1446

1962

ORGDP ENVIRONMENTAL SAMPLING
Water; Mud; Soil; Air; Vegetation
ON-PLANT

This document has been approved for release to the public by:

Technical Information Officer — Date 4/18/95
Oak Ridge K-25 Site

Oak Ridge K-25 Site
Oak Ridge, Tennessee 37831-7314
managed by
MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the U.S. DEPARTMENT OF ENERGY
under Contract DE-AC05-84OR21400

ORGDP

Year _____

ENVIRONMENTAL SAMPLING

(WATER)(MUD)(SOIL)(VEGETATION)
(PINENEEDLES)

SAMPLE LOCATION	DATE	LABORATORY RESULTS							
		Uranium		Alpha		Beta		Fluorides	pH
		ppb	µc/cc	d/m/100 cc	µc/cc	d/m/100 cc	µc/cc	ppm	

Oak Ridge K-25 Site
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MARTIN MARIETTA ENERGY SYSTEMS, INC.
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ENVIRONMENTAL AIR STUDY

No. > P.A.L.
No Samples Average c/min/ft³ Total

SAMPLE NUMBER	LOCATION	DATE	~~WIND AND WEATHER CONDITIONS~~	SAMPLE DURATION	~~AIR FLOW RATE~~	ALPHA ACTIVITY ~~c/min/ft³~~	~~μc/cc*~~
	N.W of K1420	1-1-65 3-31-65	1st Quarter 1965 –	8 hrs.	0/180	0.07	12.5
	K-1100 Portals	2-24-65 3-31-65		1 hr.	108	0.28	30.49
	NW of K1420		4-5-65 4-30-65	8 hrs.	0/75	0.07	5.36
	K-1471	3-1-65 5-16-65		8 hrs.	1/47	0.25	11.85
	K-1471	5-18-65 5-26-65		8 hrs.	0/27	0.07	1.95
	Guard Tower 1017-S-5	8-5-65 8-31-65		8 hrs.	0/80	0.08	6.33
2 Loc.	K-1131-S-Side Guard Tower 1017-S-3	8-5-65 8-31-65		8 hrs.	0/72	0.08	5.53
	Water Tank Hill	8-13-65 8-31-65		8 hrs.	0/57	0.06	3.42
	Guard Tower 1017-S-3	9-1-65 9-12-65		8 hrs.	0/36	0.09	3.13
2 Loc.	1066 Cylinder Storage Yd. Water Tank Hill	9-13-65 11-17-65 – 12-31-65		8 hrs.	0/144	0.06	8.00
2 Loc.	K-1045-C Guard Tower 1017-S-20	10-1-65 12-31-65		8 hrs.	0/174	0.11	19.84
	K-1400 (N) 1017-S-5	9-1-65 9-12-65		8 hrs.	0/36	0.11	4.09
	K-1045-C	9-1-65 10-31-65		8 hrs.	0/145	0.11	15.84
2 Loc.	Burial Ground – Salvage Yard	11-23-65 – 11-30-65 12-6-65 – 12-31-65		8 hrs.	0/85	0.09	7.65
	Radio Tower Hill	12-6-65 12-31-65		8 hrs.	0/71	0.05	3.66
	1066 Cylinder Stor. Yd.	11-22-65 12-5-65		8 hrs.	0/42	0.13	5.38

* 0.01 c/min/ft^3 = 5 x 10^{-13} μc/cc.

ENVIRONMENTAL AIR STUDY

SAMPLE NUMBER	LOCATION	DATE	WIND AND WEATHER CONDITIONS	SAMPLE DURATION	NO. >PAL / NO. SAMPLES	ALPHA ACTIVITY c/min/ft³ AV.	ALPHA ACTIVITY c/min/ft³ TOTAL *
	N.W. of K-1420	1-17-64 3-23-64		8-hr	1/181	0.13	24.14
	N.E. of K-1131	1-2-64 1-13-64			0/34	0.04	1.54
	K-1004-J Lab.	2-26-64 3-24-64			0/81	0.06	4.66
	W of K-1420	3-24-64 3-31-64			0/24	0.10	2.44
	E of K-1420	3-24-64 3-31-64			0/25	0.03	0.74
	E of K-1420	4-29-64 5-6-64			0/24	0.05	1.2
	W of K-1420	4-29-64 5-7-64			0/26	0.15	3.8
	E of K-1420	4-1-64 4-28-64			0/84	0.04	3.3
	W of K-1420	4-1-64 4-28-64			0/91	0.13	11.4
	K-1098 Fire Training Building	10-6-64 10-11-64			0/18	0.08	1.5
	W of K-413	10-12-64 10-20-64			0/27	0.05	1.4
	K-1098 Fire Training Building	10-21-64 11-21-64			0/92	0.07	6.19
	N of K-1420	11-23-64 12-31-64			0/115	0.03	3.71
	CY-1964 TOTALS				1/824	0.08	66.24
	NOTE: K-1420 Roof samples NOT included in above.						

* 0.01 c/min/ft^3 = 5 x 10^{-13} μc/cc.

ENVIRONMENTAL AIR STUDY

SAMPLE NUMBER	LOCATION	DATE	WIND AND WEATHER CONDITIONS	SAMPLE DURATION	NO. >PAL / NO. SAMPLES ~~AIR FLOW RATE~~	ALPHA ACTIVITY c/min/ft³ AVG	ALPHA ACTIVITY ~~μc/cc*~~ TOTAL
	K-1045-C	6-28-63 9-2-63		8-hr.	0/202	0.06	11.3
	K-1064 Salvage Yard	7-19-63 9-3-63			0/115	0.10	11.8
	K-1045-C, W. end	9-5-63 10-6-63			0/96	0.17	16.0
	N.E. of K-1131	9-4-63 11-26-63			0/252	0.08	21.1
	K-1045-C	10-7-63 11-30-63			0/159	0.15	23.4
	K-1045-C	11-7-63 12-25-63			0/74	0.05	3.4
	N.E. of K-1131	12-4-63 12-31-63			0/81	0.05	3.9
	CY-1963				0/979	0.09	90.9

* 0.01 c/min/ft^3 = 5 x 10^{-13} μc/cc.

ENVIRONMENTAL AIR STUDY

SAMPLE NUMBER	LOCATION	DATE	WIND AND WEATHER CONDITIONS	SAMPLE DURATION	~~AIR FLOW RATE~~ NO. >PAL / NO. SAMPLES	ALPHA ACTIVITY AV c/min/ft³	ALPHA ACTIVITY TOTAL ~~μc/cc*~~
	K-1045-C	1-14-62 1-25-62		8 hr.	0/31	0.05	1.5
	K-1420, No. side	1-22-62 2-7-62			0/44	0.07	3.2
	East of K-312-2	2-15-62 2-28-62			0/39	0.04	2.2
	" " "	2-7-62 2-15-62			0/23	0.04	1.4
	K-1131, W. end	2-14-62 3-18-62			0/99	0.05	4.5
	K-1420, east of	2-19-62 5-21-62			0/186	0.06	10.8
	East of K-132	3-20-62 4-12-62			0/70	0.07	5.1
	K-33 Portal	3-28-62 4-8-62			0/35	0.07	2.5
	K-33 Portal	4-27-62 5-21-62			0/45	0.03	2.1
	K-1131, W. end	4-30-62 7-1-62			0/171	0.02	4.2
	Salvage Yard	7-3-62 7-24-62			0/45	0.08	5.5
	West of K-1131	7-3-62 7-25-62			0/40	0.05	1.8
	East of K-1420	7-3-62 8-13-62			0/112	0.06	6.3
	CY-1962				0/980	0.05	51.1

* 0.01 c/min/ft³ = 5 x 10⁻¹³ μc/cc.

ENVIRONMENTAL AIR STUDY

	SAMPLE NUMBER	LOCATION	DATE	WIND AND WEATHER CONDITIONS	SAMPLE DURATION	No. > PAL / No. Samples ~~AIR FLOW RATE~~	ALPHA ACTIVITY c/min/ft³	Average Total ~~μc/cc~~	
1st Quarter 1961	63	K-1064 Salvage Yd.	1-6-61 to 1-24-61		8hr.	0/51	0.140	7.14	
	64	S.W. of K-1001-A	2-17-61 to 2-28-61		8hr.	0/33	0.060	1.98	
	65	Guard Tower S. of K-1045	2-12-61 to 3-4-61		8hr.	0/32	0.076	2.43	
	66	K-31 Portal	3-10-61 to 3-29-61		8hr.	0/41	0.077	3.16	
	67	K-1132 Tank Farm	3-3-61 to 3-24-61		8hr	0/36	0.057	2.05	
	68	K-1064 Salvage Yd	3-24-61 to 3-31-61		8hr	0/24	0.097	2.33	
	69	K-1100 (East of Bldg)	3-24-61 to 3-31-61		8hr.	0/22	0.045	0.99	
2nd Quarter 1961	70	S.W. of K-1001	4-15-61 to 4-28-61		8hr.	0/41	0.071	2.91	
	80	Guard Tower S. of K-1045	4-21-61 to 4-27-61		8hrs	0/17	0.074	1.26	
		South of K-1131	5-12-61 to 5-18-61		8hrs	0/24	0.112	2.69	
		East of K-1131	5-19-61 to 5-26-61		8hrs.	9/21	10.8	226.8	
		North of K-1131	5-12-61 to 5-18-61		8hrs	0/22	0.05	1.1	
3rd Quarter 1961		West of K-1131	5-18-61 to 5-25-61		8hrs	0/23	0.06	1.4	9.0 MPCa
		CY-1961		All Samples		9/387	0.66	256.24	3370
				"Representative"		0/366	0.08	29.44	470

* 0.01 c/min/ft³ = 5 x 10⁻¹³ μc/cc.

c 2a

ENVIRONMENTAL AIR STUDY

K-1131 Stack Samples

SAMPLE NUMBER	LOCATION	DATE	[redacted] Pu/Sample	SAMPLE DURATION	AIR FLOW RATE ft³/min	ALPHA ACTIVITY c/min/ft³	[redacted]	Beta/SR c/min/ft³ [illegible]
HPX- 134	UO_3 Stack #1	6-13-60	No Pu detected	10 min	130	6.9	25.0	
135	UO_3 Stack #2	6-13-60	No Pu detected	10 "	120	0.93	3.4	
136	UF_4 Vacuum System #2	6-13-60	9 ppb	10 "	100	46.0	1079	0.9
137	" " #1	6-13-60	No Pu detected	10 "	150	0.41	1.3	0.7
138	" #3	6-13-60	No Pu detected	10 "	130	1.5	28.0	
139	A Line Reactor Exhaust	6-13-60	"	10 "	150	2.4	11.0	
140	Pneumatic System Exhaust	6-13-60	"	10 "	140	27.0	51.0	
141	Pit Exhaust	6-13-60	"	10 "	140	0.20	0.82	
142	C-Line Reactor Exhaust	6-13-60	"	10 "	130	0.11	0.52	
HPX 143	#2 UO_3 Exhaust	8- 60		10 min	130			—
144	#1 UO_3 "	8 60		10 "	130			<0.5
145	#1 UF_4 "	8 60		10 "	80			<0.5
146	#2 UF_4 "	8 60		10 "	110			<0.5
147	#3 UF_4 "	8 60		10 "	80			<0.5
148	Pit Exhaust	8 60		10 "	150			<0.5
149	Pneumatic System	8 60		10 "	150			<0.5
150	"C" Reactor Exhaust	8 60		10 "	80			<0.5*

* 0.01 c/min/ft³ = 5 x 10^{-13} μc/cc.

C 2b

ENVIRONMENTAL AIR STUDY

No. > PAL ~~No samples taken~~ Average

SAMPLE NUMBER	LOCATION	DATE	WIND AND WEATHER CONDITIONS	SAMPLE DURATION	~~AIR FLOW RATE~~	ALPHA ACTIVITY c/min/ft³	ALPHA ACTIVITY µc/cc*
46	E. of K-1131 (W. of K-413)	8-26 to 9-8-60		8 hrs	0/42	0.169	
47	N. of K-1131 (E. of K-132)	8-26 to 9-8-60		8 hrs.	0/42	0.266	
48	S. of K-1131 (402.8)	9-9-60 to 9-17-60		8 hr	0/18	0.053	
49	S.W. of K-1410	9-9-60 to 9-29-60		8 hr.	0/41	0.098	
50	N. E. of K-1100 (near Portal)	10-10 to 11-7-60		8 hr	0/53	0.122	
51	K-1064 Salvage Yd.	10-5 to 11-2-60		8 hr	0/45	0.098	
52	Guard Tower S. of K-1045	11-14 to 12-5-60		8 hr	0/62	0.186	
53	S.W. of K-1001-A	11-23 to 12-5-60		8 hr	0/36	0.148	
54	K-1132 Tank Farm	12/9 to 12/12/60		8 hr	0/9	[illegible]	
55	K-33 Portal	12/9 to 12/11/60		8 hr.	0/8	0.161	
56	South of K-1421 Incinerator	11-8 to 11-17-60		8 hr	3/32	0.442	
57	S.E. Corner of K-1420	12-12 to 12-22-60		8 hr	0/31	0.090	
58	S.W. Corner of K-1420	12-12 to 12-22-60		8 hr	0/24	0.121	
59	N.W. Corner of K-601	12-12 to 12-22-60		8 hr.	1/29	0.375	
60	E. of K-601 & W. side of K-311-1	12-23-60 1-3-61		8 hr	0/32	0.040	
61	S. side of K-1420	12-23-60 1-3-61		8 hr	0/33	0.091	
62	N. Side of K-1420	12-23-60 1-3-61		8 hr	0/33	0.218	

Fourth Quarter

Special

End Fourth Quarter

* 0.01 c/min/ft³ = 5 x 10⁻¹³ µc/cc.

427 Av - 0.168 c/m/ft³ 0.93% > PAL

5,808 - 0.135 - 1.025

ENVIRONMENTAL AIR STUDY

No > Pa
Not Compiled

SAMPLE NUMBER	LOCATION	DATE	WIND AND WEATHER CONDITIONS	SAMPLE DURATION	~~AIR~~ FLOW RATE	ALPHA ACTIVITY c/min/ft³	ALPHA ACTIVITY µc/cc*
29	East of K-303-1 at Toilet #9	4-8-60 to 4-22-60		8hr	0/43	0.151	
30	West side of K-1401	4-22-60 to 4-29-60		[illegible]	0/21	0.037	
31	East side of K-1401	4-22-60 to 4-29-60		[illegible]	0/21	[illegible]	
32	West end of K-1420	4-29-60 to 5-6-60		8hr	0/21	0.120	
33	East end of K-1420	4-29-60 to 5-6-60		[illegible]	[illegible]	[illegible]	
34	S.W. of K-1015 Bldg	5-13 to 5-27-60		[illegible]	[illegible]	[illegible]	
35	S.E. of K-[illegible] Guard 4-Tower	5-13 to 5-27-60		8hr	0/41	0.050	
36	K-1064 Salvage Yd	6-24 to 7-8-60		8hr	0/41	0.120	415
37	N.E. K-1100	6-14 to 6-23-60		[illegible]	[illegible]	[illegible]	
38	S.W. of K-1001A	7-1 to 7-7-60		8hr	0/18	0.104	
39	N. of K-1131 near [illegible]	7-8 to [illegible]					
40	K-1064 Salvage Yd	7-22 to 8-5-60		8hr	0/37	0.160	
41	K-1132 [illegible]	7-21 to 8-5-60		8hr	[illegible]	[illegible]	
42	[illegible]	8-5-60 to 8-16-60		8hr	0/53	[illegible]	
43	K-1100-East Side	8-5-60 to 8-16-60		8hr	0/[illegible]	[illegible]	
44	S.E. K-1004-L Guard Tower	8-16-60 to 8-23-60		[illegible]	0/22	0.147	
45	S.W. of K-1001-A	8-16-60 to 8-26-60		8hr	0/30	0.044	

* 0.01 c/min/ft³ = 5 x 10⁻¹³ µc/cc.

ENVIRONMENTAL AIR STUDY

SAMPLE NUMBER	LOCATION	DATE	WIND AND WEATHER CONDITIONS	SAMPLE DURATION	~~AIR FLOW RATE~~ No. 2 Pal No. 2 Pal	ALPHA ACTIVITY c/min/ft³	ALPHA ACTIVITY µc/cc*
12	North side of K-1131 at Hr Talk	9-12-59 to 9-21-59		8hr.	0/30	0.293	
13	East of K-132	10-23-59 to 10-30-59		8hr.	0/21	0.090	
14	South of K-1031	10-23-59 to 11-11-59		8hr	0/51	0.151	
15	East of K-413	10-30-59 to 11-9-59		8hr.	0/32	0.108	
16	West of K-312-2 Bldg	11-25-59 to 12-14-59		8hr	0/56	[illegible]	
17	East of K-312-2 Bldg	11-25-59 to 12-14-59		8hr.	0/42	[illegible]	
18	West of K-601	12-14-59 to 12-24-59		8hr	0/30	0.130	
19	North of K-303-9	12-14-59 to 12-24-59		8hr	0/27	0.100	
20	East of K-631 Bldg.	2-8-60 to 3-3-60		8hr	0/66	[illegible]	
21	South of K-631 Bldg (N. of 402-2)	2-19-60 to 3-7-60		8hr	0/53	0.073	
22	South of K-402-2	3-8-60 to 3-18-60		8hr.	0/29	[illegible]	
23	East of K-633 Bldg.	3-8-60 to 3-18-60		8hr.	0/31	[illegible]	
24	East Side of K-31	3-18-60 to 3-25-60		8hr.	0/20	0.075	
25	West side of K-31	3-18-60 to 3-25-60		8hr.	0/19	[illegible]	
26	Southwest side of K-33	3-25-60 to 4-8-60		8hr.	0/40	0.120	
27	North side of K-33	3-25-60 to 4-8-60		8hr.	0/43	0.117	
28	West of K-1024	4-8-60 to 4-22-60		8hr.	0/41	0.162	

Average

972 Samples

0.117

7.168 / 25 = 0.287

2nd Quarter

* 0.01 c/min/ft³ = 5 x 10⁻¹³ µc/cc.

ENVIRONMENTAL AIR STUDY

No. 7 PAL
No. Samples taken / Average

SAMPLE NUMBER	LOCATION	DATE	WIND AND WEATHER CONDITIONS	SAMPLE DURATION	AIR FLOW RATE	ALPHA ACTIVITY c/min/ft³	ALPHA ACTIVITY µc/cc*
1-	S. of K-1131 outside K-402-8 Cell Trap Rm.	9-18-59 to 9-25-59		8 hr.	1/21	0.548	
	"	12-24-60 to 1-7-60		8 hr.	0/44	0.044	
2.	N.E. of K-1131 East of Bldg # 50	8-21-59 to 8-28-59		8 hr.	0/21	0.045	
3.	West of K-1131	8-21-59 to 8-28-59		8 hr.	1/22	0.275	
4-	N.E. of K-1131 at Utility Pole # 824	8-28-59 to 9-18-59		8 hr.	1/07	0.132	
5.	East End of K-1131 Outside to Generator Room	8-28-59 to 9-18-59		8 hr.	0/12	[illegible]	
	"	1-8-60 to 2-3-60		8 hr.	0/68	0.240	
6-	West of K-1410 at Security Fence	9-18-59 to 9-25-59		8 hr.	7/21	1.385	
	"	10-7-59 to 10-23-59		8 hr.	0/52	0.130	
7-	West End of K-1131	9-25-59 to 10-7-59		8 hr.	9/27	0.840	
	"	1-8-60 to 2-5-60		8 hr.	0/56	0.162	
8-	West of K-1231	6-1-59 to 6-10-59		8 hr.	0/27	0.067	
9-	North of K-1231	6-10-59 to 6-27-59		8 hr.	0/48	0.083	
10-	N.E. Corner of K-1231	6-27-59 to 7-27-59		8 hr.	3/64	0.106	
	"	12-24-59 to 1-8-60		8 hr.	2/44	0.317	
11-	Northside K-1131 at Screener Area	8-27-59 to 9-11-59		8 hr.	2/25	0.577	
	"	10-7-59 to 10-23-59		8 hr.	1/32	0.240	

* 0.01 c/min/ft³ = 5 x 10⁻¹³ µc/cc.

REPORT OF WATER ANALYSES

REPORT NO. 658

Distribution:
J. Dykstra, W. E. Muldrew,
T. Kwasnoski, RC

SAMPLE NUMBER	DATE SAMPLED	SAMPLING LOCATION	FLUORIDES ppm.	pH	MICROCURIES / cc. x 10^{-7} URANIUM*	ALPHA	BETA	ppm CrO_3
165-W	11-16-66	No. 12 EW K-25 East side # K-1030 Bldg.	0.2	6.2	0.00	0.00	0.57	3.8
166-W	"	No. 13 EW K-25 West side # K-1155	0.5	6.2	0.02	0.03	0.68	3.9
167-W	"	No. 14 EW K-601 Bldg.	0.5	7.0	0.00	0.00	0.70	0.3
168-W	"	No. 15 EW K-27 Bldg. S. side	0.8	6.8	0.30	1.09	0.82	0.6
169-W	"	No. 16 EW K-27 Bldg. S. side	0.5	6.5	0.00	0.00	0.88	8.4
170-W	"	No. 17 EW K-623	0.5	5.6	0.00	0.01	1.13	18.8
171-W	"	No. 18 EW K-1131 S. side	1.3	6.3	0.04	0.07	0.80	0.1
172-W	"	No. 19 EW K-1231 S. side	10.0	6.2	0.00	0.08	0.67	<0.1
173-W	"	No. 20 EW K-631	0.5	6.5	0.00	0.00	0.25	0.9

* *Calculated from uranium content assuming natural isotopic abundance.*

WORKS LABORATORY
SPECIAL ANALYTICAL SERVICES DEPARTMENT

SUPERVISOR T. Kwasnoski

DATE RELEASED 1/20/67

REPORT OF WATER ANALYSES

REPORT NO. 655

Distribution:

J. Dykstra, W. E. Muldrew, T. Kwasnoski, RC

SAMPLE NUMBER	DATE SAMPLED	SAMPLING LOCATION	FLUORIDES ppm.	pH	MICROCURIES / cc. x 10^{-7} URANIUM*	ALPHA	BETA	~~ppm~~ CrO_3
126-W	10-3-66	CW-7 Clinch River Below Plant (K-901)	0.3	7.0	0.0	0.04	0.31	
		WATER						
127-W	10-14-66	22 EW Poplar Creek [illegible]	0.4	4.6	0.01	0.04	0.31	< 0.1
128-W	"	23 EW Poplar Creek [illegible] 413	0.1	4.5	0.00	0.08	0.33	< 0.1
129-W	"	24 EW Poplar Creek [illegible]	1.0	4.4	0.08	0.15	0.35	0.7
130-W	"	25 EW Poplar Creek W. side [illegible]	0.5	4.5	0.00	0.04	0.54	11.8

* Cal

REPORT OF WATER ANALYSES

REPORT NO. 657

Distribution:
J. Dykstra, W. E. Muldrew,
T. Kwasnoski, RC

SAMPLE NUMBER	DATE SAMPLED	SAMPLING LOCATION	FLUORIDES ppm.	pH	MICROCURIES / cc. x 10^{-7} URANIUM*	ALPHA	BETA	ppm CrO_3
151-W	10-31-66	1-EW From K1037	0.8	6.2	0.01	0.06	0.14	4.4
152-W	"	2-EW K-1420 S. side	0.2	6.5	0.18	0.35	0.52	< 0.1
153-W	"	3-EW K-1420 Plating Facility	0.5	1.3	1.44	0.80	1.78	0.1
154-W	"	4-EW K-1420 W. side	0.1	6.5	0.15	0.10	0.04	< 0.1
155-W	"	6-EW K-1301	0.3	6.1	0.02	0.01	0.64	1.1
156-W	"	7-EW K-1414, 1400, 1401 1303	0.3	6.5	0.01	0.07	0.06	< 0.1
157-W	"	8-EW K-1401 Cleaning Area	0.5	2.3	0.38	0.21	2.20	< 0.1
158-W	"	9-EW K-1413 Bldg.	0.8	6.5	0.79	0.94	1.31	< 0.1
159-W	"	26-EW K-1501	0.2	6.8	0.00	0.03	0.21	< 0.1
160-W	"	27-EW K-1407 Holding Pond Effluent	2.1	6.9	1.35	2.03	32.95	0.2
161-W	"	28-EW K-1401 W. side	0.2	6.4	0.12	0.08	0.77	0.1
162-W	"	29-EW K-1401 Basement	0.5	7.1	0.00	0.00	0.63	8.3
163-W	"	30-EW K-1004 Labs	0.5	6.7	0.08	0.10	0.92	1.4
164-W	11-4-66	10-EW Perimeter Rd. N. of Poplar Creek - Fall out check.	0.2	7.0	0.00	0.02	0.31	< 0.1

* Calculated from uranium content assuming natural isotopic abundance.

WORKS LABORATORY

SUPERVISOR T. Kwasnoski

DATE RELEASED 1/30/67

OBGDP

Year _____

ENVIRONMENTAL SAMPLING

(WATER) ([redacted])

SAMPLE LOCATION	DATE	LABORATORY RESULTS							
		Uranium		Alpha		Beta		Fluorides	pH
		ppb	$\mu c/cc \times 10^{-7}$	d/m/100 cc	$\mu c/cc \times 10^{-7}$	d/m/100 cc	$\mu c/cc \times 10^{-7}$	ppm	
HPW 290 K-1420 Drain (Small Line at Pond)	11-4-65		15.4		22.6		73.7	0.6	1.4
HPW 291 K-1420 Drain (Large Line at Pond)	11-4-65		10.8		20.3		87.2	1.2	3.4
HPW 292 K-1420 Drain (Small Line at Pond)	11-4-65		6.9		40.0		73.6	1.1	7.1
HPW 293 K-1420 Drain (Floor Drains)	11-4-65		0.03		0.00		0.64	0.4	7.2
HP 1W East Fork Creek Bridge	1-18-66		0.15		0.24		0.11	0.4	6.5
HP 2W Pop. Crk. Bridge, Blair Rd.	1-18-66		0.01		0.02		0.04	0.8	6.5
HP 3W Pop. Crk. Bridge, HF Tank Farm	1-18-66		0.08		0.18		0.13	0.6	6.5
HP 4W K-1007 Pond at Dam	1-18-66		0.01		0.14		0.23	0.4	7.5
HP 5W Waste Disposal Pond at Dam	1-18-66		0.00		0.01		0.38	0.4	7.8
HP 6W K-1420 Pond, Below Neut. Pit	1-18-66		2.84		6.94		102.8	1.7	3.5
HP 7W Drinking Fountain, K-1004-A 1st Basement	1-18-66		0.00		0.05		0.25	0.8	6.0
HP 8W At Perimeter Fence be[redacted] K-1420 Pond	1-18-66		2.67	[redacted]	5.65		87.7	1.9	3.6
					158.6		421.8	[redacted]	

ORGDP

Proof _____

ENVIRONMENTAL SAMPLING

(WATER) [redacted]

SAMPLE LOCATION	DATE	[illegible]		[illegible]					
		[illegible]		[illegible]					
		ppm	pCi/L $\times 10^{-7}$	[illegible]	$\times 10^{-7}$	[illegible]	$\times 10^{-7}$		
HP-146 Pond SW of K-1007	12-7-64		0.05		0.28		0.39	1.5	6.9
HP-147 Drainage ditch at Security Fence	12-7-64		0.92		2.62		25.74	1.4	7.3
HP-148 K-1015 Laundry Sump	12-7-64		0.07		0.18		0.80	2.1	7.9
HP-164 K-1407-B Pond at K-1420 Acid Drain Lines	5-3-65		2.86		69		29	2.4	6.7
HP-165 Open ditch from K-1407-B Pond to Poplar Creek at Perimeter Fence	5-3-65		0.55		33		26	1.6	6.2
HP-166 Hazardous Chemicals Disposal Pond Outfall	5-3-65		0.00		0.00	<0.1 ppm CN	0.32	1.6	6.6
HP-167 Pond SW of K-1007	5-3-65		0.00		0.06		0.05	2.3	7.0
HP-168 K-1410 Drains Toward Poplar Creek	5-3-65		0.00		0.01		0.11	1.7	7.7
72W East Fork Poplar Creek	5-26-65						0.07		
73W East Fork Poplar Creek	5-28-65						0.53		

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) ~~(AIR) (SOIL) (VEGETATION)~~

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS URANIUM ~~μc/cc~~	ALPHA ~~dis/min/100 ml~~	BETA ~~dis/min/100 ml~~	FLUORIDES ppm	pH	
319 W	West end of Holding Pond	1963 7/5	3.9×10^{-6}	1.1×10^{-6}	1.0×10^{-5}	6.2	3.7	
320 W	"	7/10	4.3×10^{-6}	2.9×10^{-6}	1.7×10^{-5}	9.4	3.5	
321-W	"	7/12	6.7×10^{-6}	4.8×10^{-6}	1.6×10^{-5}	11.2	3.3	
322-W	"	7/14	8.5×10^{-6}	7.9×10^{-6}	2.3×10^{-5}	17.0	3.3	
377-W	Holding Pond	8/8	6.0×10^{-6}	3.2×10^{-6}	167.4×10^{-7}	8.6	2.9	
379-W	"	8/9	6.2×10^{-6}	1.7×10^{-6}	172.12×10^{-7}	10.0	3.0	
440-W	Holding Pond	9/27	30.4×10^{-6} ~~3.04×10^{-5}~~	1.74×10^{-5}	3.47×10^{-5}	23.8	3.6	
424-W	"	9/17	1.44×10^{-6}	1.94×10^{-6}	82.89×10^{-7}	4.1	3.3	
425-W	"	9/21	2.22×10^{-6}	3.42×10^{-6}	149.4×10^{-7}	8.6	3.7	
2 Lwt	"	1-17-64					3.0	Pb ppm 0.01

NOTE: 1 ppm U^n/cc = 7×10^{-7} μc/cc 1 dis/min/cc = 4.5×10^{-7} μc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) [redacted]

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS URANIUM ~~μc/cc~~	ALPHA d/m/100 ml	BETA d/m/100 ml	FLUORIDES ppm	pH	
222-W D=Dumped U ND=No Dump	K-1407-B	3:00 PM (D) 5/29	3.0×10^{-6}	4.7×10^{-6}	1.94×10^{-5}	14.6	3.1	
242-W [redacted]	Holding Pond	5:00 PM (D) 5/29	2.4×10^{-6}	5.3×10^{-6}	1.9×10^{-5}	12.6	2.9	
243-W [redacted]	(West End)	(D) 5/31	2.0×10^{-6}	6.1×10^{-6}	2.0×10^{-5}	16.6	3.1	
244-W	—x—	(D) 6/4	3.0×10^{-6}	2.9×10^{-6}	2.0×10^{-5}	15.4	3.2	
	Dumping of low level; non-econm.	(D) 6/5	—					
253-W	recoverable; uranium-bearing materials.	(D) 6/6	3.4×10^{-6}	6.3×10^{-6}	1.5×10^{-5}	9.2	2.5	
254-W	—x—	(D) 6/11	3.6×10^{-6}	3.6×10^{-6}	1.2×10^{-5}	16.6	3.0	
255-W		ND 6/14	2.4×10^{-6}	4.9×10^{-6}	2.5×10^{-5}	15.2	3.1	
284-W		(D) 6/19	3.3×10^{-6}	1.6×10^{-6}	9.4×10^{-6}	11.2	3.1	
292-W		ND 6/26	4.4×10^{-6}	2.7×10^{-6}	8.2×10^{-6}	8.3	3.0	

NOTE: 1 ppm U^n/cc = 7×10^{-7} μc/cc 1 dis/min/cc = 4.5×10^{-7} μc/cc

ORGDP

Year 1963 –

ENVIRONMENTAL SAMPLING

(WATER) (~~[illegible]~~)

(~~[illegible]~~)

SAMPLE LOCATION	DATE	LABORATORY RESULTS							
		Uranium		Alpha		Beta			
		ppb	μc/cc	[illegible]	[illegible]	[illegible]	[illegible]		
Pond – SW-1007 @ dam & perimeter rd.	10/23/63	—	4.9×10^{-9}	—	0.36×10^{-7}	—	0.81×10^{-7}	0.3	8.4

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) (~~MUD) (SOIL) (VEGETATION)~~

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS URANIUM ppb	ALPHA d/m/100 ml	BETA d/m/100 ml	FLUORIDES ppm	pH	
	Pond; SE of K-1001; N. of Turnpike	3-16-62	$<7.0\times10^{-10}$ <1	—	9.0×10^{-9} 2.0	0.3	7.3	
	Pond; S of K-1001; S. of Turnpike	"	2.1×10^{-9} 3	—	1.4×10^{-8} 31	0.2	7.7	
	Pond; SW of K-1007	"	3.5×10^{-9} 5	—	1.1×10^{-7} 24.4	0.3	7.1	
	K-1420 Acid Line	3-16-62	3.6×10^{-7} 514	5.3×10^{-6} 1180	6.1×10^{-5} 13,550	4.0	2.1	
	K-1407-B - (Weir) Holding Pond Effluent	"	5.3×10^{-7} 757	3.9×10^{-6} 870	2.6×10^{-5} 5,770	3.8	3.1	
	Drainage ditch at Security Zone (1407-B) (1300) (1420) (1401)	"	6.4×10^{-8} 91	3.5×10^{-7} 78	3.8×10^{-6} 844	0.5	7.0	
	K-1407 B (West Weir)	12/4/62	μc/cc 1.6×10^{-6}	2.7×10^{-6}	1.9×10^{-5}	2.5	3.7	
	Pond; SW-K-1007	12/4/62	5.6×10^{-9}	3.8×10^{-8}	3.0×10^{-7}	0.5	7.0	

10,000 4.5×10^{-5}
1,000 4.5×10^{-6}

NOTE: 1 ppm U^n/cc = 7×10^{-7} μc/cc
1 ppb = 7×10^{-10} μc/cc

1 dis/min/cc = 4.5×10^{-7} μc/cc
100 " " /100cc = "
10 " " / " = 4.5×10^{-8}
1 " " / " = 4.5×10^{-9}

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) [redacted]

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM ppb	ALPHA d/m/100 ml	BETA d/m/100 ml	FLUORIDES ppm	pH	
	Composite of K-1300, Holding Pond 1401 at Security Fence	3-16-62	91 6.4×10^{-8} µc/cc	78 3.5×10^{-7}	844 3.8×10^{-6}	0.5	7.0	
	"CW-15"	12/4/62	8.0×10^{-8}	2.3×10^{-7}	4.4×10^{-6}	0.8	4.4	
228-W	"	5/29/63	5.8×10^{-8} µc/cc	1.0×10^{-6} µc/cc	4.2×10^{-6} µc/cc	2.8	5.5	

NOTE: 1 ppm U^n/cc = 7×10^{-7} µc/cc 1 dis/min/cc = 4.5×10^{-7} µc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) (MUD) ~~(SOIL) (VEGETATION)~~

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS URANIUM ppb	ALPHA d/m/~~100 ml~~	BETA d/m/~~100 ml~~	FLUORIDES ppm	pH	
815 W	K-1015 Laundry East Sump	11/20/62	3567	3113	5804			
816 W	West Sump	"	4099	4915	8552			

NOTE: 1 ppm U^n/cc = 7×10^{-7} µc/cc 1 dis/min/cc = 4.5×10^{-7} µc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) (~~MUD~~) (~~SOIL~~) (~~VEGETATION~~)

Drain Effluent Samples

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS URANIUM ppb	ALPHA d/m/100 ml	BETA d/m/100 ml	FLUORIDES ppm	pH	
HP-DE-1	4" Acid Drain Line from K-1420	3-24-61	4.7×10^{-7} 671	108	405			
HP-DE-2	8" Acid Drain Line from K-1420	"	0.49×10^{-7} 70	7	246			
HP-DE-3	Drainage Ditch at Security Fence	"	0.20×10^{-7} 28	30	384			
HP-DE-4	Lake S.W of K-1007	4-21-61						
HPX-100W	EAST END OF HOLDING POND (NEAR K1420 DRAINS)	7-24-61	0.04×10^{-7} 5.4	392	35,368			
HPX-101W	IN DRAINAGE DITCH NEAR SECURITY FENCE.	7-24-61	$<0.007 \times 10^{-7}$ 0.53	241	2,580		6.2	
	K-1131 DRAIN	5-14-61	0.007×10^{-7} 1.0	6.0	c/m/100 ml 1,145	6.4	6.4	
HPX-430W	Burial Ground NW-K-33	4/3/63	7.0×10^{-10}	1.8×10^{-8}	4.5×10^{-8}	0.1	7.0	

NOTE: 1 ppm U^n/cc = 7×10^{-7} µc/cc 1 dis/min/cc = 4.5×10^{-7} µc/cc

C-1E

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) (~~MUD) (SOIL) (VEGETATION)~~

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM ppb	ALPHA m/100 ml	BETA m/100 ml	FLUORIDES ppm	pH	
	K-413 K-1410 Drain	4-20-60	1.89×10^{-6} µc/cc 2,709	72	6.6×10^{-7} µc/cc 14,750	412	7.1	
	(Outside Security Fence; W of K-1410)	6-8-60	4,635	916	14,155	—	3.7	
	K-1410 Drain	6-16-60	4,209	92	34,216	12,200	5.5	
	K-413 Drain	6-16-60	437	19	912	9,100	9.0	
	K-413 ~~K-1410~~ Drain	8/2/60	4789	239 ~~96~~	3100	9800	9.7	
	K-1410 ~~K-413~~ Drain	8/2/60	1544	303 ~~74~~	14500	7400	4.7	
	K-413 Drain	12/4/62	uc/cc 1.12×10^{-6}	9.0×10^{-8}	4.4×10^{-6}	6800	4.6	

NOTE: 1 ppm U^{nat}/cc = 7×10^{-7} µc/cc 1 dis/min/cc = 4.5×10^{-7} µc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) ~~(MUD) (SOIL) (VEGETATION)~~

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES	pH	
			ppb	d/m/100ml	d/m/100ml	ppm		
	K-1407 Equip. Cleaning Sta.	4-18-60	2.8×10^{-9} uc/cc 4	1	3.4×10^{-7} uc/cc 76	0.4	7.8	

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

ORGDP

Year _____

ENVIRONMENTAL SAMPLING

(WATER)(MUD)(SOIL)(VEGETATION)

SAMPLE LOCATION	DATE	LABORATORY RESULTS							
		Uranium		Alpha		Total Beta		Sr 90 ~~[illegible]~~	~~pH~~
		ppb	µc/cc	d/m/100 cc	µc/cc	~~d/m/100 cc~~	µc/cc	~~ppm~~	
Melted Snow	2-7-67					pci/l 175		46 pci/l 6x10-9 µc/cc	

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) ([redacted])

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS URANIUM ppb	ALPHA d/m/100ml	BETA d/m/100ml	FLUORIDES ppm	pH	Sr^{90} d/m/gal	Utilities (Ion exchange)
	Pond S.W. of K-1001	9-12-59	<1	1	2.7x10⁻⁷ uc/cc 6	0.5	8.6	—	
	("stagnant")	10-26-59	2	—	[illegible] uc/cc 9	0.2	8.3	195 - Sr^{90} (2×10^{-8} uc/cc). 235 - Total beta	
	"	4/18/60	7	1	2.2×10^{-7} uc/cc 48	0.1	8.7		
Heavy rains 6/24/60	"	6/27/60	7	4	7.6×10^{-8} uc/cc 17	—	9.1		
continued	"	3/16/62	3.5×10^{-9}	—	1.1×10^{-7}	0.3	7.1		
Melted Snow	SW corner of K-1001	1-6-60	2	—	3.6×10^{-8} 8	0.0	4.9	—	
"	"	3-9-60	2	—	6.8×10^{-8} 15	—	7.3	—	
Melted Snow	SW Corner of K-1001	1-10-62	0	1.0×10^{-8} uc/cc	3.0×10^{-7} 66	0.0	5.2	—	24 liters ≈ 98% Sr^{89} Russian tests
"	"	3-6-62	0	—	130 d/m/100cc 5.9×10^{-7}	0.3	5.4	—	
Melted Snow	K-1004A #	1/19/67	—	—	—	—	—	6 pCi/l 6×10^{-9} uc/cc	

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

C-1d

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) [redacted]

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES	pH	
			ppb	d/m/100ml	d/m/100ml	ppm		
	K-1420 Acid Drain Line	6-30-59	8.99×10^{-7} uc/cc 1284	219	1.58×10^{-5} uc/cc 3506	–	2.5	
	(composite of 2 lines) (NE corner of K-1407B)	6-30-59	924	79	1,299	–	1.8	
(SRO)	"	11-18-59	4.4×10^{-6} uc/cc 6334	16,836	6.60×10^{-5} uc/cc 14,666	–	2.6	(SRO)
	"	4/18/60	7.4×10^{-7} uc/cc 1062	200	848	1.9	2.2	
	" above noted elsewhere	3/16/62	3.6×10^{-7} 514	5.13×10^{-6} 1,180	6.1×10^{-5} 13,550	4.0	2.1	
	"	12/4/62	8.0×10^{-6}	1.1×10^{-5}	[illegible]	13.0	8.0	

Auto Holding Pond

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc (100 " / " /100cc) = 4.5×10^{-7} uc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) ([redacted])

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM ppb	ALPHA d/m/100ml	BETA d/m/100ml	FLUORIDES ppm	pH	
CW-2	Poplar Creek at K-27 drain	2/14/59	19	3	50	0.3	8.0	
"	(include K-1131 effluent)	6/6/59	51	3	49	—	7.4	
"	(at drain entry into Poplar Creek)	8/22/59	8.8×10^{-8} uc/cc 125	—	64	0.4	7.7	
"	"	3/26/60	21	—	LOST	—	6.7	
"	"	4/20/60	13	1	8.14×10^{-7} uc/cc 181	3.7	7.3	
"	"	5/7/60	18	—	33	—	7.4	

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) [redacted]

Holding Pond (K-1407-B)

SAMPLE NUMBER	SAMPLE LOCATION	DATE 1958	LABORATORY RESULTS URANIUM ppb	ALPHA d/m/100ml	BETA d/m/100ml	FLUORIDES ppm	pH	
	West effluent	4/30	400				2.6	
		5/1	400				2.7	
		5/2	500				2.7	
	"	5/5	250				2.4	
		5/6	200				2.5	
	"	5/7	200				2.6	
		5/8	750				2.4	
	"	5/9	10,000 — 7.8×10^{-6} uc/cc				2.5	
		5/9	12,000 — 8.4×10^{-6} uc/cc				2.5	
	"	5/10	4,000				2.6	
		5/11	3,000				2.6	
	"	5/12	1,500				2.3	
		5/13	1,000				2.4	
	"	5/14	1,000				2.4	
		5/15	500				2.6	
	"	5/16	300				2.4	
		5/17	100				2.5	
	"	5/18	300				2.7	
		5/19	100				2.7	
	"	5/20	100				2.2	

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

[illegible]

[illegible] [redacted]

Holding Pond (K-1407-B)

[illegible] NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS				
			URANIUM	[illegible]	[illegible]	[illegible]	[illegible]
		1958	[illegible]	[illegible]	[illegible]	[illegible]	
	West Effluent	5/27	200				2.3
		6/3	1,200				2.4
	"	6/10	500				2.6
		6/16	100				—
	"	6/24	300				5.5
		7/2	350				2.6
	"	7/9	200				2.7
		7/15	200				2.8
	"	7/23	300				2.2

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) (~~MUD~~) (~~SOIL~~) (~~VEGETATION~~)

Holding Pond (K-1407-B)

SAMPLE NUMBER	SAMPLE LOCATION	DATE 1958	LABORATORY RESULTS URANIUM ppb	ALPHA d/m/100ml	BETA d/m/100ml	FLUORIDES ppm	pH	
	East effluent	4/30	—				—	
		5/1	—				—	
		5/2	—				—	
	"	5/5	250				2.4	
		5/6	200				2.5	
	"	5/7	—				—	
		5/8	750				2.3	
	"	5/9	10,000	7.0×10^{-6} uc/cc			2.6	
		5/9	12,000	8.4×10^{-6} uc/cc			2.6	
	"	5/10	4,000				2.6	
		5/11	2,000				2.6	
	"	5/12	2,000				2.5	
		5/13	1,000				2.3	
	"	5/14	1,000				2.4	
		5/15	300				2.7	
	"	5/16	300				2.3	
		5/17	200				2.6	
	"	5/18	300				2.7	
		5/19	200				2.3	
	"	5/20	100				2.3	

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

ENVIRONMENTAL SAMPLING -- OHGIP

(WATER) ([redacted])

Holding Pond (K-1407-B)

SAMPLE NUMBER	SAMPLE LOCATION	DATE 1958	LABORATORY RESULTS URANIUM ppb	ALPHA d/m/100ml	BETA d/m/100ml	FLUORIDES ppm	pH	
	East Effluent	5/27	200				2.3	
		6/3	1,200				2.3	
	"	6/10	500				2.7	
	"	6/16	200				—	
		6/24	400				6.0	
	"	7/2	350				2.6	
	"	7/9	200				2.7	
		7/15	300				2.3	
	"	7/23	300				2.1	

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

C-1c

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) ([redacted])

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES	pH	
			ppb	d/m/100ml	d/m/100ml	ppm		
	K-27 Drain	11/14/58	21	2	43	2.5	7.1	
	" (K-27, K-1231, K-1131, etc.)	11/17/58	21	13	43	13.4	6.8	
	"	11/18/58	1.09×10^{-6} uc/cc 1589	144	2.22×10^{-6} uc/cc 494	168.0	3.0	
	"	11/19/58	146	13	68	40.0	6.3	
	"	11/21/58	531	38	156	3.4	9.8	
	(As of 4/18/60, access hole covered c blocktops — Accessible from hillside?)							
—	Outside Security Fence (N of K-1131)	4/20/60	9.1×10^{-9} uc/cc 13	0	8.5×10^{-7} uc/cc 189	4.8	7.3	
	"	12/4/62	2.5×10^{-8}	5.4×10^{-8}	2.3×10^{-6}	81	3.9	

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) ([redacted])

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES	pH	
			ppb	d/m/100ml	d/m/100ml	ppm		
	CW-16 NE Corner of Holding Pond K-9407-B (near Pole # 210)	8-12-58	1	0	15		6.8	
		8-25-58	2	0	15		—	
	"	9-8-58	2	0	12		7.8	
	"	9-12-58	4	1	11		7.9	
	"	9-16-58	0	0	19		6.0	
	"	9-19-58	1	1	10		7.7	
	"	9-26-58	0	0	27		7.5	

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) ([redacted])

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES	pH	
			ppb	d/m/100ml	d/m/100ml	ppm		
	CW-15 Composite of Holding Pond (Under security fence at pole #217)	8-6-58	371	79	2.49×10^{-6} uc/cc 555	–	3.5	
		8-12-58	108	37	84	–	6.3	
		8-25-58	97	9	84	–	—	
	"	9-3-58	176	32	167	–	6.3	
	"	9-12-58	375	116	112	–	4.9	
	"	9-16-58	1.02×10^{-6} uc/cc 1460	114	192	–	4.5	
	"	9-19-58	263	52	81	–	5.6	
	"	9-26-58	128	34	72	–	5.7	
(Processing SRO)	"	11-18-59	1.03×10^{-6} uc/cc 149	216	364	—	6.6	
	"	4/18/60	1.20×10^{-7} uc/cc 171	33	5.67×10^{-7} uc/cc 126	2.7	6.8	

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) ([redacted])

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES	pH	
			ppb	d/m/100ml	d/m/100ml	ppm		
	CW-14 K-1420 Floor Drains	8-6-58	4	0.8	4.05 x 10⁻⁷ uc/cc 91	–	7.0	
	(SE corner of Pond @ pole #2298)	9-3-58	27	1.0	39	–	7.7	
	"	9-8-58	24	2.0	42	–	7.1	
	"	9-12-58	5	1.0	26	–	8.6	
	"	9-16-58	<1	1.0	38	–	5.6	
	"	9-19-58	13	2.0	24	–	7.0	
	"	9-26-58	1.71 x 10⁻⁷ uc/cc 245	18.0	53	–	6.8	
	"	6-30-59	25	2.0	78	–	7.9	
	"	4/18/60	2	0	5.2 x 10⁻⁷ uc/cc 115	0.0	7.5	
	"							

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(WATER) [redacted]

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES	pH	
			ppb	d/m/100ml	d/m/100ml	ppm		
	K-802 — Poplar Creek	5-27-55					7.6	
		-28-					8.5	
	"	-29-					8.7	
		-30-					8.7	
	"	-31-					8.7	
		6-1-55					8.6	
	"	-2-					9.4	
		-3-					9.4	
	"	-4-					9.2	
		-5-					9.0	
	"	-6-					8.9	
		-7-					8.7	
	"	-8-					8.7	
		-9-					9.2	
	"	-10-					8.0	
		-11-					7.8	
East Fork	Rome Co. Bridge	6-3-55					10.4	
	Golf Course Road	"					9.5	
	Jefferson Ave & Turnpike	"					11.2	
	Midway Gate @ Y-12	"					11.0	

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

No ill effect on animal life @ fish noted.

ENVIRONMENTAL SAMPLING -- ORGDP

(~~WATER~~) (MUD) (~~SOIL~~) (~~VEGETATION~~)

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM ppm	ALPHA ~~c/m/100 ml~~	BETA ~~c/m/100 ml~~	FLUORIDES ppm	pH	
MM-1		2-9-63	152	114	471			
MM-2		"	592	1,905	3,438			
MM-3		"	28	77	343			
~~MM-4~~								
MM-5		"	38	47	231			
MM-6		"	8	15	187			
MM-8		"	14	26	289			

NOTE: 1 ppm U/cc = 7 x 10^{-7} µc/cc 1 dis/min/cc = 4.5 x 10^{-7} µc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

~~(WATER)~~ (MUD) ~~(SOIL) (VEGETATION)~~

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM ~~ppb~~	ALPHA ~~d/m/100 ml~~ c/m/gram	~~BETA~~ ~~d/m/100 ml~~ c/m/gram	FLUORIDES ppm	pH	Conduct
East	Laundry K-100 Sludge Pit	12/29/62	357 ppm	α 3113	β 5,804			N
West	"	"	410 ppm	4915	8,532			N
	K-1420 Al melter Salt Bath	12/29/62	42 ppm	≈200 α c/m/100cm²	0.03 mm/hr at contact			N

NOTE: 1 ppm [illegible] x 10^{-7} μc/cc 1 dis/min/cc = 4.5 x 10^{-7} μc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(~~WATER~~) (MUD) (~~SOIL~~) (~~VEGETATION~~)

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM ppm	ALPHA d/m/100ml	BETA d/m/100ml	FLUORIDES ppm	pH	
MM1		8-18-62	42	70.2	367			
MM2		"	670	3,520	9,926			
MM3		"	35	169.9	838			
MM4		"	3	11.3	439			
MM5		"	8	15.8	116			
MM6		"	<1	6.2	247			
MM8		"	27	37.8	407			
~~MM8~~		~~—~~						

NOTE: 1 ppm U [illegible] $\times 10^{-7}$ μc/cc 1 dis/min/cc = 4.5×10^{-7} μc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

~~(WATER)~~ (MUD) ~~(SOIL)~~ (~~VEGETATION~~)

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM ppm	ALPHA ~~c/m/100 ml~~	BETA ~~c/m/100 min~~	FLUORIDES ppm	pH	
MM 1		2-10-62	28	44.2	198			
MM 2		"	53	176.3	1,283			
MM 3		"	17	27.6	392			
MM 4		"	2	6.5	531			
MM 5		"	44	45.9	483			
MM 6		"	2	5.4	496			
MM 7		"	1,064	1,902	9,581			
MM 8		"	58	62.9	455			

NOTE: 1 ppm U = [illegible] x 10^{-7} μc/cc 1 dis/min/cc = 4.5 x 10^{-7} μc/cc

C-19

Average depth — 4'
Volume — (1.8x10^5 ft^3)
(1.4x10^6 gallons)

1.38 acres
150'x300'
½-3 Mgal/day

ENVIRONMENTAL SAMPLING — ORGMP

([redacted]) (MUD) ([redacted])

Holding Pond

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES	pH	
			ppb	d/m/[illegible]	d/m/[illegible]	ppm		
	Holding Pond K-1407-B	1957	170 kg U 2.9 kg U^{235}				Process Engineering Div. Uranium Control Dept. X W.D. McClure 8-9294	
	"	1958	120 kg. U 2.5 kg U^{235}					
	"	1959	~~no check made~~					
	"	1960	273.5 kg U 5.7 kg U^{235}					
	"	Oct. 26 1961	102.342 kg U 2.8 kg. U^{235}	Estimated				
	"	1961	152.4 kg U 2.5 kg U^{235}	(Pond cleaned out — actual mass removed.)				
	"							
	"							

NOTE: 1 ppm U^{238}/cc = 7x10^{-7} μc/cc 1 dis/min/cc = 4.5x10^{-7} μc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

([redacted]) (MUD) ([redacted]) ([redacted])

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM ppb	ALPHA d/m/~~100 ml~~	BETA d/m/~~100 ml~~	FLUORIDES ppm	pH	
MM-1	East Lake at (Jct. & Poplar)	11-25-61	202	132.5	684			
MM-2	K-1300 Drain (Jct & Poplar)	"	211	576.3	1848			
MM-3	Poplar Creek (Jct & C.R.)	"	15	16.9	456			
MM-4	CR 1 mile below	"	3	4.1	484			
MM-5	Poplar Creek (K-22 Drain)	"	34	33.1	196			
MM-6	C.R. K-1513	"	1	1.7	301			
MM-8	Blair Bridge Poplar Creek	"	31	46.2	849			
MM-9								

NOTE: 1 ppm U^{238}/cc = 7 x 10^{-7} μc/cc 1 dis/min/cc = 4.5 x 10^{-7} μc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

~~(WATER)~~ (MUD) (~~SOIL) (VEGETATION~~)

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES		
			ppm	C/m/~~100 ml~~ gm	C/m/~~100 ml~~ gm	ppm	pH	
MM 1	East Fork junction with Poplar Cr.	9/19/61	124	94	625			
2	K-1300 Drain at Poplar Cr.	"	397	876	2621			
3	Poplar Cr. at junction with Clinch	"	14	19	1037			
4	Clinch River One Mile below Poplar Cr.	"	3	5	370			
5	Poplar Cr. Opposite K-27 Drain	"	5	8	60			
6	Clinch River at K-1513 Pumphouse	"	1	3	699			
8	Blair Bridge at Poplar Cr.	"	11	21	74			

NOTE: 1 ppm U^n/cc = 7 x 10^{-7} µc/cc 1 dis/min/cc = 4.5 x 10^{-7} µc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

~~(WATER)~~ (MUD) ~~(SOIL) (VEGETATION)~~

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM ppm	ALPHA ~~c/m/100 ml~~	BETA ~~c/m/100 ml~~	FLUORIDES ppm	pH	
MM-1		8-19-61	124	94	625			
2			397	876	2621			
3			14	19	1037			
4			3	5	370			
5			5	8	60			
6			1	3	699			
8			11	21	74			

NOTE: 1 ppm U^{nat}/cc = 7 x 10^{-7} μc/cc 1 dis/min/cc = 4.5 x 10^{-7} μc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(~~WATER~~) (MUD) (~~SOIL~~) (~~VEGETATION~~)

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS URANIUM ppm	ALPHA d/m/100 ml	BETA d/m/100 ml	FLUORIDES ppm	pH	
MM-1	East fork junction with Poplar Creek	2-11-61	47.2	47.8	214			
MM-2	K-1300 at Poplar Creek	"	97.0	288.7	827			
MM-3	Poplar Creek at junction with Clinch	"	11.4	19.1	560			
MM-4	Clinch River 1 mi below Poplar Cr. jct.	"	5.5	8.7	909			
MM-5	Poplar Cr. opposite K-27 Drain	"	49.1	53.9	342			
MM-6	Clinch River at K-1513 Pump House	"	0.5	1.6	155			
MM-8	Blair Bridge at Poplar Creek.	"	27.8	33.3	38			

NOTE: 1 ppm U/cc = 7 x 10^{-7} μc/cc 1 dis/min/cc = 4.5 x 10^{-7} μc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

~~(WATER)~~ (MUD) ~~(SOIL) (VEGETATION)~~

Food Quality

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES	pH	
			ppm	~~cc/m/100ml~~	~~cc/m/100ml~~	ppm		
mm1	East Fork Junct. with Poplar	8/22/60	10	84.6	285			
mm2	K-1300 Drain at junct. with Poplar	"	393	1098.5	2417			
mm3	Poplar Cr. at junct. with Clinch	"	10	41.1	1166			
mm4	Clinch River 1 mi below Poplar Cr. junct.	"	5	13.1	1347			
mm5	Poplar Cr. opp. K-27 Drain	"	25	103.5	593			
mm6	K-1513 Clinch River	"	2	5.4	465			
mm8	Blair Bridge Poplar Creek	"	534	869.0	6730			
mm9		"	21	68.9	234			

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

~~(WATER)~~ (MUD) (~~SOIL~~) ~~(VEGETATION)~~

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM ppm	ALPHA ~~c/m/10 ml~~	BETA ~~c/m/10 ml~~	FLUORIDES ppm	pH	
MM-1	East Fork Junction with Poplar Cr.	11/22/6.	183	166	826			
MM-2	K-1309 Drain at Poplar Cr.	"	885	1959	3112			
MM-3	Poplar Cr. at Junction with Kerr Cr.	"	15	19.5	753			
MM-4	Clinch River 1 mile below Poplar Junction	"	2	4.6	368			
MM-5	Poplar Cr. Upstream K-27 Drain	"	39	9.3	186			
MM-6	Clinch River at K-1513	"	1	2.1	512			
MM-8	Blair Bridge Poplar Creek		21	10.4	145			

NOTE: 1 ppm U/cc = 7 x 10^{-7} μc/cc 1 dis/min/cc = 4.5 x 10^{-7} μc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(~~WATER~~) (~~MUD~~) (SOIL) (~~VEGETATION~~)

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM ppb	ALPHA d/m/100 ml	BETA d/m/100 ml	FLUORIDES ppm	pH	
HPX-430S	Burial Ground NW-K-33	4/3/63	2.6 ppm	4.2 c/m/g	61 c/m/g	—	—	

NOTE: 1 ppm U^n/cc = 7×10^{-7} μc/cc 1 dis/min/cc = 4.5×10^{-7} μc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(~~WATER~~) (~~RED~~) (SOIL) (~~VEGETATION~~)

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES	pH	
			ppm	~~d/m/100ml~~	~~d/m/100ml~~	ppm		
421	Guard Tower South of K-1045	11-21-60	9.3	13.0	96			
422	Contractor Rd. Immediately west of K-1007	11-21-60	2.0	6.4	86			
423	Near K-33 Portal at Water Tank	11-21-60	2.0	7.3	134			
401	K-1131 50' NE	3/27/63	296	c/m/g 300	975			
402	K-33 100' West	"	21	27	110			
403	K-25 North Guard Tower	"	5	12	120			
404	K-1420 100' NE	"	28	83	240			
405	K-1045-C So. at G. Tower	"	5	11	214			

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

C26

ENVIRONMENTAL SAMPLING — ORGDP

[redacted] (SOIL) ([redacted])

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS						mr/hr @ 1 meter
			URANIUM	ALPHA	BETA	FLUORIDES	pH		
			ppm	c/m/gram	c/m/gram	ppm			
HPX 411	K-1028-47 Powerhouse Portal	12-9-59	14 ppb	24	195	—			0.02
412	K-1064 Storage Yd. @ Pole # 2193	5-6-60	10 ppb	12	116				0.02
413	Blair Rd. — North of Porter Creek Bridge	"	1.6 "	3.1	59				0.02
414	Stone Road Between K-1037 and Blair Road	"	4.8 "	8.5	172				0.02
415	K-1017-S-3 Tower South of K-1045	"	8.6 "	11	210				0.02
416	Contractor Road (West of Data Processing)	"	1.6 "	4.6	73				0.02
Fourth Quarter 417	Near K-1132 HF Storage Tanks	11-21-60	6.3	7.2	120				
418	K-1064 Storage yard.	"	3.6	10.3	112				
419	Poplar Cr. Road at Intersection with Blair Road.	"	13.5	21.5	193				
420	Stone Road near K-1037 Porter	"	7.9	14.9	196				

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

ENVIRONMENTAL SAMPLING -- ORGE

[redacted] (SOIL) [redacted]

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS URANIUM ppb	ALPHA d/m/gram	BETA d/m/gram	FLUORIDES ppm	pH		mr/hr @ meter
HPX 401	K-1131 300' East	9-3-59	862 ppb	1632	3329	56			0.10
402	K-1131 250' Northeast	"	240	229	677	55			0.16
403	K-1131 450' Northeast	"	204	258	610	60			0.05
404	K-1131 150' NNE	"	108	106	277	49			0.10
405	K-1131 300' West	"	71	69	193	55			0.12
406	K-1131 200' South	"	200	192	438	35			0.04
407	K-312-3 50' East	12-9-59	60	280	271	—			0.02
408	K-312-3 50' West	"	72	105	378	—			0.04
409	K-303-9 50' North	"	40	37	206	—			0.02
410	K-1206-F 50' East Near K-31	"	16	26	164	—			0.02

$\bar{F}_2$ $\bar{X}$

$\frac{310}{6} = 52$ (60, 31)

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

~~(WATER) (MUD) (SOIL)~~ (VEGETATION)

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM ppb	ALPHA d/m/100 ml	BETA d/m/100 ml	FLUORIDES ppm	pH	
HPX-430 ✓	Burial Ground NW-K-33	4/3/63	0.8 ppm	1.1 c/m/g	450 c/m/g	13	—	
HP-150	K-1131 (100' NE)	12/7/64				730		
HP-151	K-25 (North at Guard Tower)	12/7/64				19		
HP-152	K-1400 Portal	12/7/64				12		
HP-153	K-1420 (100' N)	12/7/64				250		
HP-154	K-33 (100' W)	12/7/64				17		

NOTE: 1 ppm U/cc = 7×10^{-7} µc/cc 1 dis/min/cc = 4.5×10^{-7} µc/cc

ENVIRONMENTAL SAMPLING -- ORGDP

(~~WATER) (AIR) (SOIL)~~ (VEGETATION)

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS URANIUM ppm	ALPHA d/m/~~100ml~~	BETA d/m/~~100ml~~	FLUORIDES ppm	pH	
421	Guard Tower S. of K-1045	11-21-60	3.3	0.7	51			
422	Contractor Rd immediately W. of K-1007	11-21-60	1.1	0.1	36			
423	Near K-33 Portal at Water Tank	11-21-60	0.8	1.5	23			
401 ✓	K-1131 50' NE	3/27/63	9.4	6.2	1026	507		
402 ✓	K-33 100' West	"	0.7	0.2	557	154	F_2	
403 ✓	K-25 - North G. Tower	"	0.0	0.9	502	53		
404 ✓	K-1420 100' NE	"	9.9	23.4	564	24		
405 ✓	K-1045 C G. Tower, south	"	0.0	0.8	417	42		
			5 | 20.0 4.0	5 | 31.5 6.3	5 | 3066 613			

$\bar{x} = \frac{280}{5} = 156$ (507 ↑ 156 ↓ 24)

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

c2b-

ENVIRONMENTAL SAMPLING -- ORGDP

~~([illegible]) (MUD) ([illegible])~~ (VEGETATION)

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES	pH	
			ppm	c/m/~~gm~~ml	c/m/~~gm~~ml	ppm		
HPX 411	K-1028-47 Powerhouse Portal	12-9-59	2	2	54	156 →	1959 X 2054	187 → 502
412	K-1064 Storage Yd. @ Pole # 2193	5-6-60	9.8	5.4	39	—	11	22
413	Blair Road North of Poplar Creek Bridge	"	3.7	4.6	16	—		
414	Stoner Road Between K-1037 and Blair Road	"	3.0	4.2	20	—		
415	K-1017-S-3 Tower South of K-1045	"	7.8	9.0	22	—		
416	Construction Road West of Data Processing	"	4.0	6.3	26	—		
417	Near K-1132 HF Storage Tank	11-21-60	3.5	0.5	31			
418	K-1064 Storage Yd.	11-21-60	0.7	0.2	13			
419	Poplar Cr. Road at intersection with Blair Rd.	11-21-60	3.8	1.9	41			
420	Stoner Rd. near K-1037 Portal	11-21-60	2.1	2.3	31			

Fourth Quarter

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc

ENVIRONMENTAL SAMPLING -- ORGLP

[redacted] (VEGETATION)

SAMPLE NUMBER	SAMPLE LOCATION	DATE	LABORATORY RESULTS					
			URANIUM	ALPHA	BETA	FLUORIDES	pH	
			ppb	d/m/gram	d/m/gram	ppm		
HPX 401	K-1131 300' East	9-3-59	627	130	—	254		
402	K-1131 250' Northeast	"	71	28	—	63		
403	K-1131 450' Northeast	"	62	30	—	22		
404	K-1131 150' NNE	"	35	20	—	312		
405	K-1131 300' West	"	41	9	—	68		
406	K-1131 200' South	"	32	21	—	110		
407	K-312-3 50' East	12-9-59	50	370	165	502		
408	K-312-3 50' West	"	104	129	337	162		
409	K-303-9 50' North	"	12	14	97	83		
410	K-1206-F 50' East	"	15	15	111	322		

NOTE: 1 ppm U^n/cc = 7×10^{-7} uc/cc 1 dis/min/cc = 4.5×10^{-7} uc/cc