

**Appendix 3D.** Reduction-oxidation (redox) sensitive constituents for peepers in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, July 2003.

[mg/L, milligrams per liter; µg/L, micrograms per liter; --, data unavailable; P, short peeper; LP long peeper; <, less than]

Redox Parameters								
Site name	Sample device	Collection date	Sulfide (mg/L)	Ammonia (mg/L)	Iron, ferrous (mg/L)	Duplicate <sup>1</sup> iron, ferrous (mg/L)	Methane (µg/L)	Duplicate methane (µg/L)
Peepers- July 2003								
WBSP1-1	P	7/7/2003	< 0.68	--	8.01	9.70	144	150
WBSP1-2	P	7/7/2003	< 1.25	< 7.3	9.01	31.45	<42.1	<80.7
WBSP1-3	P	7/7/2003	< 0.96	--	6.33	25.78	<47.5	<35.0
WBSP1-4	P	7/7/2003	< 1.04	< 17.5	3.42	9.70	<41.9	<38.2
WBSP1-5	P	7/7/2003	< 0.89	< 6.7	0.66	7.48	99.2	<45.4
WBSP1-6	P	7/7/2003	< 1.14	< 12.5	0.74	10.23	<43.6	<46.7
WBSP1-7	P	7/7/2003	< 1.56	< 5.8	0.74	10.92	<42.9	<32.7
WBSP1-8	P	7/7/2003	< 0.66	< 5.8	6.48	14.98	<49.3	83.9
WBSP1-9	P	7/7/2003	< 0.96	< 8.8	9.70	10.23	49.6	48.5
WBSP1-10	P	7/7/2003	< 0.89	< 9.7	9.08	5.41	<41.6	<39.9
WBSP1-11	P	7/7/2003	< 0.93	< 6.3	7.48	5.33	<41.9	<43.6
WBSP1-12	P	7/7/2003	< 0.89	< 10.9	6.02	5.71	<39.2	<43.7
WBSP1-13	P	7/7/2003	< 1.39	< 6.3	7.48	6.48	<36.6	<41.7
WBSP1-14	P	7/7/2003	< 0.86	< 7.3	8.40	8.40	<43.7	<38.1
WBSP1-15	P	7/7/2003	< 1.14	< 8.0	9.24	9.08	<44.5	<44.5
WBSP1-16	P	7/7/2003	< 0.89	< 6.3	9.01	8.09	<43.8	<46.2
WBSP1-17	P	7/7/2003	< 0.96	< 8.8	4.64	3.42	<44.1	<33.4
WBSP1-18	P	7/7/2003	< 1.25	< 6.3	3.03	4.49	<43.8	<40.3
WBSP1-19	P	7/7/2003	< 0.83	< 6.3	5.25	7.09	<42.4	<42.7
WBSP1-20	P	7/7/2003	< 1.14	< 5.8	13.53	9.70	<47.0	<43.4
WBSP1-21	P	7/7/2003	< 4.17	< 17.5	12.84	10.92	<39.4	<58.5
WBSP2-1	P	7/7/2003	--	--	0.43	--	<50.8	--
WBSP2-2	P	7/7/2003	<0.69	--	10.62	11.00	64.0	67
WBSP2-3	P	7/7/2003	0.5	--	12.61	12.76	<47.1	<48.6
WBSP2-4	P	7/7/2003	1.0	< 9.72	13.30	14.37	<42.4	<58.9
WBSP2-5	P	7/7/2003	<1.14	< 8.75	8.78	9.54	<59.6	<41.8
WBSP2-6	P	7/7/2003	< 1.14	< 9.72	8.93	8.47	<41.3	<59.6
WBSP2-7	P	7/7/2003	< 0.52	--	6.63	10.16	<52.4	62
Peepers - July 2003--Continued								
WBSP2-8	P	7/7/2003	<0.53	--	9.08	9.31	<40.2	<49.6
WBSP2-9	P	7/7/2003	<0.63	--	8.93	9.16	<49.2	<48.8
WBSP2-10	P	7/7/2003	< 0.66	--	7.48	7.17	<46.9	<93.7
WBSP2-11	P	7/7/2003	< 0.74	--	4.57	4.79	<50.4	<47.1
WBSP2-12	P	7/7/2003	< 0.68	--	3.88	4.11	<43.7	<44.0

**Appendix 3D.** Reduction-oxidation (redox) sensitive constituents for peepers in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, July 2003.—Continued

[mg/L, milligrams per liter; µg/L, micrograms per liter; --, data unavailable; P, short peeper; LP long peeper; &lt;, less than]

<b>Redox Parameters</b>								
Site name	Sample device	Collection date	Sulfide (mg/L)	Ammonia (mg/L)	Iron, ferrous (mg/L)	Duplicate <sup>1</sup> iron, ferrous (mg/L)	Methane (µg/L)	Duplicate methane (µg/L)
WBSP2-13	P	7/7/2003	< 0.69	--	3.65	2.88	<48.2	<48.2
WBSP2-14	P	7/7/2003	< 0.60	--	1.58	1.73	<42.7	<50.9
WBSP2-15	P	7/7/2003	< 0.60	--	1.35	1.50	<57.3	<71.8
WBSP2-16	P	7/7/2003	< 0.74	--	1.81	1.88	<41.6	<56.2
WBSP2-17	P	7/7/2003	< 0.63	--	5.25	5.94	<57.0	<49.0
WBSP2-18	P	7/7/2003	< 0.60	--	12.53	11.61	<46.7	<44.9
WBSP2-19	P	7/7/2003	< 0.64	--	11.38	11.38	<57.1	<43.4
WBSP2-20	P	7/7/2003	< 0.86	--	7.40	6.94	<49.1	<45.4
WBSP2-21	P	7/7/2003	< 0.78	--	4.64	6.10	<62.0	<61.5
WBSP3-1	P	7/7/2003	< 0.50	--	7.78	7.63	<45.1	<35.6
WBSP3-2	P	7/7/2003	< 0.45	< 8.75	6.79	7.02	<46.5	<49.0
WBSP3-3	P	7/7/2003	0.5	< 9.72	5.56	5.64	<44.9	<48.8
WBSP3-4	P	7/7/2003	< 0.46	< 9.72	4.64	4.95	<44.7	<35.1
WBSP3-5	P	7/7/2003	< 0.45	< 17.5	7.17	5.41	<42.6	<46.8
WBSP3-6	P	7/7/2003	< 0.46	< 17.5	9.47	10.00	<54.6	<40.9
WBSP3-7	P	7/7/2003	< 0.45	< 17.5	14.14	16.13	<47.0	<53.1
WBSP3-8	P	7/7/2003	< 0.51	< 8.75	19.04	23.41	<47.7	<45.5
WBSP3-9	P	7/7/2003	< 0.51	< 7.95	21.65	22.41	<44.9	<47.9
WBSP3-10	P	7/7/2003	< 0.50	< 14.6	15.75	18.51	<42.3	<48.3
WBSP3-11	P	7/7/2003	< 0.53	< 8.75	15.21	16.97	<46.9	<49.8
WBSP3-12	P	7/7/2003	< 0.47	--	13.99	--	<45.3	<40.3
WBSP3-13	P	7/7/2003	< 0.47	< 8.75	16.97	13.37	<45.5	<55.2
WBSP3-14	P	7/7/2003	< 1.25	--	19.50	20.11	<46.9	<51.6
WBSP3-15	P	7/7/2003	< 0.78	< 8.75	20.42	18.28	<61.6	<54.4
WBSP3-16	P	7/7/2003	< 0.69	< 9.72	16.90	17.28	<51.0	<53.1
WBSP3-17	P	7/7/2003	< 1.47	--	18.20	16.59	<45.5	<46.5
WBSP3-18	P	7/7/2003	< 0.52	< 9.72	13.07	15.98	<55.1	<48.6
Peepers-July 2003--Continued								
WBSP3-19	P	7/7/2003	< 0.50	< 17.5	16.74	17.05	<46.8	<46.8
WBSP3-20	P	7/7/2003	< 0.54	--	16.51	16.28	<43.3	<50.8
WBSP3-21	P	7/7/2003	--	--	18.89	17.66	<53.2	<56.2
WBSP4-1	P	7/11/2003	--	--	--	--	--	--
WBSP4-2	P	7/11/2003	--	--	--	--	--	--

**Appendix 3D.** Reduction-oxidation (redox) sensitive constituents for peepers in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, July 2003.—Continued

[mg/L, milligrams per liter; µg/L, micrograms per liter; --, data unavailable; P, short peeper; LP long peeper; <, less than]

Redox Parameters								
Site name	Sample device	Collection date	Sulfide (mg/L)	Ammonia (mg/L)	Iron, ferrous (mg/L)	Duplicate <sup>1</sup> iron, ferrous (mg/L)	Methane (µg/L)	Duplicate methane (µg/L)
WBSP4-3	P	7/11/2003	--	--	--	--	--	--
WBSP4-4	P	7/11/2003	--	--	--	--	--	--
WBSP4-5	P	7/11/2003	--	--	--	--	--	--
WBSP4-6	P	7/11/2003	--	--	--	--	--	--
WBSP4-7	P	7/11/2003	--	--	--	--	--	--
WBSP4-8	P	7/11/2003	--	--	--	--	--	--
WBSP4-9	P	7/11/2003	--	--	31.30	35.13	12,200	11,900
WBSP4-10	P	7/11/2003	--	--	13.76	13.76	11,600	11,100
WBSP4-11	P	7/11/2003	--	--	10.85	12.91	6,720	6,290
WBSP4-12	P	7/11/2003	--	--	9.93	11.77	4,500	1,850
WBSP4-13	P	7/11/2003	--	5.00	9.85	9.77	3,330	3,080
WBSP4-14	P	7/11/2003	0.94	2.84	28.92	12.84	3,450	3,420
WBSP4-15	P	7/11/2003	0.87	2.92	11.77	11.69	2,840	2,940
WBSP4-16	P	7/11/2003	1.28	2.81	42.56	44.70	2,350	2,430
WBSP4-17	P	7/11/2003	1.45	2.42	52.06	18.89	1,860	1,820
WBSP4-18	P	7/11/2003	0.89	1.67	11.00	12.07	1,390	1,360
WBSP4-19	P	7/11/2003	0.54	2.82	13.53	13.30	709	709
WBSP4-20	P	7/11/2003	0.34	3.13	14.83	12.30	496	579
WBSP4-21	P	7/11/2003	0.38	2.50	15.06	15.90	541	511
WBSP5-1	P	7/11/2003	--	--	--	--	--	--
WBSP5-2	P	7/11/2003	--	--	--	--	--	--
WBSP5-3	P	7/11/2003	--	--	--	--	9,100	9,720
WBSP5-4	P	7/11/2003	--	--	--	--	--	--
WBSP5-5	P	7/11/2003	--	--	--	--	--	--
WBSP5-6	P	7/11/2003	--	--	--	--	--	--
WBSP5-7	P	7/11/2003	--	--	12.30	--	7,940	7,880
Peepers-July 2003--Continued								
WBSP5-8	P	7/11/2003	1.08	2.92	8.78	13.45	3,650	3,910
WBSP5-9	P	7/11/2003	1.50	2.60	10.16	11.08	1,720	1,730
WBSP5-10	P	7/11/2003	1.90	2.50	6.71	8.01	1,850	1,760
WBSP5-11	P	7/11/2003	1.50	1.88	9.01	9.01	1,510	1,500
WBSP5-12	P	7/11/2003	1.33	2.02	8.09	7.78	1,560	1,510
WBSP5-13	P	7/11/2003	--	--	7.55	7.55	1,910	1,810
WBSP5-14	P	7/11/2003	1.32	1.61	20.96	8.32	1,940	1,930

**Appendix 3D.** Reduction-oxidation (redox) sensitive constituents for peepers in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, July 2003.—Continued

[mg/L, milligrams per liter; µg/L, micrograms per liter; --, data unavailable; P, short peeper; LP long peeper; &lt;, less than]

<b>Redox Parameters</b>								
Site name	Sample device	Collection date	Sulfide (mg/L)	Ammonia (mg/L)	Iron, ferrous (mg/L)	Duplicate <sup>1</sup> iron, ferrous (mg/L)	Methane (µg/L)	Duplicate methane (µg/L)
WBSP5-15	P	7/11/2003	1.29	0.78	17.59	10.46	1,730	1,710
WBSP5-16	P	7/11/2003	1.19	0.83	14.06	8.70	984	984
WBSP5-17	P	7/11/2003	0.71	2.08	11.61	11.92	437	434
WBSP5-18	P	7/11/2003	1.25	1.67	13.68	14.83	301	281
WBSP5-19	P	7/11/2003	1.06	--	15.52	14.14	276	270
WBSP5-20	P	7/11/2003	1.92	3.29	16.13	16.06	278	256
WBSP5-21	P	7/11/2003	--	--	--	--	269	310
WBSP6-1	P	7/17/2003	< 0.69	7.29	16.79	18.57	6,960	6,600
WBSP6-2	P	7/17/2003	< 0.57	10.00	15.48	16.87	5,100	4,950
WBSP6-3	P	7/17/2003	--	--	0.25	15.32	5,500	5,000
WBSP6-4	P	7/17/2003	< 0.60	4.06	10.84	12.62	4,000	3,910
WBSP6-5	P	7/17/2003	< 0.42	--	15.32	9.22	2,890	2,790
WBSP6-6	P	7/17/2003	< 0.51	3.75	12.77	10.84	1,730	1,720
WBSP6-7	P	7/17/2003	< 0.46	< 17.50	13.16	9.84	1,190	1,170
WBSP6-8	P	7/17/2003	0.04	3.75	12.84	--	695	728
WBSP6-9	P	7/17/2003	0.08	1.25	11.77	9.39	477	446
WBSP6-10	P	7/17/2003	0.28	2.50	13.08	10.76	431	421
WBSP6-11	P	7/17/2003	--	3.75	11.30	9.76	318	307
WBSP6-12	P	7/17/2003	0.06	2.50	8.29	8.60	334	370
WBSP6-13	P	7/17/2003	0.33	2.50	13.39	11.92	284	302
WBSP6-14	P	7/17/2003	0.18	2.50	16.25	20.35	339	327
WBSP6-15	P	7/17/2003	0.13	3.75	19.65	10.53	519	54
WBSP6-16	P	7/17/2003	0.22	3.75	18.57	13.55	800	817
WBSP6-17	P	7/17/2003	0.07	5.00	15.32	14.68	1,710	1,760
WBSP6-18	P	7/17/2003	--	6.25	22.05	13.78	282	171
Peepers-July 2003--Continued								
WBSP6-19	P	7/17/2003	0.45	5.00	9.47	10.99	3,250	2,980
WBSP6-20	P	7/17/2003	0.30	5.00	15.86	13.70	3,180	3,190
WBSP6-21	P	7/17/2003	0.29	7.50	19.42	12.31	3,190	3,000
WBLP7-1	LP	7/17/2003	0.10	2.88	21.12	10.45	149	139
WBLP7-2	LP	7/17/2003	0.55	0.78	20.97	6.28	<49.7	<46.7
WBLP7-3	LP	7/17/2003	0.60	< 2.19	10.69	2.11	<39.7	<44.3
WBLP7-4	LP	7/17/2003	< 0.45	0.51	6.51	1.80	<44.9	<44.7
WBLP7-5	LP	7/17/2003	< 0.35	0.33	3.65	1.35	<43.9	<45.4

**Appendix 3D.** Reduction-oxidation (redox) sensitive constituents for peepers in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, July 2003.—Continued

[mg/L, milligrams per liter; µg/L, micrograms per liter; --, data unavailable; P, short peeper; LP long peeper; <, less than]

Redox Parameters								
Site name	Sample device	Collection date	Sulfide (mg/L)	Ammonia (mg/L)	Iron, ferrous (mg/L)	Duplicate <sup>1</sup> iron, ferrous (mg/L)	Methane (µg/L)	Duplicate methane (µg/L)
WBLP7-6	LP	7/17/2003	<0.27	0.56	5.28	3.27	<50.5	<44.1
WBLP7-7	LP	7/17/2003	< 0.25	0.58	2.88	3.11	<51.4	<57.6
WBLP7-8	LP	7/17/2003	< 0.25	0.54	3.34	3.42	<49.1	<50.0
WBLP7-9	LP	7/17/2003	< 0.31	0.50	4.35	3.65	<47.8	<54.1
WBLP7-10	LP	7/17/2003	< 0.25	0.38	3.03	3.73	<51.6	<42.7
WBLP7-11	LP	7/17/2003	< 0.29	0.64	6.43	4.12	50.7	<41.3
WBLP7-12	LP	7/17/2003	0.03	0.50	--	3.50	61.1	<46.2
WBLP7-13	LP	7/17/2003	< 0.25	0.89	4.49	6.43	55.8	<46.3
WBLP7-14	LP	7/17/2003	< 0.25	0.75	4.19	6.79	<43.4	<48.3
WBLP7-15	LP	7/17/2003	< 0.25	2.25	3.57	4.18	<46.9	<51.3
WBLP7-16	LP	7/17/2003	0.03	0.75	2.88	3.11	<46.9	<41.8
WBLP7-17	LP	7/17/2003	< 0.25	0.75	1.49	7.44	<49.2	<38.6
WBLP7-18	LP	7/17/2003	< 0.25	1.25	--	9.37	<45.3	<44.5
WBLP7-19	LP	7/17/2003	0.03	1.25	4.19	8.47	<49.5	<45.6
WBLP7-20	LP	7/17/2003	< 0.25	1.43	--	7.75	<52.7	<46.5
WBLP7-21	LP	7/17/2003	< 0.32	0.75	5.58	6.36	<48.5	<47.9
WBLP7-22	LP	7/17/2003	0.03	0.88	6.43	8.99	<41.7	<39.6

<sup>1</sup> For peepers, duplicate ferrous iron values represent samples from the right peeper cells and are separate from the left cells reported as "ferrous iron" in the table. Due to this separation, some heterogeneities are observed.