

Results of Surface Scans

Molycorp - Building 19 Foundation Only Survey Unit (Unaffected Area)

1st Floor Building Floor

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F1	1740	0	8	-2
F2	1740	0	10	0
F3	1750	10	8	-2
F4	1800	60	11	1
F5	1890	150	10	0
F6	1740	0	12	2
F7				
F8	1780	40	8	-2
F9	1740	0	6	-4
F10				
F11				
F12	1720	-20		-10
F13				
F14	1650	-90	8	-2
F15				
F16	1630	-110	6	-4
F17				
F18				
F19	1720	-20	10	0
F20				
F21	1610	-130	11	1
F22				
F23	1720	-20	12	2
F24				
F25				
F26				
F27				
F28	1820	80	12	2
F29				
F30				

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

Floor Monitor Info:

Scan MDA Beta - 204 dpm/detector area

Scan MDA Alpha - 20 dpm/detector area

Scan background Beta - 1740 cpm

Scan background Alpha - 10 cpm

Detector Eff. Beta - .27

Detector Eff. Alpha - .207

Elevated Scan Readings

Molycorp - Building 19 Foundation Only Survey Unit (Unaffected Area)

No elevated scan readings were reported

Direct Measurements (Total Activity)

Molycorp - Building 19 Foundation Only Survey Unit (Unaffected Area)

1st Floor Building Floor

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	391	309	82	78	4	43	269	476	87
F2	396	307	89	78	11	120	275	476	239
F3	371	325	46	78	-32	-348	237	476	-696
F4	386	326	60	78	-18	-196	250	476	-391
F5	387	316	71	78	-7	-76	260	476	-152
F6	377	315	62	78	-16	-174	252	476	-348
F7	402	324	78	78	0	0	266	476	0
F8	381	322	59	78	-19	-207	249	476	-413
F9	392	318	74	78	-4	-43	263	476	-87
F10	405	367	38	78	-40	-435	229	476	-870
F11	362	336	26	78	-52	-565	217	476	-1130
F12	357	313	44	78	-34	-370	235	476	-739
F13	365	324	41	78	-37	-402	232	476	-804
F14	396	367	29	78	-49	-533	220	476	-1065
F15	382	321	61	78	-17	-185	251	476	-370
F16	381	314	67	78	-11	-120	257	476	-239
F17	400	335	65	78	-13	-141	255	476	-283
F18	368	302	66	78	-12	-130	256	476	-261
F19	380	307	73	78	-5	-54	262	476	-109
F20	373	313	60	78	-18	-196	250	476	-391
F21	367	321	46	78	-32	-348	237	476	-696
F22	351	343	8	78	-70	-761	198	476	-1522
F23	363	339	24	78	-54	-587	215	476	-1174
F24	360	342	18	78	-60	-652	209	476	-1304
F25	338	334	4	78	-74	-804	193	476	-1609
F26	371	290	81	78	3	33	269	476	65
F27	368	337	31	78	-47	-511	222	476	-1022
F28	366	316	50	78	-28	-304	241	476	-609
F29	379	308	71	78	-7	-76	260	476	-152
F30	374	268	106	78	28	304	289	476	609

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

	Beta	Alpha
Efficiency	0.092	0.154
Floor Background (cpm)	78	2.4
Floor MDA (dpm/100 cm ²)	476	64

**Elevated Direct Readings (Total Activity) and Averaging Results
Molycorp - Building 19 Foundation Only Survey Unit (Unaffected Area)**

No elevated direct measurements were reported.

Removable Surface Activity Measurements
Molycorp - Building 19 Foundation Only Survey Unit (Unaffected Area)

1st Floor Building Floor

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA
F1	-30	28.4	151	2.6	5.4	12
F2	36	30.8	151	-0.2	1.5	12
F3	42	33.0	151	-0.2	1.5	12
F4	18	23.0	151	-0.2	1.5	12
F5	24	25.8	151	-0.2	1.5	12
F6	6	15.7	151	-0.2	1.5	12
F7	-24	25.8	151	-0.2	1.5	12
F8	54	37.0	151	-0.2	1.5	12
F9	-24	25.8	151	-0.2	1.5	12
F10	-18	23.0	151	2.6	5.4	12
F11	-6	15.7	151	-0.2	1.5	12
F12	48	35.0	151	-0.2	1.5	12
F13	12	19.7	151	-0.2	1.5	12
F14	42	33.0	151	-0.2	1.5	12
F15	66	40.6	151	-0.2	1.5	12
F16	60	38.8	151	-0.2	1.5	12
F17	-24	25.8	151	-0.2	1.5	12
F18	12	19.7	151	-0.2	1.5	12
F19	6	15.7	151	5.6	7.9	12
F20	30	28.4	151	-0.2	1.5	12
F21	-36	30.8	151	-0.2	1.5	12
F22	12	19.7	151	-0.2	1.5	12
F23	6	15.7	151	-0.2	1.5	12
F24	42	33.0	151	-0.2	1.5	12
F25	-6	15.7	151	-0.2	1.5	12
F26	42	33.0	151	-0.2	1.5	12
F27	18	23.0	151	2.6	5.4	12
F28	-12	19.7	151	-0.2	1.5	12
F29	6	15.7	151	-0.2	1.5	12
F30	36	30.8	151	-0.2	1.5	12

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

	Beta	Alpha
Background (cpm)	46	0.08
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	151	12

Removable Surface Activity Measurements
Molycorp - Building 19 Foundation Only Survey Unit (Unaffected Area)

No elevated removable surface activity was reported.

Exposure Rate Measurements

Molycorp - Building 19 Foundation Only Survey Unit (Unaffected Area)

1st Floor Building Floor

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
F1	13	0
F2	13	0
F3	12	-1
F4	13	0
F5	13	0
F6	13	0
F7	13	0
F8	13	0
F9	13	0
F10	13	0
F11	13	0
F12	13	0
F13	13	0
F14	12	-1
F15	12	-1
F16	12	-1
F17	12	-1
F18	12	-1
F19	12	-1
F20	12	-1
F21	11	-2
F22	11	-2
F23	12	-1
F24	11	-2
F25	12	-1
F26	12	-1
F27	13	0
F28	13	0
F29	12	-1
F30	13	0

Background dose rate: 10-15 uR/hr with Model 19, No.115870

Summary of Building Surface Direct Reading (Total Activity) Results
Molycorp - Building 19 Foundation Only Survey Unit (Unaffected Area)

Average Total Activity (dpm/100cm²)

Beta				Alpha			
n	\bar{x}	s	μ_α	n	\bar{x}	s	μ_α
30	-257	266.4	-174.7	30	-514.5	532.8	-349.4
	$t_{1-\alpha}$	1.697					

Guidelines/Conditions Satisfied?

Beta	Alpha
Yes	Yes

Summary of Exposure Rate Measurements
Molycorp - Building 19 Foundation Only Survey Unit (Unaffected Area)

n	\bar{x}	s	μ_α
30	-0.6	0.7	-0.4
$t_{1-\alpha}$	1.697		

**Guidelines/Conditions
Satisfied?
Yes**

Results of Surface Scans

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

2nd Floor Building Floor

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F1	2000	504	12	2.6
F2	1980	484	16	6.6
F3	2020	524	10	0.6
F4	2060	564	8	-1.4
F5	1620	124	12	2.6
F6	1640	144	14	4.6
F7	1900	404	8	-1.4
F8	2000	504	16	6.6
F9	1640	144	6	-3.4
F10	1660	164	8	-1.4
F11	1680	184	6	-3.4
F12	1700	204	8	-1.4
F13	1680	184	6	-3.4
F14	1720	224	10	0.6
F15	1680	184	8	-1.4
F16	1720	224	16	6.6
F17	1740	244	12	2.6
F18	1710	214	6	-3.4
F19	1780	284	8	-1.4
F20	1740	244	16	6.6
F21	1670	174	11.4	2
F22	1660	164	14.6	5.2
F23	1640	144	6.2	-3.2
F24	1620	124	12	2.6
F25	1650	154	4.2	-5.2
F26	1720	224	6.8	-2.6
F27	1690	194	10	0.6
F28	1720	224	12	2.6
F29	1800	304	14	4.6
F30	1680	184	8	-1.4

2nd floor 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 - 20 dpm/detector area

Scan background Beta - 1496 cpm

Scan background Alpha - 9.4 cpm

Detector Eff. Beta - .27

Detector Eff. Alpha - .207

Results of Surface Scans

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

1st Floor Building Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W1	500	154	4	2.6
W2	459	113	3	1.6
W3	490	144	4	2.6
W4	470	124	6	4.6
W5	430	84	2	0.6
W6	490	144	7	5.6
W7	470	124	5	3.6
W8	450	104	6	4.6
W9	450	104	6	4.6
W10	460	114	7	5.6
W11	380	34	2	0.6
W12	470	124	6	4.6
W13	346	0	2	0.6
W14	350	4	1	-0.4
W15	400	54	1	-0.4
W16	370	24	2	0.6
W17	434	88	2	0.6
W18	407	61	2	0.6
W19	355	9	1	-0.4
W20	320	-26	1	-0.4
W21	420	74	2	0.6
W22	470	124	3	1.6
W23	500	154	4	2.6
W24	400	54	3	1.6
W25	500	154	4	2.6
W26	370	24	2	0.6
W27	420	74	2	0.6
W28	440	94	2	0.6
W29	460	114	3	1.6
W30	440	94	2	0.6

1st floor interior wall scans performed with Ludlum 2350-1 No. 117563 with 43-106 No. 128912

43-106 Info:

Scan MDA Beta - 700 dpm/detector area

Scan MDA Alpha - 53 dpm/detector area

Scan background Beta - 346 cpm

Scan background Alpha - 1.4 cpm

Detector Eff. Beta - .251

Detector Eff. Alpha - .212

Results of Surface Scans

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

2nd Floor Building Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W1	440	127	5	4.2
W2	540	227	6	5.2
W3	380	67	7	6.2
W4	360	47	7	6.2
W5	350	37	7	6.2
W6	340	27	4	3.2
W7	340	27	2	1.2
W8	360	47	1	0.2
W9	310	-3	1	0.2
W10	320	7	1	0.2
W11	310	-3	2	1.2
W12	320	7	1	0.2
W13	340	27	0	-0.8
W14	330	17	1	0.2
W15	300	-13	0	-0.8
W16	260	-53	1	0.2
W17	300	-13	1	0.2
W18	280	-33	2	1.2
W19	270	-43	2	1.2
W20	280	-33	4.2	3.4
W21	290	-23	2.6	1.8
W22	270	-43	2.8	2
W23	300	-13	4	3.2
W24	280	-33	1	0.2
W25	280	-33	2	1.2
W26	300	-13	2.4	1.6
W27	280	-33	2.8	2
W28	280	-33	1.7	0.9
W29	340	27	4.2	3.4
W30	420	107	6	5.2

2nd floor interior wall scans performed with Ludlum 2350-1 No. 117563 with 43-106 No. 128912

43-106 Info:

Scan MDA Beta - 666 dpm/detector area

Scan MDA Alpha - 40 dpm/detector area

Scan background Beta - 313 cpm

Scan background Alpha - .8 cpm

Detector Eff. Beta - .251

Detector Eff. Alpha - .212

Results of Surface Scans

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

Exterior Building Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W1				
W2	440	94	2	0.6
W3				
W4				
W5				
W6	400	54	4.6	3.2
W7				
W8				
W9	420	74	3.8	2.4
W10				
W11	410	64	2	0.6

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

43-106 Info:

Scan MDA Beta - 700 dpm/detector area
Scan MDA Alpha - 53 dpm/detector area
Scan background Beta - 346 cpm
Scan background Alpha - 1.4 cpm
Detector Eff. Beta - .251
Detector Eff. Alpha - .212

Elevated Scan Readings

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

1st Floor Building Walls (Interior)

Location (see map)	Alpha Scan net cpm
W4	4.6
W6	5.6
W7	3.6
W8	4.6
W9	4.6
W10	5.6
W12	4.6

2nd Floor Building Walls (Interior)

Location (see map)	Alpha Scan net cpm
W1	4.2
W2	5.2
W3	6.2
W4	6.2
W5	6.2
W6	3.2
W20	3.4
W21	1.8
W22	2
W23	3.2
W29	3.4
W30	5.2

Direct Measurements (Total Activity)

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

2nd Floor Building Floor

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*	520	363	157	78	79	859	327	476	1717
F2*	497	369	128	78	50	543	306	476	1087
F3*	462	361	101	78	23	250	285	476	500
F4*	458	341	117	78	39	424	297	476	848
F5	348	321	27	78	-51	-554	218	476	-1109
F6	386	313	73	78	-5	-54	262	476	-109
F7	399	319	80	78	2	22	268	476	43
F8	418	317	101	78	23	250	285	476	500
F9	336	283	53	78	-25	-272	244	476	-543
F10	356	297	59	78	-19	-207	249	476	-413
F11	398	304	94	78	16	174	279	476	348
F12	352	297	55	78	-23	-250	246	476	-500
F13	379	321	58	78	-20	-217	248	476	-435
F14	351	304	47	78	-31	-337	238	476	-674
F15	380	301	79	78	1	11	267	476	22
F16	402	299	103	78	25	272	287	476	543
F17	384	304	80	78	2	22	268	476	43
F18	345	277	68	78	-10	-109	257	476	-217
F19	382	321	61	78	-17	-185	251	476	-370
F20	362	336	26	78	-52	-565	217	476	-1130
F21	352	298	54	78	-24	-261	245	476	-522
F22	331	273	58	78	-20	-217	248	476	-435
F23	334	307	27	78	-51	-554	218	476	-1109
F24	332	303	29	78	-49	-533	220	476	-1065
F25	335	332	3	78	-75	-815	192	476	-1630
F26	338	323	15	78	-63	-685	205	476	-1370
F27	375	288	87	78	9	98	274	476	196

F28	288	305	-17	78	-95	-1033	166	476	-2065
F29	269	276	-7	78	-85	-924	180	476	-1848
F30	400	294	106	78	28	304	289	476	609

* - Elevated readings due to natural radioactivity of tile.

2nd floor interior floor direct measurements were performed with 2224
No.129463 and 43-89 No. 169230

	Beta	Alpha
Efficiency	0.092	0.154
Floor Background (cpm)	78	2.4
Floor MDA (dpm/100 cm ²)	476	64

Direct Measurements (Total Activity)

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

1st Floor 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	427	408	19	49	-30	-326	176	383	-652
W2	361	288	73	49	24	261	235	383	522
W3	370	327	43	49	-6	-65	204	383	-130
W4	355	316	39	49	-10	-109	200	383	-217
W5	318	321	-3	49	-52	-565	144	383	-1130
W6	373	320	53	49	4	43	215	383	87
W7	354	308	46	49	-3	-33	208	383	-65
W8	332	313	19	49	-30	-326	176	383	-652
W9	360	317	43	49	-6	-65	204	383	-130
W10	325	295	30	49	-19	-207	189	383	-413
W11	328	312	16	8	8	87	104	172	174
W12	336	287	49	49	0	0	211	383	0
W13	305	266	39	8	31	337	146	172	674
W14	278	261	17	8	9	98	107	172	196
W15	312	316	-4	49	-53	-576	143	383	-1152
W16	347	295	52	49	3	33	214	383	65
W17	359	312	47	49	-2	-22	209	383	-43
W18	340	301	39	49	-10	-109	200	383	-217
W19	303	279	24	49	-25	-272	182	383	-543
W20	280	302	-22	8	-30	-326	80	172	-652
W21	337	287	50	49	1	11	212	383	22
W22	341	298	43	49	-6	-65	204	383	-130
W23	342	297	45	49	-4	-43	207	383	-87
W24	370	291	79	49	30	326	241	383	652
W25	354	310	44	49	-5	-54	205	383	-109
W26	316	312	4	49	-45	-489	155	383	-978
W27	342	294	48	49	-1	-11	210	383	-22
W28	336	289	47	49	-2	-22	209	383	-43
W29	360	292	68	49	19	207	230	383	413
W30	326	310	16	49	-33	-359	172	383	-717

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

	Beta	Alpha
Efficiency	0.092	0.154
Wall Background (cpm)	8	3.7
Cinderblock Wall Background (cpm)	49	3.7
Wall MDA (dpm/100 cm ²)	172	76
Cinderblock Wall MDA (dpm/100 cm ²)	383	76

Direct Measurements (Total Activity)

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

2nd Floor 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	400	388	12	8	4	43	95	172	87
W2	412	343	69	49	20	217	231	383	435
W3	309	277	32	49	-17	-185	192	383	-370
W4	263	270	-7	8	-15	-163	21	172	-326
W5	271	278	-7	8	-15	-163	21	172	-326
W6	286	265	21	8	13	141	115	172	283
W7	233	272	-39	8	-47	-511	119	172	-1022
W8	304	274	30	8	22	239	131	172	478
W9	258	248	10	8	2	22	90	172	43
W10	298	297	1	8	-7	-76	64	172	-152
W11	300	325	-25	8	-33	-359	88	172	-717
W12	289	252	37	8	29	315	143	172	630
W13	293	286	7	8	-1	-11	83	172	-22
W14	283	258	25	8	17	185	122	172	370
W15	266	263	3	8	-5	-54	71	172	-109
W16	281	262	19	8	11	120	111	172	239
W17	245	266	-21	8	-29	-315	77	172	-630
W18	276	242	34	8	26	283	138	172	565
W19	274	268	6	8	-2	-22	80	172	-43
W20	320	287	33	8	25	272	136	172	543
W21	255	268	-13	8	-21	-228	48	172	-457
W22	290	278	12	8	4	43	95	172	87
W23	240	248	-8	8	-16	-174	0	172	-348
W24	237	270	-33	8	-41	-446	107	172	-891
W25	270	262	8	8	0	0	85	172	0
W26	282	280	2	8	-6	-65	67	172	-130
W27	286	248	38	8	30	326	144	172	652
W28	259	298	-39	8	-47	-511	119	172	-1022
W29	270	264	6	8	-2	-22	80	172	-43
W30	350	273	77	49	28	304	239	383	609

2nd floor interior walls direct measurements were performed with 2224
No.129463 and 43-89 No. 169230

	Beta	Alpha
Efficiency	0.092	0.154
Wall Background (cpm)	8	3.7
Cinderblock Wall Background (cpm)	49	3.7
Wall MDA (dpm/100 cm ²)	172	76
Cinderblock Wall MDA (dpm/100 cm ²)	383	76

Direct Measurements (Total Activity)

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

Exterior Building Walls

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	382	316	66	49	17	185	228	382	370
W2	379	318	61	49	12	130	223	382	261
W3	376	304	72	49	23	250	234	382	500
W4	360	281	79	49	30	326	241	382	652
W5	345	296	49	49	0	0	211	382	0
W6	369	332	37	49	-12	-130	198	382	-261
W7	355	316	39	49	-10	-109	200	382	-217
W8	379	319	60	49	11	120	222	382	239
W9	354	310	44	49	-5	-54	205	382	-109
W10	403	329	74	49	25	272	236	382	543
W11	410	355	55	49	6	65	217	382	130

Exterior wall direct measurements were performed with 2224 No.129463
and 43-89 No. 169230

	Beta	Alpha
Efficiency	0.092	0.154
Wall Background (cpm)	49	3.7
Wall MDA (dpm/100 cm ²)	382	76

**Elevated Direct Readings (Total Activity) and Averaging Results
Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)**

No elevated direct measurements were reported.

Removable Surface Activity Measurements
Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

2nd Floor Building Floor

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA
F1*	0	10.4	151	-0.2	1.5	12
F2*	6	15.7	151	-0.2	1.5	12
F3*	0	10.4	151	-0.2	1.5	12
F4*	12	19.7	151	-0.2	1.5	12
F5	-30	28.4	151	-0.2	1.5	12
F6	42	33.0	151	-0.2	1.5	12
F7	30	28.4	151	-0.2	1.5	12
F8	-24	25.8	151	-0.2	1.5	12
F9	-30	28.4	151	-0.2	1.5	12
F10	-18	23.0	151	5.6	7.9	12
F11	-36	30.8	151	-0.2	1.5	12
F12	12	19.7	151	-0.2	1.5	12
F13	-42	33.0	151	-0.2	1.5	12
F14	-24	25.8	151	-0.2	1.5	12
F15	-60	38.8	151	-0.2	1.5	12
F16	-78	43.9	151	-0.2	1.5	12
F17	54	37.0	151	-0.2	1.5	12
F18	-18	23.0	151	5.6	7.9	12
F19	60	38.8	151	2.6	5.4	12
F20	-30	28.4	151	-0.2	1.5	12
F21	-30	28.4	151	-0.2	1.5	12
F22	36	30.8	151	-0.2	1.5	12
F23	-12	19.7	151	-0.2	1.5	12
F24	66	40.6	151	-0.2	1.5	12
F25	-18	23.0	151	-0.2	1.5	12
F26	24	25.8	151	-0.2	1.5	12
F27	48	35.0	151	-0.2	1.5	12
F28	0	10.4	151	-0.2	1.5	12
F29	12	19.7	151	-0.2	1.5	12
F30	18	23.0	151	-0.2	1.5	12

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

	Beta	Alpha
Background (cpm)	46	0.08
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	151	12

Removable Surface Activity Measurements
Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

1st Floor Building Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA
W1	54	37.0	151	2.6	5.4	12
W2	12	19.7	151	-0.2	1.5	12
W3	-30	28.4	151	-0.2	1.5	12
W4	6	15.7	151	-0.2	1.5	12
W5	48	35.0	151	-0.2	1.5	12
W6	24	25.8	151	-0.2	1.5	12
W7	-6	15.7	151	-0.2	1.5	12
W8	-12	19.7	151	-0.2	1.5	12
W9	-18	23.0	151	-0.2	1.5	12
W10	36	30.8	151	-0.2	1.5	12
W11	30	28.4	151	2.6	5.4	12
W12	6	15.7	151	-0.2	1.5	12
W13	24	25.8	151	-0.2	1.5	12
W14	24	25.8	151	-0.2	1.5	12
W15	12	19.7	151	-0.2	1.5	12
W16	18	23.0	151	-0.2	1.5	12
W17	36	30.8	151	-0.2	1.5	12
W18	-12	19.7	151	-0.2	1.5	12
W19	-6	15.7	151	-0.2	1.5	12
W20	24	25.8	151	-0.2	1.5	12
W21	-12	19.7	151	-0.2	1.5	12
W22	30	28.4	151	5.6	7.9	12
W23	-18	23.0	151	-0.2	1.5	12
W24	-24	25.8	151	-0.2	1.5	12
W25	6	15.7	151	2.6	5.4	12
W26	36	30.8	151	-0.2	1.5	12
W27	-6	15.7	151	-0.2	1.5	12
W28	30	28.4	151	-0.2	1.5	12
W29	48	35.0	151	-0.2	1.5	12
W30	18	23.0	151	-0.2	1.5	12

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

	Beta	Alpha
Background (cpm)	46	0.08
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	151	12

Removable Surface Activity Measurements
Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

2nd Floor Building Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA
W1	12	19.7	151	-0.2	1.5	12
W2	18	23.0	151	-0.2	1.5	12
W3	-30	28.4	151	-0.2	1.5	12
W4	18	23.0	151	-0.2	1.5	12
W5	24	25.8	151	-0.2	1.5	12
W6	54	37.0	151	2.6	5.4	12
W7	0	10.4	151	-0.2	1.5	12
W8	-30	28.4	151	-0.2	1.5	12
W9	66	40.6	151	-0.2	1.5	12
W10	-42	33.0	151	-0.2	1.5	12
W11	18	23.0	151	-0.2	1.5	12
W12	-12	19.7	151	-0.2	1.5	12
W13	12	19.7	151	2.6	5.4	12
W14	48	35.0	151	-0.2	1.5	12
W15	-30	28.4	151	-0.2	1.5	12
W16	30	28.4	151	-0.2	1.5	12
W17	54	37.0	151	-0.2	1.5	12
W18	-12	19.7	151	-0.2	1.5	12
W19	60	38.8	151	-0.2	1.5	12
W20	12	19.7	151	-0.2	1.5	12
W21	6	15.7	151	5.6	7.9	12
W22	24	25.8	151	-0.2	1.5	12
W23	42	33.0	151	-0.2	1.5	12
W24	-18	23.0	151	-0.2	1.5	12
W25	12	19.7	151	-0.2	1.5	12
W26	16	21.9	151	-0.2	1.5	12
W27	-12	19.7	151	-0.2	1.5	12
W28	24	25.8	151	-0.2	1.5	12
W29	-6	15.7	151	2.6	5.4	12
W30	-30	28.4	151	-0.2	1.5	12

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

	Beta	Alpha
Background (cpm)	46	0.08
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	151	12

Removable Surface Activity Measurements
Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

Exterior Building Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA
W1	6	15.7	151	2.6	5.4	12
W2	12	19.7	151	-0.2	1.5	12
W3	18	23.0	151	-0.2	1.5	12
W4	-6	15.7	151	-0.2	1.5	12
W5	6	15.7	151	2.6	5.4	12
W6	-12	19.7	151	-0.2	1.5	12
W7	18	23.0	151	-0.2	1.5	12
W8	-6	15.7	151	-0.2	1.5	12
W9	12	19.7	151	-0.2	1.5	12
W10	6	15.7	151	-0.2	1.5	12
W11	0	10.4	151	2.6	5.4	12

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

	Beta	Alpha
Background (cpm)	46	0.08
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	151	12

Removable Surface Activity Measurements
Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

No elevated removable surface activity was reported.

Exposure Rate Measurements

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

2nd Floor Building Floor

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
F1*	13	2
F2*	12	1
F3*	12	1
F4*	12	1
F5	10	-1
F6	9	-2
F7	9	-2
F8	8	-3
F9	9	-2
F10	10	-1
F11	10	-1
F12	9	-2
F13	9	-2
F14	9	-2
F15	9	-2
F16	10	-1
F17	11	0
F18	10	-1
F19	10	-1
F20	10	-1
F21	9	-2
F22	9	-2
F23	9	-2
F24	9	-2
F25	9	-2
F26	9	-2
F27	9	-2
F28	9	-2
F29	10	-1
F30	9	-2

Background dose rate: 9-13 uR/hr with Model 19, No.115870

Exposure Rate Measurements

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

1st Floor Building Walls (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
W1	14	1
W2	13	0
W3	14	1
W4	14	1
W5	14	1
W6	13	0
W7	13	0
W8	13	0
W9	13	0
W10	13	0
W11	14	1
W12	14	1
W13	14	1
W14	14	1
W15	13	0
W16	14	1
W17	14	1
W18	13	0
W19	13	0
W20	13	0
W21	13	0
W22	13	0
W23	12	-1
W24	12	-1
W25	12	-1
W26	12	-1
W27	12	-1
W28	12	-1
W29	13	0
W30	12	-1

Background dose rate: 10-15 uR/hr with Model 19, No.115870

Exposure Rate Measurements

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

2nd Floor Building Walls (Interior)

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

Background dose rate: 9-13 uR/hr with Model 19, No.115870

Exposure Rate Measurements
Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

Exterior Building Walls (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
W1	12	1
W2	13	2
W3	13	2
W4	12	1
W5	11	0
W6	12	1
W7	12	1
W8	12	1
W9	12	1
W10	12	1
W11	13	2

Background dose rate: 10-15 uR/hr with Model 19, No.115870

Exposure Rate Measurements

Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

Building Roof

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0
Roof	8	0

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

Summary of Building Surface Direct Reading (Total Activity) Results
Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

Average Total Activity (dpm/100cm²)

Beta				Alpha			
n	\bar{x}	s	μ_α	n	\bar{x}	s	μ_α
101	-69	313.0	-16.8	101	-137.1	626.1	-33.7
	$t_{1-\alpha}$	1.66					

Guidelines/Conditions Satisfied?

Beta	Alpha
Yes	Yes

Summary of Exposure Rate Measurements
Molycorp - Building 19 Survey Unit Excluding Foundation (Unaffected Area)

n	\bar{x}	s	μ_α
121	-0.2	1.1	0.0
$t_{1-\alpha}$	1.658		

Guidelines/Conditions
Satisfied?
Yes

Appendix E

Building 21 Data Package

Molycorp Washington, PA

Building 21 Data Package

This data package contains final status survey information for the Building 21, Molycorp, Washington, PA site.

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

Summary

During the initial survey of the Building 21, elevated levels of activity were identified. The classification of the building was changed to affected and an affected survey was performed.

Ceramic ceiling and floor tile was present in the building and provided increased instruments readings. A composite sample of the various tiles was analyzed for licensed material. No licensed material was identified in the tile sample.

Results from the final status survey of the Building 21 provides evidence that release criteria have been met, demonstrates that residual radioactivity is below the unrestricted use criteria, and confirms that the Building 21 (Building 19) is suitable for unrestricted use.

DDO-138 Radiation Protection Survey Report		Site: MolyCorp / Washington, PA	
Section 1: Survey Information <i>Building # 21 Walls ^{SK} Unaffected Area</i>			
Date: <i>4-24-02</i>	Time: <i>0800</i>	Location: <i>Bldg # 21 wall</i>	Survey Issue Log Number: <i>02-0132 ^{WB}</i>
RWP Number: <i>N/A</i>	Purpose of Survey: <input type="checkbox"/> RWP <input type="checkbox"/> Routine Survey <input type="checkbox"/> Unconditional Release <input checked="" type="checkbox"/> Other:		Page <i>1</i> of <i>15 24</i>
Survey Title: <i>Unaffected Survey Bldg # 21 Walls</i>			Smear Number
			Beta dpm/100cm ²
			Alpha dpm/100cm ²
<i>W1-W8 } concrete block BK6 MDA</i>			<i>1</i>
<i>W24-W27 } Meter #2224 $\alpha = 3.7 / B^- = 49$ $\alpha = 76 / B^- = 383$</i>			<i>2</i>
<i>W28-W31 } concrete block BK6 MDA</i>			<i>3</i>
<i>W38-W39 } Meter 2360 $\alpha = 3.7 / B^- = 49$ $\alpha = 76 / B^- = 401$</i>			<i>4</i>
<i>W42-W47 } wood BK6 MDA</i>			<i>5</i>
<i>W60-W68 } Meter 2360 $\alpha = 1.6 / B^- = 8$ $\alpha = 56 / B^- = 180$</i>			<i>6</i>
			<i>7</i>
			<i>8</i>
			<i>9</i>
			<i>10</i>
			<i>11</i>
			<i>12</i>
			<i>13</i>
			<i>14</i>
			<i>15</i>
			<i>16</i>
			<i>17</i>
			<i>18</i>
			<i>19</i>
			<i>20</i>
			<i>21</i>
			<i>22</i>
			<i>23</i>
			<i>24</i>
			<i>25</i>
			<i>26</i>

M9-M23 ceiling 1-24 upper walls 72-96 & Exterior 1,2,3
SMears # W48-W71 counted on 2929/115563 cal due 6-19-02
also w 72-B-96 & ceiling
Probe # 43-10 / 127216 cal due 6-19-02
Eff. = $\alpha .35 / B^- = .239$ BKG = $.13\alpha / 71B^-$
MDA = $\alpha = 12$ dpm $B^- = 130$ dpm
** All other smears counted on 2929 with BKG $\alpha .2 / B^- 71$*
MDA $\alpha 13 / B^- 130$
2360 & 156371 static readings

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 B = mRem/h beta 00 B C = mRem/h beta contact -D- = Large Area Wipe = Bulk Material Sample

Instrument Model/SN:	Cal Due Date:	Probe Model/SN:	Cal Due Date:	Detector Eff.: (cpm/dpm)	MDA: DPM	Other BKG
<i>2929 / 115563</i>	<i>6-19-02</i>	<i>43-10 / 127216</i>	<i>6-19-02</i>	<i>$\alpha .35 / B^- .239$</i>	<i>$\alpha 13 / B^- 130$</i>	<i>$\alpha .2 / B^- 71$</i>
<i>2350 / 117014</i>	<i>8-13-02</i>	<i>43-106 / 133866</i>	<i>8-6-02</i>	<i>$\alpha .211 / B^- .248$</i>	<i>$\alpha 62 / B^- 770$</i>	<i>$\alpha 1.9 / B^- 409$</i>
<i>2224-1 / 129463</i>	<i>8-6-02</i>	<i>43-89 / 169230</i>	<i>8-6-02</i>	<i>$\alpha .154 / B^- .292$</i>	<i>$\alpha 76 / B^- 178$</i>	<i>$\alpha 3.7 / B^-$</i>
<i>2360 / 156371</i>	<i>8-15-02</i>	<i>43-89 / 164832</i>	<i>8-5-02</i>	<i>$\alpha .153 / B^- .088$</i>	<i>$\alpha 76 / B^- 180$</i>	<i>$\alpha 3.7 / B^-$</i>
<i>Model 19 / 22526</i>	<i>8-6-02</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>8-10 mrem/hr</i>

Section 3: Review and Approval

Survey Performed By (Sign): <i>Steve K...</i>	Area Posted and/or Barricaded: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	Date and Time: <i>4-24-02 / 0800</i>
Radiation Safety Officer (Print Name & Sign): <i>Mike McDonald</i>		Date and Time: <i>5-16-02 0830</i>

RADIOLOGICAL SURVEY RESULTS - SURVEY LOCATION INDICATOR

Survey Area Information: Building # 21 Walls ^{5x} Unaffected Survey								
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 <u>Steve Kowalski</u>		Signature <u>Steve Kowalski</u>			Date <u>4-29-02</u>		
Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
BW-1	600	2	448	384	4	17	-.57	25
BW-2	560	1	418	316	2	16	-.57	-8
BW-3	560	1	356	308	3	16	-.57	50
BW-4	350	1	266	241	2	15	-.57	-12
BW-5	370	2	367	300	10	15	-.57	8
BW-6	380	2	293	293	5	15	2.2	-16
BW-7	380	1	368	334	3	14	2.2	21
BW-8	390	2	362	235	2	14	2.2	58
MW-9	350	3	263	252	2	14	2.2	-25
MW-10	320	1	253	256	2	13	2.2	84
MW-11	320	2	268	255	3	13	-.57	25
MW-12	340	1	266	291	3	13	-.57	50
MW-13	330	3	254	239	13	13	-.57	58
MW-14	350	1	266	241	1	12	-.57	16
MW-15	340	2	268	260	5	12	-.57	-12
MW-16	340	2	234	241	7	12	2.2	-12
MW-17	330	1	249	237	1	12	5	-8
MW-18	320	1	242	250	1	11	2.2	33
MW-19	300	1	254	247	3	11	2.2	29
MW-20	280	1	267	258	5	12	-.57	21
MW-21	280	2	334	286	8	11	-.57	-12
MW-22	260	2	343	308	2	12	5	-16
MW-23	330	2	281	261	2	12	2.2	12
BW-24	390	1	361	269	6	11	2.2	8
BW-25	280	1	373	274	3	12	5	21
BW-26	290	2	352	321	2	11	5	25
BW-27	580	2	450	338	2	11	-.57	21

BW = Block Wall

Radiological Survey Results - Survey Location Indicator

Survey Area Information: ^{SK} Unaffected Survey Bldg # 21 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
	2360/156391	8/15/02	43-89/164832	8/5/02				

Performed By: Print Name Steve Kowalski Signature *Steve Kowalski* Date 4-24-02

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (µrem/hr)	Smears (dpm/100 cm ²)	
							α	β
BW-28	460	2	328 328	274	8	12	- .57	- 4
BW-29	440	1	403	316	3	12	2.2	8
BW-30	480	1	317	250	3	11	- .57	- 4
BW-31	460	2	419	316	2	10	- .57	12
MW-32	440	2	271	272	2	10	2.2	- 8
MW-33	380	1	292	275	3	10	- .57	- 12
MW-34	360	2	252	241	1	11	- .57	25
MW-35	360	2	248	241	1	12	- .57	- 4
MW-36	340	2	256	272	4	12	- .57	- 12
MW-37	360	3	277	244	2	11	2.2	- 16
BW-38	390	2	364	261	4	12	2.2	25
BW-39	400	1	439	293	3	12	- .57	- 4
BW-40	340	1	248	234	4	15	- .57	84
BW-41	300	1	246	240	4	15	2.2	- 12
BW-42	420	3	393	317	1	15	- .57	- 4
BW-43	480	2	476	393	3	15	- .57	50
BW-44	500	1	457	359	6	16	- .57	- 8
BW-45	520	1	398	305	4	17	2.2	- 12
BW-46	620	3	447	318	12	17	- .57	29
BW-46QC	540	1	490	310	10	17	2.2	33
BW-47	520	2	452	302	4	18	- .57	- 16
MW-48	320	2	312	255	2	11	2.5	- 18
MW-49	300	1	266	241	2	11	- .37	- 24
MW-54	280	2	237	217	1	12	- .37	- 18
MW-59	260	2	235	225	1	11	2.5	84
BW-60	320	2	282	271	1	12	- .37	18
BW-61	360	1	339	272	4	11	- .37	24

MW = Metal shelving wall
 BW = Block wall

RADIOLOGICAL SURVEY RESULTS - SURVEY LOCATION INDICATOR

Survey Area Information: *Affected Area Survey Building #21 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 *Steve Kowalski* Signature *Steve Kowalski* Date *4-29-02*

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (µrem/hr)	Smears (dpm/100 cm ²)	
							α	β
BW62	360	2	349	268	2	11	-.37	-24
BW63	320	1	316	267	2	10	-.37	18
BW64	380	3	369	256	4	11	2.5	-8
BW65	400	2	370	287	4	11	-.37	30
BW66	450	1	456	358	3	11	-.37	78
BW67	400	1	382	272	6	12	-.37	36
BW68	400	2	360	267	^{SK} 12	12	2.5	-36
MW69	300	3	243	255	3	13	2.5	24
MW70	300	1	271	228	2	12	2.5	8
MW71	320	2	284	259	2	13	5.4	103
MW72	340	2	371	277	5	8	-.37	21
B73	300	1	266	272	6	8	5	8
W74	320	4	295	263	3	8	-.37	42
W75	280	6	227	210	5	7	11	-17
CR76	260	2	256	197	6	6	-.37	8
W77	260	2	232	230	2	6	2	21
W78	245	1	240	216	7	7	8	33
C79	240	3	236	217	6	7	-.37	29
CR80	260	5	273	242	6	7	2	42
W81	220	4	224	241	5	7	5	-8
CR82	200	4	182	205	1	7	-.37	4
W83	280	6	208	202	5	7	2	17
W84	260	2	257	225	2	8	8	8
CR85	270	3	271	226	2	8	-.37	33
SK/ER W86	380	3	378	246	3	8	2	17
W87	400	5	401	263	1	8	-.37	-29
B88	260	5	254	266	4	8	-.37	8

BW = Brick walls CR = CRANE RAIL
 MW = Metal walls C = Conduit
 B = BEAM

Radiological Survey Results - Survey Location Indicator

02-0132

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

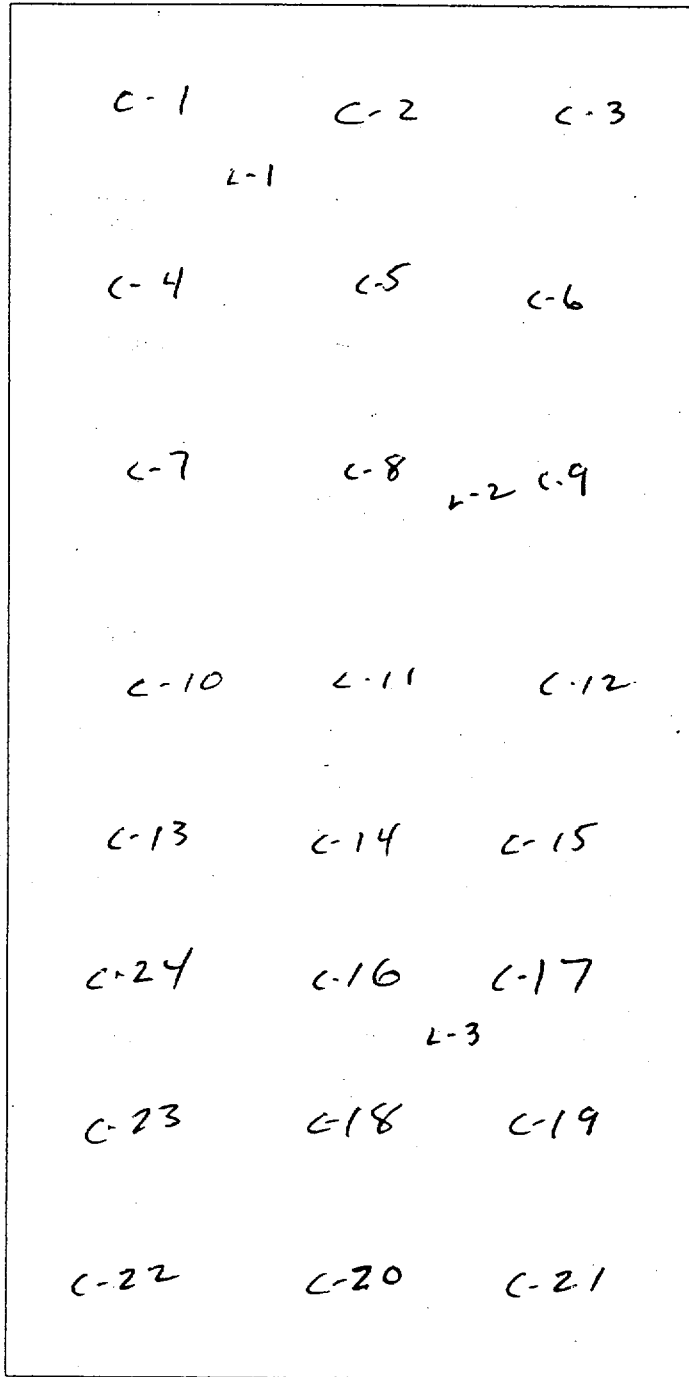
Performed By:	Print Name	Signature	Date
	_____	_____	_____
	_____	_____	_____

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
CK 89	290	2	250	208	3	8	-37	29
MW 90	260	4	228	193	3	6	-37	-46
CK 91	240	3	236	195	3	6	5	17
B 92	220	1	222	221	6	5	2.5	42
MW 93	210	1	203	217	2	5	-37	-42
MW 94	360	3	262	294	4	10	-37	-17
MW 95	360	2	388	299	8	10	11	21
B 96	360	1	278	229	6	8	-37	-7
L 1			296	302	1	9	-37	21
L 2			257	263	2	9	-37	17
L 3			372	274	1	8	-37	-7

MW - METAL WALLS
 B - BEAM
 CK - CRANE RAIL

L - LIGHTS

Building 21 North

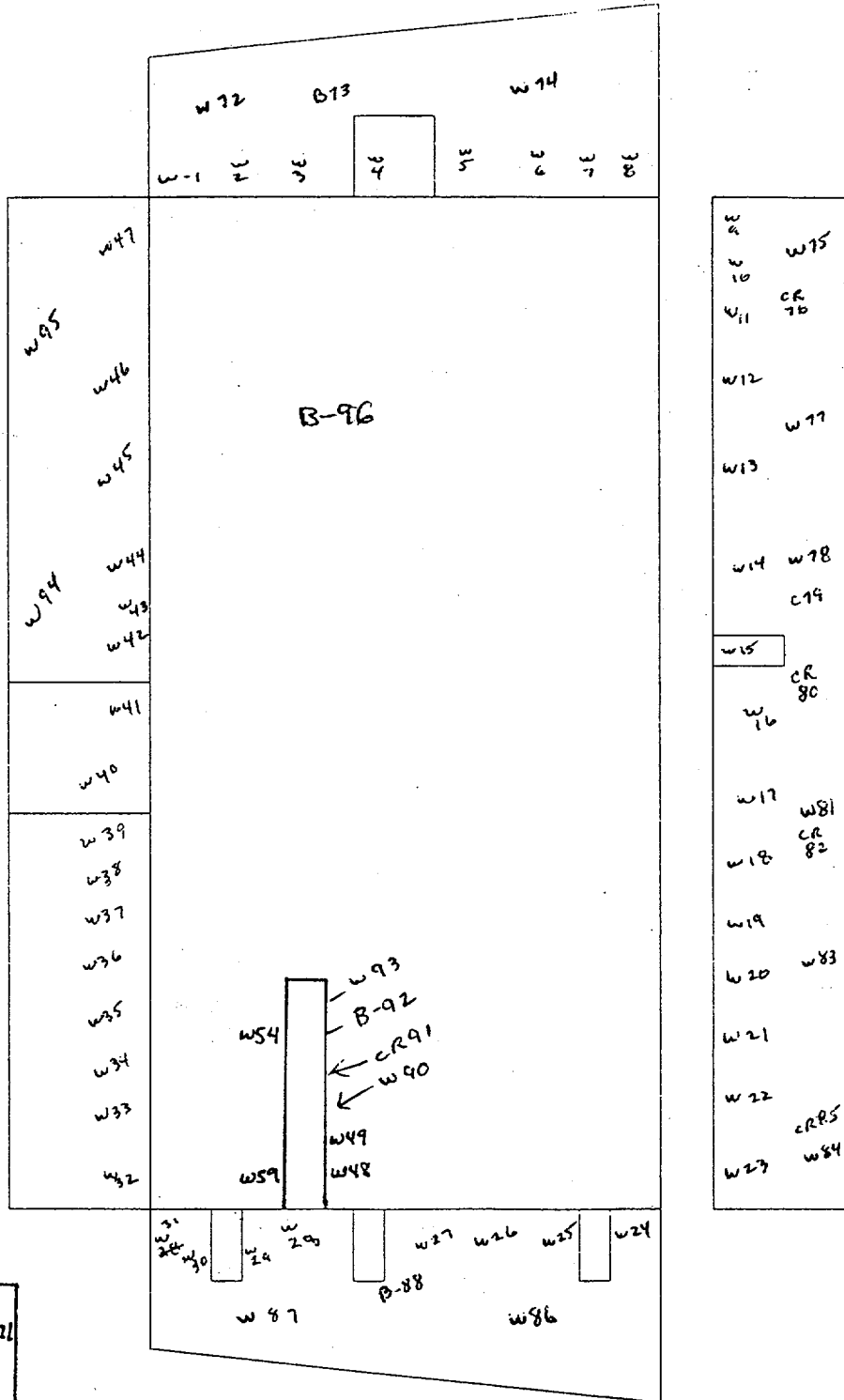


Interior
Ceiling

Scale:
4m x 4m

Building 21 North

Survey # 02-0132



- | | |
|-----|-----|
| W60 | W71 |
| W61 | |
| W62 | |
| W63 | |
| W64 | W70 |
| W65 | W67 |
| W66 | W68 |
| W67 | W69 |

pper Mez. Area

Interior

Scale:
4m x 4m

B-96 Beam Overhead

Page 8 of 15
SK

DDO-138 Radiation Protection Survey Report			Site: MolyCorp / Washington, PA
Section 1: Survey Information <i>Building #21 Floor the affected Area</i>			
Date: <i>4-29-02</i>	Time: <i>1000</i>	Location: <i>Bldg 21</i>	Survey Issue Log Number: <i>02-0132</i>
RWP Number: <i>N/A</i>	Purpose of Survey: <input type="checkbox"/> RWP <input type="checkbox"/> Routine Survey <input type="checkbox"/> Unconditional Release <input checked="" type="checkbox"/> Other:		Page <i>8</i> of <i>1524</i>
Survey Title: <i>Affected Area Bldg #21 Floor</i>			Smear Number
<i>F1 - F12 concrete floor BK6. $\alpha = 2.4$ $B^- = 78$ MDA $\alpha = 76$ $B^- = 726$ </i>			Beta dpm/100cm ²
			Alpha dpm/100cm ²
			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			

Block Readings:

Legend:
 00 = mRem/h gamma 00 C = mRem/h gamma contact ⊙ = Smear Location ∇ = Air Sample Location -X-X- = Rope, Boundary, or Barrier
 00 B = mRem/h beta 00 B C = mRem/h beta contact ⊖ = Large Area Wipe = Bulk Material Sample

Instrument Model/SN:	Cal Due Date:	Probe Model/SN:	Cal Due Date:	Detector Eff.: (cpm/dpm)	MDA: DPM	Other BKG
<i>2029 / 152202</i>	<i>2-6-03</i>	<i>43-10 / 156519</i>	<i>2-6-03</i>	<i>.344 / 1458</i>	<i>132 / 156 B^-</i>	<i>$\alpha = .2$ / $B^- = 47$</i>
<i>2224 / 129463</i>	<i>8-6-02</i>	<i>43-89 / 169230</i>	<i>8-6-02</i>	<i>.154 / .0928</i>	<i>76 / 92 B^-</i>	<i>$\alpha = 2.4$ / $B^- = 78$</i>
<i>2350 / 95359</i>	<i>8-6-02</i>	<i>43-37 / 092503</i>	<i>8-6-02</i>	<i>.209 / .210</i>	<i>150 / 309 B^-</i>	<i>$\alpha = 2.4$ / $B^- = 1650$</i>
<i>2350 / 95359</i>	<i>8-6-02</i>	<i>43-37 / 092503</i>	<i>8-6-02</i>	<i>$\alpha = .209$ $B^- = 27$</i>	<i>8.2 / 288 B^-</i>	<i>$\alpha = 2.0$ $B^- = 1750$</i>
<i>2350 / 117566</i>	<i>8-6-02</i>	<i>43-06 / 133866</i>	<i>8-6-02</i>	<i>$\alpha = .244$ $B^- = 240$</i>	<i>63 B^-</i>	<i>$B^- = 300$</i>

Section 3: Review and Approval		
Survey Performed By (Sign): <i>Steve Kowalski / Steve Fila</i>	Area Posted and/or Barricaded: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	Date and Time: <i>4-29-02 / 1000</i>
Radiation Safety Officer (Print Name & Sign): <i>Mike McDonald</i>		Date and Time: <i>5-16-02 0830</i>

Radiological Survey Results - Survey Location Indicator

Survey Area Information:

Bldg # 21

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 (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
F-1	2300	22	344	366	19	15	..52.6 ^{ms}	12
F-2	2200	21	466	382	4	15	..52.6 ^{ms}	48
F-3	2280	22	540	369	6	14	..52.6 ^{ms}	30
F-4	2300	18	353	282	8	15	..52.6 ^{ms}	-48
F-5	1800	20	375	321	3	13	2.3	-18
F-6	1900	17	372	298	0	14	..52.6 ^{ms}	-66
F-7	2000	21	321	304	4	15	..52.6 ^{ms}	12
F-8	1800	18	443	363	8	15	..52.6 ^{ms}	6
F-9	1860	17	386	308	7	12	..52.6 ^{ms}	-6
F-10	1900	20	351	296	7	12	..52.6 ^{ms}	-30
F-11	1920	21	330	320	2	14	..52.6 ^{ms}	24
F-12	2100	13	337	292	4	15	..52.6 ^{ms}	0
F-13	1900	22	364	328	5	12	..52.6 ^{ms}	-6
F-14	1930	22	372	310	8	13	..52.6 ^{ms}	18
F-15	1900	19	379	318	3	15	..52.6 ^{ms}	36
F-16	2120	22	346	293	5	15	..52.6 ^{ms}	12
F-17	1800	21	364	288	4	14	2.3	-48
F-18	1860	18	362	296	1	12	..52.6 ^{ms}	-12
F-19	1800	22	381	290	3	12	..52.6 ^{ms}	48
F-20	1900	19	377	295	2	13	..52.6 ^{ms}	36
F-21	3000	18	410	288	4	14	..52.6 ^{ms}	0
F-22	1900	21	385	375	8	14	..52.6 ^{ms}	-60
F-23	1860	22	370	308	6	15	..52.6 ^{ms}	36
F-24	1840	22	396	293	4	15	..52.6 ^{ms}	-18
F-25	1800	21	400	305	7	12	2.3	-6
F-26	1900	22	352	318	4	12	..52.6 ^{ms}	42
F-27	1920	22	309	294	4	12	..52.6 ^{ms}	18

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg # 21								
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 cm ²)	
							α	β
F-28	1900	18	385	295	8	15	5.2 6 MDA	12
F-29	1870	21	475	371	3	12	5.2 6 MDA	24
F-30	1650	22	359	282	7	14	5.2 6 MDA	18
F-31	1700	22	368	306	3	15	5.2 6 MDA	36
F-32	1800	19	382	320	11	12	5.2 6 MDA	48
F-33	1980	18	374	323	8	12	5.2 6 MDA	12
F-34	1900	17	361	330	4	15	5.2 6 MDA	-42
F-35	1860	17	367	304	5	14	5.2 6 MDA	-54
F-36	1850	20	397	315	8	14	5.2 6 MDA	-6
F-37	1720	21	336	290	5	12	2.3	30
F-38	1700	19	348	316	3	14	6 MDA	-18
F-39	1800	23	354	252	2	14	5.2 6 MDA	-48
F-40	1690	22	328	281	2	15	5.2 6 MDA	-18
F-41	1730	18	353	280	4	12	2.3	12
F-42	1700	21	326	289	5	11	5.2 6 MDA	0
F-43	1800	18	337	266	5	12	5.2 6 MDA	30
F-44	1820	22	414	353	5	14	5.2 6 MDA	-48
F-45	1800	22	367	320	7	15	5.2 6 MDA	-24
F-46	1900	19	414	351	11	15	5.2 6 MDA	30
F-47	1960	22	397	307	5	12	5.2 6 MDA	12
F-48	1920	22	406	336	5	12	5.2 6 MDA	-18
F-49	1870	22	347	320	7	13	5.2 6 MDA	-66
F-50	1800	21	329	282	1	12	2.3	18
F-51	1720	19	414	332	2	14	5.2 6 MDA	-30
F-52	1790	22	411	360	2	14	5.2 6 MDA	-54
F-53	1830	23	423	342	5	14	5.2 6 MDA	66
F-54	1850	22	364	282	7	14	5.2 6 MDA	-66

RADIOLOGICAL SURVEY RESULTS - SURVEY LOCATION INDICATOR

Survey Area Information: Bldg # 21

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 (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
F-55	1650	21	373	320	4	12	-57 MB	-48
F-56	1790	22	362	309	10	12	-57 MB	-6
F-57	1800	22	314	276	5	14	-57 MB	-42
F-58	1800	18	393	334	11	14	2.3	-6
F-59	1830	21	401	361	5	15	-57 MB	-6
F-60	1900	22	372	329	14	14	-57 MB	-36
F-61	1890	18	383	347	2	12	-57 MB	12
F-62	1760	20	371	297	3	13	-57 MB	42
F-63	1700	21	309	308	5	12	-57 MB	-6
F-64	1800	19	380	343	2	11	-57 MB	-18
F-65	1800	21	332	310	4	12	-57 MB	-12
F-66	1840	21	309	274	4	12	-57 MB	-30
F-67	1740	19	335	288	8	14	5.2	78
F-68	1790	21	333	259	7	12	2.3	-18
F-69	1800	18	337	265	8	12	-57 MB	24
F-70	1890	21	310	271	7	12	-57 MB	48
F-71	1760	18	329	318	0	9	-57 MB	-60
F-72	1700	22	371	296	9	11	-57 MB	-12
F-73	1700	23	295	270	11	12	-57 MB	-84
F-74	1800	19	276	255	7	12	-57 MB	-6
F-75	1820	21	304	268	7	14	-57 MB	0
F-76	1810	16	337	294	10	12	-37 MB	30
F-77	1800	21	302	303	8	12	-57 MB	-24
F-78	1760	22	359	327	3	14	-57 MB	12
F-79	1800	19	353	304	7	14	2.3	-6
F-80	1870	21	312	271	6	12	-57 MB	-6
F-81	1850	16	319	257	9	9	-57 MB	-36

RADIOLOGICAL SURVEY RESULTS - SURVEY LOCATION INDICATOR

Survey Area Information: Bldg # 21

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 cm ²)	
							α	β
F-82	1800	1.8	352	308	16	12	2.3	121
F-83	1900	22	287	286	6	13	-.57-6 ^{ms}	55
F-84	1920	21	357	320	4	14	-.57-6 ^{ms}	0
F-85	1700	18	339	301	3	14	-.57-6 ^{ms}	-79
F-86	1740	22	373	291	6	12	-.57-6 ^{ms}	-12
F-87	1800	22	330	298	11	13	-.57-6 ^{ms}	61
F-88	1860	22	359	297	4	13	-.57-6 ^{ms}	18
F-89	1900	21	320	292	9	13	2.3	12
F-90	1870	22	338	228	5	12	2.3	-30
F-91	1920	22	354	292	10	9	5.2	-60
F-92	1920	19	353	299	15	14	-.57-6 ^{ms}	0
F-93	1900	18	365	305	5	14	-.57-6 ^{ms}	-72
F-94	1720	22	326	290	4	13	-.57-6 ^{ms}	12
F-95	1780	18	352	297	6	12	-.57-6 ^{ms}	-12
F-96	1720	28	350	262	7	12	-.57-6 ^{ms}	-12
F-97	1890	1.6	388	316	4	14	-.57-6 ^{ms}	-36
F-98	1830	22	365	320	5	10	-.57-6 ^{ms}	-24
F-99	1800	23	354	322	4	14	2.3	0
F-100	1750	24	313	325	8	9	-.57-6 ^{ms}	-24
F-101	1900	18	339	284	8	9	-.57-6 ^{ms}	72
F-102	1850	21	414	380	6	12	-.57-6 ^{ms}	24
F-103	1830	21	328	322	7	12	-.57-6 ^{ms}	36
F-104	1700	22	319	292	22	14	2.3	36
F-105	1690	19	317	272	12	12	-.57-6 ^{ms}	12
F-106	340	3	339	284	4	13	-.57-6 ^{ms}	-48
F-107	340	4	333	263	9	13	-.57-6 ^{ms}	-24
F-108	300	2	307	263	7	13	-.57-6 ^{ms}	18

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #21

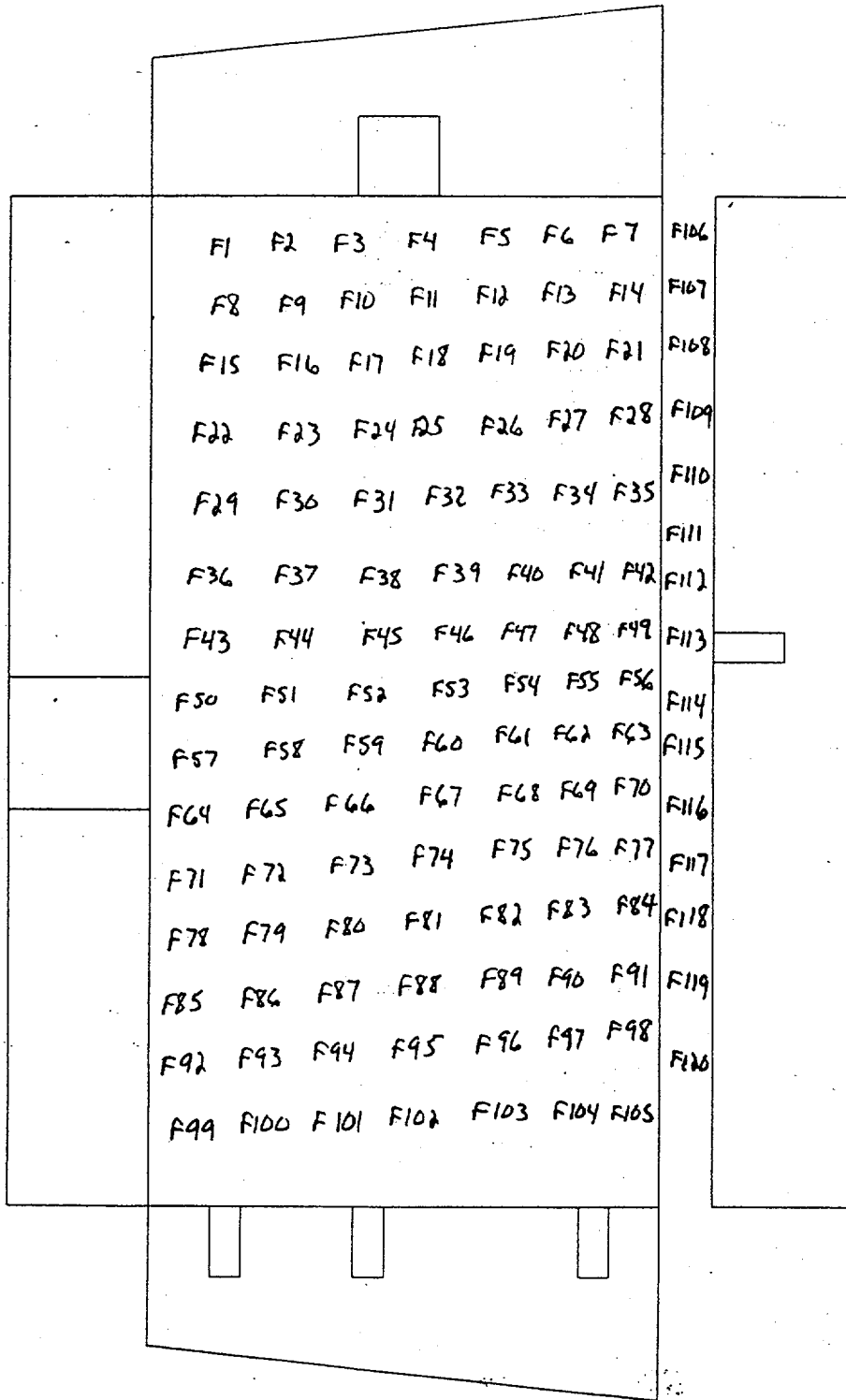
Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

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 (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
F 109	280	2	263	268	0	12	5.2	36
F 110	350	2	346	297	11	12	5.7 6 MDS	5
F 111	370	1	359	283	5	11	5.7 6 MDS	-24
F 112	300	2	282	288	1	11	5.7 6 MDS	24
F 113	340	1	277	272	2	12	5.7 6 MDS	12
F 114	320	1	276	270	7	11	5.7 6 MDS	-6
F 115	340	2	298	270	2	11	5.7 6 MDS	-24
F 116	320	1	291	235	2	12	5.7 6 MDS	-24
F 117	380	1	362	252	5	12	5.7 6 MDS	48
F 118	360	2	358	267	3	13	5.7 6 MDS	-48
F 119	350	2	312	274	5	13	5.7 6 MDS	36
F 120	340	1	285	252	5	13	5.7 6 MDS	0

Building 21 North

Survey # 02-0132



Interior

Scale:
4m x 4m

Radiological Survey Results - Survey Location Indicator

02-0132

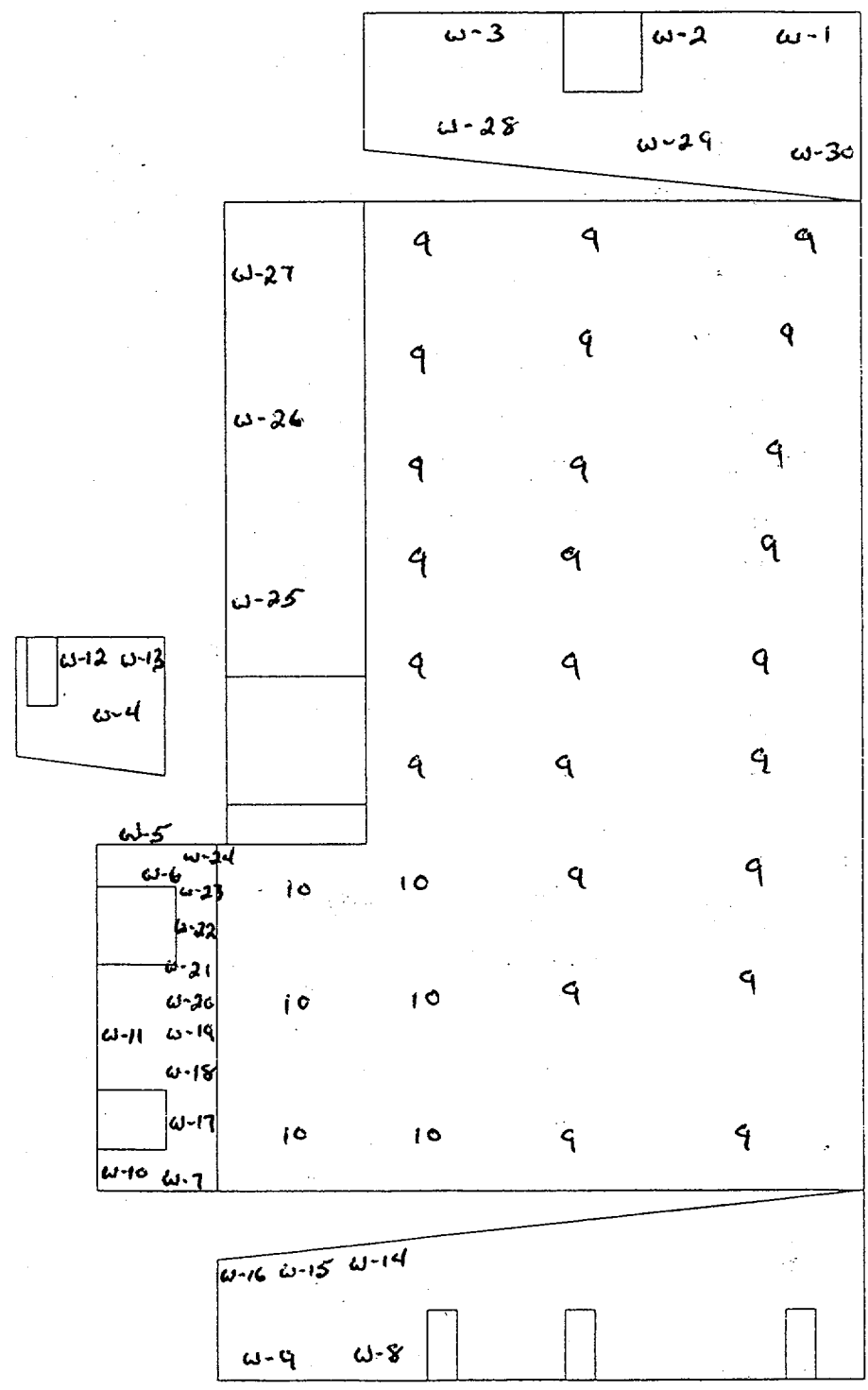
Survey Area Information:

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 (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
C-1	300	3	316	275	1	9	-0.37	8
C-2	350	1	271	256	3	10	-0.37	8
C-3	280	1	264	248	1	8	2.5	0
C-4	270	4	250	235	4	8	-0.37	-4
C-5	280	2	264	284	2	10	5.4	4
C-6	260	2	247	261	2	8	2.5	-12
C-7	280	3	261	258	5	6	-0.37	12
C-8	260	4	282	300	6	9	-0.37	4
C-9	240	1	256	254	2	8	2.5	8
C-10	280	2	278	230	4	7	2.5	12
C-11	280	2	256	240	2	8	-0.37	-4
C-12	280	2	290	286	2	7	2.5	0
C-13	250	1	260	248	4	7	-0.37	-16
C-14	260	1	252	250	4	7	-0.37	-8
C-15	220	4	226	208	2	7	-0.37	-4
C-16	260	3	260	253	2	8	-0.37	12
C-17	260	3	243	261	2	6	-0.37	8
C-18	260	1	248	228	1	6	2.5	-12
C-19	260	1	211	231	4	7	2.5	0
C-20	290	4	245	245	1	6	2.5	-8
C-21	240	1	246	249	2	7	-0.37	-4
C-22	260	3	238	240	3	9	-0.37	16
C-23	250	3	270	260	2	10	-0.37	4
C-24	260	2	248	220	4	10	-0.37	8
C-25			250	235	4	8	-0.37	-4

Building 21 North



Exterior

Scale:
4m x 4m

Bks LOWER 10-16 m/hr
UPPER 9 m/hr

Survey # 02-0152

RADIOLOGICAL SURVEY RESULTS - SURVEY LOCATION INDICATOR

Survey Area Information: Bldg # 21 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 cm ²)	
							α	β
W-1	340	4	325	278	2	12	-0.37	-4
W-2	350	6	321	292	2	12	-0.37	0
W-3	390	4	365	300	4	16	2.5	12
W-4	320	2	291	264	2	16	-0.37	8
W-5	340	4	299	236	6	12	2.5	0
W-6	300	1	284	253	4	12	-0.37	-4
W-7	300	1	283	240	6	12	-0.37	0
W-8	340	2	323	251	7	16	-0.37	12
W-9	300	2	306	264	2	12	2.5	-4
W-9 QC	310	2	300	260	3	12	-0.37	16
W-10	320	1	320	256	3	11	-0.37	12
W-11	320	2	342	242	5	12	-0.37	0
W-12	340	4	282	264	3	16	2.5	20
W-13	360	2	364	318	1	16	-0.37	-8
W-14	360	2+0.4	362	318	10	12	-0.37	-4
W-15			340	280	12	12	-0.37	12
W-16			353	278	9	12	2.5	16
W-17			312	250	4	13	2.5	16
W-18			324	255	1	13	-0.37	-12
W-19			328	256	2	14	-0.37	20
W-20			326	257	5	14	-0.37	12
W-21			320	267	5	14	2.5	0
W-22			303	265	2	16	-0.37	4
W-23			286	267	3	16	2.5	4
W-24			297	265	3	16	2.5	16
W-25			495	392	4	18	2.5	-16
W-26			637	625	1	30	-0.37	4

OK'd for 2929 2.11 B 71 MDA 2=11.4 D=130

Radiological Survey Results - Survey Location Indicator

Survey Area Information:

Bldg 21 ExTERior walls

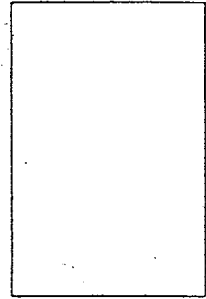
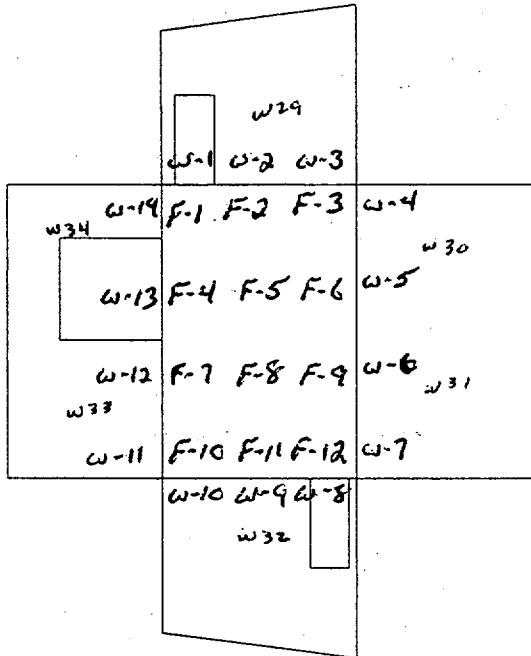
Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

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 (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
W-27			434	370	3	30	-.37	12
W-28			346	299	4	15	-.37	-8
W-29			319	217	0	15	-.37	-12
W-30			346	286	4	15	2.5	4

Building 21 North

Survey # 02-0132

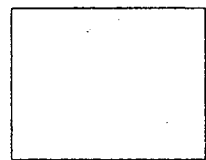
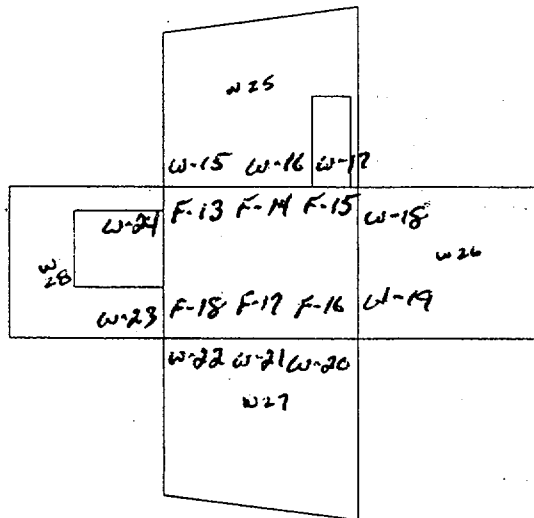


Ceiling

No Access
TO CEILING

North West Room Interior

Scale:
4m x 4m



Ceiling

South West Room Interior

Survey Area Information: **Bldg # 21 North & South Rms**

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA
		2929/115563	6-19-02	43-10/127216	6-19-02			11
	19/22526							

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 (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
F-1	1500	8	357	289	4	12	-.3	46
F-2	1550	8	411	342	2	12	-.3	21
F-3	1500	9	360	335	1	11	2.5	33
F-4	1600	7	373	259	4	11	2.5	8
F-5	1600	7	342	276	2	12	2.5	25
F-6	1750	7	339	259	3	11	-.3	21
F-7	1650	8	343	290	0	11	-.3	-13
F-8	1600	7	339	323	3	11	-.3	13
F-9	1750	7	412	293	4	12	-.3	4
F-10	1550	8	356	296	0	11	5.4	-25
F-11	1700	10	382	318	3	11	8	-29
F-12	1600	9	370	313	1	11	5.4	50
F-13	1650	9	362	305	1	10	-.3	-42
F-14	1600	8	393	332	2	10	-.3	-13
F-15	1550	6	344	287	2	11	-.3	-17
F-16	1550	7	388	301	3	10	2.5	21
F-17	1650	7	385	301	3	10	-.3	13
F-18	1600	6	383	322	3	10	-.3	0
W-1	420	2	329	247	1	12	-.3	46
W-2	440	2	357	284	2	12	-.3	-25
W-3	420	1	327	280	2	12	-.3	-13
W-4	400	3	319	294	0	11	2.5	-4
W-5	390	2	338	288	3	11	2.5	21
W-6	400	1	405	318	5	11	2.5	42
W-7	500	4	305	274	3	11	-.3	63
W-8	390	1	274	245	1	11	5.4	-13
W-9	440	2	323	270	0	11	-.3	-8

Bkgsd For 2929 α .11 β 71

MDA α = 11.4 β = 130

Bkgsd For Model 19 10-11 μ /hr

Survey Area Information:								
Bldg 21 North + South Rooms								
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 (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
W-10	440	2	326	256	4	12	-.3	-13
W-11	400	4	310	271	4	12	-.3	8
W-12	380	2	329	269	2	11	2.5	21
W-13	340	1	248	268	3	12	-.3	8
W-14	320	2	302	282	2	13	-.3	33
W-15	380	2	313	269	0	10	-.3	-29
W-16	400	3	343	272	1	10	-.3	-46
W-17	360	3	330	287	1	11	2.5	25
W-18	460	2	356	289	0	10	2.5	8
W-19	430	4	400	320	1	10	-.3	13
W-20	440	3	331	289	2	10	-.3	4
W-21	420	2	324	270	2	10	5.4	4
W-22	410	2	337	305	0	10	-.3	-17
W-23	400	1	334	297	1	10	-.3	59
W-24	400	2	335	277	5	10	-.3	-4
W-25	380	4	352	285	0	10	-.3	4
W-26	400	2	337	297	3	10	-.3	8
W-27	410	1	322	269	0	11	5.4	-4
W-28	390	3	327	267	1	10	-.3	4
W-29	390	2	301	268	1	10	-.3	-4
W-30	400	1	280	229	1	11	-.3	0
W-31	390	1	361	292	1	10	-.3	8
W-32	410	3	312	267	2	10	5.4	25
W-33	320	2	295	272	2	12	5.4	21
W-34	340	2	331	285	3	12	-.3	0

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

Section 1: Survey Information

Date: 05/15/02 Time: 1420 Location: Bldg 21 Survey Issue Log Number: 02-0209
 RWP Number: N/A Purpose of Survey: RWP Routine Survey Unconditional Release Other. Page 1 of 13

Smear Number	Beta dpm/100cm ²	Alpha dpm/100cm ²
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		

Note: All Locations Averaging over 1000 dpm β or α have been painted yellow and logged in the yellow marked Items Book.
 w2, 44, 66, 25, 27, 31, 67, 86, 39, 87.

2360	BKGD		MDA (dpm)	
	β	α	β	α
Block	49	N/A	312	N/A
Metal	8		140	

2224-1	BKGD		MDA (dpm)	
	β	α	β	α
Block	49	N/A	383	N/A
Metal	8		172	

Bkgd Readings:
 Legend:
 00 = mRem/h gamma 00 C = mRem/h gamma contact ⊕ = Smear Location ▽ = Air Sample Location -X-X- = Rope, Boundary, or Barrier
 00 II = mRem/h beta 00 II C = 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
2360/164680	11/07/02	43-89/118544	11/07/02	0.113 0.164	See Above	
2224-1/129463	08/06/02	43-89/169230	08/06/02	0.092 0.154		

Section 3: Review and Approval

Survey Performed By (Sign): Michael A. Diamond / Martin Tomida Area Posted and/or Barricaded: Yes No Not Required Date and Time: 05/15/02 1420
 Radiation Safety Officer (Print Name & Sign): Mike McDonald Date and Time: 5-16-02 0830

Bldg 21

Survey #
02-0209

Radiological Survey Results - Calculational Sheet

W-25
Block

Location	β Static (unsh) (cpm)	β Static (sh) (cpm)	Gross β	Minus Bkgd = (Net β)	Net β dpm/100 cm ²
1	386	279	107	58	630
2	410	288	122	73	793
3	375	278	97	48	522
4	469	311	158	109	1185
5	444	289	155	106	1152
6	432	272	160	111	1207
7	362	294	68	19	207
8	355	308	47	-2	-22
9	403	296	107	58	630
					6304 / 700

W-27
Block

1	525	350	175	126	1370
2	507	375	132	83	902
3	520	388	132	83	902
4	488	346	142	93	1011
5	463	357	106	57	620
6	451	345	106	57	620
7	465	365	100	51	554
8	517	367	150	101	1098
9	483	355	128	79	859
					7936 / 882

W-31
Block

1	465	293	172	123	1337
2	423	326	137	88	957
3	456	302	154	105	1141
4	466	319	147	98	1065
5	499	294	205	156	2228 1696 (E)
6	455	269	186	137	1489
7	381	310	71	22	239
8	388	306	82	33	359
9	509	284	225	176	1913
					10196 / 1133

Instrument Model/SN:	Probe Model/SN:	Detector Eff.: (cpm/dpm)
2224-1/129463	43-89/169230	.092

Material	Bkgd
Block	49

Bldg 21

Survey #
02-0209

Radiological Survey Results - Calculational Sheet

W-48
WALL

Location	β Static (unsh) (cpm)	β Static (sh) (cpm)	Gross β	Minus Bkgd = (Net β)	Net β dpm/100 cm ²
1	253	216	37	29	315
2	271	242	9	1	11
3	243	268	-25	-33	-358
4	252	275	-23	-31	-337
5	266	243	23	15	163
6	254	226	28	20	217
7	234	243	-10	-18	-196
8	277	236	41	33	359
9	242	230	12	4	43
					217/24

W-8
Block

1	362	277	85	36	391
2	384	281	103	54	587
3	326	287	39	-10	-109
4	329	296	33	-16	-174
5	337	268	69	20	217
6	347	295	52	3	33
7	367	278	89	40	435
8	334	305	29	-20	-217
9	394	291	103	54	587
					1750/194

W-2
Block

1	405	334	71	22	239
2	462	329	133	84	913
3	430	336	94	45	489
4	398	323	75	26	283
5	463	332	131	82	891
6	475	311	164	115	1250
7	533	339	194	145	1576
8	472	342	130	81	880
9	413	307	106	57	619
					7140/793

Instrument Model/SN:	Probe Model/SN:	Detector Eff.: (cpm/dpm)
2224-1/129463	43-89/169230	B ⁻ .092 / .754

Material	Bkgd
BLOCK	49
WALL	8

Bldg 21

Survey

02-0209

Radiological Survey Results - Calculational Sheet

W-67
BLOCK

Location	β Static (unsh) (cpm)	β Static (sh) (cpm)	Gross β	Minus Bkgd = (Net β)	Net β dpm/100 cm ²
1	431	292	149	140	1521
2	447	267	180	131	1424
3	422	279	143	94	1022
4	438	307	131	82	891
5	450	274	176	127	1380
6	392	276	116	67	728
7	434	289	145	96	1043
8	408	312	96	47	511
9	426	288	138	89	967
					9467/1054
N/A					

Instrument Model/SN:	Probe Model/SN:	Detector Eff.: (cpm/dpm)
2224-1/129463	43-89/169230	B-092/054

Material	Bkgd
BLOCK	49

Bldg 21

Survey #
02-0209

Radiological Survey Results - Calculational Sheet

W-44
Block

Location	β Static (unsh) (cpm)	β Static (sh) (cpm)	Gross β	Minus Bkgd = (Net β)	Net β dpm/100 cm ²
1	495	409	86	37	402
2	470	393	77	28	304
3	451	348	103	54	587
4	506	379	127	78	848
5	467	315	152	103	1120
6	591	356	235	186	2022
7	543	432	111	62	674
8	637	401	112	63	685
9	498	525	97	48	522
					7164/796

W-64
Block

1	375	321	54	5	54
2	394	280	114	65	707
3	330	269	61	12	130
4	353	279	74	MB 6625	272
5	360	262	98	49	533
6	408	307	101	52	565
7	396	275	121	72	763
8	367	293	74	25	272
9	371	267	104	55	598
					3914/435

W-66
Block

1	418	295	123	74	804
2	396	286	110	61	663
3	437	304	133	84	913
4	424	312	112	63	685
5	401	290	111	62	674
6	518	269	249	200	2174
7	394	266	128	79	859
8	483	329	154	105	1141
9	459	284	175	126	1370
					8283/920

Instrument Model/SN:	Probe Model/SN:	Detector Eff.: (cpm/dpm)
2224-1/129463	43-89/1169230	B-092/0.154

Material	Bkgd
Block	49

Survey # 02-0209

BIDS # 21

Radiological Survey Results - Calculational Sheet

Location	β Static (unsh) (cpm)	β Static (sh) (cpm)	Gross β	Minus Bkgd = (Net β)	Net β dpm/100 cm ²
w-94	347	282	65	16	142
	390	294	96	47	416
	367	289	78	29	257
	319	274	45	-4	-35
	397	296	101	52	460
	390	297	93	44	389
	373	255	118	69	611
	370	282	88	39	345
w-94	353	244	109	60	531
					3116 / 346
w-95	350	257	93	44	389
	346	287	59	10	88
	381	250	131	82	726
	319	262	88 57	8	71
	357	269	88	39	345
	367	271	96	47	416
	302	252	50	1	9
	350	288	62	13	115
w-95	297	289	8	-41	-363
					1796 / 200
w-39	453	330	123	74	655
	434	301	133	84	743
	428	285	143	94	832
	421	312	109	60	531
	417	303	114	65	575
	401	305	96	47	416
	372	308	64	15	133
	366	260	106	57	504
w-39	320	249	71	22	195
					4584 / 509

Instrument Model/SN:	Probe Model/SN:	Detector Eff.: (cpm/dpm)
2360/164680	4389/118544	β .113 \times .164

Material	Bkgd.
Block	β -49
Metal	β -8

Radiological Survey Results - Calculational Sheet

Location	β Static (unsh) (cpm)	β Static (sh) (cpm)	Gross β	Minus Bkgd = (Net β)	Net β dpm/100 cm ²
W-72	371	253	118	69	611
	442	288	154	105	929
	373	290	83	34	301
	398	310	88	39	345
	369	264	105	56	496
	469	313	156	107	947
	393	267	126	77	681
	323	312	11	-38	-336
	328	270	58	9	80
					4054/
W-86	328	273	55	6	53
	351	264	87	38	336
	352	250	102	53	469
	356	263	93	44	389
	373	242	131	82	726
	376	238	138	89	788
	414	258	156	107	947
	359	233	126	77	681
	339	260	79	30	265
					4654/
W-87	402	299	103	54	478
	398	285	113	64	566
	386	280	106	57	504
	402	302	100	51	451
	413	340	73	24	212
	403	280	123	74	655
	411	260	151	102	903
	374	244	130	81	717
	406	265	141	92	814
				5309/	

Block 49

B 49

B 49

450

517

589

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

Material	Bkgd
Block	β -49
Metal	β -8

Radiological Survey Results - Calculational Sheet

Location	β Static (unsh) (cpm)	β Static (sh) (cpm)	Gross β	Minus Bkgd = (Net β)	Net β dpm/100 cm ²
w-38	326	260	66	17	150
	380	246	134	85	752
	358	278	80	31	274
	330	274	56	7	62
	344	286	58	9	80
	361	236	125	76	673
	363	257	106	57	504
	359	282	77	28	248
w-38	381	242	139	90	796
					3539/
					393

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

Material	Bkgd
Block	B ⁻ 49
Metal	B ⁻ 8

1-72
Metal

$$977 \left(\frac{500}{10,000} \right) + 450 \left(1 - \frac{500}{10,000} \right)$$

$$49 + 428$$

$$\beta^- = 477 \text{ dpm Average}$$

$$\alpha = 954 \text{ dpm Average}$$

W-86
Block

$$943 \left(\frac{500}{10,000} \right) + 517 \left(1 - \frac{500}{10,000} \right)$$

$$47 + 491$$

$$\beta^- = 538 \text{ dpm Average}$$

$$\alpha = 1076 \text{ dpm Average}$$

W-87
Block

$$1011 \left(\frac{700}{10,000} \right) + 589 \left(1 - \frac{700}{10,000} \right)$$

$$71 + 548$$

$$\beta^- = 619 \text{ dpm Average}$$

$$\alpha = 1238 \text{ dpm Average}$$

W-94
Metal

$$681 \left(\frac{300}{10,000} \right) + 346 \left(1 - \frac{300}{10,000} \right)$$

$$20 + 335$$

$$\beta^- = 355 \text{ dpm Average}$$

$$\alpha = 710 \text{ dpm Average}$$

BLDG 21

$$1-95 \text{ Metal } 920 \left(\frac{200}{10,000} \right) + 200 \left(1 - \frac{200}{10,000} \right)$$

$$18 + 196$$

$$P^- = 214 \text{ dpm Average}$$

$$\alpha = 428 \text{ dpm Average}$$

W-39

$$\text{Block } 1102 \left(\frac{700}{10,000} \right) + 509 \left(1 - \frac{700}{10,000} \right)$$

$$77 + 473$$

$$P^- = 550 \text{ dpm Average}$$

$$\alpha = 1100 \text{ dpm Average}$$

W-38

$$\text{Block } 613 \left(\frac{500}{10,000} \right) + 393 \left(1 - \frac{500}{10,000} \right)$$

$$31 + 373$$

$$P^- = 404 \text{ dpm Average}$$

$$\alpha = 808 \text{ dpm Average}$$

11-27
BLOCK

$$685 \left(\frac{1000}{10000} \right) + 882 \left(1 - \frac{1000}{10,000} \right)$$

$$69 + 794$$

B-863 AVE. DPM

∩ 1726 AVE. DPM

W-31
BLOCK

$$614 \left(\frac{800}{10000} \right) + 1133 \left(1 - \frac{800}{10000} \right)$$

$$50 + 1042$$

B-1092 AVE. DPM

∩ 2184 AVE. DPM

W-67
BLOCK

$$693 \left(\frac{1000}{10000} \right) + 1054 \left(1 - \frac{1000}{10000} \right)$$

$$70 + 949$$

B-1018 AVE. DPM

∩ 2037 AVE. DPM

BLDG. 21

SURVEY ~~TH~~ 02-0209

W-44
BLOCK

$$557 \left(\frac{800}{10000} \right) + 796 \left(1 - \frac{800}{10000} \right)$$

45 + 732

B-777 AVE. DPM

∩ 1554 AVE. DPM

W-64
BLOCK

$$727 \left(\frac{600}{10000} \right) + 435 \left(1 - \frac{600}{10000} \right)$$

44 + 409

B-452 AVE. DPM

∩ 906 AVE. DPM

W-66
BLOCK

$$557 \left(\frac{1000}{10000} \right) + 920 \left(1 - \frac{1000}{10000} \right)$$

56 + 828

B-884 AVE. DPM

∩ 1777 AVE. DPM

W-25
BLOCK

$$543 \left(\frac{800}{10000} \right) + 700 \left(1 - \frac{800}{10000} \right)$$

43 + 644

B-687 AVE. DPM

∩ 1374 AVE. DPM

B-277 AVE D 1554
DPM

410 + 737

$576 \frac{200}{10,000} + 793 (1 - \frac{200}{10,000})$

W-2

B-215 AVE D 430 AVE
DPM

27 + 188

$886 \frac{300}{10,000} + 194 (1 - \frac{300}{10,000})$

W-8
Block

B-30 AVE D 60 AVE
DPM

6 + 24

$557 \frac{100}{10,000} + 24 (1 - \frac{100}{10,000})$

W-48

Results of Surface Scans

Molycorp - Building 21 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	Instrument #
F1	2300	550	22	2	1
F2	2200	450	21	1	1
F3	2280	530	22	2	1
F4	2300	550	18	-2	1
F5	1800	50	20	0	1
F6	1900	150	17	-3	1
F7	2000	250	21	1	1
F8	1800	50	18	-2	1
F9	1860	110	17	-3	1
F10	1900	150	20	0	1
F11	1920	170	21	1	1
F12	2100	350	13	-7	1
F13	1900	150	22	2	1
F14	1930	180	22	2	1
F15	1900	150	19	-1	1
F16	2120	370	22	2	1
F17	1800	50	21	1	1
F18	1860	110	18	-2	1
F19	1800	50	22	2	1
F20	1900	150	19	-1	1
F21	3000	1250	18	-2	1
F22	1900	150	21	1	1
F23	1860	110	22	2	1
F24	1840	90	22	2	1
F25	1800	50	21	1	1
F26	1900	150	22	2	1
F27	1920	170	22	2	1
F28	1900	150	18	-2	1
F29	1870	120	21	1	1
F30	1650	-100	22	2	1
F31	1700	-50	22	2	1
F32	1800	50	19	-1	1
F33	1880	130	18	-2	1
F34	1900	150	17	-3	1
F35	1860	110	17	-3	1
F36	1850	100	20	0	1
F37	1720	-30	21	1	1
F38	1700	-50	19	-1	1
F39	1800	50	23	3	1
F40	1690	-60	22	2	1
F41	1730	-20	18	-2	1
F42	1700	-50	21	1	1
F43	1800	50	18	-2	1
F44	1820	70	22	2	1
F45	1800	50	22	2	1
F46	1900	150	19	-1	1
F47	1960	210	22	2	1

F48	1920	170	22	2	1
F49	1820	70	22	2	1
F50	1800	50	21	1	1
F51	1720	-30	19	-1	1
F52	1790	40	22	2	1
F53	1830	80	23	3	1
F54	1850	100	22	2	1
F55	1650	-100	21	1	1
F56	1790	40	22	2	1
F57	1800	50	22	2	1
F58	1800	50	18	-2	1
F59	1830	80	21	1	1
F60	1900	150	22	2	1
F61	1890	140	18	-2	1
F62	1760	10	20	0	1
F63	1700	-50	21	1	1
F64	1800	50	19	-1	1
F65	1800	50	21	1	1
F66	1840	90	21	1	1
F67	1740	-10	19	-1	1
F68	1790	40	21	1	1
F69	1800	50	18	-2	1
F70	1890	140	21	1	1
F71	1760	10	18	-2	1
F72	1700	-50	22	2	1
F73	1700	-50	23	3	1
F74	1800	50	19	-1	1
F75	1820	70	21	1	1
F76	1810	60	16	-4	1
F77	1800	50	21	1	1
F78	1760	10	22	2	1
F79	1800	50	19	-1	1
F80	1870	120	21	1	1
F81	1850	100	16	-4	1
F82	1800	50	18	-2	1
F83	1900	150	22	2	1
F84	1920	170	21	1	1
F85	1700	-50	18	-2	1
F86	1740	-10	22	2	1
F87	1800	50	22	2	1
F88	1860	110	22	2	1
F89	1900	150	21	1	1
F90	1870	120	22	2	1
F91	1920	170	22	2	1
F92	1920	170	19	-1	1
F93	1900	150	18	-2	1
F94	1720	-30	22	2	1
F95	1780	30	18	-2	1
F96	1720	-30	28	8	1
F97	1890	140	16	-4	1
F98	1830	80	22	2	1
F99	1800	50	23	3	1
F100	1750	0	24	4	1
F101	1900	150	18	-2	1
F102	1850	100	21	1	1
F103	1830	80	21	1	1

F104	1700	-50	22	2	1
F105	1690	-60	19	-1	1
F106	340	40	3	1	2
F107	340	40	4	2	2
F108	300	0	2	0	2
F109	280	-20	2	0	2
F110	350	50	2	0	2
F111	370	70	1	-1	2
F112	300	0	2	0	2
F113	340	40	1	-1	2
F114	320	20	1	-1	2
F115	340	40	2	0	2
F116	320	20	1	-1	2
F117	380	80	1	-1	2
F118	360	60	2	0	2
F119	350	50	2	0	2
F120	340	40	1	-1	2

North and South Interior Room Floors

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm	Instrument #
F1	1500	-250	8	-12	1
F2	1550	-200	8	-12	1
F3	1500	-250	9	-11	1
F4	1600	-150	7	-13	1
F5	1600	-150	7	-13	1
F6	1750	0	7	-13	1
F7	1650	-100	8	-12	1
F8	1600	-150	7	-13	1
F9	1750	0	7	-13	1
F10	1550	-200	8	-12	1
F11	1700	-50	10	-10	1
F12	1600	-150	9	-11	1
F13	1650	-100	9	-11	1
F14	1600	-150	8	-12	1
F15	1550	-200	6	-14	1
F16	1550	-200	7	-13	1
F17	1650	-100	7	-13	1
F18	1600	-150	6	-14	1

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

Floor Monitor Info:

Scan MDA Beta - 205 dpm/detector area
Scan MDA Alpha - 28 dpm/detector area
Scan background Beta - 1750 cpm
Scan background Alpha - 20 cpm
Detector Eff. Beta - .27
Detector Eff. Alpha - .207

or

#2 - Ludlum 2350-1 No.117566 with 43-106 No.133866

Floor Monitor Info:

Scan MDA Beta - 660 dpm/detector area

Scan MDA Alpha - 63 dpm/detector area

Scan background Beta - 300 cpm

Scan background Alpha - 2 cpm

Detector Eff. Beta - .248

Detector Eff. Alpha - .211

Elevated Scan Readings

Molycorp - Building 21 Foundation Only Survey Unit (Affected Area)

No elevated scan readings were reported

Direct Measurements (Total Activity)

Molycorp - Building 21 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	399	366	33	78	-45	-489	224	476	-978
F2	466	382	84	78	6	65	271	476	130
F3	540	369	171	78	93	1011	336	476	2022
F4	353	282	71	78	-7	-76	260	476	-152
F5	375	321	54	78	-24	-261	245	476	-522
F6	372	298	74	78	-4	-43	263	476	-87
F7	321	304	17	78	-61	-663	208	476	-1326
F8	443	363	80	78	2	22	268	476	43
F9	386	308	78	78	0	0	266	476	0
F10	351	296	55	78	-23	-250	246	476	-500
F11	330	320	10	78	-68	-739	200	476	-1478
F12	337	292	45	78	-33	-359	236	476	-717
F13	364	328	36	78	-42	-457	227	476	-913
F14	372	310	62	78	-16	-174	252	476	-348
F15	379	318	61	78	-17	-185	251	476	-370
F16	346	293	53	78	-25	-272	244	476	-543
F17	364	288	76	78	-2	-22	264	476	-43
F18	362	296	66	78	-12	-130	256	476	-261
F19	381	290	91	78	13	141	277	476	283
F20	377	295	82	78	4	43	269	476	87
F21	410	288	122	78	44	478	301	476	957
F22	385	375	10	78	-68	-739	200	476	-1478
F23	370	308	62	78	-16	-174	252	476	-348
F24	396	293	103	78	25	272	287	476	543
F25	400	305	95	78	17	185	280	476	370
F26	352	318	34	78	-44	-478	225	476	-957
F27	309	294	15	78	-63	-685	205	476	-1370
F28	385	295	90	78	12	130	276	476	261
F29	475	371	104	78	26	283	287	476	565
F30	359	282	77	78	-1	-11	265	476	-22
F31	368	306	62	78	-16	-174	252	476	-348

F32	382	320	62	78	-16	-174	252	476	-348
F33	374	323	51	78	-27	-293	242	476	-587
F34	361	330	31	78	-47	-511	222	476	-1022
F35	367	304	63	78	-15	-163	253	476	-326
F36	397	315	82	78	4	43	269	476	87
F37	336	290	46	78	-32	-348	237	476	-696
F38	348	316	32	78	-46	-500	223	476	-1000
F39	354	252	102	78	24	261	286	476	522
F40	328	281	47	78	-31	-337	238	476	-674
F41	353	280	73	78	-5	-54	262	476	-109
F42	326	289	37	78	-41	-446	228	476	-891
F43	337	266	71	78	-7	-76	260	476	-152
F44	414	353	61	78	-17	-185	251	476	-370
F45	367	320	47	78	-31	-337	238	476	-674
F46	414	351	63	78	-15	-163	253	476	-326
F47	397	307	90	78	12	130	276	476	261
F48	406	336	70	78	-8	-87	259	476	-174
F49	347	320	27	78	-51	-554	218	476	-1109
F50	329	282	47	78	-31	-337	238	476	-674
F51	414	332	82	78	4	43	269	476	87
F52	411	360	51	78	-27	-293	242	476	-587
F53	423	342	81	78	3	33	269	476	65
F54	364	282	82	78	4	43	269	476	87
F55	373	320	53	78	-25	-272	244	476	-543
F56	362	309	53	78	-25	-272	244	476	-543
F57	314	276	38	78	-40	-435	229	476	-870
F58	393	334	59	78	-19	-207	249	476	-413
F59	401	361	40	78	-38	-413	231	476	-826
F60	372	329	43	78	-35	-380	234	476	-761
F61	383	347	36	78	-42	-457	227	476	-913
F62	371	297	74	78	-4	-43	263	476	-87
F63	309	308	1	78	-77	-837	189	476	-1674
F64	380	343	37	78	-41	-446	228	476	-891
F65	332	310	22	78	-56	-609	213	476	-1217
F66	309	274	35	78	-43	-467	226	476	-935
F67	335	288	47	78	-31	-337	238	476	-674
F68	333	259	74	78	-4	-43	263	476	-87
F69	337	265	72	78	-6	-65	261	476	-130
F70	310	271	39	78	-39	-424	230	476	-848
F71	329	318	11	78	-67	-728	201	476	-1457

F72	371	296	75	78	-3	-33	264	476	-65
F73	295	270	25	78	-53	-576	216	476	-1152
F74	276	255	21	78	-57	-620	212	476	-1239
F75	304	268	36	78	-42	-457	227	476	-913
F76	337	294	43	78	-35	-380	234	476	-761
F77	302	303	-1	78	-79	-859	187	476	-1717
F78	359	327	32	78	-46	-500	223	476	-1000
F79	353	304	49	78	-29	-315	240	476	-630
F80	312	271	41	78	-37	-402	232	476	-804
F81	319	257	62	78	-16	-174	252	476	-348
F82	352	308	44	78	-34	-370	235	476	-739
F83	287	286	1	78	-77	-837	189	476	-1674
F84	357	320	37	78	-41	-446	228	476	-891
F85	339	301	38	78	-40	-435	229	476	-870
F86	373	291	82	78	4	43	269	476	87
F87	330	298	32	78	-46	-500	223	476	-1000
F88	359	297	62	78	-16	-174	252	476	-348
F89	320	292	28	78	-50	-543	219	476	-1087
F90	338	228	110	78	32	348	292	476	696
F91	354	292	62	78	-16	-174	252	476	-348
F92	353	299	54	78	-24	-261	245	476	-522
F93	365	305	60	78	-18	-196	250	476	-391
F94	326	290	36	78	-42	-457	227	476	-913
F95	352	297	55	78	-23	-250	246	476	-500
F96	350	262	88	78	10	109	274	476	217
F97	388	316	72	78	-6	-65	261	476	-130
F98	365	320	45	78	-33	-359	236	476	-717
F99	354	322	32	78	-46	-500	223	476	-1000
F100	313	325	-12	78	-90	-978	173	476	-1957
F101	339	284	55	78	-23	-250	246	476	-500
F102	414	380	34	78	-44	-478	225	476	-957
F103	328	322	6	78	-72	-783	195	476	-1565
F104	319	292	27	78	-51	-554	218	476	-1109
F105	317	272	45	78	-33	-359	236	476	-717
F106	339	284	55	78	-23	-250	246	476	-500
F107	333	263	70	78	-8	-87	259	476	-174
F108	307	263	44	78	-34	-370	235	476	-739
F109	263	268	-5	78	-83	-902	182	476	-1804
F110	346	297	49	78	-29	-315	240	476	-630
F111	359	283	76	78	-2	-22	264	476	-43

F112	282	288	-6	78	-84	-913	181	476	-1826
F113	277	272	5	78	-73	-793	194	476	-1587
F114	276	270	6	78	-72	-783	195	476	-1565
F115	298	270	28	78	-50	-543	219	476	-1087
F116	291	235	56	78	-22	-239	247	476	-478
F117	362	252	110	78	32	348	292	476	696
F118	358	267	91	78	13	141	277	476	283
F119	312	274	38	78	-40	-435	229	476	-870
F120	285	252	33	78	-45	-489	224	476	-978

North and South Interior Room Floors

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	357	289	68	78	-10	-109	257	476	-217
F2	411	342	69	78	-9	-98	258	476	-196
F3	360	335	25	78	-53	-576	216	476	-1152
F4	373	259	114	78	36	391	295	476	783
F5	342	276	66	78	-12	-130	256	476	-261
F6	339	259	80	78	2	22	268	476	43
F7	343	290	53	78	-25	-272	244	476	-543
F8	339	323	16	78	-62	-674	207	476	-1348
F9	412	293	119	78	41	446	299	476	891
F10	356	296	60	78	-18	-196	250	476	-391
F11	382	318	64	78	-14	-152	254	476	-304
F12	370	313	57	78	-21	-228	248	476	-457
F13	362	305	57	78	-21	-228	248	476	-457
F14	393	332	61	78	-17	-185	251	476	-370
F15	344	287	57	78	-21	-228	248	476	-457
F16	388	301	87	78	9	98	274	476	196
F17	385	301	84	78	6	65	271	476	130
F18	383	322	61	78	-17	-185	251	476	-370

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

Floor Efficiency	Beta 0.092	Alpha 0.154
Floor Background (cpm)	78	2.4
Floor MDA (dpm/100 cm ²)	476	76

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

Elevated Direct Measurements (Total Activity) and Averaging Results
Molycorp - Building 21 Foundation Only Survey Unit (Affected Area)

Location	Direct Beta (dpm/100cm ²)	Direct Alpha (dpm/100cm ²)	Over Area (cm ²)	Exceeds Limits Maximum	Average	Averaged Value (over 1 m ²)	Within Limits? Yes/No
F3	1011	2022		No	Yes	Marked for removal/remediation	

Removable Surface Activity Measurements
Molycorp - Building 21 Foundation Only Survey Unit (Affected Area)

Building Floor

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA
F1	12	19.7	156	-0.6	2.6	13
F2	48	35.0	156	-0.6	2.6	13
F3	30	28.4	156	-0.6	2.6	13
F4	-48	35.0	156	-0.6	2.6	13
F5	-18	23.0	156	2.3	5.1	13
F6	-66	40.6	156	-0.6	2.6	13
F7	12	19.7	156	-0.6	2.6	13
F8	6	15.8	156	-0.6	2.6	13
F9	-6	15.8	156	-0.6	2.6	13
F10	-30	28.4	156	-0.6	2.6	13
F11	24	25.9	156	-0.6	2.6	13
F12	0	10.5	156	-0.6	2.6	13
F13	-6	15.8	156	-0.6	2.6	13
F14	18	23.0	156	-0.6	2.6	13
F15	36	30.8	156	-0.6	2.6	13
F16	12	19.7	156	-0.6	2.6	13
F17	-48	35.0	156	2.3	5.1	13
F18	-12	19.7	156	-0.6	2.6	13
F19	48	35.0	156	-0.6	2.6	13
F20	36	30.8	156	-0.6	2.6	13
F21	0	10.5	156	-0.6	2.6	13
F22	-60	38.8	156	-0.6	2.6	13
F23	36	30.8	156	-0.6	2.6	13
F24	-18	23.0	156	-0.6	2.6	13
F25	-6	15.8	156	2.3	5.1	13
F26	42	33.0	156	-0.6	2.6	13
F27	18	23.0	156	-0.6	2.6	13
F28	12	19.7	156	-0.6	2.6	13
F29	24	25.9	156	-0.6	2.6	13
F30	18	23.0	156	-0.6	2.6	13
F31	36	30.8	156	-0.6	2.6	13
F32	48	35.0	156	-0.6	2.6	13
F33	12	19.7	156	-0.6	2.6	13
F34	-42	33.0	156	-0.6	2.6	13
F35	-54	37.0	156	-0.6	2.6	13
F36	-6	15.8	156	-0.6	2.6	13
F37	30	28.4	156	2.3	5.1	13
F38	-18	23.0	156	-0.6	2.6	13
F39	-48	35.0	156	-0.6	2.6	13
F40	-18	23.0	156	-0.6	2.6	13
F41	12	19.7	156	2.3	5.1	13
F42	0	10.5	156	-0.6	2.6	13
F43	30	28.4	156	-0.6	2.6	13
F44	-48	35.0	156	-0.6	2.6	13
F45	-24	25.9	156	-0.6	2.6	13
F46	30	28.4	156	-0.6	2.6	13
F47	12	19.7	156	-0.6	2.6	13

F48	-18	23.0	156	-0.6	2.6	13
F49	-66	40.6	156	-0.6	2.6	13
F50	18	23.0	156	2.3	5.1	13
F51	-30	28.4	156	-0.6	2.6	13
F52	-54	37.0	156	-0.6	2.6	13
F53	66	40.6	156	-0.6	2.6	13
F54	-66	40.6	156	-0.6	2.6	13
F55	-48	35.0	156	-0.6	2.6	13
F56	-6	15.8	156	-0.6	2.6	13
F57	-42	33.0	156	-0.6	2.6	13
F58	-6	15.8	156	2.3	5.1	13
F59	-6	15.8	156	-0.6	2.6	13
F60	-36	30.8	156	-0.6	2.6	13
F61	12	19.7	156	-0.6	2.6	13
F62	42	33.0	156	-0.6	2.6	13
F63	-6	15.8	156	-0.6	2.6	13
F64	-18	23.0	156	-0.6	2.6	13
F65	-12	19.7	156	-0.6	2.6	13
F66	-30	28.4	156	-0.6	2.6	13
F67	28	27.6	156	5.2	7.6	13
F68	-18	23.0	156	2.3	5.1	13
F69	24	25.9	156	-0.6	2.6	13
F70	48	35.0	156	-0.6	2.6	13
F71	-60	38.8	156	-0.6	2.6	13
F72	-12	19.7	156	-0.6	2.6	13
F73	-84	45.5	156	-0.6	2.6	13
F74	-6	15.8	156	-0.6	2.6	13
F75	0	10.5	156	-0.6	2.6	13
F76	30	28.4	156	-0.6	2.6	13
F77	-24	25.9	156	-0.6	2.6	13
F78	12	19.7	156	-0.6	2.6	13
F79	-6	15.8	156	2.3	5.1	13
F80	-6	15.8	156	-0.6	2.6	13
F81	-36	30.8	156	-0.6	2.6	13
F82	121	54.1	156	2.3	5.1	13
F83	55	37.3	156	-0.6	2.6	13
F84	0	10.5	156	-0.6	2.6	13
F85	-79	44.2	156	-0.6	2.6	13
F86	-12	19.7	156	-0.6	2.6	13
F87	61	39.1	156	-0.6	2.6	13
F88	18	23.0	156	-0.6	2.6	13
F89	12	19.7	156	2.3	5.1	13
F90	-30	28.4	156	2.3	5.1	13
F91	-60	38.8	156	5.2	7.6	13
F92	0	10.5	156	-0.6	2.6	13
F93	-72	42.3	156	-0.6	2.6	13
F94	12	19.7	156	-0.6	2.6	13
F95	-12	19.7	156	-0.6	2.6	13
F96	-12	19.7	156	-0.6	2.6	13
F97	-36	30.8	156	-0.6	2.6	13
F98	-24	25.9	156	-0.6	2.6	13
F99	0	10.5	156	2.3	5.1	13
F100	-24	25.9	156	-0.6	2.6	13
F101	72	42.3	156	-0.6	2.6	13
F102	24	25.9	156	-0.6	2.6	13
F103	36	30.8	156	-0.6	2.6	13

F104	36	30.8	156	2.3	5.1	13
F105	12	19.7	156	-0.6	2.6	13
F106	-48	35.0	156	-0.6	2.6	13
F107	-24	25.9	156	-0.6	2.6	13
F108	18	23.0	156	-0.6	2.6	13
F109	36	30.8	156	5.2	7.6	13
F110	5	15.1	156	-0.6	2.6	13
F111	-24	25.9	156	-0.6	2.6	13
F112	24	25.9	156	-0.6	2.6	13
F113	12	19.7	156	-0.6	2.6	13
F114	-6	15.8	156	-0.6	2.6	13
F115	-24	25.9	156	-0.6	2.6	13
F116	-24	25.9	156	-0.6	2.6	13
F117	48	35.0	156	-0.6	2.6	13
F118	-48	35.0	156	-0.6	2.6	13
F119	36	30.8	156	-0.6	2.6	13
F120	0	10.5	156	-0.6	2.6	13

All floor smears counted on Ludlum 2929 No. 152202 with 43-10
No. 156519:

	Beta	Alpha
Background (cpm)	47	0.2
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	156	13

North and South Interior Room Floors

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA
F1	96	40.3	130	-0.3	1.8	11.4
F2	21	20.4	130	-0.3	1.8	11.4
F3	33	24.7	130	2.5	5.2	11.4
F4	8	14.4	130	2.5	5.2	11.4
F5	25	21.9	130	2.5	5.2	11.4
F6	21	20.4	130	-0.3	1.8	11.4
F7	-13	17.0	130	-0.3	1.8	11.4
F8	13	17.0	130	-0.3	1.8	11.4
F9	4	12.0	130	-0.3	1.8	11.4
F10	-25	21.9	130	5.4	7.7	11.4
F11	-29	23.4	130	-0.3	1.8	11.4
F12	50	29.7	130	5.4	7.7	11.4
F13	-42	27.5	130	-0.3	1.8	11.4
F14	-13	17.0	130	-0.3	1.8	11.4
F15	-17	18.8	130	-0.3	1.8	11.4
F16	21	20.4	130	2.5	5.2	11.4
F17	13	17.0	130	-0.3	1.8	11.4
F18	0	8.9	130	-0.3	1.8	11.4

Room floor smears counted on Ludlum 2929 No. 115563 with 43
10 No. 127216156519:

	Beta	Alpha
Background (cpm)	71	0.11
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.239	0.35
MDA	130	11.4

Elevated Removable Surface Activity Measurements
Molycorp - Building 21 Foundation Only Survey Unit (Affected Area)

No elevated removable surface activity was reported above limits.

Exposure Rate Measurements

Molycorp - Building 21 Foundation Only Survey Unit (Affected Area)

Building Floor

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
F1	15	5
F2	15	5
F3	14	4
F4	15	5
F5	13	3
F6	14	4
F7	15	5
F8	15	5
F9	12	2
F10	12	2
F11	14	4
F12	15	5
F13	12	2
F14	13	3
F15	15	5
F16	15	5
F17	14	4
F18	12	2
F19	12	2
F20	13	3
F21	14	4
F22	14	4
F23	15	5
F24	15	5
F25	12	2
F26	12	2
F27	12	2
F28	15	5
F29	12	2
F30	14	4
F31	15	5
F32	12	2
F33	12	2
F34	15	5
F35	14	4
F36	14	4
F37	12	2
F38	14	4
F39	14	4
F40	15	5
F41	12	2
F42	11	1
F43	12	2
F44	14	4
F45	15	5
F46	15	5

F47	12	2
F48	12	2
F49	13	3
F50	12	2
F51	14	4
F52	14	4
F53	14	4
F54	14	4
F55	12	2
F56	12	2
F57	14	4
F58	14	4
F59	15	5
F60	14	4
F61	12	2
F62	13	3
F63	12	2
F64	11	1
F65	12	2
F66	12	2
F67	14	4
F68	12	2
F69	12	2
F70	12	2
F71	9	-1
F72	11	1
F73	12	2
F74	12	2
F75	14	4
F76	12	2
F77	12	2
F78	14	4
F79	14	4
F80	12	2
F81	9	-1
F82	12	2
F83	13	3
F84	14	4
F85	14	4
F86	12	2
F87	13	3
F88	13	3
F89	13	3
F90	12	2
F91	9	-1
F92	14	4
F93	14	4
F94	13	3
F95	12	2
F96	12	2
F97	14	4
F98	10	0
F99	14	4
F100	9	-1

F101	9	-1
F102	12	2
F103	12	2
F104	14	4
F105	12	2
F106	13	3
F107	13	3
F108	13	3
F109	12	2
F110	12	2
F111	11	1
F112	11	1
F113	12	2
F114	11	1
F115	11	1
F116	12	2
F117	12	2
F118	13	3
F119	13	3
F120	13	3

Background dose rate: 8-10 uR/hr with Model 19, No.22526

North and South Interior Room Floors

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
F1	12	1
F2	12	1
F3	11	0
F4	11	0
F5	12	1
F6	11	0
F7	11	0
F8	11	0
F9	12	1
F10	11	0
F11	11	0
F12	11	0
F13	10	-1
F14	10	-1
F15	11	0
F16	10	-1
F17	10	-1
F18	10	-1

Background dose rate: 10-11 uR/hr with Model 19, No.22526

**Summary of Building Surface Direct Reading (Total Activity) Results
 Molycorp - Building 21 Foundation Only Survey Unit (Affected Area)**

Beta				Alpha			
n	\bar{x}	s	μ_α	n	\bar{x}	s	μ_α
167	81	299.7	119.2	167	128	545.6	198.0
	$t_{1-\alpha}$	1.656					

**Guidelines/Conditions
 Satisfied?**

Beta	Alpha
Yes	Yes

Summary of Exposure Rate Measurements
Molycorp - Building 21 Foundation Only Survey Unit (Affected Area)

n	\bar{x}	s	μ_α
138	2.5	1.7	2.7

$t_{1-\alpha}$ 1.658

**Guidelines/Conditions
Satisfied?
Yes**

Results of Surface Scans

Molycorp - Building 21 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	600	194	2	0.8
W2	560	154	1	-0.2
W3	560	154	1	-0.2
W4	350	-56	1	-0.2
W5	370	-36	2	0.8
W6	380	-26	2	0.8
W7	380	-26	1	-0.2
W8	390	-16	2	0.8
W9	350	-56	3	1.8
W10	320	-86	1	-0.2
W11	320	-86	2	0.8
W12	340	-66	1	-0.2
W13	330	-76	3	1.8
W14	350	-56	1	-0.2
W15	340	-66	2	0.8
W16	340	-66	2	0.8
W17	330	-76	1	-0.2
W18	320	-86	1	-0.2
W19	300	-106	1	-0.2
W20	280	-126	1	-0.2
W21	280	-126	2	0.8
W22	260	-146	2	0.8
W23	330	-76	2	0.8
W24	390	-16	1	-0.2
W25	380	-26	1	-0.2
W26	390	-16	2	0.8
W27	580	174	2	0.8
W28	460	54	2	0.8
W29	440	34	1	-0.2
W30	480	74	1	-0.2
W31	460	54	2	0.8
W32	440	34	2	0.8
W33	380	-26	1	-0.2
W34	360	-46	2	0.8
W35	360	-46	2	0.8
W36	340	-66	2	0.8
W37	360	-46	3	1.8
W38	390	-16	2	0.8
W39	400	-6	1	-0.2
W40	340	-66	1	-0.2
W41	300	-106	1	-0.2
W42	320	-86	3	1.8
W43	480	74	1	-0.2
W44	500	94	1	-0.2
W45	520	114	1	-0.2
W46	620	214	3	1.8
W47	520	114	2	0.8

W48	320	-86	2	0.8
W49	300	-106	1	-0.2
W54	280	-126	2	0.8
W59	260	-146	2	0.8
W60	320	-86	2	0.8
W61	360	-46	1	-0.2
W62	360	-46	2	0.8
W63	320	-86	1	-0.2
W64	380	-26	3	1.8
W65	400	-6	2	0.8
W66	450	44	1	-0.2
W67	400	-6	1	-0.2
W68	400	-6	2	0.8
W69	300	-106	3	1.8
W70	300	-106	1	-0.2
W71	320	-86	2	0.8
W72	340	-66	2	0.8
B73	300	-106	1	-0.2
W74	320	-86	4	2.8
W75	280	-126	6	4.8
CR76	260	-146	2	0.8
W77	260	-146	2	0.8
W78	245	-161	1	-0.2
W79	240	-166	3	1.8
CR80	260	-146	5	3.8
W81	220	-186	4	2.8
CR82	200	-206	4	2.8
W83	280	-126	6	4.8
W84	260	-146	2	0.8
CR85	270	-136	3	1.8
W86	380	-26	3	1.8
W87	400	-6	5	3.8
W88	260	-146	5	3.8
CR89	280	-126	2	0.8
W90	260	-146	4	2.8
CR91	240	-166	3	1.8
W92	220	-186	1	-0.2
W93	210	-196	1	-0.2
W94	360	-46	3	1.8
W95	360	-46	2	0.8
W96	360	-46	1	-0.2

North and South Interior Room Walls

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W1	420	11	2	0.8
W2	440	31	2	0.8
W3	420	11	1	-0.2
W4	400	-9	3	1.8
W5	390	-19	2	0.8
W6	400	-9	1	-0.2
W7	500	91	4	2.8
W8	390	-19	1	-0.2
W9	440	31	2	0.8

W10	440	31	2	0.8
W11	400	-9	4	2.8
W12	380	-29	2	0.8
W13	340	-69	1	-0.2
W14	320	-89	2	0.8
W15	380	-29	2	0.8
W16	400	-9	3	1.8
W17	360	-49	3	1.8
W18	460	51	2	0.8
W19	430	21	4	2.8
W20	440	31	3	1.8
W21	420	11	2	0.8
W22	410	1	2	0.8
W23	400	-9	1	-0.2
W24	400	-9	2	0.8
W25	380	-29	4	2.8
W26	400	-9	2	0.8
W27	410	1	1	-0.2
W28	390	-19	3	1.8
W29	390	-19	2	0.8
W30	400	-9	1	-0.2
W31	390	-19	1	-0.2
W32	410	1	3	1.8
W33	320	-89	2	0.8
W34	340	-69	2	0.8

All interior wall scans performed with Ludlum 2350-1 No.117014 with 43-106
No. 133866

43-106 Info:

Scan MDA Beta - 770 dpm/detector area

Scan MDA Alpha - 62 dpm/detector area

Scan background Beta - 409 cpm

Scan background Alpha - 1.9 cpm

Detector Eff. Beta - .248

Detector Eff. Alpha - .211

Results of Surface Scans

Molycorp - Building 21 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	300	-109	3	1.8
C2	250	-159	1	-0.2
C3	280	-129	1	-0.2
C4	270	-139	4	2.8
C5	280	-129	2	0.8
C6	260	-149	2	0.8
C7	280	-129	3	1.8
C8	260	-149	4	2.8
C9	240	-169	1	-0.2
C10	280	-129	2	0.8
C11	280	-129	2	0.8
C12	260	-149	2	0.8
C13	250	-159	1	-0.2
C14	260	-149	1	-0.2
C15	270	-139	4	2.8
C16	260	-149	3	1.8
C17	260	-149	3	1.8
C18	270	-139	1	-0.2
C19	260	-149	1	-0.2
C20	280	-129	4	2.8
C21	240	-169	1	-0.2
C22	260	-149	3	1.8
C23	250	-159	2	0.8
C24	260	-149	2	0.8

Ceiling scans performed with Ludlum 2350-1 No. 117014 with 43-106 No. 133866

43-106 Info:

Scan MDA Beta - 770 dpm/detector area

Scan MDA Alpha - 62 dpm/detector area

Scan background Beta - 409 cpm

Scan background Alpha - 1.9 cpm

Detector Eff. Beta - .248

Detector Eff. Alpha - .211

Results of Surface Scans

Molycorp - Building 21 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	-69	4	2.8
W2	350	-59	6	4.8
W3	390	-19	4	2.8
W4	320	-89	2	0.8
W5	340	-69	4	2.8
W6	300	-109	1	-0.2
W7	300	-109	1	-0.2
W8	340	-69	2	0.8
W9	300	-109	2	0.8
W10	320	-89	1	-0.2
W11	320	-89	2	0.8
W12	340	-69	4	2.8
W13	360	-49	2	0.8
W14	360	-49	4	2.8

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

43-106 Info:

Scan MDA Beta - 770 dpm/detector area

Scan MDA Alpha - 62 dpm/detector area

Scan background Beta - 409 cpm

Scan background Alpha - 1.9 cpm

Detector Eff. Beta - .248

Detector Eff. Alpha - .211

Elevated Scan Readings

Molycorp - Building 21 Survey Unit Excluding Foundation (Affected Area)

Location (see map)	Alpha Scan net cpm
------------------------------	------------------------------

Building Walls (Interior)

W75	4.8
W83	4.8

Building Exterior (Walls)

W2	4.8
----	-----

Direct Measurements (Total Activity)

Molycorp - Building 21 Survey Unit Excluding Foundation (Affected 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)	Instrument Number
W1	448	384	64	49	15	153	213	383	306	1
W2	418	316	102	49	53	541	246	383	1082	1
W3	356	308	48	49	-1	-10	197	383	-20	1
W4	266	241	25	49	-24	-245	172	383	-490	1
W5	367	300	67	49	18	184	215	383	367	1
W6	239	233	6	49	-43	-439	148	383	-878	1
W7	368	334	34	49	-15	-153	182	383	-306	1
W8	362	235	127	49	78	796	265	383	1592	1
W9	263	252	11	8	3	34	97	180	68	2
W10	253	256	-3	8	-11	-125	50	180	-250	2
W11	268	255	13	8	5	57	102	180	114	2
W12	266	291	-25	8	-33	-375	92	180	-750	2
W13	254	239	15	8	7	80	107	180	159	2
W14	266	241	25	8	17	193	128	180	386	2
W15	268	260	8	8	0	0	89	180	0	2
W16	234	241	-7	8	-15	-170	22	180	-341	2
W17	249	237	12	8	4	45	100	180	91	2
W18	242	250	-8	8	-16	-182	0	180	-364	2
W19	254	247	7	8	-1	-11	86	180	-23	2
W20	267	258	9	8	1	11	92	180	23	2
W21	334	286	48	8	40	455	167	180	909	2
W22	343	308	35	8	27	307	146	180	614	2
W23	281	261	20	8	12	136	118	180	273	2
W24	361	269	92	49	43	439	237	383	878	1
W25	373	274	99	49	50	510	243	383	1020	1
W26	352	321	31	49	-18	-184	179	383	-367	1
W27	450	338	112	49	63	643	254	383	1286	1
W28	328	274	54	49	5	57	226	401	114	2
W29	403	316	87	49	38	432	260	401	864	2
W30	317	250	67	49	18	205	240	401	409	2
W31	419	316	103	49	54	614	275	401	1227	2

W32	271	272	-1	8	-9	-102	59	180	-205	2
W33	292	275	17	8	9	102	111	180	205	2
W34	252	241	11	8	3	34	97	180	68	2
W35	248	241	7	8	-1	-11	86	180	-23	2
W36	256	272	-16	8	-24	-273	63	180	-545	2
W37	277	244	33	8	25	284	143	180	568	2
W38	364	261	103	49	54	614	275	401	1227	2
W39	439	293	146	49	97	1102	311	401	2205	2
W40	248	234	14	8	6	68	104	180	136	2
W41	246	240	6	8	-2	-23	83	180	-45	2
W42	393	317	76	49	27	307	249	401	614	2
W43	476	393	83	49	34	386	256	401	773	2
W44	457	359	98	49	49	557	270	401	1114	2
W45	398	305	93	49	44	500	265	401	1000	2
W46	447	318	129	49	80	909	297	401	1818	2
W47	452	302	150	49	101	1148	314	401	2295	2
W48	312	255	57	8	49	557	180	180	1114	2
W49	266	241	25	8	17	193	128	180	386	2
W54	237	217	20	8	12	136	118	180	273	2
W59	235	225	10	8	2	23	94	180	45	2
W60	282	271	11	49	-38	-432	173	401	-864	2
W61	339	272	67	49	18	205	240	401	409	2
W62	349	268	81	49	32	364	254	401	727	2
W63	316	267	49	49	0	0	220	401	0	2
W64	369	256	113	49	64	727	283	401	1455	2
W65	370	287	83	49	34	386	256	401	773	2
W66	456	358	98	49	49	557	270	401	1114	2
W67	382	272	110	49	61	693	281	401	1386	2
W68	360	267	93	49	44	500	265	401	1000	2
W69	263	255	8	8	0	0	89	180	0	2
W70	271	228	43	8	35	398	159	180	795	2
W71	284	259	25	8	17	193	128	180	386	2
W72	371	277	94	8	86	977	225	180	1955	2
B73	266	272	-6	8	-14	-159	31	180	-318	2
W74	295	263	32	8	24	273	141	180	545	2
W75	227	210	17	8	9	102	111	180	205	2
CR76	256	197	59	8	51	580	182	180	1159	2
W77	232	230	2	8	-6	-68	70	180	-136	2
W78	240	216	24	8	16	182	126	180	364	2
W79	236	217	19	8	11	125	116	180	250	2

CR80	273	242	31	8	23	261	139	180	523	2
W81	224	241	-17	8	-25	-284	67	180	-568	2
CR82	182	205	-23	8	-31	-352	86	180	-705	2
W83	208	202	6	8	-2	-23	83	180	-45	2
W84	257	225	32	8	24	273	141	180	545	2
CR85	271	226	45	8	37	420	162	180	841	2
W86	378	246	132	8	124	1409	264	180	2818	2
W87	401	263	138	8	130	1477	269	180	2955	2
W88	254	266	-12	8	-20	-227	45	180	-455	2
CR89	250	208	42	8	34	386	157	180	773	2
W90	228	193	35	8	27	307	146	180	614	2
CR91	236	195	41	8	33	375	156	180	750	2
W92	222	221	1	8	-7	-80	67	180	-159	2
W93	203	217	-14	8	-22	-250	55	180	-500	2
W94	362	294	68	8	60	682	194	180	1364	2
W95	388	299	89	8	81	920	219	180	1841	2
W96	278	229	49	8	41	466	168	180	932	2
L1	296	302	-6	8	-14	-159	31	180	-318	2
L2	257	263	-6	8	-14	-159	31	180	-318	2
L3	372	274	98	8	90	1023	229	180	2045	2

North and South Interior Room Walls

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)	Instrument Number
W1	329	247	82	49	33	375	255	401	750	2
W2	357	284	73	49	24	273	246	401	545	2
W3	327	280	47	49	-2	-23	218	401	-45	2
W4	319	294	25	49	-24	-273	192	401	-545	2
W5	338	288	50	49	1	11	222	401	23	2
W6	405	318	87	49	38	432	260	401	864	2
W7	305	274	31	49	-18	-205	199	401	-409	2
W8	274	245	29	49	-20	-227	197	401	-455	2
W9	323	270	53	49	4	45	225	401	91	2
W10	326	256	70	49	21	239	243	401	477	2
W11	310	271	39	49	-10	-114	209	401	-227	2
W12	329	269	60	49	11	125	233	401	250	2
W13	248	268	-20	49	-69	-784	120	401	-1568	2
W14	302	282	20	49	-29	-330	185	401	-659	2

W15	313	269	44	49	-5	-57	215	401	-114	2
W16	343	272	71	49	22	250	244	401	500	2
W17	330	287	43	49	-6	-68	214	401	-136	2
W18	356	289	67	49	18	205	240	401	409	2
W19	400	320	80	49	31	352	253	401	705	2
W20	331	289	42	49	-7	-80	212	401	-159	2
W21	324	270	54	49	5	57	226	401	114	2
W22	337	305	32	49	-17	-193	200	401	-386	2
W23	334	297	37	49	-12	-136	207	401	-273	2
W24	335	277	58	49	9	102	230	401	205	2
W25	352	285	67	49	18	205	240	401	409	2
W26	337	297	40	49	-9	-102	210	401	-205	2
W27	322	269	53	49	4	45	225	401	91	2
W28	327	267	60	49	11	125	233	401	250	2
W29	301	268	33	49	-16	-182	202	401	-364	2
W30	280	229	51	49	2	23	223	401	45	2
W31	361	292	69	49	20	227	242	401	455	2
W32	312	267	45	49	-4	-45	216	401	-91	2
W33	295	272	23	49	-26	-295	189	401	-591	2
W34	331	285	46	49	-3	-34	217	401	-68	2

All building interior wall direct measurements were performed with either:

#1 - 2224-1 No. 129463 and 43-89 No. 169230

	Beta	Alpha
Efficiency	0.098	0.155
Wall Background (cpm)	8	3.7
Cinderblock Wall Background (cpm)	49	3.7
Wall MDA (dpm/100 cm ²)	173	76
Cinderblock Wall MDA (dpm/100 cm ²)	383	76

OR

#2 - 2360 No. 156371 and 43-89 No. 164832

	Beta	Alpha
Efficiency	0.088	0.153
Wall Background (cpm)	8	3.7
Cinderblock Wall Background (cpm)	49	3.7
Wall MDA (dpm/100 cm ²)	180	76
Cinderblock Wall MDA (dpm/100 cm ²)	401	76

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

Direct Measurements (Total Activity)**Molycorp - Building 21 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/100cm ²)	Uncertainty 95% CL	MDA (dpm/100cm ²)	Direct Alpha (1) (dpm/100cm ²)
C1	316	275	41	8	33	375	156	180	750
C2	271	256	15	8	7	80	107	180	159
C3	264	248	16	8	8	91	109	180	182
C4	264	284	-20	8	-28	-318	77	180	-636
C5	247	261	-14	8	-22	-250	55	180	-500
C6	261	258	3	8	-5	-57	74	180	-114
C7	282	300	-18	8	-26	-295	70	180	-591
C8	256	254	2	8	-6	-68	70	180	-136
C9	278	230	48	8	40	455	167	180	909
C10	256	240	16	8	8	91	109	180	182
C11	290	286	4	8	-4	-45	77	180	-91
C12	260	268	-8	8	-16	-182	0	180	-364
C13	252	250	2	8	-6	-68	70	180	-136
C14	226	208	18	8	10	114	114	180	227
C15	260	253	7	8	-1	-11	86	180	-23
C16	243	261	-18	8	-26	-295	70	180	-591
C17	248	226	22	8	14	159	122	180	318
C18	211	226	-15	8	-23	-261	59	180	-523
C19	245	231	14	8	6	68	104	180	136
C20	245	245	0	8	-8	-91	63	180	-182
C21	246	249	-3	8	-11	-125	50	180	-250
C22	238	240	-2	8	-10	-114	55	180	-227
C23	270	260	10	8	2	23	94	180	45
C24	248	220	28	8	20	227	134	180	455

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 cm ²)	180	76

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

Direct Measurements (Total Activity)

Molycorp - Building 21 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/100cm ²)	Uncertainty 95% CL	MDA (dpm/100cm ²)	Direct Alpha (1) (dpm/100cm ²)
W1	325	278	47	49	-2	-23	218	180	-45
W2	321	292	29	49	-20	-227	197	180	-455
W3	365	300	65	49	16	182	238	180	364
W4	291	264	27	49	-22	-250	194	180	-500
W5	299	236	63	49	14	159	236	180	318
W6	284	253	31	49	-18	-205	199	180	-409
W7	283	240	43	49	-6	-68	214	180	-136
W8	323	251	72	49	23	261	245	180	523
W9	306	264	42	49	-7	-80	212	180	-159
W10	320	256	64	49	15	170	237	180	341
W11	342	262	80	49	31	352	253	180	705
W12	282	264	18	49	-31	-352	182	180	-705
W13	364	318	46	49	-3	-34	217	180	-68
W14	362	318	44	49	-5	-57	215	180	-114
W15	340	280	60	49	11	125	233	180	250
W16	353	278	75	49	26	295	248	180	591
W17	312	250	62	49	13	148	235	180	295
W18	324	255	69	49	20	227	242	180	455
W19	328	256	72	49	23	261	245	180	523
W20	326	257	69	49	20	227	242	180	455
W21	320	267	53	49	4	45	225	180	91
W22	303	265	38	49	-11	-125	208	180	-250
W23	286	267	19	49	-30	-341	184	180	-682
W24	297	265	32	49	-17	-193	200	180	-386
W25	495	392	103	49	54	614	275	180	1227
W26	637	625	12	49	-37	-420	174	180	-841
W27	434	370	64	49	15	170	237	180	341
W28	346	299	47	49	-2	-23	218	180	-45
W29	319	277	42	49	-7	-80	212	180	-159
W30	340	286	54	49	5	57	226	180	114

All building exterior 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 cm ²)	180	76

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

Elevated Direct Measurements (Total Activity) and Averaging Results
Molycorp - Building 21 Survey Unit Excluding Foundation (Affected Area)

Location	Direct Beta (dpm/100cm ²)	Direct Alpha (dpm/100cm ²)	Over Area (cm ²)	Exceeds Limits?		Averaged Value (over 1 m ²)	Within Limits? Yes/No
				Maximum	Average		
Building Walls (Interior)							
W2		1082		No	Yes	Marked for removal/remediation	
W8		1592	300	No	Yes	430	Yes
W25		1029		No	Yes	Marked for removal/remediation	
W27		1286		No	Yes	Marked for removal/remediation	
W31		1227		No	Yes	Marked for removal/remediation	
W38		1227	500	No	Yes	808	Yes
W39	1102	2205		No	Yes	Marked for removal/remediation	
W44		1114		No	Yes	Marked for removal/remediation	
W46		1818		No	Yes	Marked for removal/remediation	
W47	1148	2295		No	Yes	Marked for removal/remediation	
W48		1114	100	No	Yes	60	Yes
W64		1455	600	No	Yes	906	Yes
W66		1114		No	Yes	Marked for removal/remediation	
W67		1386		No	Yes	Marked for removal/remediation	
W72		1955	500	No	Yes	954	Yes
CR76		1159		No	Yes	Marked for removal/remediation	
W86	1409	2818		No	Yes	Marked for removal/remediation	
W87	1477	2955		No	Yes	Marked for removal/remediation	
W94		1364		No	Yes	Marked for removal/remediation	
W95		1841	200	No	Yes	428	Yes
L3	1023	2045		No	Yes	Marked for removal/remediation	
Building Exterior (Walls)							
W25		1227		No	Yes	Marked for removal/remediation	

Removable Surface Activity Measurements

Molycorp - Building 21 Survey Unit Excluding Foundation (Affected Area)

Building Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument #
W1	25	21.9	130	-0.6	2.6	13	1
W2	-8	14.4	130	-0.6	2.6	13	1
W3	50	29.7	130	-0.6	2.6	13	1
W4	-12	16.5	130	-0.6	2.6	13	1
W5	8	14.4	130	-0.6	2.6	13	1
W6	-16	18.4	130	2.2	4.9	13	1
W7	21	20.4	130	2.2	4.9	13	1
W8	58	31.8	130	2.2	4.9	13	1
W9	-25	21.9	130	2.2	4.9	13	1
W10	84	37.8	130	2.2	4.9	13	1
W11	25	21.9	130	-0.6	2.6	13	1
W12	50	29.7	130	-0.6	2.6	13	1
W13	58	31.8	130	-0.6	2.6	13	1
W14	16	18.4	130	-0.6	2.6	13	1
W15	-12	16.5	130	-0.6	2.6	13	1
W16	-12	16.5	130	2.2	4.9	13	1
W17	-8	14.4	130	5.0	7.4	13	1
W18	33	24.7	130	2.2	4.9	13	1
W19	29	23.4	130	2.2	4.9	13	1
W20	21	20.4	130	-0.6	2.6	13	1
W21	-12	16.5	130	-0.6	2.6	13	1
W22	-16	18.4	130	5.0	7.4	13	1
W23	12	16.5	130	2.2	4.9	13	1
W24	8	14.4	130	2.2	4.9	13	1
W25	21	20.4	130	5.0	7.4	13	1
W26	25	21.9	130	5.0	7.4	13	1
W27	21	20.4	130	-0.6	2.6	13	1
W28	-4	12.0	130	-0.6	2.6	13	1
W29	8	14.4	130	2.2	4.9	13	1
W30	-4	12.0	130	-0.6	2.6	13	1
W31	12	16.5	130	-0.6	2.6	13	1
W32	-8	14.4	130	2.2	4.9	13	1
W33	-12	16.5	130	-0.6	2.6	13	1
W34	25	21.9	130	-0.6	2.6	13	1
W35	-4	12.0	130	-0.6	2.6	13	1
W36	-12	16.5	130	-0.6	2.6	13	1
W37	-16	18.4	130	2.2	4.9	13	1
W38	25	21.9	130	2.2	4.9	13	1
W39	-4	12.0	130	-0.6	2.6	13	1
W40	84	37.8	130	-0.6	2.6	13	1
W41	-12	16.5	130	2.2	4.9	13	1
W42	-4	12.0	130	-0.6	2.6	13	1
W43	50	29.7	130	-0.6	2.6	13	1
W44	-8	14.4	130	-0.6	2.6	13	1
W45	-12	16.5	130	2.2	4.9	13	1
W46	29	23.4	130	-0.6	2.6	13	1
W47	-16	18.4	130	-0.6	2.6	13	1
W48	-18	19.2	130	2.5	5.2	12	2
W49	-24	21.6	130	-0.4	2.1	12	2
W54	-18	19.2	130	-0.4	2.1	12	2
W59	84	37.8	130	2.5	5.2	12	2

W60	18	19.2	130	-0.4	2.1	12	2
W61	24	21.6	130	-0.4	2.1	12	2
W62	-24	21.6	130	-0.4	2.1	12	2
W63	18	19.2	130	-0.4	2.1	12	2
W64	-8	14.4	130	2.5	5.2	12	2
W65	30	23.7	130	-0.4	2.1	12	2
W66	78	36.5	130	-0.4	2.1	12	2
W67	36	25.7	130	-0.4	2.1	12	2
W68	-36	25.7	130	2.5	5.2	12	2
W69	24	21.6	130	2.5	5.2	12	2
W70	8	14.4	130	2.5	5.2	12	2
W71	103	41.7	130	5.4	7.7	12	2
W72	21	20.4	130	-0.4	2.1	12	2
B73	8	14.4	130	5.0	7.4	12	2
W74	42	27.5	130	-0.4	2.1	12	2
W75	-17	18.8	130	11.0	11.0	12	2
CR76	8	14.4	130	-0.4	2.1	12	2
W77	21	20.4	130	2.0	4.7	12	2
W78	33	24.7	130	8.0	9.4	12	2
W79	29	23.4	130	-0.4	2.1	12	2
CR80	42	27.5	130	2.0	4.7	12	2
W81	-8	14.4	130	5.0	7.4	12	2
CR82	4	12.0	130	-0.4	2.1	12	2
W83	17	18.8	130	2.0	4.7	12	2
W84	8	14.4	130	8.0	9.4	12	2
CR85	33	24.7	130	-0.4	2.1	12	2
W86	17	18.8	130	2.0	4.7	12	2
W87	-29	23.4	130	-0.4	2.1	12	2
W88	8	14.4	130	-0.4	2.1	12	2
CR89	29	23.4	130	-0.4	2.1	12	2
W90	-46	28.6	130	-0.4	2.1	12	2
CR91	17	18.8	130	5.0	7.4	12	2
W92	42	27.5	130	2.5	5.2	12	2
W93	-42	27.5	130	-0.4	2.1	12	2
W94	-17	18.8	130	11.0	11.0	12	2
W95	21	20.4	130	-0.4	2.1	12	2
W96	-7	13.9	130	-0.4	2.1	12	2
L1	21	20.4	130	-0.4	2.1	12	2
L2	-17	18.8	130	-0.4	2.1	12	2
L3	-7	13.9	130	-0.4	2.1	12	2

All wall smears counted on either:

#1 - Ludlum 2929 No. 115563 with 43-10
No. 127216:

	Beta	Alpha
Background (cpm)	71	0.2
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.239	0.35
MDA	130	13

or

#2 - Ludlum 2929 No. 115563 with 43-10
No. 127216:

	Beta	Alpha
Background (cpm)	71	0.13
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.239	0.35
MDA	130	12

North and South Interior Room Walls

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument #
W1	46	28.6	130	-0.3	1.8	11.4	2
W2	-25	21.9	130	-0.3	1.8	11.4	2
W3	-13	17.0	130	-0.3	1.8	11.4	2
W4	-4	12.0	130	2.5	5.2	11.4	2
W5	21	20.4	130	2.5	5.2	11.4	2
W6	42	27.5	130	2.5	5.2	11.4	2
W7	63	33.0	130	-0.3	1.8	11.4	2
W8	-13	17.0	130	5.4	7.7	11.4	2
W9	-8	14.4	130	-0.3	1.8	11.4	2
W10	-13	17.0	130	-0.3	1.8	11.4	2
W11	8	14.4	130	-0.3	1.8	11.4	2
W12	21	20.4	130	2.5	5.2	11.4	2
W13	8	14.4	130	-0.3	1.8	11.4	2
W14	33	24.7	130	-0.3	1.8	11.4	2
W15	-29	23.4	130	-0.3	1.8	11.4	2
W16	-46	28.6	130	-0.3	1.8	11.4	2
W17	25	21.9	130	2.5	5.2	11.4	2
W18	8	14.4	130	2.5	5.2	11.4	2
W19	13	17.0	130	-0.3	1.8	11.4	2
W20	4	12.0	130	-0.3	1.8	11.4	2
W21	4	12.0	130	5.4	7.7	11.4	2
W22	-17	18.8	130	-0.3	1.8	11.4	2
W23	59	32.1	130	-0.3	1.8	11.4	2
W24	-4	12.0	130	-0.3	1.8	11.4	2
W25	4	12.0	130	-0.3	1.8	11.4	2
W26	8	14.4	130	-0.3	1.8	11.4	2
W27	-4	12.0	130	5.4	7.7	11.4	2
W28	4	12.0	130	-0.3	1.8	11.4	2
W29	-4	12.0	130	-0.3	1.8	11.4	2
W30	0	8.9	130	-0.3	1.8	11.4	2
W31	8	14.4	130	-0.3	1.8	11.4	2
W32	25	21.9	130	5.4	7.7	11.4	2
W33	21	20.4	130	5.4	7.7	11.4	2
W34	0	8.9	130	-0.3	1.8	11.4	2

All room wall smears counted on Ludlum 2929 No. 115563 with
43-10 No. 127216:

	Beta	Alpha
Background (cpm)	71	0.11
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.239	0.35
MDA	130	11.4

Removable Surface Activity Measurements
Molycorp - Building 21 Survey Unit Excluding Foundation (Affected Area)

Building Ceiling (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA
C1	8	14.4	130	-0.4	2.1	12
C2	8	14.4	130	-0.4	2.1	12
C3	0	8.9	130	2.5	5.2	12
C4	4	12.0	130	-0.4	2.1	12
C5	-12	16.5	130	5.4	7.7	12
C6	12	16.5	130	2.5	5.2	12
C7	-4	12.0	130	-0.4	2.1	12
C8	8	14.4	130	2.5	5.2	12
C9	12	16.5	130	-0.4	2.1	12
C10	-4	12.0	130	-0.4	2.1	12
C11	0	8.9	130	-0.4	2.1	12
C12	-16	18.4	130	2.5	5.2	12
C13	-8	14.4	130	-0.4	2.1	12
C14	-4	12.0	130	-0.4	2.1	12
C15	4	12.0	130	-0.4	2.1	12
C16	12	16.5	130	-0.4	2.1	12
C17	8	14.4	130	-0.4	2.1	12
C18	-12	16.5	130	2.5	5.2	12
C19	0	8.9	130	2.5	5.2	12
C20	-8	14.4	130	2.5	5.2	12
C21	-4	12.0	130	-0.4	2.1	12
C22	16	18.4	130	-0.4	2.1	12
C23	4	12.0	130	-0.4	2.1	12
C24	8	14.4	130	-0.4	2.1	12

All ceiling smears counted on Ludlum 2929 No. 115563 with 43-10 No. 127216:

	Beta	Alpha
Background (cpm)	71	0.13
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.239	0.35
MDA	130	12

Removable Surface Activity Measurements
Molycorp - Building 21 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Walls)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA
W1	-4	12.0	130	-0.4	2.1	11.4
W2	0	8.9	130	-0.4	2.1	11.4
W3	12	16.5	130	2.5	5.2	11.4
W4	8	14.4	130	-0.4	2.1	11.4
W5	0	8.9	130	2.5	5.2	11.4
W6	-4	12.0	130	-0.4	2.1	11.4
W7	0	8.9	130	-0.4	2.1	11.4
W8	12	16.5	130	-0.4	2.1	11.4
W9	-4	12.0	130	2.5	5.2	11.4
W10	12	16.5	130	-0.4	2.1	11.4
W11	0	8.9	130	-0.4	2.1	11.4
W12	20	20.0	130	2.5	5.2	11.4
W13	-8	14.4	130	-0.4	2.1	11.4
W14	-4	12.0	130	-0.4	2.1	11.4
W15	12	16.5	130	-0.4	2.1	11.4
W16	16	18.4	130	2.5	5.2	11.4
W17	16	18.4	130	2.5	5.2	11.4
W18	-12	16.5	130	-0.4	2.1	11.4
W19	20	20.0	130	-0.4	2.1	11.4
W20	12	16.5	130	-0.4	2.1	11.4
W21	0	8.9	130	2.5	5.2	11.4
W22	4	12.0	130	-0.4	2.1	11.4
W23	4	12.0	130	2.5	5.2	11.4
W24	16	18.4	130	2.5	5.2	11.4
W25	-16	18.4	130	2.5	5.2	11.4
W26	4	12.0	130	-0.4	2.1	11.4
W27	12	16.5	130	-0.4	2.1	11.4
W28	-8	14.4	130	-0.4	2.1	11.4
W29	-12	16.5	130	-0.4	2.1	11.4
W30	4	12.0	130	2.5	5.2	11.4

All exterior smears counted on Ludlum 2929 No. 115563 with 43-10 No. 127216:

	Beta	Alpha
Background (cpm)	71	0.11
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.239	0.35
MDA	130	11.4

Elevated Removable Surface Activity Measurements
Molycorp - Building 21 Survey Unit Excluding Foundation (Affected Area)

No elevated removable surface activity was reported above limits.

Exposure Rate Measurements

Molycorp - Building 21 Survey Unit Excluding Foundation (Affected Area)

Building Walls (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
W1	17	7
W2	16	6
W3	16	6
W4	15	5
W5	15	5
W6	15	5
W7	14	4
W8	14	4
W9	14	4
W10	13	3
W11	13	3
W12	13	3
W13	13	3
W14	12	2
W15	12	2
W16	12	2
W17	12	2
W18	11	1
W19	11	1
W20	12	2
W21	11	1
W22	12	2
W23	12	2
W24	11	1
W25	12	2
W26	11	1
W27	11	1
W28	12	2
W29	12	2
W30	11	1
W31	10	0
W32	10	0
W33	10	0
W34	11	1
W35	12	2
W36	12	2
W37	11	1
W38	12	2
W39	12	2
W40	15	5
W41	15	5
W42	15	5
W43	15	5
W44	16	6
W45	17	7
W46	17	7

W47	18	8
W48	11	1
W49	11	1
W54	12	2
W59	11	1
W60	12	2
W61	11	1
W62	11	1
W63	10	0
W64	11	1
W65	11	1
W66	11	1
W67	12	2
W68	12	2
W69	13	3
W70	12	2
W71	13	3
W72	8	-2
B73	8	-2
W74	8	-2
W75	7	-3
CR76	6	-4
W77	6	-4
W78	7	-3
W79	7	-3
CR80	7	-3
W81	7	-3
CR82	7	-3
W83	7	-3
W84	8	-2
CR85	8	-2
W86	8	-2
W87	8	-2
W88	8	-2
CR89	8	-2
W90	6	-4
CR91	6	-4
W92	5	-5
W93	5	-5
W94	10	0
W95	10	0
W96	8	-2
L1	9	-1
L2	9	-1
L3	8	-2

Background dose rate: 8-10 uR/hr with Model 19, No.22526

North and South Interior Room Walls

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
-----------------------	--------------------------	-------------------------

W1	12	1
W2	12	1
W3	12	1
W4	11	0
W5	11	0
W6	11	0
W7	11	0
W8	11	0
W9	11	0
W10	12	1
W11	12	1
W12	11	0
W13	12	1
W14	13	2
W15	10	-1
W16	10	-1
W17	11	0
W18	10	-1
W19	10	-1
W20	10	-1
W21	10	-1
W22	10	-1
W23	10	-1
W24	10	-1
W25	10	-1
W26	10	-1
W27	11	0
W28	10	-1
W29	10	-1
W30	11	0
W31	10	-1
W32	10	-1
W33	12	1
W34	12	1

Background dose rate: 10-11 uR/hr with Model 19, No.22526

Building Ceiling (Interior)

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
C1	9	-2
C2	10	-1
C3	8	-3
C4	10	-1
C5	8	-3
C6	6	-5
C7	9	-2
C8	8	-3
C9	7	-4

C10	8	-3
C11	7	-4
C12	7	-4
C13	7	-4
C14	7	-4
C15	8	-3
C16	6	-5
C17	6	-5
C18	7	-4
C19	6	-5
C20	7	-4
C21	7	-4
C22	9	-2
C23	10	-1
C24	10	-1

Background dose rate: 10-11 uR/hr with Model 19, No.22526

Exposure Rate Measurements

Molycorp - Building 21 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Walls)

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
W1	12	-2
W2	12	-2
W3	16	2
W4	16	2
W5	12	-2
W6	12	-2
W7	12	-2
W8	16	2
W9	12	-2
W10	11	-3
W11	12	-2
W12	16	2
W13	16	2
W14	12	-2
W15	12	-2
W16	12	-2
W17	13	-1
W18	13	-1
W19	14	0
W20	14	0
W21	14	0
W22	16	2
W23	16	2
W24	16	2
W25	18	2
W26	30	14
W27	30	14
W28	15	1
W29	15	1
W30	15	1

Background dose rate: 10-16 uR/hr with Model 19, No.22526

Exposure Rate Measurements

Molycorp - Building 21 Survey Unit Excluding Foundation (Affected Area)

Building Exterior (Roof)

Location	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	9	0
see map	10	1
see map	10	1
see map	9	0
see map	9	0
see map	10	1
see map	10	1
see map	9	0
see map	9	0
see map	10	1
see map	10	1
see map	9	0
see map	9	0

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

Summary of Building Surface Direct Reading (Total Activity) Results
Molycorp - Building 21 Survey Unit Excluding Foundation (Affected Area)

Beta				Alpha			
n	\bar{x}	s	μ_α	n	\bar{x}	s	μ_α
137	-264	299.6	-221.7	137	-528	599.2	-443.4
	$t_{1-\alpha}$	1.654					

Guidelines/Conditions Satisfied?

Beta	Alpha
Yes	Yes

Summary of Exposure Rate Measurements
Molycorp - Building 21 Survey Unit Excluding Foundation (Affected Area)

n	\bar{x}	s	μ_α
209	0.2	2.9	0.5

$t_{1-\alpha}$ 1.655

**Guidelines/Conditions
Satisfied?
Yes**

Appendix F

Building 22 Data Package

Molycorp Washington, PA

Building 22 Data Package

This data package contains final status survey information for Building 22, 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 22, elevated radioactivity was identified in multiple localized areas on the concrete floor and on several structural support components of the building (purlins). The building's classification was changed from unaffected to affected, and an affected final status survey was performed.

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 22.

Results from the final status survey of Building 22 provides evidence that release criteria have been met, demonstrates that residual radioactivity is below the unrestricted use criteria, and confirms that Building 22 is suitable for unrestricted use, excluding the contaminated purlins that will be removed during demolition.

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

Section 1: Survey Information **AFFECTED SURVEY BLDG 22**

Date: **4-25-02** Time: **1705** Location: **BLDG 22** Survey Issue Log Number: **02-0131**

RWP Number: **N/A** Purpose of Survey: RWP Routine Survey Unconditional Release Other: Page **1** of **29**

Survey Title: **Affected Bldg 22**

Smear Number	Beta dpm/100cm ²	Alpha dpm/100cm ²
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		

BKGDS FOR STATIC READINGS
FLOOR 2.4... B-78 α MDA 3497
WALL 3.7 8... 76 180
BLOCK 3.7 49 76 400
WOOD 1.6 8 56 180
 See Below for cal due and eff.

2929/152202 PROBE **43-10/156519**
CAL DUE 12-6-03 **CAL DUE** 12-6-03
EFFY α .344 **MDA** α 12
B .165 **B** 152
BKG α .2
B 44

SMears w-1-5 counted on same 2929 with DIFFERENT
Bkgs α .12 **B** 45

Bkgs Readings:

Legend:
 00 = mRem/h gamma 00 C = mRem/h gamma contact \odot = Smear Location ∇ = Air Sample Location -X-X- = Rope, Boundary, or Barrier
 00 β = mRem/h beta 00 β C = mRem/h beta contact \dashv = 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
2350-1/95359	8-6-02	43-37/092503	8-6-02	.27/.307	β 208/ α 26	β BKG α 1795 / 17
2350-1/117560	8-6-02	43-106/129912	8-6-02	.251/.212	693/60	339 / 1.8
2350-1/117563	8-13-02	43-106/123866	8-6-02	.248/.211	668/8.9	307 / .2
MODEL 19/115970	8-6-02					
2360/156371	8-15-02	43-59/164932	8-5-07	.098/.153	SEE ABOVE	

Section 3: Review and Approval

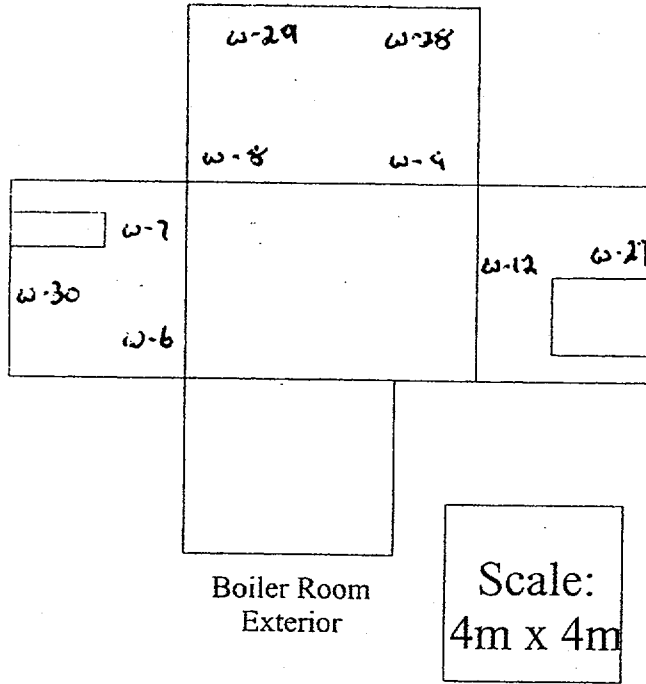
Survey Performed By (Sign): **Mark B. [Signature]** Area Posted and/or Barncaded: Yes No Not Required Date and Time: **4-25-02 / 1705**

Radiation Safety Officer (Print Name & Sign): **Mike McDonald** [Signature] Date and Time: **5-15-02 0740**

North

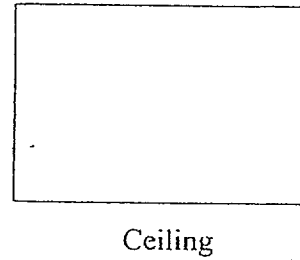
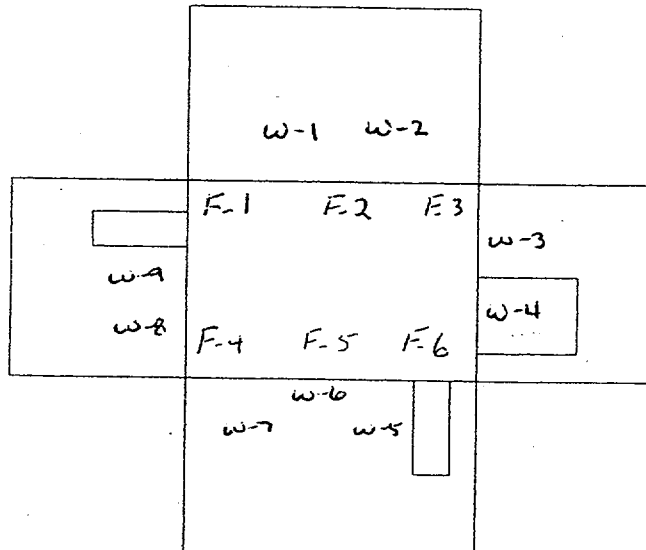
W-6-9, 12, 27-30

SEE PAGE 3 of 29

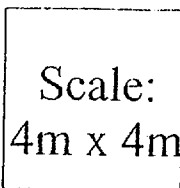


Building 22 North

3kgd 7-9 m/HR



Boiler Room
Interior



02-0131

RADIOLOGICAL SURVEY RESULTS - SURVEY LOCATION INDICATOR

Survey Area Information: *Bldg 22 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 (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
* W-6			268	252	6	13	-0.6	-12
* W-7			309	248	2	14	-0.6	6
* W-8			288	239	2	16	-0.6	42
* W-9	480	8	291	249	1	16	-0.6	-6
* W-10			244	236	5	15	2.3	24
* W-11			318	248	3	16	2.3	12
* W-12			291	246	6	17	-0.6	12
* W-13	510	12	286	276	4	16	-0.6	0
* W-14			304	289	4	16	-0.6	-12
* W-15			255	240	2	12	5.3	-24
* W-16			293	281	1	11	2.3	54
* W-17			306	242	3	11	2.3	36
* W-18			292	271	3	21	-0.6	-12
* W-19			312	266	3	24	-0.6	-24
* W-20			342	311	3	19	-0.6	6
* W-21			394	304	1	20	-0.6	61
* W-22			408	389	0	25	-0.6	55
* W-23	550	10	327	280	2	20	-0.6	-48
* W-24			276	258	5	12	5.3	-12
* W-25			266	239	2	11	-0.6	-24
* W-26	500	14	272	236	3	14	2.3	24
* W-27			281	280	1	16	2.3	78
* W-28	490	6	328	255	4	15	2.3	36
* W-29			278	265	2	16	-0.6	-24
* W-30			307	263	4	16	-0.6	-12

* CINDER Block

RADIOLOGICAL SURVEY RESULTS - SURVEY LOCATION INDICATOR

Survey Area Information:

Bldg #20 Boiler Room + 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
		2350-1/117563						

Performed By:	Print Name	Signature	Date

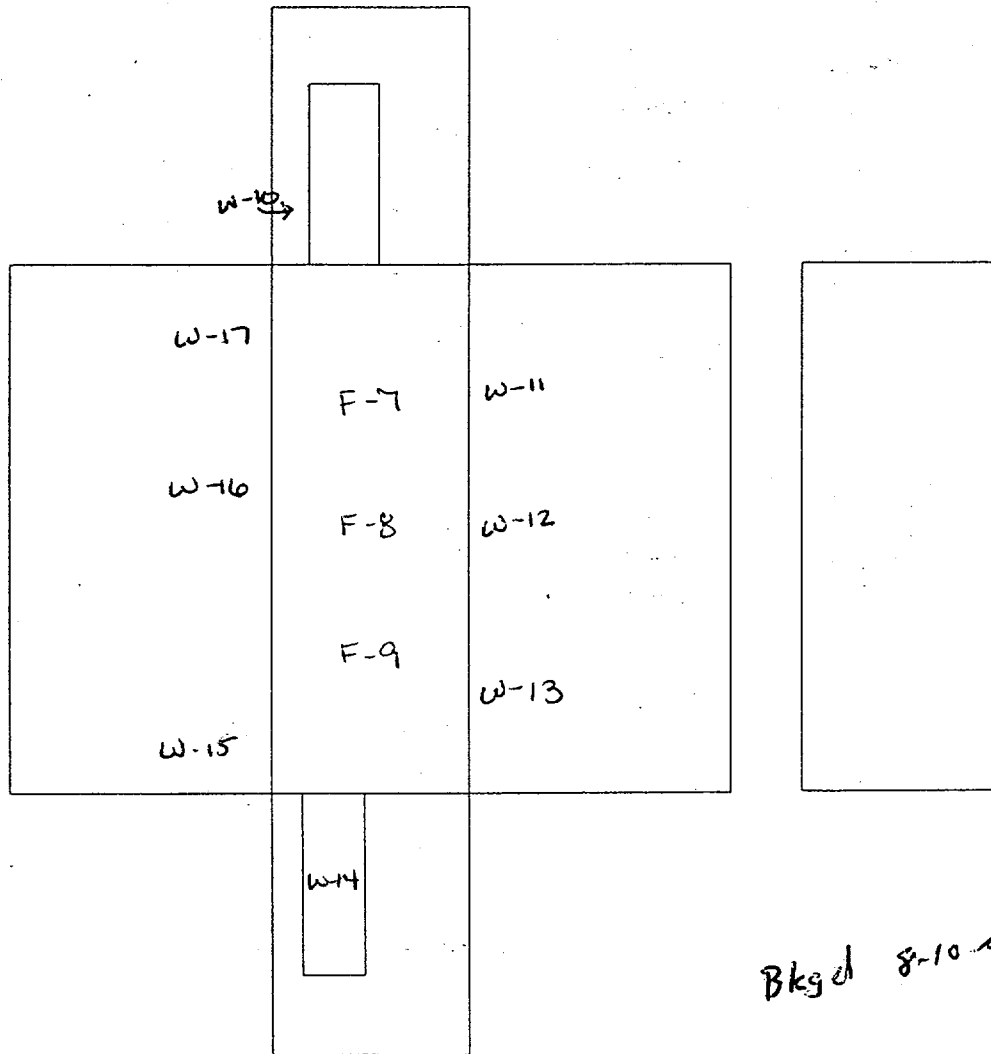
Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm ²)	
							α	β
* W-1	300	1.6	267	235	3	7	-1.6	54
* W-2	290	1	253	218	0	8	-1.6	-36
* W-3	305	1	297	223	0	8	-1.6	12
* W-4	320	1.4	251	234	2	10	-1.6	-30
* W-5	320	.8	265	230	2	10	2.3	42
* W-6	301	1	331	279	2	9	-1.6	78
* W-7	290	1	307	243	1	9	-1.6	-12
* W-8	300	1	260	228	1	8	-1.6	6
* W-9	310	1	265	226	4	8	2.3	-42
F-1	1600	7	431	361	6	11	-1.6	24
F-2	1760	10	402	333	4	11	2.3	24
F-3	1700	12	399	346	7	12	-1.6	6
F-4	1480	10	411	325	5	10	-1.6	12
F-5	1500	10	385	306	4	10	-1.6	-36
F-6	1450	10	411	323	8	10	-1.6	-24
* W-1	510	20	327	320	7	12	2.6	6
* W-1 QC			332	302	2	12	-1.3	0
* W-2			344	334	2	12	-1.3	-24
* W-3			618	508	3	13	-1.3	-36
* W-4	420	10	408	339	2	11	-1.3	-42
* W-5			503	426	3	19	-1.3	-24

* Cinder block

Building 22

North

02-0131



Bkgd 8-10 m/m

Room A
Interior

Scale:
4m x 4m

pages of 29

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg # 22, Room A

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA
	2350-1/117506							

Performed By:

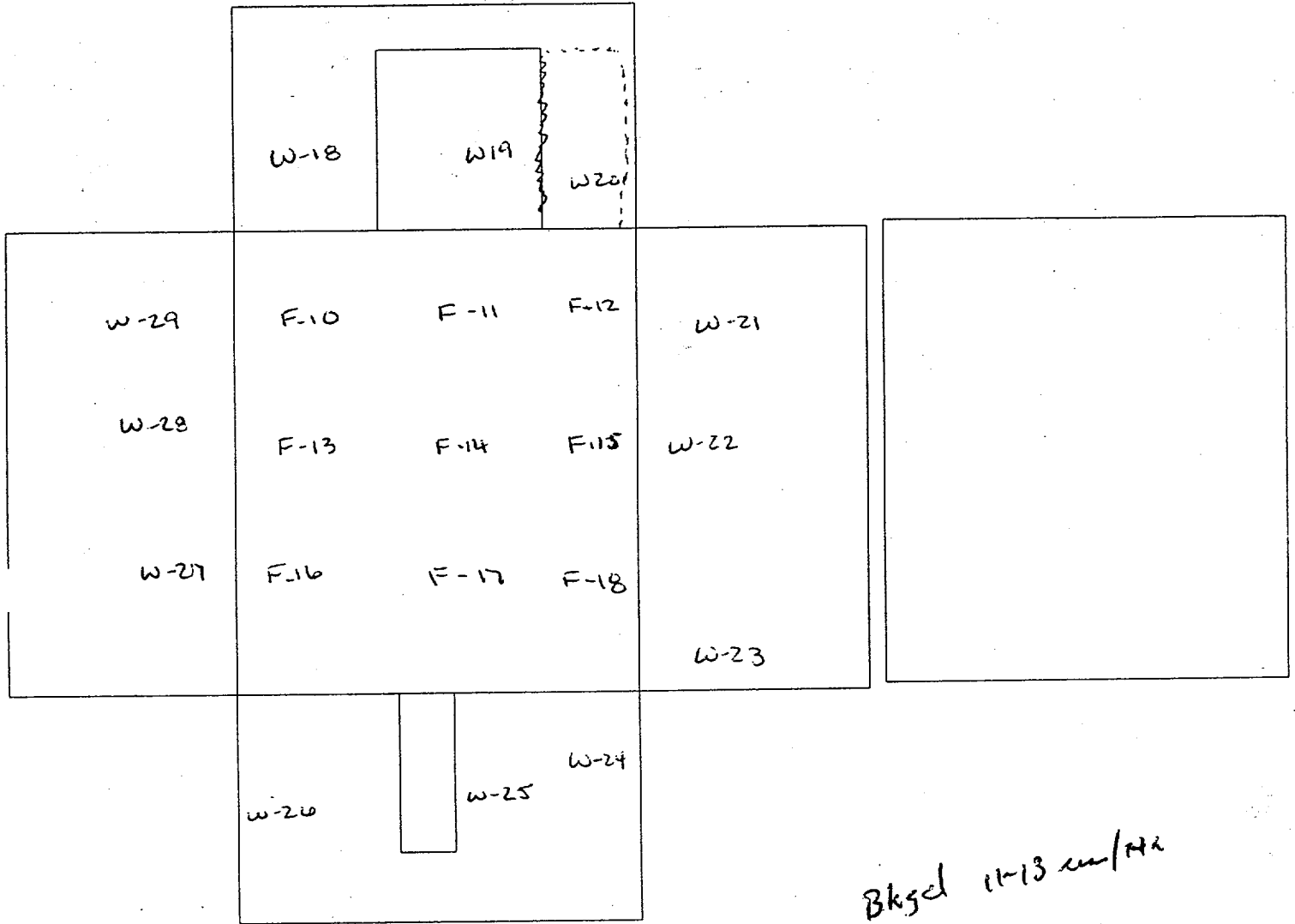
Print Name	Signature	Date
_____	_____	_____
_____	_____	_____

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
* W-10	350	1.6	282	265	3	8	2.3	0
* W-11	370	.4	282 83	265	1	10	5.2	-12
W-12	340	3	208	237	1	11	-1.6	24
W-13	360	.2	255	263	0	11	2.3	30
W-14	290	.7	236	240	6	12	-1.6	30
W-15	250	.9	217	209	1	10	-1.6	18
W-16	340	.5	212	227	0	10	2.3	0
W-17	350	.7	256	220	2	10	-1.6	-12
F-7	1800	12	390	320	6	16	-1.6	18
F-8	1750	10	452	393	9	10	2.3	60
F-9	1690	10	387	352	3	10	-1.6	-36

* Cinder block

Building 22 North

62-0131



Room B
Interior

Scale:
4m x 4m

radiological survey results - survey location indicator

Survey Area Information:

Bldg #22 - Room B

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA
	Z350-1/117503							

Performed By:	Print Name	Signature	Date

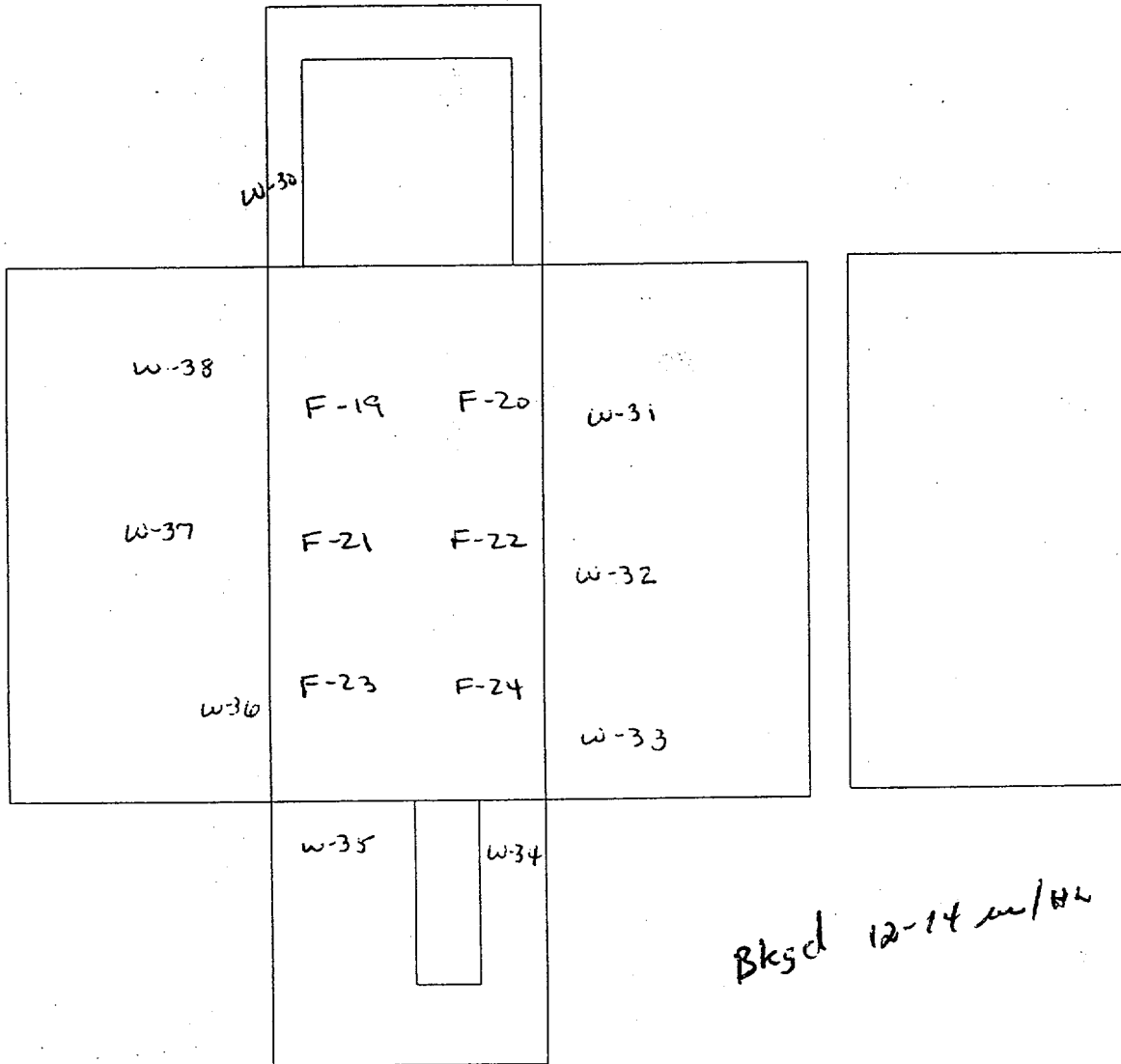
Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (µrem/hr)	Smears (dpm/100 cm ²)	
							α	β
W-18	340	1.2	284	273	3	11	-1.0	-30
W-19	330	1.8	271	253	2	11	-1.0	48
W-20	312	1	258	229	2	11	2.3	-60
W-21	343	1.2	278	240	3	11	-1.0	0
W-22	372	1.6	274	221	2	11	2.3	-24
W-23	300	1	264	258	1	12	-1.0	-60
W-24	310	2	291	229	2	12	-1.0	6
W-25	320	1	305	230	0	14	-1.0	72
W-26	368	1	297	250	0	13	-1.0	-18
W-27	315	1	250	260	3	12	-1.0	90
W-28	305	1	269	240	4	13	-1.0	0
W-29	295	0	279	228	0	11	2.3	18
F-10	2100	22	420	363	6	13	2.3	-54
F-11	1900	15	387	343	6	14	-1.0	12
F-12	2300	12	374	325	4	14	-1.0	-54
F-13	2000	12	520	328	8	13	-1.0	-36
F-14	2450	14	374	297	2	14	-1.0	0
F-15	2100	10	414	331	6	14	-1.0	-60
F-16	2400	12	480	320	12	13	-1.0	36
F-17	2200	15	445	315	3	13	-1.0	-12
F-18	2100	12	485	347	7	14	-1.0	0

* * * * *

* Cinder block

Building 22 North

07-0131



Room C
Interior

Scale:
4m x 4m

10y 9. f 29

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #22 - Room C

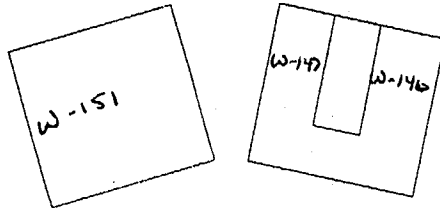
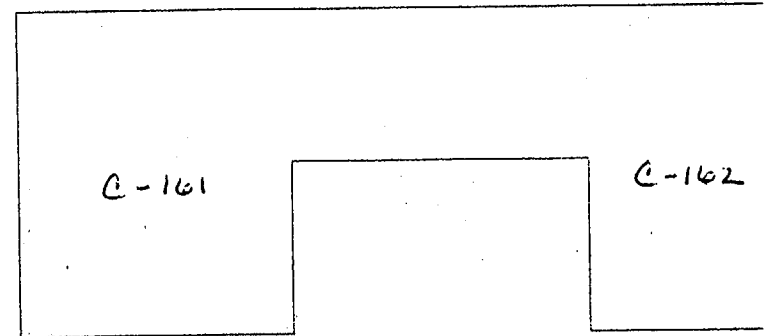
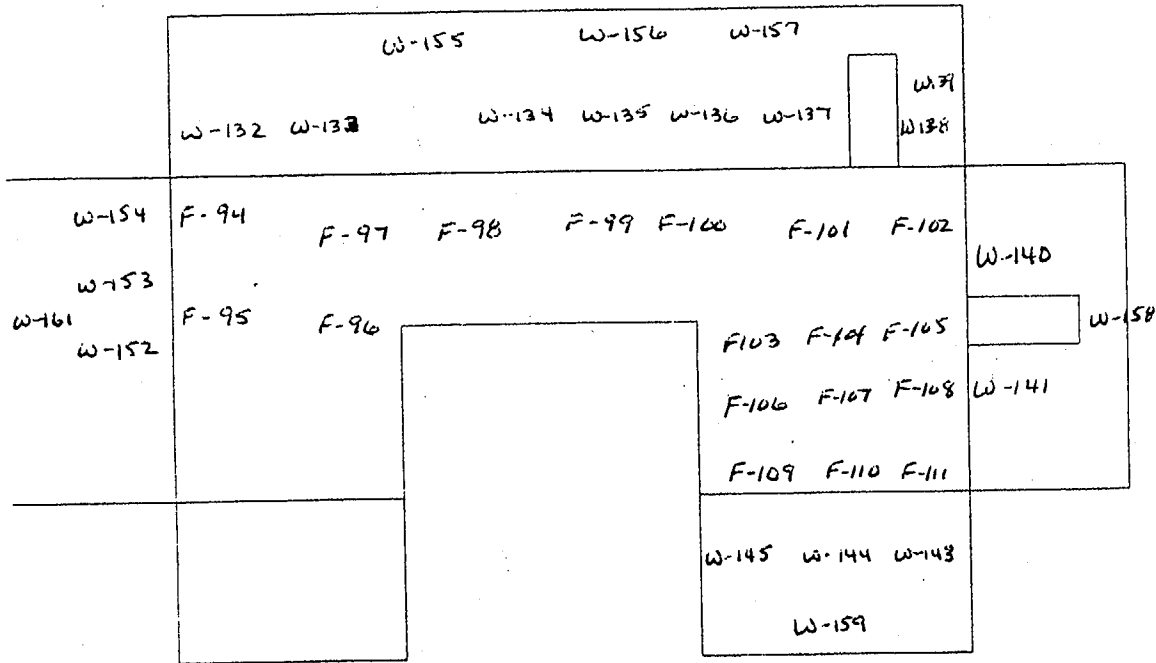
Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA
		<u>2350-1/117566</u>						
	<u>2360/156371</u>							

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 (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
* W-30	540	.7	380	299	2	12	-.6	18
* W-31	390	5	339	264	5	12	-.6	-42
* W-32	490	12	377	269	17	13	-.6	-36
* W-33	340	10	270	277	0	13	-.6	-36
* W-34	360	9	293	235	0	13	2.3	-6
W-35	420	2	327	298	3	14	-.6	0
* W-36	410	8	306	271	1	14	-.6	12
* W-37	420	3	245	244	4	15	-.6	-18
* W-38	410	1.2	297	250	7	13	-.6	24
F-19	2160	13	401	316	6	13	-.6	-18
F-20	2110	20	444	274	11	13	-.6	-48
F-21	1980	23	425	349	5	14	-.6	-6
F-22	2050	18	415	308	8	14	-.6	-18
F-23	2170	13	430	339	6	14	-.6	18
F-24	2400	28	455	334	7	14	-.6	6

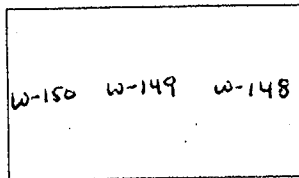
* Cinder block

Building 22 North



Room D
Interior

Scale:
4m x 4m



Bhsd 15-20 m/s

Page 11 of 29

02-0131

RADIOLOGICAL SURVEY RESULTS - SURVEY LOCATION INDICATOR

Survey Area Information: Bldg #22 Room D								
Instrument Data	Instrument Model/WSN	Cal Due	Probe Model/WSN	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 (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
* W-132	650	1	489	390	4	20	-1.6	-24
* W-133	687	1.2	543	390	3	22	-1.6	12
* W-134	720	2.4	542	362	4	23	-1.6	-72
* W-135	600	2	499	387	2	22	-1.6	6
* W-136	320	.8	251	256	1	17	-1.6	-18
* W-137	366	1	328	270	3	17	-1.6	12
* W-138	360	1	300	290	2	16	-1.6	-6
* W-139	340	1	341	274	1	16	-1.6	-12
* W-140	411	2	316	309	2	15	-1.6	-12
* W-141	460	1.4	332	293	0	14	-1.6	-90
* W-142	337	1	351	269	2	15	-1.6	60
* W-143	362	1.6	306	291	2	14	-1.6	6
* W-144	343	1	346	283	2	14	-1.6	-60
* W-145	325	1.2	378	296	3	14	-1.6	-24
* W-146	390	1	365	321	1	15	2.3	12
* W-147	343	2	332	320	2	16	-1.6	36
* W-148	490	1.6	479	400	4	21	-1.6	-6
* W-149	550	2	508	397	2	22	-1.6	0
* W-150	690	1.7	536	415	3	22	-1.6	-30
* W-151	653	1	561	420	3	23	-1.6	-36
* W-152	560	2	516	402	1	23	2.3	42
* W-153	550	1	482	393	3	23	-1.6	42
* W-154	717	2	551	418	0	23	-1.6	36
* W-155	632	1	500	400	1	22	-1.6	67
* W-156	412	1	569	386	1	22	-1.6	-24
* W-157	438	1.6	382	294	1	17	-1.6	-42
* W-158	415	1	397	294	1	15	-1.6	-6

* Cinder block

02-0131

Radiological Survey Results - Survey Location Indicator

Survey Area Information:

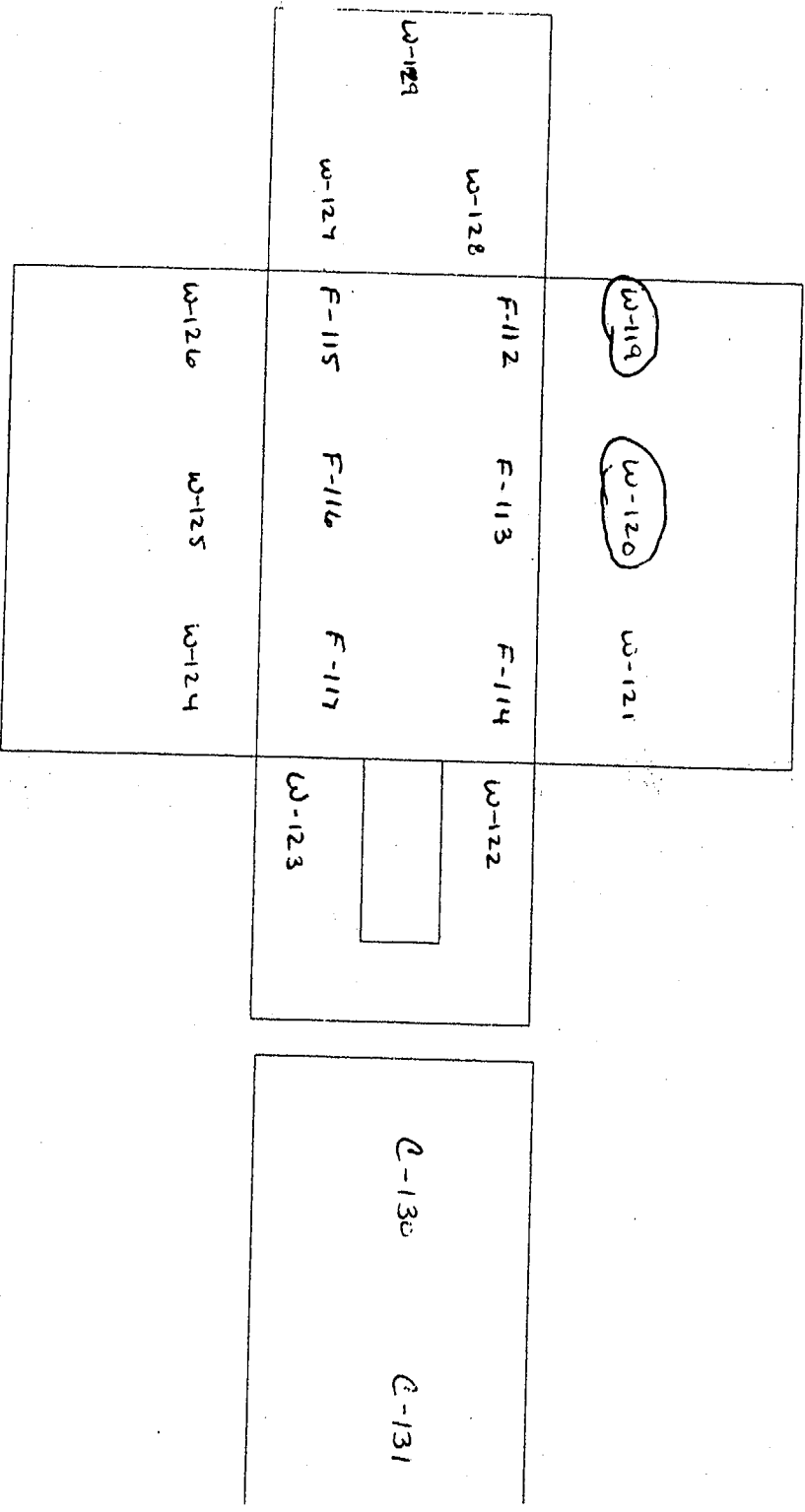
Bldg #22 Room D

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 cm ²)	
							α	β
W-159	330	.8	290	256	1	23	-1.6	6
W-160	356	1	349	277	2	23	-1.6	-24
W-161	535	1.6	543	365	1	23	2.3	-12
C-162	462	.7	318	337	4	19	2.3	-6
C-163	349	.8	280	280	1	14	-1.6	6
F-94	2100	10	521	407	3	23	-1.6	12
F-95	2210	13	464	420	7	23	-1.6	0
F-96	1950	10	530	473	2	23	2.3	-42
F-97	2810	15	577	453	5	23	2.3	48
F-98	2500	10	568	482	0	22	-1.6	30
F-99	2350	9	517	419	7	17	2.3	30
F-100	2000	12	468	400	7	17	-1.6	-24
F-101	7850	6	444	339	0	16	-1.6	-6
F-102	1580	8	409	263	6	15	-1.6	84
F-103	1750	10	354	321	4	14	-1.6	84
F-104	2000	11	444	384	9	14	-1.6	-18
F-105	1990	7	402	360	6	15	-1.6	54
F-106	1840	8	398	354	6	15	-1.6	-66
F-107	1650	14	422	372	2	14	-1.6	36
F-108	1900	8	409	367	2	14	2.3	-12
F-109	1700	12	401	370	3	15	-1.6	0
F-110	1800	10	406	339	6	14	2.3	-6
F-111	1700	14	407	367	4	15	2.3	54

Building 22 North



Room E
Interior

Scale:
4m X 4m

Bksd 14-03 20/12

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #22 - Room E

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

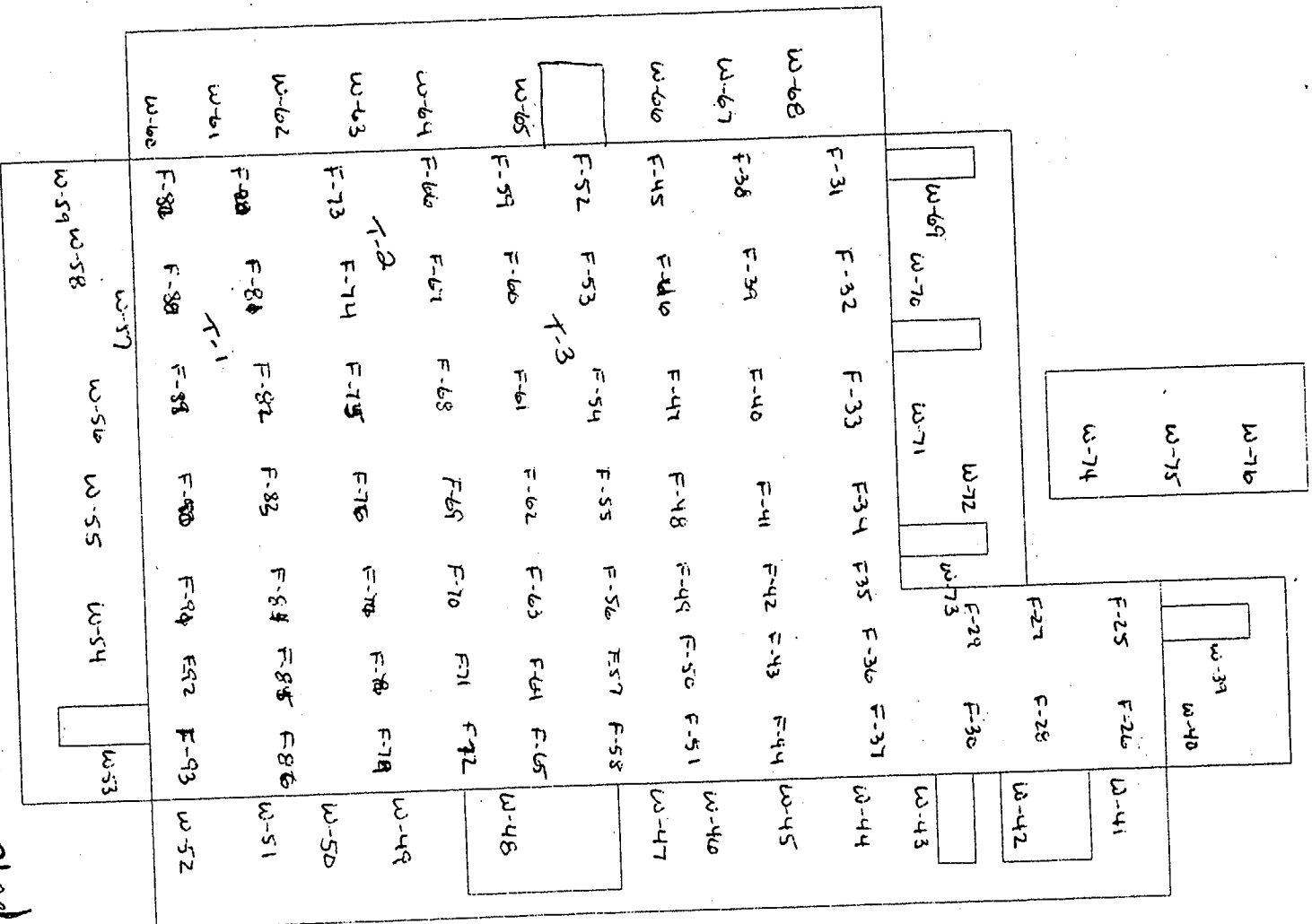
Performed By:	Print Name	Signature	Date
	_____	_____	_____
	_____	_____	_____

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm ²)	
							α	β
* W-119	1070	15	714	403	12	23	-6	-36
* W-120	1080	20	681	334	23	23	-6	-72
* W-121	1040	25	692	363	20	22	-6	0
* W-122	1070	25	662	411	11	21	-6	-6
W-123	900	25	600	316	19	19	2.3	-6
W-124	940	17	628	322	12	19	-6	-24
* W-125	1040	20	629	351	15	20	-6	85
* W-126	1020	15	679	366	17	20	-6	24
* W-127	1020	20	738	425	22	23	-6	36
* W-128	1080	28	769	391	17	24	-6	-6
* W-129	1080	12	718	400	14	24	-6	-6
			301	3				
C-130	380	6	301	320	5	24	2.3	0
C-131	400	4	277	281	2	22	-6	6
F-112	2680	5	513	395	2	23	42-6	12
F-113	2410	7	496	394	3	24	43-6	6
F-114	2360	8	521	324	2	20	-6	-60
F-115	2520	10	522	389	4	28	-6	0
F-116	2120	6	522	354	4	22	-6	-12
F-117	2340	3	487	336	8	24	-6	18
F								

* tile

Building 22 North

02-0131



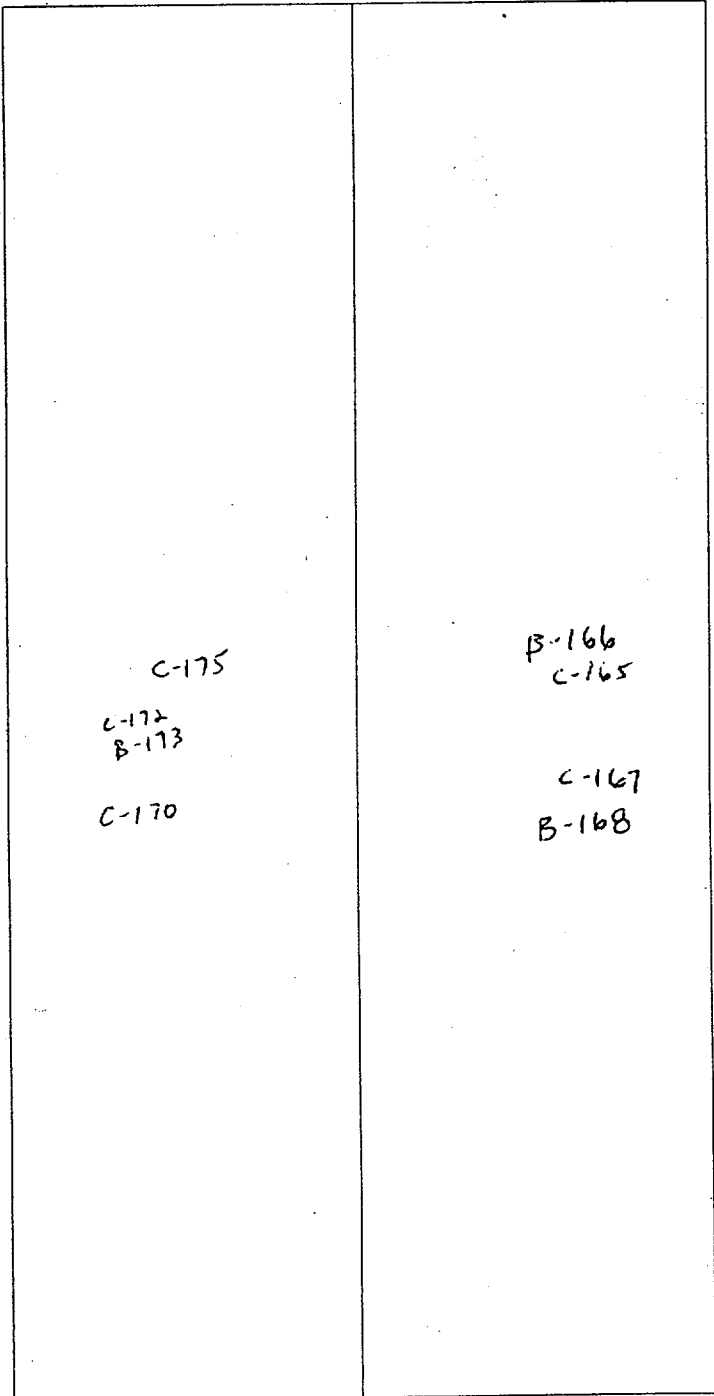
Room F
Interior

3kgd 8-14 w/10/12

Scale:

Building 22 North

02-0131



Interior Ceiling

Scale:
4m x 4m

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #22 - Room F

Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA
	2350-1/117566							
19/115870								

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 cm ²)	
							α	β
W-39	400	5	257	265	3	11	-1.6	-12
* W-40	380	1	370	310	1	12	-1.6	0
* W-41	420	20	349	287	10	12	2.3	-12
W-42	340	.5	251	232	2	12	-1.6	-54
* W-43	490	8	347	292	2	12	-1.6	12
W-44	510	1	307	288	4	12	-1.6	54
* W-45	390	3	288	295	2	12	5.2	6
* W-46	530	4	375	303	1	13	-1.6	72
* W-47	510	6	371	287	3	14	-1.6	30
W-48	270	2	245	238	1	12	2.3	-30
* W-49	520	8	383	315	0	12	-1.6	-48
* W-50	430	5	333	243	1	12	-1.6	24
* W-51	490	.5	333	292	3	13	-1.6	-48
* W-52	570	5	411	359	3	15	-1.6	12
* W-53	500	.5	353	312	3	15	5.2	12
* W-54	410	3	336	265	3	14	-1.6	18
* W-55	770	30	515	364	18	19	-1.6	-60
* W-56	720	2	460	324	5	18	-1.6	-60
* W-57	730	3	518	349	16	20	2.3	-30
* W-58	640	.5	504	370	0	20	-1.6	-42
* W-59	650	5	464	332	2	19	5.2	66
W-60	430	6	302	280	1	19	-1.6	18
W-61	410	5	274	252	4	15	-1.6	12
W-62	300	5	225	243	3	13	2.3	-60
W-63	350	3	261	232	2	12	-1.6	-30
W-64	310	9	242	244	0	12	-1.6	-42
W-65	410	15	268	253	3	12	-1.6	6

* Cinder block

RADIOLOGICAL SURVEY RESULTS - SURVEY LOCATION INDICATOR

Survey Area Information: Bldg #22 Room F

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 cm ²)	
							α	β
W-66	340	3	226	261	4	14	-1.6	0
W-67	360	2	269	245	0	14	-1.6	-18
W-68	340	2	264	255	0	13	-1.6	24
W-69	320	1	275	267	1	14	-1.6	24
W-70	340	3	306	270	1	12	-1.6	-30
W-71	330	1	297	248	0	11	-1.6	-42
W-72	340	3	330	236	3	12	-1.6	18
W-73	320	2	279	234	4	12	-1.6	-36
W-74	320	2	289	210	4	12	2.3	-6
W-75	340	2	319	242	9	14	-1.6	6
W-76	350	2	301	250	1	13	-1.6	18
W-76QC	-	-	290	246	2	13	-1.6	12
3 Bldg #22 UPPER WALLS								
Wall-164			388	259	4	8	-1.6	12
Ceiling-165			232	222	3	8	-1.6	18
Beam-166			259	231	10	8	-1.6	-18
Ceiling-167			213	267	1	8	-1.6	-6
Beam-168			246	228	1	8	-1.6	24
Wall-169			353	276	0	8	2.3	-36
Ceiling-170			248	255	1	8	-1.6	0
Wall-171			219	213	3	8	-1.6	42
Ceiling-172			225	265	1	8	-1.6	6
Beam-173			226	215	1	8	-1.6	-12
Wall-174			204	187	3	8	-1.6	30
Ceiling-175			247	224	1	8	-1.6	-18
NewT-176			232	251	4	8	-1.6	-24

* Cinder block

02-0131

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg # 22 Room F - 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
	_____	_____	_____
	_____	_____	_____

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm ²)	
							α	β
F-25	2790	16	470	269	5	12	2.3	-6
F-26	2000	16	391	253	6	12	-6	-12
F-27	3140	22	605	290	14	11	-6	42
F-28	1800	16	382	249	2	12	2.3	-36
F-29	3260	27	699	282	7	12	-6	18
F-30	1700	11	327	261	3	12	-6	6
F-31	2050	12	421	333	11	13	-6	6
F-32	1850	15	414	340	7	13	-6	-24
F-33	1920	15	415	305	8	13	2.3	48
F-34	2100	14	413	371	11	13	2.3	54
F-35	1800	14	405	301	5	13	-6	6
F-36	1750	12	402	343	8	13	5.2	-12
F-37	1900	12	396	349	4	13	-6	6
F-38	2200	14	467	349	7	14	-6	36
F-39	1900	15	400	349	8	14	-6	-6
F-40	1870	12	429	331	7	13	2.3	72
F-41	1900	10	390	352	6	12	-6	-36
F-42	2100	12	457	329	5	12	2.3	-60
F-43	2000	12	384	303	6	12	-6	-36
F-44	2700	12	332	291	7	12	2.3	-12
F-45	2150	10	404	328	9	13	-6	48
F-46	1900	10	539	368	4	14	-6	30
F-47	2100	12	383	325	5	14	-6	-72
F-48	2000	10	421	341	4	14	-6	6
F-49	1830	12	408	311	7	14	-6	-54
F-50	2100	12	368	327	1	13	-6	-60
F-51	2500	16	400	325	9	10	2.3	0

RADIOLOGICAL SURVEY RESULTS - SURVEY LOCATION INDICATOR

Survey Area Information: Bldg # 22 Room F 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: _____ 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 cm ²)	
							α	β
F-52	2300	13	327	324	1	13	-16	18
F-53	2610	18	403	399	5	13	-16	60
F-54	2490	20	531	424	7	12	-16	-16
F-55	2300	11	443	426	5	12	-16	60
F-56	1610	10	336	335	3	11	-16	-12
F-57	1640	13	339	292	7	11	-16	-42
F-58	2210	16	381	285	3	12	-16	24
F-58QL	2240	18	372	274	2	12	-16	-16
F-59	2410	15	457	344	6	13	-16	42
F-60	2100	12	365	337	4	13	-16	-16
F-61	2010	8	405	316	5	12	-16	18
F-62	2110	11	421	382	6	13	-16	-16
F-63	1660	10	380	316	11	12	-16	60
F-64	1690	12	346	301	3	12	-16	-18
F-65	1610	12	365	276	1	12	-16	-36
F-66	2310	10	516	481	8	12	-16	-18
F-67	2010	10	371	285	3	13	-16	-30
F-68	2180	16	442	392	4	13	-16	-36
F-69	1750	8	372	306	8	13	-16	36
F-70	1900	6	413	297	2	12	-16	-48
F-71	1670	11	345	284	3	11	-16	30
F-72	1510	8	362	300	0	12	-16	-16
F-73	2410	16	454	396	4	13	-16	-36
F-74	2000	10	396	285	3	13	-16	54
F-75	1830	11	406	347	8	15	-16	-18
F-76	1600	6	387	309	5	12	-16	-18
F-77	1990	7	385	306	4	13	-16	12

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg # 22 Room F Floors

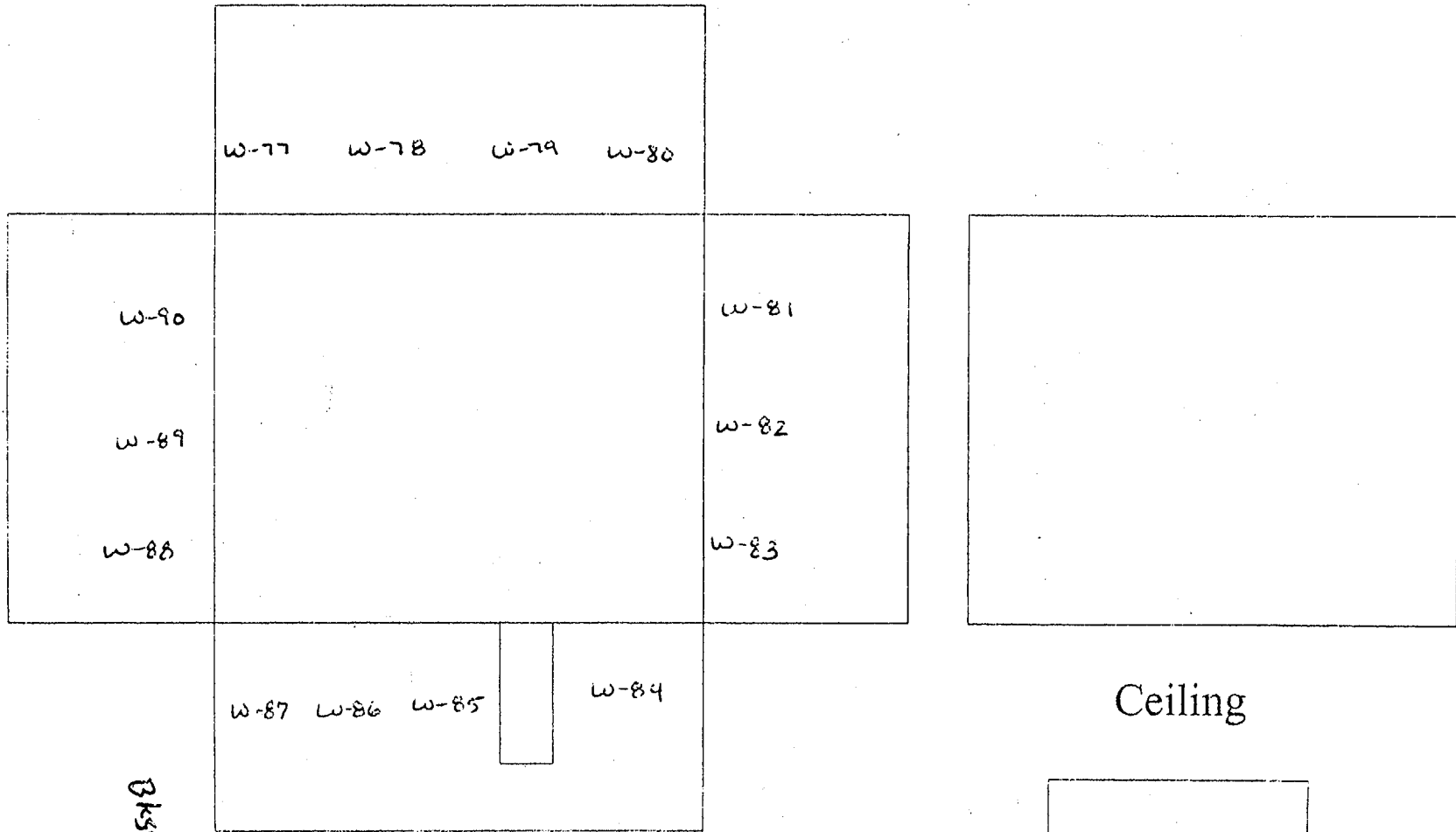
Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA

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 (μ rem/hr)	Smears (dpm/100 cm ²)	
							α	β
F-78	1900	10	444	334	6	12	-1.6	42
F-79	1680	10	373	330	5	12	-1.6	24
F-80	1960	12	413	382	8	15	-1.6	-6
F-81	2790	18	612	348	19	15	-1.6	-6
F-82	2370	20	504	408	10	15	-1.6	-18
F-83	1900	10	406	327	7	13	-1.6	36
F-84	2030	8	390	300	9	13	-1.6	6
F-85	1690	12	373	326	13	13	-1.6	-30
F-86	1670	10	333	330	2	13	-1.6	-42
F-87	2090	11	484	330	8	17	-1.6	18
F-88	2000	8	546	427	14	18	-1.6	-18
F-89	2060	10	463	387	10	19	-1.6	-12
F-90	2250	12	494	339	18	19	-1.6	-12
F-91	8000	100	4887	361	62	17	31	139
F-92	1890	12	416	348	5	14	-1.6	24
F-93	3330	26	947	826	3	16	-1.6	-24
T-1			597	425	6			
T-2			442	285	5			
T-3			398	300	3			

T = TRENCHES

Building 22 North



Room G
Interior

Ceiling

Scale:
4m x 4m

1307 29

Blkd 7-9000/HW

62-0131

radiological survey results - Survey Location Indicator

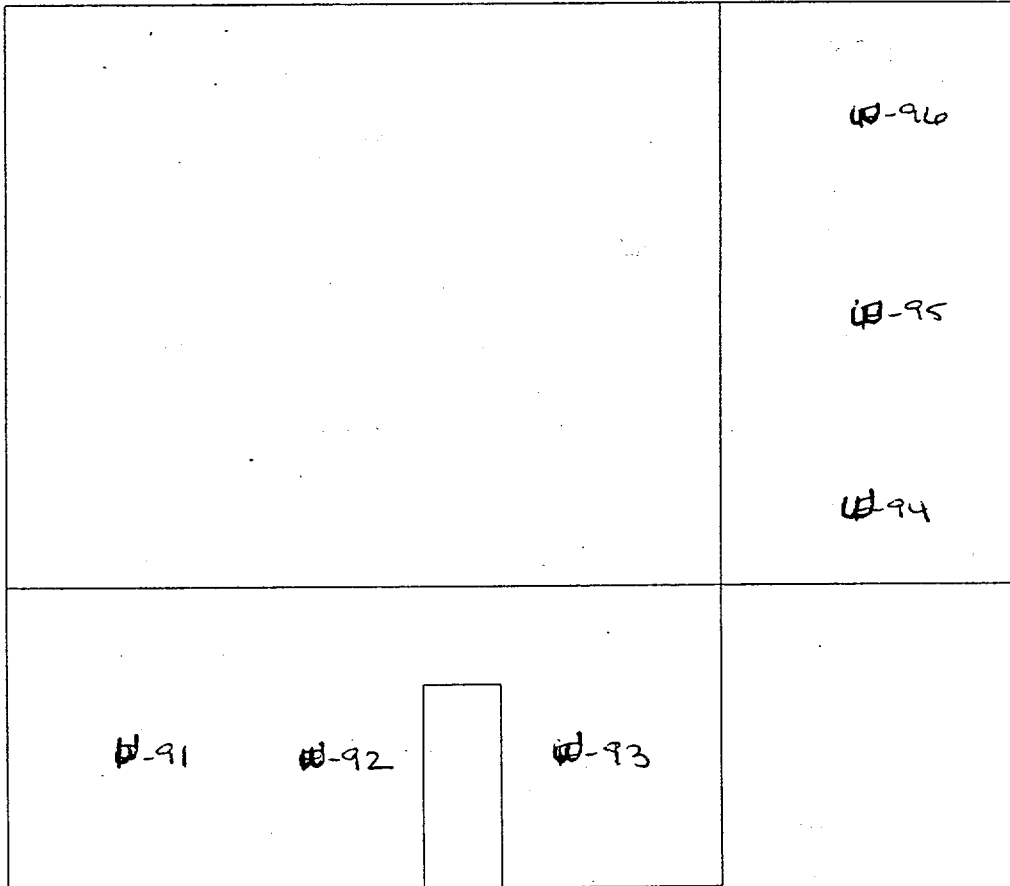
Survey Area Information: Bldg #22 Room G								
Instrument Data	Instrument Model/SN	Cal Due	Probe Model/SN	Cal Due	α Scan MDA	β Scan MDA	α Static MDA	β Static MDA
Performed By:	Print Name			Signature			Date	
	_____			_____			_____	
	_____			_____			_____	

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	β
* W-77	390	1	272	241	1	7	-.6	24
W-78	300	.8	218	214	4	8	-.6	24
* W-79	340	1.6	287	269	3	8	-.6	30
* W-80	344	1	305	242	2	9	-.6	-24
W-81	390	1	285	251	3	9	-.6	6
W-82	330	1	268	214	1	9	-.6	-12
* W-83	284	2	270	243	0	9	-.6	6
* W-84	310	1.8	261	240	3	9	-.6	12
* W-85	290	1	274	247	2	9	2.3	-54
* W-86	300	1	262	204	2	8	-.6	36
* W-87	320	1.4	257	212	2	8	2.3	0
W-88	310	.8	220	215	1	8	-.6	48
W-89	280	1	201	208	1	7	-.6	6
W-90	280	1	220	243	3	7	-.6	-24

* Cinder block

Building 22 North

02-0131



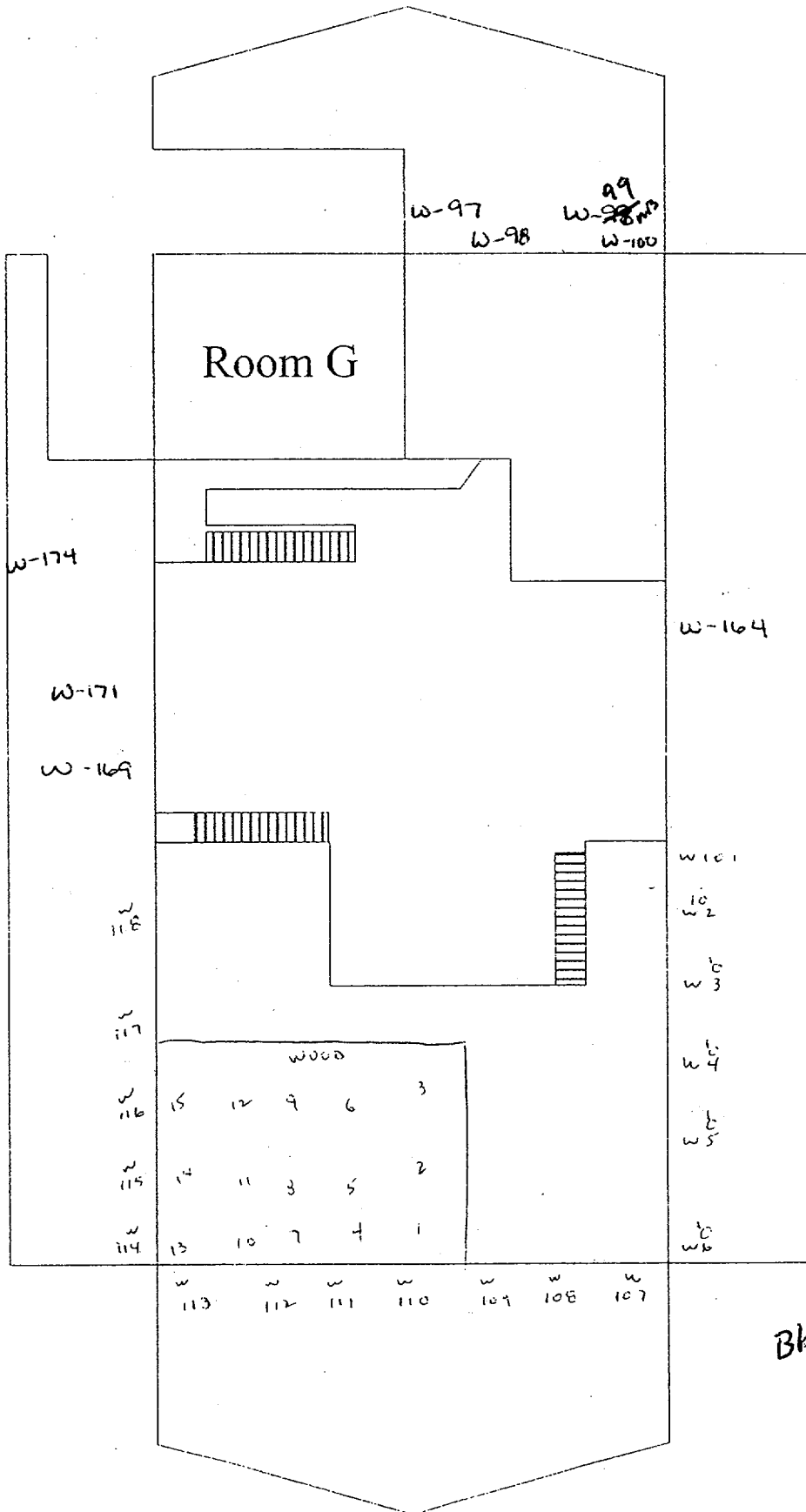
Room G
Exterior

Bksd 7-9 m/HA

Scale:
4m x 4m

25 29

North



Based 9-11 am/02

Interior
2nd Story

Scale:
4m x 4m

Radiological Survey Results - Survey Location Indicator

Survey Area Information: Bldg #22 2nd 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: _____

Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm ²)	
							α	β
* W-91	337	1	252	263	1	10	2.3	30
* W-92	290	1.6	253	225	3	10	-1.6	78
* W-93	320	1	266	219	6	10	-1.6	-84
* W-94	312	1.2	245	252	2	10	-1.6	-6
* W-95	345	1	284	238	4	10	-1.6	0
W-96	325	2	286	288	5	10	-1.6	12
* W-97	541	1	439	287	9	10	-1.6	72
* W-98	346	1	288	242	4	10	-1.6	12
* W-99	350	1	307	234	3	10	-1.6	36
* W-100	390	1.6	281	300	2	10	2.3	-30
* W-101	360	2	236	249	2	10	-1.6	24
* W-102	300	1	235	215	3	10	-1.6	-36
* W-103	350	2	248	221	2	10	-1.6	6
* W-104	420	1	290	273	0	10	-1.6	18
W-105	280	1	199	211	2	10	-1.6	-54
* W-106	540	3	465	295	1	10	-1.6	-24
* W-107	460	4	314	241	5	10	-1.6	12
* W-108	340	2	317	245	3	10	-1.6	0
* W-109	320	2	243	195	3	10	-1.6	-30
* W-110	400	1	372	293	3	10	2.3	-24
* W-111	320	2	293	287	2	11	-1.6	36
* W-112	330	1	278	303	2	11	-1.6	-12
* W-113	340	2	326	261	1	13	-1.6	-36
* W-114	270	1	252	226	2	13	-1.6	-60
W-115	320	3	280	216	5	12	2.3	-6
W-116	380	2	302	254	9	10	-1.6	-36
W-117	360	2	304	230	5	9	-1.6	42

* Cinder block

RADIOLOGICAL SURVEY RESULTS - SURVEY LOCATION INDICATOR

Survey Area Information: Bldg #22 2nd Story

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
	_____	_____	_____
	_____	_____	_____

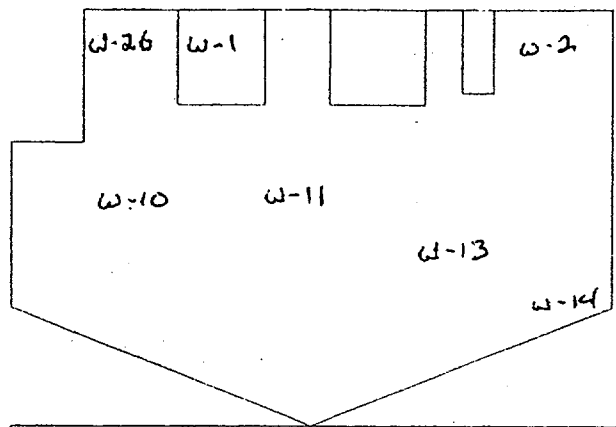
Location	β Scan (cpm)	α Scan (cpm)	β Static (unsh) (cpm)	β Static (sh) (cpm)	α Static (cpm)	ER (μrem/hr)	Smears (dpm/100 cm ²)	
							α	β
W-117 QC	310	1	297	253	2	9	-6	-12
W-118	300	1	302	249	2	9	-6	-54
F-1	440	2	328	316	4	10	-6	36
F-2	420	1	307	284	8	9	-6	0
F-3	440	2	348	279	4	10	-6	12
F-4	530	4	351	287	9	11	-6	-6
F-5	540	2	323	321	4	11	2.3	24
F-6	520	1	320	276	3	10	-6	6
F-7	700	4	543	348	16	13	2.3	-66
F-8	630	4	484	324	9	13	-6	-24
F-9	480	2	277	288	5	11	-6	-12
F-10	700	2	581	341	21	12	5.2	36
F-11	440	2	458	323	16	12	-6	-30
F-11QC	400	1	444	342	12	12	-6	-42
F-12	390	2	338	319	5	11	-6	60
F-13	2400	4	2638	306	21	11	2.3	18
F-14	400	1	309	291	10	12	2.3	30
F-15	400	2	349	308	11	11	-6	48

* ↓

* F-1 to F-15 is wood

Building #22 North

Survey # 02-0131



SMEARS
 DOSE RATES
 SCANS

W-1-5 SEE
 PAGE 4
 W-10, 11, 13-26
 SEE PAGE 3

7	5	8	8	W-15	
					W-25
7	8	8	8		
7	8	8	9	W-16	
7	8	8	9		W-3
8	8	8	9	W-17	
8	8	8	8		W-24
9	9	8	8		
8	8	9	9	W-18	W-4
8	8	8	9		W-23
8	9	8	8	W-19	
9	9	8	8		W-5
					W-22
8	8	9	8	W-20	W-21

Roof
Exterior

Bkg Smear/Spec

Scale:
4m x 4m

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

Section 1: Survey Information
 Date: 5-14-02 Time: 0945 Location: BLDG 22 Survey Issue Log Number: 02-0191

RWP Number: _____ Purpose of Survey: RWP Routine Survey Unconditional Release Other: _____ Page 1 of 36

Survey Title:	Smear Number	Beta dpm/100cm ²	Alpha dpm/100cm ²
Averaged survey's for location's W-3 Exterior wall, W-117, W-118	1		
	2		
	3		
	4		
	5		
	6		N/A
	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- = 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
2360/164680	7-9-02	43-89/118544	8-6-02	0.113 / 0.64	B ⁻ 140 / 51	BKG
				B10ck =	B ⁻ 312 / 51	B ⁻ 8 / 3.7
						B ⁻ 49 / 3.7

Section 3: Review and Approval

Survey Performed By (Sign): <i>Justin Trivedi</i>	Area Posted and/or Barricaded: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	Date and Time: 5-14-02 / 0945
Radiation Safety Officer (Print Name & Sign): Mike McDonald <i>[Signature]</i>		Date and Time: 5-15-02 0940

Radiological Survey Results - Calculational Sheet

02-0191

Location	β Static (unsh) (cpm)	β Static (sh) (cpm)	Gross β	Minus Bkgd = (Net β)	Net β dpm/100 cm ²	
W-3	1	329	234	95	46	407
	2	203	255	48	-1	-9
	3	293	245	45	-4	-35
	4	237	277	-40	-89	-787
	5	289	212	17	-32	-283
	6	307	298	9	-40	-353
	7	319	293	26	-23	-203
	8	316	275	41	-8	-70
	9	318	254	64	15	132
					-1201 / -133	
W-117	1	340	250	90	82	725
	2	297	223	74	66	584
	3	235	222	13	5	44
	4	276	216	60	52	460
	5	289	238	51	43	380
	6	223	209	14	6	53
	7	201	240	-39	-47	-415
	8	227	211	16	8	70
	9	228	217	11	3	27
					1928 / 214	
W-118	1	289	208	81	73	646
	2	266	260	6	-2	-17
	3	240	235	5	-3	-26
	4	285	243	42	34	300
	5	277	242	35	27	239
	6	214	200	14	6	53
	7	229	212	17	9	80
	8	209	190	19	4	97
	9	199	210	-11	-19	-168
					1204 / 133	

Instrument Model/SN:	Probe Model/SN:	Detector Eff.: (cpm/dpm)
		
		
		
		

	Material	Bkgd
W-3	BLOCK	49
W-117	Wall	8
W-118	WALL	8

N-3
EXTERIOR WALL
BLOCK

02-0191

$$\frac{693 \left(\frac{100}{10,000} \right) + 135 \left(1 - \frac{100}{10,000} \right)}{}$$

$$\frac{7 + \overset{J.T.}{-1.33} 132}{}$$

$$\frac{B^- \overset{-125 \text{ DPM}}{+139 \text{ AVE.}} \overset{J.T.}{}}{\overset{J.T.}{}} + \frac{\overset{-63 \text{ DPM}}{278 \text{ AVE.}} \overset{J.T.}{}}{\overset{J.T.}{}}$$

N-117

$$\frac{750 \left(\frac{300}{10,000} \right) + 24 \left(1 - \frac{300}{10,000} \right)}{}$$

$$\frac{23 + 208}{}$$

$$\frac{B^- \overset{231 \text{ DPM}}{+185 \text{ AVE.}} \overset{J.T.}{}}{\overset{J.T.}{}} + \frac{\overset{462 \text{ DPM}}{462 \text{ AVE.}} \overset{J.T.}{}}{\overset{J.T.}{}}$$

W-118

$$\frac{511 \left(\frac{200}{10,000} \right) + 133 \left(1 - \frac{200}{10,000} \right)}{}$$

$$\frac{10 + 130}{}$$

$$\frac{B^- \overset{DPM}{+140 \text{ AVE.}} \overset{J.T.}{}}{\overset{J.T.}{}} + \frac{\overset{DPM}{280 \text{ AVE.}} \overset{J.T.}{}}{\overset{J.T.}{}}$$

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

Section 1: Survey Information

Date: 5-13-02 Time: 1400 Location: BLDG 22 Survey Issue Log Number: 02-0191
 RWP Number: Purpose of Survey: RWP Routine Survey Unconditional Release Other. Page 4 of 26

Survey Title:	Smear Number	Beta dpm/100cm ²	Alpha dpm/100cm ²
Averaged surveys for locations W-32, W-72, W-115	1		
	2		
	3		
	4		
	5		
	6	N/A	
	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- = Rope, Boundary, or Barrier
 00 B = mRem/h beta 00 B C = 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)	MDA:	Other
2224-1/129463	8-6-02	43-89/169230	8-6-02	B ⁻ .092 / 1.54 BLOCK =	B ⁻ 172 / 12 B ⁻ 393 / 12	BKG B ⁻ 8 / 3.7 B ⁻ 219 / 3.7

Section 3: Review and Approval

Survey Performed By (Sign): Justin Tarnida Area Posted and/or Barricaded: Yes No Not Required Date and Time: 5-13-02 / 1400
 Radiation Safety Officer (Print Name & Sign): _____ Date and Time: _____

Radiological Survey Results - Calculational Sheet

02-0191

W-32

Location	β Static (unsh) (cpm)	β Static (sh) (cpm)	Gross β	Minus Bkgd = (Net β)	Net β dpm/100 cm ²
1	331	281	50	1	10
2	322	285	37	-12	-130
3	324	236	88	39	423
4	378	278	100	51	554
5	332	292	40	-9	-97
6	351	271	110	61	663
7	358	294	64	15	163
8	398	298	100	51	554
9	377	303	74	25	271
					2403 / 267

W-115

1	299	286	13	5	54
2	306	248	58	50	543
3	277	274	3	-5	-54
4	296	259	37	29	315
5	288	266	22	14	152
6	223	265	-42	-50	-542
7	240	266	-26	-34	-369
8	272	247	25	17	184
9	252	239	13	5	54
					333 / 37

W-72

1	323	300	23	-26	-282
2	340	232	108	59	641
3	311	292	19	-30	-326
4	356	296	60	11	119
5	305	278	27	-22	-239
6	287	262	25	-24	-260
7	306	275	25	-24	-260
8	299	300	-1	-50	-543
9	333	262	71	22	239
					909 / 101

Instrument Model/SN:	Probe Model/SN:	Detector Eff.: (cpm/dpm)

Material	Bkgd
Block	49
WALL	8

W-32
Block

02-0191

$$\underline{670\left(\frac{400}{10,000}\right) + 267\left(1 - \frac{400}{10,000}\right)}$$

$$\underline{27 + 256}$$

B-283 AVE. ^{DPM} & 567 AVE ^{DPM}

W-115

$$\underline{636\left(\frac{200}{10,000}\right) + 37\left(1 - \frac{200}{10,000}\right)}$$

$$\underline{13 + 36}$$

B-50 AVE. ^{DPM} & 100 AVE. ^{DPM}

W-72
Block

$$\underline{511\left(\frac{200}{10,000}\right) + 101\left(1 - \frac{200}{10,000}\right)}$$

$$\underline{10 + 99}$$

B-109 AVE ^{DPM} & 218 AVE ^{DPM}

Results of Surface Scans

Molycorp - Building 22 Foundation Only Survey Unit (Affected Area)

Boiler Room Floor

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F1	1600	-195	7	-10
F2	1760	-35	10	-7
F3	1700	-95	12	-5
F4	1480	-315	10	-7
F5	1500	-295	10	-7
F6	1450	-345	10	-7

Room A Floor

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F7	1800	5	12	-5
F8	1750	-45	10	-7
F9	1690	-105	10	-7

Room B Floor

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F10	2100	305	22	5
F11	1900	105	15	-2
F12	2300	505	12	-5
F13	2000	205	12	-5
F14	2450	655	14	-3
F15	2100	305	10	-7
F16	2400	605	12	-5
F17	2200	405	15	-2
F18	2100	305	12	-5

Room C Floor

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F19	2100	305	13	-4
F20	2110	315	20	3
F21	1980	185	23	6
F22	2050	255	18	1
F23	2170	375	13	-4
F24	2400	605	28	11

Room F Floor

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F25	2790	995	16	-1
F26	2000	205	16	-1
F27	3140	1345	22	5
F28	1800	5	16	-1
F29	3260	1465	27	10
F30	1700	-95	11	-6
F31	2050	255	12	-5
F32	1850	55	15	-2
F33	1920	125	15	-2
F34	2100	305	14	-3
F35	1800	5	14	-3
F36	1750	-45	12	-5
F37	1900	105	12	-5
F38	2200	405	14	-3
F39	1900	105	15	-2
F40	1870	75	12	-5
F41	1900	105	10	-7
F42	2100	305	12	-5
F43	2000	205	12	-5
F44	2700	905	12	-5
F45	2150	355	10	-7
F46	1900	105	10	-7
F47	2100	305	12	-5
F48	2000	205	10	-7
F49	1830	35	12	-5
F50	2100	305	12	-5
F51	2500	705	16	-1
F52	2300	505	13	-4
F53	2610	815	18	1
F54	2490	695	20	3
F55	2300	505	11	-6
F56	1610	-185	10	-7
F57	1640	-155	13	-4
F58	2210	415	16	-1
F59	2410	615	15	-2
F60	2100	305	12	-5
F61	2010	215	8	-9
F62	2110	315	11	-6
F63	1660	-135	10	-7
F64	1690	-105	12	-5
F65	1610	-185	12	-5
F66	2310	515	10	-7
F67	2010	215	10	-7
F68	2180	385	16	-1
F69	1750	-45	8	-9
F70	1900	105	6	-11
F71	1670	-125	11	-6
F72	1510	-285	8	-9
F73	2410	615	16	-1
F74	2000	205	10	-7

F75	1830	35	11	-6
F76	1600	-195	6	-11
F77	1990	195	7	-10
F78	1900	105	10	-7
F79	1680	-115	10	-7
F80	1960	165	12	-5
F81	2790	995	18	1
F82	2370	575	20	3
F83	1900	105	10	-7
F84	2030	235	8	-9
F85	1690	-105	12	-5
F86	1670	-125	10	-7
F87	2090	295	11	-6
F88	2000	205	8	-9
F89	2060	265	10	-7
F90	2250	455	12	-5
F91	8000	6205	100	83
F92	1890	95	12	-5
F93	3330	1535	26	9

Room D Floor

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F94	2100	305	10	-7
F95	2210	415	13	-4
F96	1950	155	10	-7
F97	2810	1015	15	-2
F98	2500	705	10	-7
F99	2350	555	9	-8
F100	2000	205	12	-5
F101	1850	55	6	-11
F102	1580	-215	8	-9
F103	1750	-45	10	-7
F104	2000	205	11	-6
F105	1990	195	7	-10
F106	1840	45	8	-9
F107	1650	-145	14	-3
F108	1900	105	8	-9
F109	1700	-95	12	-5
F110	1800	5	10	-7
F111	1700	-95	14	-3

Room E Floor

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F112	2680	885	5	-12
F113	2410	615	7	-10
F114	2360	565	8	-9
F115	2520	725	10	-7
F116	2120	325	6	-11
F117	2340	545	3	-14

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

Floor Monitor Info:

Scan MDA Beta - 208 dpm/detector area

Scan MDA Alpha - 26 dpm/detector area

Scan background Beta - 1795 cpm

Scan background Alpha - 17 cpm

Detector Eff. Beta - .27

Detector Eff. Alpha - .207

Elevated Scan Readings

Molycorp - Building 22 Foundation Only Survey Unit (Affected Area)

Location	Beta Scan (net cpm)	Alpha Scan (net cpm)
F91	6205	83

Direct Measurements (Total Activity)

Molycorp - Building 22 Foundation Only Survey Unit (Affected Area)

Boiler Room Floor

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	431	361	70	78	-8	-91	271	497	-182
F2	402	333	69	78	-9	-102	270	497	-205
F3	399	346	53	78	-25	-284	255	497	-568
F4	411	325	86	78	8	91	285	497	182
F5	385	306	79	78	1	11	279	497	23
F6	411	323	88	78	10	114	287	497	227

Room A Floor

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)
F7	390	320	70	78	-8	-91	271	497	-182
F8	452	393	59	78	-19	-216	261	497	-432
F9	387	352	35	78	-43	-489	237	497	-977

Room B Floor

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)
F10	426	363	63	78	-15	-170	264	497	-341
F11	387	343	44	78	-34	-386	246	497	-773
F12	374	325	49	78	-29	-330	251	497	-659
F13	520	328	192	78	114	1295	366	497	2591
F14	374	297	77	78	-1	-11	277	497	-23
F15	414	331	83	78	5	57	283	497	114
F16	480	320	160	78	82	932	344	497	1864
F17	445	315	130	78	52	591	321	497	1182
F18	485	347	138	78	60	682	327	497	1364

Room C Floor

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)
F19	401	316	85	78	7	80	284	497	159
F20	444	274	170	78	92	1045	351	497	2091
F21	425	349	76	78	-2	-23	276	497	-45
F22	415	308	107	78	29	330	303	497	659
F23	430	339	91	78	13	148	290	497	295
F24	455	334	121	78	43	489	314	497	977

Room F Floor

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)
F25	470	269	201	78	123	1398	372	497	2795
F26	391	253	138	78	60	682	327	497	1364
F27	605	290	315	78	237	2693	442	497	5386
F28	382	249	133	78	55	625	324	497	1250
F29	699	282	417	78	339	3852	496	497	7705
F30	327	261	66	78	-12	-136	267	497	-273
F31	421	333	88	78	10	114	287	497	227
F32	414	340	74	78	-4	-45	275	497	-91
F33	415	305	110	78	32	364	305	497	727
F34	413	371	42	78	-36	-409	244	497	-818
F35	405	301	104	78	26	295	300	497	591
F36	402	343	59	78	-19	-216	261	497	-432
F37	396	349	47	78	-31	-352	249	497	-705
F38	467	349	118	78	40	455	312	497	909
F39	400	349	51	78	-27	-307	253	497	-614
F40	429	331	98	78	20	227	295	497	455
F41	390	352	38	78	-40	-455	240	497	-909
F42	457	329	128	78	50	568	320	497	1136
F43	384	303	81	78	3	34	281	497	68
F44	332	391	-59	78	-137	-1557	97	497	-3114
F45	404	328	76	78	-2	-23	276	497	-45
F46	539	368	171	78	93	1057	351	497	2114

F47	383	325	58	78	-20	-227	260	497	-455
F48	421	341	80	78	2	23	280	497	45
F49	408	311	97	78	19	216	295	497	432
F50	368	327	41	78	-37	-420	243	497	-841
F51	400	325	75	78	-3	-34	275	497	-68
F52	327	324	3	78	-75	-852	200	497	-1705
F53	403	399	4	78	-74	-841	202	497	-1682
F54	531	424	107	78	29	330	303	497	659
F55	443	426	17	78	-61	-693	217	497	-1386
F56	336	335	1	78	-77	-875	198	497	-1750
F57	339	292	47	78	-31	-352	249	497	-705
F58	381	285	96	78	18	205	294	497	409
F59	457	344	113	78	35	398	308	497	795
F60	365	337	28	78	-50	-568	229	497	-1136
F61	405	316	89	78	11	125	288	497	250
F62	421	382	39	78	-39	-443	241	497	-886
F63	380	316	64	78	-14	-159	265	497	-318
F64	346	301	45	78	-33	-375	247	497	-750
F65	365	376	-11	78	-89	-1011	182	497	-2023
F66	516	481	35	78	-43	-489	237	497	-977
F67	371	285	86	78	8	91	285	497	182
F68	442	392	50	78	-28	-318	252	497	-636
F69	372	306	66	78	-12	-136	267	497	-273
F70	413	297	116	78	38	432	310	497	864
F71	345	284	61	78	-17	-193	263	497	-386
F72	362	300	62	78	-16	-182	264	497	-364
F73	454	396	58	78	-20	-227	260	497	-455
F74	396	285	111	78	33	375	306	497	750
F75	406	347	59	78	-19	-216	261	497	-432
F76	387	309	78	78	0	0	278	497	0
F77	385	306	79	78	1	11	279	497	23
F78	444	334	110	78	32	364	305	497	727
F79	373	336	37	78	-41	-466	239	497	-932
F80	413	382	31	78	-47	-534	233	497	-1068
F81	612	348	264	78	186	2114	412	497	4227
F82	504	408	96	78	18	205	294	497	409
F83	406	327	79	78	1	11	279	497	23
F84	390	300	90	78	12	136	289	497	273
F85	373	326	47	78	-31	-352	249	497	-705
F86	333	330	3	78	-75	-852	200	497	-1705

F87	484	330	154	78	76	864	339	497	1727
F88	546	427	119	78	41	466	313	497	932
F89	463	387	76	78	-2	-23	276	497	-45
F90	494	339	155	78	77	875	340	497	1750
F91	4887	361	4526	78	4448	50545	1511	497	101091
F92	416	348	68	78	-10	-114	269	497	-227
F93	947	826	121	78	43	489	314	497	977
T1	597	425	172	78	94	1068	352	497	2136
T2	442	285	157	78	79	898	341	497	1795
T3	398	300	98	78	20	227	295	497	455

Room D Floor

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)
F94	521	407	114	78	36	409	309	497	818
F95	464	420	44	78	-34	-386	246	497	-773
F96	530	473	57	78	-21	-239	259	497	-477
F97	577	453	124	78	46	523	317	497	1045
F98	568	482	86	78	8	91	285	497	182
F99	517	419	98	78	20	227	295	497	455
F100	468	400	68	78	-10	-114	269	497	-227
F101	444	339	105	78	27	307	301	497	614
F102	409	263	146	78	68	773	333	497	1545
F103	354	321	33	78	-45	-511	235	497	-1023
F104	444	384	60	78	-18	-205	262	497	-409
F105	402	360	42	78	-36	-409	244	497	-818
F106	398	354	44	78	-34	-386	246	497	-773
F107	422	372	50	78	-28	-318	252	497	-636
F108	409	367	42	78	-36	-409	244	497	-818
F109	401	370	31	78	-47	-534	233	497	-1068
F110	406	339	67	78	-11	-125	268	497	-250
F111	407	367	40	78	-38	-432	242	497	-864

Room E Floor

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)
F112	513	395	118	78	40	455	312	497	909
F113	496	394	102	78	24	273	299	497	545
F114	521	324	197	78	119	1352	369	497	2705
F115	522	389	133	78	55	625	324	497	1250
F116	522	354	168	78	90	1023	349	497	2045
F117	487	336	151	78	73	830	337	497	1659

All lower level 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

Elevated Direct Measurements (Total Activity) and Averaging Results
Molycorp - Building 22 Foundation Only Survey Unit (Affected Area)

Location (see map)	Direct Beta (dpm/100cm ²)	Direct Alpha (1) (dpm/100cm ²)	Over Area (cm ²)	Exceeds Limits Maximum Average	Averaged Value (over 1 m ²)
Room B Floor					
F13	1295	2591			Marked for removal/remediation
F16		1864			Marked for removal/remediation
F17		1182			Marked for removal/remediation
F18		1364			Marked for removal/remediation
Room C Floor					
F20	1045	2091			Marked for removal/remediation
Room F Floor					
F25	1398	2795			Marked for removal/remediation
F26		1364			Marked for removal/remediation
F27	2693	5386			Marked for removal/remediation
F28		1250			Marked for removal/remediation
F29	3852	7705			Marked for removal/remediation
F42		1136			Marked for removal/remediation
F46	1057	2114			Marked for removal/remediation
F81	2114	4227			Marked for removal/remediation
F87		1727			Marked for removal/remediation
F90		1750			Marked for removal/remediation
F91	50545	101091			Marked for removal/remediation
T1	1068	2136			Marked for removal/remediation
T2		1795			Marked for removal/remediation
Room D Floor					
F97		1045			Marked for removal/remediation
F102		1545			Marked for removal/remediation
Room E Floor					
F114	1352	2705			Marked for removal/remediation
F115		1250			Marked for removal/remediation

F116
F117

1023

2045
1659

Marked for removal/remediation
Marked for removal/remediation

Removable Surface Activity Measurements
Molycorp - Building 22 Foundation Only Survey Unit (Affected Area)

Boiler Room Floor

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
F1	24	25.7	152	-0.6	2.6	13	2
F2	-24	25.7	152	2.3	5.1	13	2
F3	6	15.6	152	-0.6	2.6	13	2
F4	12	19.6	152	-0.6	2.6	13	2
F5	-36	30.7	152	-0.6	2.6	13	2
F6	-24	25.7	152	-0.6	2.6	13	2

Room A Floor

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
F7	18	22.9	152	-0.6	2.6	13	2
F8	60	38.7	152	2.3	5.1	13	2
F9	-36	30.7	152	-0.6	2.6	13	2

Room B Floor

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
F10	-54	36.9	152	2.3	5.1	13	2
F11	12	19.6	152	-0.6	2.6	13	2
F12	-54	36.9	152	-0.6	2.6	13	2
F13	-36	30.7	152	-0.6	2.6	13	2
F14	0	10.2	152	-0.6	2.6	13	2
F15	-66	40.5	152	-0.6	2.6	13	2
F16	36	30.7	152	-0.6	2.6	13	2
F17	-12	19.6	152	-0.6	2.6	13	2
F18	0	10.2	152	-0.6	2.6	13	2

Room C Floor

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
F19	-18	22.9	152	-0.6	2.6	13	2
F20	-48	34.9	152	-0.6	2.6	13	2
F21	-6	15.6	152	-0.6	2.6	13	2
F22	-18	22.9	152	-0.6	2.6	13	2
F23	18	22.9	152	-0.6	2.6	13	2
F24	6	15.6	152	-0.6	2.6	13	2

Room F Floor

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
F25	-6	15.6	152	2.3	5.1	13	2
F26	-12	19.6	152	-0.6	2.6	13	2
F27	42	32.9	152	-0.6	2.6	13	2
F28	-36	30.7	152	2.3	5.1	13	2
F29	18	22.9	152	-0.6	2.6	13	2
F30	6	15.6	152	-0.6	2.6	13	2
F31	6	15.6	152	-0.6	2.6	13	2
F32	-24	25.7	152	-0.6	2.6	13	2
F33	48	34.9	152	2.3	5.1	13	2
F34	54	36.9	152	2.3	5.1	13	2
F35	6	15.6	152	-0.6	2.6	13	2
F36	-12	19.6	152	5.2	7.6	13	2
F37	6	15.6	152	-0.6	2.6	13	2
F38	36	30.7	152	-0.6	2.6	13	2
F39	-6	15.6	152	-0.6	2.6	13	2
F40	72	42.2	152	2.3	5.1	13	2
F41	-36	30.7	152	-0.6	2.6	13	2
F42	-60	38.7	152	2.3	5.1	13	2
F43	-36	30.7	152	-0.6	2.6	13	2
F44	-12	19.6	152	2.3	5.1	13	2
F45	48	34.9	152	-0.6	2.6	13	2
F46	30	28.3	152	-0.6	2.6	13	2
F47	-72	42.2	152	-0.6	2.6	13	2

F48	6	15.6	152	-0.6	2.6	13	2
F49	-54	36.9	152	-0.6	2.6	13	2
F50	-60	38.7	152	-0.6	2.6	13	2
F51	0	10.2	152	2.3	5.1	13	2
F52	18	22.9	152	-0.6	2.6	13	2
F53	60	38.7	152	-0.6	2.6	13	2
F54	-6	15.6	152	-0.6	2.6	13	2
F55	60	38.7	152	-0.6	2.6	13	2
F56	-12	19.6	152	-0.6	2.6	13	2
F57	-42	32.9	152	-0.6	2.6	13	2
F58	24	25.7	152	-0.6	2.6	13	2
F59	42	32.9	152	-0.6	2.6	13	2
F60	-6	15.6	152	-0.6	2.6	13	2
F61	18	22.9	152	-0.6	2.6	13	2
F62	-6	15.6	152	-0.6	2.6	13	2
F63	60	38.7	152	-0.6	2.6	13	2
F64	-18	22.9	152	-0.6	2.6	13	2
F65	-36	30.7	152	-0.6	2.6	13	2
F66	-18	22.9	152	-0.6	2.6	13	2
F67	-30	28.3	152	-0.6	2.6	13	2
F68	-36	30.7	152	-0.6	2.6	13	2
F69	36	30.7	152	-0.6	2.6	13	2
F70	-48	34.9	152	-0.6	2.6	13	2
F71	30	28.3	152	-0.6	2.6	13	2
F72	-6	15.6	152	-0.6	2.6	13	2
F73	-36	30.7	152	-0.6	2.6	13	2
F74	54	36.9	152	-0.6	2.6	13	2
F75	-18	22.9	152	-0.6	2.6	13	2
F76	-18	22.9	152	-0.6	2.6	13	2
F77	12	19.6	152	-0.6	2.6	13	2
F78	42	32.9	152	-0.6	2.6	13	2
F79	24	25.7	152	-0.6	2.6	13	2
F80	-6	15.6	152	-0.6	2.6	13	2
F81	-6	15.6	152	-0.6	2.6	13	2
F82	-18	22.9	152	-0.6	2.6	13	2
F83	36	30.7	152	-0.6	2.6	13	2
F84	6	15.6	152	-0.6	2.6	13	2
F85	-30	28.3	152	-0.6	2.6	13	2
F86	-42	32.9	152	-0.6	2.6	13	2
F87	18	22.9	152	-0.6	2.6	13	2
F88	-18	22.9	152	-0.6	2.6	13	2

F89	-12	19.6	152	-0.6	2.6	13	2
F90	-12	19.6	152	-0.6	2.6	13	2
F91	139	57.8	152	31	18.6	13	2
F92	24	25.7	152	-0.6	2.6	13	2
F93	-24	25.7	152	-0.6	2.6	13	2

Room D Floor

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
F94	12	19.6	152	-0.6	2.6	13	2
F95	0	10.2	152	-0.6	2.6	13	2
F96	-42	32.9	152	2.3	5.1	13	2
F97	48	34.9	152	2.3	5.1	13	2
F98	30	28.3	152	-0.6	2.6	13	2
F99	30	28.3	152	2.3	5.1	13	2
F100	-24	25.7	152	-0.6	2.6	13	2
F101	-6	15.6	152	-0.6	2.6	13	2
F102	84	45.4	152	-0.6	2.6	13	2
F103	84	45.4	152	-0.6	2.6	13	2
F104	-18	22.9	152	-0.6	2.6	13	2
F105	54	36.9	152	-0.6	2.6	13	2
F106	-66	40.5	152	-0.6	2.6	13	2
F107	36	30.7	152	-0.6	2.6	13	2
F108	-12	19.6	152	2.3	5.1	13	2
F109	0	10.2	152	-0.6	2.6	13	2
F110	-6	15.6	152	2.3	5.1	13	2
F111	54	36.9	152	2.3	5.1	13	2

Room E Floor

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
F112	12	19.6	152	-0.6	2.6	13	2
F113	6	15.6	152	-0.6	2.6	13	2
F114	-60	38.7	152	-0.6	2.6	13	2
F115	0	10.2	152	-0.6	2.6	13	2
F116	-12	19.6	152	-0.6	2.6	13	2
F117	18	22.9	152	-0.6	2.6	13	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	153	12

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

	Beta	Alpha
Background (cpm)	44	0.2
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	152	13

Elevated Removable Surface Activity Measurements
Molycorp - Building 22 Foundation Only Survey Unit (Affected Area)

No elevated removable surface activity was reported above limits.

Exposure Rate Measurements

Molycorp - Building 22 Foundation Only Survey Unit (Affected Area)

Boiler Room Floor

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 7-9 uR/hr
F1	11	3	
F2	11	3	
F3	12	4	
F4	10	2	
F5	10	2	
F6	10	2	

Room A Floor

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 8-10 uR/hr
F7	10	1	
F8	10	1	
F9	10	1	

Room B Floor

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 11-13 uR/hr
F10	13	1	
F11	14	2	
F12	14	2	
F13	13	1	
F14	14	2	
F15	14	2	
F16	13	1	
F17	13	1	
F18	14	2	

Room C Floor

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 12-14 uR/hr
F19	13	0	
F20	13	0	
F21	14	1	
F22	14	1	
F23	14	1	
F24	14	1	

Room F Floor

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 8-14 uR/hr
F25	12	0	
F26	12	0	
F27	11	-1	
F28	12	0	
F29	12	0	
F30	12	0	
F31	13	1	
F32	13	1	
F33	13	1	
F34	13	1	
F35	13	1	
F36	13	1	
F37	13	1	
F38	14	2	
F39	14	2	
F40	13	1	
F41	12	0	
F42	12	0	
F43	12	0	
F44	12	0	
F45	13	1	
F46	14	2	
F47	14	2	
F48	14	2	
F49	14	2	
F50	13	1	
F51	10	-2	
F52	13	1	
F53	13	1	
F54	12	0	
F55	12	0	
F56	11	-1	
F57	11	-1	
F58	12	0	
F59	13	1	
F60	13	1	
F61	12	0	
F62	13	1	
F63	12	0	
F64	12	0	
F65	12	0	
F66	12	0	
F67	13	1	
F68	13	1	
F69	13	1	
F70	12	0	
F71	11	-1	
F72	12	0	

F73	13	1
F74	13	1
F75	15	3
F76	12	0
F77	13	1
F78	12	0
F79	12	0
F80	15	3
F81	15	3
F82	15	3
F83	13	1
F84	13	1
F85	13	1
F86	13	1
F87	17	3
F88	18	4
F89	19	5
F90	19	5
F91	17	3
F92	14	0
F93	16	2

Room D Floor

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 15-20 uR/hr
F94	23	5	
F95	23	5	
F96	23	5	
F97	23	5	
F98	22	4	
F99	17	-1	
F100	17	-1	
F101	16	-2	
F102	15	-3	
F103	14	-4	
F104	14	-4	
F105	15	-3	
F106	15	-3	
F107	14	-4	
F108	14	-4	
F109	15	-3	
F110	14	-4	
F111	15	-3	

Room E Floor

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 19-23 uR/hr
F112	23	2	
F113	24	3	
F114	20	-1	
F115	20	-1	
F116	22	1	
F117	24	3	

Summary of Exposure Rate Measurements
Molycorp - Building 22 Foundation Only Survey Unit (Affected Area)

n	\bar{x}	s	μ_{α}
117	0.8	2.0	1.1
$t_{1-\alpha}$	1.658		

Guidelines/Conditions
Satisfied?
Yes

Summary of Building Surface Direct Reading (Total Activity) Results
Molycorp - Building 22 Foundation Only Survey Unit (Affected Area)

Beta				Alpha			
n	\bar{x}	s	μ_α	n	\bar{x}	s	μ_α
94	-136	372.1	-72.0	94	-272	744.3	-144.0
	$t_{1-\alpha}$	1.664					

Guidelines/Conditions Satisfied?

Beta	Alpha
Yes	Yes

Results of Surface Scans

Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

Second Story Floor

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
F1	440	101	2	0.2
F2	420	81	1	-0.8
F3	440	101	2	0.2
F4	530	191	4	2.2
F5	540	201	2	0.2
F6	520	181	1	-0.8
F7	700	361	4	2.2
F8	630	291	4	2.2
F9	480	141	2	0.2
F10	700	361	2	0.2
F11	440	101	2	0.2
F12	390	51	2	0.2
F13	2400	2061	4	2.2
F14	400	61	1	-0.8
F15	400	61	2	0.2

Room G floor scan performed with Ludlum 2350-1 No.117566
with 43-106 No. 128912:

Scan MDA Beta - 693 dpm/detector area

Scan MDA Alpha - 60 dpm/detector area

Scan background Beta - 339 cpm

Scan background Alpha - 1.8 cpm

Detector Eff. Beta - .251

Detector Eff. Alpha - .212

Boiler Room Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W1	300	-7	1.6	1.4
W2	290	-17	1	0.8
W3	305	-2	1	0.8
W4	320	13	1.4	1.2
W5	320	13	0.8	0.6
W6	301	-6	1	0.8
W7	290	-17	1	0.8
W8	300	-7	1	0.8
W9	310	3	1	0.8

Room A Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W10	350	43	1.6	1.4
W11	370	63	0.4	0.2
W12	340	33	3	2.8
W13	360	53	0.2	0
W14	290	-17	0.7	0.5
W15	250	-57	0.9	0.7
W16	340	33	0.5	0.3
W17	350	43	0.7	0.5

Room B Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W18	340	33	1.2	1
W19	336	29	0.8	0.6
W20	312	5	1	0.8
W21	343	36	1.2	1
W22	372	65	1.6	1.4
W23	300	-7	1	0.8
W24	310	3	2	1.8
W25	320	13	1	0.8
W26	368	61	1	0.8
W27	315	8	1	0.8
W28	305	-2	1	0.8
W29	295	-12	0	-0.2

Room C Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W30	540	233	0.7	0.5
W31	390	83	5	4.8
W32	490	183	12	11.8
W33	340	33	10	9.8
W34	360	53	9	8.8
W35	420	113	2	1.8
W36	410	103	8	7.8
W37	420	113	3	2.8
W38	410	103	1.2	1

Room F Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W39	400	93	0.5	0.3
W40	380	73	1	0.8
W41	420	113	20	19.8

W42	340	33	0.5	0.3
W43	490	183	8	7.8
W44	510	203	1	0.8
W45	390	83	3	2.8
W46	530	223	4	3.8
W47	510	203	6	5.8
W48	270	-37	2	1.8
W49	520	213	8	7.8
W50	430	123	5	4.8
W51	490	183	0.5	0.3
W52	570	263	5	4.8
W53	500	193	0.5	0.3
W54	410	103	3	2.8
W55	770	463	30	29.8
W56	720	413	2	1.8
W57	730	423	3	2.8
W58	640	333	0.5	0.3
W59	650	343	5	4.8
W60	430	123	6	5.8
W61	410	103	5	4.8
W62	300	-7	5	4.8
W63	350	43	3	2.8
W64	310	3	9	8.8
W65	410	103	15	14.8
W66	340	33	3	2.8
W67	360	53	2	1.8
W68	340	33	2	1.8
W69	320	13	1	0.8
W70	340	33	3	2.8
W71	330	23	1	0.8
W72	340	33	3	2.8
W73	320	13	2	1.8
W74	320	13	2	1.8
W75	340	33	2	1.8
W76	350	43	2	1.8

Room G Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W77	390	83	1	0.8
W78	300	-7	0.8	0.6
W79	340	33	1.6	1.4
W80	344	37	1	0.8
W81	391	84	1	0.8
W82	330	23	1	0.8
W83	284	-23	2	1.8
W84	310	3	1.8	1.6
W85	290	-17	1	0.8
W86	300	-7	1	0.8
W87	320	13	1.4	1.2
W88	310	3	0.8	0.6
W89	280	-27	1	0.8
W90	280	-27	1	0.8
W91	337	30	1	0.8

W92	290	-17	0.6	0.4
W93	320	13	1	0.8
W94	312	5	1.2	1
W95	345	38	1	0.8
W96	325	18	2	1.8
W97	541	234	1	0.8
W98	346	39	1	0.8
W99	350	43	1	0.8
W100	390	83	1.6	1.4
W101	360	53	2	1.8
W102	300	-7	1	0.8
W103	350	43	2	1.8
W104	420	113	1	0.8
W105	280	-27	1	0.8
W106	540	233	3	2.8
W107	460	153	4	3.8
W108	340	33	2	1.8
W109	320	13	2	1.8
W110	400	93	1	0.8
W111	320	13	2	1.8
W112	330	23	1	0.8
W113	340	33	2	1.8
W114	270	-37	1	0.8
W115	320	13	3	2.8
W116	380	73	2	1.8
W117	360	53	2	1.8
W118	300	-7	1	0.8

Room E Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W119	1070	763	15	14.8
W120	1080	773	20	19.8
W121	1040	733	25	24.8
W122	1070	763	25	24.8
W123	900	593	25	24.8
W124	940	633	17	16.8
W125	1040	733	20	19.8
W126	1020	713	15	14.8
W127	1020	713	20	19.8
W128	1080	773	28	27.8
W129	1080	773	12	11.8

Room D Walls (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W132	650	343	1	0.8
W133	687	380	1.2	1
W134	720	413	2.4	2.2
W135	600	293	2	1.8
W136	320	13	0.8	0.6
W137	366	59	1	0.8

W138	360	53	1	0.8
W139	340	33	1	0.8
W140	411	104	2	1.8
W141	460	153	1.4	1.2
W142	337	30	1	0.8
W143	362	55	1.6	1.4
W144	343	36	1	0.8
W145	325	18	1.2	1
W146	390	83	1	0.8
W147	343	36	2	1.8
W148	490	183	1.6	1.4
W149	550	243	2	1.8
W150	690	383	1.7	1.5
W151	653	346	1	0.8
W152	560	253	2	1.8
W153	550	243	1	0.8
W154	717	410	2	1.8
W155	632	325	1	0.8
W156	412	105	1	0.8
W157	438	131	1.6	1.4
W158	415	108	1	0.8
W159	330	23	0.8	0.6
W160	356	49	1	0.8
W161	535	228	1.6	1.4

All wall scans performed with Ludlum 2350-1 No.117563 with 43-106 No. 133866

43-106 Info:

Scan MDA Beta - 668 dpm/detector area
Scan MDA Alpha - 8.9 dpm/detector area
Scan background Beta - 307 cpm
Scan background Alpha - .2 cpm
Detector Eff. Beta - .248
Detector Eff. Alpha - .211

Building Ceiling (Interior)

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
C130	380	73	6	5.8
C131	400	93	4	3.8
C162	462	155	0.7	0.5
C163	349	42	0.8	0.6

Ceiling scans performed with Ludlum 2350-1 No.117563 with 43-106 No. 133866

43-106 Info:

Scan MDA Beta - 668 dpm/detector area

Scan MDA Alpha - 8.9 dpm/detector area

Scan background Beta - 307 cpm

Scan background Alpha - .2 cpm

Detector Eff. Beta - .248

Detector Eff. Alpha - .211

Results of Surface Scans

Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

Building and Room Exterior Walls

Location (see map)	Beta Scan gross cpm	Beta Scan net cpm	Alpha Scan gross cpm	Alpha Scan net cpm
W1	510	203	20	19.8
W2				
W3				
W4	420	113	10	9.8
W5				
W6				
W7				
W8				
W9	480	173	8	7.8
W10				
W11				
W12				
W13	510	203	12	11.8
W14				
W15				
W16				
W17				
W18				
W19				
W20				
W21				
W22				
W23	550	243	10	9.8
W24				
W25				
W26	500	193	14	13.8
W27				
W28	490	183	6	5.8
W29				
W30				

Building and room exterior walls performed with Ludlum 2350-1
No.117566 with 43-106 No. 128912

43-106 Info:

Scan MDA Beta - 668 dpm/detector area

Scan MDA Alpha - 8.9 dpm/detector area

Scan background Beta - 307 cpm

Scan background Alpha - .2 cpm

Detector Eff. Beta - .248

Detector Eff. Alpha - .211

Elevated Scan Readings

Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

Location	Beta Scan (net cpm)
F13	2061
W119	763
W120	773
W121	733
W122	763
W124	633
W125	733
W126	713
W127	713
W128	773
W129	773

Multiple alpha scan results were greater than two times background and are not listed. All areas of elevated alpha activity (by scan) were evaluated by direct and loose surface surveys.

Direct Measurements (Total Activity)

Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

Second Story Floor

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	328	316	12	8	4	45	100	180	91
F2	307	284	23	8	15	170	124	180	341
F3	348	279	69	8	61	693	195	180	1386
F4	351	287	64	8	56	636	189	180	1273
F5	323	321	2	8	-6	-68	70	180	-136
F6	320	276	44	8	36	409	161	180	818
F7	543	348	195	8	187	2125	317	180	4250
F8	484	324	160	8	152	1727	289	180	3455
F9	277	288	-11	8	-19	-216	39	180	-432
F10	581	341	240	8	232	2636	351	180	5273
F11	458	323	135	8	127	1443	266	180	2886
F12	338	318	20	8	12	136	118	180	273
F13	2638	306	2332	8	2324	26409	1077	180	52818
F14	309	291	18	8	10	114	114	180	227
F15	349	308	41	8	33	375	156	180	750

Room G floor direct measurements were performed with 2360
No. 156371 and 43-89 No. 164832

	Beta	Alpha
Efficiency	0.088	0.153
Floor Background (cpm)	8	1.6
Floor MDA (dpm/100 cm ²)	180	56

Direct Measurements (Total Activity)

Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

Boiler Room 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	267	235	32	49	-17	-193	200	400	-386
W2	253	218	35	49	-14	-159	204	400	-318
W3	297	223	74	49	25	284	247	400	568
W4	251	234	17	8	9	102	111	180	205
W5	265	230	35	49	-14	-159	204	400	-318
W6	331	279	52	49	3	34	224	400	68
W7	307	243	64	49	15	170	237	400	341
W8	260	228	32	49	-17	-193	200	400	-386
W9	265	226	39	49	-10	-114	209	400	-227

Room A 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)
W10	282	265	17	8	9	102	111	180	205
W11	283	265	18	8	10	114	114	180	227
W12	208	237	-29	8	-37	-420	102	180	-841
W13	255	263	-8	8	-16	-182	0	180	-364
W14	236	240	-4	8	-12	-136	45	180	-273
W15	217	209	8	8	0	0	89	180	0
W16	212	227	-15	8	-23	-261	59	180	-523
W17	256	220	36	8	28	318	148	180	636

Room B 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)
W18	284	273	11	49	-38	-432	173	400	-864
W19	271	253	18	8	10	114	114	180	227

W20	258	229	29	8	21	239	135	180	477
W21	278	240	38	49	-11	-125	208	400	-250
W22	274	221	53	49	4	45	225	400	91
W23	264	258	6	49	-43	-489	165	400	-977
W24	291	229	62	49	13	148	235	400	295
W25	305	230	75	49	26	295	248	400	591
W26	297	250	47	49	-2	-23	218	400	-45
W27	256	260	-4	49	-53	-602	149	400	-1205
W28	269	240	29	49	-20	-227	197	400	-455
W29	279	228	51	49	2	23	223	400	45

Room C 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)
W30	380	299	81	49	32	364	254	400	727
W31	339	264	75	49	26	295	248	400	591
W32	377	269	108	49	59	670	279	400	1341
W33	270	277	-7	49	-56	-636	144	400	-1273
W34	293	235	58	49	9	102	230	400	205
W35	327	298	29	49	-20	-227	197	400	-455
W36	306	271	35	49	-14	-159	204	400	-318
W37	245	244	1	49	-48	-545	157	400	-1091
W38	297	250	47	49	-2	-23	218	400	-45

Room F 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)
W39	257	265	-8	8	-16	-182	0	180	-364
W40	370	310	60	49	11	125	233	400	250
W41	349	287	62	49	13	148	235	400	295
W42	251	232	19	8	11	125	116	180	250
W43	347	292	55	49	6	68	227	400	136
W44	307	288	19	49	-30	-341	184	400	-682
W45	288	295	-7	49	-56	-636	144	400	-1273
W46	375	303	72	49	23	261	245	400	523
W47	371	287	84	49	35	398	257	400	795

W48	245	238	7	8	-1	-11	86	180	-23
W49	383	315	68	49	19	216	241	400	432
W50	333	243	90	49	41	466	263	400	932
W51	333	292	41	49	-8	-91	211	400	-182
W52	411	359	52	49	3	34	224	400	68
W53	353	312	41	49	-8	-91	211	400	-182
W54	336	265	71	49	22	250	244	400	500
W55	515	364	151	49	102	1159	315	400	2318
W56	460	324	136	49	87	989	303	400	1977
W57	518	349	169	49	120	1364	329	400	2727
W58	504	370	134	49	85	966	301	400	1932
W59	464	332	132	49	83	943	300	400	1886
W60	302	280	22	8	14	159	122	180	318
W61	274	252	22	8	14	159	122	180	318
W62	225	243	-18	8	-26	-295	70	180	-591
W63	261	232	29	8	21	239	135	180	477
W64	242	244	-2	8	-10	-114	55	180	-227
W65	268	253	15	8	7	80	107	180	159
W66	226	261	-35	8	-43	-489	116	180	-977
W67	269	245	24	8	16	182	126	180	364
W68	264	255	9	8	1	11	92	180	23
W69	275	267	8	49	-41	-466	168	400	-932
W70	306	270	36	49	-13	-148	205	400	-295
W71	297	248	49	49	0	0	220	400	0
W72	330	236	94	49	45	511	266	400	1023
W73	279	234	45	49	-4	-45	216	400	-91
W74	289	210	79	49	30	341	252	400	682
W75	319	242	77	49	28	318	250	400	636
W76	301	250	51	49	2	23	223	400	45
W164	322	259	63	49	14	159	236	400	318
W169	353	276	77	49	28	318	250	400	636
W171	219	213	6	49	-43	-489	165	400	-977
W174	204	187	17	49	-32	-364	181	400	-727

Room G 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)
W77	272	241	31	49	-18	-205	199	400	-409
W78	218	214	4	8	-4	-45	77	180	-91
W79	287	269	18	49	-31	-352	182	400	-705
W80	305	242	63	49	14	159	236	400	318
W81	285	251	34	49	-15	-170	203	400	-341
W82	268	214	54	49	5	57	226	400	114
W83	270	243	27	49	-22	-250	194	400	-500
W84	261	240	21	49	-28	-318	186	400	-636
W85	274	247	27	49	-22	-250	194	400	-500
W86	262	204	58	49	9	102	230	400	205
W87	257	212	45	49	-4	-45	216	400	-91
W88	220	215	5	8	-3	-34	80	180	-68
W89	201	208	-7	8	-15	-170	22	180	-341
W90	220	243	-23	8	-31	-352	86	180	-705
W91	252	263	-11	49	-60	-682	137	400	-1364
W92	253	225	28	49	-21	-239	195	400	-477
W93	266	219	47	49	-2	-23	218	400	-45
W94	295	252	43	49	-6	-68	214	400	-136
W95	284	238	46	49	-3	-34	217	400	-68
W96	286	288	-2	49	-51	-580	153	400	-1159
W97	439	287	152	49	103	1170	316	400	2341
W98	288	242	46	49	-3	-34	217	400	-68
W99	307	234	73	49	24	273	246	400	545
W100	281	300	-19	49	-68	-773	122	400	-1545
W101	236	249	-13	49	-62	-705	134	400	-1409
W102	265	215	50	49	1	11	222	400	23
W103	248	221	27	49	-22	-250	194	400	-500
W104	290	273	17	49	-32	-364	181	400	-727
W105	199	211	-12	8	-20	-227	45	180	-455
W106	465	295	170	49	121	1375	330	400	2750
W107	314	241	73	49	24	273	246	400	545
W108	317	245	72	49	23	261	245	400	523
W109	243	195	48	49	-1	-11	219	400	-23
W110	372	293	79	49	30	341	252	400	682

W111	293	287	6	49	-43	-489	165	400	-977
W112	278	303	-25	49	-74	-841	109	400	-1682
W113	326	261	65	49	16	182	238	400	364
W114	252	226	26	8	18	205	130	180	409
W115	280	216	64	8	56	636	189	180	1273
W116	302	254	48	8	40	455	167	180	909
W117	304	230	74	8	66	750	202	180	1500
W118	302	249	53	8	45	511	174	180	1023

Room E 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)
W119	714	403	311	49	262	2977	423	400	5955
W120	681	336	345	49	296	3364	442	400	6727
W121	692	363	329	49	280	3182	433	400	6364
W122	662	411	251	49	202	2295	386	400	4591
W123	600	316	284	49	235	2670	406	400	5341
W124	628	322	306	49	257	2920	420	400	5841
W125	629	351	278	49	229	2602	403	400	5205
W126	679	366	313	49	264	3000	424	400	6000
W127	738	425	313	49	264	3000	424	400	6000
W128	769	391	378	49	329	3739	460	400	7477
W129	718	400	318	49	269	3057	427	400	6114

Room D 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)
W132	489	390	99	49	50	568	271	400	1136
W133	543	390	153	49	104	1182	317	400	2364
W134	542	362	180	49	131	1489	337	400	2977
W135	499	387	112	49	63	716	283	400	1432
W136	251	256	-5	8	-13	-148	39	180	-295
W137	328	270	58	49	9	102	230	400	205
W138	300	290	10	49	-39	-443	171	400	-886
W139	341	274	67	49	18	205	240	400	409
W140	316	309	7	49	-42	-477	167	400	-955

W141	332	293	39	49	-10	-114	209	400	-227
W142	351	269	82	49	33	375	255	400	750
W143	306	291	15	49	-34	-386	178	400	-773
W144	346	283	63	49	14	159	236	400	318
W145	378	296	82	49	33	375	255	400	750
W146	365	321	44	49	-5	-57	215	400	-114
W147	332	320	12	49	-37	-420	174	400	-841
W148	479	400	79	49	30	341	252	400	682
W149	508	397	111	49	62	705	282	400	1409
W150	536	415	121	49	72	818	290	400	1636
W151	561	420	141	49	92	1045	307	400	2091
W152	516	402	114	49	65	739	284	400	1477
W153	482	393	89	49	40	455	262	400	909
W154	551	418	133	49	84	955	300	400	1909
W155	500	400	100	49	51	580	272	400	1159
W156	569	386	183	49	134	1523	339	400	3045
W157	382	294	88	49	39	443	261	400	886
W158	397	294	103	49	54	614	275	400	1227
W159	290	256	34	8	26	295	144	180	591
W160	349	277	72	8	64	727	199	180	1455
W161	543	365	178	8	170	1932	304	180	3864

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

Efficiency	Beta	Alpha
	0.088	0.153
Wall Background (cpm)	8	3.7
Wall MDA (dpm/100 cm ²)	180	76
Cinderblock background (cpm)	49	3.7
Cinderblock MDA (dpm/100 cm ²)	400	76

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

Direct Measurements (Total Activity)
Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

Building Ceiling (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)
C130	301	320	-19	8	-27	-307	74	180	-614
C131	277	281	-4	8	-12	-136	45	180	-273
C162	318	337	-19	8	-27	-307	74	180	-614
C163	280	280	0	8	-8	-91	63	180	-182
C165	232	222	10	8	2	23	94	180	45
B166	259	231	28	8	20	227	134	180	455
C167	213	267	-54	8	-62	-705	151	180	-1409
B168	246	228	18	8	10	114	114	180	227
C170	248	255	-7	8	-15	-170	22	180	-341
C172	225	265	-40	8	-48	-545	126	180	-1091
B173	226	215	11	8	3	34	97	180	68
C175	247	224	23	8	15	170	124	180	341
V176	232	251	-19	8	-27	-307	74	180	-614

All ceiling direct measurements were performed with 2360

No. 156371 and 43-89 No. 164832

Ceiling Efficiency

Beta	Alpha
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 than sampling.

Direct Measurements (Total Activity)

Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

Building and Room Exterior Walls

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	327	320	7	49	-42	-477	167	400	-955
W2	344	334	10	49	-39	-443	171	400	-886
W3	618	508	110	49	61	693	281	400	1386
W4	408	339	69	49	20	227	242	400	455
W5	503	426	77	49	28	318	250	400	636
W6	268	252	16	49	-33	-375	180	400	-750
W7	309	248	61	49	12	136	234	400	273
W8	288	239	49	49	0	0	220	400	0
W9	291	249	42	49	-7	-80	212	400	-159
W10	244	236	8	49	-41	-466	168	400	-932
W11	318	248	70	49	21	239	243	400	477
W12	291	246	45	49	-4	-45	216	400	-91
W13	286	276	10	49	-39	-443	171	400	-886
W14	304	289	15	49	-34	-386	178	400	-773
W15	255	240	15	49	-34	-386	178	400	-773
W16	293	281	12	49	-37	-420	174	400	-841
W17	306	242	64	49	15	170	237	400	341
W18	292	271	21	49	-28	-318	186	400	-636
W19	312	266	46	49	-3	-34	217	400	-68
W20	342	311	31	49	-18	-205	199	400	-409
W21	394	304	90	49	41	466	263	400	932
W22	408	389	19	49	-30	-341	184	400	-682
W23	327	280	47	49	-2	-23	218	400	-45
W24	276	258	18	49	-31	-352	182	400	-705
W25	266	239	27	49	-22	-250	194	400	-500
W26	272	236	36	49	-13	-148	205	400	-295
W27	281	280	1	49	-48	-545	157	400	-1091
W28	328	255	73	49	24	273	246	400	545
W29	278	265	13	49	-36	-409	175	400	-818
W30	307	263	44	49	-5	-57	215	400	-114

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 cm ²)	180	76

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

Elevated Direct Measurements (Total Activity) and Averaging Results
Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

Location (see map)	Direct Beta (dpm/100cm ²)	Direct Alpha (dpm/100cm ²)	Over Area (cm ²)	Exceeds Limits		Averaged Value (over 1 m ²)	Within Limits? Yes/No
				Maximum	Average		
Room G Floor (second story floor)							
F3		1386		Marked for removal/remediation			
F4		1273		Marked for removal/remediation			
F7	2125	4250		Marked for removal/remediation			
F8	1727	3455		Marked for removal/remediation			
F10	2636	5273		Marked for removal/remediation			
F11	1443	2886		Marked for removal/remediation			
F13	26409	52818		Marked for removal/remediation			
Room C Walls (Interior)							
W32		1341	400	No	Yes	567	Yes
Room F Walls (Interior)							
W55	1159	2318		Marked for removal/remediation			
W57	1364	2727		Marked for removal/remediation			
W58		1932		Marked for removal/remediation			
W59		1886		Marked for removal/remediation			
W72		1023	200	No	Yes	218	Yes
Room G Walls (Interior)							
W97	1170	2341		Marked for removal/remediation			
W106	1375	2750		Marked for removal/remediation			
W115		1273	200	No	Yes	100	Yes
W117		1500	300	No	Yes	462	Yes
W118		1023	200	No	Yes	280	Yes

Room E Walls (Interior)

W119	2977	5955	Marked for removal/remediation
W120	3364	6727	Marked for removal/remediation
W121	3182	6364	Marked for removal/remediation
W122	2295	4591	Marked for removal/remediation
W123	2670	5341	Marked for removal/remediation
W124	2920	5841	Marked for removal/remediation
W125	2602	5205	Marked for removal/remediation
W126	3000	6000	Marked for removal/remediation
W127	3000	6000	Marked for removal/remediation
W128	3739	7477	Marked for removal/remediation
W129	3057	6114	Marked for removal/remediation

Room D Walls (Interior)

W132	568	1136	Marked for removal/remediation
W133	1182	2364	Marked for removal/remediation
W134	1489	2977	Marked for removal/remediation
W135	716	1432	Marked for removal/remediation
W149	705	1409	Marked for removal/remediation
W150	818	1636	Marked for removal/remediation
W151	1045	2091	Marked for removal/remediation
W152	739	1477	Marked for removal/remediation
W154	955	1909	Marked for removal/remediation
W155	580	1159	Marked for removal/remediation
W156	1523	3045	Marked for removal/remediation
W158	614	1227	Marked for removal/remediation
W160	727	1455	Marked for removal/remediation
W161	1932	3864	Marked for removal/remediation

Building and Room Exterior Walls

W3	1386	100	No	Yes	-63	Yes
----	------	-----	----	-----	-----	-----

Removable Surface Activity Measurements

Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

Second Story Floor

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
F1	36	30.7	152	-0.6	2.6	13	2
F2	0	10.2	152	-0.6	2.6	13	2
F3	12	19.6	152	-0.6	2.6	13	2
F4	-6	15.6	152	-0.6	2.6	13	2
F5	24	25.7	152	2.3	5.1	13	2
F6	6	15.6	152	-0.6	2.6	13	2
F7	-66	40.5	152	2.3	5.1	13	2
F8	-24	25.7	152	-0.6	2.6	13	2
F9	-12	19.6	152	-0.6	2.6	13	2
F10	36	30.7	152	5.2	7.6	13	2
F11	-30	28.3	152	-0.6	2.6	13	2
F12	60	38.7	152	-0.6	2.6	13	2
F13	18	22.9	152	2.3	5.1	13	2
F14	30	28.3	152	2.3	5.1	13	2
F15	48	34.9	152	-0.6	2.6	13	2

Boiler Room Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
W1	54	36.9	152	-0.6	2.6	13	2
W2	-36	30.7	152	-0.6	2.6	13	2
W3	12	19.6	152	-0.6	2.6	13	2
W4	-30	28.3	152	-0.6	2.6	13	2
W5	42	32.9	152	2.3	5.1	13	2
W6	78	43.8	152	-0.6	2.6	13	2
W7	-12	19.6	152	-0.6	2.6	13	2
W8	6	15.6	152	-0.6	2.6	13	2
W9	-42	32.9	152	2.3	5.1	13	2

Room A Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
W10	0	10.2	152	2.3	5.1	13	2
W11	-12	19.6	152	5.2	7.6	13	2
W12	24	25.7	152	-0.6	2.6	13	2
W13	30	28.3	152	2.3	5.1	13	2
W14	30	28.3	152	-0.6	2.6	13	2
W15	18	22.9	152	-0.6	2.6	13	2
W16	0	10.2	152	2.3	5.1	13	2
W17	-12	19.6	152	-0.6	2.6	13	2

Room B Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
W18	-30	28.3	152	-0.6	2.6	13	2
W19	48	34.9	152	-0.6	2.6	13	2
W20	-60	38.7	152	2.3	5.1	13	2
W21	0	10.2	152	-0.6	2.6	13	2
W22	-24	25.7	152	2.3	5.1	13	2
W23	-66	40.5	152	-0.6	2.6	13	2
W24	6	15.6	152	-0.6	2.6	13	2
W25	72	42.2	152	-0.6	2.6	13	2
W26	-18	22.9	152	-0.6	2.6	13	2
W27	96	48.4	152	-0.6	2.6	13	2
W28	0	10.2	152	-0.6	2.6	13	2
W29	18	22.9	152	2.3	5.1	13	2

Room C Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
W30	18	22.9	152	-0.6	2.6	13	2
W31	-42	32.9	152	-0.6	2.6	13	2
W32	-36	30.7	152	-0.6	2.6	13	2
W33	-36	30.7	152	-0.6	2.6	13	2
W34	-6	15.6	152	2.3	5.1	13	2
W35	0	10.2	152	-0.6	2.6	13	2
W36	12	19.6	152	-0.6	2.6	13	2
W37	-18	22.9	152	-0.6	2.6	13	2
W38	24	25.7	152	-0.6	2.6	13	2

Room F Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
W39	-12	19.6	152	-0.6	2.6	13	2
W40	0	10.2	152	-0.6	2.6	13	2
W41	-12	19.6	152	2.3	5.1	13	2
W42	-54	36.9	152	-0.6	2.6	13	2
W43	12	19.6	152	-0.6	2.6	13	2
W44	54	36.9	152	-0.6	2.6	13	2
W45	6	15.6	152	5.2	7.6	13	2
W46	72	42.2	152	-0.6	2.6	13	2
W47	30	28.3	152	-0.6	2.6	13	2
W48	-30	28.3	152	2.3	5.1	13	2
W49	-48	34.9	152	-0.6	2.6	13	2
W50	24	25.7	152	-0.6	2.6	13	2
W51	-48	34.9	152	-0.6	2.6	13	2
W52	12	19.6	152	-0.6	2.6	13	2
W53	12	19.6	152	5.2	7.6	13	2
W54	18	22.9	152	-0.6	2.6	13	2
W55	-6	15.6	152	-0.6	2.6	13	2
W56	-60	38.7	152	-0.6	2.6	13	2
W57	-30	28.3	152	2.3	5.1	13	2
W58	-42	32.9	152	-0.6	2.6	13	2

W59	66	40.5	152	5.2	7.6	13	2
W60	18	22.9	152	-0.6	2.6	13	2
W61	12	19.6	152	-0.6	2.6	13	2
W62	-6	15.6	152	2.3	5.1	13	2
W63	-30	28.3	152	-0.6	2.6	13	2
W64	42	32.9	152	-0.6	2.6	13	2
W65	6	15.6	152	-0.6	2.6	13	2
W66	0	10.2	152	-0.6	2.6	13	2
W67	-18	22.9	152	-0.6	2.6	13	2
W68	24	25.7	152	-0.6	2.6	13	2
W69	24	25.7	152	-0.6	2.6	13	2
W70	-30	28.3	152	-0.6	2.6	13	2
W71	-42	32.9	152	-0.6	2.6	13	2
W72	18	22.9	152	-0.6	2.6	13	2
W73	-36	30.7	152	-0.6	2.6	13	2
W74	-6	15.6	152	2.3	5.1	13	2
W75	6	15.6	152	-0.6	2.6	13	2
W76	18	22.9	152	-0.6	2.6	13	2
W164	12	19.6	152	-0.6	2.6	13	2
W169	-36	30.7	152	2.3	5.1	13	2
W171	42	32.9	152	-0.6	2.6	13	2
W174	30	28.3	152	-0.6	2.6	13	2

Room G Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
W77	24	25.7	152	-0.6	2.6	13	2
W78	24	25.7	152	-0.6	2.6	13	2
W79	30	28.3	152	-0.6	2.6	13	2
W80	-24	25.7	152	-0.6	2.6	13	2
W81	6	15.6	152	-0.6	2.6	13	2
W82	-12	19.6	152	-0.6	2.6	13	2
W83	6	15.6	152	-0.6	2.6	13	2
W84	12	19.6	152	-0.6	2.6	13	2
W85	-54	36.9	152	2.3	5.1	13	2
W86	36	30.7	152	-0.6	2.6	13	2
W87	0	10.2	152	2.3	5.1	13	2
W88	48	34.9	152	-0.6	2.6	13	2
W89	6	15.6	152	-0.6	2.6	13	2

W90	-24	25.7	152	-0.6	2.6	13	2
W91	30	28.3	152	2.3	5.1	13	2
W92	78	43.8	152	-0.6	2.6	13	2
W93	-84	45.4	152	-0.6	2.6	13	2
W94	-6	15.6	152	-0.6	2.6	13	2
W95	0	10.2	152	-0.6	2.6	13	2
W96	12	19.6	152	-0.6	2.6	13	2
W97	72	42.2	152	-0.6	2.6	13	2
W98	12	19.6	152	-0.6	2.6	13	2
W99	36	30.7	152	-0.6	2.6	13	2
W100	-30	28.3	152	2.3	5.1	13	2
W101	24	25.7	152	-0.6	2.6	13	2
W102	-36	30.7	152	-0.6	2.6	13	2
W103	6	15.6	152	-0.6	2.6	13	2
W104	18	22.9	152	-0.6	2.6	13	2
W105	-54	36.9	152	-0.6	2.6	13	2
W106	-24	25.7	152	-0.6	2.6	13	2
W107	12	19.6	152	-0.6	2.6	13	2
W108	0	10.2	152	-0.6	2.6	13	2
W109	-30	28.3	152	-0.6	2.6	13	2
W110	-24	25.7	152	2.3	5.1	13	2
W111	36	30.7	152	-0.6	2.6	13	2
W112	-12	19.6	152	-0.6	2.6	13	2
W113	-36	30.7	152	-0.6	2.6	13	2
W114	-60	38.7	152	-0.6	2.6	13	2
W115	-6	15.6	152	2.3	5.1	13	2
W116	-36	30.7	152	-0.6	2.6	13	2
W117	42	32.9	152	-0.6	2.6	13	2
W118	-54	36.9	152	-0.6	2.6	13	2

Room E Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
W119	-36	30.7	152	-0.6	2.6	13	2
W120	-72	42.2	152	-0.6	2.6	13	2
W121	0	10.2	152	-0.6	2.6	13	2
W122	-6	15.6	152	-0.6	2.6	13	2
W123	-6	15.6	152	2.3	5.1	13	2
W124	-24	25.7	152	-0.6	2.6	13	2
W125	85	45.6	152	-0.6	2.6	13	2
W126	24	25.7	152	-0.6	2.6	13	2
W127	36	30.7	152	-0.6	2.6	13	2
W128	-6	15.6	152	-0.6	2.6	13	2
W129	-6	15.6	152	-0.6	2.6	13	2

Room D Walls (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
W132	-24	25.7	152	-0.6	2.6	13	2
W133	12	19.6	152	-0.6	2.6	13	2
W134	-72	42.2	152	-0.6	2.6	13	2
W135	6	15.6	152	-0.6	2.6	13	2
W136	-18	22.9	152	-0.6	2.6	13	2
W137	12	19.6	152	-0.6	2.6	13	2
W138	-6	15.6	152	-0.6	2.6	13	2
W139	-12	19.6	152	-0.6	2.6	13	2
W140	-12	19.6	152	-0.6	2.6	13	2
W141	-90	46.9	152	-0.6	2.6	13	2
W142	60	38.7	152	-0.6	2.6	13	2
W143	6	15.6	152	-0.6	2.6	13	2
W144	-60	38.7	152	-0.6	2.6	13	2
W145	-24	25.7	152	-0.6	2.6	13	2
W146	12	19.6	152	2.3	5.1	13	2
W147	36	30.7	152	-0.6	2.6	13	2
W148	6	15.6	152	-0.6	2.6	13	2
W149	0	10.2	152	-0.6	2.6	13	2

W150	-30	28.3	152	-0.6	2.6	13	2
W151	-36	30.7	152	-0.6	2.6	13	2
W152	42	32.9	152	2.3	5.1	13	2
W153	42	32.9	152	-0.6	2.6	13	2
W154	36	30.7	152	-0.6	2.6	13	2
W155	67	40.8	152	-0.6	2.6	13	2
W156	-24	25.7	152	-0.6	2.6	13	2
W157	-42	32.9	152	-0.6	2.6	13	2
W158	-6	15.6	152	-0.6	2.6	13	2
W159	6	15.6	152	-0.6	2.6	13	2
W160	-24	25.7	152	-0.6	2.6	13	2
W161	-12	19.6	152	2.3	5.1	13	2

Building Ceiling (Interior)

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
C130	0	10.2	152	2.3	5.1	13	2
C131	6	15.6	152	-0.6	2.6	13	2
C162	-6	15.6	152	2.3	5.1	13	2
C163	6	15.6	152	-0.6	2.6	13	2
C165	18	22.9	152	-0.6	2.6	13	2
B166	-18	22.9	152	-0.6	2.6	13	2
C167	-6	15.6	152	-0.6	2.6	13	2
B168	24	25.7	152	-0.6	2.6	13	2
C170	0	10.2	152	-0.6	2.6	13	2
C172	6	15.6	152	-0.6	2.6	13	2
B173	-12	19.6	152	-0.6	2.6	13	2
C175	-18	22.9	152	-0.6	2.6	13	2
V176	-24	25.7	152	-0.6	2.6	13	2

Building and Room Exterior Walls

Location (see map)	Removable Beta (dpm/100cm ²)	Uncertainty 95% CL	MDA	Removable Alpha (dpm/100cm ²)	Uncertainty 95% CL	MDA	Instrument Number
W1	6	16	153	2.6	5.4	12	1
W2	-24	26	153	-0.3	1.8	12	1
W3	-36	31	153	-0.3	1.8	12	1
W4	-42	33	153	-0.3	1.8	12	1

W5	-24	26	153	-0.3	1.8	12	1
W6	-12	19.6	152	-0.6	2.6	13	2
W7	6	15.6	152	-0.6	2.6	13	2
W8	42	32.9	152	-0.6	2.6	13	2
W9	-6	15.6	152	-0.6	2.6	13	2
W10	24	25.7	152	2.3	5.1	13	2
W11	12	19.6	152	2.3	5.1	13	2
W12	12	19.6	152	-0.6	2.6	13	2
W13	0	10.2	152	-0.6	2.6	13	2
W14	-12	19.6	152	-0.6	2.6	13	2
W15	-24	25.7	152	5.3	7.7	13	2
W16	54	36.9	152	2.3	5.1	13	2
W17	36	30.7	152	2.3	5.1	13	2
W18	12	19.6	152	-0.6	2.6	13	2
W19	-24	25.7	152	-0.6	2.6	13	2
W20	6	15.6	152	-0.6	2.6	13	2
W21	61	39.0	152	-0.6	2.6	13	2
W22	55	37.2	152	-0.6	2.6	13	2
W23	-48	34.9	152	-0.6	2.6	13	2
W24	-12	19.6	152	5.3	7.7	13	2
W25	-24	25.7	152	-0.6	2.6	13	2
W26	24	25.7	152	2.3	5.1	13	2
W27	48	34.9	152	2.3	5.1	13	2
W28	36	30.7	152	2.3	5.1	13	2
W29	-24	25.7	152	-0.6	2.6	13	2
W30	-12	19.6	152	-0.6	2.6	13	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	153	12

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

	Beta	Alpha
Background (cpm)	44	0.2
Bkgd ct. time	60	60
Sample ct. time	1	1
Efficiency	0.165	0.344
MDA	152	13

Elevated Removable Surface Activity Measurements
Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

No elevated removable surface activity was reported above limits.

Exposure Rate Measurements

Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

Second Story Floor

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 7-9 uR/hr
F1	10	2	
F2	9	1	
F3	10	2	
F4	11	3	
F5	11	3	
F6	10	2	
F7	13	5	
F8	13	5	
F9	11	3	
F10	12	4	
F11	12	4	
F12	11	3	
F13	11	3	
F14	12	4	
F15	11	3	

Boiler Room Walls (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 7-9 uR/hr
W1	7	-1	
W2	8	0	
W3	8	0	
W4	10	2	
W5	10	2	
W6	9	1	
W7	9	1	
W8	8	0	
W9	8	0	

Room A Walls (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 8-10 uR/hr
W10	8	-1	
W11	10	1	
W12	11	2	
W13	11	2	
W14	12	3	
W15	10	1	
W16	10	1	
W17	10	1	

Room B Walls (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 11-13 uR/hr
W18	11	-1	
W19	11	-1	
W20	11	-1	
W21	11	-1	
W22	11	-1	
W23	12	0	
W24	12	0	
W25	14	2	
W26	13	1	
W27	12	0	
W28	13	1	
W29	11	-1	

Room C Walls (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 12-14 uR/hr
W30	12	0	
W31	12	0	
W32	13	1	
W33	13	1	
W34	13	1	
W35	14	2	
W36	14	2	
W37	15	3	
W38	13	1	

Room F Walls (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 8-14 uR/hr
W39	11	0	
W40	12	1	
W41	12	1	
W42	12	1	
W43	12	1	
W44	12	1	
W45	12	1	
W46	13	2	
W47	14	3	
W48	12	1	
W49	12	1	
W50	12	1	
W51	13	2	
W52	15	4	
W53	15	4	

W54	14	3
W55	19	5
W56	18	4
W57	20	6
W58	20	6
W59	19	5
W60	19	5
W61	15	1
W62	13	2
W63	12	1
W64	12	1
W65	12	1
W66	14	3
W67	14	3
W68	13	2
W69	14	3
W70	12	1
W71	11	0
W72	12	1
W73	12	1
W74	12	1
W75	14	3
W76	13	2
W164	8	-3
W169	8	-3
W171	8	-3
W174	8	-3

Room G Walls (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 7-9 uR/hr
W77	7	-1	
W78	8	0	
W79	8	0	
W80	9	1	
W81	9	1	
W82	9	1	
W83	9	1	
W84	9	1	
W85	9	1	
W86	8	0	
W87	8	0	
W88	8	0	
W89	7	-1	
W90	7	-1	
W91	10	2	
W92	10	2	
W93	10	2	
W94	10	2	
W95	10	2	
W96	10	2	
W97	10	2	

W98	10	2
W99	10	2
W100	10	2
W101	10	2
W102	10	2
W103	10	2
W104	10	2
W105	10	2
W106	10	2
W107	10	2
W108	10	2
W109	10	2
W110	10	2
W111	11	3
W112	11	3
W113	13	5
W114	13	5
W115	12	4
W116	10	2
W117	9	1
W118	9	1

Room E Walls (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 19-23 uR/hr
W119	23	3	
W120	23	3	
W121	22	2	
W122	21	1	
W123	19	-1	
W124	19	-1	
W125	20	0	
W126	20	0	
W127	23	3	
W128	24	4	
W129	24	4	

Room D Walls (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 15-20 uR/hr
W132	20	2	
W133	22	4	
W134	23	5	
W135	22	4	
W136	17	-1	
W137	17	-1	
W138	16	-2	
W139	16	-2	
W140	15	-3	
W141	14	-4	

W142	15	-3
W143	14	-4
W144	14	-4
W145	14	-4
W146	15	-3
W147	16	-2
W148	21	3
W149	22	4
W150	22	4
W151	23	5
W152	23	5
W153	23	5
W154	23	5
W155	22	4
W156	22	4
W157	17	-1
W158	15	-3
W159	23	5
W160	23	5
W161	23	5

Exposure Rate Measurements

Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

Building Ceiling (Interior)

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd (uR/hr)
C130	24	3	21
C131	22	1	21
C162	19	1	18
C163	14	-4	18
C165	8	-3	11
B166	8	-3	11
C167	8	-3	11
B168	8	-3	11
C170	8	-3	11
C172	8	-3	11
B173	8	-3	11
C175	8	-3	11
V176	8	-3	11

Building and Room Exterior Walls

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd vary from 10 to 25 uR/hr
W1	12	2	
W2	12	2	
W3	13	3	
W4	11	1	
W5	19	-1	
W6	13	1	
W7	14	2	
W8	16	4	
W9	16	4	
W10	15	3	
W11	16	4	
W12	17	5	
W13	16	4	
W14	16	4	
W15	12	0	
W16	11	-1	
W17	11	-1	
W18	21	1	
W19	24	4	
W20	19	-1	
W21	20	0	
W22	25	5	
W23	20	0	
W24	12	0	
W25	11	-1	
W26	14	2	
W27	16	4	

W28	15	3
W29	16	4
W30	16	4

Building Roof

Location (see map)	Exposure Rate (uR/hr)	Net Exp Rate (uR/hr)	Bkgd 8 uR/hr
Roof	9	1	
Roof	8	0	
Roof	8	0	
Roof	8	0	
Roof	7	-1	
Roof	8	0	
Roof	8	0	
Roof	8	0	
Roof	7	-1	
Roof	8	0	
Roof	8	0	
Roof	9	1	
Roof	7	-1	
Roof	8	0	
Roof	8	0	
Roof	9	1	
Roof	8	0	
Roof	8	0	
Roof	8	0	
Roof	9	1	
Roof	8	0	
Roof	8	0	
Roof	8	0	
Roof	8	0	
Roof	9	1	
Roof	9	1	
Roof	8	0	
Roof	8	0	
Roof	8	0	
Roof	8	0	
Roof	9	1	
Roof	9	1	
Roof	8	0	
Roof	8	0	
Roof	8	0	
Roof	9	1	
Roof	8	0	
Roof	8	0	
Roof	9	1	
Roof	9	1	
Roof	8	0	
Roof	8	0	
Roof	8	0	

Roof	8	0
Roof	9	1
Roof	8	0

Summary of Exposure Rate Measurements
Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)

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

n	\bar{x}	s	μ_α
269	1.0	2.1	1.2

$t_{1-\alpha}$ 1.654

Guidelines/Conditions
Satisfied?
Yes

**Summary of Building Surface Direct Reading (Total Activity) Results
 Molycorp - Building 22 Survey Unit Excluding Foundation (Affected Area)**

Beta				Alpha			
n	\bar{x}	s	μ_α	n	\bar{x}	s	μ_α
182	-50	310.3	-12.2	182	-125	586.2	-52.8
	$t_{1-\alpha}$	1.656					

Guidelines/Conditions Satisfied?

Beta	Alpha
Yes	Yes