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PROPOSED SURFACE WATER INTERIM MEASURES/ INTERIM REMEDIAL ACTION PLAN/ ENVIRONMENTAL ASSESSMENT AND DECISION DOCUMENT

WOMAN CREEK BASIN

OPERABLE UNIT NO. 2

U.S. DEPARTMENT OF ENERGY

Rocky Flats Plant
Golden, Colorado

ENVIRONMENTAL RESTORATION PROGRAM

02 October 1991

Volume II - Appendices

ADMIN RECORD

REVIEWED FOR CLASSIFICATION/UCNI
By [illegible] (UNL)
Date 10/17/91

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VOLUME II

U.S. Department of Energy
Rocky Flats Plant
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APPENDIX A

SEDIMENT AND GROUND-WATER QUALITY SUMMARY TABLES

WOMAN CREEK BASIN

Woman Creek Basin IM/IRA Sediment

Plutonium Data above error and VOC Data Above Detection Limits for Sediment

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
1	SED028	90-08-23	0.1271/0.01		0.02193/0.0		-	-	-	-	-	-	-
2	SED028	91-03-18					-	-	-	-	-	-	16 J
3	SED031	89-03-06					-	-	-	-	-	-	-
4	SED029	89-03-09	0.3/0.1		-		-	-	-	-	-	-	-
5	SED029	90-08-22	0.8699/0.09		0.1362/0.02		-	-	-	-	-	-	-
6	SED029	90-11-13					-	-	-	-	-	-	-
7	SED030	89-03-08	0.82/0.08		-		-	-	-	-	-	-	-
8	SED030	89-03-13	0.45/0.05		-		-	-	-	-	-	-	-
9	SED030	90-08-22	0.1995/0.02		0.03305/0.0		-	-	-	-	-	-	-
10	SED030	90-11-05					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
1	SED028	90-08-23	-	-	-	-	-	-	-	-	-	-	-
2	SED028	91-03-18	-	-	-	-	-	-	-	-	-	-	-
3	SED031	89-03-06	-	-	-	-	18	-	-	-	-	8	-
4	SED029	89-03-09	-	-	-	-	-	-	-	-	-	-	-
5	SED029	90-08-22	-	-	-	-	-	-	-	-	-	-	-
6	SED029	90-11-13	-	-	-	-	-	-	-	-	-	-	-
7	SED030	89-03-08	-	-	-	-	-	-	-	-	-	7 J	-
8	SED030	89-03-13	-	-	19 J	-	-	6 J	-	6 J	-	-	-
9	SED030	90-08-22	-	-	-	-	-	-	-	-	-	-	-
10	SED030	90-11-05	-	-	-	-	-	-	-	-	-	-	-

U=Analyzed but not detected J=Present below detection limit E=Estimated value - =Results below detection limit

A=Acceptable with qualifications V=Valid and acceptable R=Rejected B=Present in laboratory blank

Woman Creek Basin IM/IRA Sediment

Plutonium Data above error and VOC Data Above Detection Limits for Sediment

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
11	SED025	89-03-08	3.3/0.1		-		-	-	-	-	-	-	-
12	SED025	90-08-21	0.5349/0.06		0.1031/0.01		-	-	-	-	-	-	-
13	SED025	90-11-05					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
11	SED025	89-03-08	-	-	-	-	-	-	-	-	-	-	-
12	SED025	90-08-21	-	-	-	-	-	-	-	-	-	-	-
13	SED025	90-11-05	-	-	-	-	-	-	-	59	-	-	-

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Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
1	1187BR	87-09-16					-	-	-	-	-	-	-
2	1187BR	87-09-18		-		-	-	-	-	-	-	-	-
3	1187BR	87-09-21		0.199/0.072		0.06/0.05	-	-	-	-	-	-	-
4	1187BR	87-10-12	DRY										
5	1187BR	88-02-17					277	-	-	-	-	-	-
6	1187BR	88-02-18		-		-	-	-	-	-	-	-	-
7	1187BR	88-04-13					301	-	-	-	-	-	-
8	1187BR	88-08-08					-	-	-	-	-	-	-
9	1187BR	88-10-26	DRY										
10	1187BR	89-02-07	DRY										
11	1187BR	89-05-02	DRY										
12	1187BR	89-08-07					-	-	-	-	-	-	-
13	1187BR	89-12-01		-		-	-	-	-	-	-	-	-
14	1187BR	90-01-23					7	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
1	1187BR	87-09-16	-	-	-	560	71	-	22	-	-	595	-
2	1187BR	87-09-18	-	-	-	-	-	-	-	-	-	-	-
3	1187BR	87-09-21	-	-	-	-	-	-	-	-	-	-	-
4	1187BR	87-10-12	DRY										
5	1187BR	88-02-17	-	-	-	495	129	-	20	-	-	824	-
6	1187BR	88-02-18	-	-	-	-	-	-	-	-	-	-	-
7	1187BR	88-04-13	-	-	-	436	121	-	28	-	-	573	-
8	1187BR	88-08-08	-	-	-	605	129	-	26	-	-	1090	-
9	1187BR	88-10-26	DRY										
10	1187BR	89-02-07	DRY										
11	1187BR	89-05-02	DRY										
12	1187BR	89-08-07	-	-	-	270	88	-	18	-	-	560	-
13	1187BR	89-12-01	-	-	-	-	-	-	-	-	-	-	-
14	1187BR	90-01-23	-	-	-	-	96	-	40	-	-	-	-

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Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
15	1187	90-06-15					-	-	-	-	-	8	-
16	1187	90-09-18					-	-	-	8	-	10	-
17	1187	90-11-28					-	-	-	-	-	-	150 B
18	1187	91-01-15		-		-	-	-	-	12	-	18	-
19	1187	91-04-16					-	-	-	12	-	-	-
20	1287BR	- -	DRY										
21	1287BR	87-08-31					-	-	-	-	-	-	-
22	1287BR	87-09-02		-		-	-	-	-	-	-	-	-
23	1287BR	88-02-25					-	-	-	-	-	-	-
24	1287BR	88-02-26		-		-	-	-	-	-	-	-	-
25	1287BR	88-04-20					-	-	-	-	-	-	-
26	1287BR	88-04-21		-		-	-	-	-	-	-	-	-
27	1287BR	88-07-25					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
15	1187	90-06-15	-	-	-	670	79	-	32	-	-	1800	-
16	1187	90-09-18	-	-	-	810 E	92	-	46 B	-	-	1000 E	-
17	1187	90-11-28	-	-	-	660	86	-	41 J	-	-	1900	-
18	1187	91-01-15	-	-	-	980 E	96	-	62	-	-	2900 E	-
19	1187	91-04-16	-	-	-	530 E	82	-	49	-	-	1200 E	-
20	1287BR	- -	DRY										
21	1287BR	87-08-31	-	-	-	58	33	-	43	-	-	3570	-
22	1287BR	87-09-02	-	-	-	-	-	-	-	-	-	-	-
23	1287BR	88-02-25	-	-	-	20	17	-	34	-	-	547	-
24	1287BR	88-02-26	-	-	-	-	-	-	-	-	-	-	-
25	1287BR	88-04-20	-	-	-	43	17	-	57	-	-	751	-
26	1287BR	88-04-21	-	-	-	-	-	-	-	-	-	-	-
27	1287BR	88-07-25	-	-	-	27	17	-	42	-	-	528	-

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Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
28	1287BR	88-07-26		-		-	-	-	-	-	-	-	-
29	1287BR	88-10-31 DRY											
30	1287BR	89-02-07 DRY											
31	1287BR	89-05-02 DRY											
32	1287BR	89-08-07 DRY											
33	1287BR	89-11-14		-		-	-	-	-	-	-	-	-
34	1287BR	90-01-24					-	-	-	-	-	7	-
35	1287	90-09-20	-	-	-	-	-	-	-	-	-	-	-
36	1287	90-11-28					-	-	-	-	-	-	-
37	1287	91-01-15					-	-	-	-	-	-	-
38	1487BR	87-08-31					-	-	-	-	-	-	-
39	1487BR	87-09-01		-		-	-	-	-	-	-	-	-
40	1487BR	87-10-12					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
28	1287BR	88-07-26	-	-	-	-	-	-	-	-	-	-	-
29	1287BR	88-10-31 DRY											
30	1287BR	89-02-07 DRY											
31	1287BR	89-05-02 DRY											
32	1287BR	89-08-07 DRY											
33	1287BR	89-11-14	-	-	-	-	-	-	-	-	-	310	-
34	1287BR	90-01-24	-	-	-	22	15	-	37	-	-	-	-
35	1287	90-09-20	-	-	-	9 J	8 J	-	28	-	-	170	-
36	1287	90-11-28	-	-	-	12	10	-	32	-	-	250 E	-
37	1287	91-01-15	-	-	-	17	12	-	54	-	-	420 E	-
38	1487BR	87-08-31	-	-	-	404	23	-	-	-	-	109	-
39	1487BR	87-09-01	-	-	-	-	-	-	-	-	-	-	-
40	1487BR	87-10-12	-	-	-	258	17	-	-	-	-	47	-

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Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
41	1487BR	87-10-13		-		-	-	-	-	-	-	-	-
42	1487BR	88-02-29					-	-	-	-	-	-	-
43	1487BR	88-03-01		-		-	-	-	-	-	-	-	-
44	1487BR	88-04-22		-		-	-	-	-	-	-	-	-
45	1487BR	88-08-08					-	-	-	-	-	-	-
46	1487BR	88-08-09		-		-	-	-	-	-	-	-	-
47	1487BR	88-10-26		-		-	-	-	-	-	-	-	-
48	1487BR	89-01-25					-	-	-	-	-	-	-
49	1487BR	89-01-26		-		-	-	-	-	-	-	-	-
50	1487BR	89-04-24					-	-	-	-	-	-	-
51	1487BR	89-04-25	-	-	-	-	-	-	-	-	-	-	-
52	1487BR	89-08-02					-	-	-	-	-	-	-
53	1487BR	89-08-03		-		-	-	-	-	-	-	-	-
54	1487BR	89-11-28		-		-	-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
41	1487BR	87-10-13	-	-	-	-	-	-	-	-	-	-	-
42	1487BR	88-02-29	-	-	-	38	7	-	-	-	-	28	-
43	1487BR	88-03-01	-	-	-	-	-	-	-	-	-	-	-
44	1487BR	88-04-22	-	-	-	-	-	-	-	-	-	-	-
45	1487BR	88-08-08	-	-	-	110	-	-	-	-	-	54	-
46	1487BR	88-08-09	-	-	-	-	-	-	-	-	-	-	-
47	1487BR	88-10-26	-	-	-	77	8 B	-	-	-	-	36	-
48	1487BR	89-01-25	-	-	-	150	-	-	-	-	-	54 J	-
49	1487BR	89-01-26	-	-	-	-	-	-	-	-	-	-	-
50	1487BR	89-04-24	-	-	-	160 J	16	-	-	-	-	68	-
51	1487BR	89-04-25	-	-	-	-	-	-	-	-	-	-	-
52	1487BR	89-08-02	-	-	-	100	11	-	-	-	-	34	-
53	1487BR	89-08-03	-	-	-	-	-	-	-	-	-	-	-
54	1487BR	89-11-28	-	-	-	450	36	-	-	-	-	120	-

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Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
55	1487	90-09-18	0.005917/0.	-	-	-	-	-	-	-	-	-	-
56	1487	90-11-20					-	-	-	-	-	-	-
57	1487	91-01-11	-	-	-	-	-	-	-	-	-	-	-
58	1487	91-04-15					-	-	-	-	-	-	-
59	1687BR	87-09-10					-	-	-	-	-	-	-
60	1687BR	87-09-14		-		-	-	-	-	-	-	-	-
61	1687BR	87-09-15	0.095/0.062		-		-	-	-	-	-	-	-
62	1687BR	87-10-16					-	-	-	-	-	-	-
63	1687BR	87-10-17		-		-	-	-	-	-	-	-	-
64	1687BR	88-02-29					-	-	-	-	-	-	-
65	1687BR	88-03-01		-		-	-	-	-	-	-	-	-
66	1687BR	88-04-22		-		-	-	-	-	-	-	-	-
67	1687BR	88-08-09					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
55	1487	90-09-18	-	-	-	130	20	-	-	-	-	59	-
56	1487	90-11-20	-	-	-	180	12	-	-	-	-	54	-
57	1487	91-01-11	-	-	-	670 E	36	-	8	-	-	200 E	-
58	1487	91-04-15	-	-	-	330 E	27	-	-	-	-	110	-
59	1687BR	87-09-10	-	-	-	-	-	-	-	-	-	-	-
60	1687BR	87-09-14	-	-	-	-	-	-	-	-	-	-	-
61	1687BR	87-09-15	-	-	-	-	-	-	-	-	-	-	-
62	1687BR	87-10-16	-	-	-	-	-	-	-	-	-	-	-
63	1687BR	87-10-17	-	-	-	-	-	-	-	-	-	-	-
64	1687BR	88-02-29	-	-	-	-	-	-	-	-	-	-	-
65	1687BR	88-03-01	-	-	-	-	-	-	-	-	-	-	-
66	1687BR	88-04-22	-	-	-	-	-	-	-	-	-	-	-
67	1687BR	88-08-09	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
68	1687BR	88-08-10		-		-	-	-	-	-	-	-	-
69	1687BR	88-10-31		-		-	-	-	-	-	-	-	-
70	1687BR	89-02-07					-	-	-	-	-	-	-
71	1687BR	89-02-08		-		-	-	-	-	-	-	-	-
72	1687BR	89-05-01					-	-	-	-	-	-	-
73	1687BR	89-05-02	-	-	-	-	-	-	-	-	-	-	-
74	1687BR	89-08-02					-	-	-	-	-	-	-
75	1687BR	89-08-03	-	-	-	-	-	-	-	-	-	-	-
76	1687BR	89-11-06		-		-	-	-	-	-	-	-	-
77	1687BR	90-03-17		-		-	-	-	-	-	-	-	-
78	1687	90-09-18					-	-	-	-	-	-	-
79	1687	90-11-28					-	-	-	-	-	-	-
80	1687	91-01-09	0.01918/0.0	-	0.008131/0.	-	-	-	-	-	-	-	-
81	1687	91-04-16					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
68	1687BR	88-08-10	-	-	-	-	-	-	-	-	-	-	-
69	1687BR	88-10-31	-	-	-	-	-	-	-	-	-	-	-
70	1687BR	89-02-07	-	-	-	-	-	-	-	-	-	-	-
71	1687BR	89-02-08	-	-	-	-	-	-	-	-	-	-	-
72	1687BR	89-05-01	-	-	-	-	-	-	-	-	-	-	-
73	1687BR	89-05-02	-	-	-	-	-	-	-	-	-	-	-
74	1687BR	89-08-02	-	-	-	-	-	-	-	-	-	-	-
75	1687BR	89-08-03	-	-	-	-	-	-	-	-	-	-	-
76	1687BR	89-11-06	-	-	-	-	-	-	-	-	-	-	-
77	1687BR	90-03-17	-	-	-	-	-	-	-	-	-	-	-
78	1687	90-09-18	-	-	-	-	-	-	-	-	-	-	-
79	1687	90-11-28	-	-	-	-	-	-	-	-	-	-	-
80	1687	91-01-09	-	-	-	-	-	-	-	-	-	-	-
81	1687	91-04-16	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
82	3087BR	88-01-22		-		0.17/0.12	-	-	-	-	-	-	-
83	3087BR	88-03-02					-	-	-	-	-	-	-
84	3087BR	88-03-03		-		-	-	-	-	-	-	-	-
85	3087BR	88-04-22		-		-	-	-	-	-	-	-	-
86	3087BR	88-08-08					-	-	-	-	-	-	-
87	3087BR	88-08-09		-		-	-	-	-	-	-	-	-
88	3087BR	88-08-09		-		-	-	-	-	-	-	-	-
89	3087BR	88-10-26		-		-	-	-	-	-	-	-	-
90	3087BR	89-02-01					-	-	-	-	-	-	-
91	3087BR	89-02-02		-		-	-	-	-	-	-	-	-
92	3087BR	89-04-24					-	-	-	-	-	-	-
93	3087BR	89-04-25	-	-	-	-	-	-	-	-	-	-	-
94	3087	89-08-02					-	-	-	-	-	-	-
95	3087BR	89-08-03	-	-	-	-	-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
82	3087BR	88-01-22	-	-	-	-	23	-	-	-	-	-	-
83	3087BR	88-03-02	-	-	-	-	-	-	-	-	-	-	-
84	3087BR	88-03-03	-	-	-	-	-	-	-	-	-	-	-
85	3087BR	88-04-22	-	-	-	-	-	-	-	-	-	-	-
86	3087BR	88-08-08	-	-	-	-	-	-	-	-	-	-	-
87	3087BR	88-08-09	-	-	-	-	-	-	-	-	-	-	-
88	3087BR	88-08-09	-	-	-	-	-	-	-	-	-	-	-
89	3087BR	88-10-26	-	-	-	-	-	-	-	-	-	-	-
90	3087BR	89-02-01	-	-	-	-	-	-	-	-	-	-	-
91	3087BR	89-02-02	-	-	-	-	-	-	-	-	-	-	-
92	3087BR	89-04-24	-	-	-	-	-	-	-	-	-	-	-
93	3087BR	89-04-25	-	-	-	-	-	-	-	-	-	-	-
94	3087	89-08-02	-	-	-	-	-	-	-	-	-	-	-
95	3087BR	89-08-03	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
96	3087BR	89-08-03	-	-	-	-	-	-	-	-	-	-	-
97	3087BR	89-12-08		0.009/0.006		-	-	-	-	-	-	-	-
98	3087BR	90-02-09					-	-	-	-	-	-	-
99	3087	90-07-23	-	-	-	-	-	-	-	-	-	-	-
100	3087	90-10-11	-	-	-	-	-	-	-	-	-	-	-
101	3087	91-03-08					-	-	-	-	-	-	-
102	3087	91-05-10					-	-	-	-	-	-	-
103	6386	86-10-06 DRY											
104	6386	87-07-06 DRY											
105	6386	87-10-14 DRY											
106	6386	88-02-17 DRY											
107	6386	88-04-13 DRY											
108	6386	88-07-18 DRY											

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
96	3087BR	89-08-03	-	-	-	-	-	-	-	-	-	-	-
97	3087BR	89-12-08	-	-	-	-	-	-	-	-	-	-	-
98	3087BR	90-02-09	-	-	-	-	-	-	-	-	-	-	-
99	3087	90-07-23	-	-	-	-	-	-	-	-	-	-	-
100	3087	90-10-11	-	-	-	-	-	-	-	-	-	-	-
101	3087	91-03-08	-	-	-	-	-	-	-	-	-	-	-
102	3087	91-05-10	-	-	-	-	-	-	-	-	-	-	-
103	6386	86-10-06 DRY											
104	6386	87-07-06 DRY											
105	6386	87-10-14 DRY											
106	6386	88-02-17 DRY											
107	6386	88-04-13 DRY											
108	6386	88-07-18 DRY											

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	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
109	6386	88-10-21 DRY											
110	6386	89-01-18 DRY											
111	6386	89-04-14 DRY											
112	6386	89-06-10 DRY											
113	6386	89-07-19 DRY											
114	6386	89-07-26 DRY											
115	6386	89-10-18 DRY											
116	6386	90-01-16 DRY											
117	6386	90-06-13					-	-	-	-	-	-	-
118	6386	90-09-19					-	-	-	-	-	-	-
119	0171		-		-		-	-	-	-	-	-	-
120	0171	87-03-09	0.91/0.63		-		-	-	-	12	-	38	-
121	0171	87-04-30	-		-		-	-	-	22	24	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
109	6386	88-10-21 DRY											
110	6386	89-01-18 DRY											
111	6386	89-04-14 DRY											
112	6386	89-06-10 DRY											
113	6386	89-07-19 DRY											
114	6386	89-07-26 DRY											
115	6386	89-10-18 DRY											
116	6386	90-01-16 DRY											
117	6386	90-06-13	-	-	-	-	-	-	-	-	-	-	-
118	6386	90-09-19	-	-	-	-	-	-	-	-	-	-	-
119	0171		-	-	-	1600	180	-	65	-	-	350	13
120	0171	87-03-09	-	-	-	4800	220	-	50	-	-	1120	-
121	0171	87-04-30	-	-	-	2300	18	-	108	-	-	1200	-

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Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
122	0171	87-05-01	-		-		-	-	-	22	24	-	-
123	0171	87-05-21	-		-		-	-	-	-	400	-	-
124	0171	87-07-02		-		-	2892	-	-	535	-	346	-
125	0171	87-10-14					-	-	-	13	-	-	-
126	0171	87-10-15		-		-	-	-	-	-	-	-	-
127	0171	88-02-26		-		-	-	-	-	12	-	-	-
128	0171	88-04-18					192	-	-	7	-	-	-
129	0171	88-04-19		-		-	-	-	-	-	-	-	-
130	0171	88-07-25					-	-	-	-	-	-	-
131	0171	88-07-26		-		-	-	-	-	-	-	-	-
132	0171	88-10-31		-		-	-	-	-	-	-	-	-
133	0171	89-02-02		-		-	-	-	-	-	-	-	-
134	0171	89-05-02	-	-	-	-	-	-	-	-	-	-	-
135	0171	89-08-08		-		-	-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
122	0171	87-05-01	-	-	-	2300	18	-	108	-	-	1200	-
123	0171	87-05-21	-	-	-	3000	-	-	800	-	-	2000	-
124	0171	87-07-02	-	-	-	1405	1525	-	147	-	-	691	-
125	0171	87-10-14	-	-	-	440	612	-	132	-	-	222	-
126	0171	87-10-15	-	-	-	-	-	-	-	-	-	-	-
127	0171	88-02-26	-	-	-	467	634	-	100	-	-	326	-
128	0171	88-04-18	-	-	-	964	455	-	111	-	-	378	-
129	0171	88-04-19	-	-	-	-	-	-	-	-	-	-	-
130	0171	88-07-25	-	-	-	830	290	-	54	-	-	203	-
131	0171	88-07-26	-	-	-	-	-	-	-	-	-	-	-
132	0171	88-10-31	-	-	-	790	-	-	110	-	-	290	-
133	0171	89-02-02	-	-	-	600	330	-	78	-	-	290	-
134	0171	89-05-02	-	-	-	690 J	200	-	69	-	-	230	-
135	0171	89-08-08	-	-	-	560	220	-	62	-	-	180	-

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Woman Creek Basin IM/IRA Ground Water
Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
136	0171	89-11-29		0.006/0.004		-	-	-	-	-	-	-	-
137	0171	90-11-20					-	-	-	-	-	30	-
138	0171	91-04-17					-	-	-	-	-	32 J	-
139	0271		32/3		4.4/2.3		-	-	-	-	-	-	-
140	0271	87-03-11	1.9/1		-		-	-	-	-	-	50	-
141	0271	87-04-09	-		-		-	-	-	-	-	-	-
142	0271	87-05-21	-		-		-	-	-	160	-	-	-
143	0271	87-07-02		-		-	-	-	-	673	-	-	-
144	0271	87-10-08		-		-	-	-	-	-	-	-	-
145	0271	88-02-26		-		-	-	51	12	8	-	-	-
146	0271	88-04-20					-	-	14	-	-	-	-
147	0271	88-04-21		-		-	-	-	-	-	-	-	-
148	0271	88-07-25					-	-	21	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
136	0171	89-11-29	-	-	-	3300	170	-	180	-	-	560	-
137	0171	90-11-20	-	-	-	860	130	-	64	-	-	290	-
138	0171	91-04-17	-	-	-	1400	140	-	97	-	-	360	-
139	0271		-	-	-	-	79	-	15	-	-	4500	79
140	0271	87-03-11	-	-	-	-	260	-	-	-	-	28800	-
141	0271	87-04-09	-	-	-	-	400	-	1000	-	-	26000	-
142	0271	87-05-21	-	-	-	40	60	-	440	-	-	24800	-
143	0271	87-07-02	-	-	-	-	-	-	192	-	-	9440	-
144	0271	87-10-08	-	-	-	-	-	-	-	-	-	-	-
145	0271	88-02-26	47	-	-	-	231	-	-	-	-	7750	-
146	0271	88-04-20	-	-	-	-	227	-	30	-	-	6837	-
147	0271	88-04-21	-	-	-	-	-	-	-	-	-	-	-
148	0271	88-07-25	-	-	-	-	276	-	57	-	-	8520	-

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Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
149	0271	88-07-26		-		-	-	-	-	-	-	-	-
150	0271	88-10-31					26	9	28	10	-	-	-
151	0271	89-08-08		-		-	16	6	12	-	-	-	-
152	0271	89-11-30					-	-	-	-	-	380	-
153	0271	90-02-26	-	-	-	-	-	-	-	-	-	-	-
154	0271	90-11-21					37	-	38	-	-	390 E	-
155	0271	91-04-19					-	7 J	13 J	-	-	100	-
156	1087	87-10-12 DRY											
157	1087	88-02-25 DRY											
158	1087	88-04-19 DRY											
159	1087	88-08-09 DRY											
160	1087	88-10-26 DRY											
161	1087	89-02-07 DRY											

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
149	0271	88-07-26	-	-	-	-	-	-	-	-	-	-	-
150	0271	88-10-31	-	-	-	-	-	-	81	-	-	8200	-
151	0271	89-08-08	-	-	-	-	160	-	27	-	-	4400	-
152	0271	89-11-30	-	-	-	-	-	-	34 J	-	-	6600 E	-
153	0271	90-02-26	-	-	-	-	-	-	-	-	-	-	-
154	0271	90-11-21	-	-	-	-	260 E	-	100	-	-	2400 E	-
155	0271	91-04-19	-	-	-	-	58	-	33	-	-	2200 E	-
156	1087	87-10-12 DRY											
157	1087	88-02-25 DRY											
158	1087	88-04-19 DRY											
159	1087	88-08-09 DRY											
160	1087	88-10-26 DRY											
161	1087	89-02-07 DRY											

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	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
162	1087	89-05-02	DRY										
163	1087	89-08-07	DRY										
164	1087	89-12-08	DRY										
165	1087	90-09-24					-	-	-	-	-	-	-
166	1087	90-09-25					-	-	-	-	-	-	-
167	1087	90-12-13					-	-	-	-	-	-	-
168	1587	- -	DRY										
169	1587	87-09-10					-	-	-	-	-	-	-
170	1587	87-09-11		0.522/0.117		0.831/0.148	-	-	-	-	-	-	-
171	1587	87-10-08		-		-	-	-	-	-	-	-	-
172	1587	88-02-29					-	-	-	-	-	-	-
173	1587	88-03-01		-		-	-	-	-	-	-	-	-
174	1587	88-04-20					-	-	-	9	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
162	1087	89-05-02	DRY										
163	1087	89-08-07	DRY										
164	1087	89-12-08	DRY										
165	1087	90-09-24	-	-	-	-	-	-	-	-	-	-	-
166	1087	90-09-25	-	-	-	-	-	-	-	-	-	-	-
167	1087	90-12-13	-	-	-	-	-	-	-	-	-	-	-
168	1587	- -	DRY										
169	1587	87-09-10	-	-	-	4080	-	-	900	-	-	510	-
170	1587	87-09-11	-	-	-	-	-	-	-	-	-	-	-
171	1587	87-10-08	-	-	-	-	-	-	-	-	-	-	-
172	1587	88-02-29	-	-	-	1591	35	-	212	-	-	96	-
173	1587	88-03-01	-	-	-	-	-	-	-	-	-	-	-
174	1587	88-04-20	-	-	-	4305	42	-	782	-	-	269	-

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Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
175	1587	88-04-21		-		-	-	-	-	-	-	-	-
176	1587	88-08-09 DRY											
177	1587	88-10-31 DRY											
178	1587	89-02-07 DRY											
179	1587	89-05-01					-	-	-	-	-	-	-
180	1587	89-08-02					-	-	-	-	-	-	-
181	1587	89-08-03	-	-	-	-	-	-	-	-	-	-	-
182	1587	89-12-04		0.007/0.004		-	-	-	-	-	-	-	-
183	1587	90-01-24					-	-	-	-	-	-	-
184	1587	90-09-18					7	-	-	10	-	220 E	-
185	1587	90-11-27	-	-	0.04049/0.0	-	6	-	-	8	-	140	-
186	1587	91-01-09		-		-	-	-	-	-	-	150	-
187	1587	91-04-15					-	-	-	-	-	31 J	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
175	1587	88-04-21	-	-	-	-	-	-	-	-	-	-	-
176	1587	88-08-09 DRY											
177	1587	88-10-31 DRY											
178	1587	89-02-07 DRY											
179	1587	89-05-01	-	-	-	1100 J	21	-	190	-	-	120	-
180	1587	89-08-02	-	-	-	1200	36	-	200	-	-	110	-
181	1587	89-08-03	-	-	-	-	-	-	-	-	-	-	-
182	1587	89-12-04	-	-	-	-	-	-	-	-	-	-	-
183	1587	90-01-24	-	-	-	-	35	-	140	-	-	74	-
184	1587	90-09-18	-	-	-	3000 E	59	-	410 BE	-	-	250 E	-
185	1587	90-11-27	-	-	-	1600 E	38	-	200 E	-	-	150	-
186	1587	91-01-09	-	-	-	2100 E	56	-	240 E	-	-	160	-
187	1587	91-04-15	-	-	-	1100	15 J	-	71	-	-	49 J	-

U=Analyzed but not detected J=Present below detection limit E=Estimated value - =Results below detection limit

A=Acceptable with qualifications V=Valid and acceptable R=Rejected B=Present in laboratory blank

Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
188	2987	87-10-28					-	-	-	-	-	-	-
189	2987	87-10-29		-		-	-	-	-	-	-	-	-
190	2987	88-02-29					-	-	-	-	-	-	-
191	2987	88-03-01		-		-	-	-	-	-	-	-	-
192	2987	88-04-22		-		-	-	-	-	-	-	-	-
193	2987	88-08-08					-	-	-	-	-	-	-
194	2987	88-08-09		-		-	-	-	-	-	-	-	-
195	2987	88-10-26		-		-	-	-	-	-	-	-	-
196	2987	89-02-01					-	-	-	-	-	-	-
197	2987	89-02-02		-		-	-	-	-	-	-	-	-
198	2987	89-04-24					-	-	-	-	-	-	-
199	2987	89-04-25	-	-	-	-	-	-	-	-	-	-	-
200	2987	89-08-02					-	-	-	-	-	-	-
201	2987	89-08-03		-		-	-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
188	2987	87-10-28	-	-	-	-	-	-	99	-	-	-	-
189	2987	87-10-29	-	-	-	-	-	-	-	-	-	-	-
190	2987	88-02-29	-	-	-	-	-	-	-	-	-	-	-
191	2987	88-03-01	-	-	-	-	-	-	-	-	-	-	-
192	2987	88-04-22	-	-	-	-	-	-	-	-	-	-	-
193	2987	88-08-08	-	-	-	-	-	-	-	-	-	-	-
194	2987	88-08-09	-	-	-	-	-	-	-	-	-	-	-
195	2987	88-10-26	-	-	-	-	-	-	-	-	-	-	-
196	2987	89-02-01	-	-	-	-	-	-	-	-	-	-	-
197	2987	89-02-02	-	-	-	-	-	-	-	-	-	-	-
198	2987	89-04-24	-	-	-	-	-	-	-	-	-	-	-
199	2987	89-04-25	-	-	-	-	-	-	-	-	-	-	-
200	2987	89-08-02	-	-	-	-	-	-	-	-	-	-	-
201	2987	89-08-03	-	-	-	-	-	-	-	-	-	-	-

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	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
202	2987	89-11-29					-	-	-	-	-	-	-
203	2987	90-05-04					-	-	-	-	-	-	-
204	2987	90-07-20	-	-	-	-	-	-	-	-	-	-	-
205	2987	90-10-11	-	-	-	-	-	-	-	-	-	-	-
206	2987	91-03-08					-	-	-	-	-	-	-
207	2987	91-05-10					-	-	-	-	-	-	-
208	4487	87-11-14 DRY											
209	4487	88-02-22 DRY											
210	4487	88-04-18 DRY											
211	4487	88-07-20 DRY											
212	4487	88-10-26 DRY											
213	4487	89-01-18 DRY											
214	4487	89-04-14 DRY											

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
202	2987	89-11-29	-	-	-	-	-	-	-	-	-	-	-
203	2987	90-05-04	-	-	-	-	-	-	-	-	-	-	-
204	2987	90-07-20	-	-	-	-	-	-	-	-	-	-	-
205	2987	90-10-11	-	-	-	-	-	-	-	-	-	-	-
206	2987	91-03-08	-	-	-	-	-	-	-	-	-	-	-
207	2987	91-05-10	-	-	-	-	-	-	-	-	-	-	-
208	4487	87-11-14 DRY											
209	4487	88-02-22 DRY											
210	4487	88-04-18 DRY											
211	4487	88-07-20 DRY											
212	4487	88-10-26 DRY											
213	4487	89-01-18 DRY											
214	4487	89-04-14 DRY											

U=Analyzed but not detected J=Present below detection limit E=Estimated value - =Results below detection limit
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	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
215	4487	89-06-10 DRY											
216	4487	89-07-26 DRY											
217	4487	89-08-17 DRY											
218	4487	89-10-26 DRY											
219	4487	90-01-15 DRY											
220	5087	87-11-18					-	-	-	-	-	-	-
221	5087	88-02-17 DRY											
222	5087	88-04-13 DRY											
223	5087	88-07-18 DRY											
224	5087	88-10-21 DRY											
225	5087	89-01-18 DRY											
226	5087	89-04-14 DRY											
227	5087	89-06-09 DRY											

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
215	4487	89-06-10 DRY											
216	4487	89-07-26 DRY											
217	4487	89-08-17 DRY											
218	4487	89-10-26 DRY											
219	4487	90-01-15 DRY											
220	5087	87-11-18	-	-	-	-	-	-	-	-	-	-	-
221	5087	88-02-17 DRY											
222	5087	88-04-13 DRY											
223	5087	88-07-18 DRY											
224	5087	88-10-21 DRY											
225	5087	89-01-18 DRY											
226	5087	89-04-14 DRY											
227	5087	89-06-09 DRY											

U=Analyzed but not detected J=Present below detection limit E=Estimated value - =Results below detection limit
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	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
228	5087	89-07-24 DRY											
229	5087	89-07-25 DRY											
230	5087	89-10-17 DRY											
231	5087	90-01-16 DRY											
232	6286						-	-	-	-	-	-	-
233	6286	87-04-09	-		-		-	-	-	-	-	-	-
234	6286	87-04-29	-		-		-	-	-	-	-	-	-
235	6286	87-05-26	-		-		-	-	-	-	-	-	-
236	6286	87-07-06					-	-	-	-	-	-	-
237	6286	87-07-07		-		-	-	-	-	-	-	-	-
238	6286	87-10-14					-	-	-	-	-	-	-
239	6286	87-10-16		-		-	-	-	-	-	-	-	-
240	6286	88-02-17					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloro methane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloro ethene	Toluene	Total Xylenes	Trichloro ethene	trans-1,2-Dichloroethene
228	5087	89-07-24 DRY											
229	5087	89-07-25 DRY											
230	5087	89-10-17 DRY											
231	5087	90-01-16 DRY											
232	6286		-	-	-	-	-	-	-	-	-	-	-
233	6286	87-04-09	-	-	-	-	-	-	-	-	-	-	-
234	6286	87-04-29	-	-	-	-	-	-	-	-	-	-	-
235	6286	87-05-26	-	-	-	-	-	-	-	-	-	-	-
236	6286	87-07-06	-	-	-	-	-	-	-	-	-	-	-
237	6286	87-07-07	-	-	-	-	-	-	-	-	-	-	-
238	6286	87-10-14	-	-	-	-	-	-	-	-	-	-	-
239	6286	87-10-16	-	-	-	-	-	-	-	-	-	-	-
240	6286	88-02-17	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Ground Water

Plutonium Data above error and VOC Data Above Detection Limits for Ground Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
241	6286	88-02-18		-		-	-	-	-	-	-	-	-
242	6286	88-04-13					-	-	-	-	-	-	-
243	6286	88-04-14		-		-	-	-	-	-	-	-	-
244	6286	88-07-14					-	-	-	-	-	-	-
245	6286	88-07-15		-		-	-	-	-	-	-	-	-
246	6286	88-10-20		-		-	-	-	-	-	-	-	-
247	6286	88-11-14					-	-	-	-	-	-	-
248	6286	89-01-23					-	-	-	-	-	-	-
249	6286	89-01-24		-		-	-	-	-	-	-	-	-
250	6286	89-04-20		-		-	-	-	-	-	-	-	-
251	6286	89-06-10		-		-	-	-	-	-	-	-	-
252	6286	89-07-20	-	-	-	-	-	-	-	-	-	-	-
253	6286	89-07-27		-		-	-	-	-	-	-	-	-
254	6286	89-10-19		-		-	-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
241	6286	88-02-18	-	-	-	-	-	-	-	-	-	-	-
242	6286	88-04-13	-	-	-	-	-	-	-	-	-	-	-
243	6286	88-04-14	-	-	-	-	-	-	-	-	-	-	-
244	6286	88-07-14	-	-	-	-	-	-	-	-	-	-	-
245	6286	88-07-15	-	-	-	-	-	-	-	-	-	-	-
246	6286	88-10-20	-	-	-	-	-	-	-	-	-	-	-
247	6286	88-11-14	-	-	-	-	-	-	29 J	-	-	-	-
248	6286	89-01-23	-	-	-	-	-	-	-	-	-	-	-
249	6286	89-01-24	-	-	-	-	-	-	-	-	-	-	-
250	6286	89-04-20	-	-	-	-	-	-	-	-	-	-	-
251	6286	89-06-10	-	-	-	-	-	-	-	-	-	-	-
252	6286	89-07-20	-	-	-	-	-	-	-	-	-	-	-
253	6286	89-07-27	-	-	-	-	-	-	-	-	-	-	-
254	6286	89-10-19	-	-	-	-	-	-	-	-	-	-	-

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	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
255	6286	90-02-16		-		0.011/0.007	-	-	-	-	-	-	-
256	6286	90-09-18	-	-	-	-	-	-	-	-	-	-	-
257	6286	90-11-21					-	-	-	-	-	-	-
258	6286	91-01-10	-	-	-	-	-	-	-	-	-	-	-
259	6286	91-05-14					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
255	6286	90-02-16	-	-	-	-	-	-	-	-	-	-	-
256	6286	90-09-18	-	-	-	-	-	-	-	-	-	-	-
257	6286	90-11-21	-	-	-	-	-	-	-	-	-	-	-
258	6286	91-01-10	-	-	-	6	-	-	-	-	-	-	-
259	6286	91-05-14	-	-	-	-	-	-	-	-	-	-	-

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APPENDIX B

SURFACE WATER SAMPLING RESULTS

WOMAN CREEK BASIN

APPENDIX B-1

SURFACE WATER SAMPLING RESULTS

VOLATILE ORGANIC COMPOUNDS

Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
1	SW050	- -	DRY										
2	SW050	87-07-21	55/7		-		-	-	-	140	-	-	-
3	SW050	89-04-17	DRY										
4	SW050	89-05-10	DRY										
5	SW050	89-06-27	1.4/0.1		0.79/0.05		-	-	-	-	-	-	-
6	SW050	89-07-18					-	-	-	-	-	-	-
7	SW050	89-08-11	DRY										
8	SW050	89-09-12	DRY										
9	SW050	89-10-04	DRY										
10	SW050	89-11-03	DRY										
11	SW050	89-12-01	DRY										
12	SW050	90-01-05	DRY										
13	SW050	90-02-02	DRY										
14	SW050	90-03-17	DRY										

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
1	SW050	- -	DRY										
2	SW050	87-07-21	-	-	-	1005	84	-	65	-	-	40	-
3	SW050	89-04-17	DRY										
4	SW050	89-05-10	DRY										
5	SW050	89-06-27	-	-	-	-	8	-	15	-	-	9	-
6	SW050	89-07-18	-	-	-	10	6	-	19	-	-	8	-
7	SW050	89-08-11	DRY										
8	SW050	89-09-12	DRY										
9	SW050	89-10-04	DRY										
10	SW050	89-11-03	DRY										
11	SW050	89-12-01	DRY										
12	SW050	90-01-05	DRY										
13	SW050	90-02-02	DRY										
14	SW050	90-03-17	DRY										

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
15	SW050	90-05-17					-	-	-	-	-	-	-
16	SW050	90-06-25					-	-	-	-	-	-	-
17	SW050	90-07-23					-	-	-	-	-	-	6 BJ
18	SW051	87-07-21	13/3		-		-	-	-	101	-	-	-
19	SW051	88-06-23	DRY										
20	SW051	89-04-17	DRY										
21	SW051	89-05-10	DRY										
22	SW051	89-06-27	0.69/0.04		1/0.1		-	-	-	-	-	-	-
23	SW051	89-07-18	DRY										
24	SW051	89-08-11	DRY										
25	SW051	89-09-12	DRY										
26	SW051	89-10-04	DRY										
27	SW051	89-11-03	DRY										

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
15	SW050	90-05-17	-	-	-	24	10	-	16	-	-	7	-
16	SW050	90-06-25	-	-	-	110	27	-	22	-	-	7	-
17	SW050	90-07-23	-	-	-	-	18	-	-	-	-	-	-
18	SW051	87-07-21	-	-	-	282	-	-	44	-	-	17	-
19	SW051	88-06-23	DRY										
20	SW051	89-04-17	DRY										
21	SW051	89-05-10	DRY										
22	SW051	89-06-27	-	-	-	46	-	-	9	-	-	-	-
23	SW051	89-07-18	DRY										
24	SW051	89-08-11	DRY										
25	SW051	89-09-12	DRY										
26	SW051	89-10-04	DRY										
27	SW051	89-11-03	DRY										

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Woman Creek Basin IM/IRA Surface Water
Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
28	SW051	89-12-01 DRY											
29	SW051	90-01-05 DRY											
30	SW051	90-02-02 DRY											
31	SW051	90-05-17					-	-	-	-	-	-	-
32	SW052	87-07-21	5.4/1.5		-		-	-	-	73	-	-	-
33	SW052	89-04-17 DRY											
34	SW052	89-05-10 DRY											
35	SW052	89-06-09 DRY											
36	SW052	89-07-07 DRY											
37	SW052	89-08-11 DRY											
38	SW052	89-09-28 DRY											
39	SW052	89-10-04 DRY											
40	SW052	89-11-03 DRY											

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
28	SW051	89-12-01 DRY											
29	SW051	90-01-05 DRY											
30	SW051	90-02-02 DRY											
31	SW051	90-05-17	-	-	-	250 E	6	11	32	-	-	14	-
32	SW052	87-07-21	-	-	-	-	-	-	-	-	-	-	-
33	SW052	89-04-17 DRY											
34	SW052	89-05-10 DRY											
35	SW052	89-06-09 DRY											
36	SW052	89-07-07 DRY											
37	SW052	89-08-11 DRY											
38	SW052	89-09-28 DRY											
39	SW052	89-10-04 DRY											
40	SW052	89-11-03 DRY											

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
41	SW052	89-12-01 DRY											
42	SW052	90-01-05 DRY											
43	SW052	90-02-02 DRY											
44	SW052	90-03-17 DRY											
45	SW052	90-04-25					-	-	-	-	-	-	-
46	SW052	90-05-17					-	-	-	-	-	-	-
47	SW055	87-07-21	3.2/1.7		-		-	-	-	50	-	-	-
48	SW055	89-04-17					-	-	-	-	-	-	-
49	SW055	89-05-25	60/1		7.2/0.3		-	-	-	-	-	-	-
50	SW055	89-06-28	17/1		33/1		-	-	-	-	-	-	-
51	SW055	89-07-18					-	-	-	-	-	-	-
52	SW055	89-08-16	0.37/0.04		0.08/0.02		-	-	-	-	-	-	-
53	SW055	89-09-20	0.638/0.05		0.161/0.056		-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloro methane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloro ethene	Toluene	Total Xylenes	Trichloro ethene	trans-1,2-Dichloroethene
41	SW052	89-12-01 DRY											
42	SW052	90-01-05 DRY											
43	SW052	90-02-02 DRY											
44	SW052	90-03-17 DRY											
45	SW052	90-04-25	-	-	-	-	-	-	7	-	-	-	-
46	SW052	90-05-17	-	-	-	-	-	-	7	-	-	-	-
47	SW055	87-07-21	-	-	-	-	-	-	-	-	-	-	-
48	SW055	89-04-17	-	-	-	-	-	-	-	-	-	-	-
49	SW055	89-05-25	-	-	-	-	-	-	-	-	-	-	-
50	SW055	89-06-28	-	-	-	-	-	-	-	-	-	19	-
51	SW055	89-07-18	-	-	-	-	-	-	-	-	-	19	-
52	SW055	89-08-16	-	-	-	-	-	-	-	-	-	28	-
53	SW055	89-09-20	-	-	-	-	-	-	-	-	-	24	-

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
54	SW055	89-10-19					-	-	-	-	-	11	-
55	SW055	89-11-09					-	-	-	-	-	-	-
56	SW055	89-12-07					-	-	-	-	-	-	-
57	SW055	90-01-17					-	-	-	-	-	10	-
58	SW055	90-03-15					-	-	-	-	-	-	-
59	SW055	90-04-24					-	-	-	-	-	-	-
60	SW055	90-05-21					-	-	-	-	-	-	-
61	SW055	90-06-25					-	-	-	-	-	7	-
62	SW057	87-07-21	54/7		-		-	-	-	48	-	-	-
63	SW057	88-06-23 DRY											
64	SW057	89-04-17 DRY											
65	SW057	89-05-10 DRY											
66	SW057	89-06-09 DRY											

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
54	SW055	89-10-19	-	-	-	-	-	-	-	-	-	-	-
55	SW055	89-11-09	-	-	-	-	-	-	-	-	-	65	-
56	SW055	89-12-07	-	-	-	-	-	-	-	-	-	60	-
57	SW055	90-01-17	-	-	-	-	-	-	-	-	-	61	-
58	SW055	90-03-15	-	-	-	-	-	-	-	-	-	41	-
59	SW055	90-04-24	-	-	-	-	-	-	-	-	-	-	-
60	SW055	90-05-21	-	-	-	-	-	-	-	-	-	13	-
61	SW055	90-06-25	-	-	-	-	-	-	-	-	-	90	-
62	SW057	87-07-21	-	-	-	-	-	-	-	-	-	-	-
63	SW057	88-06-23 DRY											
64	SW057	89-04-17 DRY											
65	SW057	89-05-10 DRY											
66	SW057	89-06-09 DRY											

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Woman Creek Basin IM/IRA Surface Water
Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
67	SW057	89-07-07 DRY											
68	SW057	89-08-11 DRY											
69	SW057	89-09-16 DRY											
70	SW057	89-10-04 DRY											
71	SW057	89-11-03 DRY											
72	SW057	89-12-01 DRY											
73	SW057	90-01-05 DRY											
74	SW057	90-02-02 DRY											
75	SW057	90-03-17 DRY											
76	SW058	87-07-21	8.9/2.1		-		-	-	-	-	-	-	-
77	SW058	89-04-17 DRY											
78	SW058	89-05-10 DRY											
79	SW058	89-06-28	7.1/0.1		1.1/0.6		-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
67	SW057	89-07-07 DRY											
68	SW057	89-08-11 DRY											
69	SW057	89-09-16 DRY											
70	SW057	89-10-04 DRY											
71	SW057	89-11-03 DRY											
72	SW057	89-12-01 DRY											
73	SW057	90-01-05 DRY											
74	SW057	90-02-02 DRY											
75	SW057	90-03-17 DRY											
76	SW058	87-07-21	-	-	-	-	-	-	-	-	-	-	-
77	SW058	89-04-17 DRY											
78	SW058	89-05-10 DRY											
79	SW058	89-06-28	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
80	SW058	89-07-14	DRY										
81	SW058	89-08-11	DRY										
82	SW058	89-09-20	DRY										
83	SW058	89-10-04	DRY										
84	SW058	89-11-20	DRY										
85	SW058	89-12-01	DRY										
86	SW058	90-01-05	DRY										
87	SW058	90-02-02	DRY										
88	SW058	90-05-17					-	-	-	-	-	-	-
89	SW058	90-07-23					-	-	-	-	-	-	-
90	SW077	89-03-30	DRY										
91	SW077	89-05-11	DRY										
92	SW077	89-06-27	3.3/0.1		2.7/0.1		-	-	-	-	-	6	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
80	SW058	89-07-14	DRY										
81	SW058	89-08-11	DRY										
82	SW058	89-09-20	DRY										
83	SW058	89-10-04	DRY										
84	SW058	89-11-20	DRY										
85	SW058	89-12-01	DRY										
86	SW058	90-01-05	DRY										
87	SW058	90-02-02	DRY										
88	SW058	90-05-17	-	-	-	11	-	-	-	-	-	-	-
89	SW058	90-07-23	-	-	-	-	-	-	-	-	-	-	-
90	SW077	89-03-30	DRY										
91	SW077	89-05-11	DRY										
92	SW077	89-06-27	-	-	-	-	-	-	-	-	-	47	-

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
93	SW077	89-07-18 DRY											
94	SW077	89-08-16	4.1/0.1		1.5/0.1		-	-	-	-	-	-	-
95	SW077	89-09-20 DRY											
96	SW077	89-10-04 DRY											
97	SW077	89-11-09 DRY											
98	SW077	89-12-01 DRY											
99	SW077	90-01-05 DRY											
100	SW077	90-02-02 DRY											
101	SW077	90-05-21					-	-	-	-	-	12	-
102	SW077	90-06-25					-	-	-	-	-	360	-
103	SW077	90-07-23					-	-	-	-	-	300	-
104	SW053	87-07-21	25/5		-		-	-	-	-	-	-	-
105	SW053	89-04-05	15/1	0.2/0.03	9.7/0.2	-	-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
93	SW077	89-07-18 DRY											
94	SW077	89-08-16	-	-	-	-	-	-	-	-	-	-	-
95	SW077	89-09-20 DRY											
96	SW077	89-10-04 DRY											
97	SW077	89-11-09 DRY											
98	SW077	89-12-01 DRY											
99	SW077	90-01-05 DRY											
100	SW077	90-02-02 DRY											
101	SW077	90-05-21	-	-	-	50	53	-	20	-	-	2100 E	-
102	SW077	90-06-25	-	-	-	8	38	-	11	-	-	1300	-
103	SW077	90-07-23	-	42 J	-	-	22 J	-	-	18 J	40 J	960	-
104	SW053	87-07-21	-	-	-	-	-	-	-	-	-	-	-
105	SW053	89-04-05	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
106	SW053	89-05-23	110/10		6.8/0.2		-	-	-	-	-	-	-
107	SW053	89-06-26	56/3		28/1		-	-	-	-	-	27	-
108	SW053	89-07-19 DRY											
109	SW053	89-08-15					-	-	-	-	-	-	-
110	SW053	89-09-20	1.101/0.058		0.224/0.057		-	-	-	-	-	-	-
111	SW053	89-10-12					-	-	-	-	-	42	-
112	SW053	89-11-07					-	-	-	-	-	50	-
113	SW053	89-12-15					-	-	-	-	-	44	-
114	SW053	90-01-17					-	-	-	-	-	-	-
115	SW053	90-05-21					-	-	-	-	-	-	-
116	SW053	90-07-23					-	-	-	-	-	28	-
117	SW053	90-11-15		4.4/0.3		-	-	-	-	-	-	39	-
118	SW063	87-07-24					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
106	SW053	89-05-23	-	-	-	-	-	-	-	-	-	-	-
107	SW053	89-06-26	-	-	-	-	-	-	-	-	-	-	-
108	SW053	89-07-19 DRY											
109	SW053	89-08-15	-	-	-	-	-	-	-	-	-	-	-
110	SW053	89-09-20	-	-	-	-	-	-	-	-	-	-	-
111	SW053	89-10-12	-	-	-	-	-	-	-	-	-	-	-
112	SW053	89-11-07	-	-	-	-	-	-	-	-	-	-	-
113	SW053	89-12-15	-	-	-	-	-	-	-	-	-	14	-
114	SW053	90-01-17	-	-	-	-	8	-	-	-	-	-	-
115	SW053	90-05-21	-	-	-	-	-	-	-	-	-	-	-
116	SW053	90-07-23	-	-	-	-	-	-	-	-	-	-	-
117	SW053	90-11-15	-	-	-	-	-	-	-	-	-	-	-
118	SW063	87-07-24	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
119	SW063	89-03-28 DRY											
120	SW063	89-05-12 DRY											
121	SW063	89-06-21 DRY											
122	SW063	89-07-19 DRY											
123	SW063	89-08-11 DRY											
124	SW063	89-09-15 DRY											
125	SW063	89-10-04 DRY											
126	SW063	89-11-03 DRY											
127	SW063	89-12-01 DRY											
128	SW063	90-01-05 DRY											
129	SW063	90-02-02 DRY											
130	SW064	87-07-22	-		-		-	-	-	-	-	-	-
131	SW064	88-05-22	0.07/0.02		-		-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
119	SW063	89-03-28 DRY											
120	SW063	89-05-12 DRY											
121	SW063	89-06-21 DRY											
122	SW063	89-07-19 DRY											
123	SW063	89-08-11 DRY											
124	SW063	89-09-15 DRY											
125	SW063	89-10-04 DRY											
126	SW063	89-11-03 DRY											
127	SW063	89-12-01 DRY											
128	SW063	90-01-05 DRY											
129	SW063	90-02-02 DRY											
130	SW064	87-07-22	-	-	-	-	-	-	-	-	-	20	-
131	SW064	88-05-22	-	-	-	-	27	-	-	-	-	16	-

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
132	SW064	89-03-30	DRY										
133	SW064	89-06-27	-		-		-	-	-	-	-	-	-
134	SW064	89-07-19	DRY										
135	SW064	89-08-11	DRY										
136	SW064	89-09-20	DRY										
137	SW064	89-10-04	DRY										
138	SW064	89-11-09	DRY										
139	SW064	89-12-01	DRY										
140	SW064	90-01-05	DRY										
141	SW064	90-02-02	DRY										
142	SW064	90-04-25					-	-	-	-	-	-	-
143	SW064	90-05-22					-	-	-	-	-	-	-
144	SW064	90-06-18					-	-	-	-	-	-	-
145	SW064	90-07-24					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
132	SW064	89-03-30	DRY										
133	SW064	89-06-27	-	-	-	-	-	6	-	-	-	12	-
134	SW064	89-07-19	DRY										
135	SW064	89-08-11	DRY										
136	SW064	89-09-20	DRY										
137	SW064	89-10-04	DRY										
138	SW064	89-11-09	DRY										
139	SW064	89-12-01	DRY										
140	SW064	90-01-05	DRY										
141	SW064	90-02-02	DRY										
142	SW064	90-04-25	-	-	-	-	22	-	-	-	-	-	-
143	SW064	90-05-22	-	-	-	-	-	-	-	-	-	-	-
144	SW064	90-06-18	-	-	-	-	-	-	-	-	-	8	-
145	SW064	90-07-24	-	-	-	-	-	-	-	-	-	10	-

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	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
146	SW064	90-08-23	-		-		-	-	-	-	-	-	-
147	SW064	90-10-23		-		-	-	-	-	-	-	-	-
148	SW064	90-11-15		-		-	-	-	-	-	-	-	-
149	SW064	90-12-06		-		-	-	-	-	-	-	-	-
150	SW070	89-03-29	0.02/0.01	-	-	-	-	-	-	-	-	-	-
151	SW070	89-05-16	-		-		-	-	-	-	-	-	-
152	SW070	89-06-23	-		-		-	-	-	-	-	-	-
153	SW070	89-07-20					-	-	-	-	-	-	-
154	SW070	89-08-14	-		-		-	-	-	-	-	-	-
155	SW070	89-09-26	-		0.088/0.034		-	-	-	-	-	-	-
156	SW070	89-10-23					-	-	-	-	-	-	-
157	SW070	89-11-16					-	-	-	-	-	-	-
158	SW070	89-12-13					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloro methane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloro ethene	Toluene	Total Xylenes	Trichloro ethene	trans-1,2-Dichloroethene
146	SW064	90-08-23	-	-	-	-	-	-	-	-	-	6	-
147	SW064	90-10-23	-	-	-	-	-	-	-	-	-	13	-
148	SW064	90-11-15	-	-	-	-	-	-	-	-	-	28	-
149	SW064	90-12-06	-	-	-	-	7	-	-	-	-	33	-
150	SW070	89-03-29	-	-	-	-	-	-	-	-	-	-	-
151	SW070	89-05-16	-	-	-	-	-	-	-	-	-	-	-
152	SW070	89-06-23	-	-	-	-	-	-	-	-	-	-	-
153	SW070	89-07-20	-	-	-	-	-	-	-	-	-	-	-
154	SW070	89-08-14	-	-	-	-	-	-	-	-	-	-	-
155	SW070	89-09-26	-	-	-	-	-	-	-	-	-	-	-
156	SW070	89-10-23	-	-	-	-	-	-	-	-	-	-	-
157	SW070	89-11-16	-	-	-	-	-	-	-	-	-	-	-
158	SW070	89-12-13	-	-	-	-	-	-	-	-	-	-	-

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	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
159	SW070	90-01-11					-	-	-	-	-	-	-
160	SW070	90-02-07					-	-	-	-	-	-	-
161	SW070	90-03-15					-	-	-	-	-	-	-
162	SW070	90-04-19					-	-	-	-	-	-	-
163	SW070	90-05-15					-	-	-	-	-	-	-
164	SW070	90-06-12					-	-	-	-	-	-	-
165	SW070	90-07-18	0.003848/0.	-	-	-	-	-	-	-	-	-	-
166	SW070	90-08-16	-		-		-	-	-	-	-	-	-
167	SW070	90-10-16	-		-		-	-	-	-	-	-	-
168	SW070	90-11-15		0.2/0.05		-	-	-	-	-	-	-	-
169	SW070	90-12-10		-		-	-	-	-	-	-	-	-
170	SW030	86-08-20 DRY											
171	SW030	87-05-26	-		-		-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
159	SW070	90-01-11	-	-	-	-	-	-	-	-	-	-	-
160	SW070	90-02-07	-	-	-	-	-	-	-	-	-	-	-
161	SW070	90-03-15	-	-	-	-	-	-	-	-	-	-	-
162	SW070	90-04-19	-	-	-	-	-	-	-	-	-	-	-
163	SW070	90-05-15	-	-	-	-	-	-	-	-	-	-	-
164	SW070	90-06-12	-	-	-	-	-	-	-	-	-	-	-
165	SW070	90-07-18	-	-	-	-	-	-	-	-	-	-	-
166	SW070	90-08-16	-	-	-	-	-	-	-	-	-	-	-
167	SW070	90-10-16	-	-	-	-	-	-	-	-	-	-	-
168	SW070	90-11-15	-	-	-	-	-	-	-	-	-	-	-
169	SW070	90-12-10	-	-	-	-	-	-	-	-	-	-	-
170	SW030	86-08-20 DRY											
171	SW030	87-05-26	-	-	-	-	-	-	-	-	-	-	-

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	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
172	SW030	87-11-10					-	-	-	-	-	-	-
173	SW030	89-03-28	-	-	-	-	-	-	-	-	-	-	-
174	SW030	89-05-16	-		-		-	-	-	-	-	-	-
175	SW030	89-06-22	0.22/0.03		-		-	-	-	-	-	-	-
176	SW030	89-07-20	DRY										
177	SW030	89-08-21	-		-		-	-	-	-	-	-	-
178	SW030	89-09-25	0.017/0.009		0.029/0.017		-	-	-	-	-	-	-
179	SW030	89-10-20					-	-	-	-	-	-	-
180	SW030	89-11-09	DRY										
181	SW030	89-12-01	DRY										
182	SW030	90-01-05	DRY										
183	SW030	90-02-02	DRY										
184	SW030	90-03-15					-	-	-	-	-	-	-
185	SW030	90-05-15					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
172	SW030	87-11-10	-	-	-	7	-	-	-	12	-	-	-
173	SW030	89-03-28	-	-	-	-	-	-	-	-	-	-	-
174	SW030	89-05-16	-	-	-	-	-	-	-	-	-	-	-
175	SW030	89-06-22	-	-	-	-	-	-	-	-	-	-	-
176	SW030	89-07-20	DRY										
177	SW030	89-08-21	-	-	-	-	-	-	-	-	-	-	-
178	SW030	89-09-25	-	-	-	-	-	-	-	-	-	-	-
179	SW030	89-10-20	-	-	-	-	-	-	-	-	-	-	-
180	SW030	89-11-09	DRY										
181	SW030	89-12-01	DRY										
182	SW030	90-01-05	DRY										
183	SW030	90-02-02	DRY										
184	SW030	90-03-15	-	-	-	-	-	-	-	-	-	-	-
185	SW030	90-05-15	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
186	SW030	90-06-11					-	-	-	-	-	-	-
187	SW030	90-07-17	0.004733/0.	-	0.007531/0.	-	-	-	-	-	-	-	-
188	SW030	90-08-16	0.01143/0.0		0.007795/0.		-	-	-	-	-	-	-
189	SW030	90-09-12	0.01293/0.0		-		-	-	-	-	-	-	-
190	SW030	90-10-03	-		-		-	-	-	-	-	-	-
191	SW030	90-11-15		-		-	-	-	-	-	-	-	-
192	SW030	90-12-06		-		-	-	-	-	-	-	-	-
193	SW054	87-07-15 DRY											
194	SW054	89-03-21	0.11/0.02	-	0.02/0.01	-	-	-	-	-	-	-	-
195	SW054	89-05-18	0.87/0.06		0.11/0.02		-	-	-	-	-	-	-
196	SW054	89-06-22	3.7/0.1		0.13/0.02		-	-	-	-	-	-	-
197	SW054	89-07-19					-	-	-	-	-	-	-
198	SW054	89-08-15					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
186	SW030	90-06-11	-	-	-	-	-	-	-	-	-	-	-
187	SW030	90-07-17	-	-	-	-	-	-	-	-	-	-	-
188	SW030	90-08-16	-	-	-	-	-	-	-	-	-	-	-
189	SW030	90-09-12	-	-	-	-	-	-	-	-	-	-	-
190	SW030	90-10-03	-	-	-	-	-	-	-	-	-	-	-
191	SW030	90-11-15	-	-	-	-	-	-	-	-	-	-	-
192	SW030	90-12-06	-	-	-	-	-	-	-	-	-	-	-
193	SW054	87-07-15 DRY											
194	SW054	89-03-21	-	-	-	-	-	-	-	-	-	-	-
195	SW054	89-05-18	-	-	-	-	-	-	-	-	-	-	-
196	SW054	89-06-22	-	-	-	-	-	-	-	-	-	-	-
197	SW054	89-07-19	-	-	-	-	-	-	-	-	-	-	-
198	SW054	89-08-15	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
199	SW054	89-09-21	0.014/0.007		0.137/0.058		-	-	-	-	-	-	-
200	SW054	89-10-12					-	-	-	-	-	-	-
201	SW054	89-11-03					-	-	-	-	-	-	-
202	SW054	89-12-12					-	-	-	-	-	-	-
203	SW054	90-01-18					-	-	-	-	-	-	-
204	SW054	90-02-12					-	-	-	-	-	-	-
205	SW054	90-05-14					-	-	-	-	-	-	-
206	SW054	90-06-13					-	-	-	-	-	-	-
207	SW054	90-08-16	0.01349/0.0		-		-	-	-	-	-	-	-
208	SW054	90-10-18	0.01924/0.0		0.02424/0.0		-	-	-	-	-	-	-
209	SW054	90-11-19		-		-	-	-	-	-	-	-	-
210	SW062	87-07-22	1.3/0.9		-		-	-	-	-	-	-	-
211	SW062	89-03-28	-	-	0.02/0.01	-	-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
199	SW054	89-09-21	-	-	-	-	-	-	-	-	-	-	-
200	SW054	89-10-12	-	-	-	-	-	-	-	-	-	-	-
201	SW054	89-11-03	-	-	-	-	-	-	-	-	-	-	-
202	SW054	89-12-12	-	-	-	-	-	-	-	-	-	-	-
203	SW054	90-01-18	-	-	-	-	-	-	-	-	-	-	-
204	SW054	90-02-12	-	-	-	-	-	-	-	-	-	-	-
205	SW054	90-05-14	-	-	-	-	-	-	-	-	-	-	-
206	SW054	90-06-13	-	-	-	-	-	-	-	-	-	-	-
207	SW054	90-08-16	-	-	-	-	-	-	-	-	-	-	-
208	SW054	90-10-18	-	-	-	-	-	-	-	-	-	-	-
209	SW054	90-11-19	-	-	-	-	-	-	-	-	-	-	-
210	SW062	87-07-22	-	-	-	-	-	-	-	-	-	-	-
211	SW062	89-03-28	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
212	SW062	89-05-23	-		-		-	-	-	-	-	-	-
213	SW062	89-06-22	-		-		-	-	-	-	-	-	-
214	SW062	89-07-19					-	-	-	-	-	-	-
215	SW062	89-08-15					-	-	-	-	-	-	-
216	SW062	89-09-15	0.01/0.009		0.009/0.008		-	-	-	-	-	-	-
217	SW062	89-10-12					-	-	-	-	-	-	-
218	SW062	89-11-08					-	-	-	-	-	-	-
219	SW062	89-12-13					-	-	-	-	-	-	-
220	SW062	90-01-18					-	-	-	-	-	-	-
221	SW062	90-05-22					-	-	-	-	-	-	-
222	SW062	90-06-18					-	-	-	-	-	-	-
223	SW062	90-07-24					-	-	-	-	-	-	-
224	SW062	90-08-22	0.0105/0.00		-		-	-	-	-	-	-	-
225	SW062	90-09-19	0.01711/0.0		0.02339/0.0		-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
212	SW062	89-05-23	-	-	-	-	-	-	-	-	-	-	-
213	SW062	89-06-22	-	-	-	-	-	-	-	-	-	-	-
214	SW062	89-07-19	-	-	-	-	-	-	-	-	-	-	-
215	SW062	89-08-15	-	-	-	-	-	-	-	-	-	-	-
216	SW062	89-09-15	-	-	-	-	-	-	-	-	-	-	-
217	SW062	89-10-12	-	-	-	-	-	-	-	-	-	-	-
218	SW062	89-11-08	-	-	-	-	-	-	-	-	-	-	-
219	SW062	89-12-13	-	-	-	-	-	-	-	-	-	-	-
220	SW062	90-01-18	-	-	-	-	-	-	-	-	-	-	-
221	SW062	90-05-22	-	-	-	-	-	-	-	-	-	-	-
222	SW062	90-06-18	-	-	-	-	-	-	-	-	-	-	-
223	SW062	90-07-24	-	-	-	-	-	-	-	-	-	-	-
224	SW062	90-08-22	-	-	-	-	-	-	-	-	-	-	-
225	SW062	90-09-19	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Surface Water
Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
226	SW062	90-10-08	0.007272/0.		-		-	-	-	-	-	-	-
227	SW062	90-11-14		-		7.7/3	-	-	-	-	-	-	-
228	SW062	90-12-06		-		-	-	-	-	-	-	-	-
229	SW027		-		-		-	-	-	-	-	-	-
230	SW027	87-07-22	-		-		-	-	-	-	-	-	-
231	SW027	89-03-21	-	-	-	-	-	-	-	-	-	-	-
232	SW027	89-05-18	0.08/0.02		0.11/0.02		-	-	-	-	-	-	-
233	SW027	89-06-22	0.82/0.05		0.14/0.02		-	-	-	-	-	-	-
234	SW027	89-07-17					-	-	-	-	-	-	-
235	SW027	89-09-15	0.04/0.01		0.04/0.02		-	-	-	-	-	-	-
236	SW027	89-10-11	-		-		-	-	-	-	-	-	-
237	SW027	89-11-08					-	-	-	-	-	-	-
238	SW027	89-12-15					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
226	SW062	90-10-08	-	-	-	-	-	-	-	-	-	-	-
227	SW062	90-11-14	-	-	-	-	-	-	-	-	-	-	-
228	SW062	90-12-06	-	-	-	-	-	-	-	-	-	-	-
229	SW027		-	-	-	-	-	-	-	-	-	-	-
230	SW027	87-07-22	-	-	-	-	-	-	-	-	-	-	-
231	SW027	89-03-21	-	-	-	-	-	-	-	-	-	-	-
232	SW027	89-05-18	-	-	-	-	-	-	-	-	-	-	-
233	SW027	89-06-22	-	-	-	-	-	-	-	-	-	-	-
234	SW027	89-07-17	-	-	-	-	-	-	-	-	-	-	-
235	SW027	89-09-15	-	-	-	-	-	-	-	-	-	-	-
236	SW027	89-10-11	-	-	-	-	-	-	-	-	-	-	-
237	SW027	89-11-08	-	-	-	-	-	-	-	-	-	-	-
238	SW027	89-12-15	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
239	SW027	90-02-12					-	-	-	-	-	-	-
240	SW027	90-05-14					-	-	-	-	-	-	-
241	SW027	90-06-11					-	-	-	-	-	-	-
242	SW027	90-07-18	0.2659/0.03	-	0.06159/0.0	-	-	-	-	-	-	-	-
243	SW027	90-08-15	-		-		-	-	-	-	-	-	-
244	SW027	90-09-12	0.03049/0.0		0.06256/0.0		-	-	-	-	-	-	-
245	SW027	90-09-19	-		-		-	-	-	-	-	-	-
246	SW027	90-10-24	-		-		-	-	-	-	-	-	-
247	SW027	90-11-08	-		-		-	-	-	-	-	-	-
248	SW027	90-11-13		-		-	-	-	-	-	-	-	-
249	SW027	90-12-06		-		-	-	-	-	-	-	-	-
250	SWC2		-		-		-	-	-	-	-	-	-
251	SWC2	89-06-20	-		-		-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
239	SW027	90-02-12	-	-	-	-	-	-	-	-	-	-	-
240	SW027	90-05-14	-	-	-	-	-	-	-	-	-	-	-
241	SW027	90-06-11	-	-	-	-	-	-	-	-	-	-	-
242	SW027	90-07-18	-	-	-	-	-	-	-	-	-	-	-
243	SW027	90-08-15	-	-	-	-	-	-	-	-	-	-	-
244	SW027	90-09-12	-	-	-	-	-	-	-	-	-	-	-
245	SW027	90-09-19	-	-	-	-	-	-	-	-	-	-	-
246	SW027	90-10-24	-	-	-	-	-	-	-	-	-	-	-
247	SW027	90-11-08	-	-	-	-	-	-	-	-	-	-	-
248	SW027	90-11-13	-	-	-	-	-	-	-	-	-	-	-
249	SW027	90-12-06	-	-	-	-	-	-	-	-	-	-	-
250	SWC2		-	-	-	-	-	-	-	-	-	-	-
251	SWC2	89-06-20	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
252	SWC2	89-07-19	-		-		-	-	-	-	-	-	-
253	SWC2	89-07-20	0.06/0.02		-		-	-	-	-	-	-	8 J
254	SWC2	89-07-21	0.03/0.01		-		-	-	-	-	-	-	-
255	SWC2	89-08-02	-		-		-	-	-	-	-	-	-
256	SWC2	89-08-03	-		-		-	-	-	-	-	-	-
257	SWC2	89-08-24	-		-		-	-	-	-	-	-	-
258	SWC2	89-08-25	-		-		-	-	-	-	-	-	-
259	SWC2	89-10-11					-	-	-	-	-	-	-
260	SWC2	89-10-17					-	-	-	-	-	-	-
261	SWC2	90-03-23	0.03/0.012		-		-	-	-	-	-	-	-
262	SWC2	90-03-29		-		-	-	-	-	-	-	-	-
263	SWC2	90-03-30		-		-	-	-	-	-	-	-	-
264	SWC2	90-03-31		-		-	-	-	-	-	-	-	-
265	SWC2	90-04-01	-		-		-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
252	SWC2	89-07-19	-	-	-	-	-	-	-	-	-	-	-
253	SWC2	89-07-20	-	-	-	-	-	-	-	-	-	-	-
254	SWC2	89-07-21	-	-	-	-	-	-	-	-	-	-	-
255	SWC2	89-08-02	-	-	-	-	-	-	-	-	-	-	-
256	SWC2	89-08-03	-	-	-	-	-	-	-	-	-	-	-
257	SWC2	89-08-24	-	-	-	-	-	-	-	-	-	-	-
258	SWC2	89-08-25	-	-	-	-	-	-	-	-	-	-	-
259	SWC2	89-10-11	-	-	-	-	-	-	-	-	-	-	-
260	SWC2	89-10-17	-	-	-	-	-	-	-	-	-	-	-
261	SWC2	90-03-23	-	-	-	-	-	-	-	-	-	-	-
262	SWC2	90-03-29	-	-	-	-	-	-	-	-	-	-	-
263	SWC2	90-03-30	-	-	-	-	-	-	-	-	-	-	-
264	SWC2	90-03-31	-	-	-	-	-	-	-	-	-	-	-
265	SWC2	90-04-01	-	-	-	-	-	-	-	-	-	-	-

U=Analyzed but not detected J=Present below detection limit E=Estimated value - =Results below detection limit

A=Acceptable with qualifications V=Valid and acceptable R=Rejected B=Present in laboratory blank

Woman Creek Basin IM/IRA Surface Water

Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
266	SWC2	90-04-02	-		-		-	-	-	-	-	-	-
267	SWC2	90-04-03	-		-		-	-	-	-	-	-	-
268	SWC2	90-04-04	-		-		-	-	-	-	-	-	-
269	SWC2	90-04-05					-	-	-	-	-	-	-
270	SWC2	90-04-06	-		-		-	-	-	-	-	-	-
271	SWC2	90-04-07	-		-		-	-	-	-	-	-	-
272	SWC2	90-04-08	-		-		-	-	-	-	-	-	-
273	SWC2	90-04-09	-		-		-	-	-	-	-	-	-
274	SWC2	90-04-10					-	-	-	-	-	-	-
275	SWC2	90-04-11					-	-	-	-	-	-	-
276	SWC2	90-04-12					7	-	-	-	-	-	-
277	SWC2	90-04-13	-		-		-	-	-	-	-	-	-
278	SWC2	90-04-14	-		-		-	-	-	-	-	-	-
279	SWC2	90-04-16	-		-		-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
266	SWC2	90-04-02	-	-	-	-	-	-	-	-	-	-	-
267	SWC2	90-04-03	-	-	-	-	-	-	-	-	-	-	-
268	SWC2	90-04-04	-	-	-	-	-	-	-	-	-	-	-
269	SWC2	90-04-05	-	-	-	-	-	-	-	-	-	-	-
270	SWC2	90-04-06	-	-	-	-	-	-	-	-	-	-	-
271	SWC2	90-04-07	-	-	-	-	-	-	-	-	-	-	-
272	SWC2	90-04-08	-	-	-	-	-	-	-	-	-	-	-
273	SWC2	90-04-09	-	-	-	-	-	-	-	-	-	-	-
274	SWC2	90-04-10	-	-	-	-	-	-	-	-	-	-	-
275	SWC2	90-04-11	-	-	-	-	-	-	-	-	-	-	-
276	SWC2	90-04-12	-	-	-	-	-	-	13	-	-	15	-
277	SWC2	90-04-13	-	-	-	-	-	-	-	-	-	-	-
278	SWC2	90-04-14	-	-	-	-	-	-	-	-	-	-	-
279	SWC2	90-04-16	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Surface Water
Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
280	SWC2	90-04-17	-		-		-	-	-	-	-	-	-
281	SWC2	90-04-18	-		-		-	-	-	-	-	-	-
282	SWC2	90-04-19		-		-	-	-	-	-	-	-	-
283	SWC2	90-04-20	-		-		-	-	-	-	-	-	-
284	SWC2	90-04-21	-		-		-	-	-	-	-	-	-
285	SWC2	90-04-22	-		-		-	-	-	-	-	-	-
286	SWC2	90-04-23	-		-		-	-	-	-	-	-	-
287	SWC2	90-04-24	-		-		-	-	-	-	-	-	-
288	SWC2	90-04-25	-		-		-	-	-	-	-	-	-
289	SWC2	90-04-26					-	-	-	-	-	-	-
290	SWC2	90-04-27	-		-		-	-	-	-	-	-	-
291	SWC2	90-04-28	-		-		-	-	-	-	-	-	-
292	SWC2	90-04-29	-		-		-	-	-	-	-	-	-
293	SWC2	90-04-30	-		-		-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
280	SWC2	90-04-17	-	-	-	-	-	-	-	-	-	-	-
281	SWC2	90-04-18	-	-	-	-	-	-	-	-	-	-	-
282	SWC2	90-04-19	-	-	-	-	-	-	-	-	-	-	-
283	SWC2	90-04-20	-	-	-	-	-	-	-	-	-	-	-
284	SWC2	90-04-21	-	-	-	-	-	-	-	-	-	-	-
285	SWC2	90-04-22	-	-	-	-	-	-	-	-	-	-	-
286	SWC2	90-04-23	-	-	-	-	-	-	-	-	-	-	-
287	SWC2	90-04-24	-	-	-	-	-	-	-	-	-	-	-
288	SWC2	90-04-25	-	-	-	-	-	-	-	-	-	-	-
289	SWC2	90-04-26	-	-	-	-	-	-	-	-	-	-	-
290	SWC2	90-04-27	-	-	-	-	-	-	-	-	-	-	-
291	SWC2	90-04-28	-	-	-	-	-	-	-	-	-	-	-
292	SWC2	90-04-29	-	-	-	-	-	-	-	-	-	-	-
293	SWC2	90-04-30	-	-	-	-	-	-	-	-	-	-	-

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Woman Creek Basin IM/IRA Surface Water
Plutonium Data above error and VOC Data Above Detection Limits for Surface Water

	Station Number	Date Sampled	Plutonium Total	Plutonium Dissolved	Americium Total	Americium Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	2-Butanone
294	SWC2	90-05-03					-	-	-	-	-	-	-
295	SWC2	90-05-04	-		-		-	-	-	-	-	-	-
296	SWC2	90-05-05	-		-		-	-	-	-	-	-	-
297	SWC2	90-05-06	-		-		-	-	-	-	-	-	-
298	SWC2	91-03-18					-	-	-	-	-	-	-

	Station Number	Date Sampled	2-Hexanone	Benzene	Chloromethane	Carbon Tetrachloride	Chloroform	Carbon Disulfide	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	trans-1,2-Dichloroethene
294	SWC2	90-05-03	-	-	-	-	-	-	-	6	6	-	-
295	SWC2	90-05-04	-	-	-	-	-	-	-	-	-	-	-
296	SWC2	90-05-05	-	-	-	-	-	-	-	-	-	-	-
297	SWC2	90-05-06	-	-	-	-	-	-	-	-	-	-	-
298	SWC2	91-03-18	-	-	-	-	-	-	-	-	-	-	-

U=Analyzed but not detected J=Present below detection limit E=Estimated value - =Results below detection limit
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Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Volatile Organic Compound Results, All Volatile Organic Compound reported in ug/l

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
1	SW050	- - DRY											
2	SW050	87-07-21	5 U		5 U		140	5 U	5 U				
3	SW050	89-04-17 DRY											
4	SW050	89-05-10 DRY											
5	SW050	89-06-27	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
6	SW050	89-07-18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
7	SW050	89-08-11 DRY											
8	SW050	89-09-12 DRY											
9	SW050	89-10-04 DRY											

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
1	SW050	- - DRY												
2	SW050	87-07-21										1005		
3	SW050	89-04-17 DRY												
4	SW050	89-05-10 DRY												
5	SW050	89-06-27	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	2 J	5 U	10 U
6	SW050	89-07-18	10 U	10 U	10 U	1 JB	5 U	5 U	5 U	10 U	5 U	10	5 U	10 U
7	SW050	89-08-11 DRY												
8	SW050	89-09-12 DRY												
9	SW050	89-10-04 DRY												

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
1	SW050	- - DRY												
2	SW050	87-07-21	84						65			40		
3	SW050	89-04-17 DRY												
4	SW050	89-05-10 DRY												
5	SW050	89-06-27	8	10 U	5 U	5 U	5 U	5 U	15	5 U	5 U	9	10 U	10 U
6	SW050	89-07-18	6	10 U	5 U	5 U	5 U	5 U	19	5 U	5 U	8	10 U	10 U
7	SW050	89-08-11 DRY												
8	SW050	89-09-12 DRY												
9	SW050	89-10-04 DRY												

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing

A=Acceptable with qualifications V=Valid and acceptable R=Rejected

Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Volatile Organic Compound Results, All Volatile Organic Compound reported in ug/l

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
10	SW050	89-11-03 DRY											
11	SW050	89-12-01 DRY											
12	SW050	90-01-05 DRY											
13	SW050	90-02-02 DRY											
14	SW050	90-03-17 DRY											
15	SW050	90-05-17	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
16	SW050	90-06-25	5 U	5 U	5 U	5 U	5 U	5 U	4 J	5 U	5 U		5 U
17	SW050	90-07-23	5 U	5 U	5 U	5 U	5 U	5 U	3 J	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
10	SW050	89-11-03 DRY												
11	SW050	89-12-01 DRY												
12	SW050	90-01-05 DRY												
13	SW050	90-02-02 DRY												
14	SW050	90-03-17 DRY												
15	SW050	90-05-17	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	2 J	24	5 U	10 U
16	SW050	90-06-25	10 U	10 U	10 U	4 JB	5 U	5 U	5 U	10 U	5 U	110	5 U	10 U
17	SW050	90-07-23	6 BJ	10 U	10 U	1 BJ	5 U	5 U	5 U	10 U	5 U	5	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
10	SW050	89-11-03 DRY												
11	SW050	89-12-01 DRY												
12	SW050	90-01-05 DRY												
13	SW050	90-02-02 DRY												
14	SW050	90-03-17 DRY												
15	SW050	90-05-17	10	10 U	5 U	5 U	4 JB	5 U	16	5 U	5 U	7	10 U	10 U
16	SW050	90-06-25	27	10 U	5 U	5 U	8 B	5 U	22	5 U	5 U	7	10 U	10 U
17	SW050	90-07-23	18	10 U	5 U	5 U	8 B	5 U	4 J	5 U	5 U	2 J	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing

A=Acceptable with qualifications V=Valid and acceptable R=Rejected

Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Volatile Organic Compound Results, All Volatile Organic Compound reported in ug/l

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
18	SW051	87-07-21	5 U		5 U		101	5 U	5 U				
19	SW051	88-06-23 DRY											
20	SW051	89-04-17 DRY											
21	SW051	89-05-10 DRY											
22	SW051	89-06-27	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
23	SW051	89-07-18 DRY											
24	SW051	89-08-11 DRY											
25	SW051	89-09-12 DRY											

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
18	SW051	87-07-21										282		
19	SW051	88-06-23 DRY												
20	SW051	89-04-17 DRY												
21	SW051	89-05-10 DRY												
22	SW051	89-06-27	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	46	5 U	10 U
23	SW051	89-07-18 DRY												
24	SW051	89-08-11 DRY												
25	SW051	89-09-12 DRY												

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
18	SW051	87-07-21	5 U						44			17		
19	SW051	88-06-23 DRY												
20	SW051	89-04-17 DRY												
21	SW051	89-05-10 DRY												
22	SW051	89-06-27	4 J	10 U	5 U	5 U	5 U	5 U	9	5 U	5 U	5	10 U	10 U
23	SW051	89-07-18 DRY												
24	SW051	89-08-11 DRY												
25	SW051	89-09-12 DRY												

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A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
26	SW051	89-10-04 DRY											
27	SW051	89-11-03 DRY											
28	SW051	89-12-01 DRY											
29	SW051	90-01-05 DRY											
30	SW051	90-02-02 DRY											
31	SW051	90-05-17	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
32	SW052	87-07-21	5 U		5 U		73	5 U	5 U				

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
26	SW051	89-10-04 DRY												
27	SW051	89-11-03 DRY												
28	SW051	89-12-01 DRY												
29	SW051	90-01-05 DRY												
30	SW051	90-02-02 DRY												
31	SW051	90-05-17	10 U	10 U	10 U	1 J	5 U	5 U	5 U	10 U	11	250 E	5 U	10 U
32	SW052	87-07-21										5 U		

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
26	SW051	89-10-04 DRY												
27	SW051	89-11-03 DRY												
28	SW051	89-12-01 DRY												
29	SW051	90-01-05 DRY												
30	SW051	90-02-02 DRY												
31	SW051	90-05-17	6	10 U	5 U	5 U	5 B	5 U	32	5 U	5 U	14	10 U	10 U
32	SW052	87-07-21	5 U						5 U			5 U		

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
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	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
33	SW052	89-04-17 DRY											
34	SW052	89-05-10 DRY											
35	SW052	89-06-09 DRY											
36	SW052	89-07-07 DRY											
37	SW052	89-08-11 DRY											
38	SW052	89-09-28 DRY											
39	SW052	89-10-04 DRY											
40	SW052	89-11-03 DRY											

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
33	SW052	89-04-17 DRY												
34	SW052	89-05-10 DRY												
35	SW052	89-06-09 DRY												
36	SW052	89-07-07 DRY												
37	SW052	89-08-11 DRY												
38	SW052	89-09-28 DRY												
39	SW052	89-10-04 DRY												
40	SW052	89-11-03 DRY												

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
33	SW052	89-04-17 DRY												
34	SW052	89-05-10 DRY												
35	SW052	89-06-09 DRY												
36	SW052	89-07-07 DRY												
37	SW052	89-08-11 DRY												
38	SW052	89-09-28 DRY												
39	SW052	89-10-04 DRY												
40	SW052	89-11-03 DRY												

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Volatile Organic Compound Results, All Volatile Organic Compound reported in ug/l

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
41	SW052	89-12-01 DRY											
42	SW052	90-01-05 DRY											
43	SW052	90-02-02 DRY											
44	SW052	90-03-17 DRY											
45	SW052	90-04-25	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
46	SW052	90-05-17	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
47	SW055	87-07-21	5 U		5 U		50	5 U	5 U				

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
41	SW052	89-12-01 DRY												
42	SW052	90-01-05 DRY												
43	SW052	90-02-02 DRY												
44	SW052	90-03-17 DRY												
45	SW052	90-04-25	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	3 J	5 U	10 U
46	SW052	90-05-17	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	2 J	5 U	10 U
47	SW055	87-07-21										5 U		

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
41	SW052	89-12-01 DRY												
42	SW052	90-01-05 DRY												
43	SW052	90-02-02 DRY												
44	SW052	90-03-17 DRY												
45	SW052	90-04-25	1 J	10 U	5 U	5 U	4 JB	5 U	7	5 U	5 U	3 J	10 U	10 U
46	SW052	90-05-17	2 J	10 U	5 U	5 U	3 JB	5 U	7	5 U	5 U	3 J	10 U	10 U
47	SW055	87-07-21	5 U						5 U			5 U		

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing

A=Acceptable with qualifications V=Valid and acceptable R=Rejected

Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Volatile Organic Compound Results, All Volatile Organic Compound reported in ug/l

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
48	SW055	89-04-17	5 U	5 U	5 U	5 U		5 U	5 U	5 U	5 U		5 U
49	SW055	89-06-28	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
50	SW055	89-07-18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
51	SW055	89-08-16	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
52	SW055	89-09-20	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
53	SW055	89-10-19	5 U	5 U	5 U	5 U	5 U	5 U	11	5 U	5 U		5 U
54	SW055	89-11-09	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
55	SW055	89-12-07	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
48	SW055	89-04-17	10 U	10 U	10 U	13		5 U	5 U	10 U	5 U	5 U		10 U
49	SW055	89-06-28	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
50	SW055	89-07-18	10 U	10 U	10 U	1 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
51	SW055	89-08-16	10 U	10 U	10 U	3 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
52	SW055	89-09-20	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
53	SW055	89-10-19	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
54	SW055	89-11-09	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
55	SW055	89-12-07	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
48	SW055	89-04-17	5 U	10 U	5 U	5 U	5 U	5 U	5 U		5 U		10 U	10 U
49	SW055	89-06-28	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19	10 U	10 U
50	SW055	89-07-18	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19	10 U	10 U
51	SW055	89-08-16	5 U	10 U	5 U	5 U	1 JB	5 U	5 U	5 U	5 U	28	10 U	10 U
52	SW055	89-09-20	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	24	10 U	10 U
53	SW055	89-10-19	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
54	SW055	89-11-09	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	65	10 U	10 U
55	SW055	89-12-07	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	60	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing

A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
56	SW055	90-01-17	5 U	5 U	5 U	5 U	5 U	5 U	10	5 U	5 U		5 U
57	SW055	90-03-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
58	SW055	90-04-24	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
59	SW055	90-05-21	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
60	SW055	90-06-25	5 U	5 U	5 U	5 U	5 U	5 U	7	5 U	5 U		5 U
61	SW057	87-07-21	5 U		5 U		48	5 U	5 U				
62	SW057	88-06-23 DRY											

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
56	SW055	90-01-17	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
57	SW055	90-03-15	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
58	SW055	90-04-24	10 U	10 U	10 U	7 JB	5 U	5 U	5 U	10 U	5 U	2 J	5 U	10 U
59	SW055	90-05-21	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
60	SW055	90-06-25	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
61	SW057	87-07-21										5 U		
62	SW057	88-06-23 DRY												

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
56	SW055	90-01-17	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	61	10 U	10 U
57	SW055	90-03-15	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	41	10 U	10 U
58	SW055	90-04-24	1 J	10 U	5 U	5 U	5 B	5 U	5 U	5 U	5 U	3 J	10 U	10 U
59	SW055	90-05-21	5 U	10 U	5 U	5 U	5 B	5 U	5 U	5 U	5 U	13	10 U	10 U
60	SW055	90-06-25	5 U	10 U	5 U	5 U	7 B	5 U	1 J	5 U	5 U	90	10 U	10 U
61	SW057	87-07-21	5 U						5 U			5 U		
62	SW057	88-06-23 DRY												

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
63	SW057	89-04-17 DRY											
64	SW057	89-05-10 DRY											
65	SW057	89-06-09 DRY											
66	SW057	89-07-07 DRY											
67	SW057	89-08-11 DRY											
68	SW057	89-09-16 DRY											
69	SW057	89-10-04 DRY											
70	SW057	89-11-03 DRY											

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
63	SW057	89-04-17 DRY												
64	SW057	89-05-10 DRY												
65	SW057	89-06-09 DRY												
66	SW057	89-07-07 DRY												
67	SW057	89-08-11 DRY												
68	SW057	89-09-16 DRY												
69	SW057	89-10-04 DRY												
70	SW057	89-11-03 DRY												

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
63	SW057	89-04-17 DRY												
64	SW057	89-05-10 DRY												
65	SW057	89-06-09 DRY												
66	SW057	89-07-07 DRY												
67	SW057	89-08-11 DRY												
68	SW057	89-09-16 DRY												
69	SW057	89-10-04 DRY												
70	SW057	89-11-03 DRY												

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
71	SW057	89-12-01 DRY											
72	SW057	90-01-05 DRY											
73	SW057	90-02-02 DRY											
74	SW057	90-03-17 DRY											
75	SW058	87-07-21	5 U		5 U		5 U	5 U	5 U				
76	SW058	89-04-17 DRY											
77	SW058	89-05-10 DRY											

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
71	SW057	89-12-01 DRY												
72	SW057	90-01-05 DRY												
73	SW057	90-02-02 DRY												
74	SW057	90-03-17 DRY												
75	SW058	87-07-21										5 U		
76	SW058	89-04-17 DRY												
77	SW058	89-05-10 DRY												

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
71	SW057	89-12-01 DRY												
72	SW057	90-01-05 DRY												
73	SW057	90-02-02 DRY												
74	SW057	90-03-17 DRY												
75	SW058	87-07-21	5 U						5 U			5 U		
76	SW058	89-04-17 DRY												
77	SW058	89-05-10 DRY												

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
78	SW058	89-06-28	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
79	SW058	89-07-14 DRY											
80	SW058	89-08-11 DRY											
81	SW058	89-09-20 DRY											
82	SW058	89-10-04 DRY											
83	SW058	89-11-20 DRY											
84	SW058	89-12-01 DRY											
85	SW058	90-01-05 DRY											

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
78	SW058	89-06-28	10 U	10 U	10 U	7 J	5 U	5 U	5 U	10 U	2 J	5 U	5 U	10 U
79	SW058	89-07-14 DRY												
80	SW058	89-08-11 DRY												
81	SW058	89-09-20 DRY												
82	SW058	89-10-04 DRY												
83	SW058	89-11-20 DRY												
84	SW058	89-12-01 DRY												
85	SW058	90-01-05 DRY												

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
78	SW058	89-06-28	2 J	10 U	5 U	5 U	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
79	SW058	89-07-14 DRY												
80	SW058	89-08-11 DRY												
81	SW058	89-09-20 DRY												
82	SW058	89-10-04 DRY												
83	SW058	89-11-20 DRY												
84	SW058	89-12-01 DRY												
85	SW058	90-01-05 DRY												

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
86	SW058	90-02-02 DRY											
87	SW058	90-05-17	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
88	SW058	90-07-23	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
89	SW077	89-03-30 DRY											
90	SW077	89-05-11 DRY											
91	SW077	89-06-27	5 U	5 U	5 U	5 U	5 U	5 U	6	5 U	5 U		5 U
92	SW077	89-07-18 DRY											

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
86	SW058	90-02-02 DRY												
87	SW058	90-05-17	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	2 J	11	5 U	10 U
88	SW058	90-07-23	10 U	10 U	10 U	1 BJ	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
89	SW077	89-03-30 DRY												
90	SW077	89-05-11 DRY												
91	SW077	89-06-27	10 U	10 U	10 U	12	5 U	5 U	5 U	10 U	3 J	5 U	5 U	10 U
92	SW077	89-07-18 DRY												

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
86	SW058	90-02-02 DRY												
87	SW058	90-05-17	4 J	10 U	5 U	5 U	3 JB	5 U	3 J	5 U	5 U	3 J	10 U	10 U
88	SW058	90-07-23	5 U	10 U	5 U	5 U	2 BJ	5 U	5 U	5 U	5 U	5 U	10 U	10 U
89	SW077	89-03-30 DRY												
90	SW077	89-05-11 DRY												
91	SW077	89-06-27	3 J	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	47	10 U	10 U
92	SW077	89-07-18 DRY												

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
93	SW077	89-08-16	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
94	SW077	89-09-20 DRY											
95	SW077	89-10-04 DRY											
96	SW077	89-11-09 DRY											
97	SW077	89-12-01 DRY											
98	SW077	90-01-05 DRY											
99	SW077	90-02-02 DRY											
100	SW077	90-05-21	5	5 U	5 U	5 U	3 J	5 U	12	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
93	SW077	89-08-16	10 U	10 U	10 U	5 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
94	SW077	89-09-20 DRY												
95	SW077	89-10-04 DRY												
96	SW077	89-11-09 DRY												
97	SW077	89-12-01 DRY												
98	SW077	90-01-05 DRY												
99	SW077	90-02-02 DRY												
100	SW077	90-05-21	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	50	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
93	SW077	89-08-16	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
94	SW077	89-09-20 DRY												
95	SW077	89-10-04 DRY												
96	SW077	89-11-09 DRY												
97	SW077	89-12-01 DRY												
98	SW077	90-01-05 DRY												
99	SW077	90-02-02 DRY												
100	SW077	90-05-21	53	10 U	5 U	5 U	7 B	5 U	20	5 U	5 U	2100 E	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
101	SW077	90-06-25	5 U	5 U	5 U	5 U	1 J	5 U	360	5 U	5 U		5 U
102	SW077	90-07-23	50 U	50 U	50 U	50 U	50 U	50 U	300	50 U	50 U		50 U
103	SW053	87-07-21	5 U		5 U		5 U	5 U	5 U				
104	SW053	89-05-23	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
105	SW053	89-06-26	5 U	5 U	5 U	5 U	5 U	5 U	27	5 U	5 U		5 U
106	SW053	89-07-19 DRY											
107	SW053	89-08-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
101	SW077	90-06-25	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	8	5 U	10 U
102	SW077	90-07-23	100 U	100 U	100 U	100 U	42 J	50 U	50 U	100 U	50 U	50 U	50 U	100 U
103	SW053	87-07-21										5 U		
104	SW053	89-05-23	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
105	SW053	89-06-26	10 U	10 U	10 U	11	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
106	SW053	89-07-19 DRY												
107	SW053	89-08-15	10 U	10 U	10 U	3 J	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
101	SW077	90-06-25	38	10 U	5 U	5 U	6 B	5 U	11	5 U	5 U	1300	10 U	10 U
102	SW077	90-07-23	22 J	100 U	50 U	50 U	18 BJ	50 U	50 U	18 J	40 J	960	100 U	100 U
103	SW053	87-07-21	5 U						5 U			5 U		
104	SW053	89-05-23	5 U	10 U	5 U	5 U	9 B	5 U	5 U	2 J	5 U	2 J	10 U	10 U
105	SW053	89-06-26	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
106	SW053	89-07-19 DRY												
107	SW053	89-08-15	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
108	SW053	89-09-20	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
109	SW053	89-10-12	5 U	5 U	5 U	5 U	5 U	5 U	42	5 U	5 U		5 U
110	SW053	89-11-07	5 U	5 U	5 U	5 U	5 U	5 U	50	5 U	5 U		5 U
111	SW053	89-12-15	5 U	5 U	5 U	5 U	5 U	5 U	44	5 U	5 U		5 U
112	SW053	90-01-17	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
113	SW053	90-05-21	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
114	SW053	90-07-23	5 U	5 U	5 U	5 U	5 U	5 U	28	5 U	5 U		5 U
115	SW053	90-11-15	5 U	5 U	5 U	5 U	5 U	5 U	39	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
108	SW053	89-09-20	10 U	10 U	10 U	4 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
109	SW053	89-10-12	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
110	SW053	89-11-07	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
111	SW053	89-12-15	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
112	SW053	90-01-17	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
113	SW053	90-05-21	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
114	SW053	90-07-23	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
115	SW053	90-11-15	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
108	SW053	89-09-20	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
109	SW053	89-10-12	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1 J	10 U	10 U
110	SW053	89-11-07	5 U	10 U	5 U	5 U	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
111	SW053	89-12-15	5 U	10 U	5 U	5 U	17 B	5 U	5 U	5 U	5 U	14	10 U	10 U
112	SW053	90-01-17	8	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
113	SW053	90-05-21	5 U	10 U	5 U	5 U	7 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
114	SW053	90-07-23	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
115	SW053	90-11-15	5 U	10 U	5 U	5 U	3 BJ	5 U	5 U	5 U	5 U	2 J	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
116	SW063	87-07-24	5 U		5 U		5 U	5 U	5 U				
117	SW063	89-03-28 DRY											
118	SW063	89-05-12 DRY											
119	SW063	89-06-21 DRY											
120	SW063	89-07-19 DRY											
121	SW063	89-08-11 DRY											
122	SW063	89-09-15 DRY											
123	SW063	89-10-04 DRY											

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
116	SW063	87-07-24										5 U		
117	SW063	89-03-28 DRY												
118	SW063	89-05-12 DRY												
119	SW063	89-06-21 DRY												
120	SW063	89-07-19 DRY												
121	SW063	89-08-11 DRY												
122	SW063	89-09-15 DRY												
123	SW063	89-10-04 DRY												

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
116	SW063	87-07-24	5 U						5 U			5 U		
117	SW063	89-03-28 DRY												
118	SW063	89-05-12 DRY												
119	SW063	89-06-21 DRY												
120	SW063	89-07-19 DRY												
121	SW063	89-08-11 DRY												
122	SW063	89-09-15 DRY												
123	SW063	89-10-04 DRY												

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
124	SW063	89-11-03 DRY											
125	SW063	89-12-01 DRY											
126	SW063	90-01-05 DRY											
127	SW063	90-02-02 DRY											
128	SW064	87-07-22	5 U		5 U		5 U	5 U	5 U				
129	SW064	88-05-22	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
130	SW064	89-03-30 DRY											

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
124	SW063	89-11-03 DRY												
125	SW063	89-12-01 DRY												
126	SW063	90-01-05 DRY												
127	SW063	90-02-02 DRY												
128	SW064	87-07-22										5 U		
129	SW064	88-05-22	10 U	10 U	10 U	2 J	5 U	5 U	5 U	10 U	5 U	3 J	5 U	10 U
130	SW064	89-03-30 DRY												

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
124	SW063	89-11-03 DRY												
125	SW063	89-12-01 DRY												
126	SW063	90-01-05 DRY												
127	SW063	90-02-02 DRY												
128	SW064	87-07-22	5 U						5 U			20		
129	SW064	88-05-22	27	10 U	5 U	5 U	9 B	5 U	5 U	5 U	5 U	16	10 U	10 U
130	SW064	89-03-30 DRY												

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
131	SW064	89-06-27	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
132	SW064	89-07-19	DRY										
133	SW064	89-08-11	DRY										
134	SW064	89-09-20	DRY										
135	SW064	89-10-04	DRY										
136	SW064	89-11-09	DRY										
137	SW064	89-12-01	DRY										
138	SW064	90-01-05	DRY										

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
131	SW064	89-06-27	10 U	10 U	10 U	5 J	5 U	5 U	5 U	10 U	6	5 U	5 U	10 U
132	SW064	89-07-19	DRY											
133	SW064	89-08-11	DRY											
134	SW064	89-09-20	DRY											
135	SW064	89-10-04	DRY											
136	SW064	89-11-09	DRY											
137	SW064	89-12-01	DRY											
138	SW064	90-01-05	DRY											

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
131	SW064	89-06-27	1 J	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	12	10 U	10 U
132	SW064	89-07-19	DRY											
133	SW064	89-08-11	DRY											
134	SW064	89-09-20	DRY											
135	SW064	89-10-04	DRY											
136	SW064	89-11-09	DRY											
137	SW064	89-12-01	DRY											
138	SW064	90-01-05	DRY											

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
139	SW064	90-02-02 DRY											
140	SW064	90-04-25	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
141	SW064	90-05-22	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
142	SW064	90-06-18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
143	SW064	90-07-24	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
144	SW064	90-08-23	5 U	5 U	5 U	5 U	5 U	5 U	1 J	5 U	5 U		5 U
145	SW064	90-10-23	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
146	SW064	90-11-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
139	SW064	90-02-02 DRY												
140	SW064	90-04-25	10 U	10 U	10 U	4 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
141	SW064	90-05-22	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	4 J	5 U	5 U	10 U
142	SW064	90-06-18	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
143	SW064	90-07-24	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
144	SW064	90-08-23	10 U	10 U	10 U	3 J	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
145	SW064	90-10-23	10 U	10 U	10 U	23 B	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
146	SW064	90-11-15	10 U	10 U	10 U	4 BJ	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
139	SW064	90-02-02 DRY												
140	SW064	90-04-25	22	10 U	5 U	5 U	4 JB	5 U	5 U	5 U	5 U	5	10 U	10 U
141	SW064	90-05-22	3 J	10 U	5 U	5 U	9 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
142	SW064	90-06-18	5 U	10 U	5 U	5 U	3 JB	5 U	5 U	5 U	5 U	8	10 U	10 U
143	SW064	90-07-24	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10	10 U	10 U
144	SW064	90-08-23	5 U	10 U	5 U	5 U	2 BJ	5 U	5 U	5 U	5 U	6	10 U	10 U
145	SW064	90-10-23	5 U	10 U	5 U	5 U	5 B	5 U	5 U	5 U	5 U	13	10 U	10 U
146	SW064	90-11-15	5	10 U	5 U	5 U	3 BJ	5 U	1 J	5 U	5 U	28	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
147	SW064	90-12-06	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
148	SW070	89-03-29	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
149	SW070	89-05-16	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
150	SW070	89-06-23	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
151	SW070	89-07-20	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
152	SW070	89-09-26	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
153	SW070	89-10-23	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
147	SW064	90-12-06	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	1 J	5 U	10 U
148	SW070	89-03-29	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
149	SW070	89-05-16	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
150	SW070	89-06-23	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
151	SW070	89-07-20	10 U	10 U	10 U	4 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
152	SW070	89-09-26	10 U	10 U	10 U	3 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
153	SW070	89-10-23	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
147	SW064	90-12-06	7	10 U	5 U	5 U	2 BJ	5 U	2 J	5 U	5 U	33	10 U	10 U
148	SW070	89-03-29	5 U	10 U	5 U	5 U	3 J	5 U	5 U	5 U	5 U	5 U	10 U	10 U
149	SW070	89-05-16	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
150	SW070	89-06-23	5 U	10 U	5 U	5 U	3 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
151	SW070	89-07-20	5 U	10 U	5 U	5 U	34 B	5 U	5 U	2 J	5 U	5 U	10 U	10 U
152	SW070	89-09-26	5 U	10 U	5 U	5 U	5 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
153	SW070	89-10-23	5 U	10 U	5 U	5 U	9 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
154	SW070	89-11-16	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
155	SW070	89-12-13	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
156	SW070	90-01-11	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
157	SW070	90-02-07	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
158	SW070	90-03-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
159	SW070	90-04-19	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
160	SW070	90-05-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
161	SW070	90-06-12	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
154	SW070	89-11-16	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
155	SW070	89-12-13	10 U	10 U	10 U	15	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
156	SW070	90-01-11	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
157	SW070	90-02-07	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
158	SW070	90-03-15	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
159	SW070	90-04-19	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
160	SW070	90-05-15	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
161	SW070	90-06-12	10 U	10 U	10 U	2 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
154	SW070	89-11-16	5 U	10 U	5 U	5 U	5 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
155	SW070	89-12-13	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
156	SW070	90-01-11	5 U	10 U	5 U	5 U	4 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
157	SW070	90-02-07	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
158	SW070	90-03-15	5 U	10 U	5 U	5 U	19 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
159	SW070	90-04-19	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
160	SW070	90-05-15	5 U	10 U	5 U	5 U	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
161	SW070	90-06-12	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
162	SW070	90-07-18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
163	SW070	90-10-16	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
164	SW070	90-11-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
165	SW070	90-12-10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
166	SW030	86-08-20 DRY											
167	SW030	87-05-26	4 U		4 U		4 U	4 U	4 U				
168	SW030	87-11-10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
162	SW070	90-07-18	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
163	SW070	90-10-16	5 J	10 U	10 U	5 BJ	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
164	SW070	90-11-15	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
165	SW070	90-12-10	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
166	SW030	86-08-20 DRY												
167	SW030	87-05-26										4 U		
168	SW030	87-11-10	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	7	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
162	SW070	90-07-18	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
163	SW070	90-10-16	5 U	10 U	5 U	5 U	2 BJ	5 U	5 U	5 U	5 U	5 U	10 U	10 U
164	SW070	90-11-15	5 U	10 U	5 U	5 U	2 BJ	5 U	5 U	5 U	5 U	5 U	10 U	10 U
165	SW070	90-12-10	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
166	SW030	86-08-20 DRY												
167	SW030	87-05-26	4 U						4 U			4 U		
168	SW030	87-11-10	5 U	10 U	5 U	5 U	21	5 U	5 U	12	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Volatile Organic Compound Results, All Volatile Organic Compound reported in ug/l

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
169	SW030	89-03-28	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
170	SW030	89-05-16	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
171	SW030	89-06-22	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
172	SW030	89-07-20 DRY											
173	SW030	89-08-21	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
174	SW030	89-09-25	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
175	SW030	89-10-20	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
176	SW030	89-11-09 DRY											

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
169	SW030	89-03-28	10 U	10 U	10 U	3 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
170	SW030	89-05-16	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
171	SW030	89-06-22	10 U	10 U	10 U	4 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
172	SW030	89-07-20 DRY												
173	SW030	89-08-21	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
174	SW030	89-09-25	10 U	10 U	10 U	7 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
175	SW030	89-10-20	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
176	SW030	89-11-09 DRY												

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
169	SW030	89-03-28	5 U	10 U	5 U	5 U	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
170	SW030	89-05-16	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
171	SW030	89-06-22	5 U	10 U	5 U	5 U	4 JB	5 U	5 U	5 U	5 U	5 U	1 J	10 U
172	SW030	89-07-20 DRY												
173	SW030	89-08-21	5 U	10 U	5 U	5 U	7 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
174	SW030	89-09-25	5 U	10 U	5 U	5	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
175	SW030	89-10-20	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
176	SW030	89-11-09 DRY												

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing

A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
177	SW030	89-12-01 DRY											
178	SW030	90-01-05 DRY											
179	SW030	90-02-02 DRY											
180	SW030	90-03-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
181	SW030	90-05-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
182	SW030	90-06-11	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
183	SW030	90-07-17	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
184	SW030	90-09-12	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
177	SW030	89-12-01 DRY												
178	SW030	90-01-05 DRY												
179	SW030	90-02-02 DRY												
180	SW030	90-03-15	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
181	SW030	90-05-15	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
182	SW030	90-06-11	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
183	SW030	90-07-17	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
184	SW030	90-09-12	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
177	SW030	89-12-01 DRY												
178	SW030	90-01-05 DRY												
179	SW030	90-02-02 DRY												
180	SW030	90-03-15	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
181	SW030	90-05-15	5 U	10 U	5 U	5 U	14 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
182	SW030	90-06-11	5 U	10 U	5 U	5 U	1 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
183	SW030	90-07-17	5 U	10 U	5 U	5 U	1 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
184	SW030	90-09-12	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
185	SW030	90-10-03	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
186	SW030	90-11-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
187	SW030	90-12-06	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
188	SW054	87-07-15 DRY											
189	SW054	89-03-21	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
190	SW054	89-05-18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
191	SW054	89-06-22	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
185	SW030	90-10-03	10 U	10 U	10 U	7 BJ	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
186	SW030	90-11-15	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
187	SW030	90-12-06	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
188	SW054	87-07-15 DRY												
189	SW054	89-03-21	10 U	10 U	10 U	3 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
190	SW054	89-05-18	10 U	10 U	10 U	2 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
191	SW054	89-06-22	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
185	SW030	90-10-03	5 U	10 U	5 U	5 U	3 BJ	5 U	5 U	5 U	5 U	5 U	10 U	10 U
186	SW030	90-11-15	5 U	10 U	5 U	5 U	2 BJ	5 U	5 U	5 U	5 U	5 U	10 U	10 U
187	SW030	90-12-06	5 U	10 U	5 U	5 U	2 BJ	5 U	5 U	5 U	5 U	5 U	10 U	10 U
188	SW054	87-07-15 DRY												
189	SW054	89-03-21	5 U	10 U	5 U	5 U	28 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
190	SW054	89-05-18	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
191	SW054	89-06-22	5 U	10 U	5 U	5 U	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Volatile Organic Compound Results, All Volatile Organic Compound reported in ug/l

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
192	SW054	89-07-19	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
193	SW054	89-08-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
194	SW054	89-09-21	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
195	SW054	89-10-12	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
196	SW054	89-11-03	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
197	SW054	89-12-12	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
198	SW054	90-01-18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
199	SW054	90-02-12	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
192	SW054	89-07-19	10 U	10 U	10 U	5 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
193	SW054	89-08-15	10 U	10 U	10 U	2 J	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
194	SW054	89-09-21	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
195	SW054	89-10-12	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
196	SW054	89-11-03	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
197	SW054	89-12-12	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
198	SW054	90-01-18	10 U	10 U	10 U	42	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
199	SW054	90-02-12	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
192	SW054	89-07-19	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
193	SW054	89-08-15	5 U	10 U	5 U	5 U	1 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
194	SW054	89-09-21	5 U	10 U	5 U	5 U	11	5 U	5 U	5 U	5 U	5 U	10 U	10 U
195	SW054	89-10-12	5 U	10 U	5 U	5 U	1 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
196	SW054	89-11-03	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
197	SW054	89-12-12	5 U	10 U	5 U	5 U	3 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
198	SW054	90-01-18	5 U	10 U	5 U	5 U	68	5 U	5 U	5 U	5 U	5 U	10 U	10 U
199	SW054	90-02-12	5 U	10 U	5 U	5 U	5 U	5 U	2 J	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing

A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
200	SW054	90-05-14	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
201	SW054	90-06-13	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
202	SW054	90-10-18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
203	SW054	90-11-19	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
204	SW062	87-07-22	5 U		5 U		5 U	5 U	5 U				
205	SW062	89-03-28	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
206	SW062	89-05-23	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
200	SW054	90-05-14	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
201	SW054	90-06-13	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
202	SW054	90-10-18	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
203	SW054	90-11-19	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
204	SW062	87-07-22										5 U		
205	SW062	89-03-28	10 U	10 U	10 U	2 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
206	SW062	89-05-23	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
200	SW054	90-05-14	5 U	10 U	5 U	5 U	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
201	SW054	90-06-13	5 U	10 U	5 U	5 U	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
202	SW054	90-10-18	5 U	10 U	5 U	5 U	2 BJ	5 U	5 U	5 U	5 U	5 U	10 U	10 U
203	SW054	90-11-19	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
204	SW062	87-07-22	5 U						5 U			5 U		
205	SW062	89-03-28	5 U	10 U	5 U	5 U	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
206	SW062	89-05-23	5 U	10 U	5 U	5 U	8 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
207	SW062	89-06-22	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
208	SW062	89-07-19	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
209	SW062	89-08-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
210	SW062	89-09-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
211	SW062	89-10-12	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
212	SW062	89-11-08	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
213	SW062	89-12-13	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
214	SW062	90-01-18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
207	SW062	89-06-22	10 U	10 U	10 U	4 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
208	SW062	89-07-19	10 U	10 U	10 U	2 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
209	SW062	89-08-15	10 U	10 U	10 U	3 J	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
210	SW062	89-09-15	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
211	SW062	89-10-12	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
212	SW062	89-11-08	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
213	SW062	89-12-13	10 U	10 U	10 U	15	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
214	SW062	90-01-18	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
207	SW062	89-06-22	5 U	10 U	5 U	5 U	3 JB	5 U	5 U	5 U	5 U	5 U	1 J	10 U
208	SW062	89-07-19	5 U	10 U	5 U	5 U	1 J	5 U	5 U	5 U	5 U	5 U	10 U	10 U
209	SW062	89-08-15	5 U	10 U	5 U	5 U	3 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
210	SW062	89-09-15	5 U	10 U	5 U	5 U	4 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
211	SW062	89-10-12	5 U	10 U	5 U	5 U	1 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
212	SW062	89-11-08	5 U	10 U	5 U	5 U	7 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
213	SW062	89-12-13	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
214	SW062	90-01-18	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
215	SW062	90-05-22	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
216	SW062	90-06-18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
217	SW062	90-07-24	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
218	SW062	90-08-22	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
219	SW062	90-11-14	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
220	SW062	90-12-06	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
221	SW027		5 U	5 U	5 U	5 U	5 U	5 U		5 U	5 U	5 U	5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
215	SW062	90-05-22	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
216	SW062	90-06-18	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
217	SW062	90-07-24	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
218	SW062	90-08-22	10 U	10 U	10 U	6 BJ	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
219	SW062	90-11-14	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
220	SW062	90-12-06	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5 U	5 U	5 U	10 U
221	SW027		10 U	10 U	10 U	8 BJ	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
215	SW062	90-05-22	5 U	10 U	5 U	5 U	8 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
216	SW062	90-06-18	5 U	10 U	5 U	5 U	3 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
217	SW062	90-07-24	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
218	SW062	90-08-22	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
219	SW062	90-11-14	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
220	SW062	90-12-06	5 U	10 U	5 U	5 U	1 BJ	5 U	5 U	5 U	5 U	5 U	10 U	10 U
221	SW027		5 U	10 U	5 U	5 U	2 BJ	5 U	5 U	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Volatile Organic Compound Results, All Volatile Organic Compound reported in ug/l

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
222	SW027	87-07-22	5 U		5 U		5 U	5 U	5 U				
223	SW027	89-03-21	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
224	SW027	89-05-18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
225	SW027	89-06-22	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
226	SW027	89-07-17	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
227	SW027	89-09-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
228	SW027	89-10-11	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
229	SW027	89-11-08	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
222	SW027	87-07-22										5 U		
223	SW027	89-03-21	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
224	SW027	89-05-18	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
225	SW027	89-06-22	10 U	10 U	10 U	3 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
226	SW027	89-07-17	10 U	10 U	10 U	3 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
227	SW027	89-09-15	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
228	SW027	89-10-11	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
229	SW027	89-11-08	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
222	SW027	87-07-22	5 U						5 U			5 U		
223	SW027	89-03-21	5 U	10 U	5 U	5 U	28 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
224	SW027	89-05-18	5 U	10 U	5 U	5 U	15 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
225	SW027	89-06-22	5 U	10 U	5 U	5 U	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
226	SW027	89-07-17	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
227	SW027	89-09-15	5 U	10 U	5 U	5 U	4 JB	5 U	5 U	2 J	5 U	5 U	10 U	10 U
228	SW027	89-10-11	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
229	SW027	89-11-08	5 U	10 U	5 U	5 U	5 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
230	SW027	89-12-15	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
231	SW027	90-02-12	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
232	SW027	90-05-14	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
233	SW027	90-06-11	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
234	SW027	90-07-18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
235	SW027	90-09-12	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
236	SW027	90-11-13	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
237	SW027	90-12-06	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
230	SW027	89-12-15	10 U	10 U	10 U	13 B	5 U	5 U	5 U	10 U	3 J	5 U	5 U	10 U
231	SW027	90-02-12	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
232	SW027	90-05-14	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
233	SW027	90-06-11	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
234	SW027	90-07-18	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
235	SW027	90-09-12	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
236	SW027	90-11-13	10 U	10 U	10 U	4 BJ	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
237	SW027	90-12-06	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
230	SW027	89-12-15	5 U	10 U	5 U	5 U	8 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
231	SW027	90-02-12	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
232	SW027	90-05-14	5 U	10 U	5 U	5 U	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
233	SW027	90-06-11	5 U	10 U	5 U	5 U	1 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
234	SW027	90-07-18	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
235	SW027	90-09-12	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
236	SW027	90-11-13	5 U	10 U	5 U	5 U	1 BJ	5 U	5 U	5 U	5 U	5 U	10 U	10 U
237	SW027	90-12-06	5 U	10 U	5 U	5 U	2 BJ	5 U	5 U	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
238	SWC2		5 U	5 U	5 U	5 U	5 U	5 U		5 U	5 U	5 U	5 U
239	SWC2	89-07-19	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
240	SWC2	89-07-20	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
241	SWC2	89-07-21	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
242	SWC2	89-08-02	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
243	SWC2	89-08-03	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
244	SWC2	89-08-24	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
245	SWC2	89-08-25	4 J	5 U	5 U	5 U	2 J	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
238	SWC2		10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
239	SWC2	89-07-19	10 U	10 U	10 U	3 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
240	SWC2	89-07-20	8 J	10 U	10 U	6 J	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
241	SWC2	89-07-21	10 U	10 U	10 U	2 J	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
242	SWC2	89-08-02	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
243	SWC2	89-08-03	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
244	SWC2	89-08-24	10 U	10 U	10 U	7 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
245	SWC2	89-08-25	10 U	10 U	10 U	3 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
238	SWC2		5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
239	SWC2	89-07-19	5 U	10 U	5 U	5 U	16 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
240	SWC2	89-07-20	5 U	10 U	5 U	5 U	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
241	SWC2	89-07-21	5 U	10 U	5 U	5 U	4 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
242	SWC2	89-08-02	5 U	10 U	5 U	5 U	5 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
243	SWC2	89-08-03	5 U	10 U	5 U	5 U	3 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
244	SWC2	89-08-24	5 U	10 U	5 U	5 U	10 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
245	SWC2	89-08-25	5 U	10 U	5 U	5 U	5 B	5 U	1 J	5 U	5 U	3 J	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
246	SWC2	89-10-11	1.7	0.2 U	0.2 U	0.2 U	0.2 U	3.8		0.2 U		0.2 U	
247	SWC2	89-10-17	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.23 U		0.2 U		0.2 U	
248	SWC2	90-03-29	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
249	SWC2	90-03-30	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
250	SWC2	90-03-31	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
251	SWC2	90-04-03	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
252	SWC2	90-04-04	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
253	SWC2	90-04-05	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
246	SWC2	89-10-11					0.5 U	0.2 U	0.2 U	0.2 U		0.2 U	0.2 U	0.2 U
247	SWC2	89-10-17					0.5 U	0.2 U	0.2 U	0.2 U		0.2 U	0.2 U	0.2 U
248	SWC2	90-03-29	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
249	SWC2	90-03-30	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
250	SWC2	90-03-31	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
251	SWC2	90-04-03	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
252	SWC2	90-04-04	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
253	SWC2	90-04-05	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
246	SWC2	89-10-11	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.5 U	0.2 U	0.5 U		0.2 U		0.2 U
247	SWC2	89-10-17	0.2 U	0.2 U	0.2 U	0.5 U	1 U	0.5 U	0.2 U	0.5 U		0.2 U		0.2 U
248	SWC2	90-03-29	5 U	10 U	5 U	5 U	7 B	5 U	5 U	2 J	2 J	5 U	10 U	10 U
249	SWC2	90-03-30	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
250	SWC2	90-03-31	5 U	10 U	5 U	5 U	4 J	5 U	5 U	5 U	5 U	5 U	10 U	10 U
251	SWC2	90-04-03	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
252	SWC2	90-04-04	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
253	SWC2	90-04-05	5 U	10 U	5 U	5 U	2 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
254	SWC2	90-04-06	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
255	SWC2	90-04-07	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
256	SWC2	90-04-08	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
257	SWC2	90-04-09	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
258	SWC2	90-04-10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
259	SWC2	90-04-11	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
260	SWC2	90-04-12	7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
261	SWC2	90-04-13	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
254	SWC2	90-04-06	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
255	SWC2	90-04-07	10 U	10 U	10 U	20 B	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
256	SWC2	90-04-08	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
257	SWC2	90-04-09	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
258	SWC2	90-04-10	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
259	SWC2	90-04-11	10 U	10 U	10 U	8 JB	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
260	SWC2	90-04-12	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
261	SWC2	90-04-13	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
254	SWC2	90-04-06	5 U	10 U	5 U	5 U	1 J	5 U	5 U	5 U	5 U	5 U	10 U	10 U
255	SWC2	90-04-07	5 U	10 U	5 U	5 U	12 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
256	SWC2	90-04-08	5 U	10 U	5 U	5 U	1 J	5 U	5 U	5 U	5 U	5 U	10 U	10 U
257	SWC2	90-04-09	5 U	10 U	5 U	5 U	5 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
258	SWC2	90-04-10	5 U	10 U	5 U	5 U	4 JB	5 U	5 U	5 U	5 U	5 U	10 U	10 U
259	SWC2	90-04-11	5 U	10 U	5 U	5 U	6 B	5 U	5 U	5 U	5 U	5 U	10 U	10 U
260	SWC2	90-04-12	5 U	10 U	5 U	5 U	5 U	5 U	13	5 U	5 U	15	10 U	10 U
261	SWC2	90-04-13	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

	Station Number	Date Sampled	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,2-Dichloropropene	trans-1,3-Dichloropropene
262	SWC2	90-04-19	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
263	SWC2	90-04-26	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
264	SWC2	90-05-03	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U
265	SWC2	91-03-18	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U	0.2 U	0.2 U	0.2 U

	Station Number	Date Sampled	2-Butanone	2-Hexanone	4-Methyl-2-Pentanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
262	SWC2	90-04-19	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
263	SWC2	90-04-26	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
264	SWC2	90-05-03	10 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U
265	SWC2	91-03-18					0.5 U	0.2 U	0.2 U	0.2 U		0.2 U	1 U	0.2 U

	Station Number	Date Sampled	Chloroform	Chloromethane	Dibromochloromethane	Ethylbenzene	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Total Xylenes	Trichloroethene	Vinyl Acetate	Vinyl Chloride
262	SWC2	90-04-19	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
263	SWC2	90-04-26	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
264	SWC2	90-05-03	5 U	10 U	5 U	5 U	2 J	5 U	5 U	6	6	5 U	10 U	10 U
265	SWC2	91-03-18	0.2 U	0.2 U	0.2 U	0.5 U	2 U	0.5 U	0.2 U	0.5 U		0.2 U		0.2 U

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APPENDIX B-2

SURFACE WATER SAMPLING RESULTS

DISSOLVED METALS

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
1	SW050	- - DRY														
2	SW050	87-07-21	-			260			147000		-	-	-	-		
3	SW050	89-04-17 DRY														
4	SW050	89-05-10 DRY														
5	SW050	89-06-27	-	-	-	-	-	-	120000	-	-	-	-	-	-	-
6	SW050	89-07-18	320	-	-	255	-	-	116000	-	-	-	-	552	-	-
7	SW050	89-08-11 DRY														
8	SW050	89-09-12 DRY														
9	SW050	89-10-04 DRY														
10	SW050	89-11-03 DRY														
11	SW050	89-12-01 DRY														
12	SW050	90-01-05 DRY														
13	SW050	90-02-02 DRY														
14	SW050	90-03-17 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
1	SW050	- - DRY														
2	SW050	87-07-21	9600	495		-	-			-	9500	430			-	20 U
3	SW050	89-04-17 DRY														
4	SW050	89-05-10 DRY														
5	SW050	89-06-27	8430	148	-	-	-	-	-	-	8060	-	-	-	-	20 U
6	SW050	89-07-18	8110	161	0.2	-	-	-	-	-	7040	-	-	-	-	20 U
7	SW050	89-08-11 DRY														
8	SW050	89-09-12 DRY														
9	SW050	89-10-04 DRY														
10	SW050	89-11-03 DRY														
11	SW050	89-12-01 DRY														
12	SW050	90-01-05 DRY														
13	SW050	90-02-02 DRY														
14	SW050	90-03-17 DRY														

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
15	SW050	90-05-17	-	-	-	-	-	-	97300	-	-	-	-	-	-	-
16	SW050	90-06-25	-	-	-	219	-	-	123000	-	-	-	-	-	-	-
17	SW050	90-07-23	93.2 B	-	3.9 B	303	-	-	144000	-	31.6	-	15.4 B	34 B	15.3 N*	-
18	SW051	87-07-21	-			210			103000		-	-	-	-		
19	SW051	88-06-23 DRY														
20	SW051	89-04-17 DRY														
21	SW051	89-05-10 DRY														
22	SW051	89-06-27	-	-	-	-	-	-	98600	-	-	-	-	-	-	-
23	SW051	89-07-18 DRY														
24	SW051	89-08-11 DRY														
25	SW051	89-09-12 DRY														
26	SW051	89-10-04 DRY														
27	SW051	89-11-03 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
15	SW050	90-05-17	8330	50.6	-	-	-	-	-	-	9130	-	-	-	-	87.8
16	SW050	90-06-25	9840	144	-	-	-	-	-	-	8190	433	-	-	-	33.7
17	SW050	90-07-23	12000	304	-		-	3040 B	-	19.9	8570	469	-	86	19 B	18.5 B
18	SW051	87-07-21	7900	-		-	-			-	7800	400			-	20 U
19	SW051	88-06-23 DRY														
20	SW051	89-04-17 DRY														
21	SW051	89-05-10 DRY														
22	SW051	89-06-27	7540	-	-	-	-	-	-	-	8360	-	-	-	-	20 U
23	SW051	89-07-18 DRY														
24	SW051	89-08-11 DRY														
25	SW051	89-09-12 DRY														
26	SW051	89-10-04 DRY														
27	SW051	89-11-03 DRY														

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
28	SW051	89-12-01 DRY														
29	SW051	90-01-05 DRY														
30	SW051	90-02-02 DRY														
31	SW051	90-05-17	-	-	-	-	-	-	95700	-	-	-	-	-	-	-
32	SW052	87-07-21	-			-			110000		-	-	-	-		
33	SW052	89-04-17 DRY														
34	SW052	89-05-10 DRY														
35	SW052	89-06-09 DRY														
36	SW052	89-07-07 DRY														
37	SW052	89-08-11 DRY														
38	SW052	89-09-28 DRY														
39	SW052	89-10-04 DRY														
40	SW052	89-11-03 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
28	SW051	89-12-01 DRY														
29	SW051	90-01-05 DRY														
30	SW051	90-02-02 DRY														
31	SW051	90-05-17	8070	-	-	-	-	-	-	-	7320	-	-	-	-	247
32	SW052	87-07-21	13700	296		-	-			-	48000	490			-	20 U
33	SW052	89-04-17 DRY														
34	SW052	89-05-10 DRY														
35	SW052	89-06-09 DRY														
36	SW052	89-07-07 DRY														
37	SW052	89-08-11 DRY														
38	SW052	89-09-28 DRY														
39	SW052	89-10-04 DRY														
40	SW052	89-11-03 DRY														

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing

A=Acceptable with qualifications V=Valid and acceptable R=Rejected

Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
41	SW052	89-12-01 DRY														
42	SW052	90-01-05 DRY														
43	SW052	90-02-02 DRY														
44	SW052	90-03-17 DRY														
45	SW052	90-04-25	-	-	-	-	-	-	107000	-	-	-	-	-	-	-
46	SW052	90-05-17	-	-	-	-	-	-	85000	-	-	-	-	-	-	-
47	SW055	87-07-21	-			240			126000		-	-	-	-		
48	SW055	89-04-17	-	-	-	213	-	-	91700	-	-	-	-	128	-	79.5
49	SW055	89-06-28	-	-	-	224	-	-	109000	-	-	-	-	-	-	-
50	SW055	89-07-18	-	-	-	315	-	-	128000	-	-	-	-	-	-	155
51	SW055	89-08-16	-	-	-	302	-	-	129000	-	-	-	-	-	-	179
52	SW055	89-09-20	-	-	-	343	-	-	145000	-	-	-	-	-	-	116
53	SW055	89-10-19	-	-	-	252	-	-	117000	-	-	-	-	55.4	-	175

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
41	SW052	89-12-01 DRY														
42	SW052	90-01-05 DRY														
43	SW052	90-02-02 DRY														
44	SW052	90-03-17 DRY														
45	SW052	90-04-25	15100	-	-	-	-	-	-	-	36800	464	-	-	-	20 U
46	SW052	90-05-17	13600	-	-	-	-	-	-	-	36300	-	-	-	-	89.5
47	SW055	87-07-21	19700	22		-	-			-	35200	730			-	140
48	SW055	89-04-17	20000	374	-	20.1	-	-	-	-	41900	-	-	-	-	1260
49	SW055	89-06-28	18100	74	-	-	-	-	-	-	34200	-	-	-	-	551
50	SW055	89-07-18	26400	470	-	-	-	-	-	-	63900	-	-	-	-	290
51	SW055	89-08-16	26300	383	-	-	-	-	-	-	55400	-	-	-	-	989
52	SW055	89-09-20	28300	262	0.3	-	-	-	-	-	88500	-	-	-	-	893
53	SW055	89-10-19	23200	245	-	-	-	2420	-	-	66800	789	-	-	-	881

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
54	SW055	89-11-09	-	-	-	273	-	-	121000	-	-	-	-	-	-	161
55	SW055	89-12-07	-	-	-	292	-	-	118000	-	-	-	-	173	-	126
56	SW055	90-01-17	150	-	-	197	-	-	94600	-	-	-	-	1160	2.3	130
57	SW055	90-03-15	-	-	-	-	-	-	107000	-	-	-	-	-	-	-
58	SW055	90-04-24	-	-	-	221	-	-	115000	-	-	-	-	-	-	-
59	SW055	90-05-21	-	-	-	-	-	-	105000	-	-	-	-	-	-	-
60	SW057	87-07-21	-			600			156000		-	-	-	-		
61	SW057	88-06-23 DRY														
62	SW057	89-04-17 DRY														
63	SW057	89-05-10 DRY														
64	SW057	89-06-09 DRY														
65	SW057	89-07-07 DRY														
66	SW057	89-08-11 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
54	SW055	89-11-09	25700	260	-	-	-	-	-	-	68600	-	-	-	-	1100
55	SW055	89-12-07	27500	265	-	-	-	-	-	-	80300	927	-	-	-	1800
56	SW055	90-01-17	19000	539	-	-	-	1960	-	-	51900	610	-	-	-	690
57	SW055	90-03-15	16100	-	-	-	-	-	-	-	136000	-	-	-	-	28.5
58	SW055	90-04-24	16700	-	-	-	-	3460	-	-	44300	607	-	-	-	100 U
59	SW055	90-05-21	14900	16.3	-	-	-	-	-	-	21000	553	-	-	-	80.4
60	SW057	87-07-21	21900	381		-	-			-	20700	790			-	20 U
61	SW057	88-06-23 DRY														
62	SW057	89-04-17 DRY														
63	SW057	89-05-10 DRY														
64	SW057	89-06-09 DRY														
65	SW057	89-07-07 DRY														
66	SW057	89-08-11 DRY														

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Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
67	SW057	89-09-16 DRY														
68	SW057	89-10-04 DRY														
69	SW057	89-11-03 DRY														
70	SW057	89-12-01 DRY														
71	SW057	90-01-05 DRY														
72	SW057	90-02-02 DRY														
73	SW057	90-03-17 DRY														
74	SW058	87-07-21	-			-			113000		-	-	-	-		
75	SW058	89-04-17 DRY														
76	SW058	89-05-10 DRY														
77	SW058	89-06-28	-	-	-	204	-	-	101000	-	-	-	-	-	-	-
78	SW058	89-07-14 DRY														
79	SW058	89-08-11 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
67	SW057	89-09-16 DRY														
68	SW057	89-10-04 DRY														
69	SW057	89-11-03 DRY														
70	SW057	89-12-01 DRY														
71	SW057	90-01-05 DRY														
72	SW057	90-02-02 DRY														
73	SW057	90-03-17 DRY														
74	SW058	87-07-21	13800	31		-	-			-	11600	590			-	20 U
75	SW058	89-04-17 DRY														
76	SW058	89-05-10 DRY														
77	SW058	89-06-28	11500	-	-	-	-	-	-	-	9260	478	-	-	-	20.9
78	SW058	89-07-14 DRY														
79	SW058	89-08-11 DRY														

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
80	SW058	89-09-20 DRY														
81	SW058	89-10-04 DRY														
82	SW058	89-11-20 DRY														
83	SW058	89-12-01 DRY														
84	SW058	90-01-05 DRY														
85	SW058	90-02-02 DRY														
86	SW058	90-05-17	-	-	-	-	-	-	91500	-	-	-	-	-	-	-
87	SW058	90-07-23	31.7 B	29.9 B	2 B	218	-	-	136000	-	6.2 B	-	-	36.7 B	-	45.5 B
88	SW077	89-03-30 DRY														
89	SW077	89-05-11 DRY														
90	SW077	89-06-27	-	-	-	-	-	-	116000	-	-	-	-	-	-	-
91	SW077	89-07-18 DRY														
92	SW077	89-08-16	-	-	-	-	-	-	72300	-	-	-	-	-	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
80	SW058	89-09-20 DRY														
81	SW058	89-10-04 DRY														
82	SW058	89-11-20 DRY														
83	SW058	89-12-01 DRY														
84	SW058	90-01-05 DRY														
85	SW058	90-02-02 DRY														
86	SW058	90-05-17	10400	-	-	-	-	-	-	-	9290	-	-	-	-	41.7
87	SW058	90-07-23	21100	126	-	-	-	1410 B	1 B	2 B	20300	810	-	32.8 B	10.8 B	9.3 B
88	SW077	89-03-30 DRY														
89	SW077	89-05-11 DRY														
90	SW077	89-06-27	23900	52.5	-	-	-	-	13.4	-	43400	591	-	-	-	28.6
91	SW077	89-07-18 DRY														
92	SW077	89-08-16	13700	256	0.3	-	-	9040	-	-	23600	-	-	-	-	35.4

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
93	SW077	89-09-20 DRY														
94	SW077	89-10-04 DRY														
95	SW077	89-11-09 DRY														
96	SW077	89-12-01 DRY														
97	SW077	90-01-05 DRY														
98	SW077	90-02-02 DRY														
99	SW077	90-05-21	-	-	-	-	-	-	105000	-	-	-	-	-	-	-
100	SW077	90-06-25	-	-	-	-	-	-	94700	-	-	-	-	-	-	-
101	SW077	90-07-23	25 B	22.4 B	1 B	152 B	-	-	101000	-	6.6 B	-	-	56.8 B	-	-
102	SW053	87-07-21	-			-			80000		-	-	-	-		
103	SW053	89-05-23	-	-	-	-	-	-	104000	-	-	-	-	2660	-	23.2
104	SW053	89-06-26	-	-	-	-	-	-	119000	-	-	-	-	673	-	-
105	SW053	89-07-19 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
93	SW077	89-09-20 DRY														
94	SW077	89-10-04 DRY														
95	SW077	89-11-09 DRY														
96	SW077	89-12-01 DRY														
97	SW077	90-01-05 DRY														
98	SW077	90-02-02 DRY														
99	SW077	90-05-21	22200	134	-	-	-	-	12.4	-	53900	566	-	-	-	76.9
100	SW077	90-06-25	22000	224	-	-	-	-	-	-	56100	575	-	-	-	92.1
101	SW077	90-07-23	23500	436	-	4.7 B	-	3950 B	1 B	-	50000	594	-	-	9.6 B	8.9 B
102	SW053	87-07-21	26400	87		-	-			-	113000	690			-	20 U
103	SW053	89-05-23	27700	587	-	-	-	-	-	-	19600	-	-	-	-	20 U
104	SW053	89-06-26	30500	458	-	-	-	-	-	-	17400	789	-	-	-	37.1
105	SW053	89-07-19 DRY														

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
106	SW053	89-08-15	-	-	-	228	-	-	140000	-	-	-	-	8540	-	-
107	SW053	89-09-20	-	133	-	207	-	-	127000	-	-	-	-	3690	-	-
108	SW053	89-11-07	-	-	-	-	-	-	123000	-	-	-	-	2470	-	-
109	SW053	89-12-15	-	-	-	-	-	-	112000	-	-	-	-	2790	2.9	-
110	SW053	90-01-17	34.6	-	-	144	-	-	123000	-	-	-	-	172	8.4	44
111	SW053	90-05-21	-	-	-	-	-	-	81700	-	-	-	-	-	-	-
112	SW053	90-07-23	36.7 B	18.8 B	2 B	229	-	-	152000	-	6.9 B	-	-	4050	-	26 B
113	SW063	87-07-24	-			-			112000		-	-	-	-		
114	SW063	89-03-28 DRY														
115	SW063	89-05-12 DRY														
116	SW063	89-06-21 DRY														
117	SW063	89-07-19 DRY														
118	SW063	89-08-11 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
106	SW053	89-08-15	26400	538	-	-	-	-	-	-	14300	-	-	-	-	20 U
107	SW053	89-09-20	21500	436	-	-	-	-	-	-	15400	-	-	-	-	20 U
108	SW053	89-11-07	23900	309	-	-	-	-	-	-	18400	631	-	-	-	37.9
109	SW053	89-12-15	25700	375	-	-	-	-	-	-	19700	622	-	-	-	30
110	SW053	90-01-17	38000	71	-	-	-	2730	-	-	46800	899	-	-	-	15.5
111	SW053	90-05-21	35500	102	-	-	-	-	-	-	61500	788	-	-	-	50.8
112	SW053	90-07-23	39300	445	-	4.5 B	-	1030 B	-	-	22500	1100	-	27 B	9.6 B	33.4
113	SW063	87-07-24	34000	393		-	-			-	110000	1070			-	30
114	SW063	89-03-28 DRY														
115	SW063	89-05-12 DRY														
116	SW063	89-06-21 DRY														
117	SW063	89-07-19 DRY														
118	SW063	89-08-11 DRY														

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
119	SW063	89-09-15 DRY														
120	SW063	89-10-04 DRY														
121	SW063	89-11-03 DRY														
122	SW063	89-12-01 DRY														
123	SW063	90-01-05 DRY														
124	SW063	90-02-02 DRY														
125	SW064	87-07-22	-			-			45800		-	-	-	-		
126	SW064	88-05-22	-	-	-	-	-	-	63100	-	-	-	-	-	-	94.6
127	SW064	89-03-30 DRY														
128	SW064	89-06-27	-	-	-	-	-	-	71600	-	-	-	-	-	-	-
129	SW064	89-07-19 DRY														
130	SW064	89-08-11 DRY														
131	SW064	89-09-20 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
119	SW063	89-09-15 DRY														
120	SW063	89-10-04 DRY														
121	SW063	89-11-03 DRY														
122	SW063	89-12-01 DRY														
123	SW063	90-01-05 DRY														
124	SW063	90-02-02 DRY														
125	SW064	87-07-22	54200	-		-	-			-	103000	1100			-	20 U
126	SW064	88-05-22	45300	36.4	-	-	-	-	13	-	110000	1140	-	-	-	20 U
127	SW064	89-03-30 DRY														
128	SW064	89-06-27	51800	29	-	-	-	-	-	-	106000	1170	-	-	-	32
129	SW064	89-07-19 DRY														
130	SW064	89-08-11 DRY														
131	SW064	89-09-20 DRY														

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
132	SW064	89-10-04 DRY														
133	SW064	89-11-09 DRY														
134	SW064	89-12-01 DRY														
135	SW064	90-01-05 DRY														
136	SW064	90-02-02 DRY														
137	SW064	90-04-25	358	-	-	-	-	-	83800	-	-	-	-	322	-	-
138	SW064	90-05-22	-	-	-	-	-	-	85000	-	-	-	-	-	7	-
139	SW064	90-06-18	-	-	-	-	-	-	80600	-	-	-	-	-	-	-
140	SW064	90-07-24	36.3 B	30.6 B	-	116 B	-	-	90700	-	-	-	-	13.7 B	-	101
141	SW064	90-08-23	39.2 B	24.4 B	-	94.1 B	-	-	77300	-	12.7	-	-	-	-	117
142	SW064	90-10-23	60.2 B	17.8 B	-	74.6 BE	-	-	82600	-	13.4	5.4 B	12 B	16.2 B	-	130
143	SW070	89-03-29	-	-	-	-	-	-	65200	-	-	-	-	-	-	14.8
144	SW070	89-05-16	-	-	-	-	-	-	37800	-	-	-	-	-	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
132	SW064	89-10-04 DRY														
133	SW064	89-11-09 DRY														
134	SW064	89-12-01 DRY														
135	SW064	90-01-05 DRY														
136	SW064	90-02-02 DRY														
137	SW064	90-04-25	56300	16.8	-	-	-	-	64.5	-	118000	1310	-	-	-	31.7
138	SW064	90-05-22	58700	18.9	-	-	-	-	6.6	-	119000	1370	-	-	-	55.3
139	SW064	90-06-18	57400	48.6	-	-	-	-	-	-	114000	1350	-	-	-	26.6
140	SW064	90-07-24	64000	77.2	-	11 B	-	482 B	1 BW	-	131000	1530	-	50.5 B	8.4 B	19.7 B
141	SW064	90-08-23	59400	45.8	-	11.3 B	-	603 B	1 B	-	125000	1320	-	52.5 B	9.6 B	21.5
142	SW064	90-10-23	62300	194	0.23	16 B	11.4 B	1560 B	17	5.1 B	142000 E	1350	-	64.7 B	11.7 B	15.5 B
143	SW070	89-03-29	14800	27.8	-	-	-	-	-	-	36200	435	-	-	-	25.6
144	SW070	89-05-16	8120	-	-	-	-	-	-	-	19200	-	-	-	-	20 U

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	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
145	SW070	89-06-23	-	-	-	-	-	-	61800	-	-	-	-	-	-	-
146	SW070	89-07-20	-	-	-	-	-	-	39700	-	-	-	-	-	-	-
147	SW070	89-09-26	-	-	-	-	-	-	69900	-	-	-	-	-	-	-
148	SW070	89-10-23	53.6	-	-	79.8	-	-	61500	-	-	-	33.1	90.8	3.9	11
149	SW070	89-11-16	-	-	-	-	-	-	87100	-	-	-	-	-	-	-
150	SW070	89-12-13	-	-	-	202	-	-	62900	-	-	-	23.3	95.8	2.7	10
151	SW070	90-01-11	-	-	-	103	-	-	57100	-	-	-	-	35.9	3.3	11
152	SW070	90-02-07	-	-	-	-	-	-	61300	-	-	-	-	-	-	-
153	SW070	90-03-15	-	-	-	-	-	-	63500	-	-	-	-	-	-	-
154	SW070	90-04-19	-	-	-	-	-	-	79500	-	-	-	-	-	-	-
155	SW070	90-05-15	254	-	-	-	-	-	64300	-	-	-	-	197	-	-
156	SW070	90-06-12	-	-	-	-	-	-	50100	-	-	-	-	-	-	-
157	SW070	90-07-18	19.5 B	17.9 B	2 BWN	57.4 B	-	-	52800	-	-	-	-	14.7 B	-	8 B
158	SW070	90-12-10	40.2 B	-	-	139 B	-	-	82000	-	7.1 B	-	6.8 B	24.3 B	-	8.5 B

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
145	SW070	89-06-23	16500	41.4	-	-	-	-	-	-	29700	455	-	-	-	20.9
146	SW070	89-07-20	16200	72.2	-	-	-	5410	-	-	35300	-	-	-	-	20 U
147	SW070	89-09-26	17100	20.7	-	-	-	-	-	-	31400	-	-	-	-	24.8
148	SW070	89-10-23	15200	20.4	-	-	-	2750	-	-	30500	441	-	-	-	14.4
149	SW070	89-11-16	19600	23.6	0.2	-	-	-	-	-	38600	-	-	-	-	20 U
150	SW070	89-12-13	13500	91	-	-	-	5250	-	-	32100	391	-	-	-	10 U
151	SW070	90-01-11	12100	14.7	-	-	-	3540	-	-	27700	356	-	-	-	10 U
152	SW070	90-02-07	12900	-	0.2	-	-	-	-	-	40100	-	-	-	-	20 U
153	SW070	90-03-15	13100	-	-	-	-	-	-	-	44000	-	-	-	-	20 U
154	SW070	90-04-19	18200	-	-	-	-	-	-	-	38400	-	-	-	-	20 U
155	SW070	90-05-15	15600	-	-	-	-	-	-	-	31700	-	-	-	-	44.2
156	SW070	90-06-12	14400	21.4	-	-	-	-	-	-	27300	-	-	-	-	20 U
157	SW070	90-07-18	15800	70.4	-	3.1 B	-	2530 B	-	-	33300	411	-	17 B	3.3 B	5.7 B
158	SW070	90-12-10	16800	10.5 B	-	3.6 B	-	3120 B	1 B	-	38500	484	-	13.5 B	4.6 B	11.5 B

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Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
159	SW030	86-08-20 DRY														
160	SW030	87-05-26		-	-			-		-					-	-
161	SW030	89-03-28	-	-	-	-	-	-	57400	-	-	-	-	103	-	-
162	SW030	89-05-16	380	-	-	-	-	-	36400	-	-	-	-	359	-	-
163	SW030	89-06-22	-	-	-	-	-	-	43100	-	-	-	-	-	-	-
164	SW030	89-07-20 DRY														
165	SW030	89-09-25														
166	SW030	89-10-20	-	-	-	-	-	-	40000	-	-	-	-	36.1	2	9
167	SW030	89-11-09 DRY														
168	SW030	89-12-01 DRY														
169	SW030	90-01-05 DRY														
170	SW030	90-02-02 DRY														
171	SW030	90-03-15	-	-	-	-	-	-	60900	-	-	-	-	-	-	-
172	SW030	90-05-15	-	-	-	-	-	-	61900	-	-	-	-	-	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
159	SW030	86-08-20 DRY														
160	SW030	87-05-26			-			-	-				-			20 U
161	SW030	89-03-28	12900	-	-	-	-	-	-	-	29200	352	-	-	-	20 U
162	SW030	89-05-16	7780	-	-	-	-	-	-	-	18000	-	-	-	-	20 U
163	SW030	89-06-22	15100	-	-	-	-	-	-	-	33000	-	-	-	-	20 U
164	SW030	89-07-20 DRY														
165	SW030	89-09-25			-											
166	SW030	89-10-20	8330	-	-	-	-	2260	-	-	17000	253	-	-	-	10 U
167	SW030	89-11-09 DRY														
168	SW030	89-12-01 DRY														
169	SW030	90-01-05 DRY														
170	SW030	90-02-02 DRY														
171	SW030	90-03-15	12500	-	-	-	-	-	-	-	45900	-	-	-	-	24.3
172	SW030	90-05-15	15500	-	-	-	-	-	-	-	32800	-	-	-	-	38

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
173	SW030	90-06-11	-	-	-	-	-	-	37400	-	-	-	-	-	-	-
174	SW030	90-09-12	18.9 B	25.8 B	1 B	42.8 B	-	2.3 B	32900	-	7.7 B	4.3 B	9.6 B	19.4 B	-	-
175	SW030	90-10-03	50.5 B	16.4 B	-	88.8 B	-	-	71500	-	12.7	-	14.2 B	19.6 B	-	8 B
176	SW054	87-07-15 DRY														
177	SW054	89-03-21	-	-	-	-	-	-	41600	-	-	-	-	-	-	-
178	SW054	89-05-18	-	-	-	-	-	-	33600	-	-	-	-	-	-	-
179	SW054	89-06-22	-	-	-	250	-	-	65600	-	-	-	-	-	-	-
180	SW054	89-07-19	-	-	11.7	-	-	-	57800	-	-	-	-	575	-	-
181	SW054	89-08-15	-	-	-	-	-	-	38800	-	-	-	-	109	-	-
182	SW054	89-09-21	-	-	-	-	-	-	44200	-	-	-	-	-	-	-
183	SW054	89-10-12	-	-	-	-	-	-	55300	-	-	-	-	-	114	-
184	SW054	89-11-03	-	-	-	78.1	2.4	-	47100	-	-	-	-	37.2	-	13
185	SW054	90-02-12	-	-	-	-	-	-	55100	-	-	-	-	-	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
173	SW030	90-06-11	13200	-	-	-	-	-	-	-	29600	-	-	-	-	26
174	SW030	90-09-12	10400	14 B	-	8.2 B	7.7 B	2640 B	1 B	3.3 B	26600	231	-	18.9 B	6 B	10.4 B
175	SW030	90-10-03	16200	7.3 B	-	5.5 B	-	2620 B	-	5.9 B	28500	427	-	19.4 B	6.9 B	8.1 B
176	SW054	87-07-15 DRY														
177	SW054	89-03-21	9980	-	-	-	-	-	-	-	29300	342	-	-	-	1390
178	SW054	89-05-18	7890	19.9	-	-	-	-	-	-	23900	-	-	-	-	20 U
179	SW054	89-06-22	15000	1180	-	-	-	5320	-	-	36300	-	-	-	-	20 U
180	SW054	89-07-19	12200	268	-	-	-	5820	-	-	26400	-	-	-	-	20 U
181	SW054	89-08-15	7420	36.8	-	-	-	-	-	-	13900	-	-	-	-	20 U
182	SW054	89-09-21	9380	-	-	-	-	-	-	-	17200	-	-	-	-	23.2
183	SW054	89-10-12	15600	73.1	-	-	-	-	-	27.7	39800	417	-	-	-	38.4
184	SW054	89-11-03	10100	-	-	-	-	4790	-	-	29200	299	-	-	-	10 U
185	SW054	90-02-12	11000	29	-	-	-	-	-	-	32600	-	-	-	-	20 U

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
186	SW054	90-05-14	-	-	-	-	-	-	45700	-	-	-	-	-	-	-
187	SW054	90-06-13	-	-	-	-	-	-	51600	-	-	-	-	-	-	-
188	SW054	90-11-19	47.1 B	9.8 B	-	113 B	-	-	69200	200 B	9 B	-	6.6 B	-	-	7.2 B
189	SW062	87-07-22	-			-			67900		-	-	-	-		
190	SW062	89-03-28	-	-	-	-	-	-	23700	-	-	-	-	113	-	-
191	SW062	89-05-23	-	-	-	-	-	-	48900	-	-	-	-	-	-	-
192	SW062	89-06-22	-	-	-	-	-	-	57600	-	-	-	-	-	-	-
193	SW062	89-07-19	-	-	-	-	-	-	100000	-	-	-	-	-	-	-
194	SW062	89-08-15	-	-	-	-	-	-	111000	-	-	-	-	394	-	-
195	SW062	89-09-15	-	-	-	-	-	-	59100	-	-	-	-	-	-	-
196	SW062	89-10-12	-	-	-	-	-	-	60500	-	-	-	-	-	-	-
197	SW062	89-11-08	-	-	-	-	-	-	49000	-	-	-	-	-	-	-
198	SW062	90-01-18	-	-	-	76.8	-	-	45100	-	-	-	-	56.3	-	11

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
186	SW054	90-05-14	12200	-	-	-	-	-	-	-	27800	-	-	-	-	130
187	SW054	90-06-13	15100	93.3	-	-	-	-	-	-	44300	-	-	-	-	20 U
188	SW054	90-11-19	15300	5.1 B	-	5.2 B	-	4090 B	-	3.1 B	32600	436	-	14.7 B	6.3 B	11.8 B
189	SW062	87-07-22	29600	16		-	-			-	99400	970			-	20 U
190	SW062	89-03-28	5580	-	-	-	-	-	-	-	23800	127	-	-	-	20 U
191	SW062	89-05-23	11200	94	-	-	-	-	-	-	36500	-	-	-	-	20 U
192	SW062	89-06-22	13800	150	-	-	-	-	-	-	43000	-	-	-	-	20 U
193	SW062	89-07-19	29500	579	-	-	-	-	-	-	99000	-	-	-	-	20 U
194	SW062	89-08-15	26800	232	-	-	-	-	-	-	74700	-	-	-	-	20 U
195	SW062	89-09-15	13700	-	-	-	-	-	-	-	44600	-	-	-	-	20 U
196	SW062	89-10-12	14500	30.6	-	-	-	-	-	-	46600	386	-	-	-	22.8
197	SW062	89-11-08	11200	-	-	-	-	-	-	-	32700	284	-	-	-	20 U
198	SW062	90-01-18	9360	-	-	-	-	1240	-	-	24800	248	-	-	-	10 U

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
199	SW062	90-05-22	-	-	-	-	-	-	55200	-	-	-	-	-	-	-
200	SW062	90-06-18	-	-	-	-	-	-	38400	-	-	-	-	-	-	-
201	SW062	90-07-24	-	21.8 B	-	79 B	-	-	40300	-	-	-	-	69.7 B	-	5.6 B
202	SW062	90-08-22	18.5 B	-	-	91.3 B	-	-	44200	-	-	-	-	46 B	-	11.4 B
203	SW027		-	-	-	-	-	-	57500	-	-	-	-	-	-	
204	SW027	87-07-22	-			-			78600		-	-	-	-		
205	SW027	89-03-21	-	-	-	-	-	-	51500	-	-	-	-	-	-	-
206	SW027	89-05-18	-	-	-	-	-	-	53400	-	-	-	-	-	-	15.6
207	SW027	89-06-22	-	-	-	-	-	-	70000	-	-	-	-	-	-	-
208	SW027	89-07-17	-	-	-	-	-	-	72300	-	-	-	-	-	-	-
209	SW027	89-09-15	-	-	-	-	-	-	45900	-	-	-	-	-	-	-
210	SW027	89-10-11	-	-	-	93.5	-	-	52700	-	-	-	-	53.4	4.8	19
211	SW027	89-11-08	-	-	-	-	-	-	69600	-	-	-	-	-	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
199	SW062	90-05-22	12200	71.7	-	-	-	-	-	13.8	32100	330	-	-	-	23.7
200	SW062	90-06-18	8400	43	-	-	-	-	-	-	21700	-	-	-	-	37
201	SW062	90-07-24	8000	63.8	-	-	-	1780 B	1 B	-	20700	224	-	22.1 B	-	10 B
202	SW062	90-08-22	9210	88.2	-	-	-	1500 B	-	-	21300	243	1 BW	-	5.1 B	2 U
203	SW027		19000	-	-	-	-	3950	-	-	45000	420	-		-	20 U
204	SW027	87-07-22	16100	153		-	-			-	49800	520			-	40
205	SW027	89-03-21	11400	-	-	-	-	-	-	-	36700	423	-	-	-	20 U
206	SW027	89-05-18	10600	29.9	-	-	-	-	-	-	39300	-	-	-	-	20 U
207	SW027	89-06-22	13400	51.1	-	-	-	7520	-	-	45300	-	-	-	-	20 U
208	SW027	89-07-17	14700	58.3	-	-	-	-	-	-	44700	-	-	-	-	23.4
209	SW027	89-09-15	8000	-	-	-	-	8530	-	-	32300	-	-	-	-	46.5
210	SW027	89-10-11	9290	19.7	-	-	-	7410	2.2	-	32800	297	-	-	-	86.2
211	SW027	89-11-08	15000	44.2	-	-	-	-	-	-	50700	474	-	-	-	20 U

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Metal Results, All Dissolved Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
212	SW027	90-02-12	-	-	-	-	-	-	73700	-	-	-	-	-	-	-
213	SW027	90-05-14	-	-	-	-	-	-	70300	-	-	-	-	-	-	-
214	SW027	90-06-11	-	-	-	-	-	-	80700	-	-	-	-	-	-	-
215	SW027	90-07-18	54.3 B	51 B	2 BWM	153 B	-	2.2 B	73200	-	-	7 B	10.9 B	153	-	16 B
216	SW027	90-09-12	44.1 B	30.3 B	-	142 B	-	2.2 B	68100	-	12.9	5.8 B	10.1 B	58.7 B	-	10 B
217	SWC2		-	-	-	240	20	-	20600	-	21	-	-	-	-	
218	SWC2	89-07-19	-	-	-	-	-	-	29900	-	-	-	-	-	-	-
219	SWC2	89-07-20	-	-	-	-	-	-	40200	-	-	-	-	155	-	-
220	SWC2	89-07-21	-	-	-	-	-	-	37900	-	-	-	-	178	-	-
221	SWC2	89-08-02	-	-	-	-	-	-	34700	-	-	-	-	-	-	-
222	SWC2	89-08-24	-	-	-	-	-	-	36400	-	-	-	-	-	-	-
223	SWC2	89-08-25	-	-	-	-	-	-	36500	-	-	-	-	-	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
212	SW027	90-02-12	13600	18.6	0.2	-	-	-	-	-	45800	-	-	-	-	24
213	SW027	90-05-14	14500	83.7	-	-	-	-	-	-	52300	-	-	-	-	47.6
214	SW027	90-06-11	16300	282	-	-	-	-	-	-	54900	-	-	-	-	20 U
215	SW027	90-07-18	14700	441	-	9.5 B	11.3 B	4150 B	-	-	49600	484	-	16.5 B	8.4 B	42.6
216	SW027	90-09-12	14100	180	-	10.3 B	7 B	3640 B	2 BW	5 B	40600	449	-	28.6 B	8.4 B	10.6 B
217	SWC2		10300	-	-	100	-	-	-	-	33900	230	-		-	5 U
218	SWC2	89-07-19	10300	-	-	-	-	6280	-	-	32800	-	-	-	-	20 U
219	SWC2	89-07-20	10000	2430	-	-	-	5820	-	-	29900	-	-	-	-	20 U
220	SWC2	89-07-21	10100	1970	-	-	-	5970	-	-	34600	-	-	-	-	20 U
221	SWC2	89-08-02	10400	90.4	-	-	-	8180	-	-	32000	-	-	-	-	20 U
222	SWC2	89-08-24	10300	-	-	-	-	7170	-	-	32500	245	-	-	-	39.2
223	SWC2	89-08-25	11200	289	-	-	-	5410	-	-	34900	-	-	-	-	103

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
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APPENDIX B-3

SURFACE WATER SAMPLING RESULTS

TOTAL METALS

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Metal Results, All Total Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
1	SW050	- - DRY														
2	SW050	89-04-17 DRY														
3	SW050	89-05-10 DRY														
4	SW050	89-06-27	7840	-	-	317	-	-	122000	-	14.8	-	-	14000	17.9	-
5	SW050	89-08-11 DRY														
6	SW050	89-09-12 DRY														
7	SW050	89-10-04 DRY														
8	SW050	89-11-03 DRY														
9	SW050	89-12-01 DRY														
10	SW050	90-01-05 DRY														
11	SW050	90-02-02 DRY														
12	SW050	90-03-17 DRY														
13	SW050	90-05-17	-	-	-	-	-	-	88300	-	-	-	-	-	-	-
14	SW050	90-06-25	319	-	-	228	-	-	120000	-	-	-	-	640	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
1	SW050	- - DRY														
2	SW050	89-04-17 DRY														
3	SW050	89-05-10 DRY														
4	SW050	89-06-27	11700	861	0.2	-	-	-	-	-	8640	-	-	108	-	50.9
5	SW050	89-08-11 DRY														
6	SW050	89-09-12 DRY														
7	SW050	89-10-04 DRY														
8	SW050	89-11-03 DRY														
9	SW050	89-12-01 DRY														
10	SW050	90-01-05 DRY														
11	SW050	90-02-02 DRY														
12	SW050	90-03-17 DRY														
13	SW050	90-05-17	7470	-	-	-	-	-	-	-	7730	-	-	-	-	158
14	SW050	90-06-25	9800	452	-	-	-	-	-	-	7980	427	-	-	-	54.6

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Metal Results, All Total Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
5	SW050	90-07-23	93.2 B	-	3.9 B	303	-	-	144000	-	31.6	-	15.4 B	34 B	15.3 N*	-
6	SW051	88-06-23 DRY														
7	SW051	89-04-17 DRY														
8	SW051	89-05-10 DRY														
9	SW051	89-07-18 DRY														
0	SW051	89-08-11 DRY														
1	SW051	89-09-12 DRY														
2	SW051	89-10-04 DRY														
3	SW051	89-11-03 DRY														
4	SW051	89-12-01 DRY														
5	SW051	90-01-05 DRY														
6	SW051	90-02-02 DRY														
7	SW051	90-05-17	224	-	-	-	-	-	91100	-	-	-	-	412	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
5	SW050	90-07-23	12000	304	-		-	3040 B	-	19.9	8570	469	-	86	19 B	18.5 B
6	SW051	88-06-23 DRY														
7	SW051	89-04-17 DRY														
8	SW051	89-05-10 DRY														
9	SW051	89-07-18 DRY														
0	SW051	89-08-11 DRY														
1	SW051	89-09-12 DRY														
2	SW051	89-10-04 DRY														
3	SW051	89-11-03 DRY														
4	SW051	89-12-01 DRY														
5	SW051	90-01-05 DRY														
6	SW051	90-02-02 DRY														
7	SW051	90-05-17	7620	244	-	-	-	-	-	-	9040	-	-	-	-	208

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Metal Results, All Total Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
28	SW052	89-04-17 DRY														
29	SW052	89-05-10 DRY														
30	SW052	89-06-09 DRY														
31	SW052	89-07-07 DRY														
32	SW052	89-08-11 DRY														
33	SW052	89-09-28 DRY														
34	SW052	89-10-04 DRY														
35	SW052	89-11-03 DRY														
36	SW052	89-12-01 DRY														
37	SW052	90-01-05 DRY														
38	SW052	90-02-02 DRY														
39	SW052	90-03-17 DRY														
40	SW052	90-04-25	249	-	-	-	-	-	104000	-	-	-	-	278	3.9	-
41	SW052	90-05-17	-	-	-	-	-	-	83800	-	-	-	-	-	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
28	SW052	89-04-17 DRY														
29	SW052	89-05-10 DRY														
30	SW052	89-06-09 DRY														
31	SW052	89-07-07 DRY														
32	SW052	89-08-11 DRY														
33	SW052	89-09-28 DRY														
34	SW052	89-10-04 DRY														
35	SW052	89-11-03 DRY														
36	SW052	89-12-01 DRY														
37	SW052	90-01-05 DRY														
38	SW052	90-02-02 DRY														
39	SW052	90-03-17 DRY														
40	SW052	90-04-25	14900	-	-	-	-	-	-	-	36700	452	-	-	-	45
41	SW052	90-05-17	12800	-	-	-	-	-	-	-	34800	-	-	-	-	85.6

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Metal Results, All Total Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
42	SW055	89-04-17	6400	-	-	307	6.9	-	104000	-	12.7	-	29.5	6200	15.5	83.1
43	SW055	89-06-28	28300	-	-	573	-	-	107000	-	28.8	-	57	26700	57.6	104
44	SW055	89-07-18	14700	-	-	492	-	-	156000	-	11.3	-	29.2	13100	27.3	172
45	SW055	89-08-16	267	-	-	308	-	-	128000	-	-	-	-	186	-	180
46	SW055	89-09-20	-	-	-	346	-	-	142000	-	-	-	-	187	-	132
47	SW055	89-10-19	548	-	2.4	269	-	-	118000	-	-	-	-	774	4.5	3200
48	SW055	89-11-09	222	-	-	295	-	-	127000	-	-	-	-	264	-	165
49	SW055	89-12-07	-	-	-	286	-	-	118000	-	-	-	-	-	-	122
50	SW055	90-01-17	46700	-	6.7	846	-	-	137000	-	47.8	28.5	76.6	49800	80	170
51	SW055	90-03-15	2590	-	-	211	-	-	104000	-	-	-	-	3480	-	-
52	SW055	90-04-24	-	-	-	238	-	-	124000	-	-	-	-	133	-	-
53	SW055	90-05-21	8530	-	-	328	-	-	124000	-	-	-	-	9360	9	-
54	SW057	88-06-23 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
42	SW055	89-04-17	21100	464	0.5	27.5	-	-	-	-	42300	-	-	-	-	2300
43	SW055	89-06-28	26400	771	-	-	-	7260	-	-	36600	-	-	141	85.2	2840
44	SW055	89-07-18	31100	954	-	-	-	6320	-	-	69500	-	-	-	-	1930
45	SW055	89-08-16	26100	363	-	-	-	-	-	-	57200	-	-	-	-	944
46	SW055	89-09-20	27900	267	0.6	-	-	-	-	-	86900	-	-	-	-	976
47	SW055	89-10-19	24100	280	-	-	-	2310	-	-	67400	812	-	-	-	1010
48	SW055	89-11-09	27500	290	0.3	-	-	-	-	-	74200	-	-	-	-	1320
49	SW055	89-12-07	27400	266	-	-	-	-	-	-	79200	914	-	-	-	1720
50	SW055	90-01-17	30700	1280	0.2	-	45.5	11200	-	-	46300	836	-	-	111	7210
51	SW055	90-03-15	16000	63.6	-	-	-	5210	-	-	132000	-	-	-	-	83.4
52	SW055	90-04-24	17800	-	-	-	-	3480	-	-	46400	645	-	-	-	100 U
53	SW055	90-05-21	17900	224	-	-	-	-	-	-	19800	614	-	-	-	660
54	SW057	88-06-23 DRY														

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Metal Results, All Total Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
5	SW057	89-04-17 DRY														
6	SW057	89-05-10 DRY														
7	SW057	89-06-09 DRY														
8	SW057	89-07-07 DRY														
9	SW057	89-08-11 DRY														
0	SW057	89-09-16 DRY														
1	SW057	89-10-04 DRY														
2	SW057	89-11-03 DRY														
3	SW057	89-12-01 DRY														
4	SW057	90-01-05 DRY														
5	SW057	90-02-02 DRY														
6	SW057	90-03-17 DRY														
7	SW058	89-04-17 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
5	SW057	89-04-17 DRY														
6	SW057	89-05-10 DRY														
7	SW057	89-06-09 DRY														
8	SW057	89-07-07 DRY														
9	SW057	89-08-11 DRY														
0	SW057	89-09-16 DRY														
1	SW057	89-10-04 DRY														
2	SW057	89-11-03 DRY														
3	SW057	89-12-01 DRY														
4	SW057	90-01-05 DRY														
5	SW057	90-02-02 DRY														
6	SW057	90-03-17 DRY														
7	SW058	89-04-17 DRY														

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Metal Results, All Total Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
68	SW058	89-05-10 DRY														
69	SW058	89-06-28	550	-		212	-	-	97900	-	-	-	32.1	842	-	-
70	SW058	89-07-14 DRY														
71	SW058	89-08-11 DRY														
72	SW058	89-09-20 DRY														
73	SW058	89-10-04 DRY														
74	SW058	89-11-20 DRY														
75	SW058	89-12-01 DRY														
76	SW058	90-01-05 DRY														
77	SW058	90-02-02 DRY														
78	SW058	90-05-17	1340	-	-	-	-	-	92800	-	-	-	-	1690	-	-
79	SW058	90-07-23	180 B	16.4 B	-	214	-	-	134000	-	16.6	7.9 B	9.8 B	293	8.9	48.8 B
80	SW077	89-03-30 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
68	SW058	89-05-10 DRY														
69	SW058	89-06-28	11300	45.7	-	-	-	-	-	-	8590	468	-	-	-	54.4
70	SW058	89-07-14 DRY														
71	SW058	89-08-11 DRY														
72	SW058	89-09-20 DRY														
73	SW058	89-10-04 DRY														
74	SW058	89-11-20 DRY														
75	SW058	89-12-01 DRY														
76	SW058	90-01-05 DRY														
77	SW058	90-02-02 DRY														
78	SW058	90-05-17	10200	83.3	-	-	-	-	-	-	10500	-	-	-	-	267
79	SW058	90-07-23	20600	141	-	2.4 B	6 B	1360 B	1 B	6.1 B	19100	782	-	35.8 B	14.6 B	16.8 B
80	SW077	89-03-30 DRY														

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Metal Results, All Total Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
31	SW077	89-05-11 DRY														
32	SW077	89-06-27	1170	-	-	214	-	-	-	-	-	-	-	2540	13.6	-
33	SW077	89-07-18 DRY														
34	SW077	89-08-16	2370	-	-	-	-	-	72300	-	-	-	-	2720	-	-
35	SW077	89-09-20 DRY														
36	SW077	89-10-04 DRY														
37	SW077	89-11-09 DRY														
38	SW077	89-12-01 DRY														
39	SW077	90-01-05 DRY														
40	SW077	90-02-02 DRY														
41	SW077	90-05-21	417	-	-	-	-	-	102000	-	-	-	-	730	3.3	-
42	SW077	90-06-25	1060	-	-	-	-	-	98000	-	-	-	-	1970	-	-
43	SW077	90-07-23	531	-	-	143 B	-	-	95300	-	12.3	-	8 B	1050	2.8 B	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
31	SW077	89-05-11 DRY														
32	SW077	89-06-27	24500	404	-	-	-	-	12.6	-	44100	603	-	-	-	218
33	SW077	89-07-18 DRY														
34	SW077	89-08-16	14000	261	-	-	-	8770	-	-	24500	-	-	-	-	52.1
35	SW077	89-09-20 DRY														
36	SW077	89-10-04 DRY														
37	SW077	89-11-09 DRY														
38	SW077	89-12-01 DRY														
39	SW077	90-01-05 DRY														
40	SW077	90-02-02 DRY														
41	SW077	90-05-21	21600	184	-	-	-	-	8.5	-	51200	532	-	-	-	118
42	SW077	90-06-25	22700	307	-	-	-	-	-	-	57300	597	-	-	-	80
43	SW077	90-07-23	21800	289	-	3.2 B	6.1 B	3480 B	1.8W	3.2 B	48000	537	-	21.5 B	13.3 B	39.5

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	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
94	SW053	89-05-23	666	-	-	234	-	-	116000	-	-	-	-	8620	-	24
95	SW053	89-06-26	6620	-	-	448	5.5	-	146000	-	-	-	29.9	22300	-	-
96	SW053	89-07-19 DRY														
97	SW053	89-08-15	-	-	-	232	-	-	140000	-	-	-	-	5640	-	-
98	SW053	89-09-20	-	-	-	244	-	-	142000	-	-	-	-	5060	-	-
99	SW053	89-10-12	400	-	-	218	-	-	146000	-	-	-	-	5470	-	-
100	SW053	89-11-07	-	-	-	-	-	-	114000	-	-	-	-	2770	-	-
101	SW053	89-12-15	6140	-	11.5	340	-	-	134000	-	-	-	-	17900	26.1	-
102	SW053	90-01-17	5170	-	3.6	209	-	-	136000	-	-	-	-	6010	21.3	46
103	SW053	90-05-21	-	-	-	-	-	-	84900	-	-	-	-	436	15.2	-
104	SW053	90-07-23	150 B	13 B	4 B	248	-	3.6 B	150000	-	24.5	6.7 B	7.3 B	5690	1.3 B	25.9 B
105	SW063	89-03-28 DRY														
106	SW063	89-05-12 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
94	SW053	89-05-23	28100	651	-	-	-	-	-	-	20900	-	-	-	-	20 U
95	SW053	89-06-26	31300	719	-	-	-	-	-	-	17100	847	-	109	-	121
96	SW053	89-07-19 DRY														
97	SW053	89-08-15	27200	501	-	-	-	-	-	-	14700	-	-	-	-	20 U
98	SW053	89-09-20	24600	474	0.7	-	-	-	-	-	16800	-	-	-	-	26.9
99	SW053	89-10-12	26200	467	-	-	-	-	-	-	18400	796	-	-	-	28.8
100	SW053	89-11-07	21700	265	-	-	-	-	-	-	16900	582	-	-	-	91.2
101	SW053	89-12-15	27500	520	-	-	-	-	-	-	19500	693	-	-	-	50.3
102	SW053	90-01-17	39200	129	-	-	-	3740	-	-	46000	942	-	-	11.6	30.2
103	SW053	90-05-21	36900	105	-	-	-	-	-	-	64500	809	-	-	-	23.1
104	SW053	90-07-23	37900	418	-	4.3 B	7.8 B	1060 B	-	6.8 B	21100	1040	-	30 B	16.7 B	20.1
105	SW063	89-03-28 DRY														
106	SW063	89-05-12 DRY														

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	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
107	SW063	89-06-21 DRY														
108	SW063	89-07-19 DRY														
109	SW063	89-08-11 DRY														
110	SW063	89-09-15 DRY														
111	SW063	89-10-04 DRY														
112	SW063	89-11-03 DRY														
113	SW063	89-12-01 DRY														
114	SW063	90-01-05 DRY														
115	SW063	90-02-02 DRY														
116	SW064	89-03-30 DRY														
117	SW064	89-06-27	998	-	-	-	-	-	72600	-	-	-	-	1070	-	-
118	SW064	89-07-19 DRY														
119	SW064	89-08-11 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
107	SW063	89-06-21 DRY														
108	SW063	89-07-19 DRY														
109	SW063	89-08-11 DRY														
110	SW063	89-09-15 DRY														
111	SW063	89-10-04 DRY														
112	SW063	89-11-03 DRY														
113	SW063	89-12-01 DRY														
114	SW063	90-01-05 DRY														
115	SW063	90-02-02 DRY														
116	SW064	89-03-30 DRY														
117	SW064	89-06-27	53600	54.3	-	-	-	-	-	-	99300	1200	-	-	-	77.9
118	SW064	89-07-19 DRY														
119	SW064	89-08-11 DRY														

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	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
120	SW064	89-09-20 DRY														
121	SW064	89-10-06 DRY														
122	SW064	89-11-09 DRY														
123	SW064	89-12-01 DRY														
124	SW064	90-01-05 DRY														
125	SW064	90-02-02 DRY														
126	SW064	90-04-25	-	-	-	-	-	-	82300	-	-	-	-	-	-	-
127	SW064	90-05-22	286	-	-	-	-	-	84400	-	-	-	-	382	-	-
128	SW064	90-06-18	243	-	-	-	-	-	85400	-	-	-	-	-	-	104
129	SW064	90-07-24	139 B	-	-	114 B	-	4 B	87500	-	16.4	5.4 B	6.6 B	278	-	98.1 B
130	SW064	90-08-23	509	16.8 B	1 B	97.8 B	-	2.8 B	79400	-	17.2	-	-	738	-	115
131	SW064	90-10-23	1920	17.9 B	3 B	100 BE	-	2.4 B	93300	-	20.9	10.5 B	9 B	1770	2.5 B	120
132	SW070	89-05-16	398	-	-	-	-	-	37900	-	-	-	-	417	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
120	SW064	89-09-20 DRY														
121	SW064	89-10-06 DRY														
122	SW064	89-11-09 DRY														
123	SW064	89-12-01 DRY														
124	SW064	90-01-05 DRY														
125	SW064	90-02-02 DRY														
126	SW064	90-04-25	56000	25.3	-	-	-	-	6.4	-	119000	1310	-	-	-	45.8
127	SW064	90-05-22	57800	34.7	-	-	-	-	6.2	-	118000	1330	-	-	-	65.7
128	SW064	90-06-18	60400	48.5	-	-	-	-	-	-	120000	1430	-	-	-	20 U
129	SW064	90-07-24	61600	79.5	-	9 B	8.7 B	409 B	1 B	4.3 B	122000	1440	-	24.2 B	14 B	11.3 B
130	SW064	90-08-23	59100	50.6 E	-	13.3 B	6.6 B	668 B	1 B	3.1 B	122000	1330	-	50 B	12.9 B	5.5 B
131	SW064	90-10-23	63200	222	-	15.5 B	16.3 B	1930 B	18	9.3 B	153000 E	1370	-	67.6 B	18 B	16 B
132	SW070	89-05-16	8400	15.1	-	-	-	-	-	-	19700	-	-	-	-	20 U

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	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
133	SW070	89-06-23	556	-	-	204	-	-	61400	-	-	-	-	692	-	-
134	SW070	89-07-20	1600	-	-	-	-	-	38600	-	-	-	-	1580	-	-
135	SW070	89-11-16	-	-	-	-	-	-	84200	-	-	-	-	266	-	-
136	SW070	89-12-13	32700	-	9.1	794	-	-	157000	-	32.4	-	35	31500	49.3	34
137	SW070	90-02-07	278	-	-	-	-	-	62000	-	-	-	-	234	-	-
138	SW070	90-03-15	333	-	-	-	-	-	62500	-	-	-	-	294	-	-
139	SW070	90-04-19	815	-	-	-	-	-	76800	-	-	-	-	610	-	-
140	SW070	90-05-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
141	SW070	90-06-12	-	-	-	-	-	-	49700	-	-	-	-	394	-	-
142	SW070	90-07-18	495 N	17.2 B	3 BW	293	-	-	56700	-	-	-	3.1 B	763	1.9 B	9.7 BE
143	SW070	90-10-16	-	-	-	150 B	-	-	76500	-	-	-	-	-	-	-
144	SW070	90-12-10	760	10.4 B	-	149 B	-	-	83900	100 B	11.7	-	7.3 B	954	2 B	8.4 B
145	SW030	86-08-20 DRY														

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
133	SW070	89-06-23	16700	70.1	-	-	-	-	-	-	30200	455	-	-	-	53.3
134	SW070	89-07-20	15000	114	-	-	-	-	-	-	32500	-	-	-	-	45.7
135	SW070	89-11-16	18900	26.3	0.2	-	-	-	-	-	37600	-	-	-	-	20 U
136	SW070	89-12-13	24400	413	0.2	-	34.1	11100	-	-	33100	716	-	-	72.8	315
137	SW070	90-02-07	13100	-	-	-	-	-	-	-	39400	-	-	-	-	121
138	SW070	90-03-15	12700	-	-	-	-	-	-	-	45900	-	-	-	-	47.3
139	SW070	90-04-19	17800	-	-	-	-	-	-	-	39500	-	-	-	-	60.1
140	SW070	90-05-15	-	-	-	-	-	-	-	-	-	-	-	-	-	43.3
141	SW070	90-06-12	13900	40	-	-	-	-	-	-	27100	-	-	-	-	29.8
142	SW070	90-07-18	16300	191	-	4.4 B	-	3130 B	-	-	35000	428	-	20.5 B	5 B	29.1
143	SW070	90-10-16	17400	45.4	-	-	-	2390 B	-	11.2	31400	500	-	-	-	5 U
144	SW070	90-12-10	16800	28.4	-	5.2 B	-	2950 BE	1 B	3.2 B	36100	483	-	19.1 B	7.9 B	26.8 E
145	SW030	86-08-20 DRY														

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Metal Results, All Total Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
146	SW030	89-03-28	579	-	-	-	-	-	59800	-	-	-	-	669	-	-
147	SW030	89-06-22	689	-	-	-	-	-	45300	-	-	-	-	624	-	-
148	SW030	89-07-20 DRY														
149	SW030	89-09-25	535	-	-	-	-	-	49300	-	-	-	-	453	-	-
150	SW030	89-10-20	170	-	5.2	51.5	-	-	38400	-	-	-	-	263	2	10
151	SW030	89-11-09 DRY														
152	SW030	89-12-01 DRY														
153	SW030	90-01-05 DRY														
154	SW030	90-02-02 DRY														
155	SW030	90-03-15	283	-	-	-	-	-	61700	-	-	-	-	140	-	-
156	SW030	90-05-15	434	-	-	-	-	-	58200	-	-	-	-	389	-	-
157	SW030	90-06-11	717	-	-	-	-	-	37300	-	-	-	-	831	-	-
158	SW030	90-09-12	589 *	-	1 B	37.6 B	-	-	25600	-	6.8 B	-	-	609 *	-	-
159	SW030	90-10-03	276	9.8 B	-	89.5 B	-	-	67400	-	8.3 B	-	7.6 B	370	-	7.8 B

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
146	SW030	89-03-28	13300	20.9	-	-	-	-	-	-	29300	372	-	-	-	20 U
147	SW030	89-06-22	16000	-	-	-	-	-	-	-	32900	-	-	-	-	20 U
148	SW030	89-07-20 DRY														
149	SW030	89-09-25	14800	-	-	-	-	-	-	-	31000	-	-	-	-	22.6
150	SW030	89-10-20	8070	-	-	-	-	2350	-	-	15900	247	-	-	-	22.5
151	SW030	89-11-09 DRY														
152	SW030	89-12-01 DRY														
153	SW030	90-01-05 DRY														
154	SW030	90-02-02 DRY														
155	SW030	90-03-15	12500	-	-	-	-	-	-	-	47400	-	-	-	-	36.1
156	SW030	90-05-15	14200	-	-	-	-	-	-	-	31300	-	-	-	-	90.9
157	SW030	90-06-11	12900	22	-	-	-	-	-	-	29300	-	-	-	-	35.7
158	SW030	90-09-12	7900	24.3	-	-	-	1800 B	1 B	-	20000	171 B	-	-	7.5 B	5.3 B
159	SW030	90-10-03	15400	10.1 B	-	5.2 B	-	2370 B	-	-	26200	413	-	16.7 B	6.1 B	10.3 B

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Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Total Metal Results, All Total Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
160	SW054	87-07-15 DRY														
161	SW054	89-03-21	292	-	-	-	-	-	39200	-	-	-	-	308	-	-
162	SW054	89-05-18	46300	-	-	465	13.1	-	63100	-	51.5	-	70.9	35900	74.4	39.2
163	SW054	89-06-22	50000	-	12.6	875	-	-	107000	-	61.2	-	108	50400	63	-
164	SW054	89-07-19	8340	-	12.6	247	-	-	69000	-	-	-	-	8910	18	-
165	SW054	89-08-15	-	-	-	-	-	-	39800	-	-	-	-	267	-	-
166	SW054	89-09-21	788	-	-	-	-	-	43600	-	-	-	-	624	-	-
167	SW054	89-10-12	223	416	-	-	-	-	54800	-	-	-	-	609	-	-
168	SW054	90-02-12	3160	-	14.9	-	-	-	54500	-	11.2	-	-	2770	109	-
169	SW054	90-05-14	-	-	-	-	-	-	42800	-	-	-	-	180	-	-
170	SW054	90-06-13	1170	-	-	-	-	-	47000	-	-	-	-	1300	4.6	-
171	SW054	90-11-19	128 B	8.1 B	-	113 B	-	-	69200	200 B	13.4	3.5 B	9.8 B	281 N*	-	8.4 B
172	SW062	89-03-28	-	-	-	-	-	-	24400	-	-	-	-	194	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
160	SW054	87-07-15 DRY														
161	SW054	89-03-21	9160	16.7	-	-	-	-	-	-	26100	308	-	-	-	54.9
162	SW054	89-05-18	17400	865	-	37.9	58.3	10200	5.6	-	25000	-	-	-	124	380
163	SW054	89-06-22	26500	2020	-	-	-	13100	-	-	37300	-	-	103	148	623
164	SW054	89-07-19	13200	388	-	-	-	6580	-	-	28300	-	-	-	-	188
165	SW054	89-08-15	7450	40.4	-	-	-	-	-	-	15700	-	-	-	-	20 U
166	SW054	89-09-21	9330	-	-	-	-	-	-	-	17100	-	-	-	-	237
167	SW054	89-10-12	15600	84.9	-	333	-	-	-	-	39000	414	-	1530	-	24
168	SW054	90-02-12	10700	148	-	-	-	-	-	-	30000	-	-	-	-	87.5
169	SW054	90-05-14	11500	-	-	-	-	-	-	-	28000	-	-	-	-	110
170	SW054	90-06-13	14000	80.9	-	-	-	-	-	-	40800	-	-	-	-	20.9
171	SW054	90-11-19	14900	15	-	5.1 B	8.9 B	3930 BE	-	5.9 B	30900	419	-	17.6 B	7.9 B	26.5
172	SW062	89-03-28	5760	-	-	-	-	-	-	-	23700	132	-	-	-	20 U

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Metal Results, All Total Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
173	SW062	89-06-22	-	-	-	-	-	-	55400	-	-	-	-	574	-	-
174	SW062	89-07-19	2050	-	-	226	-	-	124000	-	-	-	-	3640	-	-
175	SW062	89-09-15	-	-	-	-	-	-	57700	-	-	-	-	-	-	-
176	SW062	89-10-12	510	-	-	-	-	-	67500	-	-	-	-	1340	-	-
177	SW062	89-11-08	-	-	-	-	-	-	48600	-	-	-	-	-	-	-
178	SW062	89-12-13	53	-	-	69.7	-	-	44000	-	-	-	-	230	-	8
179	SW062	90-01-18	41.2	-	-	76.3	-	-	47200	-	-	-	-	114	-	11
180	SW062	90-05-22	-	-	-	-	-	-	55500	-	-	-	-	317	-	-
181	SW062	90-06-18	-	-	-	-	-	-	38400	-	-	-	-	306	-	-
182	SW062	90-07-24	595	-	-	92.3 B	-	-	41700	-	9.5 B	-	7.3 B	1300	2.8 B	7.4 B
183	SW062	90-08-22	116 B	-	-	92.6 BE	-	-	43000	-	-	-	-	665	-	9.7 B
184	SW062	90-11-14														
185	SW027	89-03-21	-	-	-	-	-	-	51100	-	-	-	-	-	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
173	SW062	89-06-22	13100	219	-	-	-	-	-	-	42100	-	-	-	-	20 U
174	SW062	89-07-19	30300	1350	-	-	-	-	-	-	102000	-	-	-	-	132
175	SW062	89-09-15	12800	17.1	-	-	-	-	-	-	39700	-	-	-	-	35.9
176	SW062	89-10-12	15800	106	-	-	-	-	-	-	49200	416	-	-	-	20 U
177	SW062	89-11-08	11000	18.1	-	-	-	-	-	10.1	31300	272	-	-	-	20 U
178	SW062	89-12-13	9360	10.5	-	-	-	1110	-	-	24500	248	-	-	-	11.5
179	SW062	90-01-18	9760	11.6	-	-	-	1250	-	-	25700	259	-	-	-	10 U
180	SW062	90-05-22	12200	81.7	-	-	-	-	-	-	31800	329	-	-	-	25.1
181	SW062	90-06-18	8360	57.3	-	-	-	-	-	-	21200	-	-	-	-	30.4
182	SW062	90-07-24	8240	140	-	-	6.5 B	1680 B	-	2.8 B	20000	226	-	-	6.8 B	16.1 B
183	SW062	90-08-22	8730	134 E	-	4.2 B	-	1500 B	-	-	22200	245	1 BWN	11.3 B	3.5 B	3.1 B
184	SW062	90-11-14														
185	SW027	89-03-21	11500	16.7	-	-	-	-	-	-	37500	418	-	-	-	20 U

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Metal Results, All Total Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
186	SW027	89-05-18	2240	-	-	-	-	-	56100	-	-	-	-	2250	-	17.1
187	SW027	89-07-17	1760	-	-	-	-	-	73800	-	-	-	-	1800	-	-
188	SW027	89-09-15	-	-	-	-	-	-	43600	-	-	-	-	183	-	-
189	SW027	89-10-11	154	-	-	99.8	-	14.2	53300	-	-	-	-	213	3	19
190	SW027	89-11-08	-	-	-	-	-	-	68600	-	-	-	-	-	-	-
191	SW027	89-12-15	536	-	-	-	-	-	75600	-	-	-	-	582	3.6	-
192	SW027	90-02-12	2590	-	-	-	-	-	72000	-	10.2	-	-	2330	10.9	-
193	SW027	90-05-14	3150	-	-	-	-	-	70300	-	-	-	-	2470	-	-
194	SW027	90-06-11	3500	-	-	-	-	-	81100	-	-	-	-	4020	-	-
195	SW027	90-07-18	3840 N	19.9 B	4 BW	185 B	-	-	74200	-	-	4.9 B	8.1 B	4550	4.7	18.6 BE
196	SW027	90-09-12	1430 *	9.5 B	2 B	129 B	-	-	53500	-	9.9 B	3.5 B	2 B	1640 *	1.7 B	20 B
197	SW027	90-11-13														
198	SWC2	89-07-19	-	-	-	-	-	-	29700	-	-	-	-	197	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
186	SW027	89-05-18	11000	142	-	-	-	5410	-	-	39400	-	-	-	-	41.1
187	SW027	89-07-17	14900	158	-	-	-	5100	-	-	45800	-	-	-	-	91.2
188	SW027	89-09-15	7170	-	-	-	-	9210	-	-	28600	-	-	-	-	200
189	SW027	89-10-11	9430	35.8	-	-	-	7330	3.6	-	33100	300	-	-	-	95.6
190	SW027	89-11-08	14600	45.8	-	-	-	-	-	-	48400	455	-	-	-	29.6
191	SW027	89-12-15	15000	53.5	-	-	-	-	-	-	50900	492	-	-	-	20 U
192	SW027	90-02-12	13500	132	-	-	-	-	-	-	42900	-	-	-	-	62.2
193	SW027	90-05-14	14400	142	-	-	-	-	-	-	50800	-	-	-	-	174
194	SW027	90-06-11	16400	426	-	-	-	-	-	-	54900	-	-	-	-	75.7
195	SW027	90-07-18	15300	481	-	7.5 B	9.1 B	4630 B	-	2 B	49400	489	-	32 B	13.1 B	147
196	SW027	90-09-12	11200	150	-	3.3 B	-	2860 B	1 B	-	33000	348	-	14.7 B	10.3 B	17.4 B
197	SW027	90-11-13														
198	SWC2	89-07-19	9960	240	-	-	-	5550	-	-	35400	-	-	-	-	114

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Metal Results, All Total Metal reported in mg/l

	Station Number	Date Sampled	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Calcium (Ca)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)
199	SWC2	89-07-21	-	-	-	-	-	-	29300	-	-	-	-	221	-	-
200	SWC2	89-07-21	-	-	-	-	-	-	31000	-	-	-	-	212	-	-
201	SWC2	89-08-24	-	-	-	-	-	-	40800	-	-	-	-	-	-	-
202	SWC2	89-08-25	-	-	-	-	-	-	34700	-	-	-	-	-	-	-

	Station Number	Date Sampled	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Thallium (Tl)	Tin (Sn)	Vanadium (V)	Zinc (Zn)
199	SWC2	89-07-21	9930	222	-	-	-	5960	-	-	34200	-	-	-	-	106
200	SWC2	89-07-21	9740	696	-	-	-	5970	-	-	32200	-	-	-	-	120
201	SWC2	89-08-24	11500	252	0.2	-	-	8390	-	-	36900	277	-	-	-	76.6
202	SWC2	89-08-25	10600	402	0.3	-	-	5070	-	-	34100	-	-	-	-	358

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected

APPENDIX B-4

SURFACE WATER SAMPLING RESULTS

TOTAL INORGANIC COMPOUNDS

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Inorganic Results, All Inorganic reported in ug/l except PH

Station Number	Date Sampled	Total Dissolved Solids, TDS	Chloride Cl	Nitrate/Nitrite NO2	Sulfate SO4	Bicarbonate HCO3	PH pH unit	Total Suspended Solids, TSS
SW050	- - DRY							.
SW050	87-07-21	510000	59000	4150	21100	.	.	7000
SW050	89-04-17 DRY							.
SW050	89-05-10 DRY							.
SW050	89-08-11 DRY							.
SW050	89-09-12 DRY							.
SW050	89-10-04 DRY							.
SW050	89-11-03 DRY							.
SW050	89-12-01 DRY							.
SW050	90-01-05 DRY							.
SW050	90-02-02 DRY							.
SW050	90-03-17 DRY							.
SW050	90-05-17	350000	22000	400	18000	.	7.3	36000
SW050	90-06-25	406000	44300	640	14800	276000	.	21000
SW050	90-07-23	539000	25910	.	.	.	.	41500
SW051	87-07-21	332000	16900	4900	61000	.	.	3000
SW051	88-06-23 DRY							.
SW051	89-04-17 DRY							.
SW051	89-05-10 DRY							.
SW051	89-07-18 DRY							.
SW051	89-08-11 DRY							.
SW051	89-09-12 DRY							.
SW051	89-10-04 DRY							.
SW051	89-11-03 DRY							.
SW051	89-12-01 DRY							.
SW051	90-01-05 DRY							.
SW051	90-02-02 DRY							.
SW051	90-05-17	340000	20000	2900	21000	.	7.7	6000
SW052	87-07-21	461000	25500	200 U	73300	.	.	2000
SW052	89-04-17 DRY							.

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A=Acceptable with qualifications V=Valid and acceptable R=Rejected Qtr=Quarter

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Inorganic Results, All Inorganic reported in ug/l except PH

Station Number	Date Sampled	Total Dissolved Solids, TDS	Chloride Cl	Nitrate/Nitrite NO2	Sulfate SO4	Bicarbonate HCO3	PH pH unit	Total Suspended Solids, TSS
SW052	89-05-10 DRY							.
SW052	89-06-09 DRY							.
SW052	89-07-07 DRY							.
SW052	89-08-11 DRY							.
SW052	89-09-28 DRY							.
SW052	89-10-04 DRY							.
SW052	89-11-03 DRY							.
SW052	89-12-01 DRY							.
SW052	90-01-05 DRY							.
SW052	90-02-02 DRY							.
SW052	90-03-17 DRY							.
SW052	90-04-25	.	.	.	.	.	.	.
SW052	90-05-17	420000	38000	50 U	70000	.	7.5	12000
SW055	87-07-21	452000	34000	240	37200	.	.	2000
SW055	89-05-25	650000	35000	2300	92000	.	7.4	520000
SW055	90-02-23	410000	34000	5500	42000	.	7.2	460000
SW055	90-04-24	.	.	.	.	.	.	.
SW055	90-05-21	370000	35000	1300	31000	.	7.6	450000
SW057	87-07-21	522000	24000	1160	1000 U	.	.	5000
SW057	88-06-23 DRY							.
SW057	89-04-17 DRY							.
SW057	89-05-10 DRY							.
SW057	89-06-09 DRY							.
SW057	89-07-07 DRY							.
SW057	89-08-11 DRY							.
SW057	89-09-16 DRY							.
SW057	89-10-04 DRY							.
SW057	89-11-03 DRY							.
SW057	89-12-01 DRY							.
SW057	90-01-05 DRY							.

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A=Acceptable with qualifications V=Valid and acceptable R=Rejected Qtr=Quarter

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Inorganic Results, All Inorganic reported in ug/l except PH

Station Number	Date Sampled	Total Dissolved Solids, TDS	Chloride Cl	Nitrate/Nitrite NO2	Sulfate SO4	Bicarbonate HCO3	PH pH unit	Total Suspended Solids, TSS
SW057	90-02-02 DRY							.
SW057	90-03-17 DRY							.
SW058	87-07-21	375000	32000	1420	22000	.	.	3000
SW058	89-04-17 DRY							.
SW058	89-05-10 DRY							.
SW058	89-07-14 DRY							.
SW058	89-08-11 DRY							.
SW058	89-09-20 DRY							.
SW058	89-10-04 DRY							.
SW058	89-11-20 DRY							.
SW058	89-12-01 DRY							.
SW058	90-01-05 DRY							.
SW058	90-02-02 DRY							.
SW058	90-05-17	370000	28000	1200	24000	.	7.8	82000
SW058	90-07-23	490000	44000	40	11000	360000	.	7000
SW077	89-03-30 DRY							.
SW077	89-05-11 DRY							.
SW077	89-07-18 DRY							.
SW077	89-09-20 DRY							.
SW077	89-10-04 DRY							.
SW077	89-11-09 DRY							.
SW077	89-12-01 DRY							.
SW077	90-01-05 DRY							.
SW077	90-02-02 DRY							.
SW077	90-03-16	500000	23000	22000	70000	.	7.3	160000
SW077	90-05-21	.	.	.	.	.	.	.
SW077	90-06-25	517000	63000	100 U	63000	292000	.	94000
SW077	90-07-23	550000	52000	600	58000	320000	.	41000
SW053	87-07-21	666000	71500	200 U	20300	.	.	2000

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A=Acceptable with qualifications V=Valid and acceptable R=Rejected Qtr=Quarter

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Inorganic Results, All Inorganic reported in ug/l except PH

Station Number	Date Sampled	Total Dissolved Solids, TDS	Chloride Cl	Nitrate/Nitrite NO2	Sulfate SO4	Bicarbonate HCO3	PH pH unit	Total Suspended Solids, TSS
SW053	89-07-19 DRY							.
SW053	90-02-13	62000	70000	80	34000	.	7.5	11000000
SW053	90-05-21	510000	55000	50 U	66000	.	7.5	5000 U
SW053	90-07-23	720000	92000	70	11000	450000	.	47000
SW053	90-11-15	540000	79000	20	27000	360000	.	930000
SW063	87-07-24	675000	50500	200 U	197000	.	.	17000
SW063	89-03-28 DRY							.
SW063	89-05-12 DRY							.
SW063	89-06-21 DRY							.
SW063	89-07-19 DRY							.
SW063	89-08-11 DRY							.
SW063	89-09-15 DRY							.
SW063	89-10-04 DRY							.
SW063	89-11-03 DRY							.
SW063	89-12-01 DRY							.
SW063	90-01-05 DRY							.
SW063	90-02-02 DRY							.
SW064	87-07-22	716000	46500	200 U	83000	.	.	13000
SW064	89-03-30 DRY							.
SW064	89-07-19 DRY							.
SW064	89-08-11 DRY							.
SW064	89-09-20 DRY							.
SW064	89-10-04 DRY							.
SW064	89-11-09 DRY							.
SW064	89-12-01 DRY							.
SW064	90-01-05 DRY							.
SW064	90-02-02 DRY							.
SW064	90-04-25	.	.	.	.	.	.	.
SW064	90-05-22	780000	92000	50 U	160000	.	7.6	36000
SW064	90-06-18	.	.	.	.	.	.	.

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected Qtr=Quarter

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Inorganic Results, All Inorganic reported in ug/l except PH

Station Number	Date Sampled	Total Dissolved Solids, TDS	Chloride Cl	Nitrate/Nitrite NO2	Sulfate SO4	Bicarbonate HCO3	PH pH unit	Total Suspended Solids, TSS
SW064	90-07-24	820000	69000	20 U	210000	550000	.	13000
SW064	90-08-23	760000	67000	20 U	130000	500000	.	16000
SW064	90-10-23	910000	77000	20 U	180000	540000	.	160000
SW064	90-11-15	750000	59000	20 U	120000	460000	.	4000 U
SW070	89-06-23	340000	62000	1600	58000	.	8.2	29000
SW070	89-08-14	320000	42000	1100	40000	.	7.9	80000
SW070	90-04-19	.	.	.	.	.	.	.
SW070	90-05-15	.	.	.	.	.	.	.
SW070	90-06-12	.	.	.	.	.	.	.
SW070	90-07-18	370000	75000	210	45000	140000	.	28000
SW070	90-08-16	250000	102000	630	31000	120000	.	40000
SW070	90-10-16	373000	65800	.	.	.	.	17000
SW070	90-11-15	450000	77000	3300	42000	190000	.	4000 U
SW070	90-12-10	450000	83000	3700	47000	190000	.	31000
SW030	86-08-20 DRY							.
SW030	87-05-26	310000	33800	1290	68000	.	.	22000
SW030	89-07-20 DRY							.
SW030	89-11-09 DRY							.
SW030	89-12-01 DRY							.
SW030	90-01-05 DRY							.
SW030	90-02-02 DRY							.
SW030	90-05-15	.	.	.	.	.	.	.
SW030	90-06-11	.	.	.	.	.	.	.
SW030	90-07-17	.	.	.	.	.	.	.
SW030	90-08-16	180000	6200	290	7400	144000	.	17000
SW030	90-09-12	220000	64000	30	22000	90000	.	23000
SW030	90-10-03	330000	59000	910	42000	180000	.	9000
SW030	90-11-15	410000	77000	2600	41000	170000	.	8000
SW054	87-07-15 DRY							.

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected Qtr=Quarter

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Inorganic Results, All Inorganic reported in ug/l except PH

Station Number	Date Sampled	Total Dissolved Solids, TDS	Chloride Cl	Nitrate/Nitrite NO2	Sulfate SO4	Bicarbonate HCO3	PH pH unit	Total Suspended Solids, TSS
SW054	90-05-14	280000	43000	670	42000	.	8	14000
SW054	90-06-13	.	.	.	.	.	.	.
SW054	90-08-16	430000	6300	50 U	6300	160000	.	14000
SW054	90-10-18	.	.	.	.	.	.	.
SW054	90-11-19	370000	77000	1200	43000	160000	.	4000
SW062	87-07-22	625000	44000	200 U	132000	.	.	7000
SW062	90-02-20	250000	21000	80	38000	.	8	5000 U
SW062	90-05-22	280000	24000	50 U	30000	.	7.9	5000 U
SW062	90-06-18	.	.	.	.	.	.	.
SW062	90-07-24	220000	29000	20 U	14000	140000	.	33000
SW062	90-08-22	240000	31000	20 U	14000	140000	.	8000
SW062	90-10-08	.	.	.	.	.	.	.
SW062	90-11-14	376000	23000	50 U	26000	150000	.	1000 U
SW027		700000	47000	5000 U	83000	.	.	.
SW027	87-07-22	426000	34000	3200	69300	.	.	1000 U
SW027	89-08-11	400000	41000	3800	85000	.	7.8	12000
SW027	90-01-29	470000	52000	4600	88000	.	7.7	.
SW027	90-05-14	440000	53000	1400	77000	.	7.3	68000
SW027	90-06-11	.	.	.	.	.	.	.
SW027	90-07-18	410000	41000	320	42000	260000	.	79000
SW027	90-09-12	360000	43000	600	51000	230000	.	52000
SW027	90-09-19	210000	34000	1500	18000	87000	.	45000
SW027	90-11-13	327000	38000	930	24000	140000	.	12000
SW027	90-11-19	320000	100000	2100	19000	106000	.	14000
SWC2		240000	31000	5000 U	67000	.	.	.
SWC2	89-07-20	260000	34000	50 U	43000	.	7.4	14000
SWC2	89-07-21	.	.	.	.	.	.	.
SWC2	89-07-21	250000	37000	50 U	50000	.	7.5	10000
SWC2	89-10-11	.	.	.	.	.	.	.

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected Qtr=Quarter

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Inorganic Results, All Inorganic reported in ug/l except PH

Station Number	Date Sampled	Total Dissolved Solids, TDS	Chloride Cl	Nitrate/Nitrite NO2	Sulfate SO4	Bicarbonate HCO3	PH pH unit	Total Suspended Solids, TSS
SWC2	89-10-17	.	.	.	.	.	.	.
SWC2	90-03-29	.	.	.	.	.	.	5000 U
SWC2	90-03-30	.	.	.	.	.	.	5000 U
SWC2	90-03-31	.	.	.	.	.	.	5500
SWC2	90-04-01	.	.	.	.	.	.	10000
SWC2	90-04-02	.	.	.	.	.	.	10000
SWC2	90-04-03	.	.	.	.	.	.	5500
SWC2	90-04-04	.	.	.	.	.	.	14000
SWC2	90-04-05	.	.	.	.	.	.	.
SWC2	90-04-06	.	.	.	.	.	.	5000 U
SWC2	90-04-07	.	.	.	.	.	.	10000
SWC2	90-04-08	.	.	.	.	.	.	7500
SWC2	90-04-09	.	.	.	.	.	.	13000
SWC2	90-04-10	.	.	.	.	.	.	.
SWC2	90-04-11	.	.	.	.	.	.	9500
SWC2	90-04-12	.	.	.	.	.	.	15000
SWC2	90-04-13	.	.	.	.	.	.	10000
SWC2	90-04-14	.	.	.	.	.	.	9000
SWC2	90-04-16	.	.	.	.	.	.	.
SWC2	90-04-17	.	.	.	.	.	.	12500
SWC2	90-04-18	.	.	.	.	.	.	16000
SWC2	90-04-19	.	.	.	.	.	.	.
SWC2	90-04-20	.	.	.	.	.	.	7500
SWC2	90-04-21	.	.	.	.	.	.	6000
SWC2	90-04-22	.	.	.	.	.	.	8500
SWC2	90-04-23	.	.	.	.	.	.	12500
SWC2	90-04-24	.	.	.	.	.	.	7000
SWC2	90-04-25	.	.	.	.	.	.	.
SWC2	90-04-26	.	.	.	.	.	.	.
SWC2	90-04-27	.	.	.	.	.	.	12000
SWC2	90-04-28	.	.	.	.	.	.	39000
SWC2	90-04-29	.	.	.	.	.	.	16000

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A=Acceptable with qualifications V=Valid and acceptable R=Rejected Qtr=Quarter

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Inorganic Results, All Inorganic reported in ug/l except PH

Station Number	Date Sampled	Total Dissolved Solids, TDS	Chloride Cl	Nitrate/Nitrite NO2	Sulfate SO4	Bicarbonate HCO3	PH pH unit	Total Suspended Solids, TSS
SWC2	90-04-30	.	.	.	.	.	.	30000
SWC2	90-05-01	.	.	.	.	.	.	12000
SWC2	90-05-02	.	.	.	.	.	.	5000 U
SWC2	90-05-03	.	.	.	.	.	.	17000
SWC2	90-05-04	.	.	660	.	.	.	17500
SWC2	90-05-05	.	.	.	.	.	.	15500
SWC2	90-05-06	.	.	.	.	.	.	17000
SWC2	91-03-18	500000	55000	100 U	53000	.	.	12000

U=Analyzed but not detected J=Present below detection limit E=Estimated value . =Missing
A=Acceptable with qualifications V=Valid and acceptable R=Rejected Qtr=Quarter

APPENDIX B-5

SURFACE WATER SAMPLING RESULTS

DISSOLVED RADIOCHEMISTRY

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Radiochemistry Results, All Dissolved Radiochemistry reported in pci/l

Station Number	Date Sampled	Gross Alpha	Gross Beta	Uranium Total*	Strontium 90	Plutonium 239/240	Americium 241	Tritium
SW050	- - DRY							
SW050	89-04-17 DRY							
SW050	89-05-10 DRY							
SW050	89-08-11 DRY							
SW050	89-09-12 DRY							
SW050	89-10-04 DRY							
SW050	89-11-03 DRY							
SW050	89-12-01 DRY							
SW050	90-01-05 DRY							
SW050	90-02-02 DRY							
SW050	90-03-17 DRY							
SW051	88-06-23 DRY							
SW051	89-04-17 DRY							
SW051	89-05-10 DRY							
SW051	89-07-18 DRY							
SW051	89-08-11 DRY							
SW051	89-09-12 DRY							
SW051	89-10-04 DRY							
SW051	89-11-03 DRY							
SW051	89-12-01 DRY							
SW051	90-01-05 DRY							
SW051	90-02-02 DRY							
SW052	89-04-17 DRY							
SW052	89-05-10 DRY							
SW052	89-06-09 DRY							
SW052	89-07-07 DRY							
SW052	89-08-11 DRY							
SW052	89-09-28 DRY							
SW052	89-10-04 DRY							
SW052	89-11-03 DRY							
SW052	89-12-01 DRY							

The table format is: result ± counting error *=sum of all Uranium isotopes _=Missing data

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Radiochemistry Results, All Dissolved Radiochemistry reported in pci/l

Station Number	Date Sampled	Gross Alpha	Gross Beta	Uranium Total*	Strontium 90	Plutonium 239/240	Americium 241	Tritium
SW052	90-01-05 DRY							
SW052	90-02-02 DRY							
SW052	90-03-17 DRY							
SW057	88-06-23 DRY							
SW057	89-04-17 DRY							
SW057	89-05-10 DRY							
SW057	89-06-09 DRY							
SW057	89-07-07 DRY							
SW057	89-08-11 DRY							
SW057	89-09-16 DRY							
SW057	89-10-04 DRY							
SW057	89-11-03 DRY							
SW057	89-12-01 DRY							
SW057	90-01-05 DRY							
SW057	90-02-02 DRY							
SW057	90-03-17 DRY							
SW058	89-04-17 DRY							
SW058	89-05-10 DRY							
SW058	89-07-14 DRY							
SW058	89-08-11 DRY							
SW058	89-09-20 DRY							
SW058	89-10-04 DRY							
SW058	89-11-20 DRY							
SW058	89-12-01 DRY							
SW058	90-01-05 DRY							
SW058	90-02-02 DRY							
SW077	89-03-30 DRY							
SW077	89-05-11 DRY							
SW077	89-07-18 DRY							
SW077	89-09-20 DRY							

The table format is: result ± counting error *=sum of all Uranium isotopes _=Missing data

Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Dissolved Radiochemistry Results, All Dissolved Radiochemistry reported in pci/l

Station Number	Date Sampled	Gross Alpha	Gross Beta	Uranium Total*	Strontium 90	Plutonium 239/240	Americium 241	Tritium
SW077	89-10-04 DRY							
SW077	89-11-09 DRY							
SW077	89-12-01 DRY							
SW077	90-01-05 DRY							
SW077	90-02-02 DRY							
SW053	89-04-05	2±6	7±4	2	0±0.4	0.2±0.03	0.03±0.03	_
SW053	89-07-19 DRY							
SW053	90-11-15	34±25	_	3.5	_	4.4±0.3	_	_
SW063	89-03-28 DRY							
SW063	89-05-12 DRY							
SW063	89-06-21 DRY							
SW063	89-07-19 DRY							
SW063	89-08-11 DRY							
SW063	89-09-15 DRY							
SW063	89-10-04 DRY							
SW063	89-11-03 DRY							
SW063	89-12-01 DRY							
SW063	90-01-05 DRY							
SW063	90-02-02 DRY							
SW064	89-03-30 DRY							
SW064	89-07-19 DRY							
SW064	89-08-11 DRY							
SW064	89-09-20 DRY							
SW064	89-10-04 DRY							
SW064	89-11-09 DRY							
SW064	89-12-01 DRY							
SW064	90-01-05 DRY							
SW064	90-02-02 DRY							
SW064	90-10-23	19±6	14±4	22.29	_	_	_	3600±1400
SW064	90-11-15	9±3.4	9.6±2.8	20.3	_	_	_	_

The table format is: result ± counting error *=sum of all Uranium isotopes _=Missing data

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Dissolved Radiochemistry Results, All Dissolved Radiochemistry reported in pci/l

Station Number	Date Sampled	Gross Alpha	Gross Beta	Uranium Total*	Strontium 90	Plutonium 239/240	Americium 241	Tritium
SW064	90-12-06	12±4	12±4	22.44	_	_	_	_
SW070	89-03-29	5±6	6±3	5.2	0±0.5	0±0.01	0.01±0.01	_
SW070	90-07-18	2.823±1.2	3.126±1.09	6.019	0.396±0.46	_	_	247.1±256
SW070	90-11-15	3.9±2.1	6.2±1.9	5.9	_	0.2±0.05	_	_
SW070	90-12-10	4±1.9	6.8±1.8	5.59	_	_	_	_
SW030	86-08-20 DRY							
SW030	89-03-28	10±6	6±3	8.6	0±0.4	0.01±0.02	0±0.01	_
SW030	89-07-20 DRY							
SW030	89-11-09 DRY							
SW030	89-12-01 DRY							
SW030	90-01-05 DRY							
SW030	90-02-02 DRY							
SW030	90-07-17	1.572±1.07	3.521±1.16	3.265	0.767±0.428	_	_	1.945±216
SW030	90-11-15	2.2±1.7	6.2±1.8	5.5	_	_	_	_
SW030	90-12-06	2.3±1.6	5.3±1.8	7.3	_	_	_	_
SW054	87-07-15 DRY							
SW054	89-03-21	5±4	4±3	8.2	0±0.5	0.01±0.01	0±0.02	_
SW054	90-11-19	4.5±2	7.1±1.9	6.8	_	_	_	_
SW062	89-03-28	3±3	3±3	0.2	0±0.5	0±0.02	0±0.01	_
SW062	90-11-14	_	3.4±1.6	1.44	_	_	7.7±3	720±140
SW062	90-12-06	_	_	1.64	_	_	_	_
SW027	89-03-21	13±7	7±3	5.6	0±0.5	0.01±0.01	0±0.02	_
SW027	90-07-18	2.975±1.16	4.796±1.28	4.848	0.519±0.422	_	_	0±243
SW027	90-11-13	_	5±1.7	2.89	_	_	_	_
SW027	90-12-06	_	5.6±1.8	4.3	_	_	_	_
SWC2	90-03-29	2.7±1	6±1.9		_	_	_	_
SWC2	90-03-30	3.2±1.1	5.6±2.2		_	_	_	_

The table format is: result ± counting error *=sum of all Uranium isotopes _=Missing data

Women Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Dissolved Radiochemistry Results, All Dissolved Radiochemistry reported in pci/l

Station Number	Date Sampled	Gross Alpha	Gross Beta	Uranium Total*	Strontium 90	Plutonium 239/240	Americium 241	Tritium
SWC2	90-03-31	2.4±0.9	8.8±2.3		_	_	_	_
SWC2	90-04-19	6.683±2.673	7.721±1.429		_	_	_	_

The table format is: result ± counting error *=sum of all Uranium isotopes _=Missing data

APPENDIX B-6

SURFACE WATER SAMPLING RESULTS

TOTAL RADIOCHEMISTRY

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Radiochemistry Results, All Total Radiochemistry reported in pci/l

Station Number	Date Sampled	Gross Alpha	Gross Beta	Uranium Total*	Strontium 90	Plutonium 239/240	Americium 241	Tritium
SW050	- - DRY							
SW050	87-07-21	26±14	19±49	2.12	_	55±7	0±27	_
SW050	89-04-17 DRY							
SW050	89-05-10 DRY							
SW050	89-06-27	32±8	24±5	4.5	0.7±0.5	1.4±0.1	0.79±0.05	20±220
SW050	89-08-11 DRY							
SW050	89-09-12 DRY							
SW050	89-10-04 DRY							
SW050	89-11-03 DRY							
SW050	89-12-01 DRY							
SW050	90-01-05 DRY							
SW050	90-02-02 DRY							
SW050	90-03-17 DRY							
SW051	87-07-21	58±4	28±8	3.2	_	13±3	0±11	_
SW051	88-06-23 DRY							
SW051	89-04-17 DRY							
SW051	89-05-10 DRY							
SW051	89-06-27	11±3	13±2	2.6	0±0.4	0.69±0.04	1±0.1	0±220
SW051	89-07-18 DRY							
SW051	89-08-11 DRY							
SW051	89-09-12 DRY							
SW051	89-10-04 DRY							
SW051	89-11-03 DRY							
SW051	89-12-01 DRY							
SW051	90-01-05 DRY							
SW051	90-02-02 DRY							
SW052	87-07-21	114±10	46±15	1.77	_	5.4±1.5	0.2±1.5	_
SW052	89-04-17 DRY							
SW052	89-05-10 DRY							
SW052	89-06-09 DRY							
SW052	89-07-07 DRY							

The table format is: result ± counting error *=sum of all Uranium isotopes _=Missing data

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Radiochemistry Results, All Total Radiochemistry reported in pci/l

Station Number	Date Sampled	Gross Alpha	Gross Beta	Uranium Total*	Strontium 90	Plutonium 239/240	Americium 241	Tritium
SW052	89-08-11 DRY							
SW052	89-09-28 DRY							
SW052	89-10-04 DRY							
SW052	89-11-03 DRY							
SW052	89-12-01 DRY							
SW052	90-01-05 DRY							
SW052	90-02-02 DRY							
SW052	90-03-17 DRY							
SW055	87-07-21	3±12	42±28	3.4	_	3.2±1.7	0±3.2	_
SW055	89-05-25	140±30	28±10	4.8	0.1±0.3	60±1	7.2±0.3	100±210
SW055	89-06-28	350±40	65±12	9.1	1.2±0.4	17±1	33±1	140±230
SW055	89-08-16	6±7	6±3	4.4	0.6±0.5	0.37±0.04	0.08±0.02	290±220
SW055	89-09-20	4.2±1.7	10.8±2.6	6.52	0.6±0.32	0.638±0.05	0.161±0.056	0±230
SW057	87-07-21	259±8	63±20	4.27	_	54±7	0±2	_
SW057	88-06-23 DRY							
SW057	89-04-17 DRY							
SW057	89-05-10 DRY							
SW057	89-06-09 DRY							
SW057	89-07-07 DRY							
SW057	89-08-11 DRY							
SW057	89-09-16 DRY							
SW057	89-10-04 DRY							
SW057	89-11-03 DRY							
SW057	89-12-01 DRY							
SW057	90-01-05 DRY							
SW057	90-02-02 DRY							
SW057	90-03-17 DRY							
SW058	87-07-21	24±21	11±32	2.38	_	8.9±2.1	0.3±1.4	_
SW058	89-04-17 DRY							
SW058	89-05-10 DRY							

The table format is: result ± counting error *=sum of all Uranium isotopes _=Missing data

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Radiochemistry Results, All Total Radiochemistry reported in pci/l

Station Number	Date Sampled	Gross Alpha	Gross Beta	Uranium Total*	Strontium 90	Plutonium 239/240	Americium 241	Tritium
SW058	89-06-28	10±5	8±3	18.1	0.7±0.6	7.1±0.1	1.1±0.6	90±230
SW058	89-07-14 DRY							
SW058	89-08-11 DRY							
SW058	89-09-20 DRY							
SW058	89-10-04 DRY							
SW058	89-11-20 DRY							
SW058	89-12-01 DRY							
SW058	90-01-05 DRY							
SW058	90-02-02 DRY							
SW077	89-03-30 DRY							
SW077	89-05-11 DRY							
SW077	89-06-27	17±5	16±3	5.1	0.9±0.4	3.3±0.1	2.7±0.1	10±220
SW077	89-07-18 DRY							
SW077	89-08-16	28±11	19±4	4.3	0.5±0.5	4.1±0.1	1.5±0.1	170±220
SW077	89-09-20 DRY							
SW077	89-10-04 DRY							
SW077	89-11-09 DRY							
SW077	89-12-01 DRY							
SW077	90-01-05 DRY							
SW077	90-02-02 DRY							
SW053	87-07-21	203±48	42±55	3.8	_	25±5	0±1.9	_
SW053	89-04-05	230±30	14±7	4.1	0.1±0.4	15±1	9.7±0.2	310±160
SW053	89-05-23	170±20	5±7	0.5	0±0.4	110±10	6.8±0.2	210±160
SW053	89-06-26	62±10	8±3	1.5	0.5±0.6	56±3	28±1	140±210
SW053	89-07-19 DRY							
SW053	89-09-20	3.2±0.7	7.1±2.2	8.1	0.29±0.31	1.101±0.058	0.224±0.057	0±290
SW063	89-03-28 DRY							
SW063	89-05-12 DRY							
SW063	89-06-21 DRY							
SW063	89-07-19 DRY							

The table format is: result ± counting error *=sum of all Uranium isotopes _=Missing data

Woman Creek Basin Interim Remedial Action Plan (IRAP)
Surface Water Total Radiochemistry Results, All Total Radiochemistry reported in pci/l

Station Number	Date Sampled	Gross Alpha	Gross Beta	Uranium Total*	Strontium 90	Plutonium 239/240	Americium 241	Tritium
SW063	89-08-11 DRY							
SW063	89-09-15 DRY							
SW063	89-10-04 DRY							
SW063	89-11-03 DRY							
SW063	89-12-01 DRY							
SW063	90-01-05 DRY							
SW063	90-02-02 DRY							
SW064	87-07-22	34±7	93±16	11.2	_	0.1±1.2	0.01±1.3	_
SW064	88-05-22	21±7	14±3	14.9	0±0.4	0.07±0.02	0.01±0.02	180±160
SW064	89-03-30 DRY							
SW064	89-06-27	17±7	17±3	3.6	0.1±0.4	0±0.01	0±0.01	60±230
SW064	89-07-19 DRY							
SW064	89-08-11 DRY							
SW064	89-09-20 DRY							
SW064	89-10-04 DRY							
SW064	89-11-09 DRY							
SW064	89-12-01 DRY							
SW064	90-01-05 DRY							
SW064	90-02-02 DRY							
SW064	90-08-23	9.328±5.266	11.74±2.667	12.95	0.168±0.282	0.005±0.007	0±0.004	_
SW070	89-03-29	7±7	8±4	7.3	0±0.5	0.02±0.01	0±0.01	160±160
SW070	89-05-16	7±4	7±3	2.8	0±0.4	0.01±0.01	0±0.01	130±210
SW070	89-06-23	5±4	10±3	6.2	0.2±0.4	0±0.01	0±0.01	170±230
SW070	89-08-14	16±7	16±4	6.1	0.5±0.5	0.01±0.01	0.01±0.01	240±200
SW070	89-09-26	4.8±1	12.2±2.5	9.23	0.28±0.28	0.005±0.006	0.088±0.034	70±240
SW070	90-07-18	_	_		_	0.003±0.003	0±0.004	_
SW070	90-08-16	3.024±2.075	6.15±1.343	4.506	0.271±0.329	0.003±0.004	0.002±0.005	_
SW070	90-10-16	3.094±2.647	6.957±1.521	6.186	0.057±0.105	0.004±0.006	0.001±0.002	_
SW030	86-08-20 DRY							
SW030	87-05-26	18±14	13±14	16.34	_	0.04±0.68	0±1.9	_

The table format is: result ± counting error *=sum of all Uranium isotopes _=Missing data

Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Total Radiochemistry Results, All Total Radiochemistry reported in pci/l

Station Number	Date Sampled	Gross Alpha	Gross Beta	Uranium Total*	Strontium 90	Plutonium 239/240	Americium 241	Tritium
SW030	89-03-28	7±6	8±3	9.3	0±0.5	0.01±0.02	0.01±0.01	0±150
SW030	89-05-16	6±4	5±3	2.3	0±0.4	0.01±0.01	0.01±0.02	120±210
SW030	89-06-22	8±3	10±3	6.6	0±0.2	0.22±0.03	0±0.01	50±210
SW030	89-07-20 DRY							
SW030	89-08-21	4±3	6±3	4.1	0±0.5	0.01±0.01	0±0.01	250±220
SW030	89-09-25	5.5±1	6.1±1.9	11.09	0.54±0.31	0.017±0.009	0.029±0.017	260±240
SW030	89-11-09 DRY							
SW030	89-12-01 DRY							
SW030	90-01-05 DRY							
SW030	90-02-02 DRY							
SW030	90-07-17	_	_		_	0.004±0.003	0.007±0.005	_
SW030	90-08-16	2.463±1.886	5.946±1.395	4.288	0.257±0.293	0.011±0.008	0.007±0.006	_
SW030	90-09-12	0.869±1.509	5.336±1.272	2.780	0.041±0.298	0.012±0.007	0±0.006	_
SW030	90-10-03	2.815±2.269	5.103±1.329	5.376	0.227±0.263	0.005±0.005	0±0.005	_
SW054	87-07-15 DRY							
SW054	89-03-21	9±6	9±3	5.7	0.1±0.5	0.11±0.02	0.02±0.01	0±150
SW054	89-05-18	17±12	26±6	3.3	0±0.4	0.87±0.06	0.11±0.02	130±160
SW054	89-06-22	14±5	22±3	21.9	1.1±0.5	3.7±0.1	0.13±0.02	180±210
SW054	89-09-21	3.3±1	8.1±2.1	4.18	0.65±0.41	0.014±0.007	0.137±0.058	0±220
SW054	90-08-16	2.475±1.848	6.648±1.524	4.226	0.364±0.225	0.013±0.010	0.003±0.005	_
SW054	90-10-18	4.332±1.812	5.832±0.973	3.668	0.297±0.217	0.019±0.007	0.024±0.011	_
SW062	87-07-22	100±20	100±13	8.3	_	1.3±0.9	0±1.3	_
SW062	89-03-28	0±2	2±2	0.2	0±0.4	0.01±0.02	0.02±0.01	90±150
SW062	89-05-23	3±4	4±3	2.8	0±0.4	0±0.01	0±0.02	180±160
SW062	89-06-22	5±4	4±3	3.7	0.6±0.3	0±0.01	0±0.01	40±210
SW062	89-09-15	4±1	2±2	4.8	0.2±0.5	0.01±0.009	0.009±0.008	0±300
SW062	90-08-22	1.072±1.205	2.776±1.196	1.136	0.419±0.246	0.010±0.008	0.000±0.003	_
SW062	90-09-19	6.902±3.085	6.491±1.423	11.10	0.321±0.243	0.017±0.009	0.023±0.015	_
SW062	90-10-08	0.243±1.204	4.244±1.214	1.270	0.268±0.217	0.007±0.006	0.004±0.005	_
SW027		33±12	37±8	10.2	_	0.1±0.2	0.1±0.12	0±0.21

The table format is: result ± counting error *=sum of all Uranium isotopes _=Missing data

Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Total Radiochemistry Results, All Total Radiochemistry reported in pci/l

Station Number	Date Sampled	Gross Alpha	Gross Beta	Uranium Total*	Strontium 90	Plutonium 239/240	Americium 241	Tritium
SW027	87-07-22	10±0	61±3	6.76	_	0±1	0±1.6	_
SW027	89-03-21	11±7	8±3	6.4	0.1±0.6	0.02±0.02	0.01±0.01	0±150
SW027	89-05-18	11±9	12±4	2	0.1±0.4	0.08±0.02	0.11±0.02	40±150
SW027	89-06-22	10±4	12±3	3.7	0±0.2	0.82±0.05	0.14±0.02	180±210
SW027	89-09-15	1±1	11±2	1.16	0.1±0.8	0.04±0.01	0.04±0.02	0±300
SW027	89-10-11	1.9±0.9	6.6±2	2.02	0.09±0.36	_	_	0±300
SW027	90-07-18	_	_		_	0.265±0.037	0.061±0.022	_
SW027	90-08-15	30.98±9.188	20.56±3.181		_	_	_	_
SW027	90-09-12	6.56±3.073	5.756±1.342	4.484	0.092±0.157	0.030±0.010	0.062±0.015	_
SW027	90-09-19	1.075±1.194	8.474±1.440		_	_	_	_
SW027	90-10-24	0.027±0.909	1.522±1.103		_	_	_	_
SW027	90-11-08	0.680±1.295	5.676±1.317		_	_	_	_
SWC2		7±4	3±3	4.1	_	0.01±0.04	0.01±0.04	0±0.22
SWC2	89-06-20	2±2	5±2		_	_	_	_
SWC2	89-07-19	_	_		_	_	_	40±220
SWC2	89-07-20	3±5	11±3	0.4	0.2±0.5	0.06±0.02	0.01±0.01	500±210
SWC2	89-07-21	1±5	9±3	1	0.8±0.5	0.03±0.01	0±0.01	310±210
SWC2	89-08-02	3±3	8±3	1.2	0.6±0.5	0.01±0.01	0±0.01	150±210
SWC2	89-08-03	2±2	9±3	1.5	0±0.8	0.01±0.01	0.01±0.01	180±220
SWC2	89-08-24	2±5	6±3	0.8	0.2±0.4	0.01±0.01	0.01±0.02	190±220
SWC2	89-08-25	1±5	9±3	1	0.5±0.4	0.01±0.01	0±0.01	180±220
SWC2	90-03-23	9±1.6	11.5±2.4	6.68	0.42±0.31	0.03±0.012	_	_
SWC2	90-04-01	3.361±2.232	7.435±1.471		_	_	_	_
SWC2	90-04-02	2.889±2.185	6.393±1.406		_	_	_	_
SWC2	90-04-03	1.201±1.828	6.993±1.467		_	_	_	_
SWC2	90-04-04	2.73±2.37	8.361±1.972		_	_	_	_
SWC2	90-04-06	7.655±3.214	6.867±1.485		_	_	_	_
SWC2	90-04-07	8.053±2.952	6.433±1.436		_	_	_	_
SWC2	90-04-08	7.097±2.854	6.838±1.454		_	_	_	_
SWC2	90-04-09	5.686±2.595	7.333±1.429		_	_	_	_
SWC2	90-04-13	2.796±2.279	8.911±1.54		_	_	_	_
SWC2	90-04-14	2.569±2.279	7.248±1.761		_	_	_	_

The table format is: result ± counting error *=sum of all Uranium isotopes _=Missing data

Woman Creek Basin Interim Remedial Action Plan (IRAP)

Surface Water Total Radiochemistry Results, All Total Radiochemistry reported in pci/l

Station Number	Date Sampled	Gross Alpha	Gross Beta	Uranium Total*	Strontium 90	Plutonium 239/240	Americium 241	Tritium
SWC2	90-04-16	1.944±2.068	7.624±1.43		-	-	-	-
SWC2	90-04-17	1.665±1.73	6.432±1.428		-	-	-	-
SWC2	90-04-18	6.458±2.893	8.436±1.549		-	-	-	-
SWC2	90-04-20	5.186±2.668	8.696±1.575		-	-	-	-
SWC2	90-04-21	2.598±2.08	5.844±1.427		-	-	-	-
SWC2	90-04-22	5.293±2.307	6.808±1.386		-	-	-	-
SWC2	90-04-23	6.908±2.913	6.417±1.472		-	-	-	-
SWC2	90-04-24	5.762±2.558	7.782±1.417		-	-	-	-
SWC2	90-04-25	4.141±2.446	10.18±1.519		-	-	-	-
SWC2	90-04-27	5.426±2.558	8.408±1.559		-	-	-	-
SWC2	90-04-28	6.19±2.913	8.777±1.509		-	-	-	-
SWC2	90-04-29	3.568±2.379	7.632±1.496		-	-	-	-
SWC2	90-04-30	3.816±2.35	6.765±1.407		-	-	-	-
SWC2	90-05-04	4.45±2.593	7.138±1.488		-	-	-	-
SWC2	90-05-05	4.266±2.372	7.004±1.301		-	-	-	-
SWC2	90-05-06	6.98±2.762	6.607±1.44		-	-	-	-

The table format is: result ± counting error *=sum of all Uranium isotopes _=Missing data

APPENDIX C

SURFACE WATER SAMPLING RESULTS

SUMMARY TABLES

WOMAN CREEK BASIN

Woman Creek Basin Interim Remedial Action Plan (IRAP)

TOTAL VOA Exceedance Report for Location SW050, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	6	0	2.5	2.5 U	2.5 U
1,1,2,2-TETRACHLOROETHANE	.	5	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	6	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHANE	.	5	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	6	1	25.417	2.5 U	140
1,2-DICHLOROETHANE	.	6	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	6	0	2.833	2.5 U	4 J
1,2-DICHLOROPROPANE	.	5	0	2.5	2.5 U	2.5 U
2-BUTANONE	.	5	1	5.2	5 U	6 BJ
2-HEXANONE	.	5	0	5	5 U	5 U
4-METHYL-2-PENTANONE	.	5	0	5	5 U	5 U
ACETONE	10U#	5	0	3.2	1 BJ	5 U
BENZENE	.	5	0	2.5	2.5 U	2.5 U
BROMODICHLOROMETHANE	.	5	0	2.5	2.5 U	2.5 U
BROMOFORM	.	5	0	2.5	2.5 U	2.5 U
BROMOMETHANE	.	5	0	5	5 U	5 U
CARBON DISULFIDE	.	5	0	2.4	2 J	2.5 U
CARBON TETRACHLORIDE	5	6	4	192.667	2 J	1005
CHLOROBENZENE	.	5	0	2.5	2.5 U	2.5 U
CHLOROETHANE	.	5	0	5	5 U	5 U
CHLOROFORM	100	6	6	25.5	6	84
CHLOROMETHANE	.	5	0	5	5 U	5 U
DIBROMOCHLOROMETHANE	.	5	0	2.5	2.5 U	2.5 U
ETHYLBENZENE	.	5	0	2.5	2.5 U	2.5 U
METHYLENE CHLORIDE	5U#	5	2	5	2.5 U	8 B
STYRENE	.	5	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	6	5	23.5	4 J	65
TOLUENE	.	5	0	2.5	2.5 U	2.5 U
TOTAL XYLENES	.	5	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	6	5	12.167	2 J	40
VINYL ACETATE	.	5	0	5	5 U	5 U
VINYL CHLORIDE	2	5	0	5	5 U	5 U
cis-1,3-DICHLOROPROPENE	.	5	0	2.5	2.5 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	5	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW051, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	3	0	2.5	2.5 U	2.5 U
1,1,2,2-TETRACHLOROETHANE	.	2	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	3	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHANE	.	2	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	3	1	35.333	2.5 U	101
1,2-DICHLOROETHANE	.	3	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	3	0	2.5	2.5 U	2.5 U
1,2-DICHLOROPROPANE	.	2	0	2.5	2.5 U	2.5 U
2-BUTANONE	.	2	0	5	5 U	5 U
2-HEXANONE	.	2	0	5	5 U	5 U
4-METHYL-2-PENTANONE	.	2	0	5	5 U	5 U
ACETONE	10U#	2	0	3	1 J	5 U
BENZENE	.	2	0	2.5	2.5 U	2.5 U
BROMODICHLOROMETHANE	.	2	0	2.5	2.5 U	2.5 U
BROMOFORM	.	2	0	2.5	2.5 U	2.5 U
BROMOMETHANE	.	2	0	5	5 U	5 U
CARBON DISULFIDE	.	2	1	6.75	2.5 U	11
CARBON TETRACHLORIDE	5	3	3	192.667	46	282
CHLOROBENZENE	.	2	0	2.5	2.5 U	2.5 U
CHLOROETHANE	.	2	0	5	5 U	5 U
CHLOROFORM	100	3	1	4.167	2.5 U	6
CHLOROMETHANE	.	2	0	5	5 U	5 U
DIBROMOCHLOROMETHANE	.	2	0	2.5	2.5 U	2.5 U
ETHYLBENZENE	.	2	0	2.5	2.5 U	2.5 U
METHYLENE CHLORIDE	5U#	2	0	3.75	2.5 U	5 B
STYRENE	.	2	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	3	3	28.333	9	44
TOLUENE	.	2	0	2.5	2.5 U	2.5 U
TOTAL XYLENES	.	2	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	3	2	12	5	17
VINYL ACETATE	.	2	0	5	5 U	5 U
VINYL CHLORIDE	2	2	0	5	5 U	5 U
cis-1,3-DICHLOROPROPENE	.	2	0	2.5	2.5 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	2	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW057, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	1	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	1	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	1	1	48	48	48
1,2-DICHLOROETHANE	.	1	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	1	0	2.5	2.5 U	2.5 U
CARBON TETRACHLORIDE	5	1	0	2.5	2.5 U	2.5 U
CHLOROFORM	100	1	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	1	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	1	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW052, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	3	0	2.5	2.5 U	2.5 U
1,1,2,2-TETRACHLOROETHANE	.	2	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	3	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHANE	.	2	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	3	1	26	2.5 U	73
1,2-DICHLOROETHANE	.	3	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	3	0	2.5	2.5 U	2.5 U
1,2-DICHLOROPROPANE	.	2	0	2.5	2.5 U	2.5 U
2-BUTANONE	.	2	0	5	5 U	5 U
2-HEXANONE	.	2	0	5	5 U	5 U
4-METHYL-2-PENTANONE	.	2	0	5	5 U	5 U
ACETONE	10U#	2	0	5	5 U	5 U
BENZENE	.	2	0	2.5	2.5 U	2.5 U
BROMODICHLOROMETHANE	.	2	0	2.5	2.5 U	2.5 U
BROMOFORM	.	2	0	2.5	2.5 U	2.5 U
BROMOMETHANE	.	2	0	5	5 U	5 U
CARBON DISULFIDE	.	2	0	2.5	2.5 U	2.5 U
CARBON TETRACHLORIDE	5	3	0	2.5	2 J	3 J
CHLOROBENZENE	.	2	0	2.5	2.5 U	2.5 U
CHLOROETHANE	.	2	0	5	5 U	5 U
CHLOROFORM	100	3	0	1.833	1 J	2.5 U
CHLOROMETHANE	.	2	0	5	5 U	5 U
DIBROMOCHLOROMETHANE	.	2	0	2.5	2.5 U	2.5 U
ETHYLBENZENE	.	2	0	2.5	2.5 U	2.5 U
METHYLENE CHLORIDE	5U#	2	0	3.5	3 JB	4 JB
STYRENE	.	2	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	3	2	5.5	2.5 U	7
TOLUENE	.	2	0	2.5	2.5 U	2.5 U
TOTAL XYLENES	.	2	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	3	0	2.833	2.5 U	3 J
VINYL ACETATE	.	2	0	5	5 U	5 U
VINYL CHLORIDE	2	2	0	5	5 U	5 U
cis-1,3-DICHLOROPROPENE	.	2	0	2.5	2.5 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	2	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW055, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	14	0	2.5	2.5 U	2.5 U
1,1,2,2-TETRACHLOROETHANE	.	13	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	14	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHANE	.	13	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	13	1	6.154	2.5 U	50
1,2-DICHLOROETHANE	.	14	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	14	3	3.964	2.5 U	11
1,2-DICHLOROPROPANE	.	13	0	2.5	2.5 U	2.5 U
2-BUTANONE	.	13	0	5	5 U	5 U
2-HEXANONE	.	13	0	5	5 U	5 U
4-METHYL-2-PENTANONE	.	13	0	5	5 U	5 U
ACETONE	10U#	13	2	5.308	1 JB	13
BENZENE	.	12	0	2.5	2.5 U	2.5 U
BROMODICHLOROMETHANE	.	13	0	2.5	2.5 U	2.5 U
BROMOFORM	.	13	0	2.5	2.5 U	2.5 U
BROMOMETHANE	.	13	0	5	5 U	5 U
CARBON DISULFIDE	.	13	0	2.5	2.5 U	2.5 U
CARBON TETRACHLORIDE	5	14	0	2.464	2 J	2.5 U
CHLOROBENZENE	.	12	0	2.5	2.5 U	2.5 U
CHLOROETHANE	.	13	0	5	5 U	5 U
CHLOROFORM	100	14	0	2.393	1 J	2.5 U
CHLOROMETHANE	.	13	0	5	5 U	5 U
DIBROMOCHLOROMETHANE	.	13	0	2.5	2.5 U	2.5 U
ETHYLBENZENE	.	13	0	2.5	2.5 U	2.5 U
METHYLENE CHLORIDE	5U#	13	1	3.115	1 JB	7 B
STYRENE	.	13	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	14	0	2.393	1 J	2.5 U
TOLUENE	.	12	0	2.5	2.5 U	2.5 U
TOTAL XYLENES	.	13	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	13	10	32.923	2.5 U	90
VINYL ACETATE	.	13	0	5	5 U	5 U
VINYL CHLORIDE	2	13	0	5	5 U	5 U
cis-1,3-DICHLOROPROPENE	.	13	0	2.5	2.5 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	13	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW058, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	4	0	2.5	2.5 U	2.5 U
1,1,2,2-TETRACHLOROETHANE	.	3	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	4	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHANE	.	3	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	4	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHANE	.	4	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	4	0	2.5	2.5 U	2.5 U
1,2-DICHLOROPROPANE	.	3	0	2.5	2.5 U	2.5 U
2-BUTANONE	.	3	0	5	5 U	5 U
2-HEXANONE	.	3	0	5	5 U	5 U
4-METHYL-2-PENTANONE	.	3	0	5	5 U	5 U
ACETONE	10U#	3	1	4.333	1 BJ	7 J
BENZENE	.	3	0	2.5	2.5 U	2.5 U
BROMODICHLOROMETHANE	.	3	0	2.5	2.5 U	2.5 U
BROMOFORM	.	3	0	2.5	2.5 U	2.5 U
BROMOMETHANE	.	3	0	5	5 U	5 U
CARBON DISULFIDE	.	3	0	2.167	2 J	2.5 U
CARBON TETRACHLORIDE	5	4	1	4.625	2.5 U	11
CHLOROBENZENE	.	3	0	2.5	2.5 U	2.5 U
CHLOROETHANE	.	3	0	5	5 U	5 U
CHLOROFORM	100	4	0	2.75	2 J	4 J
CHLOROMETHANE	.	3	0	5	5 U	5 U
DIBROMOCHLOROMETHANE	.	3	0	2.5	2.5 U	2.5 U
ETHYLBENZENE	.	3	0	2.5	2.5 U	2.5 U
METHYLENE CHLORIDE	5U#	3	0	2.333	2 BJ	3 JB
STYRENE	.	3	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	4	0	2.625	2.5 U	3 J
TOLUENE	.	3	0	2.5	2.5 U	2.5 U
TOTAL XYLENES	.	3	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	4	0	2.625	2.5 U	3 J
VINYL ACETATE	.	3	0	5	5 U	5 U
VINYL CHLORIDE	2	3	0	5	5 U	5 U
cis-1,3-DICHLOROPROPENE	.	3	0	2.5	2.5 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	3	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW077, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	5	0	7.5	2.5 U	25 U
1,1,2,2-TETRACHLOROETHANE	.	5	0	7	2.5 U	25 U
1,1,2-TRICHLOROETHANE	.	5	0	7	2.5 U	25 U
1,1-DICHLOROETHANE	.	5	0	7	2.5 U	25 U
1,1-DICHLOROETHENE	7	5	0	6.8	1 J	25 U
1,2-DICHLOROETHANE	.	5	0	7	2.5 U	25 U
1,2-DICHLOROETHENE	70	5	4	136.1	2.5 U	360
1,2-DICHLOROPROPANE	.	5	0	7	2.5 U	25 U
2-BUTANONE	.	5	0	14	5 U	50 U
2-HEXANONE	.	5	0	14	5 U	50 U
4-METHYL-2-PENTANONE	.	5	0	14	5 U	50 U
ACETONE	10U#	5	1	15.4	5 U	50 U
BENZENE	.	5	1	10.4	2.5 U	42 J
BROMODICHLOROMETHANE	.	5	0	7	2.5 U	25 U
BROMOFORM	.	5	0	7	2.5 U	25 U
BROMOMETHANE	.	5	0	14	5 U	50 U
CARBON DISULFIDE	.	5	0	7.1	2.5 U	25 U
CARBON TETRACHLORIDE	5	5	2	17.6	2.5 U	50
CHLOROBENZENE	.	5	0	7	2.5 U	25 U
CHLOROETHANE	.	5	0	14	5 U	50 U
CHLOROFORM	100	5	3	23.7	2.5 U	53
CHLOROMETHANE	.	5	0	14	5 U	50 U
DIBROMOCHLOROMETHANE	.	5	0	7	2.5 U	25 U
ETHYLBENZENE	.	5	0	7	2.5 U	25 U
METHYLENE CHLORIDE	5U#	5	3	7.2	2.5 U	18 BJ
STYRENE	.	5	0	7	2.5 U	25 U
TETRACHLOROETHENE	10	5	2	12.2	2.5 U	25 U
TOLUENE	.	5	1	5.6	2.5 U	18 J
TOTAL XYLENES	.	5	1	10	2.5 U	40 J
TRICHLOROETHENE	5	5	4	881.9	2.5 U	2100 E
VINYL ACETATE	.	5	0	14	5 U	50 U
VINYL CHLORIDE	2	5	0	14	5 U	50 U
cis-1,3-DICHLOROPROPENE	.	5	0	7	2.5 U	25 U
trans-1,3-DICHLOROPROPENE	.	5	0	7	2.5 U	25 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW053, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	12	0	2.5	2.5 U	2.5 U
1,1,2,2-TETRACHLOROETHANE	.	11	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	12	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHANE	.	11	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	12	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHANE	.	12	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	12	6	20.417	2.5 U	50
1,2-DICHLOROPROPANE	.	11	0	2.5	2.5 U	2.5 U
2-BUTANONE	.	11	0	5	5 U	5 U
2-HEXANONE	.	11	0	5	5 U	5 U
4-METHYL-2-PENTANONE	.	11	0	5	5 U	5 U
ACETONE	10U#	11	1	5.273	3 J	11
BENZENE	.	11	0	2.5	2.5 U	2.5 U
BROMODICHLOROMETHANE	.	11	0	2.5	2.5 U	2.5 U
BROMOFORM	.	11	0	2.5	2.5 U	2.5 U
BROMOMETHANE	.	11	0	5	5 U	5 U
CARBON DISULFIDE	.	11	0	2.5	2.5 U	2.5 U
CARBON TETRACHLORIDE	5	12	0	2.5	2.5 U	2.5 U
CHLOROBENZENE	.	11	0	2.5	2.5 U	2.5 U
CHLOROETHANE	.	11	0	5	5 U	5 U
CHLOROFORM	100	12	1	2.958	2.5 U	8
CHLOROMETHANE	.	11	0	5	5 U	5 U
DIBROMOCHLOROMETHANE	.	11	0	2.5	2.5 U	2.5 U
ETHYLBENZENE	.	11	0	2.5	2.5 U	2.5 U
METHYLENE CHLORIDE	5U#	11	3	4.818	2 JB	17 B
STYRENE	.	11	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	12	0	2.5	2.5 U	2.5 U
TOLUENE	.	11	0	2.455	2 J	2.5 U
TOTAL XYLENES	.	11	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	12	1	3.25	1 J	14
VINYL ACETATE	.	11	0	5	5 U	5 U
VINYL CHLORIDE	2	11	0	5	5 U	5 U
cis-1,3-DICHLOROPROPENE	.	11	0	2.5	2.5 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	11	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

TOTAL VOA Exceedance Report for Location SW063, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	1	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	1	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	1	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHANE	.	1	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	1	0	2.5	2.5 U	2.5 U
CARBON TETRACHLORIDE	5	1	0	2.5	2.5 U	2.5 U
CHLOROFORM	100	1	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	1	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	1	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW064, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	11	0	2.5	2.5 U	2.5 U
1,1,2,2-TETRACHLOROETHANE	.	10	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	11	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHANE	.	10	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	11	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHANE	.	11	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	11	0	2.364	1 J	2.5 U
1,2-DICHLOROPROPANE	.	10	0	2.5	2.5 U	2.5 U
2-BUTANONE	.	10	0	5	5 U	5 U
2-HEXANONE	.	10	0	5	5 U	5 U
4-METHYL-2-PENTANONE	.	10	0	5	5 U	5 U
ACETONE	10U#	10	1	6.1	2 J	23 B
BENZENE	.	10	0	2.5	2.5 U	2.5 U
BROMODICHLOROMETHANE	.	10	0	2.5	2.5 U	2.5 U
BROMOFORM	.	10	0	2.5	2.5 U	2.5 U
BROMOMETHANE	.	10	0	5	5 U	5 U
CARBON DISULFIDE	.	10	1	3	2.5 U	6
CARBON TETRACHLORIDE	5	11	0	2.409	1 J	3 J
CHLOROBENZENE	.	10	0	2.5	2.5 U	2.5 U
CHLOROETHANE	.	10	0	5	5 U	5 U
CHLOROFORM	100	11	3	7.045	1 J	27
CHLOROMETHANE	.	10	0	5	5 U	5 U
DIBROMOCHLOROMETHANE	.	10	0	2.5	2.5 U	2.5 U
ETHYLBENZENE	.	10	0	2.5	2.5 U	2.5 U
METHYLENE CHLORIDE	5U#	10	2	4.2	2 BJ	9 B
STYRENE	.	10	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	11	0	2.318	1 J	2.5 U
TOLUENE	.	10	0	2.5	2.5 U	2.5 U
TOTAL XYLENES	.	10	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	11	9	13.955	2.5 U	33
VINYL ACETATE	.	10	0	5	5 U	5 U
VINYL CHLORIDE	2	10	0	5	5 U	5 U
cis-1,3-DICHLOROPROPENE	.	10	0	2.5	2.5 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	10	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, • ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW070, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	18	0	2.5	2.5 U	2.5 U
1,1,2,2-TETRACHLOROETHANE	.	18	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	18	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHANE	.	18	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	18	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHANE	.	18	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	18	0	2.5	2.5 U	2.5 U
1,2-DICHLOROPROPANE	.	18	0	2.5	2.5 U	2.5 U
2-BUTANONE	.	18	0	5	5 U	5 U
2-HEXANONE	.	18	0	5	5 U	5 U
4-METHYL-2-PENTANONE	.	18	0	5	5 U	5 U
ACETONE	10U#	18	1	5.222	2 JB	15
BENZENE	.	18	0	2.5	2.5 U	2.5 U
BROMODICHLOROMETHANE	.	18	0	2.5	2.5 U	2.5 U
BROMOFORM	.	18	0	2.5	2.5 U	2.5 U
BROMOMETHANE	.	18	0	5	5 U	5 U
CARBON DISULFIDE	.	18	0	2.5	2.5 U	2.5 U
CARBON TETRACHLORIDE	5	18	0	2.5	2.5 U	2.5 U
CHLOROBENZENE	.	18	0	2.5	2.5 U	2.5 U
CHLOROETHANE	.	18	0	5	5 U	5 U
CHLOROFORM	100	18	0	2.5	2.5 U	2.5 U
CHLOROMETHANE	.	18	0	5	5 U	5 U
DIBROMOCHLOROMETHANE	.	18	0	2.5	2.5 U	2.5 U
ETHYLBENZENE	.	18	0	2.5	2.5 U	2.5 U
METHYLENE CHLORIDE	5U#	18	3	5.861	2 BJ	34 B
STYRENE	.	18	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	18	0	2.5	2.5 U	2.5 U
TOLUENE	.	18	0	2.472	2 J	2.5 U
TOTAL XYLENES	.	18	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	18	0	2.5	2.5 U	2.5 U
VINYL ACETATE	.	18	0	5	5 U	5 U
VINYL CHLORIDE	2	18	0	5	5 U	5 U
cis-1,3-DICHLOROPROPENE	.	18	0	2.5	2.5 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	18	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW030, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	16	0	2.469	2 U	2.5 U
1,1,2,2-TETRACHLOROETHANE	.	15	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	16	0	2.469	2 U	2.5 U
1,1-DICHLOROETHANE	.	15	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	16	0	2.469	2 U	2.5 U
1,2-DICHLOROETHANE	.	16	0	2.469	2 U	2.5 U
1,2-DICHLOROETHENE	70	16	0	2.469	2 U	2.5 U
1,2-DICHLOROPROPANE	.	15	0	2.5	2.5 U	2.5 U
2-BUTANONE	.	15	0	5	5 U	5 U
2-HEXANONE	.	15	0	5	5 U	5 U
4-METHYL-2-PENTANONE	.	15	0	5	5 U	5 U
ACETONE	10U#	15	2	5.067	3 JB	7 BJ
BENZENE	.	15	0	2.5	2.5 U	2.5 U
BROMODICHLOROMETHANE	.	15	0	2.5	2.5 U	2.5 U
BROMOFORM	.	15	0	2.5	2.5 U	2.5 U
BROMOMETHANE	.	15	0	5	5 U	5 U
CARBON DISULFIDE	.	15	0	2.5	2.5 U	2.5 U
CARBON TETRACHLORIDE	5	16	1	2.75	2 U	7
CHLOROBENZENE	.	15	0	2.5	2.5 U	2.5 U
CHLOROETHANE	.	15	0	5	5 U	5 U
CHLOROFORM	100	16	0	2.469	2 U	2.5 U
CHLOROMETHANE	.	15	0	5	5 U	5 U
DIBROMOCHLOROMETHANE	.	15	0	2.5	2.5 U	2.5 U
ETHYLBENZENE	.	15	0	2.667	2.5 U	5
METHYLENE CHLORIDE	5U#	15	3	4.6	1 JB	21
STYRENE	.	15	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	16	0	2.469	2 U	2.5 U
TOLUENE	.	15	1	3.133	2.5 U	12
TOTAL XYLENES	.	15	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	16	0	2.469	2 U	2.5 U
VINYL ACETATE	.	15	0	4.733	1 J	5 U
VINYL CHLORIDE	2	15	0	5	5 U	5 U
cis-1,3-DICHLOROPROPENE	.	15	0	2.5	2.5 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	15	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW054, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	15	0	2.667	2.5 U	5
1,1,2,2-TETRACHLOROETHANE	.	15	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	15	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHANE	.	15	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	15	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHANE	.	15	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	15	0	2.5	2.5 U	2.5 U
1,2-DICHLOROPROPANE	.	15	0	2.5	2.5 U	2.5 U
2-BUTANONE	.	15	0	5	5 U	5 U
2-HEXANONE	.	15	0	5	5 U	5 U
4-METHYL-2-PENTANONE	.	15	0	5	5 U	5 U
ACETONE	10U#	15	1	6.833	1.5 U	42
BENZENE	.	15	0	2.5	2.5 U	2.5 U
BROMODICHLOROMETHANE	.	15	0	2.5	2.5 U	2.5 U
BROMOFORM	.	15	0	2.5	2.5 U	2.5 U
BROMOMETHANE	.	15	0	5	5 U	5 U
CARBON DISULFIDE	.	15	0	2.5	2.5 U	2.5 U
CARBON TETRACHLORIDE	5	15	0	2.5	2.5 U	2.5 U
CHLOROBENZENE	.	15	0	2.5	2.5 U	2.5 U
CHLOROETHANE	.	15	0	5	5 U	5 U
CHLOROFORM	100	15	0	2.5	2.5 U	2.5 U
CHLOROMETHANE	.	15	0	5	5 U	5 U
DIBROMOCHLOROMETHANE	.	15	0	2.5	2.5 U	2.5 U
ETHYLBENZENE	.	15	0	2.5	2.5 U	2.5 U
METHYLENE CHLORIDE	5U#	15	3	8.833	1 JB	68
STYRENE	.	15	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	15	0	2.467	2 J	2.5 U
TOLUENE	.	15	0	2.5	2.5 U	2.5 U
TOTAL XYLENES	.	15	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	15	0	2.5	2.5 U	2.5 U
VINYL ACETATE	.	15	0	5	5 U	5 U
VINYL CHLORIDE	2	15	0	5	5 U	5 U
cis-1,3-DICHLOROPROPENE	.	15	0	2.5	2.5 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	15	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW062, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	17	0	2.5	2.5 U	2.5 U
1,1,2,2-TETRACHLOROETHANE	.	16	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	17	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHANE	.	16	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	17	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHANE	.	17	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	17	0	2.5	2.5 U	2.5 U
1,2-DICHLOROPROPANE	.	16	0	2.5	2.5 U	2.5 U
2-BUTANONE	.	16	0	5	5 U	5 U
2-HEXANONE	.	16	0	4.844	2.5 U	5 U
4-METHYL-2-PENTANONE	.	16	0	5	5 U	5 U
ACETONE	10U#	16	2	5.125	2 JB	15
BENZENE	.	16	0	2.5	2.5 U	2.5 U
BROMODICHLOROMETHANE	.	16	0	2.5	2.5 U	2.5 U
BROMOFORM	.	16	0	2.656	2.5 U	5 U
BROMOMETHANE	.	16	0	5	5 U	5 U
CARBON DISULFIDE	.	16	0	2.5	2.5 U	2.5 U
CARBON TETRACHLORIDE	5	17	0	2.5	2.5 U	2.5 U
CHLOROBENZENE	.	16	0	2.5	2.5 U	2.5 U
CHLOROETHANE	.	16	0	5	5 U	5 U
CHLOROFORM	100	17	0	2.5	2.5 U	2.5 U
CHLOROMETHANE	.	16	0	5	5 U	5 U
DIBROMOCHLOROMETHANE	.	16	0	2.5	2.5 U	2.5 U
ETHYLBENZENE	.	16	0	2.5	2.5 U	2.5 U
METHYLENE CHLORIDE	5U#	16	3	3.344	1 BJ	8 B
STYRENE	.	16	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	17	0	2.5	2.5 U	2.5 U
TOLUENE	.	16	0	2.5	2.5 U	2.5 U
TOTAL XYLENES	.	16	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	17	0	2.5	2.5 U	2.5 U
VINYL ACETATE	.	16	0	4.75	1 J	5 U
VINYL CHLORIDE	2	16	0	5	5 U	5 U
cis-1,3-DICHLOROPROPENE	.	16	0	2.5	2.5 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	16	0	2.5	2.5 U	2.5 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SW027, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	17	0	2.5	2.5 U	2.5 U
1,1,2,2-TETRACHLOROETHANE	.	16	0	2.5	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	.	17	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHANE	.	16	0	2.5	2.5 U	2.5 U
1,1-DICHLOROETHENE	7	17	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHANE	.	17	0	2.5	2.5 U	2.5 U
1,2-DICHLOROETHENE	70	16	0	2.5	2.5 U	2.5 U
1,2-DICHLOROPROPANE	.	16	0	2.5	2.5 U	2.5 U
2-BUTANONE	.	16	0	5	5 U	5 U
2-HEXANONE	.	16	0	5	5 U	5 U
4-METHYL-2-PENTANONE	.	16	0	5	5 U	5 U
ACETONE	10U#	16	2	5.375	3 JB	13 B
BENZENE	.	16	0	2.5	2.5 U	2.5 U
BROMODICHLOROMETHANE	.	16	0	2.5	2.5 U	2.5 U
BROMOFORM	.	16	0	2.5	2.5 U	2.5 U
BROMOMETHANE	.	16	0	5	5 U	5 U
CARBON DISULFIDE	.	16	0	2.531	2.5 U	3 J
CARBON TETRACHLORIDE	5	17	0	2.5	2.5 U	2.5 U
CHLOROBENZENE	.	16	0	2.5	2.5 U	2.5 U
CHLOROETHANE	.	16	0	5	5 U	5 U
CHLOROFORM	100	17	0	2.5	2.5 U	2.5 U
CHLOROMETHANE	.	16	0	5	5 U	5 U
DIBROMOCHLOROMETHANE	.	16	0	2.5	2.5 U	2.5 U
ETHYLBENZENE	.	16	0	2.5	2.5 U	2.5 U
METHYLENE CHLORIDE	5U#	16	3	5.156	1 BJ	28 B
STYRENE	.	16	0	2.5	2.5 U	2.5 U
TETRACHLOROETHENE	10	17	0	2.5	2.5 U	2.5 U
TOLUENE	.	16	0	2.469	2 J	2.5 U
TOTAL XYLENES	.	16	0	2.5	2.5 U	2.5 U
TRICHLOROETHENE	5	17	0	2.5	2.5 U	2.5 U
VINYL ACETATE	.	16	0	5	5 U	5 U
VINYL CHLORIDE	2	16	0	5	5 U	5 U
cis-1,3-DICHLOROPROPENE	.	16	0	2.5	2.5 U	2.5 U
trans-1,2-DICHLOROETHENE	70	1	0	2.5	2.5 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	16	0	2.5	2.5 U	2.5 U

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U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location SWC2, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	28	1	2.514	0.1 U	7
1,1,2,2-TETRACHLOROETHANE	.	28	0	2.243	0.1 U	2.5 U
1,1,2-TRICHLOROETHANE	.	28	0	2.243	0.1 U	2.5 U
1,1-DICHLOROETHANE	.	28	0	2.243	0.1 U	2.5 U
1,1-DICHLOROETHENE	7	28	0	2.225	0.1 U	2.5 U
1,2-DICHLOROETHANE	.	28	0	2.376	0.1 U	3.8
1,2-DICHLOROETHENE	70	24	0	2.5	2.5 U	2.5 U
1,2-DICHLOROPROPANE	.	28	0	2.243	0.1 U	2.5 U
2-BUTANONE	.	25	1	5.12	5 U	8 J
2-HEXANONE	.	25	0	5	5 U	5 U
4-METHYL-2-PENTANONE	.	25	0	5	5 U	5 U
ACETONE	10U#	25	4	5.56	2 J	20 B
BENZENE	.	28	0	2.259	0.25 U	2.5 U
BROMODICHLOROMETHANE	.	28	0	2.243	0.1 U	2.5 U
BROMOFORM	.	28	0	2.243	0.1 U	2.5 U
BROMOMETHANE	.	28	0	4.475	0.1 U	5 U
CARBON DISULFIDE	.	25	0	2.5	2.5 U	2.5 U
CARBON TETRACHLORIDE	5	28	0	2.243	0.1 U	2.5 U
CHLOROBENZENE	.	28	0	2.257	0.1 U	2.5 U
CHLOROETHANE	.	28	0	4.475	0.1 U	5 U
CHLOROFORM	100	28	0	2.243	0.1 U	2.5 U
CHLOROMETHANE	.	28	0	4.475	0.1 U	5 U
DIBROMOCHLOROMETHANE	.	28	0	2.243	0.1 U	2.5 U
ETHYLBENZENE	.	28	0	2.259	0.25 U	2.5 U
METHYLENE CHLORIDE	5U#	28	5	3.95	0.1 U	16 B
STYRENE	.	28	0	2.259	0.25 U	2.5 U
TETRACHLOROETHENE	10	28	1	2.564	0.1 U	13
TOLUENE	.	28	1	2.366	0.25 U	6
TOTAL XYLENES	.	25	1	2.62	2 J	6
TRICHLOROETHENE	5	28	1	2.707	0.1 U	15
VINYL ACETATE	.	25	0	5	5 U	5 U
VINYL CHLORIDE	2	28	0	4.475	0.1 U	5 U
cis-1,3-DICHLOROPROPENE	.	26	0	2.408	0.1 U	2.5 U
trans-1,2-DICHLOROETHENE	70	4	0	0.7	0.1 U	2.5 U
trans-1,3-DICHLOROPROPENE	.	26	0	2.408	0.1 U	2.5 U

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U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO MET Exceedance Report for Location SW050, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	6	0	135.533	93.2 B	320
ANTIMONY	.	5	0	27	15 U	30 U
ARSENIC	.	5	0	4.78	3.9 B	5 U
BARIUM	1000*	6	0	206.167	100 U	303
BERYLLIUM	5#*	5	0	2.2	1 U	2.5 U
CADMIUM	5U*	5	0	2.2	1 U	2.5 U
CALCIUM	.	6	0	124550	97300	147000
CESIUM	.	5	0	310.2	1 UWN	500 U
CHROMIUM	11*	6	0	9.433	5 U	31.6
COBALT	.	6	0	21.667	5 U	25 U
COPPER	25U*	6	0	12.983	12.5 U	15.4 B
IRON	300	6	0	131	34 B	552
LEAD	5U*	5	0	4.86	1.5 U	15.3 N*
LITHIUM	2500#*	5	0	45	25 U	50 U
MAGNESIUM	.	6	0	9385	8110	12000
MANGANESE	50	6	0	217.1	50.6	495
MERCURY	.	5	0	0.12	0.1 U	0.2
MOLYBDENUM	.	5	0	44	20 U	50 U
NICKEL	101.4*	6	0	18.333	10 U	20 U
POTASSIUM	.	5	0	2608	2500 U	3040 B
SELENIUM	10*	5	0	2.2	1 UWN	2.5 U
SILICON	.	1	0	8240	8240	8240
SILVER	.	6	0	7.483	5 U	19.9
SODIUM	.	6	0	8415	7040	9500
STRONTIUM	.	6	0	472	430	500 U
THALLIUM	.	5	0	4.2	1 U	5 U
TIN	.	5	0	57.2	50 U	86
VANADIUM	0.1#*	6	0	24	19 B	25 U
ZINC	45*	6	0	28.333	10 U	87.8

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO MET Exceedance Report for Location SW051, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	3	0	100	100 U	100 U
ANTIMONY	.	2	0	30	30 U	30 U
ARSENIC	.	2	0	5	5 U	5 U
BARIUM	1000*	3	0	136.667	100 U	210
BERYLLIUM	5#*	2	0	2.5	2.5 U	2.5 U
CADMIUM	5U*	2	0	2.5	2.5 U	2.5 U
CALCIUM	.	3	0	99100	95700	103000
CESIUM	.	2	0	500	500 U	500 U
CHROMIUM	11*	3	0	5	5 U	5 U
COBALT	.	3	0	25	25 U	25 U
COPPER	25U*	3	0	12.5	12.5 U	12.5 U
IRON	300	3	0	50	50 U	50 U
LEAD	5U*	2	0	2.5	2.5 U	2.5 U
LITHIUM	2500#*	2	0	50	50 U	50 U
MAGNESIUM	.	3	0	7836.667	7540	8070
MANGANESE	50	3	0	7.5	7.5 U	7.5 U
MERCURY	.	2	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	3	0	40	20 U	50 U
NICKEL	101.4*	3	0	20	20 U	20 U
POTASSIUM	.	2	0	2500	2500 U	2500 U
SELENIUM	10*	2	0	2.5	2.5 U	2.5 U
SILVER	.	3	0	5	5 U	5 U
SODIUM	.	3	0	7826.667	7320	8360
STRONTIUM	.	3	0	466.667	400	500 U
THALLIUM	.	2	0	5	5 U	5 U
TIN	.	2	0	50	50 U	50 U
VANADIUM	0.1#*	3	0	25	25 U	25 U
ZINC	45*	3	0	89	10 U	247

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO MET Exceedance Report for Location SW052, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	3	0	100	100 U	100 U
ANTIMONY	.	2	0	30	30 U	30 U
ARSENIC	.	2	0	5	5 U	5 U
BARIUM	1000*	3	0	100	100 U	100 U
BERYLLIUM	5#*	2	0	2.5	2.5 U	2.5 U
CADMIUM	5U*	2	0	2.5	2.5 U	2.5 U
CALCIUM	.	3	0	100666.667	85000	110000
CESIUM	.	2	0	875	500 U	1250 U
CHROMIUM	11*	3	0	5	5 U	5 U
COBALT	.	3	0	25	25 U	25 U
COPPER	25U*	3	0	12.5	12.5 U	12.5 U
IRON	300	3	0	50	50 U	50 U
LEAD	5U*	2	0	2	1.5 U	2.5 U
LITHIUM	2500#*	2	0	50	50 U	50 U
MAGNESIUM	.	3	0	14133.333	13600	15100
MANGANESE	50	3	0	103.667	7.5 U	296
MERCURY	.	2	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	3	0	40	20 U	50 U
NICKEL	101.4*	3	0	20	20 U	20 U
POTASSIUM	.	2	0	2500	2500 U	2500 U
SELENIUM	10*	2	0	2.5	2.5 U	2.5 U
SILVER	.	3	0	5	5 U	5 U
SODIUM	.	3	0	40366.667	36300	48000
STRONTIUM	.	3	0	484.667	464	500 U
THALLIUM	.	2	0	5	5 U	5 U
TIN	.	2	0	50	50 U	50 U
VANADIUM	0.1#*	3	0	25	25 U	25 U
ZINC	45*	3	0	36.5	10 U	89.5

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

DISSO MET Exceedance Report for Location SW055, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	13	0	93.462	15 U	150
ANTIMONY	.	12	0	68.333	30 U	250 U
ARSENIC	.	12	0	4.333	1 U	5 U
BARIUM	1000*	13	0	236.308	100 U	343
BERYLLIUM	5#*	12	0	6.208	1 U	50 U
CADMIUM	5U*	12	0	6.375	2 U	50 U
CALCIUM	.	13	0	115869.231	91700	145000
CESIUM	.	12	0	545.875	0.5 U	1250 U
CHROMIUM	11*	13	0	9.231	5 U	50 U
COBALT	.	13	0	24.615	10 U	50 U
COPPER	25U*	13	0	15	10 U	50 U
IRON	300	13	0	151.262	50 U	1160
LEAD	5U*	12	0	2.317	1 U	5 U
LITHIUM	2500#*	12	0	110.125	50 U	179
MAGNESIUM	.	13	0	21684.615	14900	28300
MANGANESE	50	13	0	228.292	7.5 U	539
MERCURY	.	12	0	0.117	0.1 U	0.3
MOLYBDENUM	.	13	0	76.162	20 U	250 U
NICKEL	101.4*	13	0	20.769	10 U	50 U
POTASSIUM	.	12	0	2528.333	1960	3460
SELENIUM	10*	12	0	2.458	1 U	5 U
SILVER	.	13	0	10	5 U	50 U
SODIUM	.	13	0	60615.385	21000	136000
STRONTIUM	.	13	0	593.538	500 U	927
THALLIUM	.	12	0	14.417	1.5 U	50 U
TIN	.	12	0	125	50 U	500 U
VANADIUM	0.1#*	13	0	23.846	5 U	50 U
ZINC	45*	13	0	673.3	28.5	1800

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO MET Exceedance Report for Location SW057, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	1	0	100	100 U	100 U
BARIUM	1000*	1	0	600	600	600
CALCIUM	.	1	0	156000	99999	156000
CHROMIUM	11*	1	0	5	5 U	5 U
COBALT	.	1	0	25	25 U	25 U
COPPER	25U*	1	0	12.5	12.5 U	12.5 U
IRON	300	1	0	50	50 U	50 U
MAGNESIUM	.	1	0	21900	21900	21900
MANGANESE	50	1	0	381	381	381
MOLYBDENUM	.	1	0	20	20 U	20 U
NICKEL	101.4*	1	0	20	20 U	20 U
SILVER	.	1	0	5	5 U	5 U
SODIUM	.	1	0	20700	20700	20700
STRONTIUM	.	1	0	790	790	790
VANADIUM	0.1#*	1	0	25	25 U	25 U
ZINC	45*	1	0	10	10 U	10 U

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

DISSO MET Exceedance Report for Location SW058, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	4	0	82.925	31.7 B	100 U
ANTIMONY	.	3	0	29.967	29.9 B	30 U
ARSENIC	.	3	0	4	2 B	5 U
BARIUM	1000*	4	0	155.5	100 U	218
BERYLLIUM	5#*	3	0	1.833	0.5 U	2.5 U
CADMIUM	5U*	3	0	2	1 U	2.5 U
CALCIUM	.	4	0	110375	91500	136000
CESIUM	.	3	0	207.833	50 U	500 U
CHROMIUM	11*	4	0	5.3	5 U	6.2 B
COBALT	.	4	0	19.25	2 U	25 U
COPPER	25U*	4	0	9.75	1.5 U	12.5 U
IRON	300	4	0	46.675	36.7 B	50 U
LEAD	5U*	3	0	1.833	0.5 UW	2.5 U
LITHIUM	2500#*	3	0	48.5	45.5 B	50 U
MAGNESIUM	.	4	0	14200	10400	21100
MANGANESE	50	4	0	43	7.5 U	126
MERCURY	.	3	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	4	0	30.25	1 U	50 U
NICKEL	101.4*	4	0	15.5	2 U	20 U
POTASSIUM	.	3	0	2136.667	1410 B	2500 U
SELENIUM	10*	3	0	2	1 B	2.5 U
SILVER	.	4	0	4.25	2 B	5 U
SODIUM	.	4	0	12612.5	9260	20300
STRONTIUM	.	4	0	594.5	478	810
THALLIUM	.	3	0	3.5	0.5 U	5 U
TIN	.	3	0	44.267	32.8 B	50 U
VANADIUM	0.1#*	4	0	21.45	10.8 B	25 U
ZINC	45*	4	0	20.475	9.3 B	41.7

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO MET Exceedance Report for Location SW077, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	5	0	85	25 B	100 U
ANTIMONY	.	5	0	28.48	22.4 B	30 U
ARSENIC	.	5	0	4.2	1 B	5 U
BARIUM	1000*	5	0	110.4	100 U	152 B
BERYLLIUM	5#*	5	0	2.1	0.5 U	2.5 U
CADMIUM	5U*	5	0	2.2	1 U	2.5 U
CALCIUM	.	5	0	97800	72300	116000
CESIUM	.	5	0	384.7	50 U	1250 U
CHROMIUM	11*	5	0	5.32	5 U	6.6 B
COBALT	.	5	0	20.4	2 U	25 U
COPPER	25U*	5	0	10.3	1.5 U	12.5 U
IRON	300	5	0	51.36	50 U	56.8 B
LEAD	5U*	5	0	1.5	0.5 UW	2.5 U
LITHIUM	2500#*	5	0	40.4	2 U	50 U
MAGNESIUM	.	5	0	21060	13700	23900
MANGANESE	50	5	0	220.5	52.5	436
MERCURY	.	5	0	0.14	0.1 U	0.3
MOLYBDENUM	.	5	0	40.94	4.7 B	50 U
NICKEL	101.4*	5	0	16.4	2 U	20 U
POTASSIUM	.	5	0	4098	2500 U	9040
SELENIUM	10*	5	0	10.86	1 B	25 U
SILVER	.	5	0	4.2	1 U	5 U
SODIUM	.	5	0	45400	23600	56100
STRONTIUM	.	5	0	565.2	500 U	594
THALLIUM	.	5	0	4.1	0.5 UW	5 U
TIN	.	5	0	41.1	5.5 U	50 U
VANADIUM	0.1#*	5	0	21.92	9.6 B	25 U
ZINC	45*	5	0	48.38	8.9 B	92.1

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U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

DISSO MET Exceedance Report for Location SW053, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	10	0	87.13	34.6	100 U
ANTIMONY	.	9	0	64.644	18.8 B	250 U
ARSENIC	.	9	0	3.778	1 U	5 U
BARIUM	1000*	10	0	140.8	100 U	229
BERYLLIUM	5#*	9	0	2.111	0.5 U	2.5 U
CADMIUM	5U*	9	0	2.278	1 U	2.5 U
CALCIUM	.	10	0	116170	80000	152000
CESIUM	.	9	0	569.278	50 U	1250 U
CHROMIUM	11*	10	0	5.69	5 U	10 U
COBALT	.	10	0	21.2	2 U	25 U
COPPER	25U*	10	0	11.15	1.5 U	12.5 U
IRON	300	10	0	2514.5	50 U	8540
LEAD	5U*	9	0	2.644	0.5 U	8.4
LITHIUM	2500#*	9	0	315.911	23.2	2500 U
MAGNESIUM	.	10	0	29490	21500	39300
MANGANESE	50	10	0	340.8	71	587
MERCURY	.	9	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	10	0	57.95	4.5 B	250 U
NICKEL	101.4*	10	0	17.2	2 U	20 U
POTASSIUM	.	9	0	2362.222	1030 B	2730
SELENIUM	10*	9	0	1.944	0.5 U	2.5 U
SILVER	.	10	0	5.6	1 U	15 U
SODIUM	.	10	0	34860	14300	113000
STRONTIUM	.	10	0	701.9	500 U	1100
THALLIUM	.	9	0	8.722	0.5 U	50 U
TIN	.	9	0	147.444	27 B	500 U
VANADIUM	0.1#*	10	0	21.46	5 U	25 U
ZINC	45*	10	0	24.47	10 U	50.8

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

DISSO MET Exceedance Report for Location SW063, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	1	0	100	100 U	100 U
BARIUM	1000*	1	0	100	100 U	100 U
CALCIUM	.	1	0	112000	112000	112000
CHROMIUM	11*	1	0	5	5 U	5 U
COBALT	.	1	0	25	25 U	25 U
COPPER	25U*	1	0	12.5	12.5 U	12.5 U
IRON	300	1	0	50	50 U	50 U
MAGNESIUM	.	1	0	34000	34000	34000
MANGANESE	50	1	0	393	393	393
MOLYBDENUM	.	1	0	20	20 U	20 U
NICKEL	101.4*	1	0	20	20 U	20 U
SILVER	.	1	0	5	5 U	5 U
SODIUM	.	1	0	110000	110000	110000
STRONTIUM	.	1	0	1070	1070	1070
VANADIUM	0.1#*	1	0	25	25 U	25 U
ZINC	45*	1	0	30	30	30

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO MET Exceedance Report for Location SW064, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	9	0	110.411	36.3 B	358
ANTIMONY	.	8	0	27.85	17.8 B	30.6 B
ARSENIC	.	8	0	3.438	0.5 U	5 U
BARIUM	1000*	9	0	98.3	74.6 BE	116 B
BERYLLIUM	5#*	8	0	1.75	0.5 U	2.5 U
CADMIUM	5U*	8	0	1.938	1 U	2.5 U
CALCIUM	.	9	0	75611.111	45800	90700
CESIUM	.	8	0	466.875	38 U	1250 U
CHROMIUM	11*	9	0	6.567	3 U	13.4
COBALT	.	9	0	17.711	2 U	25 U
COPPER	25U*	9	0	10	1.5 U	12.5 U
IRON	300	9	0	67.6	6.5 U	322
LEAD	5U*	8	0	2.063	0.5 U	7
LITHIUM	2500#*	8	0	80.325	50 U	130
MAGNESIUM	.	9	0	56600	45300	64000
MANGANESE	50	9	0	52.689	7.5 U	194
MERCURY	.	8	0	0.116	0.1 U	0.23
MOLYBDENUM	.	9	0	29.256	5 U	50 U
NICKEL	101.4*	9	0	15.044	2 U	20 U
POTASSIUM	.	8	0	1893.125	482 B	2500 U
SELENIUM	10*	8	0	13.513	1 B	64.5
SILVER	.	9	0	4.122	1 U	5.1 B
SODIUM	.	9	0	118666.667	103000	142000 E
STRONTIUM	.	9	0	1293.333	1100	1530
THALLIUM	.	8	0	5.375	0.5 UW	20 U
TIN	.	8	0	52.213	50 U	64.7 B
VANADIUM	0.1#*	9	0	19.967	8.4 B	25 U
ZINC	45*	9	0	24.7	10 U	55.3

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U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

DISSO MET Exceedance Report for Location SW070, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	16	0	87.331	15 U	254
ANTIMONY	.	16	0	68.838	3.5 U	250 U
ARSENIC	.	16	0	3.813	1 U	5 U
BARIUM	1000*	16	0	105.075	57.4 B	202
BERYLLIUM	5#*	16	0	1.969	0.5 U	2.5 U
CADMIUM	5U*	16	0	2.219	1 U	2.5 U
CALCIUM	.	16	0	62281.25	37800	87100
CESIUM	.	16	0	385.125	0.5 U	500 U
CHROMIUM	11*	16	0	5.944	3 U	10 U
COBALT	.	16	0	19.281	1.5 U	25 U
COPPER	25U*	16	0	13.263	1.5 U	33.1
IRON	300	16	0	59.906	14.7 B	197
LEAD	5U*	16	0	2.275	0.5 U	3.9
LITHIUM	2500#*	16	0	32.394	5 U	50 U
MAGNESIUM	.	16	0	14995	8120	19600
MANGANESE	50	16	0	28.225	7.5 U	91
MERCURY	.	16	0	0.113	0.1 UN	0.2
MOLYBDENUM	.	16	0	76.044	3.1 B	250 U
NICKEL	101.4*	16	0	15.875	2 U	20 U
POTASSIUM	.	16	0	2975	2500 U	5410
SELENIUM	10*	16	0	2.031	1 B	2.5 U
SILVER	.	16	0	6.406	1 U	15 U
SODIUM	.	16	0	33375	19200	44000
STRONTIUM	.	16	0	467.063	356	500 U
THALLIUM	.	16	0	5.125	1 U	20 U
TIN	.	16	0	130.031	13.5 B	500 U
VANADIUM	0.1#*	16	0	18.619	3.3 B	25 U
ZINC	45*	16	0	14.194	5 U	44.2

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO MET Exceedance Report for Location SW030, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	9	0	107.156	15 U	380
ANTIMONY	.	10	0	50.22	16.4 B	250 U
ARSENIC	.	10	0	3.8	1 U	5 U
BARIUM	1000*	9	0	84.067	25 U	100 U
BERYLLIUM	5#*	9	0	1.889	0.5 U	2.5 U
CADMIUM	5U*	10	0	2.28	1 U	2.5 U
CALCIUM	.	9	0	49055.556	32900	71500
CESIUM	.	10	0	319.25	0.5 U	500 U
CHROMIUM	11*	9	0	6.711	5 U	12.7
COBALT	.	9	0	18.422	1.5 U	25 U
COPPER	25U*	9	0	12.089	9.6 B	14.2 B
IRON	300	9	0	81.9	19.4 B	359
LEAD	5U*	10	0	1.85	0.5 U	2.5 U
LITHIUM	2500#*	10	0	23.25	0.5 U	50 U
MAGNESIUM	.	9	0	12434.444	7780	16200
MANGANESE	50	9	0	7.922	5 U	14 B
MERCURY	.	11	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	9	0	52.633	5 U	250 U
NICKEL	101.4*	9	0	15.522	2 U	20 U
POTASSIUM	.	10	0	2502	2260	2640 B
SELENIUM	10*	10	0	3	0.5 U	12.5 U
SILVER	.	9	0	6.022	3.3 B	15 U
SODIUM	.	9	0	28955.556	17000	45900
STRONTIUM	.	9	0	418.111	231	500 U
THALLIUM	.	10	0	3.9	1 UWN	5 U
TIN	.	9	0	93.144	18.9 B	500 U
VANADIUM	0.1#*	9	0	18.656	5 U	25 U
ZINC	45*	10	0	15.18	5 U	38

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO MET Exceedance Report for Location SW054, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	12	0	88.508	15 U	100 U
ANTIMONY	.	12	0	46.65	9.8 B	250 U
ARSENIC	.	12	0	4.892	1 U	11.7
BARIUM	1000*	12	0	111.758	78.1	250
BERYLLIUM	5#*	12	0	2.325	0.5 U	2.5 U
CADMIUM	5U*	12	0	2.333	1 U	2.5 U
CALCIUM	.	12	0	50466.667	33600	69200
CESIUM	.	12	0	495.875	0.5 U	1250 U
CHROMIUM	11*	12	0	5.75	5 U	10 U
COBALT	.	12	0	21.792	1.5 U	25 U
COPPER	25U*	12	0	11.8	6.6 B	12.5 U
IRON	300	12	0	94.017	7 UN*	575
LEAD	5U*	12	0	12.167	0.5 U	114
LITHIUM	2500#*	12	0	39.6	5 U	50 U
MAGNESIUM	.	12	0	11764.167	7420	15600
MANGANESE	50	12	0	144.392	5 U	1180
MERCURY	.	12	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	12	0	59.183	5 U	250 U
NICKEL	101.4*	12	0	17.667	2 U	20 U
POTASSIUM	.	12	0	3335	2500 U	5820
SELENIUM	10*	12	0	2.208	0.5 U	2.5 U
SILVER	.	12	0	7.567	3.1 B	27.7
SODIUM	.	12	0	29441.667	13900	44300
STRONTIUM	.	12	0	457.833	299	500 U
THALLIUM	.	12	0	4.375	1 UW	5 U
TIN	.	12	0	84.558	14.7 B	500 U
VANADIUM	0.1#*	12	0	21.775	5 U	25 U
ZINC	45*	12	0	138.2	5 U	1390

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO MET Exceedance Report for Location SW062, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	14	0	81.143	2.5 U	100 U
ANTIMONY	.	13	0	44.369	5 U	250 U
ARSENIC	.	13	0	4.038	0.5 UW	5 U
BARIUM	1000*	14	0	96.221	76.8	100 U
BERYLLIUM	5#*	13	0	2.077	0.5 U	2.5 U
CADMIUM	5U*	13	0	2.231	1 U	2.5 U
CALCIUM	.	14	0	57207.143	23700	111000
CESIUM	.	13	0	607.462	73.5 U	1250 U
CHROMIUM	11*	14	0	5.071	3 U	10 U
COBALT	.	14	0	20.643	2 U	25 U
COPPER	25U*	14	0	10.75	1.5 U	12.5 U
IRON	300	14	0	80.643	46 B	394
LEAD	5U*	13	0	1.692	0.5 U	2.5 U
LITHIUM	2500#*	13	0	33.692	5 U	50 U
MAGNESIUM	.	14	0	14503.571	5580	29600
MANGANESE	50	14	0	99.7	5 U	579
MERCURY	.	13	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	14	0	48.714	1 U	250 U
NICKEL	101.4*	14	0	16.714	2 U	20 U
POTASSIUM	.	13	0	2270.769	1240	2500 U
SELENIUM	10*	13	0	2.923	1 U	12.5 U
SILVER	.	14	0	5.771	1 U	15 U
SODIUM	.	14	0	44350	20700	99400
STRONTIUM	.	14	0	415.143	127	970
THALLIUM	.	13	0	10.231	0.5 U	50 U
TIN	.	13	0	79.046	5.5 U	500 U
VANADIUM	0.1#*	14	0	20.471	1.5 U	25 U
ZINC	45*	14	0	12.821	1 U	37

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO MET Exceedance Report for Location SW027, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	14	0	83.1	15 U	100 U
ANTIMONY	.	13	0	48.177	25 U	250 U
ARSENIC	.	13	0	3.808	0.5 U	5 U
BARIUM	1000*	14	0	102.75	50 U	153 B
BERYLLIUM	5#*	13	0	2.077	0.5 U	2.5 U
CADMIUM	5U*	13	0	2.415	2 U	2.5 U
CALCIUM	.	14	0	65535.714	45900	80700
CESIUM	.	13	0	416.923	0.5 U	1250 U
CHROMIUM	11*	14	0	5.779	3 U	12.9
COBALT	.	14	0	21.271	5.8 B	25 U
COPPER	25U*	14	0	11.857	10 U	12.5 U
IRON	300	14	0	55.721	15 U	153
LEAD	5U*	13	0	2.215	0.5 U	4.8
LITHIUM	2500#*	12	0	38.383	10 B	50 U
MAGNESIUM	.	14	0	13620.714	8000	19000
MANGANESE	50	14	0	98.679	5 U	441
MERCURY	.	13	0	0.108	0.1 U	0.2
MOLYBDENUM	.	14	0	53.2	5 U	250 U
NICKEL	101.4*	14	0	17.736	7 B	20 U
POTASSIUM	.	13	0	4053.846	2500 U	8530
SELENIUM	10*	13	0	2.208	1 U	2.5 U
SILVER	.	14	0	5.429	1 U	15 U
SODIUM	.	14	0	44271.429	32300	54900
STRONTIUM	.	14	0	469.071	297	520
THALLIUM	.	13	0	4.192	1.5 U	5 U
TIN	.	12	0	82.925	16.5 B	500 U
VANADIUM	0.1#*	14	0	21.2	5 U	25 U
ZINC	45*	14	0	27.207	10 U	86.2

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U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO MET Exceedance Report for Location SWC2, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	7	0	92.857	50 U	100 U
ANTIMONY	.	7	0	26.429	5 U	30 U
ARSENIC	.	7	0	4.429	1 U	5 U
BARIUM	1000*	7	0	120	100 U	240
BERYLLIUM	5#*	7	0	5	2.5 U	20
CADMIUM	5U*	7	0	2.5	2.5 U	2.5 U
CALCIUM	.	7	0	33742.857	20600	40200
CESIUM	.	7	0	371.429	50 U	500 U
CHROMIUM	11*	7	0	7.286	5 U	21
COBALT	.	7	0	25	25 U	25 U
COPPER	25U*	7	0	12.143	10 U	12.5 U
IRON	300	7	0	81.5	37.5 U	178
LEAD	5U*	7	0	2.857	2.5 U	5 U
LITHIUM	2500#*	6	0	50	50 U	50 U
MAGNESIUM	.	7	0	10371.429	10000	11200
MANGANESE	50	7	0	685.629	5 U	2430
MERCURY	.	7	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	7	0	57.143	50 U	100
NICKEL	101.4*	7	0	20	20 U	20 U
POTASSIUM	.	7	0	5547.857	5 U	8180
SELENIUM	10*	7	0	2.286	1 U	2.5 U
SILVER	.	7	0	5	5 U	5 U
SODIUM	.	7	0	32942.857	29900	34900
STRONTIUM	.	7	0	425	230	500 U
THALLIUM	.	7	0	5	5 U	5 U
TIN	.	6	0	50	50 U	50 U
VANADIUM	0.1#*	7	0	25	25 U	25 U
ZINC	45*	7	0	26.386	2.5 U	103

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location SW050, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	4	0	2088.05	93.2 B	7840
ANTIMONY	.	4	0	26.25	15 U	30 U
ARSENIC	.	4	0	4.725	3.9 B	5 U
BARIUM	1000	4	0	237	100 U	317
BERYLLIUM	5U#	4	0	2.125	1 U	2.5 U
CADMIUM	5U	4	0	2.125	1 U	2.5 U
CALCIUM	.	4	0	118575	88300	144000
CESIUM	.	4	0	262.75	1 UWN	500 U
CHROMIUM	11	4	0	14.1	5 U	31.6
COBALT	.	4	0	20	5 U	25 U
COPPER	25U	4	0	13.225	12.5 U	15.4 B
IRON	1000	4	0	3681	34 B	14000
LEAD	5U	4	0	9.3	1.5 U	17.9
LITHIUM	2500#	4	0	43.75	25 U	50 U
MAGNESIUM	.	4	0	10242.5	7470	12000
MANGANESE	1000	4	0	406.125	7.5 U	861
MERCURY	.	4	0	0.125	0.1 U	0.2
MOLYBDENUM	.	3	0	50	50 U	50 U
NICKEL	101.4	4	0	17.5	10 U	20 U
POTASSIUM	.	4	0	2635	2500 U	3040 B
SELENIUM	10	4	0	2.125	1 UWN	2.5 U
SILICON	.	1	0	8240	8240	8240
SILVER	.	4	0	8.725	5 U	19.9
SODIUM	.	4	0	8230	7730	8640
STRONTIUM	.	4	0	474	427	500 U
THALLIUM	.	4	0	4	1 U	5 U
TIN	.	4	0	73.5	50 U	108
VANADIUM	100#	4	0	23.5	19 B	25 U
ZINC	45	4	0	70.5	18.5 B	158

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location SW051, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	1	0	224	224	224
ANTIMONY	.	1	0	30	30 U	30 U
ARSENIC	.	1	0	5	5 U	5 U
BARIUM	1000	1	0	100	100 U	100 U
BERYLLIUM	5U#	1	0	2.5	2.5 U	2.5 U
CADMIUM	5U	1	0	2.5	2.5 U	2.5 U
CALCIUM	.	1	0	91100	91100	91100
CESIUM	.	1	0	500	500 U	500 U
CHROMIUM	11	1	0	5	5 U	5 U
COBALT	.	1	0	25	25 U	25 U
COPPER	25U	1	0	12.5	12.5 U	12.5 U
IRON	1000	1	0	412	412	412
LEAD	5U	1	0	2.5	2.5 U	2.5 U
LITHIUM	2500#	1	0	50	50 U	50 U
MAGNESIUM	.	1	0	7620	7620	7620
MANGANESE	1000	1	0	244	244	244
MERCURY	.	1	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	1	0	50	50 U	50 U
NICKEL	101.4	1	0	20	20 U	20 U
POTASSIUM	.	1	0	2500	2500 U	2500 U
SELENIUM	10	1	0	2.5	2.5 U	2.5 U
SILVER	.	1	0	5	5 U	5 U
SODIUM	.	1	0	9040	9040	9040
STRONTIUM	.	1	0	500	500 U	500 U
THALLIUM	.	1	0	5	5 U	5 U
TIN	.	1	0	50	50 U	50 U
VANADIUM	100#	1	0	25	25 U	25 U
ZINC	45	1	0	208	208	208

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U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location SW052, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	2	0	174.5	100 U	249
ANTIMONY	.	2	0	30	30 U	30 U
ARSENIC	.	2	0	5	5 U	5 U
BARIUM	1000	2	0	100	100 U	100 U
BERYLLIUM	5U#	2	0	2.5	2.5 U	2.5 U
CADMIUM	5U	2	0	2.5	2.5 U	2.5 U
CALCIUM	.	2	0	93900	83800	104000
CESIUM	.	2	0	875	500 U	1250 U
CHROMIUM	11	2	0	5	5 U	5 U
COBALT	.	2	0	25	25 U	25 U
COPPER	25U	2	0	12.5	12.5 U	12.5 U
IRON	1000	2	0	164	50 U	278
LEAD	5U	2	0	3.2	2.5 U	3.9
LITHIUM	2500#	2	0	50	50 U	50 U
MAGNESIUM	.	2	0	13850	12800	14900
MANGANESE	1000	2	0	7.5	7.5 U	7.5 U
MERCURY	.	2	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	2	0	50	50 U	50 U
NICKEL	101.4	2	0	20	20 U	20 U
POTASSIUM	.	2	0	2500	2500 U	2500 U
SELENIUM	10	2	0	2.5	2.5 U	2.5 U
SILVER	.	2	0	5	5 U	5 U
SODIUM	.	2	0	35750	34800	36700
STRONTIUM	.	2	0	476	452	500 U
THALLIUM	.	2	0	5	5 U	5 U
TIN	.	2	0	50	50 U	50 U
VANADIUM	100#	2	0	25	25 U	25 U
ZINC	45	2	0	65.3	45	85.6

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location SW058, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	3	0	690	180 B	1340
ANTIMONY	.	3	0	25.467	16.4 B	30 U
ARSENIC	.	3	0	3.667	1 U	5 U
BARIUM	1000	3	0	175.333	100 U	214
BERYLLIUM	5U#	3	0	1.833	0.5 U	2.5 U
CADMIUM	5U	3	0	2	1 U	2.5 U
CALCIUM	.	3	0	108233.333	92800	134000
CESIUM	.	3	0	207.833	50 U	500 U
CHROMIUM	11	3	0	8.867	5 U	16.6
COBALT	.	3	0	19.3	7.9 B	25 U
COPPER	25U	3	0	18.133	9.8 B	32.1
IRON	1000	3	0	941.667	293	1690
LEAD	5U	3	0	4.633	2.5 U	8.9
LITHIUM	2500#	3	0	49.6	48.8 B	50 U
MAGNESIUM	.	3	0	14033.333	10200	20600
MANGANESE	1000	3	0	90	45.7	141
MERCURY	.	3	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	3	0	34.133	2.4 B	50 U
NICKEL	101.4	3	0	15.333	6 B	20 U
POTASSIUM	.	3	0	2120	1360 B	2500 U
SELENIUM	10	3	0	2	1 B	2.5 U
SILVER	.	3	0	5.367	5 U	6.1 B
SODIUM	.	3	0	12730	8590	19100
STRONTIUM	.	3	0	583.333	468	782
THALLIUM	.	3	0	3.833	1.5 U	5 U
TIN	.	3	0	45.267	35.8 B	50 U
VANADIUM	100#	3	0	21.533	14.6 B	25 U
ZINC	45	3	0	112.733	16.8 B	267

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location SW077, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	5	0	1109.6	417	2370
ANTIMONY	.	5	0	25	5 U	30 U
ARSENIC	.	5	0	4.2	1 U	5 U
BARIUM	1000	5	0	131.4	100 U	214
BERYLLIUM	5U#	5	0	2.1	0.5 U	2.5 U
CADMIUM	5U	5	0	2.2	1 U	2.5 U
CALCIUM	.	5	0	85320	59000 U	102000
CESIUM	.	5	0	384.7	50 U	1250 U
CHROMIUM	11	5	0	6.46	5 U	12.3
COBALT	.	5	0	20.4	2 U	25 U
COPPER	25U	5	0	11.6	8 B	12.5 U
CYANIDE	.	1	0	0.75	0.75 U	0.75 U
IRON	1000	5	0	1802	730	2720
LEAD	5U	5	0	4.84	1.5 U	13.6
LITHIUM	2500#	5	0	40.4	2 U	50 U
MAGNESIUM	.	5	0	20920	14000	24500
MANGANESE	1000	5	0	289	184	404
MERCURY	.	5	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	5	0	40.64	3.2 B	50 U
NICKEL	101.4	5	0	17.22	6.1 B	20 U
POTASSIUM	.	5	0	3950	2500 U	8770
SELENIUM	10	5	0	5.42	1 BW	12.6
SILVER	.	5	0	4.64	3.2 B	5 U
SODIUM	.	5	0	45020	24500	57300
STRONTIUM	.	5	0	553.8	500 U	603
THALLIUM	.	5	0	4.3	1.5 U	5 U
TIN	.	5	0	44.3	21.5 B	50 U
VANADIUM	100#	5	0	22.66	13.3 B	25 U
ZINC	45	5	0	101.52	39.5	218

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U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location SW053, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	10	0	1954.6	100 U	6620
ANTIMONY	.	10	0	50.3	13 B	250 U
ARSENIC	.	10	0	5.91	3.6	11.5
BARIUM	1000	10	0	237.3	100 U	448
BERYLLIUM	5U#	10	0	2.45	0.5 U	5.5
CADMIUM	5U	10	0	2.56	2 U	3.6 B
CALCIUM	.	10	0	130890	84900	150000
CESIUM	.	10	0	637.35	50 U	1250 U
CHROMIUM	11	10	0	7.45	5 U	24.5
COBALT	.	10	0	21.67	6.7 B	25 U
COPPER	25U	10	0	13.47	7.3 B	29.9
CYANIDE	.	1	0	0.75	0.75 U	0.75 U
IRON	1000	10	0	7989.6	436	22300
LEAD	5U	10	0	8.34	1.3 B	26.1
LITHIUM	2500#	10	0	289.59	24	2500 U
MAGNESIUM	.	10	0	30060	21700	39200
MANGANESE	1000	10	0	424.9	105	719
MERCURY	.	10	0	0.16	0.1 U	0.7
MOLYBDENUM	.	10	0	60.93	4.3 B	250 U
NICKEL	101.4	10	0	17.78	7.8 B	20 U
POTASSIUM	.	10	0	2480	1060 B	3740
SELENIUM	10	10	0	3.4	0.5 U	12.5 U
SILVER	.	10	0	6.18	5 U	15 U
SODIUM	.	10	0	25590	14700	64500
STRONTIUM	.	10	0	720.9	500 U	1040
THALLIUM	.	10	0	8.45	1.5 U	50 U
TIN	.	10	0	143.9	30 B	500 U
VANADIUM	100#	10	0	22.83	11.6	25 U
ZINC	45	10	0	41.16	10 U	121

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

TOTAL MET Exceedance Report for Location SW055, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	12	0	9042.25	50 U	46700
ANTIMONY	.	12	0	68.333	30 U	250 U
ARSENIC	.	12	0	4.925	2.4	6.7
BARIUM	1000	12	0	374.917	211	846
BERYLLIUM	5U#	12	0	6.575	1 U	50 U
CADMIUM	5U	12	0	6.375	2 U	50 U
CALCIUM	.	12	0	124083.333	104000	156000
CESIUM	.	12	0	545.875	0.5 U	1250 U
CHROMIUM	11	12	0	15.883	5 U	50 U
COBALT	.	12	0	26.125	10 U	50 U
COPPER	25U	12	0	27.275	10 U	76.6
IRON	1000	12	0	9186.167	50 U	49800
LEAD	5U	12	0	17.45	1.5 U	80
LITHIUM	2500#	12	0	373.175	50 U	3200
MAGNESIUM	.	12	0	24500	16000	31100
MANGANESE	1000	12	0	439.383	50 U	1280
MERCURY	.	12	0	0.2	0.1 U	0.6
MOLYBDENUM	.	12	0	81.458	27.5	250 U
NICKEL	101.4	12	0	23.792	10 U	50 U
POTASSIUM	.	12	0	4231.667	2310	11200
SELENIUM	10	12	0	2.458	1 U	5 U
SILVER	.	12	0	10.417	5 U	50 U
SODIUM	.	12	0	63150	19800	132000
STRONTIUM	.	12	0	610.083	500 U	914
THALLIUM	.	12	0	17.333	1.5 U	50 U
TIN	.	12	0	132.583	50 U	500 U
VANADIUM	100#	12	0	37.6	5 U	111
ZINC	45	12	0	1753.617	50 U	7210

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location SW064, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	7	0	599.286	100 U	1920
ANTIMONY	.	7	0	22.814	5 U	30 U
ARSENIC	.	7	0	3.571	1 B	5 U
BARIUM	1000	7	0	101.686	97.8 B	114 B
BERYLLIUM	5U#	7	0	1.643	0.5 U	2.5 U
CADMIUM	5U	7	0	2.743	2.4 B	4 B
CALCIUM	.	7	0	83557.143	72600	93300
CESIUM	.	7	0	462.143	38 U	1250 U
CHROMIUM	11	7	0	10.643	5 U	20.9
COBALT	.	7	0	16.843	2 U	25 U
COPPER	25U	7	0	9.586	1.5 U	12.5 U
CYANIDE	.	3	0	1.167	0.75 U	2 B
IRON	1000	7	0	619.714	50 U	1770
LEAD	5U	7	0	1.714	0.5 U	3 U
LITHIUM	2500#	7	0	83.871	50 U	120
MAGNESIUM	.	7	0	58814.286	53600	63200
MANGANESE	1000	7	0	73.557	25.3	222
MERCURY	.	7	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	7	0	33.971	9 B	50 U
NICKEL	101.4	7	0	15.943	6.6 B	20 U
POTASSIUM	.	7	0	1858.143	409 B	2500 U
SELENIUM	10	7	0	5.371	1 B	18
SILVER	.	7	0	5.243	3.1 B	9.3 B
SODIUM	.	7	0	121900	99300	153000 E
STRONTIUM	.	7	0	1344.286	1200	1440
THALLIUM	.	7	0	3.429	1 UWN	5 U
TIN	.	7	0	48.829	24.2 B	67.6 B
VANADIUM	100#	7	0	20.7	12.9 B	25 U
ZINC	45	7	0	33.171	5.5 B	77.9

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
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Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location SW070, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	13	0	2943.462	30 U	32700
ANTIMONY	.	13	0	43.277	10.4 B	250 U
ARSENIC	.	13	0	4.546	1 U	9.1
BARIUM	1000	13	0	183.846	100 U	794
BERYLLIUM	5U#	13	0	1.962	0.5 U	2.5 U
CADMIUM	5U	13	0	2.115	1 U	2.5 U
CALCIUM	.	13	0	65361.538	2500 U	157000
CESIUM	.	13	0	363.423	1 UWN	500 U
CHROMIUM	11	13	0	7.469	3 U	32.4
COBALT	.	13	0	18.731	1.5 U	25 U
COPPER	25U	13	0	12.531	3.1 B	35
CYANIDE	.	2	0	0.875	0.75 U	1 U
IRON	1000	13	0	2904.538	5 U	31500
LEAD	5U	13	0	5.746	1 U	49.3
LITHIUM	2500#	13	0	37.085	5 U	50 U
MAGNESIUM	.	13	0	14915.385	2500 U	24400
MANGANESE	1000	13	0	74.869	7.5 U	413
MERCURY	.	13	0	0.115	0.1 U	0.2
MOLYBDENUM	.	13	0	51.508	4.4 B	250 U
NICKEL	101.4	13	0	17.546	2 U	34.1
POTASSIUM	.	13	0	3236.154	2390 B	11100
SELENIUM	10	13	0	2.346	1 B	5 U
SILICON	.	1	0	5650	5650	5650
SILVER	.	13	0	5.8	1 U	15 U
SODIUM	.	13	0	31538.462	2500 U	45900
STRONTIUM	.	13	0	506.308	428	716
THALLIUM	.	13	0	3.846	1 U	5 U
TIN	.	13	0	78.046	19.1 B	500 U
VANADIUM	100#	13	0	24.285	5 U	72.8
ZINC	45	13	0	61.069	2.5 U	315

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location SW030, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	9	0	474.667	170	717
ANTIMONY	.	9	0	49.256	3.5 U	250 U
ARSENIC	.	9	0	4.078	0.5 U	5.2
BARIUM	1000	9	0	86.511	37.6 B	100 U
BERYLLIUM	5U#	9	0	1.889	0.5 U	2.5 U
CADMIUM	5U	9	0	2.111	1 U	2.5 U
CALCIUM	.	9	0	49222.222	25600	67400
CESIUM	.	9	0	343.611	0.5 U	500 U
CHROMIUM	11	9	0	6.122	5 U	10 U
COBALT	.	9	0	18.111	1.5 U	25 U
COPPER	25U	9	0	10.4	1 U	12.5 U
CYANIDE	.	2	0	0.75	0.75 U	0.75 U
IRON	1000	9	0	483.111	140	831
LEAD	5U	9	0	1.778	0.5 U	2.5 U
LITHIUM	2500#	9	0	30.367	0.5 U	50 U
MAGNESIUM	.	9	0	12785.556	7900	16000
MANGANESE	1000	9	0	12.478	5 U	24.3
MERCURY	.	9	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	9	0	56.8	1 U	250 U
NICKEL	101.4	9	0	14.889	2 U	20 U
POTASSIUM	.	9	0	2391.111	1800 B	2500 U
SELENIUM	10	9	0	1.944	0.5 U	2.5 U
SILVER	.	9	0	5.333	1.5 U	15 U
SODIUM	.	9	0	29255.556	15900	47400
STRONTIUM	.	9	0	411.444	171 B	500 U
THALLIUM	.	9	0	3.778	1 UW	5 U
TIN	.	9	0	91.133	3.5 U	500 U
VANADIUM	100#	9	0	18.733	5 U	25 U
ZINC	45	9	0	27.044	5.3 B	90.9

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Woman Creek Basin Interim Remedial Action Plan (IRAP)

TOTAL MET Exceedance Report for Location SW054, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	11	0	10054.636	100 U	50000
ANTIMONY	.	11	0	63.1	8.1 B	416
ARSENIC	.	11	0	6.918	1 U	14.9
BARIUM	1000	11	0	218.182	100 U	875
BERYLLIUM	5U#	11	0	3.282	0.5 U	13.1
CADMIUM	5U	11	0	2.364	1 U	2.5 U
CALCIUM	.	11	0	57272.727	39200	107000
CESIUM	.	11	0	540.909	200 B	1250 U
CHROMIUM	11	11	0	15.664	5 U	61.2
COBALT	.	11	0	23.045	3.5 B	25 U
COPPER	25U	11	0	26.245	9.8 B	108
CYANIDE	.	1	0	1	1 U	1 U
IRON	1000	11	0	9231.727	180	50400
LEAD	5U	11	0	26.364	0.5 UW	109
LITHIUM	2500#	11	0	45.236	8.4 B	50 U
MAGNESIUM	.	11	0	13612.727	7450	26500
MANGANESE	1000	11	0	333.991	7.5 U	2020
MERCURY	.	11	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	11	0	70.545	5.1 B	333
NICKEL	101.4	11	0	22.473	8.9 B	58.3
POTASSIUM	.	11	0	4664.545	2500 U	13100
SELENIUM	10	11	0	2.6	0.5 U	5.6
SILVER	.	11	0	5.082	5 U	5.9 B
SODIUM	.	11	0	28927.273	15700	40800
STRONTIUM	.	11	0	467.364	308	500 U
THALLIUM	.	11	0	4.636	1 U	5 U
TIN	.	11	0	186.418	17.6 B	1530
VANADIUM	100#	11	0	43.627	7.9 B	148
ZINC	45	11	0	160.164	10 U	623

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Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location SW062, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	12	0	330.433	41.2	2050
ANTIMONY	.	12	0	62.5	5 U	250 U
ARSENIC	.	12	0	3.667	1 U	5 U
BARIUM	1000	12	0	104.742	69.7	226
BERYLLIUM	5U#	12	0	1.917	0.5 U	2.5 U
CADMIUM	5U	12	0	2.167	1 U	2.5 U
CALCIUM	.	12	0	53950	24400	124000
CESIUM	.	12	0	616.417	73.5 U	1250 U
CHROMIUM	11	12	0	6.042	3 U	10 U
COBALT	.	12	0	18.667	2 U	25 U
COPPER	25U	12	0	10.733	1.5 U	12.5 U
CYANIDE	.	2	0	0.75	0.75 U	0.75 U
IRON	1000	12	0	731.667	50 U	3640
LEAD	5U	12	0	2085.025	0.5 U	25000 U
LITHIUM	2500#	12	0	32.592	5 U	50 U
MAGNESIUM	.	12	0	12117.5	5760	30300
MANGANESE	1000	12	0	179.4	7.5 U	1350
MERCURY	.	12	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	12	0	71.683	1 U	250 U
NICKEL	101.4	12	0	15.708	2 U	20 U
POTASSIUM	.	12	0	2128.333	1110	2500 U
SELENIUM	10	12	0	2.167	0.5 U	5 U
SILICON	.	1	0	6530	6530	6530
SILVER	.	12	0	6.575	1 U	15 U
SODIUM	.	12	0	36116.667	20000	102000
STRONTIUM	.	12	0	343.917	132	500 U
THALLIUM	.	12	0	3.792	1 BWN	5 U
TIN	.	12	0	118.067	5.5 U	500 U
VANADIUM	100#	12	0	18.358	3.5 B	25 U
ZINC	45	12	0	24.925	3.1 B	132

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
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Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location SW027, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	12	0	1625	100 U	3840 N
ANTIMONY	.	12	0	45.783	9.5 B	250 U
ARSENIC	.	12	0	4	1 U	5 U
BARIUM	1000	12	0	109.483	99.8	185 B
BERYLLIUM	5U#	12	0	2.042	0.5 U	2.5 U
CADMIUM	5U	12	0	3.225	1 U	14.2
CALCIUM	.	12	0	64433.333	43600	81100
CESIUM	.	12	0	447.5	0.5 U	1250 U
CHROMIUM	11	12	0	6.092	3 U	10.2
COBALT	.	12	0	20.283	3.5 B	25 U
COPPER	25U	12	0	11.05	2 B	12.5 U
CYANIDE	.	2	0	0.75	0.75 U	0.75 U
IRON	1000	12	0	1678.167	50 U	4550
LEAD	5U	12	0	3.492	1.5 U	10.9
LITHIUM	2500#	12	0	243.725	17.1	2500 U
MAGNESIUM	.	12	0	12866.667	7170	16400
MANGANESE	1000	12	0	149.192	7.5 U	481
MERCURY	.	12	0	0.1	0.1 U	0.1 U
MOLYBDENUM	.	12	0	55.483	3.3 B	250 U
NICKEL	101.4	12	0	16.758	2 U	20 U
POTASSIUM	.	12	0	4128.333	2500 U	9210
SELENIUM	10	12	0	2.217	1 B	3.6
SILICON	.	1	0	4540	4540	4540
SILVER	.	12	0	5.292	1.5 U	15 U
SODIUM	.	12	0	42891.667	28600	54900
STRONTIUM	.	12	0	458.5	300	500 U
THALLIUM	.	12	0	4.25	1.5 U	10 U
TIN	.	12	0	120.558	14.7 B	500 U
VANADIUM	100#	12	0	21.117	5 U	25 U
ZINC	45	12	0	79.483	10 U	200

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location SWC2, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	5	0	100	100 U	100 U
ANTIMONY	.	5	0	30	30 U	30 U
ARSENIC	.	5	0	5	5 U	5 U
BARIUM	1000	5	0	100	100 U	100 U
BERYLLIUM	5U#	5	0	2.5	2.5 U	2.5 U
CADMIUM	5U	5	0	2.5	2.5 U	2.5 U
CALCIUM	.	5	0	33100	29300	40800
CESIUM	.	5	0	410	50 U	500 U
CHROMIUM	11	5	0	5	5 U	5 U
COBALT	.	5	0	25	25 U	25 U
COPPER	25U	5	0	12.5	12.5 U	12.5 U
IRON	1000	5	0	146	50 U	221
LEAD	5U	5	0	2.5	2.5 U	2.5 U
LITHIUM	2500#	5	0	50	50 U	50 U
MAGNESIUM	.	5	0	10346	9740	11500
MANGANESE	1000	5	0	362.4	222	696
MERCURY	.	5	0	0.16	0.1 U	0.3
MOLYBDENUM	.	5	0	50	50 U	50 U
NICKEL	101.4	5	0	20	20 U	20 U
POTASSIUM	.	5	0	6188	5070	8390
SELENIUM	10	5	0	2.5	2.5 U	2.5 U
SILVER	.	5	0	5	5 U	5 U
SODIUM	.	5	0	34560	32200	36900
STRONTIUM	.	5	0	455.4	277	500 U
THALLIUM	.	5	0	5	5 U	5 U
TIN	.	5	0	50	50 U	50 U
VANADIUM	100#	5	0	25	25 U	25 U
ZINC	45	5	0	154.92	76.6	358

(____)= Value exceeds ARAR, #=Value shown is TBC, • ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
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Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SW050, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALKALINITY AS CACO3	.	2	0	290850	276000	305700
BICARBONATE AS CACO3	.	1	0	276000	276000	276000
CARBONATE	.	1	0	2500	2500 U	2500 U
CARBONATE AS CACO3	.	1	0	1000	1000 U	1000 U
CHLORIDE	5000U	4	0	37802.5	22000	59000
CYANIDE	.	2	0	252.5	5 U	500 U
FLUORIDE	.	1	0	380	380	380
NITRATE	.	2	0	34.186	18.372	50 U
NITRATE/NITRITE	10000	3	0	1730	400	4150
NITRITE	.	1	0	50	50 U	50 U
OIL AND GREASE	.	4	0	3295	500 U	9400
PHOSPHATE	.	1	0	73	73	73
SULFATE	250000	3	0	17966.667	14800	21100
TOTAL DISSOLVED SOLIDS	250000#	4	0	451250	350000	539000
TOTAL SUSPENDED SOLIDS	.	4	0	26375	7000	41500
pH	.	1	0	7.3	7.3	7.3

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SW051, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
CARBONATE	.	1	0	2500	2500 U	2500 U
CHLORIDE	5000U	2	0	18450	16900	20000
CYANIDE	.	2	0	252.5	5 U	500 U
NITRATE	.	1	0	21.692	21.692	21.692
NITRATE/NITRITE	10000	2	0	3900	2900	4900
OIL AND GREASE	.	2	0	1500	500 U	2500 U
SULFATE	250000	2	0	41000	21000	61000
TOTAL DISSOLVED SOLIDS	250000#	2	0	336000	332000	340000
TOTAL SUSPENDED SOLIDS	.	2	0	4500	3000	6000
pH	.	1	0	7.7	7.7	7.7

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SW052, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
CARBONATE	.	1	0	2500	2500 U	2500 U
CHLORIDE	5000U	2	0	31750	25500	38000
CYANIDE	.	3	0	170	5 U	500 U
NITRATE	.	1	0	0.443	0.443 U	0.443 U
NITRATE/NITRITE	10000	2	0	62.5	25 U	100 U
OIL AND GREASE	.	2	0	1500	500 U	2500 U
SULFATE	250000	2	0	71650	70000	73300
TOTAL DISSOLVED SOLIDS	250000#	2	0	440500	420000	461000
TOTAL SUSPENDED SOLIDS	.	2	0	7000	2000	12000
pH	.	1	0	7.5	7.5	7.5

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

TOTAL WQH Exceedance Report for Location SW055, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
CARBONATE	.	3	0	2500	2500 U	2500 U
CHLORIDE	5000U	4	0	34500	34000	35000
CYANIDE	.	3	0	170	5 U	500 U
NITRATE	.	2	0	5.622	1.063	10.182
NITRATE/NITRITE	10000	4	0	2335	240	5500
OIL AND GREASE	.	4	0	1000	500 U	2500 U
SULFATE	250000	4	0	50550	31000	92000
TOTAL DISSOLVED SOLIDS	250000#	4	0	470500	370000	650000
TOTAL SUSPENDED SOLIDS	.	4	0	358000	2000	520000
pH	.	3	0	7.4	7.2	7.6

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SW057, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
CHLORIDE	5000U	1	0	24000	24000	24000
CYANIDE	.	1	0	500	500 U	500 U
NITRATE	.	1	0	5.135	5.135	5.135
NITRATE/NITRITE	10000	1	0	1160	1160	1160
OIL AND GREASE	.	1	0	12300	12300	12300
SULFATE	250000	1	0	500	500 U	500 U
TOTAL DISSOLVED SOLIDS	250000#	1	0	522000	522000	522000
TOTAL SUSPENDED SOLIDS	.	1	0	5000	5000	5000

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

TOTAL WQH Exceedance Report for Location SW058, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
BICARBONATE AS CACO3	.	1	0	360000	360000	360000
CARBONATE	.	1	0	2500	2500 U	2500 U
CARBONATE AS CACO3	.	1	0	0	0	0
CHLORIDE	5000U	3	0	34666.667	28000	44000
CYANIDE	.	2	0	252.5	5 U	500 U
FLUORIDE	.	1	0	600	600	600
NITRATE	.	1	0	6.286	6.286	6.286
NITRATE/NITRITE	10000	3	0	886.667	40	1420
NITRITE	.	1	0	10	10 U	10 U
OIL AND GREASE	.	2	0	650	500 U	800
PHOSPHATE	.	1	0	60	60	60
SILICA, DISSOLVED	.	1	0	8400	8400	8400
SULFATE	250000	3	0	19000	11000	24000
TOTAL DISSOLVED SOLIDS	250000#	3	0	411666.667	370000	490000
TOTAL SUSPENDED SOLIDS	.	3	0	30666.667	3000	82000
pH	.	1	0	7.8	7.8	7.8

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SW077, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALKALINITY AS CACO3	.	1	0	292000	292000	292000
BICARBONATE AS CACO3	.	2	0	306000	292000	320000
CARBONATE	.	1	0	2500	2500 U	2500 U
CARBONATE AS CACO3	.	2	0	500	0	1000 U
CHLORIDE	5000U	3	0	46000	23000	63000
CYANIDE	.	1	0	5	5 U	5 U
FLUORIDE	.	2	0	385	370	400
NITRATE/NITRITE	10000	3	0	7550	50 U	22000
OIL AND GREASE	.	3	0	1366.667	500 U	2500 U
PHOSPHATE	.	2	0	265	210	320
SILICA, DISSOLVED	.	1	0	7100	7100	7100
SULFATE	250000	3	0	63666.667	58000	70000
TOTAL DISSOLVED SOLIDS	250000#	3	0	522333.333	500000	550000
TOTAL SUSPENDED SOLIDS	.	3	0	98333.333	41000	160000
pH	.	1	0	7.3	7.3	7.3

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SW053, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
BICARBONATE AS CACO3	.	2	0	405000	360000	450000
CARBONATE	.	2	0	2500	2500 U	2500 U
CARBONATE AS CACO3	.	2	0	0	0	0
CHLORIDE	5000U	5	0	73500	55000	92000
CYANIDE	.	2	0	252.5	5 U	500 U
FLUORIDE	.	2	0	1000	1000	1000
NITRATE	.	1	0	0.443	0.443 U	0.443 U
NITRATE/NITRITE	10000	5	0	59	20	100 U
NITRITE	.	1	0	10	10 U	10 U
OIL AND GREASE	.	4	0	1000	500	2500 U
PHOSPHATE	.	2	0	395	90	700
SILICA, DISSOLVED	.	2	0	9900	7800	12000
SULFATE	250000	5	0	31660	11000	66000
TOTAL DISSOLVED SOLIDS	250000#	5	0	499600	62000	720000
TOTAL SUSPENDED SOLIDS	.	5	0	2396300	2000	11000000
pH	.	2	0	7.5	7.5	7.5

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SW063, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
CHLORIDE	5000U	1	0	50500	50500	50500
CYANIDE	.	1	0	500	500 U	500 U
NITRATE	.	1	0	0.443	0.443 U	0.443 U
NITRATE/NITRITE	10000	1	0	100	100 U	100 U
OIL AND GREASE	.	1	0	2500	2500 U	2500 U
SULFATE	250000	1	0	197000	197000	197000
TOTAL DISSOLVED SOLIDS	250000#	1	0	675000	675000	675000
TOTAL SUSPENDED SOLIDS	.	1	0	17000	17000	17000

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

TOTAL WQH Exceedance Report for Location SW064, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
BICARBONATE AS CACO3	.	4	0	512500	460000	550000
CARBONATE	.	1	0	2500	2500 U	2500 U
CARBONATE AS CACO3	.	4	0	0	0	0
CHLORIDE	5000U	6	0	68416.667	46500	92000
CYANIDE	.	4	0	128.887	5 U	500 U
FLUORIDE	.	4	0	2075	1700	2700
NITRATE	.	1	0	0.443	0.443 U	0.443 U
NITRATE/NITRITE	10000	6	0	27.5	10 U	100 U
NITRITE	.	3	0	10	10 U	10 U
OIL AND GREASE	.	5	0	1080	500	2500 U
PHOSPHATE	.	4	0	35	10	80
SILICA, DISSOLVED	.	4	0	5225	3700	6700
SULFATE	250000	6	0	147166.667	83000	210000
TOTAL DISSOLVED SOLIDS	250000#	6	0	789333.333	716000	910000
TOTAL SUSPENDED SOLIDS	.	6	0	40000	2000 U	160000
pH	.	1	0	7.6	7.6	7.6

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SW070, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALKALINITY AS CACO3	.	1	0	189010	189010	189010
BICARBONATE AS CACO3	.	4	0	160000	120000	190000
CARBONATE	.	2	0	2500	2500 U	2500 U
CARBONATE AS CACO3	.	4	0	125	0	500 U
CHLORIDE	5000U	7	0	72400	42000	102000
CYANIDE	.	5	0	10.78	1 U	36.6
FLUORIDE	.	5	0	630	250 U	800
FLUORIDE, SOLUBLE	.	1	0	250	250 U	250 U
NITRATE	.	3	0	540.651	4.87	1610
NITRATE/NITRITE	10000	6	0	1756.667	210	3700
NITRITE	.	4	0	8.75	5 U	10 U
OIL AND GREASE	.	6	0	818.333	300	1810
PHOSPHATE	.	4	0	33.75	5 U	50
SILICA, DISSOLVED	.	3	0	5366.667	5200	5500
SULFATE	250000	6	0	43833.333	31000	58000
SULFIDE	.	1	0	1000	1000	1000
TOTAL DISSOLVED SOLIDS	250000#	7	0	364714.286	250000	450000
TOTAL SUSPENDED SOLIDS	.	7	0	32428.571	2000 U	80000
pH	.	2	0	8.05	7.9	8.2

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SW030, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
BICARBONATE AS CACO3	.	4	0	146000	90000	180000
CARBONATE AS CACO3	.	4	0	1500	0	6000
CHLORIDE	5000U	5	0	48000	6200	77000
CYANIDE	.	4	0	128.75	5 U	500 U
FLUORIDE	.	4	0	537.5	250 U	700
FLUORIDE, SOLUBLE	.	1	0	250	250 U	250 U
NITRATE	.	1	0	5.711	5.711	5.711
NITRATE/NITRITE	10000	5	0	1024	30	2600
NITRITE	.	4	0	8.75	5 U	10 U
OIL AND GREASE	.	4	0	1750	300	5200
PHOSPHATE	.	4	0	32.5	10	70
SILICA, DISSOLVED	.	3	0	5433.333	4800	6000
SULFATE	250000	5	0	36080	7400	68000
TOTAL DISSOLVED SOLIDS	250000#	5	0	290000	180000	410000
TOTAL SUSPENDED SOLIDS	.	5	0	15800	8000	23000

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SW054, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
BICARBONATE AS CACO3	.	2	0	160000	160000	160000
CARBONATE	.	1	0	2500	2500 U	2500 U
CARBONATE AS CACO3	.	2	0	250	0	500 U
CHLORIDE	5000U	3	0	42100	6300	77000
CYANIDE	.	2	0	7.95	5 U	10.9
FLUORIDE	.	2	0	425	250 U	600
FLUORIDE, SOLUBLE	.	1	0	250	250 U	250 U
NITRATE	.	1	0	5	5 U	5 U
NITRATE/NITRITE	10000	3	0	631.667	25 U	1200
NITRITE	.	3	0	21.667	5 U	50 U
OIL AND GREASE	.	3	0	1766.667	300	3000
PHOSPHATE	.	2	0	25	20	30
SILICA, DISSOLVED	.	1	0	3500	3500	3500
SULFATE	250000	3	0	30433.333	6300	43000
SULFIDE	.	1	0	500	500 U	500 U
TOTAL DISSOLVED SOLIDS	250000#	3	0	360000	280000	430000
TOTAL SUSPENDED SOLIDS	.	3	0	10666.667	4000	14000
pH	.	1	0	8	8	8

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SW062, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
BICARBONATE AS CACO3	.	3	0	143333.333	140000	150000
CARBONATE	.	2	0	2500	2500 U	2500 U
CARBONATE AS CACO3	.	3	0	166.667	0	500 U
CHLORIDE	5000U	6	0	28666.667	21000	44000
CYANIDE	.	3	0	170	5 U	500 U
FLUORIDE	.	2	0	450	400	500
FLUORIDE, SOLUBLE	.	1	0	250	250 U	250 U
NITRATE	.	2	0	25.221	0.443 U	50 U
NITRATE/NITRITE	10000	6	0	41.667	10 U	100 U
NITRITE	.	3	0	21.667	5 U	50 U
OIL AND GREASE	.	5	0	1060	500 U	2500 U
PHOSPHATE	.	3	0	21.667	5 U	40
SILICA, DISSOLVED	.	2	0	7150	7100	7200
SULFATE	250000	6	0	42333.333	14000	132000
TOTAL DISSOLVED SOLIDS	250000#	6	0	331833.333	220000	625000
TOTAL SUSPENDED SOLIDS	.	6	0	8916.667	500 U	33000
pH	.	2	0	7.95	7.9	8

(____)= Value exceeds ARAR, #=Value shown is TBC, • ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SW027, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALKALINITY AS CACO3	.	2	0	5000	5000 U	5000 U
BICARBONATE AS CACO3	.	5	0	164600	87000	260000
CARBONATE	.	3	0	2500	2500 U	2500 U
CARBONATE AS CACO3	.	3	0	166.667	0	500 U
CHLORIDE	5000U	10	0	48300	34000	100000
CYANIDE	.	4	0	128.125	2.5 U	500 U
FLUORIDE	.	4	0	637.5	250 U	900
FLUORIDE, SOLUBLE	.	1	0	250	250 U	250 U
NITRATE	.	3	0	14.019	11.068 U	16.823
NITRATE/NITRITE	10000	10	0	2095	320	4600
NITRITE	.	3	0	8.333	5 U	10 U
OIL AND GREASE	.	6	0	1250	500 U	2500 U
PHOSPHATE	.	3	0	100	40	160
SILICA, DISSOLVED	.	2	0	7800	7500	8100
SILICON	.	1	0	4000	4000	4000
SULFATE	250000	10	0	55630	18000	88000
TOTAL ALKALINITY	.	2	0	96500	87000	106000
TOTAL DISSOLVED SOLIDS	250000#	10	0	406300	210000	700000
TOTAL SUSPENDED SOLIDS	.	8	0	35312.5	500 U	79000
pH	.	3	0	7.6	7.3	7.8

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations
and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL WQH Exceedance Report for Location SWC2, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALKALINITY AS CACO3	.	1	0	210000	210000	210000
AMMONIA	.	1	0	250	250 U	250 U
CARBONATE	.	2	0	2500	2500 U	2500 U
CARBONATE AS CACO3	.	1	0	5000	5000 U	5000 U
CHLORIDE	5000U	4	0	39250	31000	55000
CYANIDE	.	3	0	4.167	2.5 U	5 U
FLUORIDE	.	1	0	600	600	600
NITRATE	.	3	0	3.763	0.111 U	11.068 U
NITRATE/NITRITE	10000	5	0	652	25 U	2500 U
NITRITE	.	1	0	5	5 U	5 U
OIL AND GREASE	.	3	0	4366.667	2500 U	8100
PHOSPHATE	.	1	0	5	5 U	5 U
SOLIDS, NONVOLATILE SUSPENDE	.	27	0	11666.667	2500 U	39000
SULFATE	250000	4	0	53250	43000	67000
SULFIDE	.	3	0	666.667	500 U	1000
TOTAL DISSOLVED SOLIDS	250000#	4	0	312500	240000	500000
TOTAL SUSPENDED SOLIDS	.	35	0	11742.857	2500 U	39000
pH	.	2	0	7.45	7.4	7.5

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations
and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO RAD Exceedance Report for Location SW053, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#*	2	0	0.03	0.03	0.03
CESIUM-137	.	1	0	0	0	0
GROSS ALPHA	15*	2	1	18	2	34
GROSS BETA	5*	2	1	7	7	7
GROSS GAMMA	.	1	0	.	.	.
PLUTONIUM-239	15*	2	2	2.3	0.2	4.4
RADIUM-226	.	1	0	.	.	.
RADIUM-228	.	1	1	6.3	6.3	6.3
STRONTIUM-89	.	1	0	.	.	.
STRONTIUM-90	8*	2	0	0	0	0
TOTAL URANIUM	40*	2	0	1.875	1.75 U	2
TRITIUM	20000*	1	0	.	.	.
URANIUM-233,-234	.	1	1	1	1	1
URANIUM-234	.	1	1	1.5	1.5	1.5
URANIUM-235	.	2	0	0.1	0.1	0.1
URANIUM-238	.	2	1	0.9	0.9	0.9

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations
and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO RAD Exceedance Report for Location SW064, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#*	1	0	.	.	.
GROSS ALPHA	15*	3	3	13.333	9	19
GROSS BETA	5*	3	3	11.867	9.6	14
GROSS GAMMA	.	3	0	.	.	.
PLUTONIUM-239	15*	3	0	.	.	.
RADIUM 226 AND 228	.	1	0	.	.	.
RADIUM-226	.	2	0	.	.	.
STRONTIUM-89	.	2	0	.	.	.
STRONTIUM-90	8*	3	0	.	.	.
TOTAL URANIUM	40*	3	0	21.677	20.3	22.44
TRITIUM	20000*	3	1	3600	3600	3600
URANIUM-233,-234	.	1	1	12	12	12
URANIUM-234	.	2	2	12.5	12	13
URANIUM-235	.	3	3	0.377	0.29	0.44
URANIUM-238	.	3	3	8.967	7.9	10

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations
and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO RAD Exceedance Report for Location SW070, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#*	3	0	0.01	0.01	0.01
CESIUM-137	.	1	0	0	0	0
GROSS ALPHA	15*	4	3	3.931	2.823 X	5
GROSS BETA	5*	4	4	5.532	3.126 J	6.8
GROSS GAMMA	.	2	0	.	.	.
PLUTONIUM-239	15*	3	1	0.1	0	0.2
RADIUM-226	.	1	0	0.2	0.2	0.2
STRONTIUM-89	.	2	0	.	.	.
STRONTIUM-90	8*	4	0	0.198	0	0.397 J
TOTAL URANIUM	40*	4	0	5.677	5.2	6.019 X
TRITIUM	20000*	3	0	247.1	247.1 J	247.1 J
URANIUM-233,-234	.	2	2	2.435	1.6	3.27 X
URANIUM-234	.	2	2	2.35	2.3	2.4
URANIUM-235	.	4	2	0.297	0 J	0.49
URANIUM-238	.	4	4	2.912	2.749 X	3.2

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO RAD Exceedance Report for Location SW030, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#*	3	0	0	0	0
CESIUM-137	.	1	0	0	0	0
GROSS ALPHA	15*	4	4	4.018	1.572 J	10
GROSS BETA	5*	4	4	5.255	3.521 J	6.2
GROSS GAMMA	.	2	0	.	.	.
PLUTONIUM-239	15*	3	0	0.01	0.01	0.01
RADIUM-226	.	1	0	0.1	0.1	0.1
STRONTIUM-89	.	2	0	.	.	.
STRONTIUM-90	8*	4	1	0.384	0	0.768 J
TOTAL URANIUM	40*	4	0	6.166	3.266 X	8.6
TRITIUM	20000*	3	0	1.945	1.945 J	1.945 J
URANIUM-233,-234	.	2	2	2.409	1.618 X	3.2
URANIUM-234	.	2	2	2.9	2.4	3.4
URANIUM-235	.	4	2	0.18	0.06 J	0.3
URANIUM-238	.	4	4	3.322	1.588 X	5.1

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations
and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

DISSO RAD Exceedance Report for Location SW054, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#*	2	0	0	0	0
CESIUM-137	.	1	0	0.2	0.2	0.2
GROSS ALPHA	15*	2	2	4.75	4.5	5
GROSS BETA	5*	2	2	5.55	4	7.1
GROSS GAMMA	.	1	0	.	.	.
PLUTONIUM-239	15*	2	0	0.01	0.01	0.01
RADIUM-226	.	1	1	0.3	0.3	0.3
STRONTIUM-89	.	1	0	.	.	.
STRONTIUM-90	8*	2	0	0	0	0
TOTAL URANIUM	40*	2	0	7.5	6.8	8.2
TRITIUM	20000*	1	0	.	.	.
URANIUM-233,-234	.	1	1	3.3	3.3	3.3
URANIUM-234	.	1	1	3.2	3.2	3.2
URANIUM-235	.	2	0	0.1	0.1	0.1
URANIUM-238	.	2	2	4.05	3.3	4.8

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

DISSO RAD Exceedance Report for Location SW062, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#*	3	1	3.85	0	7.7
CESIUM-137	.	1	0	0.1	0.1	0.1
GROSS ALPHA	15*	3	0	3	3	3
GROSS BETA	5*	3	1	3.2	3	3.4
GROSS GAMMA	.	2	0	.	.	.
PLUTONIUM-239	15*	3	0	0	0	0
RADIUM-226	.	1	0	.	.	.
RADIUM-228	.	1	0	.	.	.
STRONTIUM-89	.	2	0	.	.	.
STRONTIUM-90	8*	3	0	0	0	0
TOTAL URANIUM	40*	3	0	1.093	0.2	1.64
TRITIUM	20000*	2	0	360	360 U	360 U
URANIUM-233,-234	.	1	1	0.2	0.2	0.2
URANIUM-234	.	2	2	0.75	0.71	0.79
URANIUM-235	.	3	0	0	0	0
URANIUM-238	.	3	2	0.327	0	0.55

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO RAD Exceedance Report for Location SW027, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#*	3	0	0	0	0
CESIUM-137	.	1	1	1.4	1.4	1.4
GROSS ALPHA	15*	4	2	7.988	2.975 X	13
GROSS BETA	5*	4	4	5.599	4.796 X	7
GROSS GAMMA	.	2	0	.	.	.
PLUTONIUM-239	15*	3	0	0.01	0.01	0.01
RADIUM-226	.	2	0	0.2	0.2	0.2
RADIUM-228	.	1	0	.	.	.
STRONTIUM-89	.	2	0	.	.	.
STRONTIUM-90	8*	4	1	0.26	0	0.519 J
TOTAL URANIUM	40*	4	0	4.41	2.89	5.6
TRITIUM	20000*	3	0	0	0 J	0 J
URANIUM-233,-234	.	2	2	2.273	2.2	2.345 X
URANIUM-234	.	2	2	1.195	0.99	1.4
URANIUM-235	.	4	0	0.074	0.049 J	0.1
URANIUM-238	.	4	4	2.314	1.6	3.3

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO RAD Exceedance Report for Location SWC2, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
GROSS ALPHA	15*	4	4	3.746	2.4	6.683
GROSS BETA	5*	4	4	7.03	5.6	8.8

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL RAD Exceedance Report for Location SW050, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	2	1	0.395	0	0.79
CESIUM-137	.	2	0	0.5	0.5	0.5
GROSS ALPHA	15	2	2	29	26	32
GROSS BETA	5	2	1	21.5	19	24
PLUTONIUM-239	15	2	2	28.2	1.4	55
RADIUM-226	.	1	1	1.5	1.5	1.5
STRONTIUM-90	8	2	1	0.7	0.7	0.7
TOTAL URANIUM	40	2	0	3.31	2.12	4.5
TRITIUM	20000	2	0	20	20	20
URANIUM-233,-234	.	2	1	1.95	1.3	2.6
URANIUM-235	.	2	0	0.16	0.1	0.22
URANIUM-238	.	2	1	1.2	0.6	1.8

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL RAD Exceedance Report for Location SW051, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	2	1	0.5	0	1
CESIUM-137	.	2	0	0.4	0.4	0.4
GROSS ALPHA	15	2	2	34.5	11	58
GROSS BETA	5	2	2	20.5	13	28
PLUTONIUM-239	15	2	2	6.845	0.69	13
RADIUM-226	.	1	0	0.1	0.1	0.1
STRONTIUM-90	8	2	0	0	0	0
TOTAL URANIUM	40	2	0	2.9	2.6	3.2
TRITIUM	20000	2	0	0	0	0
URANIUM-233,-234	.	2	1	1.3	1.2	1.4
URANIUM-235	.	2	0	0.15	0	0.3
URANIUM-238	.	2	2	1.45	1.2	1.7

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL RAD Exceedance Report for Location SW052, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	1	0	0.2	0.2	0.2
CESIUM-137	.	1	0	.	.	.
GROSS ALPHA	15	1	1	114	114	114
GROSS BETA	5	1	1	46	46	46
PLUTONIUM-239	15	1	1	5.4	5.4	5.4
STRONTIUM-90	8	1	0	.	.	.
TOTAL URANIUM	40	1	0	1.77	1.77	1.77
TRITIUM	20000	1	0	.	.	.
URANIUM-233,-234	.	1	0	1	1	1
URANIUM-235	.	1	0	0.17	0.17	0.17
URANIUM-238	.	1	0	0.6	0.6	0.6

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

TOTAL RAD Exceedance Report for Location SW055, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	5	4	8.088	0	33
CESIUM-137	.	5	1	0.2	0	0.8
GROSS ALPHA	15	5	3	100.64	3	350
GROSS BETA	5	5	5	30.36	6	65
PLUTONIUM-239	15	5	5	16.242	0.37	60
RADIUM-226	.	3	2	1.933	0.2	3.8
RADIUM-228	.	1	1	4.1	4.1	4.1
STRONTIUM-90	8	5	3	0.625	0.1	1.2
TOTAL URANIUM	40	5	0	5.644	3.4	9.1
TRITIUM	20000	5	1	132.5	0	290
URANIUM-233,-234	.	5	4	2.688	0.7	4.4
URANIUM-235	.	5	1	0.148	0	0.3
URANIUM-238	.	5	5	2.808	2	4.4

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL RAD Exceedance Report for Location SW057, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	1	0	0	0	0
CESIUM-137	.	1	0	.	.	.
GROSS ALPHA	15	1	1	259	259	259
GROSS BETA	5	1	1	63	63	63
PLUTONIUM-239	15	1	1	54	54	54
STRONTIUM-90	8	1	0	.	.	.
TOTAL URANIUM	40	1	0	4.27	4.27	4.27
TRITIUM	20000	1	0	.	.	.
URANIUM-233,-234	.	1	1	2.8	2.8	2.8
URANIUM-235	.	1	0	0.57	0.57	0.57
URANIUM-238	.	1	0	0.9	0.9	0.9

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations
and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL RAD Exceedance Report for Location SW058, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	2	1	0.7	0.3	1.1
CESIUM-137	.	2	0	0.2	0.2	0.2
GROSS ALPHA	15	2	2	17	10	24
GROSS BETA	5	2	1	9.5	8	11
PLUTONIUM-239	15	2	2	8	7.1	8.9
RADIUM-226	.	1	0	0.1	0.1	0.1
STRONTIUM-90	8	2	1	0.7	0.7	0.7
TOTAL URANIUM	40	2	0	10.24	2.38	18.1
TRITIUM	20000	2	0	90	90	90
URANIUM-233,-234	.	2	2	5.5	1	10
URANIUM-235	.	2	1	0.19	0.08	0.3
URANIUM-238	.	2	2	4.55	1.3	7.8

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL RAD Exceedance Report for Location SW077, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	2	2	2.1	1.5	2.7
CESIUM-137	.	2	0	0.2	0	0.4
GROSS ALPHA	15	2	2	22.5	17	28
GROSS BETA	5	2	2	17.5	16	19
PLUTONIUM-239	15	2	2	3.7	3.3	4.1
RADIUM-226	.	2	1	0.35	0.2	0.5
STRONTIUM-90	8	2	1	0.7	0.5	0.9
TOTAL URANIUM	40	2	0	4.7	4.3	5.1
TRITIUM	20000	2	0	90	10	170
URANIUM-233,-234	.	2	2	2.6	2.4	2.8
URANIUM-235	.	2	0	0.05	0	0.1
URANIUM-238	.	2	2	2.05	1.9	2.2

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

TOTAL RAD Exceedance Report for Location SW053, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	5	4	8.945	0	28
CESIUM-137	.	5	0	0.133	0	0.4
GROSS ALPHA	15	5	5	133.64	3.2	230
GROSS BETA	5	5	3	15.22	5	42
PLUTONIUM-239	15	5	5	41.42	1.101	110
RADIUM-226	.	3	2	0.533	0.3	0.9
STRONTIUM-90	8	5	0	0.223	0	0.5
TOTAL URANIUM	40	5	0	3.6	0.5	8.1
TRITIUM	20000	5	2	165	0	310
URANIUM-233,-234	.	5	5	1.764	0.4	3.92
URANIUM-235	.	5	0	0.026	0	0.13
URANIUM-238	.	5	4	1.81	0.1	4.05

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL RAD Exceedance Report for Location SW064, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	4	0	0.005	0	0.01
CESIUM-137	.	4	0	0.128	0	0.3
GROSS ALPHA	15	4	4	20.332	9.328	34
GROSS BETA	5	4	4	33.935	11.74	93
PLUTONIUM-239	15	4	1	0.044	0	0.1
RADIUM-226	.	2	2	0.7	0.6	0.8
STRONTIUM-90	8	4	0	0.089	0	0.168
TOTAL URANIUM	40	4	0	10.663	3.6	14.9
TRITIUM	20000	3	1	120	60	180
URANIUM-233,-234	.	4	4	5.79	1.8	7.9
URANIUM-235	.	3	1	0.133	0	0.4
URANIUM-235/236	.	1	1	0.288	0.288	0.288
URANIUM-238	.	4	4	4.701	1.8	6.6

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL RAD Exceedance Report for Location SW070, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	8	1	0.013	0 J	0.088
CESIUM-137	.	8	0	0.091	0	0.3
GROSS ALPHA	15	7	6	6.56	3.024	16
GROSS BETA	5	7	7	9.472	6.15	16
PLUTONIUM-238	.	1	0	0.001	0.001 J	0.001 J
PLUTONIUM-239	15	8	2	0.007	0	0.02
RADIUM-226	.	4	1	0.175	0	0.5
STRONTIUM-90	8	7	0	0.187	0	0.5
TOTAL URANIUM	40	7	0	6.046	2.8	9.23
TRITIUM	20000	5	1	154	70	240
URANIUM-233,-234	.	7	7	2.895	1.4	4.26
URANIUM-235	.	5	3	0.274	0	0.6
URANIUM-235/236	.	2	2	0.179	0.093	0.265
URANIUM-238	.	7	7	2.904	1.4	4.5

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL RAD Exceedance Report for Location SW030, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	10	3	0.006	0	0.029
CESIUM-137	.	10	1	0.2	0	0.991
GROSS ALPHA	15	9	8	6.072	0.87	18
GROSS BETA	5	9	8	7.165	5	13
PLUTONIUM-238	.	1	0	0.001	0.001 J	0.001 J
PLUTONIUM-239	15	10	5	0.034	0.005 J	0.22
RADIUM-226	.	3	1	0.133	0	0.3
STRONTIUM-90	8	9	1	0.133	0	0.54
TOTAL URANIUM	40	9	0	6.908	2.3	16.34
TRITIUM	20000	6	2	136	0	260
URANIUM-233,-234	.	9	9	2.46	1	4.59
URANIUM-235	.	6	2	0.225	0	0.84
URANIUM-235/236	.	3	1	0.071	0	0.154
URANIUM-238	.	9	9	4.275	1.3	13

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL RAD Exceedance Report for Location SW054, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	6	5	0.071	0.004	0.137
CESIUM-137	.	6	0	0.108	0	0.6
GROSS ALPHA	15	6	6	8.351	2.475	17
GROSS BETA	5	6	6	12.93	5.832	26
PLUTONIUM-239	15	6	6	0.788	0.013	3.7
RADIUM-226	.	3	3	1.933	0.3	4.2
RADIUM-228	.	1	1	10	10	10
STRONTIUM-90	8	6	4	0.419	0	1.1
TOTAL URANIUM	40	6	0	7.163	3.3	21.9
TRITIUM	20000	4	0	77.5	0	180
URANIUM-233,-234	.	6	6	2.805	1.1	8.3
URANIUM-235	.	4	1	0.235	0.1	0.6
URANIUM-235/236	.	2	2	0.058	0.058	0.058
URANIUM-238	.	6	6	4.182	2.033	13

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL RAD Exceedance Report for Location SW062, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	8	3	0.007	0	0.023
CESIUM-137	.	8	1	0.158	0	0.7
GROSS ALPHA	15	8	4	15.027	0	100
GROSS BETA	5	8	6	15.689	2	100
PLUTONIUM-239	15	8	5	0.169	0	1.3
RADIUM-226	.	1	0	0	0	0
STRONTIUM-90	8	8	4	0.258	0	0.6
TOTAL URANIUM	40	8	0	4.163	0.2	11.101
TRITIUM	20000	5	1	77.5	0	180
URANIUM-233,-234	.	8	8	2.384	0.2	8.136
URANIUM-235	.	5	0	0.02	0	0.1
URANIUM-235/236	.	3	2	0.074	0	0.113
URANIUM-238	.	8	7	1.739	0	5.1

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL RAD Exceedance Report for Location SW027, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	8	5	0.066	0	0.14
CESIUM-137	.	8	0	0.084	0	0.3
GROSS ALPHA	15	12	8	9.769	0.028	33
GROSS BETA	5	12	12	15.799	1.522	61
PLUTONIUM-238	.	1	1	0.007	0.007 J	0.007 J
PLUTONIUM-239	15	8	5	0.17	0	0.82
RADIUM-226	.	3	0	0.267	0.2	0.3
STRONTIUM-90	8	7	0	0.08	0	0.1
TOTAL URANIUM	40	8	0	4.591	1.16	10.2
TRITIUM	20000	7	0	36.667	0	180
URANIUM-233,-234	.	8	6	1.703	0.62	4.1
URANIUM-235	.	6	0	0.098	0	0.17
URANIUM-235/236	.	1	1	0.184	0.184	0.184
URANIUM-238	.	8	8	2.79	0.4	6.1

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

TOTAL RAD Exceedance Report for Location SWC2, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	7	0	0.006	0	0.01
CESIUM-137	.	7	0	0.167	0	0.37
GROSS ALPHA	15	35	25	4.248	1	9
GROSS BETA	5	35	34	7.567	3	11.5
PLUTONIUM-239	15	8	3	0.021	0.01	0.06
RADIUM-226	.	1	0	0.16	0.16	0.16
RADIUM-228	.	1	1	0.18	0.18	0.18
STRONTIUM-90	8	7	4	0.389	0	0.8
THORIUM-230	.	1	0	0.02	0.02	0.02
THORIUM-232	.	1	0	0.04	0.04	0.04
TOTAL URANIUM	40	8	0	2.085	0.4	6.68
TRITIUM	20000	8	2	193.75	0	500
URANIUM-233,-234	.	8	8	0.888	0.2	2.6
URANIUM-235	.	7	1	0.033	0	0.23
URANIUM-238	.	8	7	1.169	0.2	3.85

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL VOA Exceedance Report for Location 903PAD, All VOA reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
1,1,1-TRICHLOROETHANE	.	36	0	3.214	2.5	5.714
1,1,2,2-TETRACHLOROETHANE	.	30	0	3.25	2.5	6.25
1,1,2-TRICHLOROETHANE	.	36	0	3.143	2.5	5.714
1,1-DICHLOROETHANE	.	30	0	3.25	2.5	6.25
1,1-DICHLOROETHENE	7	35	5	21.458	8.786	62.786
1,2-DICHLOROETHANE	.	36	0	3.143	2.5	5.714
1,2-DICHLOROETHENE	70	36	7	21.843	2.5	55
1,2-DICHLOROPROPANE	.	30	0	3.25	2.5	6.25
2-BUTANONE	.	30	1	6.533	5	12.667
2-HEXANONE	.	30	0	6.5	5	12.5
4-METHYL-2-PENTANONE	.	30	0	6.5	5	12.5
ACETONE	10U#	30	4	6.04	2.333	14.167
BENZENE	.	29	1	3.817	2.5	9.083
BROMODICHLOROMETHANE	.	30	0	3.25	2.5	6.25
BROMOFORM	.	30	0	3.25	2.5	6.25
BROMOMETHANE	.	30	0	6.5	5	12.5
CARBON DISULFIDE	.	30	1	3.903	2.333	7.667
CARBON TETRACHLORIDE	5	36	10	59.289	8.5	193.714
CHLOROBENZENE	.	29	0	3.25	2.5	6.25
CHLOROETHANE	.	30	0	6.5	5	12.5
CHLOROFORM	100	36	10	8.978	2.5	22.071
CHLOROMETHANE	.	30	0	6.5	5	12.5
DIBROMOCHLOROMETHANE	.	30	0	3.25	2.5	6.25
ETHYLBENZENE	.	30	0	3.25	2.5	6.25
METHYLENE CHLORIDE	5U#	30	6	4.15	2.25	7.5
STYRENE	.	30	0	3.25	2.5	6.25
TETRACHLOROETHENE	10	36	12	11.007	3.429	21.286
TOLUENE	.	29	1	3.017	2.5	5.083
TOTAL XYLENES	.	30	1	3.75	2.5	8.75
TRICHLOROETHENE	5	35	21	135.278	2.786	322.214
VINYL ACETATE	.	30	0	6.5	5	12.5
VINYL CHLORIDE	2	30	0	6.5	5	12.5
cis-1,3-DICHLOROPROPENE	.	30	0	3.25	2.5	6.25
trans-1,3-DICHLOROPROPENE	.	30	0	3.25	2.5	6.25

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
DISSO MET Exceedance Report for Location 903PAD, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150*	35	0	99.56	66.414	138.571
ANTIMONY	.	29	0	35.63	26.217	66.667
ARSENIC	.	29	0	4.552	2.983	5
BARIUM	1000*	35	0	220.72	171.429	275.143
BERYLLIUM	5#*	29	0	2.89	1.333	10.417
CADMIUM	5U*	29	0	2.963	1.667	10.417
CALCIUM	.	35	0	114908.7	98500	130428.571
CESIUM	.	29	0	470.601	183.583	875
CHROMIUM	11*	35	0	6.326	5	15.629
COBALT	.	35	0	22.99	13.429	28.571
COPPER	25U*	35	0	12.219	9	18.271
IRON	300	35	0	75.757	45.814	281.257
LEAD	5U*	29	0	2.502	1.25	5.05
LITHIUM	2500#*	29	0	57.338	37.083	71.5
MAGNESIUM	.	35	0	15742.802	12878.571	18624.286
MANGANESE	50	35	0	171.58	73.443	325.786
MERCURY	.	29	0	0.113	0.1	0.183
MOLYBDENUM	.	34	0	41.622	15.1	74.286
NICKEL	101.4*	35	0	18.715	12	24.286
POTASSIUM	.	29	0	2728.5	2228.333	3840
SELENIUM	10*	29	0	3.753	1.5	6.667
SILICON	.	1	0	8240	8240	8240
SILVER	.	35	0	5.848	4	13.557
SODIUM	.	35	0	27990.888	17888.571	42708.571
STRONTIUM	.	35	0	566.653	508.857	660.143
THALLIUM	.	29	0	6.036	2.25	12.5
TIN	.	29	0	61.261	39.717	131
VANADIUM	0.1#*	35	0	23.745	17.057	28.571
ZINC	45*	35	0	129.427	12.386	338.3

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations
and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)
TOTAL MET Exceedance Report for Location 903PAD, All MET reported in ug/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALUMINUM	150#	27	0	2221.4	177.367	9787.167
ANTIMONY	.	27	0	34.175	21.067	66.667
ARSENIC	.	27	0	4.586	3.05	5.283
BARIUM	1000	27	0	186.442	118.5	298.5
BERYLLIUM	5U#	27	0	2.939	1.333	10.417
CADMIUM	5U	27	0	2.95	1.667	10.417
CALCIUM	.	27	0	103535.278	86500	121850
CESIUM	.	27	0	462.693	183.583	875
CHROMIUM	11	27	0	9.218	5	20.083
COBALT	.	27	0	22.638	12.483	29.167
COPPER	25U	27	0	15.872	10.883	26.933
CYANIDE	.	1	0	0.75	0.75	0.75
IRON	1000	27	0	2697.806	261.5	11483.333
LEAD	5U	27	0	6.987	2	21.133
LITHIUM	2500#	27	0	101.154	37.633	575
MAGNESIUM	.	27	0	15194.306	11348.333	18453.333
MANGANESE	1000	27	0	246.001	89.783	489.583
MERCURY	.	27	0	0.121	0.1	0.2
MOLYBDENUM	.	26	0	51.039	30.517	83.333
NICKEL	101.4	27	0	18.974	12.017	25
POTASSIUM	.	27	0	2989.444	2278.333	5085
SELENIUM	10	27	0	2.834	1.5	4.6
SILICON	.	1	0	8240	8240	8240
SILVER	.	27	0	6.525	4.7	15.167
SODIUM	.	27	0	28986.667	17410	43796.667
STRONTIUM	.	27	0	532.869	474.5	633.167
THALLIUM	.	27	0	6.578	2.583	12.5
TIN	.	27	0	65.942	42.883	134.667
VANADIUM	100#	27	0	25.882	16.983	39.333
ZINC	45	27	0	385.278	62.967	1357.767

(____)= Value exceeds ARAR, #=Value shown is TBC, • ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard
U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

TOTAL WQH Exceedance Report for Location 903PAD, All WQH reported in ug/l except PH

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
ALKALINITY AS CACO3	.	3	0	291425	284000	298850
BICARBONATE AS CACO3	.	4	0	314000	309333.333	318666.667
CARBONATE	.	8	0	2500	2500	2500
CARBONATE AS CACO3	.	4	0	500	333.333	666.667
CHLORIDE	5000U	19	0	32452.738	24771.429	40428.571
CYANIDE	.	14	0	228.929	75.714	429.286
FLUORIDE	.	4	0	455	450	460
NITRATE	.	8	0	12.227	8.832	15.623
NITRATE/NITRITE	10000	18	0	2517.738	687.857	5604.286
NITRITE	.	2	0	30	30	30
OIL AND GREASE	.	18	0	3087.381	2185.714	4642.857
PHOSPHATE	.	4	0	132.667	114.333	151
SILICA, DISSOLVED	.	2	0	7750	7750	7750
SULFATE	250000	18	0	37761.905	29471.429	48842.857
TOTAL DISSOLVED SOLIDS	250000#	19	0	450607.143	409142.857	507428.571
TOTAL SUSPENDED SOLIDS	.	19	0	75696.429	9000	118071.429
pH	.	8	0	7.5	7.467	7.533

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

Woman Creek Basin Interim Remedial Action Plan (IRAP)

TOTAL RAD Exceedance Report for Location 903PAD, All RAD reported in pci/l

Analyte	ARAR Value	Number of Results	Number of Exceedances	Average of All Values**	Minimum of All Values	Maximum of All Values
AMERICIUM-241	0.05#	15	9	1.712	0.286	5.541
CESIUM-137	.	9	1	0.3	0.22	0.46
GROSS ALPHA	15	15	13	82.377	62.857	123.571
GROSS BETA	5	15	13	29.766	24.429	36.571
PLUTONIUM-239	15	15	15	17.484	10.323	28.629
RADIUM-226	.	8	4	0.797	0.42	1.2
RADIUM-228	.	1	1	4.1	4.1	4.1
STRONTIUM-90	8	9	6	0.545	0.4	0.7
TOTAL URANIUM	40	15	0	4.691	2.977	6.577
TRITIUM	20000	9	1	66.5	24	114
URANIUM-233,-234	.	15	11	2.548	1.486	3.571
URANIUM-235	.	15	2	0.205	0.131	0.28
URANIUM-238	.	15	12	1.937	1.214	2.771

(____)= Value exceeds ARAR, #=Value shown is TBC, * ARAR standard is for total metal **=Min, Max, and Mean are first computed at individual stations and then averaged for 903PAD If result qualifier is U, statistics are calculated using one/half the reported result, NS=No Standard

U=Analyzed but not detected, J=Present below Detection limit, B=Present in Blank, E=Estimated value

APPENDIX D

MILESTONE SCHEDULE

SURFACE WATER IM/IRAP/EA

WOMAN CREEK BASIN

OPERABLE UNIT NO. 2

TABLE D-1

PROPOSED MILESTONE SCHEDULE

Surface Water IM/IRAP/EA
Woman Creek Basin
Operable Unit No. 2

Woman Creek Basin Interim Measures/Interim Remedial Action Plan/
Environmental Assessment (IM/IRA/EA) and Decision Document

Submit Draft Proposed IM/IRAP/EA	03 September 1991
Submit Proposed IM/IRAP/EA to EPA/CDH	02 October 1991
Public Review of Proposed IM/IRAP/EA	15 October 1991
Submit Draft RS to EPA/CDH	14 January 1992
Submit Final IM/IRAP/EA and Final RS to EPA/CDH	05 March 1992
DOE-HQ Approval of Final IM/IRAP/EA and FONSI	19 March 1992
Begin IM/IRA Construction (if required)	30 June 1992
Complete IM/IRA Construction (if required)	8 September 1992

APPENDIX E

ARAR TABLES FOR

SURFACE WATER CONTAMINANTS

SURFACE WATER IM/IRA/EA

WOMAN CREEK BASIN

OPERABLE UNIT NO. 2

TABLE E-1 PROPOSED CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS IN SURFACE WATER AT OPERABLE UNIT NO.2, WOMAN CREEK

(Units are ug/l, unless otherwise specified)

Parameter	Type	Maximum Concen-tration in Surface Water(2)	ARAR	TBC	ARAR Reference	Comment	Hazard Quotient/ Cancer Risk*
Total Dissolved Solids	Indicator	720,000.0		250,000	CWA AWQC Water and Fish Ingestion Standard is TBC		No oral RfD/not considered an oral carcinogen
Bicarbonate	Anion	550,000.0			No Standard		No oral RfD/not considered an oral carcinogen
Chloride	Anion	92,000.0		250,000	WQCC Surface Water Standard; Site-Specific Inorganic Standard is TBC		No oral RfD/not considered an oral carcinogen
N as Nitrate	Anion	1,610.0	10,000		SDWA MCL [40 CFR 141.11(b)]		No oral RfD/not considered an oral carcinogen
N as Nitrate+Nitrite	Anion	22,000.0		10,000(1)	SDWA MCL [40 CFR 141.51(b)] is TBC		No oral RfD/not considered an oral carcinogen
N as Nitrite	Anion	1,900.0		1,000	WQCC Surface Water Standard; Site-Specific Inorganic Standard is TBC		2.9E-01/not considered an oral carcinogen
Sulfate	Anion	210,000.0		250,000	WQCC Surface Water Standard; Site-Specific Inorganic Standard is TBC		No oral RfD/not considered an oral carcinogen
Calcium	Metal	152,000.0			No Standard		No oral RfD/not considered an oral carcinogen
Magnesium	Metal	39,300.0			No Standard		No oral RfD/not considered an oral carcinogen
Sodium	Metal	113,000.0			No Standard		No oral RfD/not considered an oral carcinogen

TABLE E-1 PROPOSED CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS IN SURFACE WATER AT OPERABLE UNIT NO.2, WOMAN CREEK

(Units are ug/l, unless otherwise specified)

Parameter	Type	Maximum Concen-tration in Surface Water(2)	ARAR	TBC	ARAR Reference	Comment	Hazard Quotient/ Cancer Risk*
Zinc	Metal	1,357.77		45	WQCC Surface Water Standard; Site-Specific Metal Standard is TBC		6.4E-03/not considered an oral carcinogen
Americium 241	Radionuclide	28.0pCi/l		0.05pCi/l	WQCC Surface Water Standard; Site-Specific Radionuclide Standard is TBC		No oral RfD/3.3E-07
Gross Alpha	Radionuclide	230.0pCi/l	15pCi/l		SDWA MCL [40 CFR 141.15(b)]		No oral RfD/NA
Gross Beta	Radionuclide	42.0pCi/l		5 pCi/l	WQCC Surface Water Standard; Site-Specific Radionuclide Standard is TBC.		No oral RfD/NA
Plutonium 238+239+240	Radionuclide	110.0pCi/l	15pCi/l		WQCC Surface Water Standard; State-Wide Radionuclide Standard		No oral RfD/8.8E-05
Uranium (total)	Radionuclide	8.25pCi/l	40pCi/l		WQCC Surface Water Standard; State-Wide Radionuclide Standard		No oral RfD/1.1E-04
1,1-Dichloroethene	Volatile	62.79	7		SDWA MCL [40 CFR 141.61(a)]		2.2E-02/4.9E-05
Acetone	Volatile	14.18		10U	RCRA 40 CFR Part 264 Subpart F is TBC	Acetone is 40 CFR Part 264 Appendix IX constituent. Background is TBC.	2.9E-03/not considered an oral carcinogen
2-Butanone	Volatile	12.67		10U	RCRA 40 CFR Part 264 Subpart F is TBC	2-Butanone is 40 CFR Part 261 Appendix VIII constituent. Background is TBC.	5.7E-03/not considered an oral carcinogen
Benzene	Volatile	9.08	5		SDWA MCL [40 CFR 141.61(a)]		No oral RfD/5.7E-08
Carbon Disulfide	Volatile	7.67		5U	RCRA 40 CFR Part 264 Subpart F is TBC	Carbon Disulfide is 40 CFR Part 261 Appendix VIII constituent. Background is TBC.	1.4E-03/not considered an oral carcinogen

TABLE E-1 PROPOSED CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS IN SURFACE WATER AT OPERABLE UNIT NO.2, WOMAN CREEK

(Units are ug/l, unless otherwise specified)

Parameter	Type	Maximum Concen-tration in Surface Water(2)	ARAR	TBC	ARAR Reference	Comment	Hazard Quotient/ Cancer Risk*
Carbon Tetrachloride	Volatile	194.0	5		SDWA MCL [40 CFR 141.61(a)]		2.0E-01/7.6E-06
Chloroform	Volatile	22.07	100		SDWA MCL [40 CFR 141.12(c)]		2.9E-01/7.2E-06
Trichloroethene	Volatile	322.0	5		SDWA MCL [40 CFR 141.61(a)]		No oral RfD/6.5E-07
Methylene Chloride	Volatile	17.0		5U	RCRA 40 CFR Part 264 Subpart F is TBC	Methylene Chloride is 40 CFR Part 261 Appendix VIII constituent. Background is TBC.	2.4E-03/4.4E-07
Tetrachloroethene	Volatile	21.0	10		WQCC Surface Water Standard; State-Wide Water Supply Standard		2.9E-02/6.0E-06
Vinyl Chloride	Volatile	12.5	2		SDWA MCL [40 CFR 141.61(a)]		No oral RfD/4.5E-05
Toluene	Volatile	5.08	2,420		WQCC Surface Water Standard; State-Wide Water Supply Standard		3.5E-01/not considered an oral carcinogen
Total Xylenes	Volatile	8.75		10,000(1)	SDWA MCL [40 CFR 141.61(a)]		1.4E-01/not considered an oral carcinogen

TABLE E-1 PROPOSED CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS IN SURFACE WATER AT OPERABLE UNIT NO.2, WOMAN CREEK

(Units are ug/l, unless otherwise specified)

Parameter	Type	Maximum Concen-tration in Surface Water(2)	ARAR	TBC	ARAR Reference	Comment	Hazard Quotient/ Cancer Risk*

EXPLANATION OF TABLE

(1) EPA National Primary and Secondary Drinking Water Regulations, 40 CFR Parts 141, 142 and 143, Final Rule (1/30/91), effective July 30, 1992

(2) Maximum compound concentrations determined from available data (Appendix C).

* Hazard Quotient = (ARAR or TBC ug/l) x (0.001 mg/ug) x (2 liters/day) / [(70 kg) x (Chronic Oral Reference Dose mg/kg/d)]

Carcinogenic risk = (ARAR or TBC ug/l) x (0.001 mg/ug) x (2 liters/day) x (Carcinogenic Slope Factor kg x d/mg) x (350 days/year) x (30 years) / [(70 kg) x (365 days/year) x (70 years)]

Radionuclide carcinogenic risk = (ARAR or TBC pCi/l) x (2 liters/day) x (Carcinogenic Slope Factor 1/(pci/l)) x (350 days/year) x (30 years)

Hazard Quotients/Risk values are based on a 30 year exposure for a 70 kg person drinking 2 liters per day for a 350 day year.

Chronic oral reference doses (RfDs) and Carcinogenic Slope Factors taken from Health Effects Assessment Summary Tables, Fourth Quarter FY 1990 (EPA, 1990b).

TABLE E-2.1 POTENTIAL CHEMICAL-SPECIFIC ARARs/TBCs FOR PARAMETERS IN SURFACE WATER AT OPERABLE UNIT NO. 2, WOMAN CREEK FEDERAL SURFACE WATER QUALITY STANDARDS

(Units are ug/l unless otherwise specified)

Parameter	SDWA Maximum Contaminant Level (a)	SDWA Maximum Contaminant Level Goal (a)	CWA AWQC for Protection of Aquatic Life (c)		CWA Water Quality Criteria for Protection of Human Health (c)		RCRA 40CFR Part 264 Subpart F Concentration Limit
			Acute Value	Chronic Value	Water and Fish Ingestion	Fish Consumption Only	
Total Dissolved Solids			SS	SS	250,000		
Bicarbonate							
Chloride							
N as Nitrate	10,000				10,000		
N as Nitrate+Nitrite	[10,000(b)]	[10,000(b)]					
N as Nitrite	[1,000(b)]	[1,000(b)]					
Sulfate							
Calcium							
Magnesium							
Sodium							
Zinc			120(3)	110(3)			51.7
Americium 241							
Gross Alpha	15 pCi/l						
Gross Beta	4 mrem/yr(6)						
Plutonium 238+239+240							
Uranium (total)							
1,1-Dichloroethene	7	7	11.6(1)(5)		0.033(1)(5)	1.85(1)(5)	5U
Acetone							10U
2-Butanone							10U
Benzene	5	0	5300(1)		0.86	40	5U
Carbon Disulfide							5U
Carbon Tetrachloride	5	0	35,200(1)		0.4*	6.94*	5U
Chloroform	100(2)		28,900(1)	12,400(4)	0.19*	15.7*	1U
Methylene Chloride							5U
Tetrachloroethene	[5(b)]	[0(b)]	5,280(1)	840(1)	0.8*	8.85*	5U
Trichloroethene	5		45,000	21,900	2.7	80.7	5U

TABLE E-2.1 POTENTIAL CHEMICAL-SPECIFIC ARARs/TBCs FOR PARAMETERS IN SURFACE WATER AT OPERABLE UNIT NO. 2, WOMAN CREEK FEDERAL SURFACE WATER QUALITY STANDARDS

(Units are ug/l unless otherwise specified)

Parameter	SDWA Maximum Contaminant Level (a)	SDWA Maximum Contaminant Level Goal (a)	CWA AWQC for Protection of Aquatic Life (c)		CWA Water Quality Criteria for Protection of Human Health (c)		RCRA 40CFR Part 264 Subpart F Concentration Limit
			Acute Value	Chronic Value	Water and Fish Ingestion	Fish Consumption Only	
Vinyl Chloride	2	0			2*	525*	1U
Toluene	1,000(b)	1,000(b)	17,500(1)		14,300	42,400	5U
Total Xylenes	10,000(b)	10,000(b)					5U

EXPLANATION OF TABLE

• Human health criteria for carcinogens reported for three risk levels. Value presented is the 10-5 risk level.

AWQC = Ambient Water Quality Criteria
CWA = Clean Water Act
SDWA = Safe Drinking Water Act
SS = species specific

(1) criteria not developed; value presented is lowest observed effects level (LOEL)
(2) total trihalomethanes: chloroform, bromoform, bromodichloromethane, dibromochloromethane
(3) hardness dependent criteria
(4) pH dependent criteria (7.8 pH used)
(5) Criteria is for dichloroethene
(6) SDWA standard for gross beta of 4 mrem/yr is an exposure dosage.
Compliance with the standard cannot determined through testing for gross beta.
Rather, a cumulative dose must be derived for all radionuclides using the method described in 40 CFR 141.16(b).

(a) EPA National Primary and Secondary Drinking Water Regulations, 40 CFR 141 and 40 CFR 143 (as of May 1990)
(b) Standard shown in brackets is amended MCL or MCLG, EPA National Primary and Secondary Drinking Water Regulations, 40 CFR Parts 141, 142, and 143, Final Rule (1/30/91), effective July 30, 1992.
(c) EPA, Quality Criteria for Protection of Aquatic Life, 1986

TABLE E-2.2 POTENTIAL CHEMICAL-SPECIFIC ARARs/TBCs FOR PARAMETERS IN SURFACE WATER AT OPERABLE UNIT NO.2, WOMAN CREEK STATE SURFACE WATER QUALITY STANDARDS

(Units are ug/l unless otherwise specified)

Parameter	Statewide Standards (a) CDH/WQCC								Segment 4 Classification and Water Quality Standards (b) CDH/WQCC				State Groundwater Standards for Human Health/ Agriculture
	Tables A,B Carcino-genic/ Noncarcin-ogenic	Table C Aquatic Life		State-Wide Radionuclide Standards	Tables I, II, III (4)				Table 1 Additional Organic Chemical Standards	Stream Segment Table		Table 2 Radionuclides	
		Acute Value	Chronic Value		Aquatic Life Acute Value	Aquatic Life Chronic Value	Agricul-tural Standard	Drinking Water Supply		Acute Value	Chronic Value		
Total Dissolved Solids													400,000
Bicarbonate													
Chloride										250,000			250,000/
N as Nitrate							100,000	10,000		10,000	10,000		10,000/
N as Nitrate+Nitrite								10,000					/100,000
N as Nitrite					SS	SS	10,000	1,000		1,000	1,000		1,000/10,000
Sulfate								250,000		250,000	250,000		250,000/
Calcium													
Magnesium													
Sodium													
Zinc					231.9(1)	45(1)	2,000	5,000		231.9(1)	45(1)		5,000/2,000
Americium 241												0.05pCi/l	
Gross Alpha												7 pCi/l	15pCi/l
Gross Beta												5 pCi/l	4mrem/yr(3)
Plutonium 238+239+240				15pCi/l								0.05pCi/l	
Uranium (total)				40pCi/l	2,617.6(1)	1,635(1)						5 pCi/l	
1,1-Dichloroethene	7												
Acetone													
2-Butanone													
Benzene	5	5300											
Carbon Disulfide													
Carbon Tetrachloride	5	35,200											
Chloroform	100(2)	28,900	1,240						0.19				

TABLE E-2.2 POTENTIAL CHEMICAL-SPECIFIC ARARs/TBCs FOR PARAMETERS IN SURFACE WATER AT OPERABLE UNIT NO.2, WOMAN CREEK STATE SURFACE WATER QUALITY STANDARDS

(Units are ug/l unless otherwise specified)

Parameter	Statewide Standards (a) CDH/WQCC								Segment 4 Classification and Water Quality Standards (b) CDH/WQCC				State Groundwater Standards for Human Health/ Agriculture
	Tables A,B Carcino-genic/ Noncarcin-ogenic	Table C Aquatic Life		State-Wide Radionuclide Standards	Tables I, II, III (4)				Table 1 Additional Organic Chemical Standards	Stream Segment Table		Table 2 Radionuclides	
		Acute Value	Chronic Value		Aquatic Life Acute Value	Aquatic Life Chronic Value	Agricul-tural Standard	Drinking Water Supply		Acute Value	Chronic Value		
Trichloroethene	5	45,000	21,900										
Methylene Chloride													
Tetrachloroethene	10	5,280	840						0.8				
Vinyl Chloride	2												
Toluene	2,420	17,500											
Total Xylenes													

EXPLANATION OF TABLE

CDH = Colorado Department of Health
SS = Species Specific
TVS = Table Value Standard (hardness dependent), see Table III in (a)
WQCC = Water Quality Control Commission

(1) Calculated using an estimated average hardness of 108.1 mg/l of $CaCO_3$, based on the Background Geochemical Characterization Report, EG&G, 1989.
(2) Standard is for total trihalomethanes: chloroform, bromoform, bromodichloromethane, dibromochloromethane.
(3) WQCC human health ground-water standard for gross beta is an exposure dosage.
Compliance with the standard cannot be determined through testing for gross beta.
Rather, a cumulative dose must be derived for all radionuclides present.
The dose may be calculated using the method described in The Basic Standards for Ground Water 3.11.0, pp.24.

TABLE E-2.2 POTENTIAL CHEMICAL-SPECIFIC ARARs/TBCs FOR PARAMETERS IN SURFACE WATER AT OPERABLE UNIT NO.2, WOMAN CREEK STATE SURFACE WATER QUALITY STANDARDS

(Units are ug/l unless otherwise specified)

Parameter	Statewide Standards (a) CDH/WQCC								Segment 4 Classification and Water Quality Standards (b) CDH/WQCC				State Groundwater Standards for Human Health/ Agriculture
	Tables A,B Carcino-genic/ Noncarcin-ogenic	Table C Aquatic Life		State-Wide Radionuclide Standards	Tables I, II, III (4)				Table 1 Additional Organic Chemical Standards	Stream Segment Table		Table 2 Radionuclides	
		Acute Value	Chronic Value		Aquatic Life		Agricul-tural Standard	Drinking Water Supply		Acute Value	Chronic Value		
					Acute Value	Chronic Value							

(4) Table I = physical and biological parameters
Table II = inorganic parameters
Table III = metal parameters
Values in Tables I, II, and III for recreational uses and cold water biota are not included.

(a) CDH/WQCC Colorado Water Quality Standards 3.1.0 (5 CCR 1002-8) 1/15/74; amended 9/30/89.

(b) CDH/WQCC, Classifications and Numeric Standards for S. Platte River Basin, Laramie River Basin, Republican River Basin, Smokey Hill Basin 3.8.0 (5 CCR 1002-8) 4/6/81; amended 2/15/91.

TABLE E-3

ACTION-SPECIFIC ARARS FOR CONSTITUENTS IN WASTES FOR OFF-SITE DISPOSAL OR ON-SITE PLACEMENT, OPERABLE UNIT NO. 2 WOMAN CREEK INTERIM REMEDIAL ACTION*

Constituent	Potential Waste Code	Treatment Standard**	Best Demonstrated Available Technology (BDAT) Basis for Standard
Calcium	--	--	--
Magnesium	--	--	--
Sodium	--	--	--
Zinc	--	--	--
$Pu^{238,239,240}$	--	--	--
Am^{241}	--	--	--
$Uranium^{total}$	--	--	--
Carbon Tetrachloride	U211	5.6 mg/kg	Incineration or Fuel Substitution
	F001	0.96 mg/ℓ	Incineration
1,1 Dichloroethene	U078	33 mg/kg	Incineration or Fuel Substitution
Tetrachloroethene	U210	5.6 mg/kg	Incineration or Fuel Substitution
	F001	0.05 mg/ℓ	Incineration
Acetone	U002	160 mg/kg	Incineration or Fuel Substitution
	F003	0.59 mg/ℓ	Incineration
2-Butanone	U159	36 mg/kg	Incineration
	F005	0.75 mg/ℓ	Incineration
Benzene	U019	36 mg/kg	Incineration
	F005	3.7 mg/kg	Incineration
Carbon Disulfide	P022	--	Incineration
	F005	4.81 mg/ℓ	Incineration
Chloroform	U044	5.6 mg/kg	Incineration
Methylene Chloride	U080	33 mg/kg	Incineration or Fuel Substitution
	F001	0.96 mg/ℓ	Incineration
	F002	0.96 mg/ℓ	Incineration
Toluene	U220	28 mg/kg	Incineration
	F005	0.33 mg/ℓ	Incineration

TABLE E-3 (Continued)

ACTION-SPECIFIC ARARS FOR CONSTITUENTS IN WASTES FOR OFF-SITE DISPOSAL OR ON-SITE PLACEMENT, OPERABLE UNIT NO. 2 WOMAN CREEK INTERIM REMEDIAL ACTION*

Constituent	Potential Waste Code	Treatment Standard**	Best Demonstrated Available Technology (BDAT) Basis for Standard
Total Xylenes	U239	28 mg/kg	Incineration
	F003	0.15 mg/ℓ	Incineration
Trichloroethene	U228	5.6 mg/kg	Incineration Fuel Substitution
	F001	0.91 mg/ℓ	Incineration
	F002	0.91 mg/ℓ	Incineration
Vinyl Chloride	U043	33 mg/kg	Incineration or Fuel Substitution
Multi-Source Leachate[2]	F039		

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* Land Disposal Restrictions at 40 CFR Part 268. Treatment standards identified are based on the potential hazardous waste code(s) that could be assigned to the parameters of concern.

** Treatment standards are presented for non-wastewaters

[1] Standard is expressed as a specific technology

[2] U.S. EPA added listed hazardous waste code F039 to 40 CFR 261.31 June 1, 1990 (55 FR 22520) and defined it as "leachate resulting from the treatment, storage, or disposal of wastes classified by more than one waste code under [40 CFR Part 261] Subpart D, or from a mixture of wastes classified under Subparts C and D of this part." If this waste code is deemed applicable to a waste, the waste must meet the treatment standards (see 40 CFR Part 268 Tables CCW and CCWE) prior to land disposal.

TABLE E-4
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 2, WOMAN CREEK

Action	Requirement	Prerequisite	Citation	ARAR	Comments
Treatment	Hazardous Waste must be treated to meet treatment standard or using specific technology.	Waste must be identifiable as hazardous per 40 CFR Part 261	RCRA Sections 3004(d)(3), (e)(3) 42 U.S.C. 6924(d)(3), (e)(3)	Applicable	Placement of excavated soil on-site or transportation of soil off-site for disposal must be treated to attain levels achievable by best demonstrated available treatment technologies before being land-disposed. If soil and debris and not hazardous waste, EPA policy is that LDR is generally not relevant and appropriate, per EPA 1989x. See also Appendix E-3.
Hazardous Waste Generation	Standards applicable to generators including waste accumulation, recordkeeping, container labelling, manifesting, etc.	Waste must be identifiable as hazardous per 40 CFR Part 261	40 CFR Part 262	Applicable	Wastes generated in proposed action may be identifiable as hazardous wastes. Examples may include treatment sludge, excavated soils, used treatment materials. R&A if wastes are not hazardous.
Hazardous Waste Transportation	Hazardous waste shipment off-site is subject to DOT regulations, manifesting, recordkeeping, and discharge cleanup, etc.	Wastes must be identifiable as hazardous per 40 CFR Part 261.	40 CFR Part 263	Applicable	Wastes identifiable as hazardous must comply with applicable hazardous waste requirements for off-site shipment. R&A if not hazardous.
Excavation/ Consolidation	Consolidation in storage piles/storage tanks will trigger storage requirements.	Movement of hazardous waste (listed or characteristic) from one unit or area of contamination into another. Consolidation within a unit or area of contamination does not trigger applicability.	40 CFR Part 264 Subpart L/ 40 CFR Part 264 Subpart J	Applicable	RCRA requirements for storage in waste piles or tanks are applicable to interim storage of excavated soil destined for consolidation or off-site disposal.
	Placement on or in land outside unit boundary or area of contamination will trigger land disposal requirements and restrictions. (See Table E-3 for allowable constituent concentrations.)		40 CFR 268 (Subpart D)	Relevant and Appropriate (R&A)	Soil excavated during installation is subject to land disposal restrictions for wastes if placement occurs outside the area of contamination. Requirements are applicable for RCRA hazardous waste; R&A if not RCRA hazardous waste.
Ground-Water Diversion	Excavation of soil for construction of slurry wall may trigger cleanup or land disposal restrictions.	RCRA hazardous waste placed at site after November 19, 1980, or movement hazardous waste from one unit, area of contamination, or location into another unit or area of contamination.	See Excavation/ Consolidation	R&A	See Excavation/Consolidation

TABLE E-4 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 2, WOMAN CREEK

Action	Requirement	Prerequisite	Citation	ARAR	Comments
Treatment or Storage in Tanks	Tanks must have sufficient shell strength (thickness), and, for closed tanks, pressure controls, to assure that they do not collapse or rupture.	RCRA hazardous waste (listed or characteristic), held for temporary period before treatment, disposal, or storage elsewhere, (40 CFR 264.10) in a tank.	40 CFR 264.190	R&A	Applicable to treatment and storage tanks used in treating or containing water contaminated with hazardous waste. R&A if units would be excluded under RCRA, such as wastewater treatment units or if wastes are not RCRA hazardous waste.
	Waste must not be incompatible with the tank material unless the tank is protected by a liner or by other means.		40 CFR 264.191	R&A	
	New tanks or components must be provided with secondary containment.		40 CFR 264.193	R&A	
	Tanks must be provided with controls to prevent overfilling, and sufficient freeboard maintained in open tanks to prevent overtopping by wave action or precipitation.		40 CFR 264.194	R&A	
	Inspect the following: overfilling control, control equipment, monitoring data, waste level (for uncovered tanks), tank condition, above-ground portions of tanks, (to assess their structural integrity) and the area surrounding the tank (to identify signs of leakage).		40 CFR 264.195	R&A	
	Repair any corrosion, crack, or leak.		40 CFR 264.196	R&A	
	At closure, remove all hazardous waste and hazardous waste residues from tanks, discharge control equipment and discharge confinement structures.		40 CFR 264.197	R&A	

TABLE E-4 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 2, WOMAN CREEK

Action	Requirement	Prerequisite	Citation	ARAR	Comments
Treatment or Storage in Tanks (cont.)	Store ignitable and reactive waste so as to prevent the waste from igniting or reacting. Ignitable or reactive wastes in covered tanks must comply with buffer zone requirements in "Flammable and Combustible Liquids Code," Tables 2-1 through 2-6 (National Fire Protection Association, 1976 or 1981).		40 CFR 264.198	R&A	
Container Storage (On-Site)	Containers of hazardous waste must be: · Maintained in good condition;	RCRA hazardous waste (listed or characteristic) held for a temporary period before treatment, disposal, or storage elsewhere, in a container (i.e., any portable device in which a material is stored, transported, disposed of, or handled) (40 CFR 264.10).	40 CFR 264.171	Applicable	RCRA container storage requirements are applicable if hazardous wastes are stored, R&A if stored wastes are not RCRA hazardous wastes.
	· Compatible with hazardous waste to be stored; and		40 CFR 264.172		
	· Closed during storage (except to add or remove waste).		40 CFR 264.173		
	Inspect container storage areas weekly for deterioration.		40 CFR 264.174		
	Place containers on a sloped, crack-free base, and protect from contact with accumulated liquid. Provide containment system with a capacity of 10% of the volume of containers of free liquids. Remove spilled or leaked waste in a timely manner to prevent overflow of the containment system.		40 CFR 264.175		
	Keep containers of ignitable or reactive waste at least 50 feet from the facility's property line.		40 CFR 264.176		

TABLE E-4 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 2, WOMAN CREEK

Action	Requirement	Prerequisite	Citation	ARAR	Comments
Container Storage (On-Site) (cont)	Keep incompatible materials separate. Separate incompatible materials stored near each other by a dike or other barrier.		40 CFR 264.177		
	At closure, remove all hazardous waste and residues from the containment system, and decontaminate or remove all containers, liners.		40 CFR 264.178		
Off-Site Treatment Storage or Disposal	In the case of any removal or remedial action involving the transfer of any hazardous substance or pollutant or contaminant off-site, such hazardous substance or pollutant or contaminant shall only be transferred to a facility which is operating in compliance with section 3004 and 3005 of the Solid Waste Disposal Act (or where applicable, in compliance with the Toxic Substances Control Act or other applicable Federal law) and all applicable State requirements. Such substance or pollutant or contaminant may be transferred to a land disposal facility only if the President determines that both of the following requirements are met: · The unit to which the hazardous substance or pollutant or contaminant is transferred is not releasing any hazardous waste, or constituent thereof, into the ground water or surface water or soil.		SARA section 121(d)(2)(C)	Applicable	Applicable to the off-site treatment, storage, or disposal of wastes generated during on-site remedial actions.

TABLE E-4 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 2, WOMAN CREEK

Action	Requirement	Prerequisite	Citation	ARAR	Comments
Off-Site Treatment Storage or Disposal (cont)	· All such releases from other units at the facility are being controlled by a corrective action program approved by the Administrator under subtitle C of the Solid Waste Disposal Act.				
	Wastes must be treated using technology or to concentra- level by best demonstrated available technology (BDAT) for each hazardous constituent in the waste, prior to land disposal. (See Table E-3)	Wastes must be identifiable as hazardous per 40 CFR Part 261	40 CFR Part 268	Applicable	Applicable to wastes, other than treated effluent, such as treatment sludge, excavated soils, used treatment materials. Also applicable to on-site land disposal or "placement" outside the area of contamination. R&A if not RCRA hazardous waste.
Discharge of Storm Waters	Requires storm water discharges to be permitted under the Federal (or state) National Pollution Discharge Elimination Systems (NPDES) program. Different requirements are applicable for different classes and types of discharges.		40 CFR 122.21(g) 40 CFR 122.26, and 40 CFR 122.28	R&A	Alternatives for the IRAP include collection and treatment of treated effluent in Pond C-2, which is subject to a NPDES permit, prior to discharge off site.
Discharge of Water into Surface Water Bodies	An NPDES permit is required for discharging water into surface water bodies.		40 CFR 122 and 40 CFR 125	R&A	Alternatives for the IRAP include collection and treatment of treated effluent in Pond C-2, which is subject to a NPDES permit, prior to discharge off site.
	All surface water discharges must be in compliance with recently promulgated Colorado Stream Discharge Standards		5 CCR 1002-8	R&A	Alternatives for the IRAP include collection and treatment of treated effluent in Pond C-2, which is subject to a NPDES permit, prior to discharge off site.

TABLE E-4 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 2, WOMAN CREEK

Action	Requirement	Prerequisite	Citation	ARAR	Comments
Effluent Guidelines and Standards: Pre-Treatment Standards	This section establishes pre-treatment standards (both general and categorical) for the control of pollutant discharges into Public Owned Treatment Works (POTW). Discharge of POTW must not cause pass-through interference, violation of specific prohibitions, or violations of local limitations or ordinances. POTW should either have an EPA-approved pre-treatment program or have sufficient mechanisms to meet the requirements of the national pre-treatment program in accepting CERCLA waste.		40 CFR 403.5	R&A	Alternatives for the IRAP include collection and treatment of treated effluent in Pond C-2, which is subject to a NPDES permit, prior to discharge off site.
Discharge of Treatment System Effluent	Use of best available technology (BAT) economically achievable is required to control toxic and non-conventional pollutants. Use of best conventional pollutant control technology (BCT) is required to control conventional pollutants. Technology-basedlimitations may be determined on a case-by-case basis.		40 CFR 122.44	R&A	The remedial alternatives at Operable Unit 2 may include the discharge of treatment system effluent.
U.S. EPA Ground-Water Protection Strategy	The strategy includes guidelines on classifying ground water for EPA decisions affecting ground water protection and corrective actions. Criteria include ecological importance, replaceability, and vulnerabilityconsideration.	The protection strategy does not involve applicable ARARs but does contain policy statements to be considered.		TBC	This strategy is to be considered regarding ground water remedial alternatives for Operable Unit 2.
National Ambient Air Quality	National ambient air quality standards have been set to attain and maintain primary and secondary standards to protect public health and the environment. Requirements include a major-source permit, prevention of significant deterioration permit, non-attainable area permit, and visibility permit.		CAA Section 109 and 40 CFR 50	R&A	Remedial actions at Operable Unit 2 that may result in new sources of air emissions include incineration, excavation, and air stripping of contaminated ground water.

TABLE E-4 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 2, WOMAN CREEK

Action	Requirement	Prerequisite	Citation	ARAR	Comments
New Source Performance Standards	Standards for new sources of air emissions. Requirements are source-specific.	Need to determine if these standards apply to potential remedial actions.	CAA Section III	R&A	
Transportation of Hazardous Materials	Specific DOT requirements exist for labeling, packaging, shipping papers/manifesting, and transporting by rail, aircraft, vessel, and highway.		49 CFR 100-199	Applicable	Applicable to wastes or materials shipped off-site.
Environmental Impact of Federal Actions	A statement of environmental impact is required. Establishes provisions applicable to and binding on all federal agencies for implementing the procedural requirements of the National Environmental Policy Act (NEPA). Includes procedures for planning (Part 1501), preparing environmental impact statements (part 1502), decision-making (Part 1505), and compliance (Part 1507).		NEPA Section 102(2)(c) and 40 CFR 1500-1508; DOE 5440.1C	R&A	EPA, CDH, and DOE have reached agreement on the applicability of NEPA to RCRA/CERCLA actions.
Worker Safety	Occupational Safety and Health program for DOE contractor employees at government-owned contractor-operated facilities.		DOE 5483.1A	TBC	
Emergency Planning, Preparedness, and Response for Operations	Provide coordination direction of planning, preparedness, and response to operational emergencies in which there is a potential for personal injury, destruction of property, theft, or release of toxic, radioactive, or other hazardous material which present a potential threat to health, safety, or the environment.		DOE 5500.2	TBC	

TABLE E-4 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 2, WOMAN CREEK

Action	Requirement	Prerequisite	Citation	ARAR	Comments
General Environmental Protection Program	Establishes environmental protection program requirements, authorities, and responsibilities for DOE operations for ensuring compliance with federal and state environment protection laws and regulations, federal executive orders, and internal department policies.		DOE 5400.1	TBC	
Environmental Compliance Issue Coordination	Establishes DOE requirements for coordination of significant environmental compliance issues.		DOE 5400.2A	TBC	
Hazardous and Radioactive Mixed Waste Program	Establishes DOE hazards and radioactive mixed waste policies and requirements and implements RCRA.		DOE 5400.3	TBC	
Radiation Protection	Establishes radiation protection standards and requirements including occupationally related exposure of individuals in controlled areas.		DOE 5480.1	TBC	
Packaging and Transportation of Hazardous Materials, Hazardous Substances, hazardous wastes, and radioactive materials	Establishes requirements for packaging and transportation.		DOE 5480.3	TBC	
Comprehensive Environmental Response, Compensation and Liability Act Program	Establishes basic requirements for implementation of the Superfund at DOE facilities.		DOE 5480.14	TBC	
Environmental Protection Safety, and Health Protection Information Reporting Requirements	Establishes requirements and procedures for reporting information having environmental protection, safety, or health significance for DOE operations.		DOE 5484.1	TBC	

TABLE E-4 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 2, WOMAN CREEK

Action	Requirement	Prerequisite	Citation	ARAR	Comments
Radioactive Waste Management	Establishes policies and guidelines by which DOE manages radioactive waste, waste byproducts, and radioactively contaminated surplus facilities.		DOE 5820.2A	TBC	

TABLE E-5
ANALYSIS OF LOCATION-SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT NO. 2, WOMAN CREEK

LOCATION	CITATION	REQUIREMENT	ARAR TYPE*	COMMENTS
Fault zones	40 CFR 264.18(a)	RCRA regulations specify that hazardous waste treatment, storage, or disposal must not take place within 200 feet of a Holocene fault.	R&A	No faults displaced during Holocene times exist within 200 feet of this site.
Flood plain	40 CFR 264.18(b)	Any RCRA treatment, storage, or disposal facility which lies within a 100-year floodplain must be designed, constructed and operated to avoid washout.	R&A	This site is not located within a 100-year floodplain.
Siting of Hazardous Waste Disposal Sites	Colorado Hazardous Waste Act, Sections 25-15-101, 203, 208, 302	Outlines siting criteria for hazardous waste disposal sites.	R&A	Although the proposed action involves the treatment of water rather than disposal of hazardous wastes, these criteria are considered in the siting of the unit.
Siting of Wastewater Treatment Facilities	Colorado Water Quality Control Act Section 25-8-202 and 25-8-702	CDH Water Quality Control Division must approve locations of wastewater treatment facilities.	R&A	Applicable to domestic wastewater treatment facilities, relevant and appropriate to the proposed action.
Siting within an area where action may cause irreparable harm, loss, or destruction of significant articles.	36 CFR Part 65, National Historic Preservation Act	Planned actions must avoid threatening significant scientific, prehistorical, historical, or archeological data.	Applicable	Proposed activities will not threaten significant scientific, historic, prehistoric, or archeological artifacts.
Siting on or near historic property owned or controlled by Federal agency.	36 CFR Part 800, National Historic Preservation Act	Action to preserve historic properties; planning of action to minimize harm to National Historic Landmarks, included in or eligible for the National Register of Historic Places	Applicable	Proposed activities will not disturb known or suspected historic sites. Refer to Sections 2.2.7 and 7.4

TABLE E-5 (continued)
ANALYSIS OF LOCATION-SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT NO. 2, WOMAN CREEK415

LOCATION	CITATION	REQUIREMENT	ARAR TYPE*	COMMENTS
Siting on critical habitat of endangered or threatened species.	50 CFR Parts 200, 402, 33 CFR Parts 320-330	Action to conserve endangered or threatened species.	Applicable	Proposed activities will not adversely affect endangered or threatened species. Refer to Section 2.2.5 and 7.3.
Wetlands	40 CFR Part 6, Appendix A	Actions must minimize the destruction, loss, or degradation of wetlands, as defined by Executive Order 11990, Section 7.	Applicable	Proposed activities will not adversely affect wetlands. Refer to Sections 2.2.6 and 7.3.
	40 CFR Parts 230, 231	Actions must not discharge dredged or fill material into wetlands without permit.	Applicable	Proposed activities will not adversely affect wetlands.
Area affecting stream or river.	40 CFR 6.302	Action must protect fish or wildlife.	Applicable	Proposed action will be protective of potentially affected fish and wildlife resources. Refer to Sections 2.2.3.1 and 7.3.

* The ARAR types designated reflect the application status of each requirement when preparation of this IM/IRA began. In response to these requirements, investigations were performed and the results are indicated in the Comments column which reflect the lack of any location-specific ARAR requirements which would preclude the proposed activity.

APPENDIX F

RISK CALCULATIONS FOR PUBLIC EXPOSURE TO AIRBORNE VOLATILE ORGANIC COMPOUNDS

APPENDIX F

RISK CALCULATIONS FOR PUBLIC EXPOSURE TO AIRBORNE VOLATILE ORGANIC COMPOUNDS

This appendix provides the methodology, assumptions, and calculations, for computing carcinogenic and non-carcinogenic (systemic) human health risks resulting from public exposure to airborne volatile organic compounds (VOCs) originating from the Woman Creek Basin seeps. In general, it is assumed a member of the public will be exposed to released VOCs continuously over 10 years at the eastern RFP property line.

Carcinogenic risks are calculated to estimate the increased likelihood of an individual contracting cancer during his lifetime due to contaminant exposure. Carcinogenic risks from multiple sources are assumed to be additive.

$$\text{Risk} = \text{CDI} \times \text{SF}$$

where:

CDI = Chronic Daily Intake

SF = Slope Factor, as defined in the Risk Assessment Guidance for Superfund, Volume I (Part A) (EPA, 1989)

Non-carcinogenic risks are evaluated by comparing the exposure level (E) to a reference dose (RfD) below which it is not expected that any systemic health effects are likely to occur.

$$\text{Noncancer Hazard Quotient (HQ)} = E/RfD$$

Non-carcinogenic risks from multiple sources are also conservatively assumed to be additive. A noncancer hazard index (HI) is computed by summing HQs for each contaminant

$$HI = E_1/RfD_1 + E_2/RfD_2 + \cdots E_iRfD_i$$

A HI less than 1 implies there will not be systemic health effects from exposure to the contaminants. The following equation is used to estimate the intake (CDI or E) resulting from contaminant inhalation.

$$\text{Intake (mg/kg/day)} = \frac{CA \times IR \times ED}{BW \times AT}$$

where:

CA = Average concentration in air (mg/m^3) at the point of exposure.

IR = Inhalation Rate
= 20 m^3/day (adult)

BW = Body Weight
= 70 kg (adult)

ED = Exposure Duration
= 10 years x 350 days (EPA, 1989)

AT = Averaging Time
= 10 years x 365 days/year for noncarcinogens
= 70 years x 365 days/year for carcinogens (EPA, 1989)

It is assumed, for computing the intake, that the source release is continuous, and exposure occurs over a 10-year duration. Ten years is chosen because the FFACO specifies implementation of final remediation within 7 years, and 3 years have been conservatively added to allow time for the remediation to become effective.

The ambient air VOC concentration (CA) at the nearest point of exposure is computed using the Gaussian plume equation of Pasquill as modified by Gifford (1961) for ground level concentrations at the centerline of the plume. The Gaussian Plume model predicts contaminant concentrations at various downwind distances from the contaminant source. The computation is as follows:

CA	=	χ/Q x Release Source Term
χ/Q	=	dispersion coefficient (sec/m³)
Release Source Term	=	Rate at which contaminants are released (g/sec)

The release source term was computed using the flow weighted average VOC concentrations at CS-55 (including upstream seeps) and CS-53, and the design flows. The computation is shown in Table F-1. The flow values used in the averaging are the CS-55 and CS-53 design flows, 3 gpm and 1 gpm, respectively.

The dispersion coefficient (χ/Q) is calculated using the following formula:

χ/Q	=	$(\pi\ \sigma_y\ \sigma_z\ \mu_{avg})^{-1}$ WDF
		dispersion coefficient (sec/m^3)

where:

π	=	Pi (3.1416....)
μ_{avg}	=	Average wind speed (m/sec)
σ_{yz}	=	Gaussian distribution coefficients in the crosswind and vertical directions
WDF	=	Wind Direction Factor (0.13 for the East-Southeast Sector from Rocky Flats Plant meteorological data)

The WDF represents the fraction of the time the wind blows to the ESE. ESE is the compass sector where the wind blows most frequently. The average wind speed (u_{avg}) used in the calculation of X/Q is 5 m/sec. This value for u_{avg} is based data from the 1990 Rocky Flats Plant EIS for the ESE sector.

The diffusion coefficient calculation for this release was calculated using values of σ_y and σ_x calculated using the formulas recommended by Briggs for open-country conditions (Gifford, 1976). The formula is for the Pasquill Stability Class D (this stability class was used because it was reported in the RFP EIS to be the most prevalent, occurring about 52% of the time). The formulas used were as follows:

σ_y	=	$0.08X\ (1 + 0.0001X)^{-1/2}$
σ_z	=	$0.06X\ (1 + 0.0015X)^{-1/2}$

where

X	=	the downwind distance in meters (2100 meters ESE to the property line from the Woman Creek Basin IM/IRA seeps)

The computed VOC air concentrations and estimated risks are shown in Table F-2

TABLE F-1
AIR CONCENTRATION CALCULATIONS FOR DISPERSION OF VOCs
2100 METERS FROM WOMAN CREEK BASIN SEEPS

ANALYTE	AVERAGE CONCEN @ CS-55 (ug/l)	AVERAGE CONCEN @ CS-53 (ug/l)	FLOW WEIGHTED AVERAGE CONCENTRATION (ug/l)	RELEASE SOURCE TERM (g/sec)	CALCULATED AIR CONCENTRATION (mg/cu m)
1,1 - Dichloroethene	21.5	2.5	16.7	4.2E-06	3.7E-09
1,2 - Dichloroethene	21.8	2.5	17.0	4.3E-06	3.8E-09
2 - Butanone	6.5	5.0	6.1	1.6E-06	1.4E-09
Benzene	3.8	2.5	3.5	8.8E-07	7.7E-10
Carbon Disulfide	3.9	2.5	3.6	9.0E-07	7.9E-10
Carbon Tetrachloride	59.3	2.5	45.1	1.1E-05	1.0E-08
Chloroform	9.0	3.0	7.5	1.9E-06	1.7E-09
Tetrachloroethene	11.0	2.5	8.9	2.2E-06	2.0E-09
Toluene	3.0	2.5	2.9	7.3E-07	6.4E-10
Total Xylenes	3.8	2.5	3.4	8.7E-07	7.6E-10
Trichloroethene	135.3	3.3	102.3	2.6E-05	2.3E-08

TABLE F-2

WOMAN CREEK BASIN IM/IRA
RISKS TO PUBLIC FROM INHALATION AT FENCELINE OF
VOLATILE ORGANIC COMPOUNDS FROM WOMAN CREEK BASIN SEEPS

ANALYTE	FLOW-WEIGHTED AVERAGE CONCENTRATION IN WOMAN CREEK SEEPS (ug/l)	CALCULATED AIR CONCENTRATION (mg/cu m)	CHRONIC INHALATION REFERENCE CONCENTRATION (mg/kg/d)	HAZARD QUOTIENT	CARCINOGENIC SLOPE FACTOR 1/(mg/kg/d)	CANCER RISK
1,1 - Dichloroethene*	16.7	3.7E-09	9.0E-03	1.1E-07	1.2	1.7E-10
1,2 - Dichloroethene •	21.5	3.8E-09	1.0E-02	1.0E-07	N/A	N/A
2 - Butanone	6.2	1.4E-09	9.0E-02	4.3E-09	N/A	N/A
Benzene	3.4	7.7E-10	N/A	N/A	2.9E-02	8.7E-13
Carbon Disulfide	3.6	7.9E-10	1.0E-02	2.2E-08	N/A	N/A
Carbon Tetrachloride •	45.1	1.0E-08	7.0E-04	3.9E-06	1.3E-01	5.1E-11
Chloroform •	7.5	1.7E-09	1.0E-02	4.7E-08	8.1E-02	5.4E-12
Tetrachloroethene *	8.9	2.0E-09	1.0E-02	5.5E-08	1.8E-03	1.4E-13
Toluene	2.9	6.4E-10	5.7E-01	3.1E-10	N/A	N/A
Total Xylenes	3.4	7.6E-10	9.0E-02	2.3E-09	N/A	N/A
Trichloroethene	102.3	2.3E-08	N/A	N/A	1.7E-02	1.5E-11
CUMULATIVE RISK				4.3E-06		2.5E-10

• Oral RfD used (see Appendix H)

In addition to potential health risks resulting from inhalation of VOCs (from the Woman Creek Basin seeps) at the RFP boundary, noncarcinogenic and carcinogenic risks to RFP employees are also examined. This analysis considers dispersion of VOCs from the seeps to contractor support trailer T-903A, the nearest employee-occupied facility. T-903A is located south of Central Avenue and to the northeast of Building 886, and is approximately 114 meters to the west-northwest of CS-55. The WDF for the west-northwest direction is 0.03.

Substituting a WDF of 0.03 (west-northwest direction) and a propagation distance of 114 meters into the Gaussian Dispersion Model discussed above allows estimation of VOC air concentrations at T-903A. The calculated VOC air concentrations and potential noncarcinogenic and carcinogenic health risks due to inhalation are presented in Table F-3.

A comparison of the results presented in Tables F-2 and F-3 indicates that the health risks due to inhalation of VOCs from Woman Creek Basin seeps at the nearest employee-occupied facility to the seeps (T-903A) are of the same magnitude.

TABLE F-3

WOMAN CREEK BASIN IM/IRA
RISKS TO RFP EMPLOYEES FROM INHALATION OF VOLATILE
ORGANIC COMPOUNDS FROM WOMAN CREEK BASIN SEEPS

ANALYTE	FLOW-WEIGHTED AVERAGE CONCENTRATION IN WOMAN CREEK SEEPS (ug/l)	CONCEN @ T-903A (mg/cu m)	CHRONIC INHALATION REFERENCE CONCENTRATION (mg/kg/d)	HAZARD QUOTIENT	CARCINOGENIC SLOPE FACTOR (kg-d/mg)	CANCER RISK
1,1 - Dichloroethene *	16.7	4.2E-09	9.0E-03	1.3E-07	1.2	2.0E-10
1,2 - Dichloroethene •	21.5	5.4E-09	1.0E-02	1.5E-07	N/A	N/A
2 - Butanone	6.2	1.6E-09	9.0E-02	4.7E-09	N/A	N/A
Benzene	3.4	8.7E-10	N/A	N/A	2.9E-02	9.9E-13
Carbon Disulfide	3.6	9.0E-10	1.0E-02	2.5E-08	N/A	N/A
Carbon Tetrachloride *	45.1	1.1E-08	7.0E-04	4.4E-06	1.3E-01	5.8E-11
Chloroform •	7.5	1.9E-09	1.0E-02	5.2E-08	8.1E-02	6.0E-12
Tetrachloroethene •	8.9	2.2E-09	1.0E-02	6.1E-08	1.8E-03	1.6E-13
Toluene	2.9	7.2E-10	5.7E-01	3.5E-10	N/A	N/A
Total Xylenes	3.4	8.7E-10	9.0E-02	2.6E-09	N/A	N/A
Trichloroethene	102.3	2.6E-08	N/A	N/A	1.7E-02	1.7E-11
TOTAL RISK				4.9E-06		2.8E-10

• Oral RfD used (see Appendix H)

APPENDIX G

FLOW-WEIGHTED AVERAGE
AND
MAXIMUM SURFACE WATER CONCENTRATIONS

SURFACE WATER IM/IRA/EA

WOMAN CREEK BASIN

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TABLE G-1
WOMAN CREEK BASIN SURFACE WATER IM/IRA
FLOW WEIGHTED AVERAGES

ANALYTE	ARAR	903 PAD AND LIP (1) (Flow =3.0 GPM)		SW053 (Flow = 1.0 GPM)		FLOW WEIGHTED AVERAGE CONCENTRATION	FLOW WEIGHTED MAXIMUM CONCENTRATION
Volatile Organics (4) (Concentration Units = ug/l)		C avg (2)	C max (3)	C avg	C max	C avg	C max
Acetone	10 (5)	6.04	14.18	5.27	11	6	13
1,1-Dichloroethene	7	21.45	62.79	2.5	2.5	17	48
Carbon Tetrachloride	5	59	194	3	3	45	146
Trichloroethene	5	135	322	3	14	102	245
Tetrachloroethene	10	11	21	3	3	9	17
Methylene Chloride	5 (5)	4.15	7.5	4.82	17	4	10
Vinyl Chloride	2	6.5	12.5	5	5	6	11
Dissolved Metals (Concentration Units = mg/l)		C avg	C max	C avg	C max	C avg	C max
Iron	0.300	0.0760	0.2800	2.5100	8.5400	0.6845	2.3450
Manganese	0.050	0.1720	0.3260	0.3408	0.5870	0.2142	0.3913
Selenium	0.010	0.0038	0.0067	0.0019	0.0025	0.0033	0.0057
Strontium (6)	0.396	0.418	0.918	0.4389	0.817	0.4232	0.8928
Beryllium	0.005	0.003	0.0104	0.0021	0.0025	0.0028	0.0084
Cadmium	0.005 U	0.003	0.0104	0.0023	0.0025	0.0028	0.0084
Chromium	0.05	0.006	0.0156	0.0057	0.01	0.0059	0.0142
Copper	0.025 U	0.012	0.018	0.0112	0.0125	0.0118	0.0166
Lead	0.005	0.0025	0.0051	0.0026	0.0084	0.0025	0.0059
Nickel	0.101	0.0187	0.0243	0.0172	0.02	0.0183	0.0232
Zinc	0.045	0.1294	0.338	0.0245	0.0501	0.1032	0.2660
Total Metals (Concentration Units = mg/l)		C avg	C max	C avg	C max	C avg	C max
Aluminum	0.150 (5)	2.2700	9.7900	1.9546	6.6200	2.1912	8.9975
Beryllium	0.005 (5)	0.003	0.0104	0.0025	0.0055	0.0029	0.0092
Cadmium	0.005	0.003	0.0104	0.0026	0.0036	0.0029	0.0087
Copper	0.025 U	0.0159	0.0269	0.0135	0.0299	0.0153	0.0277
Iron	1.000	2.6970	11.4800	7.9890	22.3000	4.0200	14.1850
Lead	0.005	0.0211	0.0070	0.0083	0.0261	0.0179	0.0118
Lithium	2.500 (5)	0.1010	0.5750	0.2896	2.5000	0.1482	1.0563
Selenium	0.010	0.0028	0.0046	0.0034	0.0125	0.0030	0.0066
Strontium	0.396	0.3138	0.879	0.4575	0.847	0.3497	0.8710
Zinc	0.045	0.3850	1.3570	0.0412	0.1210	0.2991	1.0480

ANALYTE	ARAR	903 PAD AND LIP (1) (Flow = 3.0 GPM)		SW053 (Flow = 1.0 GPM)		FLOW WEIGHTED AVERAGE CONCENTRATION	FLOW WEIGHTED MAXIMUM CONCENTRATION
Dissolved Radionuclides (7)							
(Concentration Units = pCi/l)		C avg (2)	C max (3)	C avg	C max	C avg	C max
Gross Alpha	15.00	-	-	18.000	34.000	4.5000	8.5000
Gross Beta	5.00	-	-	7.000	7.000	1.7500	1.7500
Total Radionuclides							
(Concentration Units = pCi/l)		C avg	C max	C avg	C max	C avg	C max
Gross Alpha	15.00	82.370	123.570	133.640	230.000	95.1875	150.178
Gross Beta	5.00	29.760	36.570	15.220	42.000	26.1250	37.928
Plutonium 239, 240	15.00	17.480	28.620	41.420	110.000	23.4650	48.965
Americium 241	0.05 (5)	1.171	5.541	8.945	28.000	3.1145	11.156
Total Inorganics							
(Concentration Units = mg/l)		C avg	C max	C avg	C max	C avg	C max
Total Dissolved Solids	250 (5)	450.6	507.6	499.6	720.0	462.9	560.6
Chloride	0.005 U	32.15	40.43	73.5	92	42.5	53.3

(1) Collection at 903 Pad and Lip includes flows from surface water stations SW50, SW051, SW052, SW055, SW057, SW058, SW077

(2) C avg = Average Analyte Concentration. For a group of stations (e.g. 903 Pad and Lip Area) C avg is computed by first determining the arithmetic mean concentration at individual stations and then using this data to compute the arithmetic mean for the stations in the group. If a datum indicates non-detected (i.e. 'U' designation) the value used in computation of the arithmetic mean is one half the Contract Required Detection Limit (CRDL). In cases where a station or group of stations has many non-detect results in addition to one or more results below the detection limit for a contaminant, the calculated C avg may be greater than C max.

(3) C max = Maximum Analyte Concentration. C max is the maximum detected concentration in the entire data set for the station or group of stations. If the analyte is not detected (i.e. 'U' designation) in any of the station samples, C max is set equal to the CRDL.

(4) Methylene chloride and acetone were detected in several laboratory blanks. Surface water data in which these common laboratory contaminants were detected in blanks are evaluated for computation of C avg and C max as follows; If the datum is less than ten times the concentration found in the corresponding blanks, the datum is evaluated as a non-detect, 5U and 10 U for methylene chloride and acetone, respectively. If the datum is greater than ten times the concentration found in the corresponding blanks, the datum is evaluated at the concentration reported by the sample analysis.

(5) ARAR value for this constituent is TBC.

(6) No ARAR or TBC value exists for this constituent. The value listed as ARAR for this constituent is background concentration which is considered as an IM/IRA goal.

(7) No dissolved radionuclides data are available for the 903 Pad Area stations; the flow weighted average and maximum values are based on SW053 only.

APPENDIX H

RISK ASSESSMENT CALCULATIONS

SURFACE WATER IM/IRA/EA

WOMAN CREEK BASIN

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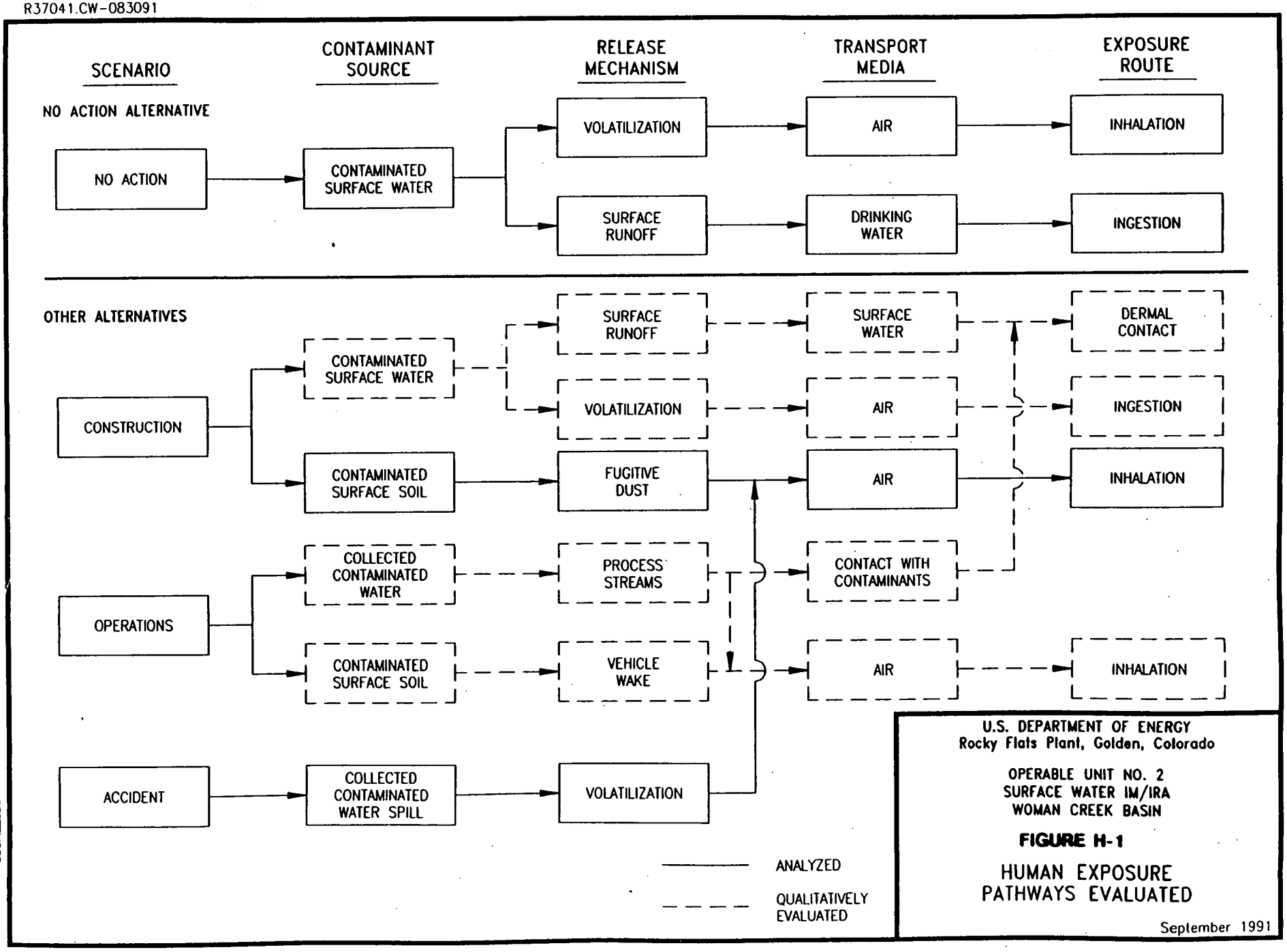
APPENDIX H
RISK ASSESSMENT CALCULATIONS

The toxicity assessment (intake and risk) for carcinogenic and noncarcinogenic effects of chemicals was performed in accordance with the EPA's Risk Assessment Guidance for Superfund Sites (EPA, 1989). Carcinogenic risks are considered to be cumulative for the entire period of exposure and the calculations yield an estimate for the lifetime increased risk of cancer. Noncarcinogenic risks are considered "threshold" events. That is, no effect is observed below a given exposure. The potential for increased health effects is expressed in terms of the noncancer hazard quotient, which equals the exposure level divided by the reference dose (RfD) (noncarcinogenic toxicity value). The sum of the hazard quotients for all contaminants is the hazard index (HI). The EPA methodology assumes that a HI value of less than one is unlikely to result in adverse health effects, even for sensitive population groups. Generally, the greater the index value above unity, the greater the level of concern.

EPA's Integrated Risk Information System (IRIS) was utilized as the primary source for toxicity information (RfDs and slope factors). EPA's Health Effects Assessment Summary Tables (annual FY 1991) were used a secondary source of information. For several VOCs (1,1-DCE; 1,2-DCE; carbon tetrachloride; chloroform; and tetrachloroethylene), inhalation toxicity values (i.e., RfDs) were estimated using the oral pathway values in those instances where inhalation values were not available. It is expected that use of the oral RfD as a surrogate inhalation RfD for these contaminants is reasonable based on similar toxic effects through both exposure routes. For example, it would not be suitable to use the oral RfD as the inhalation RfD if lung toxicity is the most sensitive toxic effect through the inhalation route and if this effect did not occur or was a minor effect through the ingestion route. There is no evidence for the chemicals of concern, however, that lung toxicity is a sensitive endpoint through the inhalation route. A second factor to consider is the "first-pass" effect on the chemical. The first-pass effect refers to the shunting of blood in the gastrointestinal tract, and the substances absorbed into that blood, to the liver before entering the general systemic circulation. The most sensitive toxic endpoint on which the oral RfD for four of these chemicals is based is liver toxicity (U.S. EPA, 1991). Several of these chemicals are known to be converted to toxic metabolites in the liver which may contribute to the hepatic toxicity. Liver toxicity has also been reported to be among the most sensitive toxic endpoints of 1,2-dichloroethene (U.S. EPA, 1987). Based on this information, it would be expected that these chemicals would be at least as toxic, if not more toxic, through the oral route than the inhalation route. Therefore, the use of the oral RfD for these chemicals as the inhalation RfD would be expected to be conservative and would probably provide an overestimate of noncarcinogenic risk.

Contaminant release sources and pathways evaluated are discussed in Section 4.2 and illustrated in Figure H-1. Of these, only the inhalation pathway during construction (fugitive dust) and potential accident conditions (tank rupture/volatilization) was analyzed for the four IM/IRA Alternatives. The other contaminant

R37041.CW-083091



U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

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FIGURE H-1

HUMAN EXPOSURE PATHWAYS EVALUATED

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release sources and pathways do not pose as significant an exposure concern because of limited release and pathway potentials, design controls, and procedural and monitoring controls. Details are presented below, in the personnel exposure discussions for each IM/IRA Alternative.

Carcinogenic risks from multiple contaminants were calculated as being additive. Calculation of the noncarcinogenic hazard index from multiple contaminants was handled similarly. Basic equations to calculated carcinogenic risks and noncarcinogenic hazard index values are presented in Appendix F.

Risks resulting from fugitive dust during construction were calculated for those metal and radionuclide contaminants having (1) concentrations above background and (2) toxicity values for the inhalation exposure pathway. Maximum contaminant soil concentration values were utilized as reported in Table A-12 and Table A-13 of DOE (1990c). Soil sample data has indicated the presence of some VOCs in the soil. However, considering that construction activities will be conducted outside of IHSS areas and primarily involve surficial soils, any encountered VOC concentrations are anticipated to be low and were not included in the analysis. Calculations of risks due to fugitive dust do not include a credit for implementation of the dust suppression methods outlined in the Plan for Prevention of Contaminant Dispersion (EG&G, 1991). The calculated risks are thus conservatively high estimates of actual risks. Risks from potential accidents (influent tank ruptures) were conservatively calculated using maximum flow weighted VOC concentrations. Table H-1 summarizes analyzed contaminants and associated concentration and toxicity values.

Fugitive dust generation was evaluated for both sump excavation and pipeline construction activities. Respirable particulate (<10u) emissions (E) for sump excavation were estimated using the following equation for aggregate handling from AP-42, 11.2.3.3 (EPA, 1985):

$$E = k\,(0.0016)\,(U/2.2)^{1.3}/(M/2)^{1.4} \quad \text{kg/mg}$$

where k = particle size multiplier
= .35 (for particulates <10u)
U = mean wind speed, m/s
M = material moisture content, % (10% assumed)

For pipeline construction, an emission factor of 1.2 tons/acre/month was conservatively utilized and is based on estimates for heavy construction from AP-42, 11.2.4.3 (EPA, 1985). Given the linear feet of pipeline to be fabricated and associated man-hour estimates, and assuming a 25-foot wide work area, the associated fugitive dust source (killogram per second [kg/s]) was estimated for each alternative.

TABLE H-1
BASIS CHEMICALS FOR RISK ANALYSIS

Chemical Contaminant	Concentration Soil (mg/kg)	Concentration Liq (mg/l)	Slope Factor (mg/kg/day)$^{-1}$	Reference Dose (mg/kg/day)	DCF[i] (mrem/pCi)
Arsenic	3.70E+01		5.00E+01[f]	NA	
Barium	1.90E+03		NA	7.00E-02[d]	
Beryllium	1.70E+00		8.40E+00[f]	5.00E-03[d]	
Bis-(2-ethylhexyl)phthalate	1.72E+00		1.40E-02[d]	NA	
Cadmium	6.20E+00		6.10E+00[f]	NA	
Chromium	5.80E+01		4.10E+01[f]	2.00E-05[a,c]	
Manganese	3.54E+03		NA	4.00E-04[a,c]	
Mercury	1.14E+02		NA	3.00E-04[a,c]	
Nickel	3.61E+01		8.40E-01[b]	NA	
Uranium 233,234 (pCi)	3.40E+03		2.70E-08[c]	NA	1.35E-01
Uranium 238 (pCi)	3.90E+03		2.40E-08[c]	NA	1.18E-01
Strontium 89,90 (pCi)	1.10E+03		5.60E-11[c]	NA	1.30E-03
Plutonium 239,240 (pCi)	9.40E+04		4.10E-08[c]	NA	4.29E-01
Americium 241 (pCi)	2.20E+04		4.00E-08[c]	NA	4.44E-01
Cesium 137 (pCi)	3.10E+03		1.90E-11[c]	NA	3.19E-05
Benzene		7.00E-03	2.90E-02[b]	NA	
Carbon Disulfide		6.00E-03	NA	1.00E-02[a,b]	
1,1-Dichlorothene		4.80E-02	1.20E+00[f]	9.00E-03[d]	
1,2-Dichlorothene		5.00E-03	NA	2.00E-02[d]	
2-Butanone		1.10E-02	NA	NA	
Carbon Tetrachloride		1.46E-01	1.30E-01[b]	7.00E-03[d]	
Chloroform		1.90E-02	8.10E-02[f]	1.00E-02[d]	
Tetrachloroethene		1.70E-02	1.80E-03[h]	1.00E-02[d]	
Toluene		4.00E-03	NA	2.00E-01[d]	
Total Xylenes		7.00E-03	NA	2.00E-00[d]	
Trichloroethene		2.45E-01	1.70E-02[c]	NA	

TABLE H-1 (Continued)
BASIS CHEMICALS FOR RISK ANALYSIS

Footnotes

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[a] Subchronic Inhalation RfC values utilized.
[b] Inhalation value from IRIS.
[c] Inhalation value from HEAST, Annual, FY 1991.
[d] Oral value from IRIS.
[e] Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
[f] Inhalation Slope Factor from HEAST, Annual, 1991, correlated with IRIS.
[g] Metals included in risk analysis include only those which have slope factors or reference dose values.
[h] Calculated from Inhalation Unit Risk, HEAST, Annual, 1991.
[i] Dose Conversion Factors are from EPA-520/1-88-020.

The VOC source term for the postulated tank ruptures was calculated assuming all VOCs are released over an 8-hour period following the initial accident.

Personnel exposures were calculated based on a single hypothetical individual for each exposure category (workers, other onsite personnel, and the general public). Airborne contaminant concentrations for construction workers were estimated by dividing the dust source (kg/s) by the dispersion volume (meters cubed per second [m^3/s]). The dispersion volume was defined as 20m long x 10m high x 5 m/s wide and corresponds to predominant wind speeds at Rocky Flats (see Appendix B of RFP/FEIS) and the estimated cross section for the immediate work area. Airborne contaminant concentrations at receptor locations on plant site were estimated using the Gausian plume equation of Pasquill as modified by Gifford (1961) for ground level concentrations at the centerline of the plume. The equation for a ground level release is presented in Appendix F. Briggs dispersion coefficients for open country conditions (see Appendix F) were utilized to calculate airborne contaminant concentrations for other onsite personnel during construction activities. For accident conditions (tank rupture), the Short-Term Dispersion Coefficients developed by Slade (1968) were utilized to more accurately represent short-term releases from the postulated accidents. The Short-Term Dispersion Coefficients have the following values for Pasquill Stability Class F:

$$\sigma_y = (.02)(x)^{.89}$$
$$\sigma_z = (.05)(x)^{.61}$$

where "x" equals the downwind distance in meters. A summary of risk analysis parameters are presented in Table H-2. Resulting personnel exposures are given in Table H-3. Predicted worker exposures during construction for the Alternatives are very low, with a radiological dose three orders of magnitude lower than the annual limiting value (5 rem EDE) presented in DOE Order 5480.11. Maximum other onsite personnel radiological doses during construction are estimated to be two orders of magnitude lower than those for the workers and are well below annual dose limits (10 mrem EDE) for the public from airborne emissions (DOE Order 5400.5). Offsite impacts to a member of the public would be negligible, considering the additional dispersion to the plant boundary, and were not calculated. Other onsite personnel exposures resulting from the hypothetical tank ruptures for the IM/IRA Alternatives are predicted to be negligible. Considering, the additional dispersion distance to the plant boundary, no offsite impacts to the public would be anticipated.

Table H-4 provides a qualitative summary of uncertainties associated with the risk assessment exposure models and associated parameters.

A detailed discussion of personnel health effects for each IM/IRA Alternative for construction activities, routine operations, and accident conditions is presented below:

TABLE H-2

RISK ANALYSIS PARAMETERS

Parameter	Value	Basis
Inhalation Rate		
- Worker	2.5 m^3/hr	EPA[a]
- Resident	0.83 m^3/hr	EPA[a]
Adult Body Weight	70 kg	EPA[a]
Meteorological Conditions		
- Construction	5 m/s wind speed "D" Stability Class Annual wind direction averaging	Representative[b]
- Accidents	1 m/s wind speed "F" Stability Class No wind direction averaging	Conservative[b]
Toxicity Values	See Table H-1	EPA Methodology

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a EPA OSWER Directive 9285.6-03, Human Health Evaluation Manual, Supplemental Guidance: "Standard Default Exposure Factors".

b Based on meteorological data presented by Appendix B-1 and B-2 of the Rocky Flats Plant Final Environmental Impact Statement. The assumed meteorological conditions used in the construction-related risk assessment calculations are typical for the RFP. The assumed meteorological conditions used in the accident-related risk calculations reflect stable conditions offering much less dispersion and dilution of contaminants than would be typical at the RFP. The assumed meteorological conditions for accident scenarios thus results in conservatively high estimates of contaminant air concentrations.

TABLE H-3
SUMMARY OF PERSONNEL EXPOSURES

Construction Exposures

	Alternative No. 1 & 3			Alternative No. 2			Alternative No. 4		
	Cancer Risk	Noncancer HI	Dose[a] (mrem)	Cancer Risk	Noncancer HI	Dose[a] (mrem)	Cancer Risk	Noncancer HI	Dose[a] (mrem)
Sump 53									
- Worker	2E-12	4E-07	4E-05	2E-12	4E-07	4E-05	2E-12	4E-07	4E-05
- Other Personnel[b]	3E-14	7E-09	9E-07	3E-14	7E-09	9E-07	3E-14	7E-09	9E-07
Sump 55									
- Worker	2E-12	8E-09	4E-05	2E-12	8E-09	4E-05	2E-12	8E-09	4E-05
- Other Personnel[b]	7E-14	2E-10	1E-06	7E-14	2E-10	1E-06	7E-14	2E-10	1E-06
Pipeline									
- Worker	1E-07	4E-04	3E+00	2E-07	6E-04	2E-01	2E-07	7E-04	5E+00
- Other Personnel[b]	2E-09	8E-06	5E-02	3E-09	9E-06	7E-02	4E-09	1E-05	8E-02
Total									
- Worker	1E-07	4E-04	3E+00	2E-07	6E-04	2E-01	2E-07	7E-04	5E+00
- Other Personnel	2E-09	8E-06	5E-02	3E-09	9E-06	7E-02	4E-09	1E-05	8E-02

Accident Exposure (Tank Rupture)[b]

	Alternative No.1	Alternative No. 2	Alternative No. 3	Alternative No. 4
Cancer Risk	NA	2E-07	2E-07	1E-07
Noncancer HI	NA	8E-05	4E-03	5E-05

[a] Doses are reported in mrem (CEDE).
[b] Maximum exposure of other site personnel.

TABLE H-3

SUMMARY OF PERSONNEL EXPOSURES

TABLE H-4

EXPOSURE ASSESSMENT UNCERTAINTY[a]

PARAMETER	EFFECT ON EXPOSURE		
	Potential Magnitude for Overestimation	Potential Magnitude for Underestimation	Potential Magnitude for Over- or Under-Estimation
Soil Contaminant Concentrations			Moderate
Surface Water Contaminant Concentrations			Low
Fugitive Dust Source Term			Low
Accident (VOC) Source Term	Low		
Worker Air Concentration Model			Low
Other Onsite Personnel Air Concentration Model (Routine)	Low to Moderate		Low
Resident Air Concentration Model (No Action)			Low
Resident Ingestion Model (No Action)	Moderate to High		
Exposure Assumptions (e.g., body weight, inhalation rate)			Moderate

[a] Consistent with EPA (1989), parameters marked as low, moderate, or high may affect estimates of exposure by less than one, one to two, or more than two orders of magnitude, respectively.

TABLE H-4

EXPOSURE ASSESSMENT UNCERTAINTY

IM/IRA Alternative No. 1

Personnel exposures and health effects resulting from IM/IRA Alternative No. 1 are predicted based on the analysis methodology presented at the beginning of this Appendix.

Construction Activities

Potential personnel exposures during construction activities would result from several pathways:

- Dermal and airborne exposure to hazardous or radioactive materials during excavation/grading for the two collection sumps, the piping supports, and the transfer station pad.
- Airborne exposure to VOCs while working in the vicinity of the surface water seeps.

There would be limited potential for dermal contact with contaminated soil considering the small amount of soil excavated (~100 yd^3), the use of backhoe equipment, and plans to route piping over uncontaminated soil to the extent possible. Also, the SSHSP would specify the appropriate levels of personnel protection (e.g., gloves, goggles, protective clothing) against splashing and contact with contaminants. Considering the limited potential for dermal exposure and associated controls, and that the dermal exposure pathway is of minor concern for the identified contaminants, potential impact to workers would be negligible. Access controls to the plant site and construction areas would preclude dermal contact as a credible exposure pathway to other site personnel and the public.

Excavation of the collection system sumps (CS-55 and CS-53), trenching between surface water station SW-55 and SW-77, and construction activities for the piping system (2,400 linear feet) and surface water transfer station would generate airborne particulates and an associated inhalation pathway from contaminated soil. Respirable particulate ($< 10\mu$) emission rates were estimated using equations from AP-42 (EPA, 1985) for aggregate handling and heavy construction, as discussed at the beginning of this Appendix.

Based on a 10% moisture level and a mean wind speed of 5 m/s, excavation for CS-55 (sump and trench) would result in the emission of 8.4×10^{-3} kg of respirable particulates. Excavation for CS-53 (sump only) would result in the release of 7.8×10^{-3} kg of respirable particulates. This conservatively takes no credit for dust control measures that would be specified in the SSHSP. Based on 70 labor-hours for sump installation with three workers, dust generation activities would occur for approximately three 8-hour work days for each sump. Based on an upper dust emission rate of 1.4×10^{-8} kg/s, a dynamic dispersion working volume (20 m long x 10 m high x 5 m/s), and using maximum soil contamination levels, individual worker cancer risks are predicted to equal 2×10^{-12}, with a radiological dose of 4×10^{-5} mrem (CEDE). The corresponding noncancer hazard index (HI) was calculated to equal 8×10^{-9}. A HI value less than one is unlikely to cause adverse effects

(EPA, 1989). Nearest occupied locations adjacent to the sump excavation activities include contractor support trailers for the 903 and 904 Pads and the east portal inner guard gate (Building 900). Using a wind direction weighted dispersion factor (X/Q) from CS-55 and CS-53 for these locations results in the following incremental cancer risk and noncancer hazard index values:

	CS-55 Excavation	CS-53 Excavation	Total
Cancer Risk			
Trailer (T903A)	7×10^{-14}	4×10^{-15}	7×10^{-14}
Building 900	1×10^{-14}	3×10^{-14}	4×10^{-14}
Noncancer HI			
Trailer (T903A)	2×10^{-10}	1×10^{-11}	2×10^{-10}
Building 900	3×10^{-11}	7×10^{-9}	7×10^{-9}
Rad Dose (mrem, CEDE)			
Trailer (T903A)	1×10^{-6}	9×10^{-8}	1×10^{-6}
Building 900	3×10^{-7}	9×10^{-7}	1×10^{-6}

An EPA (1985) heavy construction emission factor of 1.2 tons/acre/month was utilized to estimate airborne particulate releases resulting from pipeline construction. It was conservatively assumed that all particulate emissions would be in the respirable range. Based on a cost estimate of 180 labor-hours to install 2,400 linear feet of pipe and assuming an average field crew size of 2.5 workers, it is projected to take nine 8-hour work days to complete construction of the pipeline, at a rate of 270 feet per day. Particulate releases are estimated to total 79.6 kg, using an effective work area of 300 feet by 25 feet over a period of nine work days. Based on a dust emission rate of 3×10^{-4} kg/s and an average wind speed of 5 m/s, individual worker cancer risks are projected to be 1×10^{-7}, with a radiological dose of 3×10^{0} mrem (CEDE). The calculated noncancer HI for the same worker was predicted to equal 4×10^{-4}. Exposures to other onsite personnel were evaluated for occupied locations nearest the pipeline construction work. An individual at the east portal inner guard gate (Building 900) would be exposed to the highest contaminant concentration ($X/Q = 1.6 \times 10^{-5}$ s/m^3), with a resulting cancer risk of 2×10^{-9}, a HI of 8×10^{-6}, and a radiological dose of 5×10^{-2} mrem (CEDE).

Potential exposures to VOCs are primarily anticipated to result from the surface water seep flows. Worker exposures to VOCs near the collection systems are expected to be minimal, considering the unconfined work areas, the short duration of the construction activities, VOC monitoring, and available protection measures afforded by the SSHSP.

Routine Operations

Potential exposure pathways for remediation workers, other onsite personnel, and members of the general public during routine operations include:

- Airborne exposure to low levels of VOC vapors from the surface water collection system sumps during transfer of contaminated surface water from the pipeline to the tank truck to the process influent tank, and from the water treatment process equipment.
- Dermal contact with contaminants while performing operations and maintenance activities.
- Fugitive dust generated in the wake of vehicles traveling to the water collection stations for maintenance and surveillance activities.

Outdoor operational tasks, such as surface water operations and maintenance of the surface water collection system, would be performed in accordance with Operational Safety Analysis (OSA) procedures, specifying appropriate levels of monitoring and personnel exposure protection. Considering the unconfined nature of the work areas and administrative controls, potential worker exposures to airborne VOCs would be very low. Airborne VOC concentrations and resulting exposures to other onsite personnel and the general public would be significantly less because of their greater dispersion distance from the source. These exposure levels would be less than those resulting from the No Action Alternative, because the collection system would limit the extent that VOCs would be released to the atmosphere. The potential for chronic exposure of workers to VOCs resulting from operational tasks associated with the Building 231B GAC adsorption system and the Building 374 low-level waste water treatment system would be small, considering facility ventilation features and OSA procedures to protect workers from potential hazards.

Personnel protective measures may be necessary during some routine operational activities where there is a potential for worker contact with contaminated water. Appropriate measures would be specified in the OSA for those activities. Access controls would preclude dermal exposure as a credible pathway for other onsite personnel and the general public.

Occasional travel to the surface water collection stations will be required for maintenance and surveillance purposes. While some fugitive dust may be generated in the wake of the vehicle, it is not expected to be a significant exposure pathway for the vehicle operator, other onsite personnel, or the general public because of the short travel distance on unpaved roads and the anticipated low frequency of travel to the collection stations.

Accident Conditions

Any accidents that may occur during the construction phase of the proposed action would be typical of small excavation or construction activities. The SSHSP would identify appropriate precautions and responsibilities for each job. Workers would be familiar with SSHSP and a copy of it would be available at the work site.

During operations, accidents that could impact either workers or members of the public would include fires or major spills of contaminated material. Potential releases of untreated water along the proposed pipeline or within the existing treatment facilities would create the potential for short duration airborne VOCs. Intake of contaminants by workers involved in the cleanup would be controlled by following safety precautions specified in the OSA. Influent to Building 374 would comply with the low-level waste water treatment system process design limits.

IM/IRA Alternative No. 2

Construction Activities

Potential personnel exposures to hazardous or radioactive contaminants during construction activities would result from the following pathways:

- Dermal exposure to contaminants during excavation/grading for the two collection sumps, and the above-ground piping system.
- Airborne exposure to contaminated fugitive dust during excavation/grading for the two surface water collection sumps, and the above-ground piping system.
- Airborne exposure to VOCs from the surface water seeps.

There would be limited potential for dermal contact with contaminated soil because of the relatively small amount of soil excavated (~150 yd^3), the use of heavy equipment, and plans to route piping over uncontaminated soil, wherever possible. The extent of excavation/grading for IM/IRA Alternative No. 2 would be somewhat greater than Alternative No. 1, considering the longer pipe length (3,500 linear feet vs. 2,400 linear feet) to be installed and the added construction of a 20,000-gallon influent tank, having secondary containment. However, potential impacts to workers would remain negligible because the potential for dermal exposure would still be very low and the personnel protection levels would be specified in the SSHSP. Access controls to the plant site and construction areas would preclude dermal contact as a credible exposure pathway to other site personnel and the public.

As with IM/IRA Alternative No. 1, excavation of the collection system sumps (CS-55 and 53), trenching between surface water station SW-55 and SW-77, and construction of the pipeline (3,500 linear feet) and the surface water transfer station would release contaminated particulates. Respirable particulates ($< 10\mu$) emission rates were estimated using equations from AP-42 (EPA, 1985) for aggregate handling and heavy construction, as discussed earlier.

Excavation activities for CS-55 (sump and trench)and CS-53 (sump only) would be identical to those for IM/IRA Alternative No.1 and would result in comparable respirable particulate emissions and resulting exposures to individual workers and other site personnel.

An EPA (1985) heavy construction emission factor of 1.2 tons/acre/month was utilized to estimate airborne particulate releases resulting from pipeline construction. It was conservatively assumed that all particulate emissions would be in the respirable range. Based on a cost estimate of 260 labor-hours to install 3,500 linear feet of pipe and assuming an average field crew size of 2.5 workers, it is projected to take thirteen 8-hour work days to complete construction of the pipeline at a rate of 270 feet per day. Particulate releases are estimated to total 115 kg., using an effective work area of 300 feet by 25 feet over a period of thirteen work days. Based on an average wind speed of 5 m/s, individual worker cancer risks are projected to be 2×10^{-7}, with a radiological dose of 2×10^{-1} mrem (CEDE). The calculated noncancer HI for the same worker was predicted to equal 6×10^{-4}. Exposures to other onsite personnel were evaluated for occupied locations nearest to the pipeline construction work. An individual at the east portal inner guard gate (Building 900) would be exposed to the highest airborne contaminant concentration ($X/Q = 1.6 \times 10^{-5}$ s/m^3) with a resulting cancer risk of 3×10^{-9}, a HI of 9×10^{-6}, and a radiological dose of 7×10^{-2} mrem (CEDE).

Potential exposures to VOCs are primarily anticipated to result from the surface water seep flows. Worker exposures to VOCs near the collection systems are expected to be minimal, considering the unconfined work areas, the short duration of the construction activities, VOC monitoring, and available protection measures afforded by the SSHSP.

Routine Operations

Potential exposure pathways for remediation workers, other onsite personnel, and members of the general public during routine operations include:

- Airborne exposure to low levels of VOC vapors from the surface water collection system sumps.
- Dermal contact with contaminants while performing operations and maintenance activities.
- Fugitive dust generated in the wake of vehicles traveling to the water collection stations for maintenance and surveillance activities.

- Fugitive dust generated by a tank truck to discharge treated water to the South Interceptor Ditch during the initial phase of the alternative.

Outdoor operational tasks, such as surface water operations and maintenance of the surface water collection system, would be performed in accordance with OSA procedures, specifying appropriate levels of monitoring and personnel exposure protection. Considering the unconfined nature of the work areas and administrative controls, potential worker exposures to airborne VOCs would be very low. Airborne VOC concentrations and resulting exposures to other onsite personnel and the general public would be significantly less because of their greater dispersion distance from the source. These exposure levels would be less than those resulting from the No Action Alternative, because the collection system would limit the extent that VOCs would be released to the atmosphere. The potential for chronic exposure of workers to VOCs resulting from operational tasks associated with the South Walnut Creek IM/IRA treatment system would be small, considering facility ventilation features and OSA procedures to protect workers from potential hazards.

Personnel protective measures may be necessary during some routine operational activities where there is a potential for worker contact with contaminated water. Appropriate measures would be specified in the OSA for those activities. Access controls would preclude dermal exposure as a credible pathway for other onsite personnel and the general public.

Occasional travel to the surface water collection stations on unpaved roads will be required for maintenance and surveillance purposes. Also, during the initial phase of the action, approximately ten water transfer trips will be required between the South Walnut Creek IM/IRA treatment facility and South Interceptor Ditch on unpaved roads. While some fugitive dust may be generated in the wake of the vehicles, it is not expected to be a significant exposure pathway for the vehicle operators, other onsite personnel, or the general public because of the short travel distance on unpaved roads and the anticipated low frequency of travel.

Accident Conditions

Any accidents that may occur during the construction phase of the proposed action would be typical of small excavation or construction activities. The SSHSP would identify appropriate precautions and responsibilities for each job. Workers would be familiar with SSHSP and a copy of it would be available at the work site. No credible accident during construction would lead to exposure of either workers, site employees, or members of the public to levels greater than those resulting from the severe accident analyzed below.

During operation, accidents that could impact either workers or members of the public would include fires or major spills of contaminated material. These impacts are addressed in the South Walnut Creek Surface Water IM/IRAP/EA Decision Document (DOE EA-0496). Potential releases of untreated water along the

proposed pipeline or within the existing treatment facilities would create the potential for short-duration airborne VOCs. Intake of contaminants by workers involved in the cleanup would be controlled by following safety precautions specified in the OSA. Any airborne VOC releases that would lead to exposures of other site personnel or the general public would be less than the severe accident discussed below.

Based on the maximum amount of contaminants potentially available and the dispersible form of the contaminants, the most severe credible accident would be the rupture of the 20,000-gallon storage tank added by this alternative. Assuming the tank to be full of untreated water at the maximum design basis concentrations and that all contents would be spilled and VOCs released, the incremental cancer risk to the maximally exposed onsite individual (Building 900) is predicted to be 2×10^{-7}. The corresponding HI is projected to equal 8×10^{-5}.

IM/IRA Alternative No. 3

Construction Activities

Exposure to hazardous or radioactive contaminants during construction activities may result from the following exposure pathways:

- Dermal contact with hazardous or radioactive materials in soils during excavation/grading conducted for the installation of the two collection system sumps and piping supports.
- Inhalation of respirable-size soil particles contaminated with hazardous or radioactive material which are released during excavation/grading of the sumps and piping support.
- Inhalation of airborne VOCs while in the vicinity of the contaminated surface water seeps.

The above exposure pathways are the same as those identified for IM/IRA Alternative No. 1, as construction of the collection system pipeline and transfer station are identical for both alternatives. As in the Alternative No. 1 analysis, there is limited potential for dermal contact with contaminated soil during construction because only a limited amount of soil will be excavated, soil will be excavated by the use of heavy equipment, above-ground piping is planned to be routed over uncontaminated soil, and personal protective equipment will be utilized by workers in accordance with the SSHSP to prevent dermal contact with hazardous materials. Potential impacts to construction workers are therefore considered negligible. Other plant workers and the general public would not have access to the construction area due to access control requirements for the area and the plantsite in general. For this reason, these individuals are not of concern in the dermal contact exposure pathway analysis.

Airborne particulates released in construction activities associated with the sumps, piping, and the surface water transfer station may present an additional hazard to construction workers, other plant workers, and the general public via the inhalation exposure pathway. Respirable particulates (< 10μ) emission rates were estimated using equations from AP-42 as discussed at the beginning of this Appendix. Risk of cancer and of noncancer health effects to construction workers and nearby plant workers are comparable to those for IM/IRA Alternative No. 1.

The air stripping system is planned to be installed outside of Building 910 for treatment of Woman Creek surface water. Treated surface water will be pumped to the Building 910 Solar Pond Evaporation System for further processing and then recycled to the Rocky Flats Plant process water supply. Impacts associated with construction of the Building 910 Solar Pond Evaporation System were addressed in the DOE Environmental Assessment for the Dewatering and RCRA Partial Closure Action on Solar Evaporation Ponds (DOE/EA-0487, May 1991). No human health impacts are expected from construction of the Woman Creek surface water air stripping system outside of Building 910.

Routine Operations

Potential exposure pathways for remediation workers, other onsite personnel, and members of the general public during routine operations include:

- Inhalation of low concentrations of VOCs released from the surface water collection system sumps and during collected water transfer operations from the pipeline to the tanker truck and to the process equalization tank outside of Building 910.
- Dermal contact with contaminants during operations and maintenance activities.
- Inhalation of contaminated fugitive dust generated by vehicle travel on the dirt roads to the surface water collection systems for maintenance and surveillance activities.

OSA procedures, including utilization of appropriate monitoring and personal protective equipment, will be followed when routine operations and maintenance activities are conducted at the collection systems and transfer station and at the Building 910 air stripping system for the Woman Creek surface water. Exposure of workers to VOCs during routine operations near the collection systems and transfer station are expected to be minimal, as administrative controls will be implemented. In addition, the areas are located outside and are open to the atmosphere. The Building 910 air stripping system includes a 5,000 gallon equalization tank to where the surface water will be transferred from the transporting tank truck. Appropriate OSA procedures will be implemented in this activity to prevent any possible VOC exposure in transfer. No VOC emissions are expected from the equalization tank as the tank is vented through an activated carbon filter, which will remove any organics. The air stripper system is designed to remove VOCs by passing the water through a vapor-phase

GAC unit. This eliminates any other VOC release point in the Building 910 evaporative treatment process. Inhalation of VOCs by other onsite workers or the general public is not anticipated under routine operations due to the increased distance from the contaminant sources and because the treatment system will remove VOCs from the surface water flow that returns to the plant process water supply.

Dermal contact with contaminated media during routine operations is unlikely as personal protective measures will be implemented where any potential worker contact with contaminated surface water or soil may occur. Appropriate measures would be specified in the OSA for those activities. Access controls will limit dermal exposure to other onsite personnel and the general public.

Routine operations will require some travel over unpaved roads to the surface water collection systems and along the pipeline path. Although some fugitive dust may be generated by vehicle travel, this will not be a significant source for contaminant exposure for the vehicle driver, other workers, or the general public. Other vehicle routes under this alternative are on paved roads where contaminated fugitive dust generation will not occur.

Accident Conditions

The SSHSP will be followed during construction and installation activities and will address appropriate precautions to be taken to avoid accidents during this phase of Alternative No. 3 activities. In addition, appropriate monitoring and personal protective equipment will be utilized to prevent worker exposure during construction activities.

Accidents that may occur allowing contaminant release include a major spill of collected surface water. A release of untreated water along the pipeline, at the transfer station, or at the Building 910 treatment location may allow short term VOC emissions to the atmosphere. Worker exposure would be limited by instituting appropriate OSA procedures. Any airborne VOC releases that would lead to exposure to other site personnel would be less than the severe accident discussed below.

A major spill of collected surface water would release airborne VOCs and allow potential exposure to other onsite workers in nearby buildings. For example, the 5,000-gallon treatment system equalization tank could rupture. Assuming maximum capacity volume of the tank and 100% volatilization of all VOCs in the collected surface water a maximum airborne concentration of 2.82×10^{-1} sec/m^3 (x/6) would exist. This exposure level would present a cancer risk of 2×10^{-7} and a hazard index of 4×10^{-3}.

IM/IRA Alternative No. 4

Construction Activities

Potential exposure to hazardous or radioactive contaminants during construction activities may result from the following exposure pathways:

- Dermal exposure to contaminants during excavation/grading for the two surface water collection sumps and pipeline supports.
- Inhalation exposure to airborne contaminated fugitive dust during excavation/grading for the two surface water collection sumps and pipeline supports.
- Airborne exposure to VOCs from the surface water seeps.

There would be limited potential for dermal contact with contaminated soil during construction because only a limited amount of soil will be excavated, soil will be excavated by the use of heavy equipment, above-ground piping is planned to be routed over uncontaminated soil, and personal protective equipment will be utilized by workers in accordance with the SSHSP to prevent dermal contact with hazardous materials. Potential impacts to workers from dermal absorption is therefore considered to be negligible. Other plant workers and the general public would not have access to construction areas due to access control requirements for the area and for the plant site in general. These individuals are therefore not considered in the dermal contact exposure pathway analysis.

Excavation of the collection sumps (CS-53 and CS-55) and construction activities for the piping system (2,500 linear feet) will generate airborne particulates and create an associated inhalation pathway from contaminated soil. Excavation activities for CS-55 and CS-53 would be identical to those for IM/IRA Alternative No. 1 and would result in comparable respirable particulate emissions and resulting exposures to individual workers and other onsite personnel.

As with the other alternatives, an EPA (1985) heavy construction emission factor of 1.2 tons/acre/month was utilized to estimate airborne particulate releases resulting from pipeline construction. It was conservatively assumed that all particulate emissions would be in the respirable range. Based on a cost estimate of 300 man-hours to install 2,500 linear feet of pipe and assuming an average field crew size of 2.5 workers, it is projected to take fifteen 8-hour work days to complete construction of the pipeline at a rate of 270 feet per day. Particulate releases are estimated to total 131 kg., using an effective work area of 300 feet by 25 feet over a period of fifteen work days. Based on an average wind speed of 5 m/s, individual worker cancer risks are projected to be 2×10^{-7}, with a radiological dose of 5×10^{0} mrem (CEDE). The calculated noncancer hazard index for the same worker was predicted to equal 7×10^{-4}. Exposures to other site personnel were evaluated

for occupied locations nearest to the pipeline construction work. An individual at the east portal inner guard gate (Building 900) would be exposed to the highest airborne contaminant concentration ($X/Q = 1.63 \times 10^{-5}$ s/m^3) with a resulting cancer risk of 4×10^{-9}, a hazard index of 1×10^{-5}, and a radiological dose of 8×10^{-2} mrem (CEDE).

Potential exposures to VOCs are primarily anticipated to result from the surface water seep flows. Dry soil samples from the areas closest to the surface collection system do not yield significant levels of VOCs. Worker exposures to VOCs near the collection systems are expected to be minimal, considering the unconfined work areas, the short duration of construction activities, and VOC monitoring and protective measures afforded by the SSHSP.

The Woman Creek Basin Chemical Precipitation and Filtration System will be installed outside of Building 891, which houses the 881 Hillside Ground-water Treatment System. The systems will be connected by pipeline. Impacts from construction of the 881 Hillside Ground-water Treatment System were addressed in the January 1990 Environmental Assessment for 881 Hillside/High Priority Sites Interim Remedial Action (DOE/EA - 0413). Although the 881 report cited fugitive dust as a pathway of concern during construction activities, it also states that dust control measures would be implemented as specified in the SSHSP. Such measures would also be implemented in the construction of the Woman Creek Basin Chemical Precipitation and Filtration System construction activities at Building 891, thereby eliminating any significant exposure of workers due to fugitive dust.

Routine Operations

Potential exposure pathways for remediation workers, other onsite personnel, and members of the general public during routine operations include:

- Airborne exposure to low levels of VOCs from the surface water collection systems.
- Dermal contact with contaminants while performing operations and maintenance activities.
- Fugitive dust generated by vehicles traveling to the water collection stations for maintenance and surveillance activities.

Outdoor operational tasks, such as surface water operations and maintenance of the collection systems and piping, would be performed in accordance with OSA procedures. Appropriate monitoring and protective equipment would be utilized by workers in accordance with the OSAs. Potential worker exposure to VOCs would be very low due to the unconfined nature of the work areas and administrative controls. Airborne VOC concentrations and resulting exposures to other onsite personnel and the general public would be significantly less because of their greater dispersion distance from the source. These exposure levels would be less than

those resulting from the No Action Alternative, since the collection system would limit the extent of VOCs released to the atmosphere. The potential for chronic exposure to workers to VOCs resulting from operational tasks at Building 891 would be small, as the initial treatment process (precipitation and filtration), designed to remove metals and radionuclide contaminants, would be equipped with activated carbon filters to remove any organics from process vents and appropriate OSAs would be followed by workers for proper personal protection from hazardous materials.

Personal protective measures may be required during some routine operational activities where there is a potential for worker dermal contact with contaminated water. Appropriate measures would be specified in the OSA for those activities. Access controls would preclude dermal exposure to other site workers and the general public.

Occasional travel to the surface water collection stations and pipeline on unpaved roads will be required for maintenance and surveillance purposes. Although some fugitive dust may be generated by vehicle travel, this will not be a significant exposure source to the vehicle driver, other workers, or the general public.

Accident Conditions

The SSHSP will be followed during construction and installation activities and will address appropriate precautions to be taken to avoid accidents during this phase of Alternative No. 4 activities. The SSHSP will contain contingency plan requirements including spill response and medical emergency response for workers.

A release of untreated water along the pipeline or at Building 891 may allow short term VOC emissions to the atmosphere. Worker exposure would be limited by instituting proper OSA procedures. Any airborne releases that would lead to exposure to other site personnel would be less than the severe accident, such as a major spill, discussed below.

A spill releasing airborne VOCs to other site workers in nearby buildings (Building 881) could occur if the 8,000-gallon flow equalization tank at Building 891 were to rupture. Assuming the tank at maximum capacity and 100% volatilization of all VOCs in the collected surface water, a maximum cancer risk of 1×10^{-7} and a hazard index of 5×10^{-5} would result.

R[redacted]lation [redacted]t

Woman Creek Interim Action, OU-2
Fugative Dust during construction of CS-53 Sump
Exposure of Workers

Written: 09-Aug-91
Author: DCPalmer
Printed: 21-Aug-91

Constants:

Adult Body Weight	BWa	70	kg	kg/mg	1E-06	
Child Body Weight	BWc	15	kg	gm/kg	1000	
Adult Inhalation Rate	IRa	0.63	Cubic meters/hour	gm/mg	0.001	
Worker Inhalation Rate	IRw	2.50	Cubic meters/hour	m3/ml	1E-06	
Child Inhalation Rate	IRc	0.63	Cubic meters/hour	Sec Per Min	60	

Operationing Release Parameters

					Dispersion Volume	1.00E+03	cubic meters/second
Exposure Time	ET	8	Hours/day		Wind Speed	5	meters/sec
Exposure Frequency	EF	3	Days/year		Airborn Dust	1.34E-11	mg/cubic meter
Adult Exposure Duration	EDa	1	Years		Constr. Area	NA	acres
Youth Exposure Duration	EDy	0	Years		Excavation Dust Source	1.34E-06	kg/sec
Child Exposure Duration	EDc	1	Years		Job Duration	1	Years
Averaging Time (carc.)	ATc	24500	Days	Worker Dispersion Factor	Chi over Q	1.00E+00	sec/cubic meter
Adult Avg Time (non-carc.)	ATna	350	Days		Emission Factor	1.71E-04	kg/Mg
Child Avg Time (non-carc.)	ATnc	350	Days		Soil excavated	45.9	Mg

Carcinogenic:(g)

	Soil Conc (mg/kg)	Slope Factor SF		Source (mg/m3)	Air Conc (mg/m3)	Intake (mg/kg-day)	Risk	CEDE (mRem)
Arsenic	3.70E+01	5.00E+01	(f)	4.95E-10	4.95E-10	1.73E-14	8.66E-13	
Barium	1.90E+03	NA		2.54E-06	2.54E-06	8.89E-13	0.00E+00	
Beryllium	1.70E+00	8.40E+00	(f)	2.27E-11	2.27E-11	7.95E-16	6.68E-15	
Bis-(2-ethylhexyl)phthalate	1.72E+00	1.40E-02	(d)	2.29E-11	2.29E-11	8.03E-16	1.12E-17	
Cadmium	6.20E+00	6.10E+00	(f)	8.29E-11	8.29E-11	2.90E-15	1.77E-14	
Chromium	5.80E+01	4.10E+01	(f)	7.76E-10	7.76E-10	2.71E-14	1.11E-12	
Manganese	3.54E+03	NA		4.74E-06	4.74E-06	1.66E-12	0.00E+00	
Mercury	1.14E+02	NA		1.52E-09	1.52E-09	5.33E-14	0.00E+00	
Nickel	3.61E+01	8.40E-01	(b)	4.83E-10	4.83E-10	1.69E-14	1.42E-14	
Uranium 233,234 (pCi)	3.40E+03	2.70E-06	(c)	4.55E-06	4.55E-06	1.59E-12	4.30E-20	3.70E-07
Uranium 238 (pCi)	3.90E+03	2.40E-06	(c)	5.22E-06	5.22E-06	1.83E-12	4.38E-20	3.71E-07
Strontium 89,90 (pCi)	1.10E+03	5.60E-11	(c)	1.47E-06	1.47E-06	5.15E-13	2.88E-23	1.15E-09
Plutonium 239,240 (pCi)	9.40E+04	4.10E-06	(c)	1.26E-06	1.26E-06	4.40E-11	1.80E-16	3.24E-05
Americium 241 (pCi)	2.20E+04	4.00E-06	(c)	2.94E-07	2.94E-07	1.03E-11	4.12E-19	7.84E-06
Cesium 137 (pCi)	3.10E+03	1.90E-11	(c)	4.15E-06	4.15E-06	1.45E-12	2.76E-23	7.94E-11
Total							2.02E-12	4.10E-05

Non-carcinogenic:(g)

	Soil Conc (mg/kg)	RfC/RfD		Source (mg/m3)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Arsenic	3.70E+01	NA		4.95E-10	4.95E-10	1.21E-12	0.00E+00
Barium	1.90E+03	7.00E-02	(d)	2.54E-06	2.54E-06	6.22E-11	8.89E-10
Beryllium	1.70E+00	5.00E-03	(d)	2.27E-11	2.27E-11	5.57E-14	1.11E-11
Bis-(2-ethylhexyl)phthalate	1.72E+00	NA		2.29E-11	2.29E-11	5.62E-14	0.00E+00
Cadmium	6.20E+00	NA		8.29E-11	8.29E-11	2.03E-13	0.00E+00
Chromium	5.80E+01	2.00E-05	(a,c)	7.76E-10	7.76E-10	1.90E-12	9.50E-08
Manganese	3.54E+03	4.00E-04	(a,c)	4.74E-06	4.74E-06	1.16E-10	2.90E-07
Mercury	1.14E+02	3.00E-04	(a,c)	1.52E-09	1.52E-09	3.73E-12	1.24E-08
Nickel	3.61E+01	NA		4.83E-10	4.83E-10	1.18E-12	0.00E+00
Uranium 233,234 (pCi)	3.40E+03	NA		4.55E-06	4.55E-06	1.11E-10	0.00E+00
Uranium 238 (pCi)	3.90E+03	NA		5.22E-06	5.22E-06	1.28E-10	0.00E+00
Strontium 89,90 (pCi)	1.10E+03	NA		1.47E-06	1.47E-06	3.60E-11	0.00E+00
Plutonium 239,240 (pCi)	9.40E+04	NA		1.26E-06	1.26E-06	3.08E-09	0.00E+00
Americium 241 (pCi)	2.20E+04	NA		2.94E-07	2.94E-07	7.21E-10	0.00E+00
Cesium 137 (pCi)	3.10E+03	NA		4.15E-06	4.15E-06	1.02E-10	0.00E+00
Total							3.98E-07

(a) Subchronic Inhalation RfC values utilized.
(b) Inhalation value from IRIS.
(c) Inhalation value from HEAST, Annual, FY 1991.
(d) Oral value from IRIS.
(e) Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f) Inhalation Slope Factor from HEAST, Annual, 1991, correllated with IRIS.
(g) Metals included in risk analysis include only those which have Slope Factors or RfCs available.

Excavation Dust Source = Emission Factor * Soil Escavated / (168 * 3600) seconds / month
Airborne Dust = Dust Source / Dispersion Volume
Source = Airborne Dust * Soil Concentration
Air concentration = source * (X/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD
CEDE = Air Concentration * IR * ET * EF * ED * DCF
Dose Conversion Factors (DCF) are Effective Committed Dose Equivalents from Federal Guidance Report No. 11

Risk Calculation Worksheet

Woman Creek Interim Action, OU-2
Fugative Dust during construction of CS-53 Sump
Exposure of Other Site Personnel at T903A

Written: 07-Aug-91
Author: DCPalmer
Printed: 21-Aug-91

Constants:

Adult Body Weight	BWa	70	kg	kg/mg	1E-06
Child Body Weight	BWc	15	kg	gm/kg	1000
Adult Inhalation Rate	IRa	0.83	Cubic meters/hour	gm/mg	0.001
Worker Inhalation Rate	IRw	2.50	Cubic meters/hour	m3/ml	1E-06
Child Inhalation Rate	IRc	0.63	Cubic meters/hour	Sec Per Min	60

Operationing Release Parameters

Exposure Time	ET	8	Hours/day	Worker Dispersion Fa	Chi over Q	2.10E-06	sec/cubic meter
Exposure Frequency	EF	3	Days/year		Airborn Dust	NA	mg/cubic meter
Adult Exposure Duration	EDa	1	Years		Constr. Area	NA	acres
Youth Exposure Duration	EDy	0	Years		Excavation Dust Source	1.34E-06	kg/sec
Child Exposure Duration	EDc	1	Years		Job Duration	1	Years
Averaging Time (carc.)	ATc	24500	Days		Emission Factor	1.71E-04	kg/Mg
Adult Avg Time (non-carc.)	ATna	350	Days		Soil excavated	45.9	Mg
Child Avg Time (non-carc.)	ATnc	350	Days				

Carcinogenic:(g)

	Soil Conc (mg/kg)	Slope Factor SF		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg-day)	Risk	CEDE (mRem)
Arsenic	3.70E+01	5.00E+01	(f)	4.95E-07	1.04E-12	3.64E-17	1.82E-15	
Barium	1.90E+03	NA		2.54E-05	5.33E-11	1.87E-15	0.00E+00	
Beryllium	1.70E+00	8.40E+00	(f)	2.27E-08	4.76E-14	1.67E-18	1.40E-17	
Bis-(2-ethylhexyl)phthalate	1.72E+00	1.40E-02	(d)	2.29E-08	4.82E-14	1.69E-18	2.36E-20	
Cadmium	6.20E+00	6.10E+00	(f)	8.29E-08	1.74E-13	6.09E-18	3.72E-17	
Chromium	5.80E+01	4.10E+01	(f)	7.76E-07	1.63E-12	5.70E-17	2.34E-16	
Manganese	3.54E+03	NA		4.74E-05	9.94E-11	3.48E-15	0.00E+00	
Mercury	1.14E+02	NA		1.52E-06	3.20E-12	1.12E-16	0.00E+00	
Nickel	3.61E+01	8.40E-01	(b)	4.83E-07	1.01E-12	3.55E-17	2.98E-17	
Uranium 233,234 (pCi)	3.40E+03	2.70E-06	(c)	4.55E-05	9.55E-11	3.34E-15	9.02E-23	7.78E-10
Uranium 238 (pCi)	3.90E+03	2.40E-06	(c)	5.22E-05	1.10E-10	3.83E-15	9.20E-23	7.78E-10
Strontium 89,90 (pCi)	1.10E+03	5.60E-11	(c)	1.47E-05	3.09E-11	1.08E-15	6.05E-26	2.41E-12
Plutonium 239,240 (pCi)	9.40E+04	4.10E-06	(c)	1.26E-03	2.64E-09	9.24E-14	3.79E-21	6.60E-08
Americium 241 (pCi)	2.20E+04	4.00E-06	(c)	2.94E-04	6.16E-10	2.16E-14	8.65E-22	1.65E-08
Cesium 137 (pCi)	3.10E+03	1.90E-11	(c)	4.15E-05	8.71E-11	3.05E-15	5.79E-26	1.67E-13
Total							4.24E-15	8.50E-08

Non-carcinogenic:(g)

	Soil Conc (mg/kg)	RfC/RfD(a)		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Arsenic	3.70E+01	NA		4.95E-07	1.04E-12	3.64E-17	0.00E+00
Barium	1.90E+03	7.00E-02	(d)	2.54E-05	5.33E-11	1.87E-15	2.67E-14
Beryllium	1.70E+00	5.00E-03	(d)	2.27E-08	4.76E-14	1.67E-18	3.34E-16
Bis-(2-ethylhexyl)phthalate	1.72E+00	NA		2.29E-08	4.82E-14	1.69E-18	0.00E+00
Cadmium	6.20E+00	NA		8.29E-08	1.74E-13	6.09E-18	0.00E+00
Chromium	5.80E+01	2.00E-05	(a,c)	7.76E-07	1.63E-12	5.70E-17	2.85E-12
Manganese	3.54E+03	4.00E-04	(a,c)	4.74E-05	9.94E-11	3.48E-15	8.70E-12
Mercury	1.14E+02	3.00E-04	(a,c)	1.52E-06	3.20E-12	1.12E-16	3.73E-13
Nickel	3.61E+01	NA		4.83E-07	1.01E-12	3.55E-17	0.00E+00
Uranium 233,234 (pCi)	3.40E+03	NA		4.55E-05	9.55E-11	3.34E-15	0.00E+00
Uranium 238 (pCi)	3.90E+03	NA		5.22E-05	1.10E-10	3.83E-15	0.00E+00
Strontium 89,90 (pCi)	1.10E+03	NA		1.47E-05	3.09E-11	1.08E-15	0.00E+00
Plutonium 239,240 (pCi)	9.40E+04	NA		1.26E-03	2.64E-09	9.24E-14	0.00E+00
Americium 241 (pCi)	2.20E+04	NA		2.94E-04	6.16E-10	2.16E-14	0.00E+00
Cesium 137 (pCi)	3.10E+03	NA		4.15E-05	8.71E-11	3.05E-15	0.00E+00
Total							1.19E-11

(a) Subchronic inhalation RfC values utilized.
(b) Inhalation value from IRIS.
(c) Inhalation value from HEAST, Annual, FY 1991.
(d) Oral value from IRIS.
(e) Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f) Dose Conversion Factors from DOE/EH-0071.
(g) Metals included in risk analysis include only those with Slope Factors or RfCs available.

Excavation Dust Source = Emission Factor * Soil Excavated / (168 * 3600) seconds / month
Source = Dust source * Soil Concentration
Air concentration = source * (X/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD
CEDE = Air Concentration * IR * ET * EF * ED * DCF
Dose Conversion Factors (DCF) are Effective Committed Dose Equivalents from Federal Guidance Report No. 11

Risk Calculation Worksheet

Woman Creek Interim Action, OU-2
Fugative Dust during construction of CS-53 Sump
Exposure of Other Site Personnel at Building 900

Written: 07-Aug-91
Author: DCPalmer
Printed: 21-Aug-91

Constants:

Adult Body Weight	BWa	70	kg	kg/mg	1E-06
Child Body Weight	BWc	15	kg	gm/kg	1000
Adult Inhalation Rate	IRa	0.83	Cubic meters/hour	gm/mg	0.001
Worker Inhalation Rate	IRw	2.50	Cubic meters/hour	m3/ml	1E-06
Child Inhalation Rate	IRc	0.63	Cubic meters/hour	Sec Per Min	60

Operationing Release Parameters

Exposure Time	ET	8	Hours/day	Worker Dispersion Fa	Chi over Q	1.66E-05	sec/cubic meter
Exposure Frequency	EF	3	Days/year		Airborn Dust	NA	mg/cubic meter
Adult Exposure Duration	EDa	1	Years		Constr. Area	NA	acres
Youth Exposure Duration	EDy	0	Years		Excavation Dust Sour	1.34E-06	kg/sec
Child Exposure Duration	EDc	1	Years		Job Duration	1	Years
Averaging Time (carc.)	ATc	24500	Days		Emission Factor	1.71E-04	kg/Mg
Adult Avg Time (non-carc.)	ATna	350	Days		Soil excavated	45.9	Mg
Child Avg Time (non-carc.)	ATnc	350	Days				

Carcinogenic:(g)

	Soil Conc (mg/kg)	Slope Factor SF		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg-day)	Risk	CEDE (mRem)
Arsenic	3.70E+01	5.00E+01	(f)	4.95E-07	8.22E-12	2.67E-16	1.44E-14	
Barium	1.90E+03	NA		2.54E-05	4.22E-10	1.46E-14	0.00E+00	
Beryllium	1.70E+00	8.40E+00	(f)	2.27E-06	3.77E-13	1.32E-17	1.11E-16	
Bis-(2-ethylhexyl)phthalate	1.72E+00	1.40E-02	(d)	2.29E-06	3.81E-13	1.33E-17	1.87E-19	
Cadmium	6.20E+00	6.10E+00	(f)	8.29E-06	1.38E-12	4.82E-17	2.94E-16	
Chromium	5.80E+01	4.10E+01	(f)	7.76E-07	1.29E-11	4.51E-16	1.85E-14	
Manganese	3.54E+03	NA		4.74E-05	7.86E-10	2.75E-14	0.00E+00	
Mercury	1.14E+02	NA		1.52E-06	2.53E-11	8.86E-16	0.00E+00	
Nickel	3.61E+01	8.40E-01	(b)	4.83E-07	8.02E-12	2.80E-16	2.36E-16	
Uranium 233,234 (pCi)	3.40E+03	2.70E-06	(c)	4.55E-05	7.55E-10	2.64E-14	7.13E-22	8.13E-09
Uranium 238 (pCi)	3.90E+03	2.40E-06	(c)	5.22E-05	8.66E-10	3.03E-14	7.27E-22	8.15E-09
Strontium 89,90 (pCi)	1.10E+03	5.60E-11	(c)	1.47E-05	2.44E-10	8.54E-15	4.79E-25	1.90E-11
Plutonium 239,240 (pCi)	9.40E+04	4.10E-06	(c)	1.26E-03	2.09E-08	7.30E-13	2.99E-20	8.37E-07
Americium 241 (pCi)	2.20E+04	4.00E-06	(c)	2.94E-04	4.88E-09	1.71E-13	6.84E-21	1.30E-07
Cesium 137 (pCi)	3.10E+03	1.90E-11	(c)	4.15E-05	6.88E-10	2.41E-14	4.58E-25	1.32E-12
Total							3.35E-14	8.80E-07

Non-carcinogenic:(g)

	Soil Conc (mg/kg)	RfC/RfD(a)		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Arsenic	3.70E+01	NA		4.95E-07	8.22E-12	2.01E-14	0.00E+00
Barium	1.90E+03	7.00E-02	(d)	2.54E-05	4.22E-10	1.03E-12	1.46E-11
Beryllium	1.70E+00	5.00E-03	(d)	2.27E-06	3.77E-13	9.24E-16	1.85E-13
Bis-(2-ethylhexyl)phthalate	1.72E+00	NA		2.29E-06	3.81E-13	9.33E-16	0.00E+00
Cadmium	6.20E+00	NA		8.29E-06	1.38E-12	3.37E-15	0.00E+00
Chromium	5.80E+01	2.00E-05	(a,c)	7.76E-07	1.29E-11	3.15E-14	1.58E-09
Manganese	3.54E+03	4.00E-04	(a,c)	4.74E-05	7.86E-10	1.92E-12	4.81E-09
Mercury	1.14E+02	3.00E-04	(a,c)	1.52E-06	2.53E-11	6.20E-14	2.07E-10
Nickel	3.61E+01	NA		4.83E-07	8.02E-12	1.96E-14	0.00E+00
Uranium 233,234 (pCi)	3.40E+03	NA		4.55E-05	7.55E-10	1.85E-12	0.00E+00
Uranium 238 (pCi)	3.90E+03	NA		5.22E-05	8.66E-10	2.12E-12	0.00E+00
Strontium 89,90 (pCi)	1.10E+03	NA		1.47E-05	2.44E-10	5.96E-13	0.00E+00
Plutonium 239,240 (pCi)	9.40E+04	NA		1.26E-03	2.09E-08	5.11E-11	0.00E+00
Americium 241 (pCi)	2.20E+04	NA		2.94E-04	4.88E-09	1.20E-11	0.00E+00
Cesium 137 (pCi)	3.10E+03	NA		4.15E-05	6.88E-10	1.69E-12	0.00E+00
Total							6.81E-09

(a)S[redacted]ic inha[redacted]C valu[redacted]d.
(b)Inhalation value from IRIS.
(c)Inhalation value from HEAST, Annual, FY 1991.
(d)Oral value from IRIS.
(e)Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f)Inhalation Slope Factor from HEAST, Annual, 1991, correllated with IRIS.
(g)Metals included in risk analysis include only those which have Slope Factors or RfCs available.

Excavation Dust Source = Emission Factor * Soil Excavated / (168 * 3600) seconds / month
Source = Dust source * Soil Concentration
Air concentration = source * (X/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD
CEDE = Air Concentration * IR * ET * EF * ED * DCF
Dose Conversion Factors (DCF) are Effective Committed Dose Equivalents from Federal Guidance Report No. 11

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Woman Creek Interim Action, OU-2
Fugative Dust during construction of CS-55 Sump
Exposure of Workers

Written: 06-Aug-91
Author: DCPalmer
Printed: 21-Aug-91

Constants:

Adult Body Weight	BWa	70	kg	kg/mg	1E-06
Child Body Weight	BWc	15	kg	gm/kg	1000
Adult Inhalation Rate	IRa	0.63	Cubic meters/hour	gm/mg	0.001
Worker Inhalation Rate	IRw	2.50	Cubic meters/hour	m3/ml	1E-06
Child Inhalation Rate	IRc	0.63	Cubic meters/hour	Sec Per Min	60

Operationing Release Parameters

				Worker Dispersion F	Chi over Q	1.00E+00	sec/cubic meter
Exposure Time	ET	8	Hours/day		Dispersion Volume	1.00E+03	cubic meters/second
Exposure Frequency	EF	3	Days/year		Wind Speed	5	meters/sec
Adult Exposure Duration	EDa	1	Years		Airborn Dust	1.44E-11	mg/cubic meter
Youth Exposure Duration	EDy	0	Years		Constr. Area	NA	acres
Child Exposure Duration	EDc	1	Years		Excavation Dust Source	1.44E-06	kg/sec
Averaging Time (carc.)	ATc	24500	Days		Job Duration	1	Years
Adult Avg Time (non-carc.)	ATna	350	Days		Emission Factor	1.71E-04	kg/Mg
Child Avg Time (non-carc.)	ATnc	350	Days		Soil excavated	49.3	Mg

Carcinogenic:(g)

	Soil Conc (mg/kg)	Slope Factor SF		Source (mg/m3)	Air Conc (mg/m3)	Intake (mg/kg-day)	Risk	CEDE (mRem)
Arsenic	3.70E+01	5.00E+01	(f)	5.32E-10	5.32E-10	1.86E-14	9.30E-13	
Barium	1.90E+03	NA		2.73E-06	2.73E-06	9.54E-13	0.00E+00	
Beryllium	1.70E+00	8.40E+00	(f)	2.44E-11	2.44E-11	8.54E-16	7.18E-15	
Bis-(2-ethylhexyl)phthalate	1.72E+00	1.40E-02	(d)	2.46E-11	2.46E-11	8.62E-16	1.21E-17	
Cadmium	6.20E+00	6.10E+00	(f)	8.91E-11	8.91E-11	3.12E-15	1.90E-14	
Chromium	5.80E+01	4.10E+01	(f)	8.33E-10	8.33E-10	2.92E-14	1.20E-12	
Manganese	3.54E+03	NA		5.09E-06	5.09E-06	1.78E-12	0.00E+00	
Mercury	1.14E+02	NA		1.64E-09	1.64E-09	5.73E-14	0.00E+00	
Nickel	3.61E+01	8.40E-01	(b)	5.19E-10	5.19E-10	1.81E-14	1.52E-14	
Uranium 233,234 (pCi)	3.40E+03	2.70E-06	(c)	4.88E-06	4.88E-06	1.71E-12	4.61E-20	3.97E-07
Uranium 238 (pCi)	3.90E+03	2.40E-06	(c)	5.60E-06	5.60E-06	1.96E-12	4.70E-20	3.96E-07
Strontium 89,90 (pCi)	1.10E+03	5.60E-11	(c)	1.58E-06	1.58E-06	5.53E-13	3.10E-23	1.23E-09
Plutonium 239,240 (pCi)	9.40E+04	4.10E-06	(c)	1.35E-06	1.35E-06	4.72E-11	1.94E-18	3.48E-05
Americium 241 (pCi)	2.20E+04	4.00E-06	(c)	3.16E-07	3.16E-07	1.11E-11	4.42E-19	8.42E-06
Cesium 137 (pCi)	3.10E+03	1.90E-11	(c)	4.45E-06	4.45E-06	1.56E-12	2.96E-23	8.53E-11
Total							2.17E-12	4.40E-05

Non-carcinogenic:(g)

	Soil Conc (mg/kg)	RfC/RfD		Source (mg/m3)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Arsenic	3.70E+01	NA		5.32E-10	5.32E-10	1.86E-14	0.00E+00
Barium	1.90E+03	7.00E-02	(d)	2.73E-06	2.73E-06	9.54E-13	1.36E-11
Beryllium	1.70E+00	5.00E-03	(d)	2.44E-11	2.44E-11	8.54E-16	1.71E-13
Bis-(2-ethylhexyl)phthalate	1.72E+00	NA		2.46E-11	2.46E-11	8.62E-16	0.00E+00
Cadmium	6.20E+00	NA		8.91E-11	8.91E-11	3.12E-15	0.00E+00
Chromium	5.80E+01	2.00E-05	(a,c)	8.33E-10	8.33E-10	2.92E-14	1.46E-09
Manganese	3.54E+03	4.00E-04	(a,c)	5.09E-06	5.09E-06	1.78E-12	4.45E-09
Mercury	1.14E+02	3.00E-04	(a,c)	1.64E-09	1.64E-09	5.73E-14	1.91E-10
Nickel	3.61E+01	NA		5.19E-10	5.19E-10	1.81E-14	0.00E+00
Uranium 233,234 (pCi)	3.40E+03	NA		4.88E-06	4.88E-06	1.71E-12	0.00E+00
Uranium 238 (pCi)	3.90E+03	NA		5.60E-06	5.60E-06	1.96E-12	0.00E+00
Strontium 89,90 (pCi)	1.10E+03	NA		1.58E-06	1.58E-06	5.53E-13	0.00E+00
Plutonium 239,240 (pCi)	9.40E+04	NA		1.35E-06	1.35E-06	4.72E-11	0.00E+00
Americium 241 (pCi)	2.20E+04	NA		3.16E-07	3.16E-07	1.11E-11	0.00E+00
Cesium 137 (pCi)	3.10E+03	NA		4.45E-06	4.45E-06	1.56E-12	0.00E+00
Total							6.11E-09

(a)Subchronic Inhalation RfC values utilized.
(b)Inhalation value from IRIS.
(c)Inhalation value from HEAST, Annual, FY 1991.
(d)Oral value from IRIS.
(e)Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f)Inhalation Slope Factor from HEAST, Annual, 1991, correllated with IRIS.
(g)Metals included in risk analysis include only those which have Slope Factors or RfCs available.

Excavation Dust Source = Emission Factor * Soil Escavated / (168 * 3600) seconds / month
Airborne Dust = Dust Source / Dispersion Volume
Source = Airborne Dust * Soil Concentration
Air concentration = source * (X/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD
CEDE = Air Concentration * IR * ET * EF * ED * DCF
Dose Conversion Factors (DCF) are Effective Committed Dose Equivalents from Federal Guidance Report No. 11

Risk Calculation Worksheet

Woman Creek Interim Action, OU-2
Fugative Dust during construction of CS-55 Sump
Exposure of Other Site Personnel at T903A

Written: 07-Aug-91
Author: DCPalmer
Printed: 21-Aug-91

Constants:

Adult Body Weight	BWa	70	kg	kg/mg	1E-06
Child Body Weight	BWc	15	kg	gm/kg	1000
Adult Inhalation Rate	IRa	0.63	Cubic meters/hour	gm/mg	0.001
Worker Inhalation Rate	IRw	2.50	Cubic meters/hour	m3/ml	1E-06
Child Inhalation Rate	IRc	0.63	Cubic meters/hour	Sec Per Min	60

Operationing Release Parameters

Exposure Time	ET	6	Hours/day	Worker Dispersion Fa	Chi over Q	3.33E-05	sec/cubic meter
Exposure Frequency	EF	3	Days/year		Airborn Dust	NA	mg/cubic meter
Adult Exposure Duration	EDa	1	Years		Constr. Area	NA	acres
Youth Exposure Duration	EDy	0	Years		Excavation Dust Source	1.44E-06	kg/sec
Child Exposure Duration	EDc	1	Years		Job Duration	1	Years
Averaging Time (carc.)	ATc	24500	Days		Emission Factor	1.71E-04	kg/Mg
Adult Avg Time (non-carc.)	ATna	350	Days		Soil excavated	49.3	Mg
Child Avg Time (non-carc.)	ATnc	350	Days				

Carcinogenic:(g)

	Soil Conc (mg/kg)	Slope Factor SF		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg-day)	Risk	CEDE (mRem)
Arsenic	3.70E+01	5.00E+01	(f)	5.32E-07	1.77E-11	6.19E-16	3.10E-14	
Barium	1.90E+03	NA		2.73E-05	9.06E-10	3.16E-14	0.00E+00	
Beryllium	1.70E+00	8.40E+00	(f)	2.44E-08	8.13E-13	2.85E-17	2.39E-16	
Bis-(2-ethylhexyl)phthalate	1.72E+00	1.40E-02	(d)	2.46E-08	8.20E-13	2.87E-17	4.02E-19	
Cadmium	6.20E+00	6.10E+00	(f)	8.91E-08	2.97E-12	1.04E-16	6.33E-16	
Chromium	5.80E+01	4.10E+01	(f)	8.33E-07	2.77E-11	9.71E-16	3.98E-14	
Manganese	3.54E+03	NA		5.09E-05	1.69E-09	5.92E-14	0.00E+00	
Mercury	1.14E+02	NA		1.64E-06	5.45E-11	1.91E-15	0.00E+00	
Nickel	3.61E+01	6.40E-01	(b)	5.19E-07	1.73E-11	6.04E-16	5.06E-16	
Uranium 233,234 (pCi)	3.40E+03	2.70E-08	(c)	4.88E-05	1.63E-09	5.69E-14	1.54E-21	1.32E-08
Uranium 238 (pCi)	3.90E+03	2.40E-08	(c)	5.60E-05	1.87E-09	6.53E-14	1.57E-21	1.33E-08
Strontium 89,90 (pCi)	1.10E+03	5.60E-11	(c)	1.58E-05	5.26E-10	1.84E-14	1.03E-24	4.10E-11
Plutonium 239,240 (pCi)	9.40E+04	4.10E-08	(c)	1.35E-03	4.50E-08	1.57E-12	6.45E-20	1.16E-06
Americium 241 (pCi)	2.20E+04	4.00E-08	(c)	3.16E-04	1.05E-08	3.68E-13	1.47E-20	2.80E-07
Cesium 137 (pCi)	3.10E+03	1.90E-11	(c)	4.45E-05	1.48E-09	5.19E-14	9.86E-26	2.84E-12
Total							7.21E-14	1.48E-06

Non-carcinogenic:(g)

	Soil Conc (mg/kg)	RfC/RfD(a)		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Arsenic	3.70E+01	NA		5.32E-07	1.77E-11	6.19E-16	0.00E+00
Barium	1.90E+03	7.00E-02	(d)	2.73E-05	9.06E-10	3.16E-14	4.54E-13
Beryllium	1.70E+00	5.00E-03	(d)	2.44E-08	8.13E-13	2.85E-17	5.69E-15
Bis-(2-ethylhexyl)phthalate	1.72E+00	NA		2.46E-08	8.20E-13	2.87E-17	0.00E+00
Cadmium	6.20E+00	NA		8.91E-08	2.97E-12	1.04E-16	0.00E+00
Chromium	5.80E+01	2.00E-05	(a,c)	8.33E-07	2.77E-11	9.71E-16	4.85E-11
Manganese	3.54E+03	4.00E-04	(a,c)	5.09E-05	1.69E-09	5.92E-14	1.48E-10
Mercury	1.14E+02	3.00E-04	(a,c)	1.64E-06	5.45E-11	1.91E-15	6.36E-12
Nickel	3.61E+01	NA		5.19E-07	1.73E-11	6.04E-16	0.00E+00
Uranium 233,234 (pCi)	3.40E+03	NA		4.88E-05	1.63E-09	5.69E-14	0.00E+00
Uranium 238 (pCi)	3.90E+03	NA		5.60E-05	1.87E-09	6.53E-14	0.00E+00
Strontium 89,90 (pCi)	1.10E+03	NA		1.58E-05	5.26E-10	1.84E-14	0.00E+00
Plutonium 239,240 (pCi)	9.40E+04	NA		1.35E-03	4.50E-08	1.57E-12	0.00E+00
Americium 241 (pCi)	2.20E+04	NA		3.16E-04	1.05E-08	3.68E-13	0.00E+00
Cesium 137 (pCi)	3.10E+03	NA		4.45E-05	1.48E-09	5.19E-14	0.00E+00
Total							2.03E-10

(a) [redacted]nic inh[redacted]C val[redacted]d.
(b) Inhalation value from IRIS.
(c) Inhalation value from HEAST, Annual, FY 1991.
(d) Oral value from IRIS.
(e) Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f) Dose Conversion Factors from DOE/EH-0071.
(g) Metals included in risk analysis include only those with Slope Factors or RfCs available.

Excavation Dust Source = Emission Factor * Soil Excavated / (168 * 3600) seconds / month
Source = Dust source * Soil Concentration
Air concentration = source * (X/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD
CEDE = Air Concentration * IR * ET * EF * ED * DCF
Dose Conversion Factors (DCF) are Effective Committed Dose Equivalents from Federal Guidance Report No. 11

R[redacted]lation [redacted]t

Woman Creek Interim Action, OU-2
Fugative Dust during construction of CS-55 Sump
Exposure of Other Site Personnel at Building 900

Written: 07-Aug-91
Author: DCPalmer
Printed: 21-Aug-91

Constants:

Adult Body Weight	BWa	70	kg	kg/mg	1E-06
Child Body Weight	BWc	15	kg	gm/kg	1000
Adult Inhalation Rate	IRa	0.83	Cubic meters/hour	gm/mg	0.001
Worker Inhalation Rate	IRw	2.50	Cubic meters/hour	m3/ml	1E-06
Child Inhalation Rate	IRc	0.83	Cubic meters/hour	Sec Per Min	60

Operationing Release Parameters

Exposure Time	ET	8	Hours/day	Worker Dispersion Fa	Chi over Q	6.33E-06	sec/cubic meter
Exposure Frequency	EF	3	Days/year		Airborn Dust	NA	mg/cubic meter
Adult Exposure Duration	EDa	1	Years		Constr. Area	NA	acres
Youth Exposure Duration	EDy	0	Years		Excavation Dust Source	9.83E-09	kg/sec
Child Exposure Duration	EDc	1	Years		Job Duration	1	Years
Averaging Time (carc.)	ATc	24500	Days		Emission Factor	1.17E-04	kg/Mg
Adult Avg Time (non-carc.)	ATna	350	Days		Soil excavated	49.3	Mg
Child Avg Time (non-carc.)	ATnc	350	Days				

Carcinogenic:(g)

	Soil Conc (mg/kg)	Slope Factor SF		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg-day)	Risk	CEDE (mRem)
Arsenic	3.70E+01	5.00E+01	(f)	3.64E-07	3.03E-12	1.06E-16	5.30E-15	
Barium	1.90E+03	NA		1.87E-05	1.55E-10	5.44E-15	0.00E+00	
Beryllium	1.70E+00	8.40E+00	(f)	1.67E-08	1.39E-13	4.87E-18	4.09E-17	
Bis-(2-ethylhexyl)phthalate	1.72E+00	1.40E-02	(d)	1.69E-08	1.40E-13	4.91E-18	6.88E-20	
Cadmium	6.20E+00	6.10E+00	(f)	6.09E-08	5.06E-13	1.78E-17	1.06E-16	
Chromium	5.80E+01	4.10E+01	(f)	5.70E-07	4.75E-12	1.66E-16	6.81E-15	
Manganese	3.54E+03	NA		3.48E-05	2.90E-10	1.01E-14	0.00E+00	
Mercury	1.14E+02	NA		1.12E-06	9.33E-12	3.27E-16	0.00E+00	
Nickel	3.61E+01	8.40E-01	(b)	3.55E-07	2.96E-12	1.03E-16	8.69E-17	
Uranium 233,234 (pCi)	3.40E+03	2.70E-06	(c)	3.34E-05	2.78E-10	9.74E-15	2.63E-22	2.26E-09
Uranium 238 (pCi)	3.90E+03	2.40E-06	(c)	3.83E-05	3.19E-10	1.12E-14	2.68E-22	2.27E-09
Strontium 89,90 (pCi)	1.10E+03	5.60E-11	(c)	1.08E-05	9.01E-11	3.15E-15	1.76E-25	7.02E-12
Plutonium 239,240 (pCi)	9.40E+04	4.10E-08	(c)	9.24E-04	7.70E-09	2.69E-13	1.10E-20	1.96E-07
Americium 241 (pCi)	2.20E+04	4.00E-08	(c)	2.16E-04	1.80E-09	6.30E-14	2.52E-21	4.60E-08
Cesium 137 (pCi)	3.10E+03	1.90E-11	(c)	3.05E-05	2.54E-10	8.88E-15	1.69E-26	4.66E-13
Total							1.23E-14	2.51E-07

Non-carcinogenic:(g)

	Soil Conc (mg/kg)	RfC/RfD(a)		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Arsenic	3.70E+01	NA		3.64E-07	3.03E-12	1.06E-16	0.00E+00
Barium	1.90E+03	7.00E-02	(d)	1.87E-05	1.55E-10	5.44E-15	7.77E-14
Beryllium	1.70E+00	5.00E-03	(d)	1.67E-08	1.39E-13	4.87E-18	9.74E-16
Bis-(2-ethylhexyl)phthalate	1.72E+00	NA		1.69E-08	1.40E-13	4.91E-18	0.00E+00
Cadmium	6.20E+00	NA		6.09E-08	5.06E-13	1.78E-17	0.00E+00
Chromium	5.80E+01	2.00E-05	(a,c)	5.70E-07	4.75E-12	1.66E-16	8.31E-12
Manganese	3.54E+03	4.00E-04	(a,c)	3.48E-05	2.90E-10	1.01E-14	2.54E-11
Mercury	1.14E+02	3.00E-04	(a,c)	1.12E-06	9.33E-12	3.27E-16	1.09E-12
Nickel	3.61E+01	NA		3.55E-07	2.96E-12	1.03E-16	0.00E+00
Uranium 233,234 (pCi)	3.40E+03	NA		3.34E-05	2.78E-10	9.74E-15	0.00E+00
Uranium 238 (pCi)	3.90E+03	NA		3.83E-05	3.19E-10	1.12E-14	0.00E+00
Strontium 89,90 (pCi)	1.10E+03	NA		1.08E-05	9.01E-11	3.15E-15	0.00E+00
Plutonium 239,240 (pCi)	9.40E+04	NA		9.24E-04	7.70E-09	2.69E-13	0.00E+00
Americium 241 (pCi)	2.20E+04	NA		2.16E-04	1.80E-09	6.30E-14	0.00E+00
Cesium 137 (pCi)	3.10E+03	NA		3.05E-05	2.54E-10	8.88E-15	0.00E+00
Total							3.48E-11

(a) [redacted]nic Inh[redacted]C valu[redacted]d.
(b) Inhalation value from IRIS.
(c) Inhalation value from HEAST, Annual, FY 1991.
(d) Oral value from IRIS.
(e) Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f) Dose Conversion Factors from DOE/EH-0071.
(g) Metals included in risk analysis include only those with Slope Factors or RfCs available.

Excavation Dust Source = Emission Factor * Soil Excavated / (168 * 3600) seconds / month
Source = Dust source * Soil Concentration
Air concentration = source * (X/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD
CEDE = Air Concentration * IR * ET * EF * ED * DCF
Dose Conversion Factors (DCF) are Effective Committed Dose Equivalents from Federal Guidance Report No. 11

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Woman Creek Interim Action, OU-2, Alternatives 1 & 3
Fugative Dust during pipeline construction
Exposure of Workers

Written: 06-Aug-91
Author: DCPalmer
Printed: 21-Aug-91

Constants:

Adult Body Weight	BWa	70	kg	kg/mg	1E-06
Child Body Weight	BWc	15	kg	gm/kg	1000
Adult Inhalation Rate	IRa	0.83	Cubic meters/hour	gm/mg	0.001
Worker Inhalation Rate	IRw	2.50	Cubic meters/hour	m3/ml	1E-06
Child Inhalation Rate	IRc	0.83	Cubic meters/hour	Sec Per Min	60

Operationing Release Parameters

Exposure Time	ET	8	Hours/day		Airborn Dust	3.06E-07	mg/cubic meter
Exposure Frequency	EF	9	Days/year		Constr. Area	0.17	acres
Adult Exposure Duration	EDa	1	Years		Dust Source	3.06E-04	kg/sec
Youth Exposure Duration	EDy	0	Years		Job Duration	1	Year
Child Exposure Duration	EDc	1	Years	Worker Dispersion Factor	Chi over Q	1.00E+00	sec/cubic meter
Averaging Time (carc.)	ATc	24500	Days		Dispersion Volume	1.00E+03	cubic meters/second
Adult Avg Time (non-carc.)	ATna	350	Days		Wind Speed	5	meters/second
Child Avg Time (non-carc.)	ATnc	350	Days				

Carcinogenic:(g)

	Soil Conc (mg/kg)	Slope Factor SF		Source (mg/m3)	Air Conc (mg/m3)	Intake (mg/kg-day)	Risk	CEDE (mRem)
Arsenic	3.70E+01	5.00E+01	(f)	1.13E-05	1.13E-05	1.19E-09	5.94E-08	
Barium	1.90E+03	NA		5.81E-04	5.81E-04	6.10E-08	0.00E+00	
Beryllium	1.70E+00	8.40E+00	(f)	5.20E-07	5.20E-07	5.46E-11	4.59E-10	
Bis-(2-ethylhexyl)phthalate	1.72E+00	1.40E-02	(d)	5.25E-07	5.25E-07	5.51E-11	7.71E-13	
Cadmium	6.20E+00	6.10E+00	(f)	1.90E-06	1.90E-06	1.99E-10	1.21E-09	
Chromium	5.80E+01	4.10E+01	(f)	1.77E-05	1.77E-05	1.86E-09	7.64E-08	
Manganese	3.54E+03	NA		1.08E-03	1.08E-03	1.14E-07	0.00E+00	
Mercury	1.14E+02	NA		3.49E-05	3.49E-05	3.66E-09	0.00E+00	
Nickel	3.61E+01	8.40E-01	(b)	1.10E-05	1.10E-05	1.16E-09	9.74E-10	
Uranium 233,234 (pCi)	3.40E+03	2.70E-06	(c)	1.04E-03	1.04E-03	1.09E-07	2.95E-15	2.54E-02
Uranium 236 (pCi)	3.90E+03	2.40E-06	(c)	1.19E-03	1.19E-03	1.25E-07	3.01E-15	2.54E-02
Strontium 89,90 (pCi)	1.10E+03	5.60E-11	(c)	3.37E-04	3.37E-04	3.53E-08	1.96E-18	7.87E-06
Plutonium 239,240 (pCi)	9.40E+04	4.10E-06	(c)	2.88E-02	2.88E-02	3.02E-06	1.24E-13	2.22E+00
Americium 241 (pCi)	2.20E+04	4.00E-06	(c)	6.73E-03	6.73E-03	7.07E-07	2.83E-14	5.36E-01
Cesium 137 (pCi)	3.10E+03	1.90E-11	(c)	9.49E-04	9.49E-04	9.96E-08	1.89E-18	5.45E-06
Total							1.38E-07	2.81E+00

Non-carcinogenic:(g)

	Soil Conc (mg/kg)	RfC/RfD		Source (mg/m3)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Arsenic	3.70E+01	NA		1.13E-05	1.13E-05	1.19E-09	0.00E+00
Barium	1.90E+03	7.00E-02	(d)	5.81E-04	5.81E-04	6.10E-08	8.71E-07
Beryllium	1.70E+00	5.00E-03	(d)	5.20E-07	5.20E-07	5.46E-11	1.09E-08
Bis-(2-ethylhexyl)phthalate	1.72E+00	NA		5.25E-07	5.25E-07	5.51E-11	0.00E+00
Cadmium	6.20E+00	NA		1.90E-06	1.90E-06	1.99E-10	0.00E+00
Chromium	5.80E+01	2.00E-05	(a,c)	1.77E-05	1.77E-05	1.86E-09	9.31E-05
Manganese	3.54E+03	4.00E-04	(a,c)	1.08E-03	1.08E-03	1.14E-07	2.84E-04
Mercury	1.14E+02	3.00E-04	(a,c)	3.49E-05	3.49E-05	3.66E-09	1.22E-05
Nickel	3.61E+01	NA		1.10E-05	1.10E-05	1.16E-09	0.00E+00
Uranium 233,234 (pCi)	3.40E+03	NA		1.04E-03	1.04E-03	1.09E-07	0.00E+00
Uranium 236 (pCi)	3.90E+03	NA		1.19E-03	1.19E-03	1.25E-07	0.00E+00
Strontium 89,90 (pCi)	1.10E+03	NA		3.37E-04	3.37E-04	3.53E-08	0.00E+00
Plutonium 239,240 (pCi)	9.40E+04	NA		2.88E-02	2.88E-02	3.02E-06	0.00E+00
Americium 241 (pCi)	2.20E+04	NA		6.73E-03	6.73E-03	7.07E-07	0.00E+00
Cesium 137 (pCi)	3.10E+03	NA		9.49E-04	9.49E-04	9.96E-08	0.00E+00
Total							3.90E-04

(a) Subchronic inhalation RfC values utilized.
(b) Inhalation value from IRIS.
(c) Inhalation value from HEAST, Annual, FY 1991.
(d) Oral value from IRIS.
(e) Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f) Inhalation Slope Factor from HEAST, Annual, 1991, correllated with IRIS.
(g) Metals included in risk analysis include only those which have Slope Factors or RfCs available.

Airborne Dust = Dust Source / Dispersion Volume
Construction Dust Source = 1.2 tons/acre-month * Construction Area * 907.18 kg/ton / (168 * 3600 sec/month)
Source = Airborne Dust * Soil Concentration
Air concentration = source * (X/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD
CEDE = Air Concentration *IR * ET * EF * ED * DCF
Dose Conversion Factors (DCF) are Effective Committed Dose Equivalents from Federal Guidance Report No. 11

Ri[redacted]lation [redacted]t

Woman Creek Interim Action, OU-2, Alternatives 1 & 3
Fugative Dust during pipeline construction
Exposure of Other Site Personnel

Written: 08-Aug-91
Author: DCPalmer
Printed: 21-Aug-91

Constants:

Adult Body Weight	BWa	70	kg	kg/mg	1E-06	
Child Body Weight	BWc	15	kg	gm/kg	1000	
Adult Inhalation Rate	IRa	0.63	Cubic meters/hour	gm/mg	0.001	
Worker Inhalation Rate	IRw	2.50	Cubic meters/hour	m3/ml	1E-06	
Child Inhalation Rate	IRc	0.63	Cubic meters/hour	Sec Per Min	60	

Operationing Release Parameters

Exposure Time	ET	8	Hours/day	Site Worker Dispersion Factor	Chi over Q	1.63E-05	sec/cubic meter
Exposure Frequency	EF	9	Days/year		Airborn Dust	3.06E-07	mg/cubic meter
Adult Exposure Duration	EDa	1	Years		Constr. Area	0.17	acres
Youth Exposure Duration	EDy	0	Years		Dust Source	3.06E-04	kg/sec
Child Exposure Duration	EDc	1	Years		Job Duration	1	Year
Averaging Time (carc.)	ATc	24500	Days				
Adult Avg Time (non-carc.)	ATna	350	Days				
Child Avg Time (non-carc.)	ATnc	350	Days				

Carcinogenic:(g)

	Soil Conc (mg/kg)	Slope Factor SF		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg-day)	Risk	CEDE (mRem)
Arsenic	3.70E+01	5.00E+01	(f)	1.13E-02	1.65E-07	1.94E-11	9.68E-10	
Barium	1.90E+03	NA		5.81E-01	9.47E-06	9.94E-10	0.00E+00	
Beryllium	1.70E+00	8.40E+00	(f)	5.20E-04	8.48E-09	8.90E-13	7.46E-12	
Bis-(2-ethylhexyl)phthalate	1.72E+00	1.40E-02	(d)	5.25E-04	8.55E-09	8.98E-13	1.26E-14	
Cadmium	6.20E+00	6.10E+00	(f)	1.90E-03	3.09E-06	3.25E-12	1.98E-11	
Chromium	5.80E+01	4.10E+01	(f)	1.77E-02	2.89E-07	3.04E-11	1.24E-09	
Manganese	3.54E+03	NA		1.08E+00	1.77E-05	1.85E-09	0.00E+00	
Mercury	1.14E+02	NA		3.49E-02	5.69E-07	5.97E-11	0.00E+00	
Nickel	3.61E+01	8.40E-01	(b)	1.10E-02	1.80E-07	1.89E-11	1.59E-11	
Uranium 233,234 (pCi)	3.40E+03	2.70E-06	(c)	1.04E+00	1.70E-05	1.78E-09	4.81E-17	4.13E-04
Uranium 238 (pCi)	3.90E+03	2.40E-06	(c)	1.19E+00	1.95E-05	2.04E-09	4.90E-17	4.15E-04
Strontium 89,90 (pCi)	1.10E+03	5.60E-11	(c)	3.37E-01	5.49E-06	5.76E-10	3.22E-20	1.28E-06
Plutonium 239,240 (pCi)	9.40E+04	4.10E-06	(c)	2.88E+01	4.69E-04	4.92E-08	2.02E-15	3.62E-02
Americium 241 (pCi)	2.20E+04	4.00E-06	(c)	6.73E+00	1.10E-04	1.15E-08	4.61E-16	6.77E-03
Cesium 137 (pCi)	3.10E+03	1.90E-11	(c)	9.49E-01	1.55E-05	1.62E-09	3.06E-20	6.89E-06
Total							2.26E-09	4.58E-02

Non-carcinogenic:(g)

	Soil Conc (mg/kg)	RfC/RfD(a)		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Arsenic	3.70E+01	NA		1.13E-02	1.65E-07	1.94E-11	0.00E+00
Barium	1.90E+03	7.00E-02	(d)	5.81E-01	9.47E-06	9.94E-10	1.42E-08
Beryllium	1.70E+00	5.00E-03	(d)	5.20E-04	8.48E-09	8.90E-13	1.78E-10
Bis-(2-ethylhexyl)phthalate	1.72E+00	NA		5.25E-04	8.55E-09	8.98E-13	0.00E+00
Cadmium	6.20E+00	NA		1.90E-03	3.09E-06	3.25E-12	0.00E+00
Chromium	5.80E+01	2.00E-05	(a,c)	1.77E-02	2.89E-07	3.04E-11	1.52E-06
Manganese	3.54E+03	4.00E-04	(a,c)	1.08E+00	1.77E-05	1.85E-09	4.63E-06
Mercury	1.14E+02	3.00E-04	(a,c)	3.49E-02	5.69E-07	5.97E-11	1.99E-07
Nickel	3.61E+01	NA		1.10E-02	1.80E-07	1.89E-11	0.00E+00
Uranium 233,234 (pCi)	3.40E+03	NA		1.04E+00	1.70E-05	1.78E-09	0.00E+00
Uranium 238 (pCi)	3.90E+03	NA		1.19E+00	1.95E-05	2.04E-09	0.00E+00
Strontium 89,90 (pCi)	1.10E+03	NA		3.37E-01	5.49E-06	5.76E-10	0.00E+00
Plutonium 239,240 (pCi)	9.40E+04	NA		2.88E+01	4.69E-04	4.92E-08	0.00E+00
Americium 241 (pCi)	2.20E+04	NA		6.73E+00	1.10E-04	1.15E-08	0.00E+00
Cesium 137 (pCi)	3.10E+03	NA		9.49E-01	1.55E-05	1.62E-09	0.00E+00
Total							6.38E-06

(a) [redacted]nic Inh[redacted]C valu[redacted]d.
(b) Inhalation value from IRIS.
(c) Inhalation value from HEAST, Annual, FY 1991.
(d) Oral value from IRIS.
(e) Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f) Dose Conversion Factors from DOE/EH-0071.
(g) Metals included in risk analysis include only those with Slope Factors or RfCs available.

Airborne Dust = Dust Source / Dispersion Volume
Construction Dust Source = 1.2 tons/acre-month * Construction Area * 907.18 kg/ton / (168 * 3600 sec/month)
Source = Dust source * Soil Concentration
Air concentration = source * (X/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD
CEDE = Air Concentration *IR * ET * EF * ED * DCF
Dose Conversion Factors (DCF) are Effective Committed Dose Equivalents from Federal Guidance Report No. 11

Risk Calculation Worksheet

Woman Creek Interim Action, OU-2, Alternative 2
Fugative Dust during pipeline construction
Exposure of Workers

Written: 06-Aug-91
Author: DCPalmer
Printed: 21-Aug-91

Constants:

Adult Body Weight	BWa	70	kg	kg/mg	1E-06
Child Body Weight	BWc	15	kg	gm/kg	1000
Adult Inhalation Rate	IRa	0.83	Cubic meters/hour	gm/mg	0.001
Worker Inhalation Rate	IRw	2.50	Cubic meters/hour	m3/ml	1E-06
Child Inhalation Rate	IRc	0.63	Cubic meters/hour	Sec Per Min	60

Operationing Release Parameters

Exposure Time	ET	8	Hours/day		Airborn Dust	3.06E-07	mg/cubic meter
Exposure Frequency	EF	13	Days/year		Constr. Area	0.17	acres
Adult Exposure Duration	EDa	1	Years		Dust Source	3.06E-04	kg/sec
Youth Exposure Duration	EDy	0	Years		Job Duration	1	Year
Child Exposure Duration	EDc	1	Years	Worker Dispersion Factor	Chi over Q	1.00E+00	sec/cubic meter
Averaging Time (carc.)	ATc	24500	Days		Dispersion Volume	1.00E+03	cubic meters/second
Adult Avg Time (non-carc.)	ATna	350	Days		Wind Speed	5	meters/second
Child Avg Time (non-carc.)	ATnc	350	Days				

Carcinogenic:(g)

	Soil Conc (mg/kg)	Slope Factor SF		Source (mg/m3)	Air Conc (mg/m3)	Intake (mg/kg-day)	Risk	CEDE (mRem)
Arsenic	3.70E+01	5.00E+01	(f)	1.13E-05	1.13E-05	1.72E-09	8.56E-08	
Barium	1.90E+03	NA		5.81E-04	5.81E-04	8.81E-08	0.00E+00	
Beryllium	1.70E+00	8.40E+00	(f)	5.20E-07	5.20E-07	7.89E-11	6.62E-10	
Bis-(2-ethylhexyl)phthalate	1.72E+00	1.40E-02	(d)	5.25E-07	5.25E-07	7.96E-11	1.11E-12	
Cadmium	6.20E+00	6.10E+00	(f)	1.90E-06	1.90E-06	2.88E-10	1.75E-09	
Chromium	5.80E+01	4.10E+01	(f)	1.77E-05	1.77E-05	2.69E-09	1.10E-07	
Manganese	3.54E+03	NA		1.08E-03	1.08E-03	1.64E-07	0.00E+00	
Mercury	1.14E+02	NA		3.49E-05	3.49E-05	5.29E-09	0.00E+00	
Nickel	3.61E+01	8.40E-01	(b)	1.10E-05	1.10E-05	1.67E-09	1.41E-09	
Uranium 233,234 (pCi)	3.40E+03	2.70E-06	(c)	1.04E-03	1.04E-03	1.58E-07	4.26E-15	3.86E-02
Uranium 238 (pCi)	3.90E+03	2.40E-06	(c)	1.19E-03	1.19E-03	1.81E-07	4.34E-15	3.87E-02
Strontium 89,90 (pCi)	1.10E+03	5.60E-11	(c)	3.37E-04	3.37E-04	5.10E-08	2.86E-18	1.14E-04
Plutonium 239,240 (pCi)	9.40E+04	4.10E-08	(c)	2.88E-02	2.88E-02	4.36E-06	1.79E-13	3.21E+00
Americium 241 (pCi)	2.20E+04	4.00E-08	(c)	6.73E-03	6.73E-03	1.02E-06	4.08E-14	7.77E-01
Cesium 137 (pCi)	3.10E+03	1.90E-11	(c)	9.49E-04	9.49E-04	1.44E-07	2.73E-18	7.86E-08
Total							2.00E-07	1.73E-01

Non-carcinogenic:(g)

	Soil Conc (mg/kg)	RfC/RfD		Source (mg/m3)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Arsenic	3.70E+01	NA		1.13E-05	1.13E-05	1.72E-09	0.00E+00
Barium	1.90E+03	7.00E-02	(d)	5.81E-04	5.81E-04	8.81E-08	1.26E-06
Beryllium	1.70E+00	5.00E-03	(d)	5.20E-07	5.20E-07	7.89E-11	1.58E-08
Bis-(2-ethylhexyl)phthalate	1.72E+00	NA		5.25E-07	5.25E-07	7.96E-11	0.00E+00
Cadmium	6.20E+00	NA		1.90E-06	1.90E-06	2.88E-10	0.00E+00
Chromium	5.80E+01	2.00E-05	(a,c)	1.77E-05	1.77E-05	2.69E-09	1.35E-04
Manganese	3.54E+03	4.00E-04	(a,c)	1.08E-03	1.08E-03	1.64E-07	4.11E-04
Mercury	1.14E+02	3.00E-04	(a,c)	3.49E-05	3.49E-05	5.29E-09	1.76E-05
Nickel	3.61E+01	NA		1.10E-05	1.10E-05	1.67E-09	0.00E+00
Uranium 233,234 (pCi)	3.40E+03	NA		1.04E-03	1.04E-03	1.58E-07	0.00E+00
Uranium 238 (pCi)	3.90E+03	NA		1.19E-03	1.19E-03	1.81E-07	0.00E+00
Strontium 89,90 (pCi)	1.10E+03	NA		3.37E-04	3.37E-04	5.10E-08	0.00E+00
Plutonium 239,240 (pCi)	9.40E+04	NA		2.88E-02	2.88E-02	4.36E-06	0.00E+00
Americium 241 (pCi)	2.20E+04	NA		6.73E-03	6.73E-03	1.02E-06	0.00E+00
Cesium 137 (pCi)	3.10E+03	NA		9.49E-04	9.49E-04	1.44E-07	0.00E+00
Total							5.84E-04

(a)Subchronic Inhalation RfC values utilized.
(b)Inhalation value from IRIS.
(c)Inhalation value from HEAST, Annual, FY 1991.
(d)Oral value from IRIS.
(e)Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f)Inhalation Slope Factor from HEAST, Annual, 1991, correllated with IRIS.
(g)Metals included in risk analysis include only those which have Slope Factors or RfCs available.

Airborne Dust = Dust Source / Dispersion Volume
Construction Dust Source = 1.2 tons/acre-month * Construction Area * 907.18 kg/ton / (168 * 3600 sec/month)
Source = Airborne Dust * Soil Concentration
Air concentration = source * (X/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD
CEDE = Air Concentration *IR * ET * EF * ED * DCF
Dose Conversion Factors (DCF) are Effective Committed Dose Equivalents from Federal Guidance Report No. 11

Woman Creek Interim Action, OU-2, Alternative 2
Fugative Dust during pipeline construction
Exposure of Other Site Personnel

Written: 06-Aug-91
Author: DCPalmer
Printed: 21-Aug-91

Constants:

Adult Body Weight	BWa	70	kg	kg/mg	1E-06	
Child Body Weight	BWc	15	kg	gm/kg	1000	
Adult Inhalation Rate	IRa	0.83	Cubic meters/hour	gm/mg	0.001	
Worker Inhalation Rate	IRw	2.50	Cubic meters/hour	m3/ml	1E-06	
Child Inhalation Rate	IRc	0.83	Cubic meters/hour	Sec Per Min	60	

Operationing Release Parameters

Exposure Time	ET	8	Hours/day	Site Worker Dispersion Factor	Chi over Q	1.63E-05	sec/cubic meter
Exposure Frequency	EF	13	Days/year		Airborn Dust	3.06E-07	mg/cubic meter
Adult Exposure Duration	EDa	1	Years		Constr. Area	0.17	acres
Youth Exposure Duration	EDy	0	Years		Dust Source	3.06E-04	kg/sec
Child Exposure Duration	EDc	1	Years		Job Duration	1	Year
Averaging Time (carc.)	ATc	24500	Days				
Adult Avg Time (non-carc.)	ATna	350	Days				
Child Avg Time (non-carc.)	ATnc	350	Days				

Carcinogenic:(g)

	Soil Conc (mg/kg)	Slope Factor SF		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg-day)	Risk	CEDE (mRem)
Arsenic	3.70E+01	5.00E+01	(f)	1.13E-02	1.65E-07	2.60E-11	1.40E-09	
Barium	1.90E+03	NA		5.81E-01	9.47E-06	1.44E-09	0.00E+00	
Beryllium	1.70E+00	8.40E+00	(f)	5.20E-04	8.46E-09	1.29E-12	1.08E-11	
Bis-(2-ethylhexyl)phthalate	1.72E+00	1.40E-02	(d)	5.25E-04	8.55E-09	1.30E-12	1.82E-14	
Cadmium	6.20E+00	6.10E+00	(f)	1.90E-03	3.09E-06	4.69E-12	2.86E-11	
Chromium	5.60E+01	4.10E+01	(f)	1.77E-02	2.89E-07	4.39E-11	1.80E-09	
Manganese	3.54E+03	NA		1.08E+00	1.77E-05	2.68E-09	0.00E+00	
Mercury	1.14E+02	NA		3.49E-02	5.69E-07	8.62E-11	0.00E+00	
Nickel	3.61E+01	8.40E-01	(b)	1.10E-02	1.80E-07	2.73E-11	2.29E-11	
Uranium 233,234 (pCi)	3.40E+03	2.70E-06	(c)	1.04E+00	1.70E-05	2.57E-09	6.94E-17	5.97E-04
Uranium 236 (pCi)	3.90E+03	2.40E-06	(c)	1.19E+00	1.95E-05	2.95E-09	7.08E-17	5.99E-04
Strontium 89,90 (pCi)	1.10E+03	5.60E-11	(c)	3.37E-01	5.49E-06	8.32E-10	4.66E-20	1.85E-06
Plutonium 239,240 (pCi)	9.40E+04	4.10E-06	(c)	2.88E+01	4.69E-04	7.11E-08	2.91E-15	5.23E-02
Americium 241 (pCi)	2.20E+04	4.00E-06	(c)	6.73E+00	1.10E-04	1.66E-08	6.65E-16	1.27E-02
Cesium 137 (pCi)	3.10E+03	1.90E-11	(c)	9.49E-01	1.55E-05	2.34E-09	4.45E-20	1.26E-07
Total							3.26E-09	6.62E-02

Non-carcinogenic:(g)

	Soil Conc (mg/kg)	RfC/RfD(a)		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Arsenic	3.70E+01	NA		1.13E-02	1.65E-07	2.60E-11	0.00E+00
Barium	1.90E+03	7.00E-02	(d)	5.81E-01	9.47E-06	1.44E-09	2.06E-08
Beryllium	1.70E+00	5.00E-03	(d)	5.20E-04	8.46E-09	1.29E-12	2.57E-10
Bis-(2-ethylhexyl)phthalate	1.72E+00	NA		5.25E-04	8.55E-09	1.30E-12	0.00E+00
Cadmium	6.20E+00	NA		1.90E-03	3.09E-06	4.69E-12	0.00E+00
Chromium	5.60E+01	2.00E-05	(a,c)	1.77E-02	2.89E-07	4.39E-11	2.19E-06
Manganese	3.54E+03	4.00E-04	(a,c)	1.08E+00	1.77E-05	2.68E-09	6.69E-06
Mercury	1.14E+02	3.00E-04	(a,c)	3.49E-02	5.69E-07	8.62E-11	2.87E-07
Nickel	3.61E+01	NA		1.10E-02	1.80E-07	2.73E-11	0.00E+00
Uranium 233,234 (pCi)	3.40E+03	NA		1.04E+00	1.70E-05	2.57E-09	0.00E+00
Uranium 236 (pCi)	3.90E+03	NA		1.19E+00	1.95E-05	2.95E-09	0.00E+00
Strontium 89,90 (pCi)	1.10E+03	NA		3.37E-01	5.49E-06	8.32E-10	0.00E+00
Plutonium 239,240 (pCi)	9.40E+04	NA		2.88E+01	4.69E-04	7.11E-08	0.00E+00
Americium 241 (pCi)	2.20E+04	NA		6.73E+00	1.10E-04	1.66E-08	0.00E+00
Cesium 137 (pCi)	3.10E+03	NA		9.49E-01	1.55E-05	2.34E-09	0.00E+00
Total							9.19E-06

(a) [redacted]nic Inh[redacted]IC valu[redacted]d.
(b) Inhalation value from IRIS.
(c) Inhalation value from HEAST, Annual, FY 1991.
(d) Oral value from IRIS.
(e) Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f) Dose Conversion Factors from DOE/EH-0071.
(g) Metals included in risk analysis include only those with Slope Factors or RfCs available.

Airborne Dust = Dust Source / Dispersion Volume
Construction Dust Source = 1.2 tons/acre-month * Construction Area * 907.18 kg/ton / (168 * 3600 sec/month)
Source = Dust source * Soil Concentration
Air concentration = source * (X/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD
CEDE = Air Concentration *IR * ET * EF * ED * DCF
Dose Conversion Factors (DCF) are Effective Committed Dose Equivalents from Federal Guidance Report No. 11

Woman Creek Interim Action, OU-2, Alternative 4
Fugative Dust during pipeline construction
Exposure of Workers

Written: 06-Aug-91
Author: DCPalmer
Printed: 21-Aug-91

Constants:

Adult Body Weight	BWa	70	kg	kg/mg	1E-06
Child Body Weight	BWc	15	kg	gm/kg	1000
Adult Inhalation Rate	IRa	0.83	Cubic meters/hour	gm/mg	0.001
Worker Inhalation Rate	IRw	2.5	Cubic meters/hour	m3/ml	1E-06
Child Inhalation Rate	IRc	0.83	Cubic meters/hour	Sec Per Min	60

Operationing Release Parameters

Exposure Time	ET	8	Hours/day		Airborn Dust	3.06E-07	mg/cubic meter
Exposure Frequency	EF	15	Days/year		Constr. Area	0.17	acres
Adult Exposure Duration	EDa	1	Years		Dust Source	3.06E-04	kg/sec
Youth Exposure Duration	EDy	0	Years		Job Duration	1	Year
Child Exposure Duration	EDc	1	Years	Worker Dispersion Factor	Chi over Q	1.00E+00	sec/cubic meter
Averaging Time (carc.)	ATc	24500	Days		Dispersion Volume	1.00E+03	cubic meters/second
Adult Avg Time (non-carc.)	ATna	350	Days		Wind Speed	5	meters/second
Child Avg Time (non-carc.)	ATnc	350	Days				

Carcinogenic:(g)

	Soil Conc (mg/kg)	Slope Factor SF		Source (mg/m3)	Air Conc (mg/m3)	Intake (mg/kg-day)	Risk	CEDE (mRem)
Arsenic	3.70E+01	5.00E+01	(f)	1.13E-05	1.13E-05	1.96E-09	9.90E-08	
Barium	1.90E+03	NA		5.81E-04	5.81E-04	1.02E-07	0.00E+00	
Beryllium	1.70E+00	8.40E+00	(f)	5.20E-07	5.20E-07	9.10E-11	7.64E-10	
Bis-(2-ethylhexyl)phthalate	1.72E+00	1.40E-02	(d)	5.25E-07	5.25E-07	9.18E-11	1.29E-12	
Cadmium	6.20E+00	6.10E+00	(f)	1.90E-06	1.90E-06	3.32E-10	2.02E-09	
Chromium	5.60E+01	4.10E+01	(f)	1.77E-05	1.77E-05	3.10E-09	1.27E-07	
Manganese	3.54E+03	NA		1.08E-03	1.08E-03	1.89E-07	0.00E+00	
Mercury	1.14E+02	NA		3.49E-05	3.49E-05	6.10E-09	0.00E+00	
Nickel	3.61E+01	8.40E-01	(b)	1.10E-05	1.10E-05	1.93E-09	1.62E-09	
Uranium 233,234 (pCi)	3.40E+03	2.70E-06	(c)	1.04E-03	1.04E-03	1.82E-07	4.91E-15	4.23E-02
Uranium 238 (pCi)	3.90E+03	2.40E-06	(c)	1.19E-03	1.19E-03	2.09E-07	5.01E-15	4.24E-02
Strontium 89,90 (pCi)	1.10E+03	5.60E-11	(c)	3.37E-04	3.37E-04	5.89E-08	3.30E-18	1.31E-04
Plutonium 239,240 (pCi)	9.40E+04	4.10E-06	(c)	2.88E-02	2.88E-02	5.03E-06	2.06E-13	3.70E+00
Americium 241 (pCi)	2.20E+04	4.00E-06	(c)	6.73E-03	6.73E-03	1.18E-06	4.71E-14	8.97E-01
Cesium 137 (pCi)	3.10E+03	1.90E-11	(c)	9.49E-04	9.49E-04	1.66E-07	3.15E-18	9.09E-06
Total							2.31E-07	4.69E+00

Non-carcinogenic:(g)

	Soil Conc (mg/kg)	RfC/RfD		Source (mg/m3)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Arsenic	3.70E+01	NA		1.13E-05	1.13E-05	1.96E-09	0.00E+00
Barium	1.90E+03	7.00E-02	(d)	5.81E-04	5.81E-04	1.02E-07	1.46E-06
Beryllium	1.70E+00	5.00E-03	(d)	5.20E-07	5.20E-07	9.10E-11	1.82E-08
Bis-(2-ethylhexyl)phthalate	1.72E+00	NA		5.25E-07	5.25E-07	9.18E-11	0.00E+00
Cadmium	6.20E+00	NA		1.90E-06	1.90E-06	3.32E-10	0.00E+00
Chromium	5.60E+01	2.00E-05	(a,c)	1.77E-05	1.77E-05	3.10E-09	1.55E-04
Manganese	3.54E+03	4.00E-04	(a,c)	1.08E-03	1.08E-03	1.89E-07	4.74E-04
Mercury	1.14E+02	3.00E-04	(a,c)	3.49E-05	3.49E-05	6.10E-09	2.03E-05
Nickel	3.61E+01	NA		1.10E-05	1.10E-05	1.93E-09	0.00E+00
Uranium 233,234 (pCi)	3.40E+03	NA		1.04E-03	1.04E-03	1.82E-07	0.00E+00
Uranium 238 (pCi)	3.90E+03	NA		1.19E-03	1.19E-03	2.09E-07	0.00E+00
Strontium 89,90 (pCi)	1.10E+03	NA		3.37E-04	3.37E-04	5.89E-08	0.00E+00
Plutonium 239,240 (pCi)	9.40E+04	NA		2.88E-02	2.88E-02	5.03E-06	0.00E+00
Americium 241 (pCi)	2.20E+04	NA		6.73E-03	6.73E-03	1.18E-06	0.00E+00
Cesium 137 (pCi)	3.10E+03	NA		9.49E-04	9.49E-04	1.66E-07	0.00E+00
Total							5.51E-04

(a)Subchronic inhalation RfC values utilized.
(b)Inhalation value from IRIS.
(c)Inhalation value from HEAST, Annual, FY 1991.
(d)Oral value from IRIS.
(e)Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f)Inhalation Slope Factor from HEAST, Annual, 1991, correllated with IRIS.
(g)Metals included in risk analysis include only those which have Slope Factors or RfCs available.

Airborne Dust = Dust Source / Dispersion Volume
Construction Dust Source = 1.2 tons/acre-month * Construction Area * 907.18 kg/ton / (168 * 3600 sec/month)
Source = Airborne Dust * Soil Concentration
Air concentration = source * (X/Q)
Intake = (Air concentration * IR * ET * EF * ED) / (BW * AT)
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD
CEDE = Air Concentration *IR * ET * EF * ED * DCF
Dose Conversion Factors (DCF) are Effective Committed Dose Equivalents from Federal Guidance Report No. 11

[redacted] ulation [redacted] et [redacted]

Woman Creek Interim Action, OU-2, Alternative 4
Fugative Dust during pipeline construction
Exposure of Other Site Personnel

Written: 06-Aug-91
Author: DCPalmer
Printed: 21-Aug-91

Constants:

Adult Body Weight	BWa	70	kg	kg/mg	1E-06	
Child Body Weight	BWc	15	kg	gm/kg	1000	
Adult Inhalation Rate	IRa	0.83	Cubic meters/hour	gm/mg	0.001	
Worker Inhalation Rate	IRw	2.5	Cubic meters/hour	m3/ml	1E-06	
Child Inhalation Rate	IRc	0.83	Cubic meters/hour	Sec Per Min	60	

Operationing Release Parameters

Exposure Time	ET	8	Hours/day	Site Worker Dispersion Factor	Chi over Q	1.63E-05	sec/cubic meter
Exposure Frequency	EF	15	Days/year		Airborn Dust	3.06E-07	mg/cubic meter
Adult Exposure Duration	EDa	1	Years		Constr. Area	0.17	acres
Youth Exposure Duration	EDy	0	Years		Dust Source	3.06E-04	kg/sec
Child Exposure Duration	EDc	1	Years		Job Duration	1	Year
Averaging Time (carc.)	ATc	24500	Days				
Adult Avg Time (non-carc.)	ATna	350	Days				
Child Avg Time (non-carc.)	ATnc	350	Days				

Carcinogenic:(g)

	Soil Conc (mg/kg)	Slope Factor SF		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg-day)	Risk	CEDE (mRem)
Arsenic	3.70E+01	5.00E+01	(f)	1.13E-02	1.65E-07	3.23E-11	1.61E-09	
Barium	1.90E+03	NA		5.81E-01	9.47E-06	1.66E-09	0.00E+00	
Beryllium	1.70E+00	8.40E+00	(f)	5.20E-04	8.48E-09	1.48E-12	1.25E-11	
Bis-(2-ethylhexyl)phthalate	1.72E+00	1.40E-02	(d)	5.25E-04	8.55E-09	1.50E-12	2.09E-14	
Cadmium	6.20E+00	6.10E+00	(f)	1.90E-03	3.09E-08	5.41E-12	3.30E-11	
Chromium	5.60E+01	4.10E+01	(f)	1.77E-02	2.89E-07	5.06E-11	2.07E-09	
Manganese	3.54E+03	NA		1.08E+00	1.77E-05	3.09E-09	0.00E+00	
Mercury	1.14E+02	NA		3.49E-02	5.69E-07	9.95E-11	0.00E+00	
Nickel	3.61E+01	8.40E-01	(b)	1.10E-02	1.80E-07	3.15E-11	2.65E-11	
Uranium 233,234 (pCi)	3.40E+03	2.70E-06	(c)	1.04E+00	1.70E-05	2.97E-09	8.01E-17	6.69E-04
Uranium 236 (pCi)	3.90E+03	2.40E-06	(c)	1.19E+00	1.95E-05	3.40E-09	8.17E-17	6.91E-04
Strontium 89,90 (pCi)	1.10E+03	5.60E-11	(c)	3.37E-01	5.49E-06	9.60E-10	5.37E-20	2.14E-06
Plutonium 239,240 (pCi)	9.40E+04	4.10E-06	(c)	2.88E+01	4.69E-04	8.20E-08	3.36E-15	6.04E-02
Americium 241 (pCi)	2.20E+04	4.00E-06	(c)	6.73E+00	1.10E-04	1.92E-08	7.68E-16	1.46E-02
Cesium 137 (pCi)	3.10E+03	1.90E-11	(c)	9.49E-01	1.55E-05	2.70E-09	5.14E-20	1.46E-07
Total							3.76E-09	7.84E-02

Non-carcinogenic:(g)

	Soil Conc (mg/kg)	RfC/RfD(a)		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Arsenic	3.70E+01	NA		1.13E-02	1.65E-07	3.23E-11	0.00E+00
Barium	1.90E+03	7.00E-02	(d)	5.81E-01	9.47E-06	1.66E-09	2.37E-08
Beryllium	1.70E+00	5.00E-03	(d)	5.20E-04	8.48E-09	1.48E-12	2.97E-10
Bis-(2-ethylhexyl)phthalate	1.72E+00	NA		5.25E-04	8.55E-09	1.50E-12	0.00E+00
Cadmium	6.20E+00	NA		1.90E-03	3.09E-08	5.41E-12	0.00E+00
Chromium	5.60E+01	2.00E-05	(a,c)	1.77E-02	2.89E-07	5.06E-11	2.53E-06
Manganese	3.54E+03	4.00E-04	(a,c)	1.08E+00	1.77E-05	3.09E-09	7.72E-06
Mercury	1.14E+02	3.00E-04	(a,c)	3.49E-02	5.69E-07	9.95E-11	3.32E-07
Nickel	3.61E+01	NA		1.10E-02	1.80E-07	3.15E-11	0.00E+00
Uranium 233,234 (pCi)	3.40E+03	NA		1.04E+00	1.70E-05	2.97E-09	0.00E+00
Uranium 236 (pCi)	3.90E+03	NA		1.19E+00	1.95E-05	3.40E-09	0.00E+00
Strontium 89,90 (pCi)	1.10E+03	NA		3.37E-01	5.49E-06	9.60E-10	0.00E+00
Plutonium 239,240 (pCi)	9.40E+04	NA		2.88E+01	4.69E-04	8.20E-08	0.00E+00
Americium 241 (pCi)	2.20E+04	NA		6.73E+00	1.10E-04	1.92E-08	0.00E+00
Cesium 137 (pCi)	3.10E+03	NA		9.49E-01	1.55E-05	2.70E-09	0.00E+00
Total							1.08E-05

(a) [redacted]nic inh[redacted]IC valu[redacted]d. [redacted]
(b) Inhalation value from IRIS.
(c) Inhalation value from HEAST, Annual, FY 1991.
(d) Oral value from IRIS.
(e) Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f) Dose Conversion Factors from DOE/EH-0071.
(g) Metals included in risk analysis include only those with Slope Factors or RfCs available.

Airborne Dust = Dust Source / Dispersion Volume
Construction Dust Source = 1.2 tons/acre-month * Construction Area * 907.18 kg/ton / (168 * 3600 sec/month)
Source = Dust source * Soil Concentration
Air concentration = source * (χ/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD
CEDE = Air Concentration *IR * ET * EF * ED * DCF
Dose Conversion Factors (DCF) are Effective Committed Dose Equivalents from Federal Guidance Report No. 11

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Woman Creek Interim Action, OU-2, Alternative 2
Overflow Storage Tank Rupture (20,000 gal)
Exposure of Other Site Personnel

Written: 21-Aug-91
Author: DCPalmer
Printed: 27-Aug-91

Constants:

Liter Per Gal	3.7853		Adult Body Weight	BWa	70	kg
Sec Per Min	60		Child Body Weight	BWc	15	kg
R	62.37	mmHg l/gmole K	Adult Inhalation Rate	IRa	0.83	Cubic meters/hour
N/V	3.28E+01		Worker Inhalation Rate	IRw	2.5	Cubic meters/hr
kg/mg	1.00E-06		Child Inhalation Rate	IRc	0.625	Cubic meters/hour
gm/kg	1.00E+03					
gm/mg	1.00E-03					
m3/ml	1.00E-06					

Operationing Release Parameters

Exposure Time	ET	8	Hours/day
Exposure Frequency	EF	1	Days/year
Adult Exposure Duration	EDa	1	Years
Youth Exposure Duration	EDy	0	Years
Child Exposure Duration	EDc	1	Years
Averaging Time (carc.)	ATc	24500	Days
Adult Avg Time (non-carc.)	ATna	350	Days
Child Avg Time (non-carc.)	ATnc	350	Days
Worker Dispersion Factor	Chi over Q	8.50E-02	sec/cubic meter
	Job Duration	NA	Years
	Flow Rate	41.7	gpm

Carcinogenic:

	Liquid Conc (mg/l)	Slope Factor SF		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Benzene	7.00E-03	2.90E-02	(b)	1.84E-02	1.56E-03	1.82E-06	5.29E-10
Carbon Disulfide	6.00E-03	NA		1.58E-02	1.34E-03	1.56E-06	0.00E+00
Not used	0.00E+00	NA		0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichlorethene	4.80E-02	1.20E+00	(f)	1.26E-01	1.07E-02	1.25E-07	1.50E-07
Not used	0.00E+00	NA		0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloroethene	5.00E-03	NA		1.31E-02	1.12E-03	1.30E-06	0.00E+00
2-Butanone	1.10E-02	NA		2.89E-02	2.46E-03	2.87E-06	0.00E+00
Carbon Tetrachloride	1.46E-01	1.30E-01	(b)	3.84E-01	3.26E-02	3.80E-07	4.95E-08
Chloroform	1.90E-02	8.10E-02	(f)	4.99E-02	4.25E-03	4.95E-06	4.01E-09
Tetrachloroethene	1.70E-02	1.80E-03	(h)	4.47E-02	3.80E-03	4.43E-06	7.97E-11
Toluene	4.00E-03	NA		1.05E-02	8.94E-04	1.04E-06	0.00E+00
Total Xylenes	7.00E-03	NA		1.84E-02	1.56E-03	1.82E-06	0.00E+00
Trichloroethene	2.45E-01	1.70E-02	(c)	6.44E-01	5.47E-02	6.36E-07	1.09E-06
Totals							2.15E-07

Non-carcinogenic:

	Liquid Conc (mg/l)	RfC/RfD(a)		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Benzene	7.00E-03	NA		1.84E-02	1.56E-03	1.82E-06	0.00E+00
Carbon Disulfide	6.00E-03	1.00E-02	(a,b)	1.58E-02	1.34E-03	1.56E-06	1.56E-06
Not used	0.00E+00	NA		0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichlorethene	4.80E-02	9.00E-03	(d)	1.26E-01	1.07E-02	1.25E-07	1.39E-05
Not used	0.00E+00	NA		0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloroethene	5.00E-03	2.00E-02	(d)	1.31E-02	1.12E-03	1.30E-06	6.51E-07
2-Butanone	1.10E-02	NA		2.89E-02	2.46E-03	2.87E-06	0.00E+00
Carbon Tetrachloride	1.46E-01	7.00E-03	(d)	3.84E-01	3.26E-02	3.80E-07	5.43E-05
Chloroform	1.90E-02	1.00E-02	(d)	4.99E-02	4.25E-03	4.95E-06	4.95E-06
Tetrachloroethene	1.70E-02	1.00E-02	(d)	4.47E-02	3.80E-03	4.43E-06	4.43E-06
Toluene	4.00E-03	2.00E-01	(d)	1.05E-02	8.94E-04	1.04E-06	5.21E-06
Total Xylenes	7.00E-03	2.00E+00	(d)	1.84E-02	1.56E-03	1.82E-06	9.12E-09
Trichloroethene	2.45E-01	NA		6.44E-01	5.47E-02	6.36E-07	0.00E+00
Totals							7.99E-05

(a)Subchronic Oral RfD utilized where Subchronic Inhalation RfC not available. Subchronic values not available on IRIS.
(b)Inhalation value from IRIS.
(c)Inhalation value from HEAST, Annual, FY 1991.
(d)Oral value from IRIS.
(e)Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f)Inhalation Slope Factor from HEAST, Annual, 1991, correllated with IRIS.
(h)Calculated from Inhalation Unit Risk, HEAST, Annual, 1991.

Flow Rate = Total tank volume / 480 minutes
Source = Liquid Concentration * Flow Rate * Liters per gallon / seconds per minute
Air concentration = source * (X/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD

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Woman Creek Interim Action, OU-2, Alternative 3
Equalization Tank Rupture (5,000 gal)
Exposure of other Site Personnel

Written: 21-Aug-91
Author: DCPalmer
Printed: 27-Aug-91

Constants:

Liter Per Gal	3.7853		Adult Body Weight	BWa	70	kg
Sec Per Min	60		Child Body Weight	BWc	15	kg
R	62.37	mmHg l/gmole K	Adult Inhalation Rate	IRa	0.83	Cubic meters/hour
N/V	3.26E+01		Worker Inhalation Rat	IRw	2.5	Cubic meters/hr
kg/mg	1.00E-06		Child Inhalation Rate	IRc	0.625	Cubic meters/hour
gm/kg	1.00E+03					
gm/mg	1.00E-03					
m3/ml	1.00E-06					

Operationing Release Parameters

Exposure Time	ET	8	Hours/day
Exposure Frequency	EF	1	Days/year
Adult Exposure Duration	EDa	1	Years
Youth Exposure Duration	EDy	0	Years
Child Exposure Duration	EDc	1	Years
Averaging Time (carc.)	ATc	24500	Days
Adult Avg Time (non-carc.)	ATna	350	Days
Child Avg Time (non-carc.)	ATnc	350	Days
Worker Dispersion Factor	Chi over Q	2.62E-01	sec/cubic meter
	Job Duration	NA	Years
	Flow Rate	10.4	gpm

Carcinogenic:

	Liquid Conc (mg/l)	Slope Factor SF		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Benzene	7.00E-03	2.90E-02	(b)	4.60E-03	1.21E-03	1.41E-06	4.06E-10
Carbon Disulfide	6.00E-03	NA		3.94E-03	1.03E-03	1.20E-06	0.00E+00
Not used	0.00E+00	NA		0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichlorethene	4.60E-02	1.20E+00	(f)	3.15E-02	8.26E-03	9.64E-06	1.16E-07
Not used	0.00E+00	NA		0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloroethene	5.00E-03	NA		3.29E-03	8.61E-04	1.00E-06	0.00E+00
2-Butanone	1.10E-02	NA		7.23E-03	1.89E-03	2.21E-06	0.00E+00
Carbon Tetrachloride	1.46E-01	1.30E-01	(b)	9.59E-02	2.51E-02	2.93E-07	3.81E-08
Chloroform	1.90E-02	6.10E-02	(f)	1.25E-02	3.27E-03	3.82E-06	3.09E-09
Tetrachloroethene	1.70E-02	1.80E-03	(h)	1.12E-02	2.93E-03	3.41E-06	6.14E-11
Toluene	4.00E-03	NA		2.63E-03	6.89E-04	8.03E-09	0.00E+00
Total Xylenes	7.00E-03	NA		4.60E-03	1.21E-03	1.41E-06	0.00E+00
Trichloroethene	2.45E-01	1.70E-02	(c)	1.61E-01	4.22E-02	4.92E-07	8.36E-09
Totals							1.66E-07

Non-carcinogenic:

	Liquid Conc (mg/l)	RfC/RfD(a)		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Benzene	7.00E-03	NA		4.60E-03	1.21E-03	9.64E-07	0.00E+00
Carbon Disulfide	6.00E-03	1.00E-02	(a,b)	3.94E-03	1.03E-03	8.43E-07	8.43E-06
Not used	0.00E+00	NA		0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichlorethene	4.60E-02	9.00E-03	(d)	3.15E-02	8.26E-03	6.75E-06	7.50E-04
Not used	0.00E+00	NA		0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloroethene	5.00E-03	2.00E-02	(d)	3.29E-03	8.61E-04	7.03E-07	3.51E-06
2-Butanone	1.10E-02	NA		7.23E-03	1.89E-03	1.55E-06	0.00E+00
Carbon Tetrachloride	1.46E-01	7.00E-03	(d)	9.59E-02	2.51E-02	2.05E-05	2.93E-03
Chloroform	1.90E-02	1.00E-02	(d)	1.25E-02	3.27E-03	2.67E-06	2.67E-04
Tetrachloroethene	1.70E-02	1.00E-02	(d)	1.12E-02	2.93E-03	2.39E-06	2.39E-04
Toluene	4.00E-03	2.00E-01	(d)	2.63E-03	6.89E-04	5.62E-07	2.81E-06
Total Xylenes	7.00E-03	2.00E+00	(d)	4.60E-03	1.21E-03	9.64E-07	4.92E-07
Trichloroethene	2.45E-01	NA		1.61E-01	4.22E-02	3.44E-05	0.00E+00
Totals							4.31E-03

(a)Subchronic Oral RfD utilized where Subchronic Inhalation RfC not available. Subchronic values not available on IRIS.
(b)Inhalation value from IRIS.
(c)Inhalation value from HEAST, Annual, FY 1991.
(d)Oral value from IRIS.
(e)Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f)Inhalation Slope Factor from HEAST, Annual, 1991, correllated with IRIS.
(h)Calculated from Inhalation Unit Risk, HEAST, Annual, 1991.

Flow Rate = Total tank volume / 480 minutes
Source = Liquid Concentration * Flow Rate * Liters per gallon / seconds per minute
Air concentration = source * (X/Q)
Intake = (Air concentration * IR * ET * EF * ED) / (BW * AT)
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD

Risk Calculation Worksheet

Woman Creek Interim Action, OU-2, Alternative 4
Influent Storage Tank Rupture (8,000 gal)
Exposure of Other Site Personnel

Written: 21-Aug-91
Author: DCPalmer
Printed: 27-Aug-91

Constants:

Liter Per Gal		3.7853		Adult Body Weight	BWa	70	kg
Sec Per Min		60		Child Body Weight	BWc	15	kg
R		62.37	mmHg l/gmole K	Adult Inhalation Rat	IRa	0.83	Cubic meters/hour
N/V		3.28E+01		Worker Inhalation R	IRw	2.5	Cubic meters/hr
kg/mg		1.00E-06		Child Inhalation Rat	IRc	0.625	Cubic meters/hour
gm/kg		1.00E+03					
gm/mg		1.00E-03					
m3/ml		1.00E-06					

Operationing Release Parameters

Exposure Time	ET	8	Hours/day
Exposure Frequency	EF	1	Days/year
Adult Exposure Duration	EDa	1	Years
Youth Exposure Duration	EDy	0	Years
Child Exposure Duration	EDc	1	Years
Averaging Time (carc.)	ATc	24500	Days
Adult Avg Time (non-carc.)	ATna	350	Days
Child Avg Time (non-carc.)	ATnc	350	Days
Worker Dispersion Factor	Chi over Q	1.21E-01	sec/cubic meter
	Job Duration	NA	Years
	Flow Rate	16.7	gpm

Carcinogenic:

	Liquid Conc (mg/l)	Slope Factor SF		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Benzene	7.00E-03	2.90E-02	(b)	7.36E-03	8.91E-04	1.04E-06	3.01E-10
Carbon Disulfide	6.00E-03	NA		6.31E-03	7.63E-04	8.90E-09	0.00E+00
Not used	0.00E+00	NA		0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichlorethene	4.80E-02	1.20E+00	(f)	5.05E-02	6.11E-03	7.12E-06	8.55E-06
Not used	0.00E+00	NA		0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloroethene	5.00E-03	NA		5.26E-03	6.36E-04	7.42E-09	0.00E+00
2-Butanone	1.10E-02	NA		1.16E-02	1.40E-03	1.63E-08	0.00E+00
Carbon Tetrachloride	1.46E-01	1.30E-01	(b)	1.54E-01	1.86E-02	2.17E-07	2.82E-08
Chloroform	1.90E-02	8.10E-02	(f)	2.00E-02	2.42E-03	2.82E-08	2.28E-09
Tetrachloroethene	1.70E-02	1.80E-03	(h)	1.79E-02	2.16E-03	2.52E-08	4.54E-11
Toluene	4.00E-03	NA		4.21E-03	5.09E-04	5.93E-09	0.00E+00
Total Xylenes	7.00E-03	NA		7.36E-03	8.91E-04	1.04E-08	0.00E+00
Trichloroethene	2.45E-01	1.70E-02	(c)	2.58E-01	3.12E-02	3.64E-07	6.18E-09
Totals							1.22E-07

Non-carcinogenic:

	Liquid Conc (mg/l)	RfC/RfD(a)		Source (mg/sec)	Air Conc (mg/m3)	Intake (mg/kg/day)	Risk
Benzene	7.00E-03	NA		7.36E-03	8.91E-04	7.27E-07	0.00E+00
Carbon Disulfide	6.00E-03	1.00E-02	(a,b)	6.31E-03	7.63E-04	8.90E-09	8.90E-07
Not used	0.00E+00	NA		0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichlorethene	4.80E-02	9.00E-03	(d)	5.05E-02	6.11E-03	7.12E-06	7.91E-06
Not used	0.00E+00	NA		0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloroethene	5.00E-03	2.00E-02	(d)	5.26E-03	6.36E-04	7.42E-09	3.71E-07
2-Butanone	1.10E-02	NA		1.16E-02	1.40E-03	1.63E-08	0.00E+00
Carbon Tetrachloride	1.46E-01	7.00E-03	(d)	1.54E-01	1.86E-02	2.17E-07	3.09E-05
Chloroform	1.90E-02	1.00E-02	(d)	2.00E-02	2.42E-03	2.82E-08	2.82E-06
Tetrachloroethene	1.70E-02	1.00E-02	(d)	1.79E-02	2.16E-03	2.52E-08	2.52E-06
Toluene	4.00E-03	2.00E-01	(d)	4.21E-03	5.09E-04	5.93E-09	2.97E-06
Total Xylenes	7.00E-03	2.00E+00	(d)	7.36E-03	8.91E-04	1.04E-08	5.19E-09
Trichloroethene	2.45E-01	NA		2.58E-01	3.12E-02	3.64E-07	0.00E+00
Totals							4.55E-05

(a)Subchronic Oral RfD utilized where Subchronic Inhalation RfC not available. Subchronic values not available on IRIS.
(b)Inhalation value from IRIS.
(c)Inhalation value from HEAST, Annual, FY 1991.
(d)Oral value from IRIS.
(e)Subchronic RfD value from HEAST, Annual, FY 1991. RfC not available.
(f)Inhalation Slope Factor from HEAST, Annual, 1991, correllated with IRIS.
(h)Calculated from Inhalation Unit Risk, HEAST, Annual, 1991.

Flow Rate = Total tank volume / 480 minutes
Source = Liquid Concentration * Flow Rate * Liters per gallon / seconds per minute
Air concentration = source * (X/Q)
Intake = {Air concentration * IR * ET * EF * ED} / {BW * AT}
Risk (for cancer) = Intake * Slope Factor
Risk (non-cancer) = Intake / RfC or RfD

Calculation of X/Q Values (CS-53)
Woman Creek IM/IRA

Written: DCP 07-Aug-91 Printed: 12-Aug-91

Annual Averages

Avg Wind Speed 5 Meters per second

D (Neutral)

Direction	Sector	Distance (meters)	Average Annual Frequency	sigma-y	sigma-z	X/Q	Average X/Q
Distances to boundary							
E	5	NA	0.107	NA	NA	NA	NA
S	9	NA	0.066	NA	NA	NA	NA
NNE	2	NA	0.029	NA	NA	NA	NA
Distance from CS-53 to:							
T903A		393	0.019	3.08E+01	1.87E+01	1.10E-04	2.10E-06
Bldg. 900		229	0.056	1.81E+01	1.19E+01	2.96E-04	1.66E-05
				0.00E+00	0.00E+00	1.00E+00	0.00E+00

Accident conditions

Avg Wind Speed 1 Meter per second

F (Very Stable, Short Term)

Direction	Sector	Distance (meters)	sigma-y	sigma-z	X/Q
Distance to Boundary					
E	5	NA	NA	NA	NA
S	9	NA	NA	NA	NA
NNE	2	NA	NA	NA	NA
Distance from CS-53 to:					
T903A	4	393	4.07E+00	1.91E+00	4.09E-02
Bldg. 900	11	229	2.52E+00	1.38E+00	9.19E-02

Calculation of X/Q Values (CS-55)
Woman Creek IM/IRA

Written: DCP 07-AUG-91 Printed: 12-Aug-91

Annual Averages

Avg Wind Speed 5 Meters per second

D (Neutral)

Direction	Sector	Distance (meters)	Average Annual Frequency	sigma-y	sigma-z	X/Q	Average X/Q
Distances to boundary							
E	5	NA	0.107	NA	NA	NA	NA
S	9	NA	0.066	NA	NA	NA	NA
NNE	2	NA	0.029	NA	NA	NA	NA
Distance from CS-55 to:							
T903A		114	0.030	9.07E+00	6.32E+00	1.11E-03	3.33E-05
Bldg. 900		233	0.029	1.84E+01	1.20E+01	2.87E-04	8.33E-06
				0.00E+00	0.00E+00	1.00E+00	0.00E+00

Accident conditions

Avg Wind Speed 1 Meter per second

F (Very Stable, Short Term)

Direction	Sector	Distance (meters)	sigma-y	sigma-z	X/Q
Distance to Boundary					
E	5	NA	NA	NA	NA
S	9	NA	NA	NA	NA
NNE	2	NA	NA	NA	NA
Distance from CS-55 to:					
T903A	4	114	1.35E+00	8.99E-01	2.62E-01
Bldg. 900	11	233	2.56E+00	1.39E+00	8.95E-02

Calculation of X/Q Values (Transfer Station)
Woman Creek IM/IRAP

Written: DCP 07-Aug-91 Printed: 12-Aug-91

Annual Averages

Avg Wind Speed 5 Meters per second

D (Neutral)

Direction	Sector	Distance (meters)	Average Annual Frequency	sigma-y	sigma-z	X/Q	Average X/Q
Distances to boundary							
E	5	NA	0.107	NA	NA	NA	NA
S	9	NA	0.066	NA	NA	NA	NA
NNE	2	NA	0.029	NA	NA	NA	NA
Distance from Transfer Station to:							
T903A		305	0.065	2.40E+01	1.52E+01	1.75E-04	1.14E-05
Bldg. 900		38	0.039	3.03E+00	2.22E+00	9.46E-03	3.69E-04
				0.00E+00	0.00E+00	1.00E+00	0.00E+00

Accident conditions

Avg Wind Speed 1 Meter per second

F (Very Stable, Short Term)

Direction	Sector	Distance (meters)	sigma-y	sigma-z	X/Q
Distance to Boundary					
E	5	NA	NA	NA	NA
S	9	NA	NA	NA	NA
NNE	2	NA	NA	NA	NA
Distance from Transfer Station to:					
T903A	4	305	3.25E+00	1.64E+00	5.98E-02
Bldg. 900	11	38	5.09E-01	4.60E-01	1.36E+00

Calculation of X/Q Values (Pipeline Midpoint)
Woman Creek IM/IRAP

Written: DCP 07-Aug-91 Printed: 12-Aug-91

Annual Averages

Avg Wind Speed 5 Meters per second

D (Neutral)

Direction	Sector	Distance (meters)	Average Annual Frequency	sigma-y	sigma-z	X/Q	Average X/Q
Distances to boundary							
E	5	NA	0.107	NA	NA	NA	NA
S	9	NA	0.066	NA	NA	NA	NA
NNE	2	NA	0.029	NA	NA	NA	NA
Distance From Pipeline Midpoint:							
T903A		201	0.034	1.59E+01	1.06E+01	3.78E-04	1.29E-05
Bldg. 900		160	0.028	1.27E+01	8.62E+00	5.82E-04	1.63E-05
				0.00E+00	0.00E+00	1.00E+00	0.00E+00

Accident conditions

Avg Wind Speed 1 Meter per second

F (Very Stable, Short Term)

Direction	Sector	Distance (meters)	sigma-y	sigma-z	X/Q
Distance to Boundary					
E	5	NA	NA	NA	NA
S	9	NA	NA	NA	NA
NNE	2	NA	NA	NA	NA
Distance from Pipeline Midpoint to:					
T903A	4	201	2.24E+00	1.27E+00	1.12E-01
Bldg. 900	11	160	1.83E+00	1.11E+00	1.57E-01

Calculation of X/Q Values (Building 231B)
Woman Creek IM/IRAP

Written: DCP 07-Aug-91 Printed: 12-Aug-91

Annual Averages

Avg Wind Speed 5 Meters per second

D (Neutral)

Direction	Sector	Distance (meters)	Average Annual Frequency	sigma-y	sigma-z	X/Q	Average X/Q
Distances to boundary							
E	5	NA	0.107	NA	NA	NA	NA
S	9	NA	0.066	NA	NA	NA	NA
NNE	2	NA	0.029	NA	NA	NA	NA
Distance from Bldg. 231B to:							
Bldg. 231A		29	0.131	2.32E+00	1.70E+00	1.61E-02	2.11E-03
Bldg. 223		76	0.107	6.06E+00	4.32E+00	2.43E-03	2.60E-04
Bldg. 552		38	0.102	3.03E+00	2.22E+00	9.46E-03	9.65E-04

Accident conditions

Avg Wind Speed 1 Meter per second

F (Very Stable, Short Term)

Direction	Sector	Distance (meters)	sigma-y	sigma-z	X/Q
Distance to Boundary					
E	5	NA	NA	NA	NA
S	9	NA	NA	NA	NA
NNE	2	NA	NA	NA	NA
Distance from Bldg. 231B to:					
Bldg. 231A	4	29	4.00E-01	3.90E-01	2.04E+00
Bldg. 223	11	76	9.44E-01	7.02E-01	4.80E-01

Calculation of X/Q Values (Walnut Creek Treatment Facility)
Woman Creek IM/IRAP

Written: DCP 07-Aug-91 Printed: 12-Aug-91

Annual Averages

Avg Wind Speed 5 Meters per second

D (Neutral)

Direction	Sector	Distance (meters)	Average Annual Frequency	sigma-y	sigma-z	X/Q	Average X/Q
Distances to boundary							
E	5	NA	0.107	NA	NA	NA	NA
S	9	NA	0.066	NA	NA	NA	NA
NNE	2	NA	0.029	NA	NA	NA	NA
Distance from Walnut Creek Trmt. Facility to :							
Bldg. 900		241	0.065	1.91E+01	1.24E+01	2.70E-04	1.75E-05
Bldg. 995/998 Area		252	0.030	1.99E+01	1.29E+01	2.48E-04	7.45E-06

Accident conditions

Avg Wind Speed 1 Meter per second

F (Very Stable, Short Term)

Direction	Sector	Distance (meters)	sigma-y	sigma-z	X/Q
Distance to Boundary					
E	5	NA	NA	NA	NA
S	9	NA	NA	NA	NA
NNE	2	NA	NA	NA	NA
Distance from Walnut Crekk Trmt. Facility to:					
Bldg. 900	4	241	2.64E+00	1.42E+00	8.51E-02
Bldg. 995/998 Area	11	252	2.74E+00	1.46E+00	7.96E-02

Calculation of X/Q Values (Building 910)
Woman Creek IM/IRAP

Written: DCP 07-Aug-91 Printed: 12-Aug-91

Annual Averages

Avg Wind Speed 5 Meters per second

D (Neutral)

Direction	Sector	Distance (meters)	Average Annual Frequency	sigma-y	sigma-z	X/Q	Average X/Q
Distances to boundary							
E	5	NA	0.107	NA	NA	NA	NA
S	9	NA	0.066	NA	NA	NA	NA
NNE	2	NA	0.029	NA	NA	NA	NA
Distance from Bldg. 910 to:							
Bldg. 980		38	0.066	3.03E+00	2.22E+00	9.46E-03	6.24E-04
Bldg. 963		114	0.131	9.07E+00	6.32E+00	1.11E-03	1.45E-04
				0.00E+00	0.00E+00	1.00E+00	0.00E+00

Accident conditions

Avg Wind Speed 1 Meter per second

F (Very Stable, Short Term)

Direction	Sector	Distance (meters)	sigma-y	sigma-z	X/Q
Distance to Boundary					
E	5	NA	NA	NA	NA
S	9	NA	NA	NA	NA
NNE	2	NA	NA	NA	NA
Distance from Bldg. 910 to:					
Bldg. 980	4	38	5.09E-01	4.60E-01	1.36E+00
Bldg. 963	11	114	1.35E+00	8.99E-01	2.62E-01

Calculation of X/Q Values (Building 891)
Woman Creek IM/IRAP

Written: DCP 07-Aug-91 Printed: 12-Aug-91

Annual Averages

Avg Wind Speed 5 Meters per second

D (Neutral)

Direction	Sector	Distance (meters)	Average Annual Frequency	sigma-y	sigma-z	X/Q	Average X/Q
Distances to boundary							
E	5	NA	0.107	NA	NA	NA	NA
S	9	NA	0.066	NA	NA	NA	NA
NNE	2	NA	0.029	NA	NA	NA	NA
Distance from Bldg. 891 to:							
Bldg. 881		191	0.019	1.51E+01	1.01E+01	4.16E-04	7.91E-06
Bldg. 863		229	0.03	1.81E+01	1.19E+01	2.96E-04	8.89E-06
Bldg. 865		229	0.056	1.81E+01	1.19E+01	2.96E-04	1.66E-05
Bldg. 886		191	0.039	1.51E+01	1.01E+01	4.16E-04	1.62E-05
T903A		457	0.107	3.58E+01	2.11E+01	8.43E-05	9.02E-06

Accident conditions

Avg Wind Speed 1 Meter per second

F (Very Stable, Short Term)

Direction	Sector	Distance (meters)	sigma-y	sigma-z	X/Q
Distance to Boundary					
E	5	NA	NA	NA	NA
S	9	NA	NA	NA	NA
NNE	2	NA	NA	NA	NA
Distance from Bldg. 891 to:					
Bldg. 881	4	191	2.14E+00	1.23E+00	1.21E-01
Bldg. 886	11	191	2.14E+00	1.23E+00	1.21E-01
Bldg. 865	4	229	2.52E+00	1.38E+00	9.19E-02
Bldg. 886	4	191	2.14E+00	1.23E+00	1.21E-01
T903A	4	457	4.66E+00	2.10E+00	3.26E-02

APPENDIX I

TRANSPORTATION ANALYSIS

SURFACE WATER IM/IRAP/EA

WOMAN CREEK BASIN

OPERABLE UNIT NO. 2

APPENDIX I

TRANSPORTATION ANALYSIS

With the exception of the no action alternative, all of the IM/IRA Alternatives involve transportation activities during construction of the surface water collection system and treatment facilities and during subsequent operation of the collection/treatment processes. It is anticipated that primary shipments and vehicle movements during construction and normal operations will be by truck. Both onsite and offsite shipment of materials will be required to support the alternatives. Potential transportation impacts to the human environment include exposure to the radioactive or hazardous material being hauled, latent effects associated with vehicle pollution, and traumatic injuries and fatalities from accidents.

An estimate of emission rates for operation of a typical truck are presented below:

Truck Emission Rate[a]

Pollutant	Emission Rate (g/km)
Carbon Monoxide	22.0
Hydrocarbons	3.3
Nitrogen Oxide	13.0
Sulfur Oxide	5.1
Particulates[b]	0.8

[a] From Rao et. al., (1982)

[b] Does not include fugitive dust

Estimates of health effects per kilometer for truck transportation are (Rao et. al., 1982):

Source	LCFs[a]	Injuries	Fatalities
Pollutants	1×10^{-7}	-	-
Accidents	-	5.1×10^{-7}	3.0×10^{-8}

[a] Latent cancer fatalities

The above accident impacts are average values over multiple population zones (urban, suburban, rural) and are derived from Department of Transportation (DOT) nationwide statistics. For the proposed IM/IRA Alternatives, it is anticipated that the majority of material receipts for construction and routine operations will originate within the Denver Metropolitan area, within a 50-mile (80 km) radius of the plant site. To place transportation impacts to the general public in perspective, given the health effects tabulated above, approximately 60,000 round-trop truck shipments (with a one-way distance of 50 miles) would be required to cause one additional latent cancer fatality. Approximately 210,000 truck shipments would be required to result in one additional traumatic fatality.

Transportation of radioactive and hazardous materials at the Rocky Flats Plant must comply with the regulations and guidelines established by the On-Site Transportation Manual (EG&G, 1991) for packaging, marking, labeling, handling, transporting, and storing materials. The On-Site Transportation Manual is based on current rules and regulations (CFR Titles 10, 40, 49), applicable DOE orders, and ALARA exposure principals. Vehicle and driver qualifications are maintained in accordance with Federal Motor Carrier Safety Regulations. Emergency response guidance for transportation-related accidental spills or container failures is provided in Section 17 of the On-Site Transportation Manual. More detailed notification, response, and recovery action procedures are specified in the Rocky Flats Emergency Plan and the Hazardous Materials Response Team Manual. A HAZ-MAT team would respond to an emergency condition and would identify material hazard classes and make appropriate notifications; isolate and establish restricted zones; and take any necessary actions to contain, control, and prevent the spread of hazardous materials.

An evaluation of transportation impacts for each IM/IRA Alternative is presented below:

IM/IRA Alternative No. 1

IM/IRA Alternative No. 1 involves transportation activities during construction and routine operations.

Construction transportation activities primarily involve the movement of a limited amount of equipment for excavation/grading, pipeline installation, and deliveries of construction materials. Direct impacts would include short-term effects common to all construction projects, including dust generation, pollution, noise, and increased traffic levels. These impacts would be insignificant, considering the scope of this Alternative. Potential personnel exposures from fugitive dust are presented in Appendix H. Approximately 83 cubic yards of excavated soil for the sumps may be classified as mixed waste and require offsite disposal. Potential impacts would be very small, as discussed below. Possible human health impacts resulting from construction transportation related emissions and accidents would also be very small, given the tabulated emissions and health effects estimates presented at the beginning of this Appendix.

Routine operations will require the delivery of process treatment chemicals (iron, lime, GAC), tank truck transfer of untreated and partially treated water, occasional vehicle travel for inspection and maintenance of the collection system sumps, and offsite disposal of materials that will likely be classified as hazardous mixed waste. Based on collection system design flow rates, 160 water transfer trips per year will be required between the transfer station and the treatment system at Building 231B. An additional 140 water transfer trips per year will be required between Building 231B and Building 374, for final surface water treatment. An annual total round trip travel distance of approximately 600 miles would be required to support transfer operations. All travel would be confined to the plant site on paved roads. Occasional travel to the collection system sumps will also be required for periodic inspection and maintenance activities. Annual hazardous mixed waste disposal estimates include 2 cubic yards of sediment from the sumps, 1 cubic yard of GAC, and 10 cubic yards of solidified process sludge. Offsite transportation impacts associated with the hazardous/radioactive nature of the material would be very low, as evaluated in DOE (1991b). Relatively low concentrations of contaminants, disposal site waste acceptance criteria, and compliance with DOT packaging and transport requirements all contribute to a very low potential for health effects from normal transport and accidents. Health impacts resulting from both onsite and offsite transportation emissions and accidents would be small, considering the relatively low number of total miles traveled and the transportation health effects estimates presented at the beginning of this Appendix.

IM/IRA Alternative No. 2

IM/IRA Alternative No. 2 involves transportation activities during the construction phase as well as during subsequent routine operations.

During construction, transportation would include the movement of a limited amount of construction equipment for excavation/grading, fabrication of a 20,000-gallon storage tank, deliveries of construction materials, and potential offsite disposal of excavated soil for the sumps. As with Alternative No. 1, direct impacts would include those short-term effects common to all construction projects, including dust generation, pollution, noise, and increased traffic levels. From the scope of the alternatives, none of these impacts would be expected to be significant. Potential personnel exposures from fugitive dust are presented in Appendix H. Possible personnel impacts resulting from transportation-related emissions and accidents would be very small, based on the tabulated emissions and health effects estimates presented at the beginning of the Appendix.

Routine operations will require the delivery of process treatment chemicals (iron, lime, GAC) and the offsite disposal of materials that will likely be classified as hazardous mixed waste. Annual hazardous mixed waste disposal estimates include 2 cubic yards of sediment from the sumps, 1 cubic yard of GAC, and 10 cubic yards of solidified process sludge/cake. Offsite transportation impacts associated with the hazardous/ radioactive nature of the material would be very low as determined in DOE (1991b). Relatively low

concentrations of contaminants, disposal site waste acceptance criteria, and compliance with DOT packaging and transport requirements all contribute to very low health effects. Given the small number of offsite shipments and the tabulated emissions and health estimates presented in this Appendix, health impacts resulting from offsite transportation emissions and accidents are anticipated to be very small.

Operational activities will also include periodic inspection and maintenance of the collection system sumps and piping system and transfer of treated water (~10 trips) from the South Walnut Creek IM/IRA treatment facility to the South Intercepter Ditch. Vehicle miles traveled to support these operations will be very small and will result in negligible impacts.

IM/IRA Alternative No. 3

As with IM/IRA Alternative No. 1 and No. 2, Alternative No. 3 involves transportation activities during construction and routine operations.

Construction transportation activities would be very similar to Alternative No. 1 and involve the movement of a limited amount of equipment for excavation/grading, pipeline installation, deliveries of construction materials, and potential offsite disposal of excavated soil for the sumps. Additional transportation activity would be required to support installation of the air stripping system outside of Building 910 and installation of a 5,000-gallon equalization tank. As with IM/IRA Alternative No. 1 and No. 2, construction transportation impacts would be very small. Soils excavated for the collection system sumps (83 yd^3) will possibly be classified as hazardous mixed waste and require offsite disposal. Associated impacts would be very low, as determined from DOE (1991b).

Routine operations will require the delivery of process treatment chemicals (GAC), tank truck transfer of collected surface water, periodic vehicle travel for inspection and maintenance of the collection system, and offsite disposal of GAC. Approximately 160 tank truck trips a year (400 round trip miles) will be required to transport collected surface water from the transfer station to Building 910. Annual offsite disposal requirements would primarily require the shipment of spent GAC (2 yd^3) and solidified brine concentrate from the evaporators. In general, routine transportation activities will be less than those for IM/IRA Alternative No. 1 and No. 2 and will have very small impacts.

IM/IRA Alternative No. 4

Construction activities would be similar to the other alternatives and involve the movement of construction equipment, pipeline installation, and deliveries of construction materials. Transportation activities would include a chemical precipitation/filtration system and a 5,000-gallon equalization tank adjacent to

Building 891. As with the other IM/IRA Alternatives (No.1, 2, and 3), transportation impacts would be very small. Also, soils excavated for the collection system sumps (83 yd^3) will possibly be handled as a hazardous mixed waste and require offsite disposal. Associated transportation impacts would be very small, as in the other alternatives.

Routine transportation activities will be somewhat lower than the other IM/IRA Alternatives, because the need to transfer collected surface water by tank truck on plant site is eliminated. As in the other cases, routine transportation impacts would be very small.