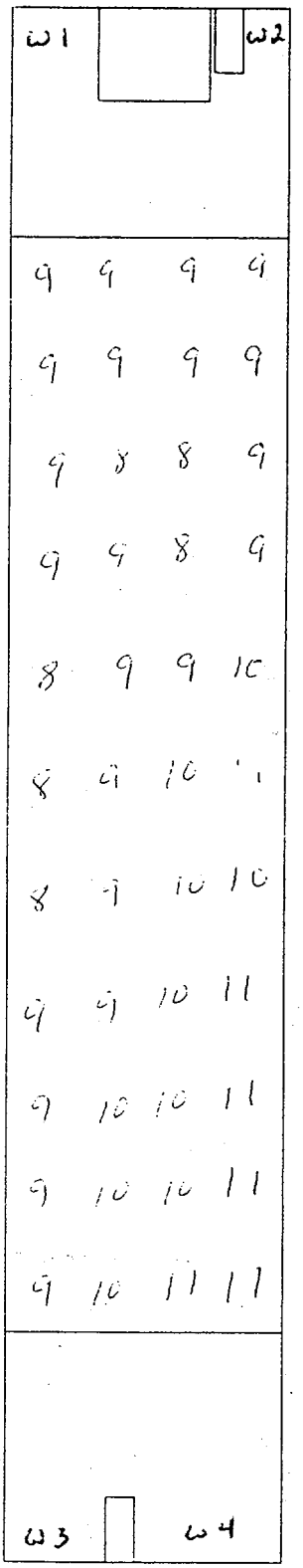
02-0192

Building 37
North Room



02-0192

Building 37
North



Exterior

Scale:
4m x 4m

Results of Surface Scans
Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

Building Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W1	360	35	1.4	0.6
W2	380	55	2.2	1.4
W3	345	20	1.2	0.4
W4	350	25	1.8	1
W5	290	-35	2.2	1.4
W6	320	-5	2.6	1.8
W7	300	-25	2.4	1.6
W8	320	-5	2.8	2
W9	300	-25	1.8	1
W10	300	-25	1.2	0.4
W11	280	-45	1	0.2
W12	360	35	2.2	1.4
W13	380	55	2.4	1.6
W14	380	55	2.6	1.8
W15	290	-35	1	0.2
W16	280	-45	0	-0.8
W17	300	-25	2	1.2
W18	440	115	3	2.2
W19	290	-35	1	0.2
W20	300	-25	2.2	1.4
W21	280	-45	2.1	1.3
W22	290	-35	1.2	0.4
W23	290	-35	1.4	0.6
W24	300	-25	1.6	0.8
W25	290	-35	1.6	0.8
W26	290	-35	1.2	0.4
W27	280	-45	1.2	0.4
W28	300	-25	2.8	2
W29	300	-25	4.2	3.4
W30	320	-5	3.6	2.8

All interior wall scans performed with Ludlum 2350-1 No.117566
with 43-106 No. 133866

Scan MDA Beta - 686 dpm/detector area
Scan MDA Alpha - 40 dpm/detector area
Scan background Beta - 325 cpm
Scan background Alpha - .8 cpm
Detector Eff. Beta - .248
Detector Eff. Alpha - .211

Results of Surface Scans

Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

Building Exterior (Walls)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W1	250	-75	1	0.2
W2	290	-35	2	1.2
W3	300	-25	2	1.2
W4	310	-15	2	1.2

All exterior wall scans performed with Ludlum 2350-1 No.117566
with 43-106 No. 133866

Scan MDA Beta - 686 dpm/detector area
Scan MDA Alpha - 40 dpm/detector area
Scan background Beta - 325 cpm
Scan background Alpha - .8 cpm
Detector Eff. Beta - .248
Detector Eff. Alpha - .211

Elevated Scan Readings

Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

Building Walls (Interior)

Location (see map)	Alpha Scan net cpm
W6	1.8
W14	1.8
W18	2.2
W28	2
W29	3.4
W30	2.8

Direct Measurements (Total Activity)
Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

Building Walls (Interior)

Location (see map)	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm^2)	Uncertainty 95% CL	MDA (dpm/100cm^2)	Direct Alpha (1) (dpm/100cm^2)
W1	311	292	19	8	11	97	90	140	195
W2	302	318	-16	8	-24	-212	49	140	-425
W3	332	288	44	8	36	319	125	140	637
W4	296	270	26	8	18	159	101	140	319
W5	191	196	-5	8	-13	-115	30	140	-230
W6	258	269	-11	8	-19	-168	30	140	-336
W7	251	212	39	8	31	274	119	140	549
W8	215	197	18	8	10	88	88	140	177
W9	270	243	27	8	19	168	103	140	336
W10	277	230	47	8	39	345	129	140	690
W11	238	241	-3	8	-11	-97	39	140	-195
W12	301	240	61	49	12	106	182	383	212
W13	338	251	87	49	38	336	202	383	673
W14	326	266	60	49	11	97	181	383	195
W15	225	231	-6	8	-14	-124	25	140	-248
W16	232	214	18	8	10	88	88	140	177
W17	234	217	17	8	9	80	87	140	159
W18	356	268	88	49	39	345	203	383	690
W19	364	295	69	49	20	177	188	383	354
W20	350	271	79	49	30	265	196	383	531
W21	215	253	-38	8	-46	-407	95	140	-814
W22	213	227	-14	8	-22	-195	42	140	-389
W23	196	209	-13	8	-21	-186	39	140	-372
W24	201	190	11	8	3	27	76	140	53
W25	241	217	24	8	16	142	98	140	283
W26	245	238	7	8	-1	-9	67	140	-18
W27	203	217	-14	8	-22	-195	42	140	-389
W28	288	251	37	8	29	257	116	140	513
W29	258	223	35	8	27	239	114	140	478
W30	276	241	35	8	27	239	114	140	478

Building interior wall direct measurements were performed with 2360 No. 164680 and 43-89 No. 118544

	Beta	Alpha
Efficiency	0.113	0.164
Wall Background (cpm)	8	3.7
Cinderblock Wall Background (cpm)	49	3.7
Wall MDA (dpm/100 cm^2)	140	71
Cinderblock Wall MDA (dpm/100 cm^2)	383	76

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Direct Measurements (Total Activity)

Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

Building Exterior (Walls)

Location (see map)	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm2)	Uncertainty 95% CL	MDA (dpm/100cm2)	Direct Alpha (1) (dpm/100cm2)
W1	206	213	-7	8	-15	-133	17	140	-265
W2	198	204	-6	8	-14	-124	25	140	-248
W3	254	246	8	8	0	0	69	140	0
W4	245	247	-2	8	-10	-88	42	140	-177

Building exterior wall direct measurements were performed with 2360 No. 164680 and 43-89 No. 118544

	Beta	Alpha
Efficiency	0.113	0.164
Wall Background (cpm)	8	3.7
Wall MDA (dpm/100 cm2)	140	71

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Elevated Direct Measurements (Total Activity) and Averaging Results
Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

No elevated direct measurements were reported.

Removable Surface Activity Measurements
Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

Building Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA
W1	46	28.6	126	2.4	5.1	11
W2	0	8.7	126	2.4	5.1	11
W3	13	16.9	126	2.4	5.1	11
W4	38	26.2	126	2.4	5.1	11
W5	21	20.3	126	-0.37	2.0	11
W6	-13	16.9	126	-0.37	2.0	11
W7	8	14.3	126	5.3	7.6	11
W8	17	18.7	126	-0.37	2.0	11
W9	54	30.7	126	-0.37	2.0	11
W10	-4	11.9	126	-0.37	2.0	11
W11	25	21.9	126	-0.37	2.0	11
W12	8	14.3	126	-0.37	2.0	11
W13	-29	23.3	126	2.4	5.1	11
W14	63	33.0	126	2.4	5.1	11
W15	21	20.3	126	-0.37	2.0	11
W16	13	16.9	126	-0.37	2.0	11
W17	80	36.9	126	-0.37	2.0	11
W18	0	8.7	126	-0.37	2.0	11
W19	-4	11.9	126	5.3	7.6	11
W20	13	16.9	126	-0.37	2.0	11
W21	-21	20.3	126	-0.37	2.0	11
W22	25	21.9	126	-0.37	2.0	11
W23	17	18.7	126	-0.37	2.0	11
W24	0	8.7	126	-0.37	2.0	11
W25	13	16.9	126	-0.37	2.0	11
W26	38	26.2	126	2.4	5.1	11
W27	88	38.6	126	2.4	5.1	11
W28	-29	23.3	126	-0.37	2.0	11
W29	17	18.7	126	-0.37	2.0	11
W30	54	30.7	126	-0.37	2.0	11

Ludlum 2929 No. 115563 with 43-10 No. 127216 Info:

	Beta	Alpha
Background (cpm)	68	0.13
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.239	0.35
MDA	126	11

Removable Surface Activity Measurements

Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

Building Exterior (Walls)

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA
W1	-4	11.9	126	-0.37	2.0	11
W2	50	29.7	126	-0.37	2.0	11
W3	38	26.2	126	5.2	7.6	11
W4	25	21.9	126	2.4	5.1	11

Ludlum 2929 No. 115563 with 43-10 No. 127216 Info:

	Beta	Alpha
Background (cpm)	68	0.13
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.239	0.35
MDA	126	11

Elevated Removable Surface Activity Measurements
Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

No elevated removable surface activity was reported above limits.

Exposure Rate Measurements

Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

Building Walls (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
W1	12	3
W2	12	3
W3	12	3
W4	16	7
W5	9	0
W6	9	0
W7	9	0
W8	10	1
W9	10	1
W10	10	1
W11	10	1
W12	10	1
W13	10	1
W14	10	1
W15	10	1
W16	10	1
W17	12	3
W18	12	3
W19	12	3
W20	12	3
W21	12	3
W22	10	1
W23	10	1
W24	10	1
W25	9	0
W26	10	1
W27	10	1
W28	8	-1
W29	10	1
W30	8	-1

Background dose rate: 9-11 uR/hr with Model 19, No. 22526

Exposure Rate Measurements

Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

Building Exterior (Walls)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
W1	10	1
W2	10	1
W3	12	3
W4	12	3

Background dose rate: 9-11 uR/hr with Model 19, No. 22526

Exposure Rate Measurements

Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

Building Roof

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
Roof	9	0
Roof	9	0
Roof	9	0
Roof	9	0
Roof	9	0
Roof	9	0
Roof	9	0
Roof	9	0
Roof	9	0
Roof	8	-1
Roof	8	-1
Roof	9	0
Roof	9	0
Roof	9	0
Roof	8	-1
Roof	9	0
Roof	8	-1
Roof	9	0
Roof	9	0
Roof	10	1
Roof	8	-1
Roof	9	0
Roof	10	1
Roof	11	2
Roof	8	-1
Roof	9	0
Roof	10	1
Roof	10	1
Roof	9	0
Roof	9	0
Roof	10	1
Roof	11	2
Roof	9	0
Roof	10	1
Roof	10	1
Roof	11	2
Roof	9	0
Roof	10	1
Roof	10	1
Roof	11	2
Roof	9	0
Roof	10	1
Roof	11	2
Roof	11	2

Background dose rate: 9-11 uR/hr with Model 19, No. 22526

Summary of Building Surface Direct Reading (Total Activity) Results
Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

Beta				Alpha			
n	$\bar{x}$	s	μ_α	n	$\bar{x}$	s	μ_α
34	53	196.2	109.7	34	106	392.4	219.5

$t_{1-\alpha}$ 1.691

Guidelines/Conditions Satisfied?

Beta	Alpha
Yes	Yes

Summary of Exposure Rate Measurements

Molycorp - Building 37 Survey Unit Excluding Foundation (Unaffected Area)

n	$\bar{x}$	s	μ_α
78	0.9	1.3	1.1

$t_{1-\alpha}$ 1.669

Guidelines/Conditions Satisfied?

Yes

Results of Surface Scans
Molycorp - Building 37 Foundation Only Survey Unit (Unaffected Area)

Building Floor (South)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F1	1900	397	8	1.4
F2	1920	417	9	2.4
F3	1940	437	8	1.4
F4	1910	407	11	4.4
F5	1860	357	10	3.4
F6	1900	397	10	3.4
F7	1850	347	8	1.4
F8	1880	377	9	2.4
F9	1950	447	8	1.4
F10	1800	297	6	-0.6
F11	1740	237	7	0.4
F12	1770	267	6	-0.6
F13	1670	167	7	0.4
F14	1740	237	7	0.4
F15	1770	267	4	-2.6
F16	1700	197	9	2.4
F17	1810	307	9	2.4
F18	1780	277	10	3.4
F19	1750	247	7	0.4
F20	1800	297	7	0.4
F21	1790	287	5	-1.6
F22	1690	187	15	8.4
F23	1700	197	8	1.4
F24	1760	257	6	-0.6
F25	1740	237	10	3.4
F26	1790	287	7	0.4
F27	1750	247	5	-1.6
F28	1700	197	5	-1.6
F29	1810	307	4	-2.6
F30	1820	317	9	2.4

All floor scans performed with Ludlum 239-1F (2350-1 No.95359)
with 43-37 No. 92503

Floor Monitor Info:
Scan MDA Beta - 190 dpm/detector area
Scan MDA Alpha - 16 dpm/detector area
Scan background Beta - 1503 cpm
Scan background Alpha - 6.6 cpm
Detector Eff. Beta - .27
Detector Eff. Alpha - .207

Elevated Scan Readings

Molycorp - Building 37 Foundation Only Survey Unit (Unaffected Area)

No elevated scan results were reported.

Direct Measurements (Total Activity)
Molycorp - Building 37 Foundation Only Survey Unit (Unaffected Area)

Building Floor (South)

Location (see map)	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm^2)	Uncertainty 95% CL	MDA (dpm/100cm^2)	Direct Alpha (1) (dpm/100cm^2)
F1	288	297	-9	78	-87	-770	144	387	-1540
F2	431	418	13	78	-65	-575	165	387	-1150
F3	351	337	14	78	-64	-566	166	387	-1133
F4	427	401	26	78	-52	-460	177	387	-920
F5	324	325	-1	78	-79	-699	152	387	-1398
F6	354	350	4	78	-74	-655	157	387	-1310
F7	373	359	14	78	-64	-566	166	387	-1133
F8	355	379	-24	78	-102	-903	127	387	-1805
F9	373	380	-7	78	-85	-752	146	387	-1504
F10	383	361	22	78	-56	-496	173	387	-991
F11	367	353	14	78	-64	-566	166	387	-1133
F12	353	287	66	78	-12	-106	208	387	-212
F13	352	253	99	78	21	186	231	387	372
F14	320	223	97	78	19	168	229	387	336
F15	365	264	101	78	23	204	232	387	407
F16	331	252	79	78	1	9	217	387	18
F17	336	263	73	78	-5	-44	213	387	-88
F18	307	265	42	78	-36	-319	190	387	-637
F19	346	232	114	78	36	319	240	387	637
F20	381	262	119	78	41	363	243	387	726
F21	399	280	119	78	41	363	243	387	726
F22	319	226	93	78	15	133	227	387	265
F23	341	256	85	78	7	62	221	387	124
F24	361	273	88	78	10	88	223	387	177
F25	359	256	103	78	25	221	233	387	442
F26	337	255	82	78	4	35	219	387	71
F27	314	292	22	78	-56	-496	173	387	-991
F28	513	402	111	78	33	292	238	387	584
F29	355	285	70	78	-8	-71	211	387	-142
F30	551	452	99	78	21	186	231	387	372

Building interior floor direct measurements were performed with 2360 No. 164680 and 43-89 No. 118544

	Beta	Alpha
Efficiency	0.113	0.164
Floor Background (cpm)	78	2.4
Floor MDA (dpm/100 cm^2)	387	60

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Elevated Direct Measurements (Total Activity)
Molycorp - Building 37 Foundation Only Survey Unit (Unaffected Area)

No elevated direct measurements were reported.

Removable Surface Activity Measurements
Molycorp - Building 37 Foundation Only Survey Unit (Unaffected Area)

Building Floor (South)

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA
F1	54	30.7	126	-0.37	2.0	11
F2	17	18.7	126	2.4	5.1	11
F3	13	16.9	126	-0.37	2.0	11
F4	-4	11.9	126	-0.37	2.0	11
F5	-17	18.7	126	-0.37	2.0	11
F6	25	21.9	126	-0.37	2.0	11
F7	-13	16.9	126	-0.37	2.0	11
F8	25	21.9	126	2.4	5.1	11
F9	8	14.3	126	-0.37	2.0	11
F10	38	26.2	126	2.4	5.1	11
F11	-8	14.3	126	2.4	5.1	11
F12	63	33.0	126	-0.37	2.0	11
F13	42	27.4	126	-0.37	2.0	11
F14	4	11.9	126	-0.37	2.0	11
F15	21	20.3	126	-0.37	2.0	11
F16	38	26.2	126	-0.37	2.0	11
F17	46	28.6	126	-0.37	2.0	11
F18	-4	11.9	126	2.4	5.1	11
F19	-8	14.3	126	2.4	5.1	11
F20	8	14.3	126	-0.37	2.0	11
F21	13	16.9	126	-0.37	2.0	11
F22	-13	16.9	126	-0.37	2.0	11
F23	-4	11.9	126	2.4	5.1	11
F24	50	29.7	126	2.4	5.1	11
F25	8	14.3	126	2.4	5.1	11
F26	25	21.9	126	-0.37	2.0	11
F27	38	26.2	126	-0.37	2.0	11
F28	17	18.7	126	2.4	5.1	11
F29	33	24.6	126	5.2	7.6	11
F30	-4	11.9	126	2.4	5.1	11

Ludlum 2929 No. 115563 with 43-10 No. 127216 Info:

	Beta	Alpha
Background (cpm)	68	0.13
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.239	0.35
MDA	126	11

Elevated Removable Surface Activity Measurements
Molycorp - Building 37 Foundation Only Survey Unit (Unaffected Area)

No elevated removable surface activity was reported above limits.

Exposure Rate Measurements
Molycorp - Building 37 Foundation Only Survey Unit (Unaffected Area)

Building Floor (South)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
F1	12	3
F2	14	5
F3	12	3
F4	12	3
F5	12	3
F6	12	3
F7	15	4
F8	12	3
F9	14	5
F10	14	5
F11	12	3
F12	14	5
F13	10	1
F14	10	1
F15	10	1
F16	10	1
F17	10	1
F18	10	1
F19	10	1
F20	10	1
F21	10	1
F22	10	1
F23	10	1
F24	10	1
F25	10	1
F26	10	1
F27	10	1
F28	12	3
F29	10	1
F30	12	3

Background dose rate: 9-11 uR/hr with Model 19, No. 22526

Summary of Building Surface Direct Reading (Total Activity) Results
Molycorp - Building 37 Foundation Only Survey Unit (Unaffected Area)

Beta				Alpha			
n	$\bar{x}$	s	μ_α	n	$\bar{x}$	s	μ_α
30	-181	402.5	-55.8	30	-361	804.9	-111.7

$t_{1-\alpha}$ 1.697

Guidelines/Conditions Satisfied?

Beta	Alpha
Yes	Yes

Summary of Exposure Rate Measurements
Molycorp - Building 37 Foundation Only Survey Unit (Unaffected Area)

n	$\bar{x}$	s	μ_α
30	2.2	1.5	2.7

$t_{1-\alpha}$ 1.697

Guidelines/Conditions Satisfied?
Yes

Results of Surface Scans
Molycorp - Building 37 Foundation Only Survey Unit (Affected Area)

Building Floor (North)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F1	1780	277	8	1.4
F2	1820	317	7	0.4
F3	1800	297	5	-1.6
F4	1740	237	10	3.4
F5	1810	307	4	-2.6
F6	1850	347	14	7.4
F7	1980	477	11	4.4
F8	1940	437	11	4.4
F9	1880	377	10	3.4
F10	1850	347	10	3.4
F11	1910	407	5	-1.6
F12	1900	397	15	8.4
F13	1850	347	17	10.4
F14	1950	447	8	1.4
F15	2040	537	8	1.4
F16	1950	447	7	0.4
F17	1860	357	5	-1.6
F18	2100	597	10	3.4
F19	2050	547	12	5.4
F20	1980	477	8	1.4
F21	1950	447	4	-2.6
F22	1990	487	5	-1.6
F23	1940	437	5	-1.6
F24	1930	427	4	-2.6
F25	2110	607	14	7.4
F26	1990	487	10	3.4
F27	1940	437	10	3.4
F28	1980	477	10	3.4
F29	2010	507	8	1.4
F30	1900	397	14	7.4
F31	1950	447	12	5.4
F32	1950	447	11	4.4
F33	1930	427	18	11.4
F34	2000	497	9	2.4
F35	1990	487	6	-0.6
F36	2010	507	10	3.4
F37	1995	492	10	3.4
F38	2020	517	10	3.4
F39	2000	497	12	5.4
F40	2100	597	11	4.4
F41	2040	537	11	4.4
F42	1950	447	9	2.4
F43	1990	487	6	-0.6
F44	1980	477	6	-0.6
F45	1990	487	10	3.4
F46	2000	497	13	6.4
F47	2020	517	10	3.4
F48	1960	457	9	2.4
F49	1870	367	8	1.4

F50	1855	352	8	1.4
F51	1875	372	17	10.4
F52	1890	387	12	5.4
F53	1920	417	12	5.4
F54	1880	377	5	-1.6

All floor scans performed with Ludlum 239-1F (2350-1 No.95359) with 43-37 No. 92503

Floor Monitor Info:
Scan MDA Beta - 190 dpm/detector area
Scan MDA Alpha - 16 dpm/detector area
Scan background Beta - 1503 cpm
Scan background Alpha - 6.6 cpm
Detector Eff. Beta - .27
Detector Eff. Alpha - .207

Elevated Scan Readings
Molycorp - Building 37 Foundation Only Survey Unit (Affected Area)

No elevated scan results were reported.

Direct Measurements (Total Activity)
Molycorp - Building 37 Foundation Only Survey Unit (Affected Area)

Building Floor (North)

Location (see map)	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm2)	Uncertainty 95% CL	MDA (dpm/100cm2)	Direct Alpha (1) (dpm/100cm2)
F1	383	263	120	78	42	372	244	387	743
F2	347	271	76	78	-2	-18	215	387	-35
F3	332	269	63	78	-15	-133	206	387	-265
F4	390	279	111	78	33	292	238	387	584
F5	338	286	52	78	-26	-230	198	387	-460
F6	384	262	122	78	44	389	245	387	779
F7	404	276	128	78	50	442	249	387	885
F8	402	303	99	78	21	186	231	387	372
F9	410	266	144	78	66	584	258	387	1168
F10	380	248	132	78	54	478	251	387	956
F11	570	271	299	78	221	1956	337	387	3912
F12	382	293	89	78	11	97	224	387	195
F13	350	244	106	78	28	248	235	387	496
F14	405	270	135	78	57	504	253	387	1009
F15	467	307	160	78	82	726	268	387	1451
F16	363	304	59	78	-19	-168	203	387	-336
F17	392	307	85	78	7	62	221	387	124
F18	474	291	183	78	105	929	280	387	1858
F19	433	311	122	78	44	389	245	387	779
F20	397	266	131	78	53	469	251	387	938
F21	371	283	88	78	10	88	223	387	177
F22	350	279	71	78	-7	-62	212	387	-124
F23	363	268	95	78	17	150	228	387	301
F24	408	293	115	78	37	327	241	387	655
F25	433	271	162	78	84	743	269	387	1487
F26	374	258	116	78	38	336	242	387	673
F27	377	307	70	78	-8	-71	211	387	-142
F28	382	278	104	78	26	230	234	387	460
F29	401	287	114	78	36	319	240	387	637
F30	395	241	154	78	76	673	264	387	1345
F31	345	252	93	78	15	133	227	387	265
F32	272	274	-2	78	-80	-708	151	387	-1416

F33	379	259	120	78	42	372	244	387	743
F34	432	303	129	78	51	451	250	387	903
F35	398	284	114	78	36	319	240	387	637
F36	374	267	107	78	29	257	236	387	513
F37	448	350	98	78	20	177	230	387	354
F38	370	252	118	78	40	354	243	387	708
F39	387	307	80	78	2	18	218	387	35
F40	432	312	120	78	42	372	244	387	743
F41	378	361	17	78	-61	-540	169	387	-1080
F42	395	277	118	78	40	354	243	387	708
F43	442	279	163	78	85	752	269	387	1504
F44	417	287	130	78	52	460	250	387	920
F45	368	268	100	78	22	195	231	387	389
F46	373	313	60	78	-18	-159	204	387	-319
F47	441	332	109	78	31	274	237	387	549
F48	384	292	92	78	14	124	226	387	248
F49	400	272	128	78	50	442	249	387	885
F50	465	361	104	78	26	230	234	387	460
F51	404	355	49	78	-29	-257	195	387	-513
F52	438	356	82	78	4	35	219	387	71
F53	424	306	118	78	40	354	243	387	708
F54	405	332	73	78	-5	-44	213	387	-88

Building interior floor direct measurements were performed with 2360 No. 164680 and 43-89 No. 118544

	Beta	Alpha
Efficiency	0.113	0.164
Floor Background (cpm)	78	2.4
Floor MDA (dpm/100 cm2)	387	60

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Elevated Direct Measurements (Total Activity) and Averaging Results

Molycorp - Building 37 Foundation Only Survey Unit (Affected Area)

Building Floor (North)

Location	Direct Beta (dpm/100cm^2)	Direct Alpha (dpm/100cm^2)	Over Area (cm^2)	Exceeds Limits Maximum	Exceeds Limits Average	Averaged Value (over 1 m^2)	Within Limit?
F9		1168		Marked for removal/remediation			
F11	1956	3912		Marked for removal/remediation			
F14		109		Marked for removal/remediation			
F15		1451		Marked for removal/remediation			
F18		1858		Marked for removal/remediation			
F25		1487		Marked for removal/remediation			
F30		1345		Marked for removal/remediation			
F43		1504		Marked for removal/remediation			

Removable Surface Activity Measurements
Molycorp - Building 37 Foundation Only Survey Unit (Affected Area)

Building Floor (North)

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA
F1	4	11.9	126	2.4	5.1	11
F2	-4	11.9	126	2.4	5.1	11
F3	67	34.0	126	-0.37	2.0	11
F4	38	26.2	126	-0.37	2.0	11
F5	-8	14.3	126	-0.37	2.0	11
F6	25	21.9	126	-0.37	2.0	11
F7	13	16.9	126	-0.37	2.0	11
F8	8	14.3	126	2.4	5.1	11
F9	71	34.9	126	2.4	5.1	11
F10	-29	23.3	126	2.4	5.1	11
F11	13	16.9	126	2.4	5.1	11
F12	38	26.2	126	8.2	9.5	11
F13	50	29.7	126	-0.37	2.0	11
F14	-8	14.3	126	-0.37	2.0	11
F15	-4	11.9	126	-0.37	2.0	11
F16	0	8.7	126	-0.37	2.0	11
F17	84	37.8	126	-0.37	2.0	11
F18	4	11.9	126	2.4	5.1	11
F19	4	11.9	126	-0.37	2.0	11
F20	67	34.0	126	-0.37	2.0	11
F21	25	21.9	126	-0.37	2.0	11
F22	13	16.9	126	2.4	5.1	11
F23	38	26.2	126	-0.37	2.0	11
F24	-13	16.9	126	-0.37	2.0	11
F25	-8	14.3	126	-0.37	2.0	11
F26	8	14.3	126	-0.37	2.0	11
F27	109	42.8	126	2.4	5.1	11
F28	4	11.9	126	2.4	5.1	11
F29	29	23.3	126	2.4	5.1	11
F30	-4	11.9	126	2.4	5.1	11
F31	-8	14.3	126	2.4	5.1	11
F32	67	34.0	126	-0.37	2.0	11
F33	25	21.9	126	8.2	9.5	11
F34	84	37.8	126	-0.37	2.0	11
F35	71	34.9	126	-0.37	2.0	11
F36	4	11.9	126	-0.37	2.0	11
F37	50	29.7	126	5.3	7.6	11
F38	-13	16.9	126	2.4	5.1	11
F39	-4	11.9	126	2.4	5.1	11
F40	38	26.2	126	2.4	5.1	11
F41	0	8.7	126	-0.37	2.0	11
F42	84	37.8	126	-0.37	2.0	11
F43	8	14.3	126	-0.37	2.0	11
F44	8	14.3	126	-0.37	2.0	11
F45	0	8.7	126	-0.37	2.0	11

F46	25	21.9	126	2.4	5.1	11
F47	13	16.9	126	2.4	5.1	11
F48	38	26.2	126	2.4	5.1	11
F49	13	16.9	126	5.3	7.6	11
F50	29	23.3	126	-0.37	2.0	11
F51	-8	14.3	126	8.2	9.5	11
F52	8	14.3	126	-0.37	2.0	11
F53	13	16.9	126	-0.37	2.0	11
F54	25	21.9	126	-0.37	2.0	11

Ludlum 2929 No. 115563 with 43-10 No. 127216 Info:

	Beta	Alpha
Background (cpm)	68	0.13
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.239	0.35
MDA	126	11

Elevated Removable Surface Activity Measurements
Molycorp - Building 37 Foundation Only Survey Unit (Affected Area)

No elevated removable surface activity was reported above limits.

Exposure Rate Measurements
Molycorp - Building 37 Foundation Only Survey Unit (Affected Area)

Building Floor (North)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
F1	10	1
F2	10	1
F3	10	1
F4	10	1
F5	12	3
F6	10	1
F7	10	1
F8	10	1
F9	10	1
F10	12	3
F11	12	3
F12	9	0
F13	10	1
F14	9	0
F15	10	1
F16	10	1
F17	10	1
F18	12	3
F19	12	3
F20	9	0
F21	9	0
F22	9	0
F23	10	1
F24	10	1
F25	10	1
F26	10	1
F27	10	1
F28	10	1
F29	10	1
F30	10	1
F31	10	1
F32	10	1
F33	9	0
F34	9	0
F35	10	1
F36	10	1
F37	10	1
F38	10	1
F39	9	0
F40	9	0
F41	9	0
F42	11	2
F43	11	2
F44	10	1
F45	9	0
F46	10	1
F47	10	1

F48	10	1
F49	12	3
F50	12	3
F51	12	3
F52	12	3
F53	12	3
F54	12	3

Background dose rate: 9-11 uR/hr with Model 19, No. 22526

Summary of Building Surface Direct Reading (Total Activity) Results
Molycorp - Building 37 Foundation Only Survey Unit (Affected Area)

Beta				Alpha			
n	$\bar{x}$	s	μ_α	n	$\bar{x}$	s	μ_α
46	161	264.5	226.6	46	322	529.1	453.1

$t_{1-\alpha}$ 1.680

Guidelines/Conditions Satisfied?

Beta	Alpha
Yes	Yes

Summary of Exposure Rate Measurements
Molycorp - Building 37 Foundation Only Survey Unit (Affected Area)

n	$\bar{x}$	s	μ_α
54	1.2	1.0	1.5

$t_{1-\alpha}$ 1.674

Guidelines/Conditions Satisfied?
Yes

Appendix I

Building 23 Data Package

Molycorp Washington, PA

Building 23 Data Package

This data package contains final status survey information for Building 23, Molycorp, Washington, PA site.

Field data collection forms, survey report forms, statistical test results, and comparisons to release limits are provided.

Summary

The building was surveyed as an unaffected building during its initial final status survey. During the ORISE visit of April 2002, elevated activity was located in the building's overhead.

In an effort to identify additional elevated areas of activity, overhead structures were cleaned and resurveyed. Radiological surveys identified multiple elevated areas. These areas were marked for remediation/removal.

It was determined that the activity identified on the floor was fixed into the concrete, and will require surface removal of the concrete in the identified areas. The activity identified on the purlins was also determined to be fixed contamination.

The areas on the purlins, identified as contaminated, have been marked with a bright florescent paint and recorded as being contaminated in a log controlled by the project manager. These contaminated purlins will remain in place until building demolition.

Elevated levels of background radiation, from soil radioactivity, continued to be a presence during survey activities of Building 23.

Results from the final status survey of Building 23 provides evidence that release criteria have been met, demonstrates that residual radioactivity is below the unrestricted use criteria, and confirms that Building 23 is suitable for unrestricted use, excluding the contaminated purlins that will be removed just prior to building demolition.

DDO-138 Radiation Protection Survey Report

Site: Molycorp / Washington, PA

Section 1: Survey Information Bldg 23

Date:	Time:	Location:	Survey Issue Log Number
4-11-02	1600	Bldg 23	02-0110

RWP Number: NA

Purpose of Survey: ☐ RWP ☐ Routine Survey ☐ Unconditional Release ☐ Other:

Page 1 of 14

Survey Title: AFFECTED AREA

Model 19 # 115870 Due 8-6-02

(1) FLOOR (1 Minute STATIC Readings Shielded (unshielded)

BKG		MDA
β⁻	78	497
α	2.4	64

(2) WALLS INTERIOR + EXTERIOR + Roof vents

BKG		MDA
β⁻	8	140
α	3.7	71

(3) FLOOR smears

2929 #152202 BKG β⁻ 47 α .22 MDA ~~MS 150~~ 155 ~~MB~~ 13 walls Interior + Exterior smears

Bkgd Readings:

Smear Number	Beta dpm/100cm²	Alpha dpm/100cm²
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		

NA

Legend:

00 = mRem/h gamma | 00 C = mRem/h gamma contact | ① = Smear Location | ▽ = Air Sample Location | -X-X-X- = Rope, Boundary, or Barrier

00 β = mRem/h beta | 00 βC = mRem/h beta contact | —①— = Large Area Wipe | = Bulk Material Sample

Section 2: Instrument Used

	Instrument Model/SN:	Cal Due Date:	Probe Model/SN:	Cal Due Date:	Detector Eff.: (cpm/dpm) β⁻	α	MDA: β⁻	α	Other BKG β⁻	α
(3)	2929/152202	2-6-03	43-10/156519	2-6-03	.165	.344	154	11.6	46	.12
(1)	2360/156371	8-5-02	43-89/164832	8-5-02	.088	.153	See Above			
(2)	2360/164680	7-9-02	43-89-118544	8-6-02	.113	.164	See Above			
	2350-1/117014	8-13-02	43-106/133866	8-6-02	.248	.211	669	42	309	2.2
	2350-1/95359	8-6-02	43-37/092503	8-6-02	.27	.207	198	23	1637	13.8

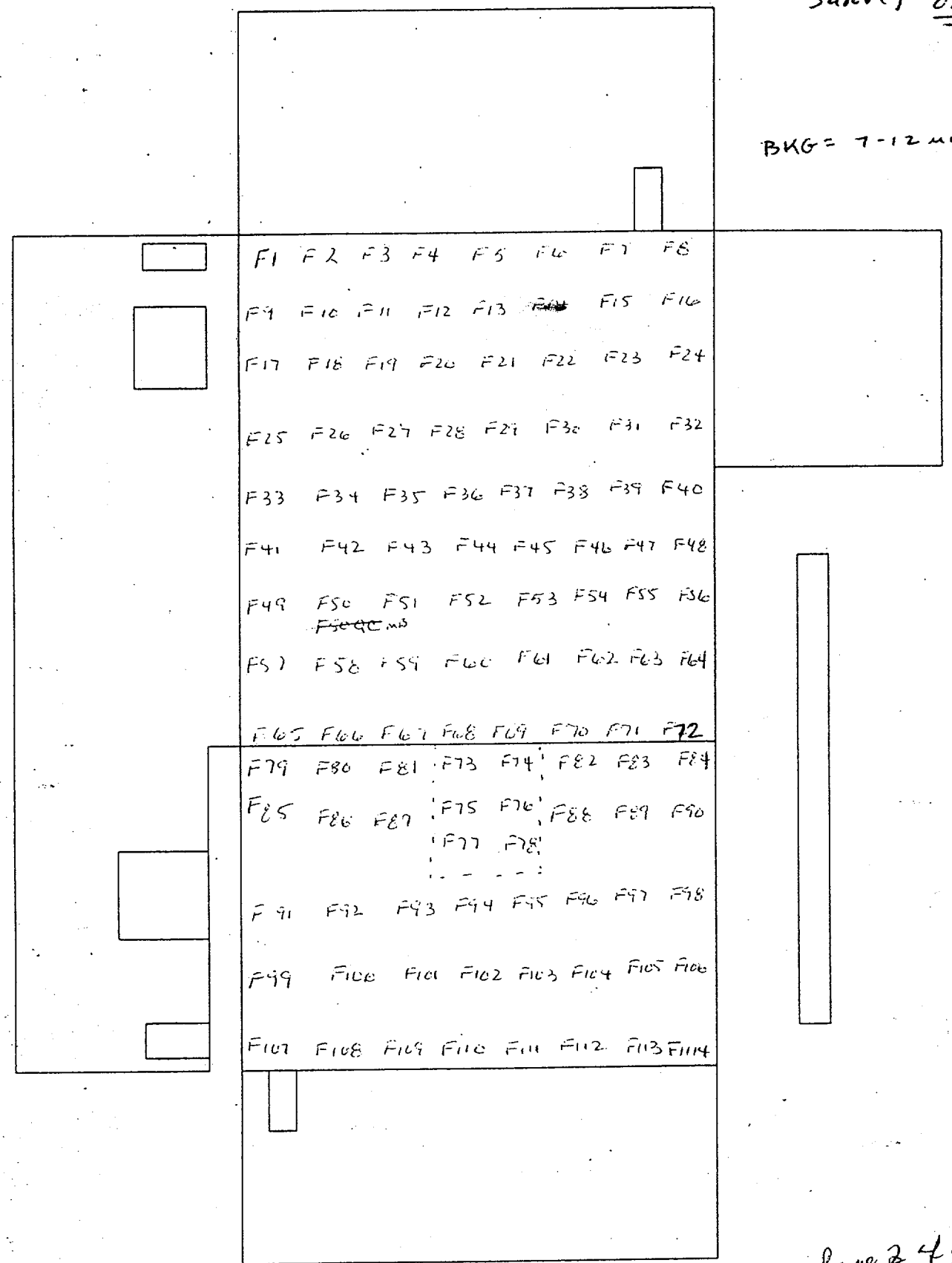
Section 3: Review and Approval

Survey Performed By (Sign):	Area Posted and/or Barricaded:	Date and Time:
Mark Blaucioch	☐ Yes ☐ No ☑ Not Required	4-11-02 / 1600
Radiation Safety Officer (Print Name & Sign): Mike McDonald		Date and Time: 5-15-02 0940

Building 23
North

survey # 02-0110

BKG = 7-12 microR/hr



Page 2 of 14

Interior

Scale:
4m x 4m

Survey #02-110

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #23 Interior (Floor)

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date
	MARK BLANCIAK	Mark Blanciak	

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
F-1	2200	46	443	310	19	10	-.3	18
F-2	1900	52	390	303	13	10	-.3	0
F-3	2500	55	448	317	32	10	-.3	61
F-4	1900	34	426	288	33	10	-.3	67
F-5	1800	31	376	296	22	10	2.6	-36
F-6	1800	32	377	273	14	10	-.3	-36
F-7	1700	25	380	293	10	11	-.3	-12
F-8	1700	24	543	310	8	11	-.3	-42
F-9	2100	26	447	272	16	10	2.6	0
F-10	1700	34	384	279	9	10	-.3	18
F-11	1800	37	314	279	19	9	2.6	12
F-12	1820	42	393	318	20	9	-.3	-12
F-13	1800	39	288	305	14	9	11	6
F-14	1800	28	337	275	7	9	8.4	24
F-15	1900	37	331	256	10	9	8.4	12
F-16	1700	32	362	272	16	10	14	-18
F-17	1720	36	465	260	13	10	-.3	54
F-18	1650	34	357	251	8	9	5.5	91
F-19	1650	30	353	243	4	9	-.3	109
F-20	1600	26	319	243	14	9	-.3	-73
F-21	1520	35	316	248	15	9	8.4	121
F-22	1650	28	350	274	8	9	-.3	-48
F-23	1700	30	368	288	9	9	2.6	30
F-24	2300	42	382	323	19	9	2.6	-18
F-25	3000	73	457	298	25	10	5.5	115
F-26	1350	10	344	293	5	9	2.6	42
F-27	1430	19	296	233	7	9	-.3	30

Survey # 02-110

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg 23 Interior (Floor)

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date
	MARK BLANCIAK	Mark Blanciak	

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
F-28	1450	14	285	234	7	9	-.3	6
F-29	1410	13	306	251	13	9	5.5	-12
F-30	1520	14	340	259	18	9	-.3	-30
F-31	1660	24	344	262	13	10	2.6	18
F-32	4180	197	720	469	64	9	-.3	42
F-33	2360	50	406	257	16	9	2.6	-12
F-34	1740	17	332	267	1	9	2.6	30
F-35	1700	20	350	241	9	9	5.5	12
F-36	1740	22	335	242	12	10	-.3	-36
F-37	2000	32	395	276	25	9	-.3	-36
F-38	1680	16	346	270	18	9	2.6	12
F-39	1650	11	289	258	10	10	-.3	-67
F-40	2050	40	423	315	21	10	2.6	-24
F-41	2330	22	674	286	39	9	2.6	0
F-42	1940	16	351	289	9	9	-.3	-18
F-43	1660	20	347	250	4	9	2.6	6
F-44	1770	14	366	263	16	9	-.3	-36
F-45	1690	18	339	228	24	9	-.3	-24
F-46	1740	20	338	276	12	10	-.3	12
F-47	1670	18	329	239	10	10	-.3	12
F-48	2300	50	370	280	26	10	2.6	-36
F-49	2120	40	552	256	21	9	-.3	-12
F-50	1550	10	355	277	12	9	-.3	-18
F-50 QC	—	—	321	254	9	9	-.3	-36
F-51	1510	14	355	264	7	9	2.6	24
F-52	1960	20	396	285	17	9	-.3	36
F-53	1740	35	416	300	19	9	-.3	-42

Survey # 02-110

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg 23 Interior (Floor)

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date
	MARK BLANCIAK	Mark Blanciak	

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
F-54	1550	19	289	240	1	9	-.3	-42
F-55	1710	21	321	304	9	9	-.3	-18
F-56	2600	74	419	294	34	9	-.3	-24
F-57	1560	16	330	250	6	10	2.6	-12
F-58	1550	12	358	283	9	9	-.3	48
F-59	1570	14	343	239	12	9	-.3	12
F-60	1570	20	401	297	10	9	-.3	42
F-61	1600	18	362	274	16	9	-.3	0
F-62	1860	16	358	270	17	10	5.5	12
F-63	1640	13	326	286	14	9	-.3	42
F-64	2400	60	414	303	9	10	2.6	42
F-65	1900	30	465	267	6	10	-.3	97
F-66	1600	15	311	264	5	9	-.3	67
F-67	2230	32	460	273	12	9	2.6	12
F-68	2130	46	455	234	17	9	-.3	-18
F-69	2000	50	364	268	17	8	-.3	36
F-70	2010	30	384	260	15	9	8.4	12
F-71	1580	18	352	277	5	9	-.3	-18
F-72	2010	45	411	272	18	10	-.3	36
F-73	2600	43	511	292	26	10	-.3	-36
F-74	4200	59	653	332	22	9	-.3	-24
F-75	2940	39	424	310	17	9	2.6	6
F-76	2800	48	573	308	30	9	-.3	0
F-77	—	—	558	313	48	9	-.3	-48
F-78	2340	54	437	325	27	9	-.3	-30
F-79	1340	8	280	233	4	9	-.3	61
F-80	1430	13	320	356	2	9	5.5	54

Survey # 02-110

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #23 Interior (Floor)

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date
	MARK BLANCIAK	Mark Blanciak	

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
F-81	1460	29	370	273	4	8	-.3	6
F-82	3130	35	451	377	6	8	2.6	24
F-83	2110	32	399	277	12	8	2.6	0
F-84	1520	23	306	251	5	8	5.5	12
F-85	1410	14	296	292	8	8	-.3	61
F-86	1480	11	322	265	5	9	-.3	30
F-87	1470	9	320	252	6	8	-.3	-24
F-88	1420	16	332	265	7	9	-.3	61
F-89	1460	15	334	266	8	8	2.6	0
F-90	1450	14	305	277	6	8	-.3	-36
F-91	1580	13	355	282	11	8	-.3	-18
F-92	1420	8	360	277	3	9	2.6	61
F-93	1570	11	378	282	11	9	-.3	-18
* F-94	1100	20	256	238	6	9	-.3	42
* F-95	1220	28	341	223	6	9	-.3	18
F-96	1850	22	431	~~248~~ (348)	10	10	-.3	-18
F-97	1420	8	298	282	6	8	-.3	-6
F-98	1470	15	297	259	4	8	-.3	0
F-99	1560	22	338	289	5	8	-.3	85
F-100	1570	12	324	252	7	8	-.3	-12
F-101	1510	24	340	258	7	8	-.3	-6
F-102	1460	10	327	259	1	8	-.3	0
F-103	1480	18	299	265	0	8	-.3	-18
F-104	1340	6	304	225	7	8	-.3	79
F-105	1370	8	297	269	10	9	2.6	-48
F-106	1410	17	317	275	7	9	-.3	18
F-107	1520	20	298	256	9	7	-.3	-24

* F-94, F-95 is diamond plate

Survey # 02-110

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #23 Interior (Floor)

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

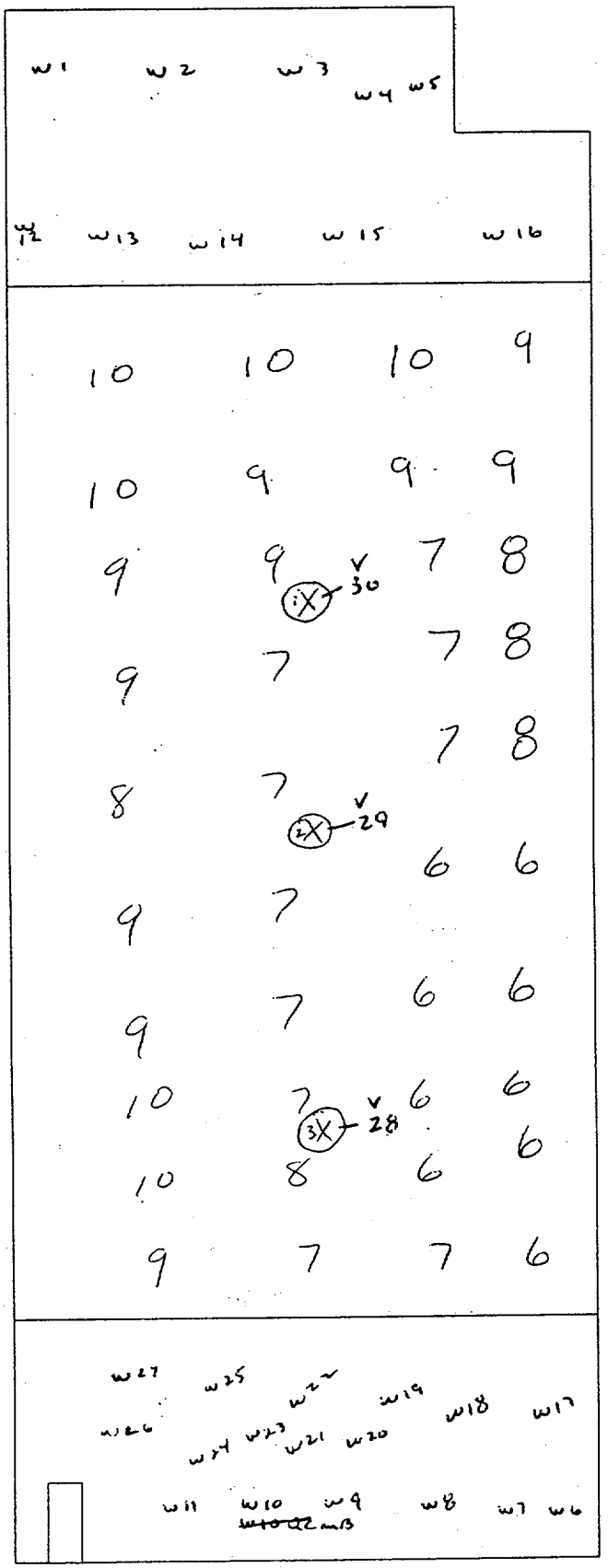
Performed By:	Print Name	Signature	Date
	MARK BLANCIAK	Mark Blanciak	

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
F108	1610	16	300	264	6	8	2.6	0
F109	1540	12	334	281	3	8	2.6	-18
F110	1640	11	343	268	6	8	-.3	24
F111	1690	22	327	251	6	8	2.6	61
112	1450	27	322	243	3	7	-.3	42
F113	1410	18	332	262	3	8	5.5	48
F114	1220	13	306	231	7	9	-.3	36

Building 23
North

Survey #02-0110

BKG = 6-10 microR/hr



Exterior

Scale:
4m x 4m

Survey-
02-110

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Building #23 Outside walls 4-8-02

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date
	MARK BLAWCIAK	Mark Blawciak	7-10-02

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
W-1	340	3	252	238	7	14	-.6	12
W-2	310	2	242	245	1	14	-.6	12
W-3	310	1	233	231	4	14	2.3	-36
W-4			260	233	0	14	-.6	79
W-5			224	226	4	14	-.6	6.1
W-6			224	231	9	9	-.6	-24
W-7			211	198	9	9	-.6	73
W-8			250	197	7	8	2.3	-36
W-9			279	192	5	9	2.3	-6.1
W-10	360	3	282	234	12	9	2.3	24
W-10 QC			255	200	9	9	-.6	-30
W-11			183	192	5	7	-.6	-12
W-12			214	208	0	10	-.6	0
W-13			219	203	2	9	2.3	-48
W-14			223	180	3	9	-.6	-36
W-15			257	228	1	10	-.6	12
W-16			231	225	3	10	-.6	-18
W-17			206	198	0	9	-.6	18
W-18			230	249	1	8	2.3	6
W-19			245	250	2	8	-.6	-12
W-20			250	255	1	9	-.6	-24
W-21			201	199	0	8	-.6	-6
W-22			240	235	1	7	2.3	12
W-23			228	223	2	8	2.3	0
W-24			266	286	2	8	-.6	6
W-25			250	240	0	8	-.6	-24
W-26			220	224	1	9	-.6	0

* W-8, W-9 CONCRETE

Survey # 02-110

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #23 ~~Interior~~ Exterior Walls

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

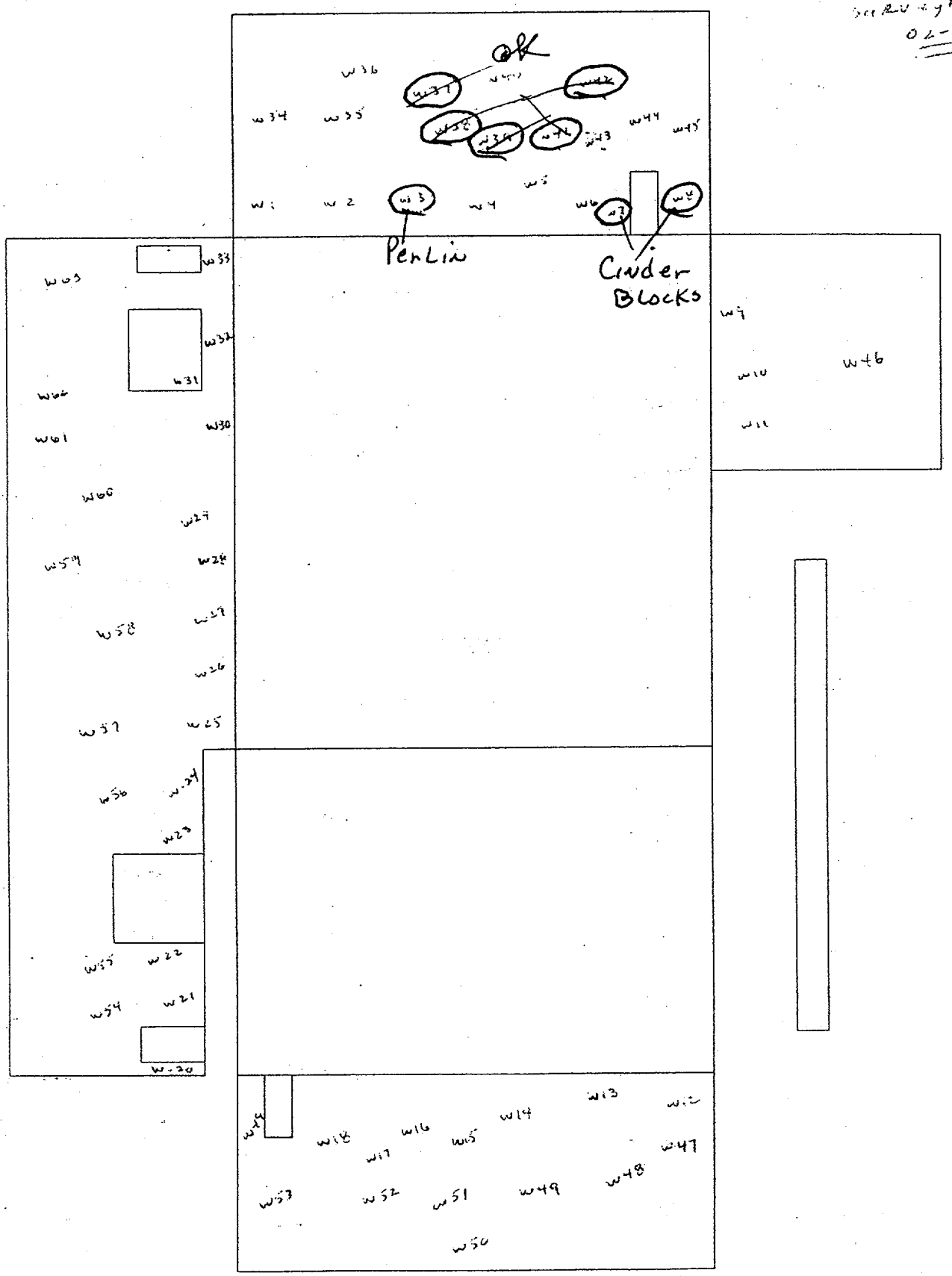
Performed By:	Print Name	Signature	Date
	MARK BLANCIAK	Mark Blanciak	7-11-02

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
W-27	NA	NA	250	230	2	8	-.6	-6
V-28	NA	NA	335	256	20	7	-.6	6
V-29	NA	NA	314	246	14	7	-.6	-6
V-30	NA	NA	368	233	18	7	-.6	-12

V = Vents on Roof

North

Survey # 02-0110

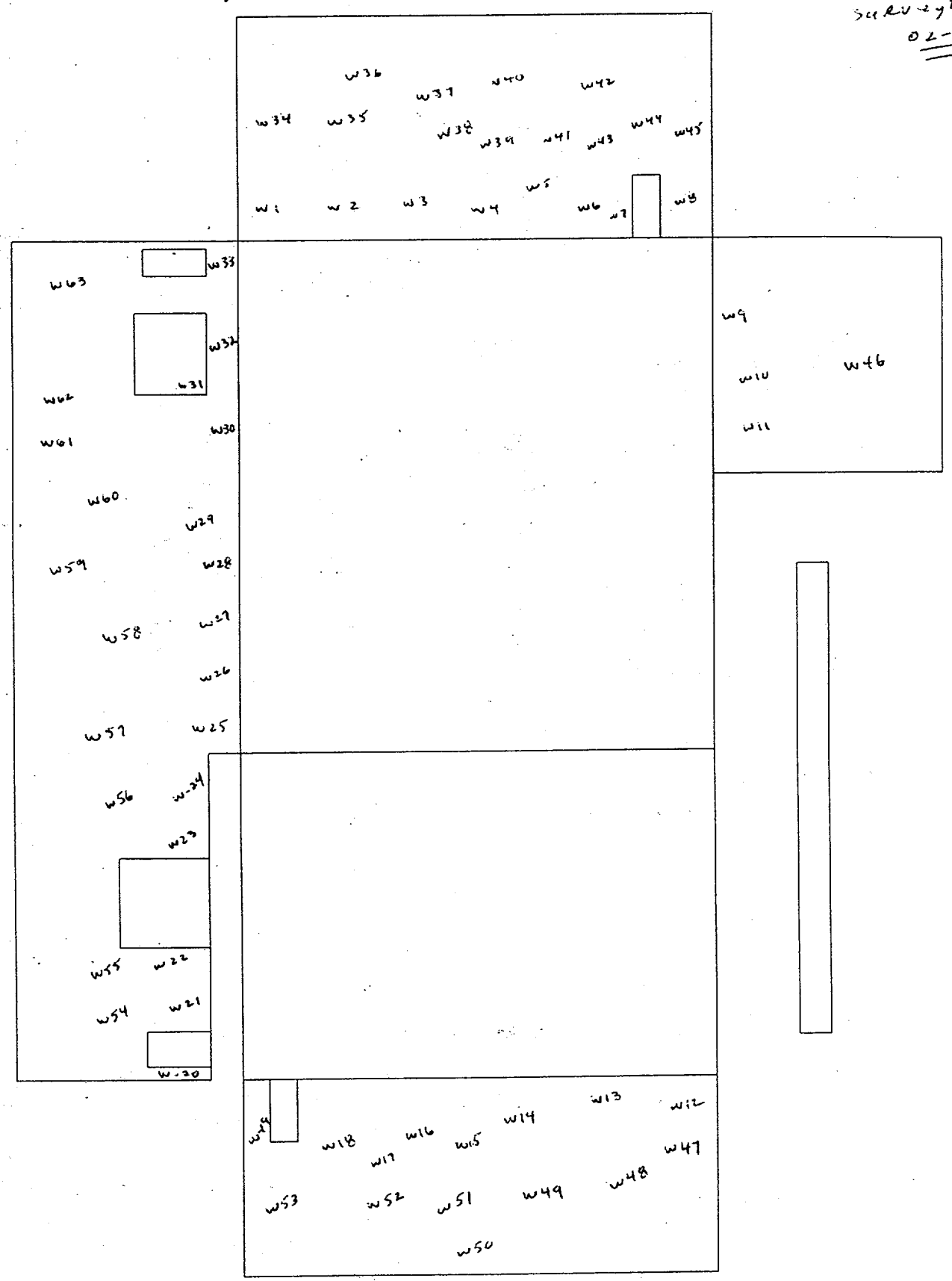


Interior Walls

Scale: 4m x 4m

Building 23
North

Survey # 02-0110



Interior
Walls

Scale:
4m x 4m

Survey # 07-110

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Building #23 - Interior Walls

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date
	MARK BLAUCIAK	Mark Blauciak	

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
W-1	410	4	194	190	3	9	-.6	-.6
W-2	430	3	219	219	6	9	8.1	-.6
* W-3	830	6	648	261	137	9	-.6	54
W-4	420	4	236	230	1	10	-.6	-24
W-5	330	2	263	268	1	10	-.6	-18
W-6	340	3	233	228	3	10	-.6	24
W-7	420	4	346	261	9	10	2.3	-48
* W-8	400	2	321	244	3	10	-.6	-36
W-9	300	2	229	258	8	10	-.6	79
W-10	270	1	206	243	4	10	2.3	-12
W-11	280	1	194	199	3	9	2.3	42
W-12	270	2	193	192	4	8	-.6	0
W-12 QC	—	—	192	198	2	8	-.6	-42
W-13	255	1	195	175	4	8	-.6	-42
W-14	260	1	184	190	7	8	2.3	12
W-15	255	1	185	191	2	8	-.6	6
W-16	260	3	197	224	5	8	5.2	-18
W-17	249	.9	221	195	3	8	-.6	-18
W-18	264	.8	188	231	2	9	-.6	-24
W-19	247	1.2	224	182	4	8	-.6	-30
W-20	248	.8	192	192	2	8	2.3	-6
W-21	215	1	213	183	2	8	-.6	24
W-22	233	1	202	197	2	7	-.6	-18
W-23	260	1	175	196	2	8	-.6	-12
W-24	266	.8	183	199	5	8	-.6	12
W-25	270	2	198	215	1	8	-.6	30
W-26	274	1	219	246	2	8	-.6	6

* W-3 is horzontal steel beam
W-7 + W-8 are cinder block

Survey # 02-0110

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg 23 Interior Walls

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
W-27	265	1.0	219	213	6	8	-6	12
W-28	248	1.4	241	234	2	8	-.6	18
W-29	250	1.0	242	217	3	9	-.6	-24
W-30	267	1.2	207	227	2	8	-.6	30
W-31	283	2.0	218	209	3	9	8	-36
W-32	300	1.2	188	229	3	9	-.6	-30
W-33	280	2.4	231	241	0	8	-.6	-18
W-34	340	4	221	239	0	9	2.3	12
W-35	–	–	272	228	1	8	-.6	-18
W-36	–	–	305	260	3	8	-.6	6
W-37	–	–	330	290	2	8	-.6	-30
W-38	–	–	375	335	5	7	-.6	-42
W-39	350	6	327	287	4	7	-.6	12
W-40			226	210	3	8	2.3	6
W-41			300	266	6	8	-.6	54
W-42			316	286	6	9	-.6	24
W-43	280	4	228	230	4	8	-.6	-48
W-44			214	201	6	8	-.6	-36
W-45			216	210	2	9	-.6	0
W-46			181	204	4	8	-.6	12
W-47			185	205	2	5	2.3	-18
W-48			230	182	2	6	-.6	-18
W-49			177	201	1	5	-.6	6
W-50			179	211	1	6	-.6	-36
W-51	260	4	198	190	7	6	-.6	-12
W-52			191	179	6	5	-.6	24
W-53			232	205	5	8	-.6	-6

Survey #02-110

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Building #23 - Interior Walls

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date
	MARK BLANCIAK	Mark Blanciak	4-10-02

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
W-54	N/A	N/A	212	192	6	7	-.6	-24
W-55			220	201	4	7	-.6	-36
W-56			210	198	3	6	-.6	-48
W-57			198	184	2	8	-.6	18
W-58			335	292	2	8	2.3	6
W-59			182	183	1	8	-.6	-12
W-60			322	275	2	8	-.6	12
W-61			234	175	2	8	-.6	6
W-62			226	193	5	7	2.3	24
W-63			201	247	5	6	-.6	-6

DDO-138 Radiation Protection Survey Report

Site: Molycorp / Washington, PA

Section 1: Survey Information AFFected

Date: 4/9/02	Time: 1700	Location: Bldg 23 BAthRoom	Survey Issue Log Number: 02-0111
RWP Number: N/A	Purpose of Survey: ☐ RWP ☐ Routine Survey ☐ Unconditional Release ☑ Other:		Page 1 of 4

Survey Title: AFFected Bldg.

Model 19 #115870 Due 8-6-02

	BKG	MDA
WALLS + BLOCK	β⁻ 8	140
	α 3.7	71
FLOOR	β⁻ 78	387
	α 2.4	60

Smear Number	Beta dpm/100cm²	Alpha dpm/100cm²
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		

Bkgd Readings:

Legend:

00 = mRem/h gamma | 00 C = mRem/h gamma contact | ① = Smear Location | ▽ = Air Sample Location | -X-X-X- = Rope, Boundary, or Barrier

00 β = mRem/h beta | 00 βC = mRem/h beta contact | —①— = Large Area Wipe | = Bulk Material Sample

Section 2: Instrument Used

Instrument Model/SN:	Cal Due Date:	Probe Model/SN:	Cal Due Date:	Detector Eff.: (cpm/dpm) β⁻	α	MDA: β⁻	α	Other β⁻	BKG	α
Ludlum 2929 #152202	2-6-03	43-10/156519	2-6-03	.165	.344	154	11.6	46		.13
2350-1/117014	8-13-02	43-106/133866	8-6-02	.248	.211	733	53	β⁻ BKG 371		α 1.4
2350-1/95359	8-6-02	43-37/092503	8-6-02	.27	.207	248	26	2545		α 16.2
2360/164680	7-9-02	43-89/118544	8-6-02	.113	.164	See Above				

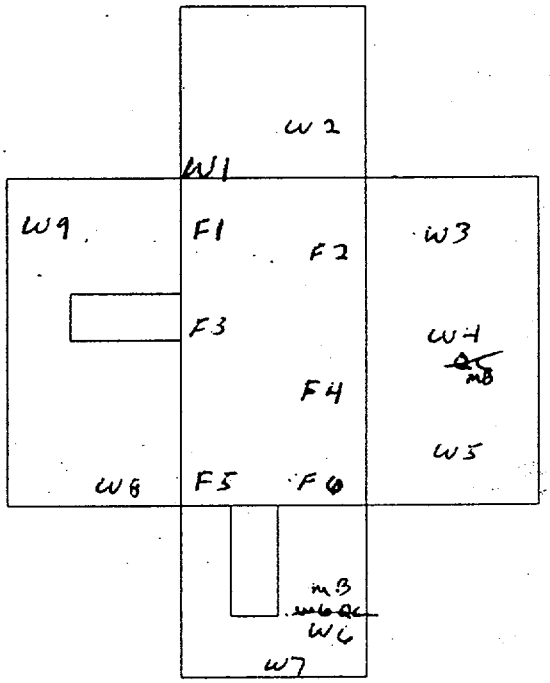
Section 3: Review and Approval

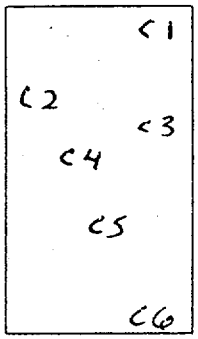
Survey Performed By (Sign): Mark Blanciak	Area Posted and/or Barricaded: ☐ Yes ☐ No ☑ Not Required	Date and Time: 4/9/02 / 1700
Radiation Safety Officer (Print Name & Sign):		Date and Time:

Building 23
North

Survey # 02-0111

BKg = 15 microrem/hr



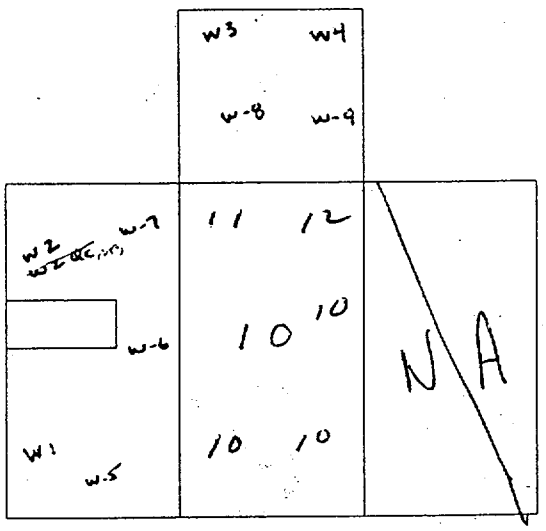


Bathroom Ceiling

Bathroom Interior

Scale: 4m x 4m

North



Bathroom Exterior

Mark Blanchard 4/9/02

Survey # 02-011

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg # 23 INTERIOR BATHROOM

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date
	MARK BLANCIAK	Mark Blanciak	4-9-02

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
F-1	2300	22	532	314	6	15	-.4	-6
F-2	2560	10	539	328	4	15	-.4	-24
F-3	2540	8	587	373	6	15	-.4	6
F-4	2660	15	523	333	6	15	2.5	-6
F-4 QC	2660	14	569	378	5	15	-.4	-6
F-5	2700	11	578	312	6	15	-.4	6
F-6	2730	14	573	378	6	15	-.4	-12
W-1	390	1	351	308	0	14	-.4	12
W-2	400	1.2	348	312	0	15	-.4	12
W-3	380	1	312	278	3	18	2.5	6
W-4	330	0	329	295	1	17	2.5	-6
W-5	370	1	339	315	1	15	-.4	-18
W-6	360	1.6	311	288	1	15	-.4	-12
W6 QC	340	1.0	320	278	2	14	-.4	12
W-7	310	1.8	295	270	1	15	-.4	6
W-8	330	1.0	319	308	2	15	-.4	6
W-9	350	1.0	372	333	4	14	2.5	-6
W-10	300	1.4	292	263	2	15	-.4	12
C-1	NA	NA	385	259	5	14	-.4	-18
C-2	NA	NA	402	275	6	14	2.5	12
C-3	320	2	355	278	4	15	-.4	-18
C-4	NA	NA	393	283	2	15	-.4	6
C-4 QC	NA	NA	376	275	2	14	-.4	-6
C-5	300	1	372	312	2	14	-.4	-6
C-6	NA	NA	380	292	4	14	-.4	12

Survey # 02-0111

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #23 Exterior Bathroom

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date
	MARK BLANCIAK	Mark Blanciak	4/9/02

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
W-1	NA	NA	340	278	8	13	-.4	6
W-2	320	2	320	274	5	13	-.4	-6
W-2 QC	NA	NA	323	280	4	13	2.5	-12
W-3	NA	NA	365	305	5	16	-.4	-6
W-4	360	6	385	325	4	16	-.4	-6
W-5	NA	NA	347	288	5	14	-.4	6
W-6	↓	↓	331	282	5	13	-.4	12
W-7			344	292	10	13	-.4	6
W-8			332	283	8	15	-.4	-12
W-9	NA	NA	340	290	8	15	2.5	-6

DDO-138 Radiation Protection Survey Report

Site: Molycorp / Washington, PA

Section 1: Survey Information

Date:	Time:	Location:	Survey Issue Log Number
05/14/02	1100	BLDG 23	02-0194

RWP Number: N/A

Purpose of Survey: ☐ RWP ☐ Routine Survey ☐ Unconditional Release ☐ Other:

Page 1 of 45

Survey Title: AFFECTED

Note: ALL KNOWN AFFECTED AREAS WERE PAINTED YELLOW AND LOGGED IN the Yellow MARKED ITEMS BOOK.

Smear Number	Beta dpm/100cm²	Alpha dpm/100cm²
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
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21		
22		
23		
24		
25		
26		

2224-1

	BKGD β⁻	BKGD α	MDA β⁻	MDA α
FLOOR	78	2.4	476	66
WALL	8	3.7	172	78
BLOCK	49	3.7	383	78

Bkgd Readings:

Legend:

00 = mRem/h gamma | 00 C = mRem/h gamma contact | ⓘ = Smear Location | ▽ = Air Sample Location | -X-X-X- = Rope, Boundary, or Barrier

00 β = mRem/h beta | 00 βC = mRem/h beta contact | —⊙— = Large Area Wipe | = Bulk Material Sample

Section 2: Instrument Used

Instrument Model/SN:	Cal Due Date:	Probe Model/SN:	Cal Due Date:	Detector Eff.: (cpm/dpm) β⁻	Detector Eff.: (cpm/dpm) α	MDA: β⁻	MDA: α	Other (BKGD) β⁻	Other (BKGD) α
2224-1/129463	08/06/02	43-89/169230	08/06/02	.092	0.15	See Above			
2350-1/117563	08/06/02	43-106/128912	08/06/02	0.251	0.212	651	53	299	1.4
N/A									
2929/152202	02/06/03	43-10-1/156519	02/06/03	0.165	0.344	151	12	45	0.2
N/A		N/A					N/A		

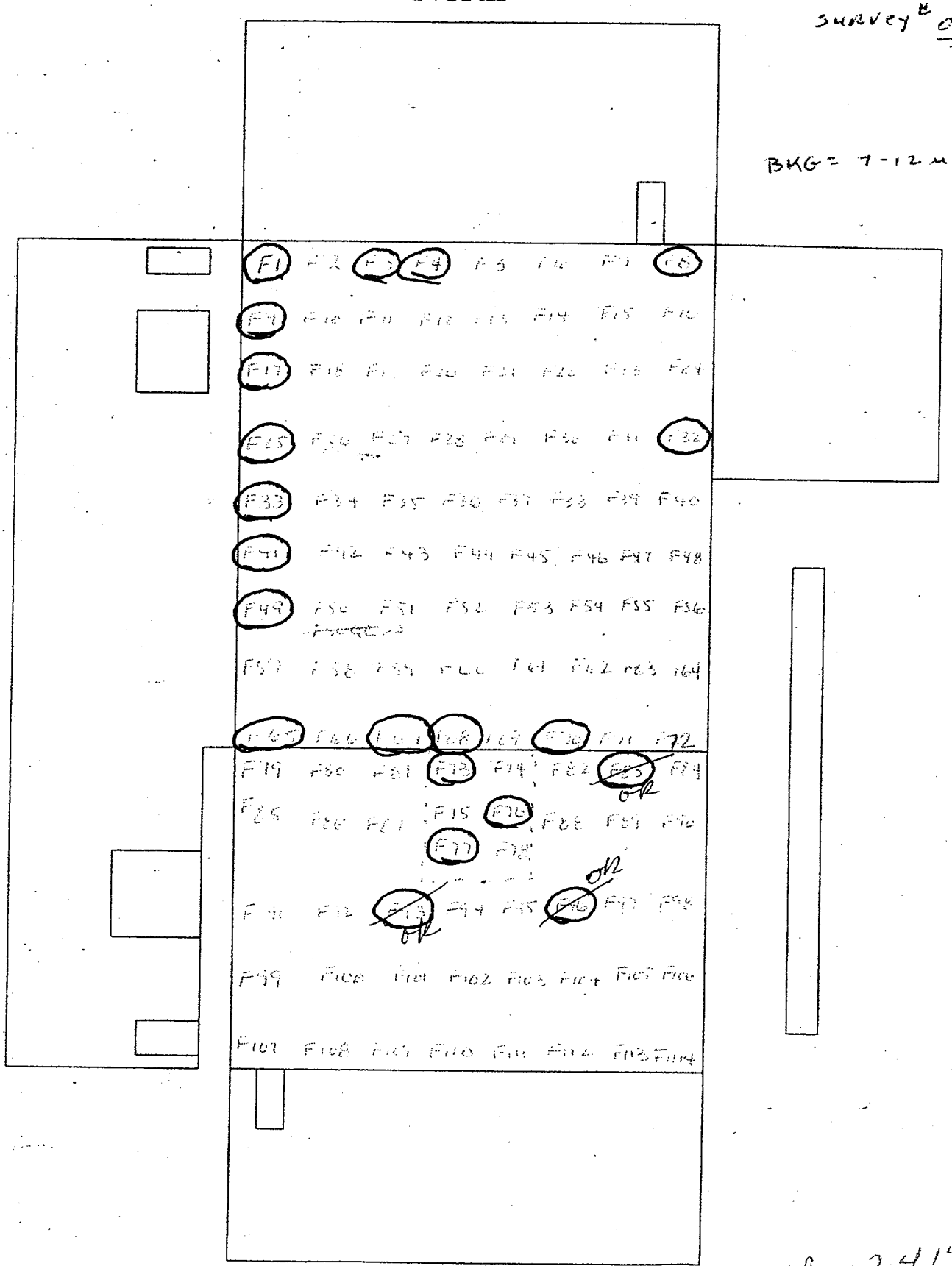
Section 3: Review and Approval

Survey Performed By (Sign):	Area Posted and/or Barricaded:	Date and Time:
Michael A. Blamoski	☐ Yes ☐ No ☒ Not Required	05/14/02 1100
Radiation Safety Officer (Print Name & Sign):		**Date and Time:**
Mike McDonald		5-15-02 0940

North

survey # 02-011

BKG = 7-12 microR/h

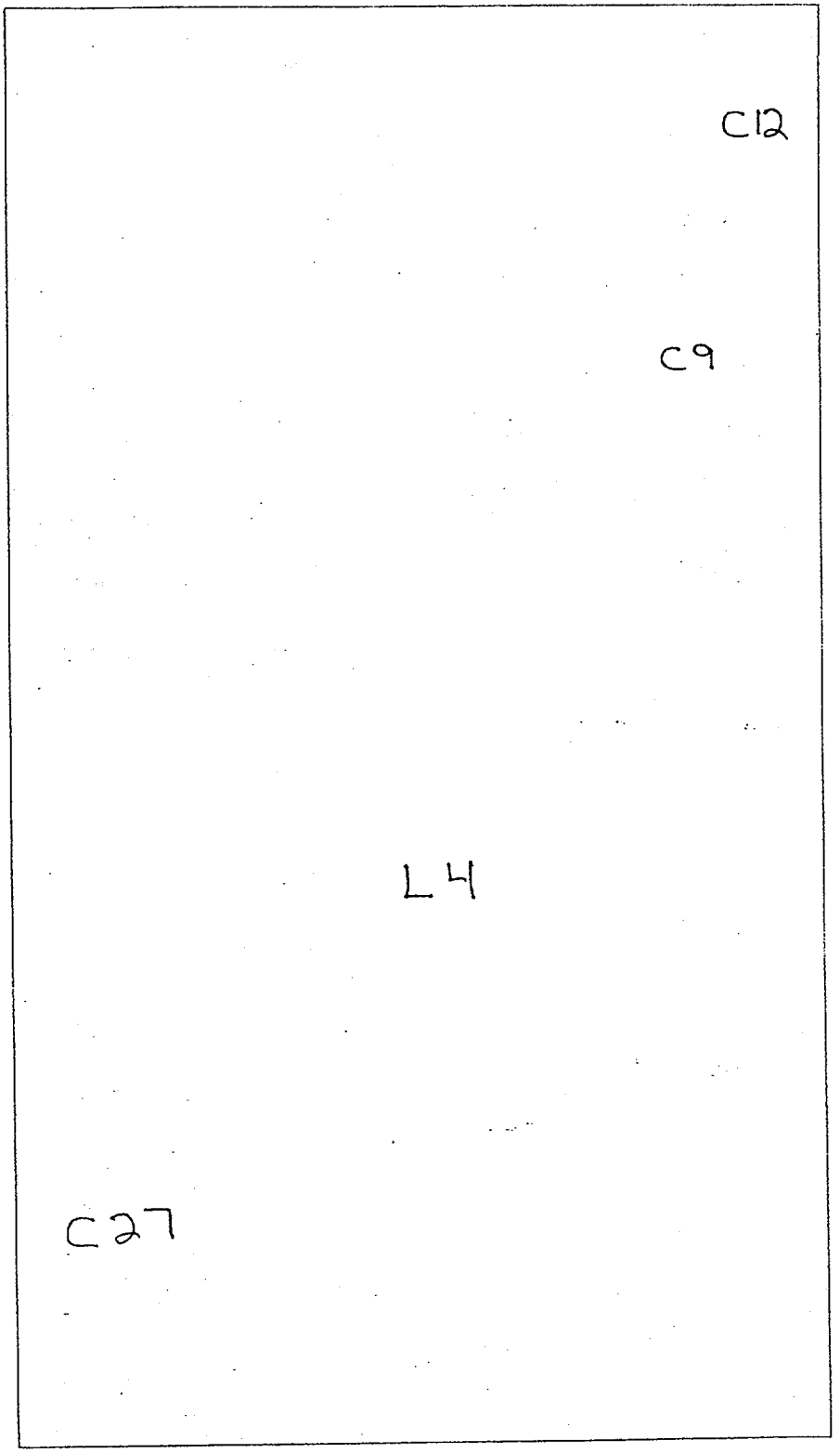


Interior

Scale:
4m x 4m

Building 23
North

Survey #
02-0194



L = Light
C = Ceiling

Ceiling

Scale:
4m x 4m

Survey 02-0194

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg # 23 . AFFected (Upper Area)

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
B-1	620	12	484	242	29	5	-0.6	-18
B-2	480	2	338	226	5	5	-0.6	30
H-3	400	4	378	237	18	5	2.3	30
L-4	380	1.2	327	257	18	5	-0.6	-60
B-5	320	5	238	218	10	5	-0.6	6
B-6	1200	4	974	270	114	5	14	54
B-7	680	12	520	252	25	6	-0.6	18
CL-8	1150	2.4	785	311	22	5	2.3	0
C-9	320	1	296	263	2	5	-0.6	-6
B-10	300	Ø	243	235	16	5	-0.6	-18
B-11	1400	14	1203	256	197	5	2.3	24
C-12	300	7	277	271	1	5	-0.6	12
EP-13	410	1.5	464	258	15	5	2.3	-42
B-14	860	10	637	280	29	5	-0.6	-6
B-15	890	10	675	271	6	5	2.3	24
DF-16	800	7	662	272	5	5	5.2	42
B-17	800	1.5	663	256	9	7	-0.6	6
C-18	280	Ø	252	271	2	6	-0.6	-6
L-19	360	1	343	244	7	7	-0.6	-36
B-20	1500	8	1180	276	75	6	14	-60
CL-21	1100	8	1012	339	43	5	8.1	-60
B-22	230	Ø	206	217	5	5	-0.6	-6
B-23	640	4	723	235	32	5	2.3	-18
B-24	1000	8	1007	256	133	5	2.3	12
B-25	260	8	383	205	12	5	-0.6	0
B-26	930	1.4	790	316	38	5	2.3	18
C-27	280	1.4	230	233	1	5	-0.6	24

B = Beam EP = Exhaust Pipe CL = Column
C = Ceiling DF = Door Frame
L = Light H = Hopper

02-0194

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #23 Affected (upper Area)

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

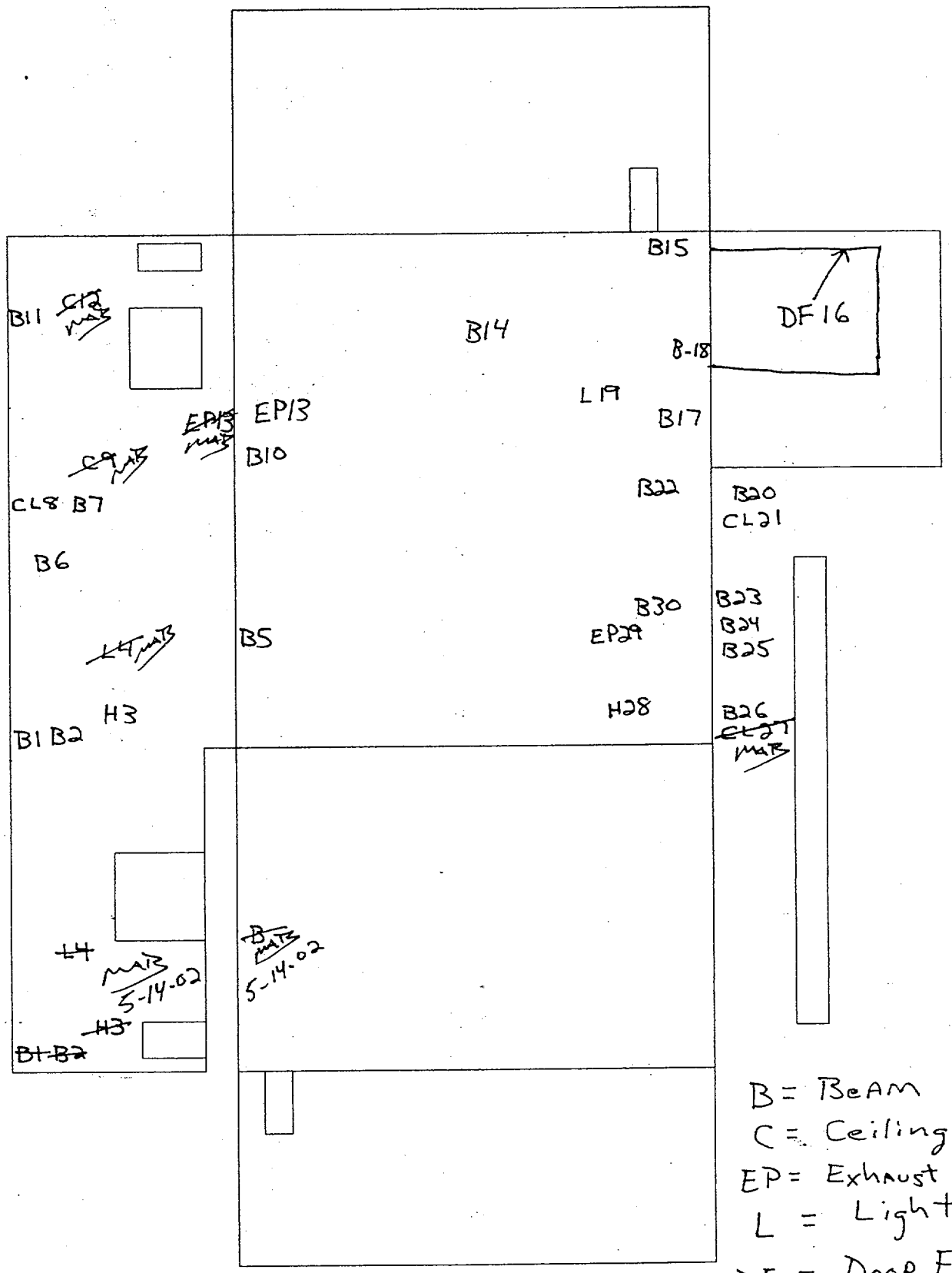
Performed By:	Print Name	Signature	Date

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm²) α	Smears (dpm/100 cm²) β
H-28	810	6	520	254	35	5	2.3	36
EP-29	340	20	339	219	24	5	-0.6	-6
B-30	300	6	226	222	15	5	-0.6	-18

H = Hopper
EP = Exhaust Pipe
B = Beam

Building 23 Survey #
02-0194

North



B = Beam
C = Ceiling
EP = Exhaust Pipe
L = Light
DF = Door Frame

Interior

Scale:
4m x 4m

Page 5 of 5

Results of Surface Scans
Molycorp - Building 23 Foundation Only Survey Unit (Affected Area)

Building Floor

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F1	2200	563	46	32.2
F2	1900	263	52	38.2
F3	2500	863	55	41.2
F4	190	-1447	34	20.2
F5	1800	163	31	17.2
F6	1800	163	32	18.2
F7	1700	63	25	11.2
F8	1700	63	24	10.2
F9	2100	463	26	12.2
F10	1700	63	34	20.2
F11	1800	163	37	23.2
F12	1820	183	42	28.2
F13	1800	163	39	25.2
F14	1800	163	28	14.2
F15	1900	263	37	23.2
F16	1700	63	32	18.2
F17	1720	83	36	22.2
F18	1650	13	34	20.2
F19	1650	13	30	16.2
F20	1600	-37	26	12.2
F21	1520	-117	35	21.2
F22	1650	13	28	14.2
F23	1700	63	30	16.2
F24	2300	663	42	28.2
F25	3000	1363	73	59.2
F26	1350	-287	10	-3.8
F27	1430	-207	19	5.2
F28	1450	-187	14	0.2
F29	1410	-227	13	-0.8
F30	1520	-117	14	0.2
F31	1660	23	24	10.2
F32	4180	2543	197	183.2
F33	2360	723	50	36.2
F34	1740	103	17	3.2
F35	1700	63	20	6.2
F36	1740	103	22	8.2
F37	2000	363	32	18.2
F38	1680	43	16	2.2
F39	1650	13	11	-2.8
F40	2050	413	40	26.2
F41	2330	693	22	8.2
F42	1940	303	16	2.2
F43	1660	23	20	6.2
F44	1770	133	14	0.2

F45	1690	53	18	4.2
F46	1740	103	20	6.2
F47	1670	33	18	4.2
F48	2300	663	50	36.2
F49	2120	483	40	26.2
F50	1550	-87	10	-3.8
F51	1510	-127	14	0.2
F52	1960	323	20	6.2
F53	1740	103	35	21.2
F54	1550	-87	19	5.2
F55	1710	73	21	7.2
F56	2600	963	74	60.2
F57	1560	-77	16	2.2
F58	1550	-87	12	-1.8
F59	1570	-67	14	0.2
F60	1570	-67	20	6.2
F61	1600	-37	18	4.2
F62	1860	223	16	2.2
F63	1640	3	13	-0.8
F64	2400	763	60	46.2
F65	1900	263	30	16.2
F66	1600	-37	15	1.2
F67	2230	593	32	18.2
F68	2130	493	46	32.2
F69	2000	363	50	36.2
F70	2010	373	30	16.2
F71	1580	-57	18	4.2
F72	2010	373	45	31.2
F73	2600	963	43	29.2
F74	4200	2563	59	45.2
F75	2940	1303	39	25.2
F76	2800	1163	48	34.2
F77				
F78	2340	703	54	40.2
F79	1340	-297	8	-5.8
F80	1430	-207	13	-0.8
F81	1460	-177	29	15.2
F82	3130	1493	35	21.2
F83	2110	473	32	18.2
F84	1520	-117	23	9.2
F85	1410	-227	14	0.2
F86	1480	-157	11	-2.8
F87	1470	-167	9	-4.8
F88	1420	-217	16	2.2
F89	1460	-177	15	1.2
F90	1450	-187	14	0.2
F91	1580	-57	13	-0.8
F92	1420	-217	8	-5.8
F93	1570	-67	11	-2.8
F94	1100	-537	20	6.2
F95	1220	-417	28	14.2
F96	1850	213	22	8.2

F97	1420	-217	8	-5.8
F98	1470	-167	15	1.2
F99	1560	-77	22	8.2
F100	1570	-67	12	-1.8
F101	1510	-127	24	10.2
F102	1460	-177	10	-3.8
F103	1480	-157	18	4.2
F104	1340	-297	6	-7.8
F105	1370	-267	8	-5.8
F106	1410	-227	17	3.2
F107	1520	-117	20	6.2
F108	1610	-27	16	2.2
F109	1540	-97	12	-1.8
F110	1640	3	11	-2.8
F111	1690	53	22	8.2
F112	1450	-187	27	13.2
F113	1410	-227	18	4.2
F114	1220	-417	13	-0.8

All floor scans performed with Ludlum 239-1F (2350-1 No.95359) with 43-37 No. 92503

Floor Monitor Info:
Scan MDA Beta - 198 dpm/detector area
Scan MDA Alpha - 23 dpm/detector area
Scan background Beta - 1637 cpm
Scan background Alpha - 13.8 cpm
Detector Eff. Beta - .27
Detector Eff. Alpha - .207

Results of Surface Scans

Molycorp - Building 23 Foundation Only Survey Unit (Affected Area)

Building Interior Bathroom

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F1	2300	-245	22.0	5.8
F2	2560	15	10	-6.2
F3	2540	-5	8	-8.2
F4	2660	115	15	-1.2
F5	2700	155	11	-5.2
F6	2730	185	14	-2.2

Bathroom floor scans performed with Ludlum 239-1F (2350-1 No.95359) with 43-37 No. 92503

Floor Monitor Info:
Scan MDA Beta - 248 dpm/detector area
Scan MDA Alpha - 26 dpm/detector area
Scan background Beta - 2545 cpm
Scan background Alpha - 16.2 cpm
Detector Eff. Beta - .27
Detector Eff. Alpha - .207

Elevated Scan Readings

Molycorp - Building 23 Foundation Only Survey Unit (Affected Area)

Location	Beta Scan (net cpm)	Alpha (net cpm)
F1	46	32.2
F2	52	38.2
F3	55	41.2
F12	42	28.2
F24	42	28.2
F25	73	59.2
F32	197	183.2
F33	50	36.2
F48	50	36.2
F56	74	60.2
F64	60	46.2
F68	46	32.2
F69	50	36.2
F72	45	31.2
F73	43	29.2
F74	59	45.2
F76	48	34.2
F78	54	40.2

Direct Measurements (Total Activity)
Molycorp - Building 23 Foundation Only Survey Unit (Affected Area)

Building Floor (Interior)

Location	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm^2)	Uncertainty 95% CL	MDA (dpm/100cm^2)	Direct Alpha [1] (dpm/100cm^2)
F1	443	310	133	78	55	625	324	497	1250
F2	390	303	87	78	9	102	286	497	205
F3	448	317	131	78	53	602	322	497	1205
F4	426	288	138	78	60	682	327	497	1364
F5	376	296	80	78	2	23	280	497	45
F6	377	273	104	78	26	295	300	497	591
F7	380	293	87	78	9	102	286	497	205
F8	543	310	233	78	155	1761	393	497	3523
F9	447	272	175	78	97	1102	354	497	2205
F10	384	279	105	78	27	307	301	497	614
F11	314	279	35	78	-43	-489	237	497	-977
F12	393	318	75	78	-3	-34	275	497	-68
F13	288	305	-17	78	-95	-1080	174	497	-2159
F14	337	275	62	78	-16	-182	264	497	-364
F15	331	256	75	78	-3	-34	275	497	-68
F16	362	272	90	78	12	136	289	497	273
F17	465	260	205	78	127	1443	375	497	2886
F18	357	251	106	78	28	318	302	497	636
F19	353	243	110	78	32	364	305	497	727
F20	319	243	76	78	-2	-23	276	497	-45
F21	316	248	68	78	-10	-114	269	497	-227
F22	350	274	76	78	-2	-23	276	497	-45
F23	368	288	80	78	2	23	280	497	45
F24	382	323	59	78	-19	-216	261	497	-432
F25	457	298	159	78	81	920	343	497	1841
F26	344	293	51	78	-27	-307	253	497	-614
F27	296	233	63	78	-15	-170	264	497	-341
F28	285	236	49	78	-29	-330	251	497	-659
F29	306	251	55	78	-23	-261	257	497	-523
F30	340	259	81	78	3	34	281	497	68
F31	344	262	82	78	4	45	282	497	91
F32	720	469	251	78	173	1966	404	497	3932

F33	406	257	149	78	71	807	336	497	1614
F34	332	267	65	78	-13	-148	266	497	-295
F35	350	241	109	78	31	352	305	497	705
F36	338	242	96	78	18	205	294	497	409
F37	395	276	119	78	41	466	313	497	932
F38	366	270	96	78	18	205	294	497	409
F39	289	258	31	78	-47	-534	233	497	-1068
F40	423	315	108	78	30	341	304	497	682
F41	674	286	388	78	310	3523	481	497	7045
F42	351	289	62	78	-16	-182	264	497	-364
F43	347	250	97	78	19	216	295	497	432
F44	366	263	103	78	25	284	300	497	568
F45	339	228	111	78	33	375	306	497	750
F46	338	276	62	78	-16	-182	264	497	-364
F47	329	239	90	78	12	136	289	497	273
F48	370	280	90	78	12	136	289	497	273
F49	332	256	76	78	-2	-23	276	497	-45
F50	355	277	78	78	0	0	278	497	0
F51	355	264	91	78	13	148	290	497	295
F52	396	285	111	78	33	375	306	497	750
F53	416	300	116	78	38	432	310	497	864
F54	289	240	49	78	-29	-330	251	497	-659
F55	321	304	17	78	-61	-693	217	497	-1386
F56	419	294	125	78	47	534	317	497	1068
F57	330	250	80	78	2	23	280	497	45
F58	358	283	75	78	-3	-34	275	497	-68
F59	343	239	104	78	26	295	300	497	591
F60	401	297	104	78	26	295	300	497	591
F61	362	274	88	78	10	114	287	497	227
F62	358	270	88	78	10	114	287	497	227
F63	326	286	40	78	-38	-432	242	497	-864
F64	414	303	111	78	33	375	306	497	750
F65	465	267	198	78	120	1364	370	497	2727
F66	311	264	47	78	-31	-352	249	497	-705
F67	460	273	187	78	109	1239	363	497	2477
F68	455	234	221	78	143	1625	385	497	3250
F69	364	268	96	78	18	205	294	497	409
F70	384	260	124	78	46	523	317	497	1045
F71	352	277	75	78	-3	-34	275	497	-68
F72	411	272	139	78	61	693	328	497	1386

F73	511	292	219	78	141	1602	384	497	3205
F74	653	332	321	78	243	2761	445	497	5523
F75	424	310	114	78	36	409	309	497	818
F76	573	308	265	78	187	2125	412	497	4250
F77	558	313	245	78	167	1898	400	497	3795
F78	437	325	112	78	34	386	307	497	773
F79	280	233	47	78	-31	-352	249	497	-705
F80	320	356	-36	78	-114	-1295	144	497	-2591
F81	370	273	97	78	19	216	295	497	432
F82	451	377	74	78	-4	-45	275	497	-91
F83	399	277	122	78	44	500	315	497	1000
F84	306	251	55	78	-23	-261	257	497	-523
F85	296	292	4	78	-74	-841	202	497	-1682
F86	322	265	57	78	-21	-239	259	497	-477
F87	320	252	68	78	-10	-114	269	497	-227
F88	332	265	67	78	-11	-125	268	497	-250
F89	334	266	68	78	-10	-114	269	497	-227
F90	305	277	28	78	-50	-568	229	497	-1136
F91	355	282	73	78	-5	-57	274	497	-114
F92	360	277	83	78	5	57	283	497	114
F93	378	282	96	78	18	205	294	497	409
F94	256	238	18	78	-60	-682	218	497	-1364
F95	341	223	118	78	40	455	312	497	909
F96	431	348	83	78	5	57	283	497	114
F97	298	282	16	78	-62	-705	216	497	-1409
F98	297	259	38	78	-40	-455	240	497	-909
F99	338	289	49	78	-29	-330	251	497	-659
F100	324	252	72	78	-6	-68	273	497	-136
F101	340	258	82	78	4	45	282	497	91
F102	327	259	68	78	-10	-114	269	497	-227
F103	299	265	34	78	-44	-500	236	497	-1000
F104	304	225	79	78	1	11	279	497	23
F105	297	269	28	78	-50	-568	229	497	-1136
F106	317	275	42	78	-36	-409	244	497	-818
F107	298	256	42	78	-36	-409	244	497	-818
F108	300	264	36	78	-42	-477	238	497	-955
F109	334	281	53	78	-25	-284	255	497	-568
F110	343	268	75	78	-3	-34	275	497	-68
F111	327	251	76	78	-2	-23	276	497	-45
F112	322	243	79	78	1	11	279	497	23

F113	332	262	70	78	-8	-91	271	497	-182
F114	306	231	75	78	-3	-34	275	497	-68

All building interior floor direct measurements were performed with 2360 No. 156371 and 43-89 No. 164832

	Beta	Alpha
Efficiency	0.088	0.153
Floor Background (cpm)	78	2.4
Floor MDA (dpm/100 cm^2)	497	65

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Direct Measurements (Total Activity)
Molycorp - Building 23 Foundation Only Survey Unit (Affected Area)

Building Interior Bathroom

Location	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm^2)	Uncertainty 95% CL	MDA (dpm/100cm^2)	Direct Alpha (1) (dpm/100cm^2)
F1	532	314	218	78	140	1239	298	387	2478
F2	539	328	211	78	133	1177	295	387	2354
F3	587	373	214	78	136	1204	296	387	2407
F4	523	333	190	78	112	991	284	387	1982
F5	578	312	266	78	188	1664	322	387	3327
F6	573	378	195	78	117	1035	287	387	2071

All bathroom direct measurements were performed with 2360 No. 164680 and 43-89 No. 118544

	Beta	Alpha
Efficiency	0.113	0.164
Wall and Ceiling Background (cpm)	8	3.7
Cinderblock Wall Background (cpm)	49	3.7
Floor Background (cpm)	78	2.4
Wall MDA (dpm/100 cm^2)	140	71
Floor MDA (dpm/100 cm^2)	387	60

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Elevated Direct Measurements (Total Activity) and Averaging Results
Molycorp - Building 23 Survey Unit (Affected Area)

Building Floor (Interior)

Location	Direct Beta (dpm/100cm^2)	Direct Alpha (dpm/100cm^2)	Over Area (cm^2)	Exceeds Limits Maximum	Exceeds Limits Average	Averaged Value (over 1 m^2)	Within Limits? Yes/No
F1		1250	Marked for removal/remediation				
F3		1205	Marked for removal/remediation				
F4		1364	Marked for removal/remediation				
F8	1761	3523	Marked for removal/remediation				
F9	1102	2205	Marked for removal/remediation				
F17	1443	2886	Marked for removal/remediation				
F25		1841	Marked for removal/remediation				
F32	1966	3932	Marked for removal/remediation				
F33		1614	Marked for removal/remediation				
F41	3523	7045	Marked for removal/remediation				
F56		1068	Marked for removal/remediation				
F65	1364	2727	Marked for removal/remediation				
F67	1239	2477	Marked for removal/remediation				
F68	1625	3250	Marked for removal/remediation				
F70		1045	Marked for removal/remediation				
F72		1386	Marked for removal/remediation				
F73	1602	3205	Marked for removal/remediation				
F74	2761	5523	Marked for removal/remediation				
F76	2125	4250	Marked for removal/remediation				
F77	1898	3795	Marked for removal/remediation				
W3	3354	6708	Marked for removal/remediation				
V1		1257	Marked for removal/remediation				
V2		1062	Marked for removal/remediation				
V3	1124	2248	Marked for removal/remediation				

Building Bathroom (Interior)

F1	1239	2478	Marked for removal/remediation
F2	1177	2354	Marked for removal/remediation

F3	1204	2407	Marked for removal/remediation
F4		1982	Marked for removal/remediation
F5	1664	3327	Marked for removal/remediation
F6	1035	2071	Marked for removal/remediation
C1	1044	2088	Marked for removal/remediation
C2	1053	2106	Marked for removal/remediation
C3		1221	Marked for removal/remediation
C4		1805	Marked for removal/remediation
C6		1416	Marked for removal/remediation

Removable Surface Activity Measurements
Molycorp - Building 23 Foundation Only Survey Unit (Affected Area)

Building Floor

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA	Instrument #
F1	18	23.0	154	-0.3	1.8	11.6	2
F2	0	10.4	154	-0.3	1.8	11.6	2
F3	61	39.1	154	-0.3	1.8	11.6	2
F4	67	40.8	154	-0.3	1.8	11.6	2
F5	-36	30.8	154	2.6	5.4	11.6	2
F6	-36	30.8	154	-0.3	1.8	11.6	2
F7	-12	19.7	154	-0.3	1.8	11.6	2
F8	-42	33.0	154	-0.3	1.8	11.6	2
F9	0	10.4	154	2.6	5.4	11.6	2
F10	18	23.0	154	-0.3	1.8	11.6	2
F11	12	19.7	154	2.6	5.4	11.6	2
F12	-12	19.7	154	-0.3	1.8	11.6	2
F13	6	15.7	154	11.0	11.1	11.6	2
F14	24	25.8	154	8.4	9.7	11.6	2
F15	12	19.7	154	8.4	9.7	11.6	2
F16	-18	23.0	154	14.0	12.5	11.6	2
F17	54	37.0	154	-0.3	1.8	11.6	2
F18	91	47.2	154	5.5	7.8	11.6	2
F19	109	51.4	154	-0.3	1.8	11.6	2
F20	-73	42.5	154	-0.3	1.8	11.6	2
F21	121	54.1	154	8.4	9.7	11.6	2
F22	-48	35.0	154	-0.3	1.8	11.6	2
F23	30	28.4	154	2.6	5.4	11.6	2
F24	-18	23.0	154	2.6	5.4	11.6	2
F25	115	52.8	154	5.5	7.8	11.6	2
F26	42	33.0	154	2.6	5.4	11.6	2
F27	30	28.4	154	-0.3	1.8	11.6	2
F28	6	15.7	154	-0.3	1.8	11.6	2
F29	-12	19.7	154	5.5	7.8	11.6	2
F30	-30	28.4	154	-0.3	1.8	11.6	2
F31	18	23.0	154	2.6	5.4	11.6	2
F32	42	33.0	154	-0.3	1.8	11.6	2

F33	-12	19.7	154	2.6	5.4	11.6	2
F34	30	28.4	154	2.6	5.4	11.6	2
F35	12	19.7	154	5.5	7.8	11.6	2
F36	-36	30.8	154	-0.3	1.8	11.6	2
F37	-36	30.8	154	-0.3	1.8	11.6	2
F38	12	19.7	154	2.6	5.4	11.6	2
F39	-67	40.8	154	-0.3	1.8	11.6	2
F40	-24	25.8	154	2.6	5.4	11.6	2
F41	0	10.4	154	2.6	5.4	11.6	2
F42	-18	23.0	154	-0.3	1.8	11.6	2
F43	6	15.7	154	2.6	5.4	11.6	2
F44	-36	30.8	154	-0.3	1.8	11.6	2
F45	-24	25.8	154	-0.3	1.8	11.6	2
F46	12	19.7	154	-0.3	1.8	11.6	2
F47	12	19.7	154	-0.3	1.8	11.6	2
F48	-36	30.8	154	2.6	5.4	11.6	2
F49	-12	19.7	154	-0.3	1.8	11.6	2
F50	-18	23.0	154	-0.3	1.8	11.6	2
F51	24	25.8	154	2.6	5.4	11.6	2
F52	36	30.8	154	-0.3	1.8	11.6	2
F53	-42	33.0	154	-0.3	1.8	11.6	2
F54	-42	33.0	154	-0.3	1.8	11.6	2
F55	-18	23.0	154	-0.3	1.8	11.6	2
F56	-24	25.8	154	-0.3	1.8	11.6	2
F57	-12	19.7	154	2.6	5.4	11.6	2
F58	48	35.0	154	-0.3	1.8	11.6	2
F59	12	19.7	154	-0.3	1.8	11.6	2
F60	42	33.0	154	-0.3	1.8	11.6	2
F61	0	10.4	154	-0.3	1.8	11.6	2
F62	12	19.7	154	5.5	7.8	11.6	2
F63	42	33.0	154	-0.3	1.8	11.6	2
F64	42	33.0	154	2.6	5.4	11.6	2
F65	97	48.6	154	-0.3	1.8	11.6	2
F66	67	40.8	154	-0.3	1.8	11.6	2
F67	12	19.7	154	2.6	5.4	11.6	2
F68	-18	23.0	154	-0.3	1.8	11.6	2
F69	36	30.8	154	-0.3	1.8	11.6	2
F70	12	19.7	154	8.4	9.7	11.6	2
F71	-18	23.0	154	-0.3	1.8	11.6	2
F72	36	30.8	154	-0.3	1.8	11.6	2

F73	-36	30.8	154	-0.3	1.8	11.6	2
F74	-24	25.8	154	-0.3	1.8	11.6	2
F75	6	15.7	154	2.6	5.4	11.6	2
F76	0	10.4	154	-0.3	1.8	11.6	2
F77	-48	35.0	154	-0.3	1.8	11.6	2
F78	-30	28.4	154	-0.3	1.8	11.6	2
F79	61	39.1	154	-0.3	1.8	11.6	2
F80	54	37.0	154	5.5	7.8	11.6	2
F81	6	15.7	154	-0.3	1.8	11.6	2
F82	24	25.8	154	2.6	5.4	11.6	2
F83	0	10.4	154	2.6	5.4	11.6	2
F84	12	19.7	154	5.5	7.8	11.6	2
F85	61	39.1	154	-0.3	1.8	11.6	2
F86	30	28.4	154	-0.3	1.8	11.6	2
F87	-24	25.8	154	-0.3	1.8	11.6	2
F88	61	39.1	154	-0.3	1.8	11.6	2
F89	0	10.4	154	2.6	5.4	11.6	2
F90	-36	30.8	154	-0.3	1.8	11.6	2
F91	-18	23.0	154	-0.3	1.8	11.6	2
F92	61	39.1	154	2.6	5.4	11.6	2
F93	-18	23.0	154	-0.3	1.8	11.6	2
F94	42	33.0	154	-0.3	1.8	11.6	2
F95	18	23.0	154	-0.3	1.8	11.6	2
F96	-18	23.0	154	-0.3	1.8	11.6	2
F97	-6	15.7	154	-0.3	1.8	11.6	2
F98	0	10.4	154	-0.3	1.8	11.6	2
F99	85	45.7	154	-0.3	1.8	11.6	2
F100	-12	19.7	154	-0.3	1.8	11.6	2
F101	-6	15.7	154	-0.3	1.8	11.6	2
F102	0	10.4	154	-0.3	1.8	11.6	2
F103	-18	23.0	154	-0.3	1.8	11.6	2
F104	79	44.1	154	-0.3	1.8	11.6	2
F105	-48	35.0	154	2.6	5.4	11.6	2
F106	18	23.0	154	-0.3	1.8	11.6	2
F107	-24	25.8	154	-0.3	1.8	11.6	2
F108	0	10.4	154	2.6	5.4	11.6	2
F109	-18	23.0	154	2.6	5.4	11.6	2
F110	24	25.8	154	-0.3	1.8	11.6	2
F111	61	39.1	154	2.6	5.4	11.6	2
F112	42	33.0	154	-0.3	1.8	11.6	2

F113	48	35.0	154	5.5	7.8	11.6	2
F114	36	30.8	154	-0.3	1.8	11.6	2

#1 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	47	0.22
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	155	13.0

#2 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	46	0.12
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	154	11.6

Removable Surface Activity Measurements
Molycorp - Building 23 Foundation Only Survey Unit (Affected Area)

Building Interior Bathroom

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA	Instrument #
F1	-6	15.7	154	-0.4	2.1	11.6	2
F2	-24	25.8	154	-0.4	2.1	11.6	2
F3	6	15.7	154	-0.4	2.1	11.6	2
F4	-6	15.7	154	2.5	5.3	11.6	2
F5	6	15.7	154	-0.4	2.1	11.6	2
F6	-12	19.7	154	-0.4	2.1	11.6	2

#2 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	46	0.12
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	154	11.6

Elevated Removable Surface Activity Measurements
Molycorp - Building 23 Foundation Only Survey Unit (Affected Area)

No elevated removable surface activity was reported above limits.

Exposure Rate Measurements
Molycorp - Building 23 Foundation Only Survey Unit (Affected Area)

Building Floor

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
F1	10	1
F2	10	1
F3	10	1
F4	10	1
F5	10	1
F6	10	1
F7	11	2
F8	11	2
F9	10	1
F10	10	1
F11	9	0
F12	9	0
F13	9	0
F14	9	0
F15	9	0
F16	10	1
F17	10	1
F18	9	0
F19	9	0
F20	9	0
F21	9	0
F22	9	0
F23	9	0
F24	9	0
F25	10	1
F26	9	0
F27	9	0
F28	9	0
F29	9	0
F30	9	0
F31	10	1
F32	9	0
F33	9	0
F34	9	0
F35	9	0
F36	10	1
F37	9	0
F38	9	0
F39	10	1
F40	10	1
F41	9	0
F42	9	0
F43	9	0
F44	9	0

F45	9	0
F46	10	1
F47	10	1
F48	10	1
F49	9	0
F50	9	0
F51	9	0
F52	9	0
F53	9	0
F54	9	0
F55	9	0
F56	9	0
F57	10	1
F58	9	0
F59	9	0
F60	9	0
F61	9	0
F62	10	1
F63	9	0
F64	10	1
F65	10	1
F66	9	0
F67	9	0
F68	9	0
F69	8	-1
F70	9	0
F71	9	0
F72	10	1
F73	10	1
F74	9	0
F75	9	0
F76	9	0
F77	9	0
F78	9	0
F79	9	0
F80	9	0
F81	8	-1
F82	8	-1
F83	8	-1
F84	8	-1
F85	8	-1
F86	9	0
F87	8	-1
F88	9	0
F89	8	-1
F90	8	-1
F91	8	-1
F92	9	0
F93	9	0
F94	9	0
F95	9	0
F96	10	1

F97	8	-1
F98	8	-1
F99	8	-1
F100	8	-1
F101	8	-1
F102	8	-1
F103	8	-1
F104	8	-1
F105	9	0
F106	9	0
F107	7	-2
F108	8	-1
F109	8	-1
F110	8	-1
F111	8	-1
F112	7	-2
F113	8	-1
F114	9	0

Background dose rate: 7-12 uR/hr with Model 19, No.115870

Exposure Rate Measurements
Molycorp - Building 23 Foundation Only Survey Unit (Affected Area)

Building Interior Bathroom

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
F1	15	0
F2	15	0
F3	15	0
F4	15	0
F5	15	0
F6	15	0

Background dose rate: 7-12 uR/hr with Model 19, No.115870

Summary of Building Surface Direct Reading (Total Activity) Results
Molycorp - Building 23 Foundation Only Survey Unit (Affected Area)

Including all building interior and exterior measurements

Beta				Alpha			
n	$\bar{x}$	s	μ_α	n	$\bar{x}$	s	μ_α
94	-66	345.5	-6.7	94	-132	690.9	-13.4

$t_{1-\alpha}$ 1.664

Guidelines/Conditions Satisfied?

Beta	Alpha
Yes	Yes

Summary of Exposure Rate Measurements
Molycorp - Building 23 Foundation Only Survey Unit (Affected Area)

Including all building interior and exterior measurements (uR/hr)

n	$\bar{x}$	s	μ_α
114	0.0	0.8	0.1

$t_{1-\alpha}$ 1.658

Guidelines/Conditions Satisfied?
Yes

Results of Surface Scans
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W1	410	101	4.0	1.8
W2	430	121	3.0	0.8
W3	830	521	6.0	3.8
W4	420	111	4.0	1.8
W5	330	21	2.0	-0.2
W6	340	31	3.0	0.8
W7	420	111	4.0	1.8
W8	400	91	2.0	-0.2
W9	300	-9	2.0	-0.2
W10	270	-39	1.0	-1.2
W11	280	-29	1.0	-1.2
W12	270	-39	2.0	-0.2
W13	255	-54	1.0	-1.2
W14	260	-49	1.0	-1.2
W15	255	-54	1.0	-1.2
W16	260	-49	3.0	0.8
W17	249	-60	0.9	-1.3
W18	264	-45	0.8	-1.4
W19	247	-62	1.2	-1
W20	248	-61	0.8	-1.4
W21	215	-94	1.0	-1.2
W22	233	-76	1.0	-1.2
W23	260	-49	1.0	-1.2
W24	266	-43	0.8	-1.4
W25	270	-39	2.0	-0.2
W26	274	-35	1.0	-1.2
W27	265	-44	1.0	-1.2
W28	248	-61	1.4	-0.8
W29	250	-59	1.0	-1.2
W30	267	-42	1.2	-1
W31	283	-26	2.0	-0.2
W32	300	-9	1.2	-1
W33	280	-29	2.4	0.2
W34	340	31	4.0	1.8
W35				
W36				
W37				
W38				
W39	350	41	6.0	3.8
W40				
W41				
W42				
W43	280	-29	4.0	1.8
W44				

W45				
W46				
W47				
W48				
W49				
W50				
W51	260	-49	4.0	1.8
W52				
W53				
W54				
W55				
W56				
W57				
W58				
W59				
W60				
W61				
W62				
W63				

All interior wall scans performed with:

Ludlum 2350-1 No.117014 with 43-106 No. 133866

Scan MDA Beta - 669 dpm/detector area
Scan MDA Alpha - 42 dpm/detector area
Scan background Beta - 309 cpm
Scan background Alpha - 2.2 cpm
Detector Eff. Beta - .248
Detector Eff. Alpha - .211

Results of Surface Scans
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Interior Bathroom

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
IW1	390	19	1	-0.4
IW2	400	29	1.2	-0.2
IW3	380	9	1	-0.4
IW4	330	-41	0	-1.4
IW5	370	-1	1	-0.4
IW6	360	-11	1.6	0.2
IW7	310	-61	1.8	0.4
IW8	330	-41	1	-0.4
IW9	350	-21	1	-0.4
IW10	300	-71	1.4	0
C1				
C2				
C3	320	-51	2	0.6
C4				
C5	300	-71	1	-0.4
C6				
EW1				
EW2	320	-51	2	0.6
EW3				
EW4	360	-11	6	4.6
EW5				
EW6				
EW7				
EW8				
EW9				

IW - Interior Wall
EW - Exterior Wall

Bathroom wall and ceiling scans performed with Ludlum 2350-1
No.117014 with 43-106 No. 133866
Scan MDA Beta - 733 dpm/detector area
Scan MDA Alpha - 53 dpm/detector area
Scan background Beta - 371 cpm
Scan background Alpha - 1.4 cpm
Detector Eff. Beta - .248
Detector Eff. Alpha - .211

Results of Surface Scans
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Ceiling (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
B1	620	321	12	10.6
B2	480	181	2	0.6
H3	400	101	4	2.6
L4	380	81	1.2	-0.2
B5	320	21	5	3.6
B6	1200	901	4	2.6
B7	680	381	12	10.6
CL8	1150	851	2.4	1
C9	320	21	1	-0.4
B10	300	1	0	-1.4
B11	1400	1101	14	12.6
C12	300	1	7	5.6
EP13	410	111	1.5	0.1
B14	860	561	10	8.6
B15	890	591	10	8.6
DF16	800	501	7	5.6
B17	800	501	1.5	0.1
C18	280	-19	0	-1.4
L19	360	61	1	-0.4
B20	1500	1201	8	6.6
CL21	1100	801	8	6.6
B22	230	-69	0	-1.4
B23	640	341	4	2.6
B24	1000	701	8	6.6
B25	260	-39	8	6.6
B26	930	631	1.4	0
C27	280	-19	1.4	0
H28	810	511	6	4.6
EP29	340	41	20	18.6
B30	300	1	6	4.6

Ceiling scans performed with Ludlum 2350-1 No.117563 with 43-106 No. 128912

43-106 Info:
Scan MDA Beta - 651 dpm/detector area
Scan MDA Alpha - 53 dpm/detector area
Scan background Beta - 299 cpm
Scan background Alpha - 1.4 cpm
Detector Eff. Beta - .251
Detector Eff. Alpha - .212

Results of Surface Scans
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Walls)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W1	340	31	3	0.8
W2	310	1	2	-0.2
W3	310	1	1	-1.2
W4				
W5				
W6				
W7				
W8				
W9				
W10	360	51	3	0.8
W11				
W12				
W13				
W14				
W15				
W16				
W17				
W18				
W19				
W20				
W21				
W22				
W23				
W24				
W25				
W26				
W27				
V1				
V2				
V3				

All exterior scans performed with Ludlum 2350-1 No.117014 with 43-106 No. 133866:

Scan MDA Beta - 669 dpm/detector area
Scan MDA Alpha - 42 dpm/detector area
Scan background Beta - 309 cpm
Scan background Alpha - 2.2 cpm
Detector Eff. Beta - .248
Detector Eff. Alpha - .211

Elevated Scan Readings

Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Location	Beta Scan (net cpm)	Alpha (net cpm)
EW4		4.6
B1		12
B5		5
B6	901	4
B7		12
CL8	851	2.4
B11	1101	14
C12		7
B14		10
B15		10
DF16		7
B20	1201	8
CL21		8
B24	701	8
B25		8
B26	631	1.4
H28		6
EP29		20
B30		6

Direct Measurements (Total Activity)
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Walls (Interior)

Location	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm^2)	Uncertainty 95% CL	MDA (dpm/100cm^2)	Direct Alpha (1) (dpm/100cm^2)
W1	194	190	4	8	-4	-35	60	140	-71
W2	219	219	0	8	-8	-71	49	140	-142
W3	648	261	387	8	379	3354	345	140	6708
W4	236	230	6	8	-2	-18	65	140	-35
W5	263	268	-5	8	-13	-115	30	140	-230
W6	233	228	5	8	-3	-27	63	140	-53
W7	346	261	85	49	36	319	201	140	637
W8	321	244	77	49	28	248	195	140	496
W9	229	258	-29	8	-37	-327	79	140	-655
W10	206	243	-37	8	-45	-398	93	140	-796
W11	194	199	-5	8	-13	-115	30	140	-230
W12	193	192	1	8	-7	-62	52	140	-124
W13	195	175	20	8	12	106	92	140	212
W14	184	190	-6	8	-14	-124	25	140	-248
W15	185	191	-6	8	-14	-124	25	140	-248
W16	197	224	-27	8	-35	-310	76	140	-619
W17	221	195	26	8	18	159	101	140	319
W18	188	231	-43	8	-51	-451	103	140	-903
W19	224	182	42	8	34	301	123	140	602
W20	192	192	0	8	-8	-71	49	140	-142
W21	213	183	30	8	22	195	107	140	389
W22	202	197	5	8	-3	-27	63	140	-53
W23	175	196	-21	8	-29	-257	63	140	-513
W24	183	199	-16	8	-24	-212	49	140	-425
W25	198	215	-17	8	-25	-221	52	140	-442
W26	219	246	-27	8	-35	-310	76	140	-619
W27	219	213	6	8	-2	-18	65	140	-35
W28	241	234	7	8	-1	-9	67	140	-18
W29	242	217	25	8	17	150	100	140	301
W30	207	227	-20	8	-28	-248	60	140	-496
W31	218	209	9	8	1	9	72	140	18
W32	188	229	-41	8	-49	-434	100	140	-867

W33	231	241	-10	8	-18	-159	25	140	-319
W34	221	239	-18	8	-26	-230	55	140	-460
W35	272	228	44	8	36	319	125	140	637
W36	305	260	45	8	37	327	126	140	655
W37	330	290	40	8	32	283	120	140	566
W38	375	335	40	8	32	283	120	140	566
W39	327	287	40	8	32	283	120	140	566
W40	226	210	16	8	8	71	85	140	142
W41	300	266	34	8	26	230	112	140	460
W42	316	286	30	8	22	195	107	140	389
W43	228	230	-2	8	-10	-88	42	140	-177
W44	214	201	13	8	5	44	79	140	88
W45	216	210	6	8	-2	-18	65	140	-35
W46	181	204	-23	8	-31	-274	67	140	-549
W47	185	205	-20	8	-28	-248	60	140	-496
W48	230	182	48	8	40	354	130	140	708
W49	177	201	-24	8	-32	-283	69	140	-566
W50	179	211	-32	8	-40	-354	85	140	-708
W51	198	190	8	8	0	0	69	140	0
W52	191	179	12	8	4	35	78	140	71
W53	232	205	27	8	19	168	103	140	336
W54	212	192	20	8	12	106	92	140	212
W55	220	201	19	8	11	97	90	140	195
W56	210	198	12	8	4	35	78	140	71
W57	198	184	14	8	6	53	81	140	106
W58	335	292	43	8	35	310	124	140	619
W59	182	183	-1	8	-9	-80	46	140	-159
W60	322	275	47	8	39	345	129	140	690
W61	224	175	49	8	41	363	131	140	726
W62	226	193	33	8	25	221	111	140	442
W63	201	247	-46	8	-54	-478	107	140	-956

All building interior wall direct measurements were performed with 2360 No. 164680 and 43-89 No. 118544

	Beta	Alpha
Wall Efficiency	0.113	0.164
Wall Background (cpm)	8	3.7
Cinderblock Wall Background (cpm)	49	3.7
Wall MDA (dpm/100 cm^2)	140	71

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Direct Measurements (Total Activity)
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Interior Bathroom

Location	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm^2)	Uncertainty 95% CL	MDA (dpm/100cm^2)	Direct Alpha (1) (dpm/100cm^2)
IW1	351	308	43	49	-6	-53	166	140	-106
IW2	348	312	36	49	-13	-115	160	140	-230
IW3	312	278	34	49	-15	-133	158	140	-265
IW4	329	295	34	49	-15	-133	158	140	-265
IW5	339	315	24	49	-25	-221	148	140	-442
IW6	311	288	23	49	-26	-230	147	140	-460
IW7	295	270	25	49	-24	-212	149	140	-425
IW8	319	308	11	49	-38	-336	134	140	-673
IW9	372	333	39	49	-10	-88	163	140	-177
IW10	292	263	29	49	-20	-177	153	140	-354
C1	385	259	126	8	118	1044	201	140	2088
C2	402	275	127	8	119	1053	202	140	2106
C3	355	278	77	8	69	611	160	140	1221
C4	393	283	110	8	102	903	188	140	1805
C5	372	312	60	8	52	460	143	140	920
C6	380	292	88	8	80	708	170	140	1416
EW1	340	278	62	49	13	115	183	140	230
EW2	320	274	46	49	-3	-27	169	140	-53
EW3	365	305	60	49	11	97	181	140	195
EW4	385	325	60	49	11	97	181	140	195
EW5	347	288	59	49	10	88	180	140	177
EW6	331	282	49	49	0	0	172	140	0
EW7	344	292	52	49	3	27	174	140	53
EW8	332	283	49	49	0	0	172	140	0
EW9	340	290	50	49	1	9	173	140	18

All bathroom direct measurements were performed with 2360 No. 164680 and 43-89 No. 118544

	Beta	Alpha
Efficiency	0.113	0.164
Wall and Ceiling Background (cpm)	8	3.7
Cinderblock Wall Background (cpm)	49	3.7
Floor Background (cpm)	78	2.4
Wall MDA (dpm/100 cm^2)	140	71
Floor MDA (dpm/100 cm^2)	387	60

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Direct Measurements (Total Activity)
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Ceiling (Interior)

Location	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm2)	Uncertainty 95% CL	MDA (dpm/100cm2)	Direct Alpha (1) (dpm/100cm2)
B1	484	242	242	8	234	2543	337	172	5087
B2	338	226	112	8	104	1130	233	172	2261
H3	378	237	141	8	133	1446	260	172	2891
L4	327	257	70	8	62	674	188	172	1348
B5	238	218	20	8	12	130	113	172	261
B6	974	270	704	8	696	7565	568	172	15130
B7	520	252	268	8	260	2826	354	172	5652
CL8	785	311	474	8	466	5065	468	172	10130
C9	296	263	33	8	25	272	136	172	543
B10	243	235	8	8	0	0	85	172	0
B11	1203	256	947	8	939	10207	658	172	20413
C12	277	271	6	8	-2	-22	80	172	-43
EP13	464	258	206	8	198	2152	312	172	4304
B14	637	280	357	8	349	3793	407	172	7587
B15	675	271	404	8	396	4304	432	172	8609
DF16	662	272	390	8	382	4152	425	172	8304
B17	663	256	407	8	399	4337	434	172	8674
C18	252	271	-19	8	-27	-293	71	172	-587
L19	343	244	99	8	91	989	220	172	1978
B20	1180	276	904	8	896	9739	643	172	19478
CL21	1012	339	673	8	665	7228	556	172	14457
B22	206	217	-11	8	-19	-207	37	172	-413
B23	723	235	488	8	480	5217	474	172	10435
B24	1007	256	751	8	743	8076	587	172	16152
B25	383	205	178	8	170	1848	291	172	3696
B26	790	316	474	8	466	5065	468	172	10130
C27	230	233	-3	8	-11	-120	48	172	-239
H28	520	254	266	8	258	2804	353	172	5609
EP29	339	219	120	8	112	1217	241	172	2435
B30	226	222	4	8	-4	-43	74	172	-87

All ceiling direct measurements were performed with 2224-1
No. 129463 and 43-89 No. 169230

	Beta	Alpha
Ceiling Efficiency	0.92	0.154
Ceiling Background (cpm)	8	3.7
Ceiling MDA (dpm/100 cm2)	172	78

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Direct Measurements (Total Activity)
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Walls and Roof)

Location	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm^2)	Uncertainty 95% CL	MDA (dpm/100cm^2)	Direct Alpha [1] (dpm/100cm^2)
W1	252	238	14	8	6	53	81	140	106
W2	242	245	-3	8	-11	-97	39	140	-195
W3	233	231	2	8	-6	-53	55	140	-106
W4	260	233	27	8	19	168	103	140	336
W5	224	226	-2	8	-10	-88	42	140	-177
W6	224	231	-7	8	-15	-133	17	140	-265
W7	211	198	13	8	5	44	79	140	88
W8	250	197	53	78	-25	-221	199	387	-442
W9	279	192	87	78	9	80	223	387	159
W10	282	234	48	8	40	354	130	140	708
W11	183	192	-9	8	-17	-150	17	140	-301
W12	214	208	6	8	-2	-18	65	140	-35
W13	219	203	16	8	8	71	85	140	142
W14	223	180	43	8	35	310	124	140	619
W15	257	228	29	8	21	186	106	140	372
W16	231	225	6	8	-2	-18	65	140	-35
W17	206	198	8	8	0	0	69	140	0
W18	230	249	-19	8	-27	-239	58	140	-478
W19	245	250	-5	8	-13	-115	30	140	-230
W20	250	255	-5	8	-13	-115	30	140	-230
W21	201	199	2	8	-6	-53	55	140	-106
W22	240	235	5	8	-3	-27	63	140	-53
W23	228	223	5	8	-3	-27	63	140	-53
W24	266	286	-20	8	-28	-248	60	140	-496
W25	250	240	10	8	2	18	74	140	35
W26	220	224	-4	8	-12	-106	35	140	-212
W27	250	230	20	8	12	106	92	140	212

All building exterior direct measurements were performed with

2360 No. 164680 and 43-89 No. 118544	Beta	Alpha
Efficiency	0.113	0.164
Background (cpm)	8	3.7
MDA (dpm/100 cm^2)	140	71

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Direct Measurements (Total Activity)
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Roof)

Location	Unshield Beta cpm	Shield Beta cpm	Gross Beta cpm	Bkgd cpm	Net cpm	Direct Beta (dpm/100cm^2)	Uncertainty 95% CL	MDA (dpm/100cm^2)	Direct Alpha [1] (dpm/100cm^2)
V1	335	256	79	8	71	628	162	140	1257
V2	314	246	68	8	60	531	151	140	1062
V3	368	233	135	8	127	1124	207	140	2248

All building exterior direct measurements were performed with
2360 No. 164680 and 43-89 No. 118544

	Beta	Alpha
Efficiency	0.113	0.164
Background (cpm)	8	3.7
MDA (dpm/100 cm^2)	140	71

(1) - A beta to alpha ratio factoring (1:2, beta to alpha) was used to provide a more accurate alpha activity determination then sampling.

Elevated Direct Measurements (Total Activity) and Averaging Results
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Ceiling (Interior)

Location	Direct Beta (dpm/100cm^2)	Direct Alpha (dpm/100cm^2)	Over Area (cm^2)	Exceeds Limits Maximum	Exceeds Limits Average	Averaged Value (over 1 m^2)	Within Limits? Yes/No
B1	2543	5087	Marked for removal/remediation				
B2	1130	2261	Marked for removal/remediation				
H3	1446	2891	Marked for removal/remediation				
L4		1348	Marked for removal/remediation				
B6	7565	15130	Marked for removal/remediation				
B7	2826	5652	Marked for removal/remediation				
CL8	5065	10130	Marked for removal/remediation				
B11	10207	20413	Marked for removal/remediation				
EP13	2152	4304	Marked for removal/remediation				
B14	3793	7587	Marked for removal/remediation				
B15	4304	8609	Marked for removal/remediation				
DF16	4152	8304	Marked for removal/remediation				
B17	4337	8674	Marked for removal/remediation				
L19		1978	Marked for removal/remediation				
B20	9739	19478	Marked for removal/remediation				
CL21	7228	14457	Marked for removal/remediation				
B23	5217	10435	Marked for removal/remediation				
B24	8076	16152	Marked for removal/remediation				
B25	1848	3696	Marked for removal/remediation				
B26	5065	10130	Marked for removal/remediation				
H28	2804	5609	Marked for removal/remediation				
EP29	1217	2435	Marked for removal/remediation				

Removable Surface Activity Measurements
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA	Instrument #
W1	-6	15.8	155	-0.6	2.6	13	1
W2	-6	15.8	155	8.1	9.5	13	1
W3	54	37.0	155	-0.6	2.6	13	1
W4	-24	25.9	155	-0.6	2.6	13	1
W5	-18	23.0	155	-0.6	2.6	13	1
W6	24	25.9	155	-0.6	2.6	13	1
W7	-48	35.0	155	2.3	5.1	13	1
W8	-36	30.8	155	-0.6	2.6	13	1
W9	79	44.2	155	-0.6	2.6	13	1
W10	-12	19.7	155	2.3	5.1	13	1
W11	42	33.0	155	2.3	5.1	13	1
W12	0	10.5	155	-0.6	2.6	13	1
W13	-42	33.0	155	-0.6	2.6	13	1
W14	12	19.7	155	2.3	5.1	13	1
W15	6	15.8	155	-0.6	2.6	13	1
W16	-18	23.0	155	5.2	7.6	13	1
W17	-18	23.0	155	-0.6	2.6	13	1
W18	-24	25.9	155	-0.6	2.6	13	1
W19	-30	28.4	155	-0.6	2.6	13	1
W20	-6	15.8	155	2.3	5.1	13	1
W21	24	25.9	155	-0.6	2.6	13	1
W22	-18	23.0	155	-0.6	2.6	13	1
W23	-12	19.7	155	-0.6	2.6	13	1
W24	12	19.7	155	-0.6	2.6	13	1
W25	30	28.4	155	-0.6	2.6	13	1
W26	6	15.8	155	-0.6	2.6	13	1
W27	12	19.7	155	-0.6	2.6	13	1
W28	18	23.0	155	-0.6	2.6	13	1
W29	-24	25.9	155	-0.6	2.6	13	1
W30	30	28.4	155	-0.6	2.6	13	1
W31	-36	30.8	155	8.0	9.5	13	1
W32	-30	28.4	155	-0.6	2.6	13	1

W33	-18	23.0	155	-0.6	2.6	13	1
W34	12	19.7	155	2.3	5.1	13	1
W35	-18	23.0	155	-0.6	2.6	13	1
W36	6	15.8	155	-0.6	2.6	13	1
W37	-30	28.4	155	-0.6	2.6	13	1
W38	-42	33.0	155	-0.6	2.6	13	1
W39	12	19.7	155	-0.6	2.6	13	1
W40	6	15.8	155	2.3	5.1	13	1
W41	54	37.0	155	-0.6	2.6	13	1
W42	24	25.9	155	-0.6	2.6	13	1
W43	-48	35.0	155	-0.6	2.6	13	1
W44	-36	30.8	155	-0.6	2.6	13	1
W45	0	10.5	155	-0.6	2.6	13	1
W46	12	19.7	155	-0.6	2.6	13	1
W47	-18	23.0	155	2.3	5.1	13	1
W48	-18	23.0	155	-0.6	2.6	13	1
W49	6	15.8	155	-0.6	2.6	13	1
W50	-36	30.8	155	-0.6	2.6	13	1
W51	-12	19.7	155	-0.6	2.6	13	1
W52	24	25.9	155	-0.6	2.6	13	1
W53	-6	15.8	155	-0.6	2.6	13	1
W54	-24	25.9	155	-0.6	2.6	13	1
W55	-36	30.8	155	-0.6	2.6	13	1
W56	-48	35.0	155	-0.6	2.6	13	1
W57	18	23.0	155	-0.6	2.6	13	1
W58	6	15.8	155	2.3	5.1	13	1
W59	-12	19.7	155	-0.6	2.6	13	1
W60	12	19.7	155	-0.6	2.6	13	1
W61	6	15.8	155	-0.6	2.6	13	1
W62	24	25.9	155	2.3	5.1	13	1
W63	-6	15.8	155	-0.6	2.6	13	1

#1 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	47	0.22
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	155	13.0

#2 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	46	0.12
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	154	11.6

Removable Surface Activity Measurements
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Interior Bathroom

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA	Instrument #
IW1	12	19.7	154	-0.4	2.1	11.6	2
IW2	12	19.7	154	-0.4	2.1	11.6	2
IW3	6	15.7	154	2.5	5.3	11.6	2
IW4	-6	15.7	154	2.5	5.3	11.6	2
IW5	-18	23.0	154	-0.4	2.1	11.6	2
IW6	-12	19.7	154	-0.4	2.1	11.6	2
IW7	6	15.7	154	-0.4	2.1	11.6	2
IW8	6	15.7	154	-0.4	2.1	11.6	2
IW9	-6	15.7	154	2.5	5.3	11.6	2
IW10	12	19.7	154	-0.4	2.1	11.6	2
C1	-18	23.0	154	-0.4	2.1	11.6	2
C2	12	19.7	154	2.5	5.3	11.6	2
C3	-18	23.0	154	-0.4	2.1	11.6	2
C4	6	15.7	154	-0.4	2.1	11.6	2
C5	-6	15.7	154	-0.4	2.1	11.6	2
C6	12	19.7	154	-0.4	2.1	11.6	2
EW1	6	15.7	154	-0.4	2.1	11.6	2
EW2	-6	15.7	154	-0.4	2.1	11.6	2
EW3	-6	15.7	154	-0.4	2.1	11.6	2
EW4	-6	15.7	154	-0.4	2.1	11.6	2
EW5	6	15.7	154	-0.4	2.1	11.6	2
EW6	12	19.7	154	-0.4	2.1	11.6	2
EW7	6	15.7	154	-0.4	2.1	11.6	2
EW8	-12	19.7	154	-0.4	2.1	11.6	2
EW9	-6	15.7	154	2.5	5.3	11.6	2

#1 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	47	0.22
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	155	13.0

#2 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	46	0.12
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	154	11.6

Removable Surface Activity Measurements
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Ceiling (Interior)

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA
B1	-18	23.4	151	-0.6	2.6	12
B2	30	28.7	151	-0.6	2.6	12
H3	30	28.7	151	2.3	5.1	12
L4	-60	39.0	151	-0.6	2.6	12
B5	6	16.3	151	-0.6	2.6	12
B6	54	37.2	151	14.0	12.5	12
B7	18	23.4	151	-0.6	2.6	12
CL8	0	11.3	151	2.3	5.1	12
C9	-6	16.3	151	-0.6	2.6	12
B10	-18	23.4	151	-0.6	2.6	12
B11	24	26.2	151	2.3	5.1	12
C12	12	20.2	151	-0.6	2.6	12
EP13	-42	33.2	151	2.3	5.1	12
B14	-6	16.3	151	-0.6	2.6	12
B15	24	26.2	151	2.3	5.1	12
DF16	42	33.2	151	5.2	7.6	12
B17	6	16.3	151	-0.6	2.6	12
C18	-6	16.3	151	-0.6	2.6	12
L19	-36	31.1	151	-0.6	2.6	12
B20	-60	39.0	151	14.0	12.5	12
CL21	-60	39.0	151	8.1	9.5	12
B22	-6	16.3	151	-0.6	2.6	12
B23	-18	23.4	151	2.3	5.1	12
B24	12	20.2	151	2.3	5.1	12
B25	0	11.3	151	-0.6	2.6	12
B26	18	23.4	151	2.3	5.1	12
C27	24	26.2	151	-0.6	2.6	12
H28	28	27.9	151	2.3	5.1	12
EP29	-6	16.3	151	-0.6	2.6	12
B30	-18	23.4	151	-0.6	2.6	12

#1 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	45	0.2
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	151	12.0

Removable Surface Activity Measurements
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Walls and Roof)

Location (see map)	Removable Beta (dpm/100cm2)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm2)	Uncertainty 95% CL	MDA	Instrument #
W1	12	19.7	155	-0.6	2.6	13	1
W2	12	19.7	155	-0.6	2.6	13	1
W3	-36	30.8	155	2.3	5.1	13	1
W4	79	44.2	155	-0.6	2.6	13	1
W5	6	15.8	155	-0.6	2.6	13	1
W6	-24	25.9	155	-0.6	2.6	13	1
W7	73	42.5	155	-0.6	2.6	13	1
W8	-36	30.8	155	2.3	5.1	13	1
W9	-6	15.8	155	2.3	5.1	13	1
W10	24	25.9	155	2.3	5.1	13	1
W11	-12	19.7	155	-0.6	2.6	13	1
W12	0	10.5	155	-0.6	2.6	13	1
W13	-48	35.0	155	2.3	5.1	13	1
W14	-36	30.8	155	-0.6	2.6	13	1
W15	12	19.7	155	-0.6	2.6	13	1
W16	-18	23.0	155	-0.6	2.6	13	1
W17	18	23.0	155	-0.6	2.6	13	1
W18	6	15.8	155	2.3	5.1	13	1
W19	-12	19.7	155	-0.6	2.6	13	1
W20	-24	25.9	155	-0.6	2.6	13	1
W21	-6	15.8	155	-0.6	2.6	13	1
W22	12	19.7	155	2.3	5.1	13	1
W23	0	10.5	155	2.3	5.1	13	1
W24	6	15.8	155	-0.6	2.6	13	1
W25	-24	25.9	155	-0.6	2.6	13	1
W26	0	10.5	155	-0.6	2.6	13	1
W27	-6	15.8	155	-0.6	2.6	13	1
V1	6	15.8	155	-0.6	2.6	13	1
V2	-6	15.8	155	-0.6	2.6	13	1
V3	-12	19.7	155	-0.6	2.6	13	1

#1 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	47	0.22
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	155	13.0

#2 - Ludlum 2929 No. 152202 with 43-10 No. 156519 Info:

	Beta	Alpha
Background (cpm)	46	0.12
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	154	11.6

Elevated Removable Surface Activity Measurements
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

No elevated removable surface activity was reported above limits.

Exposure Rate Measurements
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Walls (Interior)

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
W1	9	0
W2	9	0
W3	9	0
W4	10	1
W5	10	1
W6	10	1
W7	10	1
W8	10	1
W9	10	1
W10	10	1
W11	9	0
W12	8	-1
W13	8	-1
W14	8	-1
W15	8	-1
W16	8	-1
W17	8	-1
W18	9	0
W19	8	-1
W20	8	-1
W21	8	-1
W22	7	-2
W23	8	-1
W24	8	-1
W25	8	-1
W26	8	-1
W27	8	-1
W28	8	-1
W29	9	0
W30	8	-1
W31	9	0
W32	9	0
W33	8	-1
W34	9	0
W35	8	-1
W36	8	-1
W37	8	-1
W38	7	-2
W39	7	-2
W40	8	-1
W41	8	-1
W42	9	0
W43	8	-1
W44	8	-1

W45	9	0
W46	8	-1
W47	5	-4
W48	6	-3
W49	5	-4
W50	6	-3
W51	6	-3
W52	5	-4
W53	8	-1
W54	7	-2
W55	7	-2
W56	6	-3
W57	8	-1
W58	8	-1
W59	8	-1
W60	8	-1
W61	8	-1
W62	7	-2
W63	6	-3

Background dose rate: 7-12 uR/hr with Model 19, No.115870

Exposure Rate Measurements
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Interior Bathroom

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
IW1	14	-1
IW2	15	0
IW3	18	3
IW4	17	2
IW5	15	0
IW6	15	0
IW7	15	0
IW8	15	0
IW9	14	-1
IW10	15	0
C1	14	-1
C2	14	-1
C3	15	0
C4	15	0
C5	14	-1
C6	14	-1
EW1	13	-2
EW2	13	-2
EW3	16	1
EW4	16	1
EW5	14	-1
EW6	13	-2
EW7	13	-2
EW8	15	0
EW9	15	0

Background dose rate: 7-12 uR/hr with Model 19, No.115870

Exposure Rate Measurements
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Ceiling (Interior)

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
B1	5	0
B2	5	0
H3	5	0
L4	5	0
B5	5	0
B6	5	0
B7	6	1
CL8	5	0
C9	5	0
B10	5	0
B11	5	0
C12	5	0
EP13	5	0
B14	5	0
B15	5	0
DF16	5	0
B17	7	2
C18	6	1
L19	7	2
B20	6	1
CL21	5	0
B22	5	0
B23	5	0
B24	5	0
B25	5	0
B26	5	0
C27	5	0
H28	5	0
EP29	5	0
B30	5	0

Background dose rate: 5 uR/hr with Model 19, No.22526

Exposure Rate Measurements
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Walls)

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
W1	14	4
W2	14	4
W3	14	4
W4	14	4
W5	14	4
W6	9	-1
W7	9	-1
W8	8	-2
W9	9	-1
W10	9	-1
W11	7	-3
W12	10	0
W13	9	-1
W14	9	-1
W15	10	0
W16	10	0
W17	9	-1
W18	8	-2
W19	8	-2
W20	9	-1
W21	8	-2
W22	7	-3
W23	8	-2
W24	8	-2
W25	8	-2
W26	9	-1
W27	8	-2

Background dose rate: 6-10 uR/hr with Model 19, No.115870

Exposure Rate Measurements
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Roof)

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
V1	7	-2
V2	7	-2
V3	7	-2
see map	10	1
see map	10	1
see map	10	1
see map	9	0
see map	10	1
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	7	-2
see map	8	-1
see map	9	0
see map	7	-2
see map	7	-2
see map	8	-1
see map	8	-1
see map	7	-2
see map	7	-2
see map	8	-1
see map	9	0
see map	7	-2
see map	6	-3
see map	6	-3
see map	9	0
see map	7	-2
see map	6	-3
see map	6	-3
see map	10	1
see map	7	-2
see map	6	-3
see map	6	-3
see map	10	1
see map	8	-1
see map	6	-3
see map	6	-3
see map	9	0
see map	7	-2
see map	7	-2
see map	6	-3

Background dose rate: 6-10 uR/hr with Model 19, No.115870

Summary of Building Surface Direct Reading (Total Activity) Results
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Including all building interior and exterior measurements

Beta				Alpha			
n	$\bar{x}$	s	μ_α	n	$\bar{x}$	s	μ_α
117	-17	200.6	13.5	360	-11	401.3	23.9

$t_{1-\alpha}$ 1.658

Guidelines/Conditions Satisfied?

Beta	Alpha
Yes	Yes

Summary of Exposure Rate Measurements
Molycorp - Building 23 Survey Unit Excluding Foundation (Affected Area)

Including all building interior and exterior measurements (uR/hr)

n	$\bar{x}$	s	μ_α
194	-0.7	1.4	-0.5

$t_{1-\alpha}$	1.655

Guidelines/Conditions Satisfied?
Yes