

Table 1. Well completion data for all wells at the Fry Canyon demonstration site in Utah from 1996 through 1998

[—, no data available; **Site type:** B, well installed in the barrier gate material; BG, well installed in the barrier gravel zone; M, monitoring well; BW, well installed in barrier impermeable walls; **Construction method:** T, trenching; B, bored or augered; C, cable tool; V, driven; **Casing finish:** P, perforated; G, gravel screen; T, sand point.

Well	Date drilled	Site type	Altitude of land surface (feet)	Depth of well (feet)	Construction method	Diameter (inches)	Casing bottom (feet)	Casing finish and perforated interval (feet)	Table no. where other data are available
AFOFS1	08/29/97	B	5,363.65	9.97	T	2.00	9.97	P 7.97-9.97	5, 10
AFOR1S-1	08/29/97	B	5,363.69	9.39	T	.25	9.39	P 8.39-9.39	5
AFOR1-2	08/29/97	B	5,363.69	10.05	T	.25	10.05	P 9.05-10.05	5
AFOR1-3	08/29/97	B	5,363.69	10.05	T	.25	10.05	P 9.05-10.05	5
AFOR1S-4	08/29/97	B	5,363.69	9.39	T	.25	9.39	P 8.39-9.39	5
AFOR1-5	08/29/97	B	5,363.69	10.05	T	.25	10.05	P 9.05-10.05	5
AFOR1-6	08/29/97	B	5,363.69	10.05	T	.25	10.05	P 9.05-10.05	5
AFOR1S-7	08/29/97	B	5,363.69	9.39	T	.25	9.39	P 8.39-9.39	5
AFOR1-8	08/29/97	B	5,363.69	10.05	T	.25	10.05	P 9.05-10.05	5
AFOR2S-1	08/29/97	B	5,363.69	9.39	T	.25	9.39	P 8.39-9.39	5
AFOR2-2	08/29/97	B	5,363.69	10.05	T	.25	10.05	P 9.05-10.05	5
AFOR2-3	08/29/97	B	5,363.69	10.05	T	.25	10.05	P 9.05-10.05	—
AFOR2S-4	08/29/97	B	5,363.69	9.39	T	.25	9.39	P 8.39-9.39	5
AFOR2-5	08/29/97	B	5,363.69	10.05	T	.25	10.05	P 9.05-10.05	5
AFOR2-6	08/29/97	B	5,363.69	10.05	T	.25	10.05	P 9.05-10.05	—
AFOR2S-7	08/29/97	B	5,363.69	9.39	T	.25	9.39	P 8.39-9.39	5
AFOR2-8	08/29/97	B	5,363.69	10.05	T	.25	10.05	P 9.05-10.05	5
AFOT1	08/29/97	BG	5,363.89	10.24	T	2.00	10.24	P 5.24-10.24	2, 8, 10
AFOT2	08/29/97	BG	5,363.67	10.05	T	2.00	10.05	P 5.05-10.05	2, 8, 10
AFOT3	08/29/97	B	5,363.69	10.14	T	2.00	10.14	P 5.14-10.14	5, 8, 10, 13
DG-1	09/01/97	M	5,363.31	9.00	B	2.00	9.00	G 3.79-8.79	2, 10
DG-2	09/01/97	M	5,363.22	9.00	B	2.00	9.00	G 3.79-8.79	2, 8, 10
DG-2a	08/04/98	M	5,363.14	13.70	C	2.00	13.70	G 8.37-13.37	2, 10
DG-2b	08/04/98	M	5,362.61	13.00	C	2.00	13.00	G 7.66-12.66	2, 10
DG-3	08/31/97	M	5,362.26	9.00	B	2.00	9.00	G 3.79-8.79	2, 7, 10
DG-4	08/31/97	M	5,361.33	10.00	B	2.00	8.00	G 2.79-7.79	2, 6, 10
DP-1	12/16/96	M	5,360.46	6.85	V	2.00	6.85	T 3.60-6.52	10
DP-2	12/16/96	M	5,359.75	8.45	V	2.00	8.45	T 5.20-8.12	10
DP-3	12/16/96	M	5,363.05	5.72	V	2.00	5.72	T 2.47-5.39	10
DP-4	12/16/96	M	5,360.18	9.07	V	2.00	9.07	T 5.82-8.74	2, 10
DP-5	12/17/96	M	5,360.03	5.99	V	2.00	5.99	T 2.74-5.66	10
DS-1	08/05/98	BW	5,363.02	11.00	C	2.00	11.00	P 5.66-10.66	2, 10
DS-2	08/05/98	BW	5,363.57	11.00	C	2.00	11.00	P 5.66-10.66	2, 10
FC-1	09/10/96	M	5,382.38	14.50	B	2.00	14.50	G 9.17-14.17	2, 10
FC-2	09/10/96	M	5,363.96	11.50	B	2.00	11.50	G 6.17-11.17	2, 9, 10, 14
FC-3	09/11/96	M	5,367.32	15.50	B	2.00	15.50	G 10.17-15.17	2, 9, 10, 15
FC-4	09/11/96	M	5,368.25	17.50	B	2.00	17.50	G 12.17-17.17	2, 10
FC-5	09/12/96	M	5,371.51	20.00	B	2.00	20.00	G 14.66-19.66	2, 10
FC-7	09/12/96	M	5,368.34	13.50	B	2.00	13.50	G 10.17-13.17	2, 10
FC-8	09/13/96	M	5,371.44	20.00	B	2.00	20.00	G 14.66-19.66	2, 10
FC-16D	08/06/98	M	5,381.98	31.00	C	2.00	31.00	G 28.16-30.66	10
FC-16S	08/06/98	M	5,381.98	19.00	C	2.00	19.00	G 13.66-18.66	10
FC-17	08/08/98	M	5,373.98	21.75	C	2.50	21.75	G 16.25-21.25	2, 10
FC-18	08/07/98	M	5,365.01	13.00	C	2.50	13.00	G 10.66-12.66	2, 10
FC-19	08/07/98	M	5,367.64	19.50	C	2.50	19.50	G 14.17-19.17	2, 10

Table 1. Well completion data for all wells at the Fry Canyon demonstration site in Utah from 1996 through 1998—Continued

Well	Date drilled	Site type	Altitude of land surface (feet)	Depth of well (feet)	Construction method	Diameter (inches)	Casing bottom (feet)	Casing finish and perforated interval (feet)	Table no. where other data are available
PO4FS1	08/27/97	B	5,361.98	11.18	T	2.00	11.18	P 6.18-11.18	3, 10
PO4R1S-1	08/27/97	B	5,362.03	9.83	T	.25	9.83	P 9.33-9.83	3
PO4R1-2	08/27/97	B	5,362.03	11.16	T	.25	11.16	P 10.16-11.16	3
PO4R1-3	08/27/97	B	5,362.03	11.16	T	.25	11.16	P 9.66-11.16	3
PO4R1S-4	08/27/97	B	5,362.03	9.83	T	.25	9.83	P 9.33-9.83	3
PO4R1-5	08/27/97	B	5,362.03	11.16	T	.25	11.16	P 10.66-11.16	3
PO4R1-6	08/27/97	B	5,362.03	11.16	T	.25	11.16	P 9.16-11.16	3
PO4R1S-7	08/27/97	B	5,362.03	9.83	T	.25	9.83	P 9.33-9.83	3
PO4R1-8	08/27/97	B	5,362.03	11.16	T	.25	11.16	P 10.66-11.16	3
PO4R2S-1	08/27/97	B	5,362.03	9.83	T	.25	9.83	P 9.33-9.83	3
PO4R2-2	08/27/97	B	5,362.03	11.16	T	.25	11.16	P 10.66-11.16	3
PO4R2-3	08/27/97	B	5,362.03	11.16	T	.25	11.16	P 9.16-11.16	3
PO4R2S-4	08/27/97	B	5,362.03	9.83	T	.25	9.83	P 9.33-9.83	3
PO4R2-5	08/27/97	B	5,362.03	11.16	T	.25	11.16	P 10.66-11.16	3
PO4R2-6	08/27/97	B	5,362.03	11.16	T	.25	11.16	P 10.16-11.16	—
PO4R2S-7	08/27/97	B	5,362.03	9.83	T	.25	9.83	P 9.33-9.83	3
PO4R2-8	08/27/97	B	5,362.03	11.16	T	.25	11.16	P 10.66-11.16	3
PO4T1	08/27/97	BG	5,362.38	11.79	T	2.00	11.79	P 6.79-11.79	2, 6, 10
PO4T2	08/27/97	BG	5,362.01	11.50	T	2.00	11.50	P 6.50-11.50	2, 6, 10
PO4T3	08/27/97	B	5,362.03	11.14	T	2.00	11.14	P 6.14-11.14	3, 6, 10, 11
TI-1	08/05/98	M	5,363.76	11.00	C	2.00	11.00	G 8.66-10.66	2, 10
TI-2	08/05/98	M	5,363.34	14.00	C	2.00	14.00	G 8.66-13.66	2, 10
TI-3	08/04/98	M	5,363.53	13.00	C	2.00	13.00	G 7.66-12.66	2, 10
W-1	08/05/98	M	5,363.96	10.50	C	2.00	10.50	G 7.67-10.17	2, 10
W-2	08/04/98	M	5,362.34	14.00	C	2.00	14.00	G 8.66-13.66	2, 10
ZVIFS1	08/30/97	B	5,362.98	11.08	T	2.00	11.08	P 6.08-11.08	4, 10
ZVIR1S-1	08/30/97	B	5,362.92	9.75	T	.25	9.75	P 9.25-9.75	4
ZVIR1-2	08/30/97	B	5,362.92	11.08	T	.25	11.08	P 10.58-11.08	4
ZVIR1-3	08/30/97	B	5,362.92	11.08	T	.25	11.08	P 9.08-11.08	4
ZVIR1S-4	08/30/97	B	5,362.92	9.75	T	.25	9.75	P 9.25-9.75	4
ZVIR1-5	08/30/97	B	5,362.92	11.08	T	.25	11.08	P 10.58-11.08	4
ZVIR1-6	08/30/97	B	5,362.92	11.08	T	.25	11.08	P 9.08-11.08	4
ZVIR1S-7	08/30/97	B	5,362.92	9.75	T	.25	9.75	P 9.25-9.75	4
ZVIR1-8	08/30/97	B	5,362.92	11.08	T	.25	11.08	P 9.20-11.08	4
ZVIR2S-1	08/30/97	B	5,363.04	9.75	T	.25	9.75	P 9.25-9.75	4
ZVIR2-2	08/30/97	B	5,363.04	11.08	T	.25	11.08	P 9.20-11.08	4
ZVIR2-3	08/30/97	B	5,363.04	11.08	T	.25	11.08	P 9.08-11.08	—
ZVIR2S-4	08/30/97	B	5,363.04	9.75	T	.25	9.75	P 9.25-9.75	4
ZVIR2-5	08/30/97	B	5,363.04	11.08	T	.25	11.08	P 9.20-11.08	4
ZVIR2-6	08/30/97	B	5,363.04	11.08	T	.25	11.08	P 9.08-11.08	—
ZVIR2S-7	08/30/97	B	5,363.04	9.75	T	.25	9.75	P 9.25-9.75	4
ZVIR2-8	08/30/97	B	5,363.04	11.08	T	.25	11.08	P 9.20-11.08	4
ZVIT1	08/30/97	BG	5,362.92	11.02	T	2.00	11.02	P 6.02-11.02	2, 7, 10
ZVIT2	08/30/97	BG	5,363.03	11.31	T	2.00	11.31	P 6.31-11.31	2, 7, 10
ZVIT3	08/30/97	B	5,363.10	11.14	T	2.00	10.14	P 6.14-11.14	4, 7, 10, 12

Table 2. Discharge, physical properties, and results of chemical analyses for surface- and ground-water samples from sites near the permeable reactive barriers, Fry Canyon, Utah

[mg/L, milligrams per liter; µg/L, micrograms per liter; NA, not applicable; —, no data available; <, less than reporting limit; >, greater than reporting limit; **Discharge:** ft³/s, cubic feet per second; **Specific conductance:** µS/cm, microsiemens per centimeter at 25 degrees Celsius, measured in the field]

Location	Date	Discharge (ft ³ /s)	Specific con- ductance (µS/cm)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO ₃)	Pho- sphate, field (mg/L as PO ₄)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Magne- sium, dis- solved (mg/L as Mg)	Potas- sium, dis- solved (mg/L as K)	Sodium, dis- solved (mg/L as Na)	Sulfate, dis- solved (mg/L as SO ₄)
AFOT1	09/24/97	NA	2,670	7.2	246	—	—	—	—	—	—	—
AFOT1	10/30/97	NA	2,700	7.2	252	.35	410	50	160	10	110	1,490
AFOT1	11/19/97	NA	2,640	7.2	246	—	—	—	—	—	—	—
AFOT1	01/29/98	NA	2,660	7.2	296	—	440	70	150	8.7	150	1,480
AFOT1	04/22/98	NA	2,780	7.2	294	—	—	—	—	—	—	—
AFOT1	06/24/98	NA	2,730	7.3	296	—	450	40	160	10	110	1,720
AFO11	09/10/98	NA	2,800	6.9	322	—	—	—	—	—	—	—
AFOT1	12/16/98	NA	2,950	7.3	340	—	470	60	170	10	140	1,550
AFOT1	05/12/99	NA	2,930	7.2	346	—	480	85	170	10	180	1,575
AFOT1	08/11/99	NA	3,150	7.2	304	—	450	58	160	12	130	1,735
AFOT1	12/01/99	NA	3,060	7.1	314	—	510	—	190	11	160	—
AFOT1	06/14/00	NA	—	—	—	—	450	—	150	—	140	—
AFOT2	09/25/97	NA	2,630	7.2	258	—	—	—	—	—	—	—
AFOT2	10/30/97	NA	2,680	7.3	246	.70	380	60	150	9.6	120	1,440
AFOT2	11/19/97	NA	2,620	7.4	244	—	—	—	—	—	—	—
AFOT2	01/29/98	NA	2,830	7.1	296	—	540	140	190	8.8	220	1,500
AFOT2	04/22/98	NA	2,860	7.0	282	—	—	—	—	—	—	—
AFOT2	06/24/98	NA	2,740	7.2	278	—	400	50	140	9.8	150	1,580
AFOT2	09/10/98	NA	2,760	6.9	328	—	—	—	—	—	—	—
AFOT2	12/16/98	NA	2,980	7.1	363	—	400	80	140	9.6	170	1,380
AFOT2	05/12/99	NA	2,900	7.3	353	—	390	79	140	9.3	180	1,415
AFOT2	08/11/99	NA	3,170	7.1	308	—	530	57	180	12	110	1,715
AFOT2	12/01/99	NA	3,080	7.1	326	—	510	—	180	11	170	—
DG-1	09/25/97	NA	2,060	7.4	316	—	—	—	—	—	—	—
DG-1	10/30/97	NA	2,110	7.4	294	<2.0	130	120	60	7.7	280	680
DG-1	11/19/97	NA	2,050	7.5	298	<.20	—	—	—	—	—	—
DG-1	01/29/98	NA	2,040	7.6	282	<.20	130	110	60	6.3	270	690
DG-1	04/23/98	NA	2,010	7.3	282	<.20	—	—	—	—	—	—
DG-1	06/24/98	NA	2,110	7.2	314	<.20	130	110	60	6.7	260	690
DG-1	09/09/98	NA	1,890	7.3	326	—	—	—	—	—	—	—
DG-1	12/16/98	NA	2,160	7.4	320	—	130	100	60	7.3	260	650
DG-1	05/12/99	NA	2,180	7.5	320	—	140	100	70	6.9	260	700
DG-1	08/11/99	NA	2,400	7.4	338	—	210	81	90	9.0	250	920
DG-1	12/02/99	NA	2,730	7.3	328	—	250	—	100	8.6	260	—
DG-1	06/14/00	NA	—	—	—	—	250	—	94	—	230	—
DG-2	09/25/97	NA	2,130	7.4	296	<.20	—	—	—	—	—	—
DG-2	10/30/97	NA	2,350	7.2	288	<2.0	140	110	70	7.5	310	750
DG-2	11/19/97	NA	2,150	7.5	234	<.20	—	—	—	—	—	—
DG-2	01/29/98	NA	2,120	7.5	268	<.20	130	120	60	6.7	270	670
DG-2	04/23/98	NA	2,070	7.2	288	.40	—	—	—	—	—	—
DG-2	06/24/98	NA	2,050	7.2	334	.25	120	110	60	6.9	280	610
DG-2	09/09/98	NA	2,030	7.1	276	—	—	—	—	—	—	—
DG-2	12/16/98	NA	2,130	7.6	276	—	70	120	40	5.2	300	570

Table 2. Discharge, physical properties, and results of chemical analyses for surface- and ground-water samples from sites near the permeable reactive barriers, Fry Canyon, Utah—Continued

Location	Aluminum, dissolved ($\mu\text{g/L}$ as Al)	Copper, dis- solved ($\mu\text{g/L}$ as Cu)	Iron, dis- solved (mg/L as Fe)	Lithium, dis- solved (mg/L as Li)	Man- ganese, dissolved (mg/L as Mn)	Phos- phorus, dissolved (mg/L as P)	Silica, dis- solved (mg/L as SiO_2)	Stron- tium, dis- solved (mg/L as Sr)	Zinc, dis- solved ($\mu\text{g/L}$ as Zn)	Ura- nium, dis- solved ($\mu\text{g/L}$ as U)
AFOT1	—	—	—	—	—	—	—	—	—	17,590
AFOT1	300	30	<.02	.2	.10	.2	7.5	3.8	<4	20,700
AFOT1	—	—	—	—	—	—	—	—	—	19,850
AFOT1	150	40	.03	.2	<.01	.2	6.5	3.3	<2	20,660
AFOT1	—	—	—	—	—	—	—	—	—	20,100
AFOT1	870	20	.34	.3	<.01	<.1	7.5	3.1	<2	19,060
AFOT1	—	—	—	—	—	—	—	—	—	15,010
AFOT1	580	60	.06	.4	.02	0.9	7.6	3.2	50	15,400
AFOT1	420	<20	<.03	.4	<.02	<1.0	7.8	3.0	<20	16,020
AFOT1	350	40	.11	.3	.02	<1.0	8.4	3.2	<20	22,330
AFOT1	340	140	.07	.4	.05	<1.0	7.5	3.3	<20	17,080
AFOT1	240	50	.07	.3	<.02	<1.0	7	3	<20	16,880
AFOT2	—	—	—	—	—	—	—	—	—	14,870
AFOT2	260	30	<.02	.2	.20	.3	6.5	3.4	<4	18,500
AFOT2	—	—	—	—	—	—	—	—	—	16,900
AFOT2	200	40	.18	.3	.10	.3	7.7	3.9	<2	20,630
AFOT2	—	—	—	—	—	—	—	—	—	18,720
AFOT2	410	20	.03	.3	.10	<.1	6.4	2.7	<2	15,640
AFOT2	—	—	—	—	—	—	—	—	—	11,260
AFOT2	420	25	.35	.5	.30	.2	7.0	2.7	30	15,520
AFOT2	210	<20	.37	.4	.20	<1.0	7.1	2.5	<20	12,890
AFOT2	200	40	<.03	.3	<.02	<1.0	7.9	3.3	<20	18,360
AFOT2	350	50	.26	.4	.10	<1.0	7.7	3.4	<20	16,650
DG-1	—	—	—	—	—	—	—	—	—	620
DG-1	30	<5	.18	.2	.90	<.1	5.8	1.6	<4	1,100
DG-1	—	—	—	—	—	—	—	—	—	1,250
DG-1	<20	10	.35	.2	.60	.4	4.4	1.5	<2	1,830
DG-1	—	—	—	—	—	—	—	—	—	1,590
DG-1	120	<2	.50	.2	.90	1.4	5.2	1.4	<2	1,920
DG-1	—	—	—	—	—	—	—	—	—	1,580
DG-1	30	40	.40	.3	.30	<.1	4.3	1.3	20	2,660
DG-1	<170	<20	.59	.3	.40	<1.0	5.1	1.3	<20	2,430
DG-1	<170	40	.82	.3	.40	<1.0	6.2	2.0	<20	4,600
DG-1	<170	<20	.99	.3	.50	<1.0	5.0	2.2	<20	4,210
DG-1	<170	<20	1.23	.3	.55	<1.0	5.1	2.0	<20	4,200
DG-2	—	—	—	—	—	—	—	—	—	1,770
DG-2	80	10	<.02	.2	.40	<.1	4.7	1.8	<4	4,480
DG-2	—	—	—	—	—	—	—	—	—	3,370
DG-2	<20	30	.01	.2	.10	<.1	3.8	1.4	<2	5,060
DG-2	—	—	—	—	—	—	—	—	—	6,200
DG-2	150	<2	.18	.2	.40	<.1	5.2	1.3	<2	2,100
DG-2	—	—	—	—	—	—	—	—	—	1,540
DG-2	190	<2	.01	.2	.10	<.1	3.0	.9	10	2,810

Table 2. Discharge, physical properties, and results of chemical analyses for surface- and ground-water samples from sites near the permeable reactive barriers, Fry Canyon, Utah—Continued

Location	Date	Discharge (ft ³ /s)	Specific con- ductance (μS/cm)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO ₃)	Pho- sphate, field (mg/L as PO ₄)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Magne- sium, dis- solved (mg/L as Mg)	Potas- sium, dis- solved (mg/L as K)	Sodium, dis- solved (mg/L as Na)	Sulfate, dis- solved (mg/L as SO ₄)
DG-2	05/12/99	NA	1,900	7.9	278	—	70	110	50	5.7	280	535
DG-2	08/11/99	NA	1,960	7.6	292	—	60	110	50	6.0	320	560
DG-2	12/02/99	NA	1,980	7.8	256	—	80	—	60	5.8	300	—
DG-2a	09/09/98	NA	1,960	7.4	162	—	—	—	—	—	—	—
DG-2a	12/15/98	NA	2,210	7.7	180	—	130	100	80	13	260	820
DG-2a	05/11/99	NA	2,030	7.8	197	—	100	110	60	6.9	230	725
DG-2a	08/11/99	NA	2,180	7.6	223	—	110	98	60	7.1	250	745
DG-2a	12/01/99	NA	2,110	7.5	188	—	120	—	60	5.8	290	—
DG-2a	06/14/00	NA	1,880	7.5	221	.15	80	100	43	—	290	620
DG-2b	09/09/98	NA	2,120	7.5	302	—	170	—	90	13	270	—
DG-2b	12/15/98	NA	2,260	7.9	296	—	—	100	—	—	—	850
DG-2b	05/11/99	NA	2,200	7.7	298	—	150	110	90	6.5	270	790
DG-2b	08/11/99	NA	2,330	7.6	197	—	170	89	100	7.9	220	980
DG-2b	12/01/99	NA	1,890	8.2	188	—	80	—	90	6.2	270	—
DG-3	09/24/97	NA	2,190	7.2	456	<.20	—	—	—	—	—	—
DG-3	10/28/97	NA	2,510	7.3	524	<.20	130	160	80	8.5	320	690
DG-3	11/18/97	NA	2,700	7.3	546	<.20	—	—	—	—	—	—
DG-3	01/27/98	NA	3,340	7.2	556	<.20	180	210	110	7.6	470	1,050
DG-3	04/23/98	NA	3,320	7.0	544	<.20	—	—	—	—	—	—
DG-3	06/24/98	NA	2,540	7.2	540	<.20	140	150	80	5.9	380	700
DG-3	09/09/98	NA	2,370	7.0	502	<2.0	—	—	—	—	—	—
DG-3	12/15/98	NA	2,520	7.3	488	<2.0	110	150	80	4.5	400	650
DG-3	05/11/99	NA	2,520	7.3	480	.45	110	145	70	4.9	360	610
DG-3	08/10/99	NA	2,670	7.4	494	<2.0	110	130	80	5.0	340	670
DG-3	11/30/99	NA	2,410	7.3	450	<2.0	110	—	70	4.0	260	—
DG-3	06/14/00	NA	—	—	—	—	250	—	100	—	250	—
DG-4	09/24/97	NA	2,100	7.2	450	<.20	—	—	—	—	—	—
DG-4	10/28/97	NA	2,210	7.1	462	<.20	110	110	70	4.6	240	640
DG-4	11/18/97	NA	2,130	7.2	454	<.20	—	—	—	—	—	—
DG-4	01/27/98	NA	2,050	7.2	450	<.20	100	130	70	3.8	290	500
DG-4	04/23/98	NA	1,960	6.9	450	<.20	—	—	—	—	—	—
DG-4	06/23/98	NA	1,990	7.1	458	<.20	100	120	60	3.7	300	490
DG-4	09/09/98	NA	1,920	7.1	460	<2.0	—	—	—	—	—	—
DG-4	12/15/98	NA	2,030	7.3	446	<2.0	100	110	70	10	310	530
DG-4	05/11/99	NA	1,900	7.3	456	1.4	80	115	60	4.1	270	440
DG-4	08/10/99	NA	2,240	7.3	450	<2.0	190	100	60	4.0	280	655
DG-4	11/30/99	NA	1,920	7.3	440	<2.0	260	—	100	4.0	260	—
DP-4	04/23/98	NA	2,020	7.2	342	—	—	—	—	—	—	—
DP-4	06/24/98	NA	2,010	7.2	376	—	100	120	.2	.2	310	540
DP-4	09/09/98	NA	1,880	7.3	360	—	—	—	—	—	—	—
DP-4	12/15/98	NA	1,990	7.6	362	—	90	110	70	12	300	580
DP-4	05/11/99	NA	1,930	7.7	365	—	90	110	60	5.3	250	535
DP-4	08/11/99	NA	2,080	7.8	300	—	100	110	80	6.3	260	785
DP-4	12/01/99	NA	1,890	7.7	292	—	90	100	80	5.1	290	605
DS-1	09/10/98	NA	1,730	7.4	216	—	—	—	—	—	—	—
DS-1	12/15/98	NA	2,040	7.6	378	—	210	80	50	19	230	680
DS-1	05/12/99	NA	2,100	7.7	440	.75	180	100	50	14	240	615

Table 2. Discharge, physical properties, and results of chemical analyses for surface- and ground-water samples from sites near the permeable reactive barriers, Fry Canyon, Utah—Continued

Location	Aluminum, dissolved (µg/L as Al)	Copper, dis- solved (µg/L as Cu)	Iron, dis- solved (mg/L as Fe)	Lithium, dis- solved (mg/L as Li)	Man- ganese, dissolved (mg/L as Mn)	Phos- phorus, dissolved (mg/L as P)	Silica, dis- solved (mg/L as SiO ₂)	Stron- tium, dis- solved (mg/L as Sr)	Zinc, dis- solved (µg/L as Zn)	Ura- nium, dis- solved (µg/L as U)
DG-2	<170	<20	<.03	.2	.20	<1.0	3.6	.8	<20	2,400
DG-2	<170	30	.43	.2	.30	<1.0	4.8	.8	<20	1,590
DG-2	<170	<20	.14	.2	.30	<1.0	3.4	.9	<20	1,190
DG-2a	—	—	—	—	—	—	—	—	—	910
DG-2a	120	25	1.14	.5	.30	<.1	3.0	.9	20	1,260
DG-2a	<170	<20	1.00	.2	.20	<1.0	3.4	.7	<20	1,240
DG-2a	<170	<20	1.25	.3	.20	<1.0	4.3	.8	<20	930
DG-2a	<170	<20	1.18	.2	.20	<1.0	3.5	.8	<20	1,040
DG-2a	<170	<20	.77	.2	.23	<1.0	3.5	.6	<20	1,400
DG-2b	60	20	13.3	.5	.20	<.1	3.8	1.2	20	<.06
DG-2b	—	—	—	—	—	—	—	—	—	—
DG-2b	<170	<20	11.1	.3	.10	<1.0	4.2	1.1	<20	10
DG-2b	<170	<20	6.00	.3	.10	<1.0	3.6	1.3	<20	10
DG-2b	<170	<20	1.37	.3	<.02	<1.0	1.7	.7	<20	20
DG-3	—	—	—	—	—	—	—	—	—	2,660
DG-3	40	10	.15	.2	1.00	<.1	6.6	1.6	10	3,350
DG-3	—	—	—	—	—	—	—	—	—	3,660
DG-3	120	30	.11	.3	.10	.3	5.7	2.4	<2	5,150
DG-3	—	—	—	—	—	—	—	—	—	5,600
DG-3	<20	14	.25	.2	.30	<.1	5.6	1.8	<2	3,060
DG-3	—	—	—	—	—	—	—	—	—	1,350
DG-3	160	15	.49	.2	.20	.2	5.0	1.7	20	200
DG-3	<170	<20	.43	.2	.10	<1.0	5.6	1.5	<20	2,100
DG-3	<170	30	.67	.2	.70	<1.0	6.5	1.9	20	11,110
DG-3	<170	60	1.41	.2	.30	1.5	5.1	1.6	<20	12,70
DG-3	<170	30	1.28	.3	.55	<1.0	5.4	2.1	<20	1,830
DG-4	—	—	—	—	—	—	—	—	—	700
DG-4	<20	10	.35	.2	.40	<.1	4.4	1.5	<4	810
DG-4	—	—	—	—	—	—	—	—	—	790
DG-4	<20	20	.31	.2	.20	<.1	4.8	1.5	<2	800
DG-4	—	—	—	—	—	—	—	—	—	920
DG-4	<20	<2	.45	.1	.30	.3	5.0	1.4	<2	720
DG-4	—	—	—	—	—	—	—	—	—	510
DG-4	120	90	.49	.2	.20	.2	5.0	1.5	50	570
DG-4	<170	<20	.54	.2	.10	<1.0	5.6	1.3	<20	670
DG-4	230	30	1.64	.2	1.60	<1.0	9.2	1.8	<20	2,310
DG-4	<170	70	2.37	.3	.40	5.2	6.4	2.0	<20	630
DP-4	—	—	—	—	—	—	—	—	—	350
DP-4	<20	<2	7.74	.5	.50	5.7	2.1	1.1	440	10
DP-4	—	—	—	—	—	—	—	—	—	300
DP-4	100	44	2.67	.3	.20	.4	3.6	.9	540	250
DP-4	<170	<20	2.58	.2	.10	<1.0	4.1	.8	<20	260
DP-4	<170	20	2.35	.2	.10	<1.0	4.2	1.0	30	160
DP-4	<170	<20	1.79	.2	.12	<1.0	3.3	1.0	<20	180
DS-1	—	—	—	—	—	—	—	—	—	6,940
DS-1	420	30	1.15	.1	1.90	.5	7.1	1.6	20	11,200
DS-1	200	<20	.60	.1	1.50	<1.0	7.4	1.4	<20	10,400

Table 2. Discharge, physical properties, and results of chemical analyses for surface- and ground-water samples from sites near the permeable reactive barriers, Fry Canyon, Utah—Continued

Location	Date	Discharge (ft ³ /s)	Specific con- ductance (μS/cm)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO ₃)	Pho- sphate, field (mg/L as PO ₄)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Magne- sium, dis- solved (mg/L as Mg)	Potas- sium, dis- solved (mg/L as K)	Sodium, dis- solved (mg/L as Na)	Sulfate, dis- solved (mg/L as SO ₄)
DS-1	08/10/99	NA	2,250	7.5	450	<2.0	170	86	80	15	290	710
DS-1	11/30/99	NA	2,560	7.5	496	—	150	—	80	15	270	—
DS-2	09/09/98	NA	2,140	7.1	448	5.0	—	—	—	—	—	—
DS-2	12/15/98	NA	2,090	7.1	452	<2.0	140	110	60	11	310	600
DS-2	05/11/99	NA	2,160	7.4	434	2.3	160	110	70	5.2	260	695
DS-2	08/10/99	NA	2,240	7.3	444	<2	560	110	200	5.0	150	680
DS-2	11/30/99	NA	2,170	7.2	410	—	120	—	80	5.0	340	—
FC-1	09/14/96	NA	1,720	7.6	441	—	49	110	49	4.2	290	310
FC-1	12/19/96	NA	1,750	7.7	428	—	48	110	48	4.0	310	330
FC-1	04/10/97	NA	1,740	7.5	446	—	43	120	45	3.3	280	340
FC-2	09/24/97	NA	2,050	7.2	396	.05	—	—	—	—	—	—
FC-2	10/29/97	NA	2,140	7.4	416	.05	130	—	70	4.7	300	—
FC-2	11/19/97	NA	2,170	7.4	418	<.05	—	—	—	—	—	—
FC-2	09/13/96	NA	1,940	7.2	474	—	97	120	54	4.6	290	400
FC-2	12/17/96	NA	2,010	7.4	444	—	110	110	60	5.0	320	490
FC-2	04/10/97	NA	2,160	7.1	432	—	120	110	71	4.1	270	630
FC-3	09/26/97	NA	3,270	6.9	390	.10	—	—	—	—	—	—
FC-3	10/29/97	NA	3,260	7.1	396	<.05	490	—	100	7.0	230	—
FC-3	11/19/97	NA	3,360	7.1	404	.05	—	—	—	—	—	—
FC-3	09/13/96	NA	3,120	6.9	411	—	450	110	96	7.1	250	1,300
FC-3	12/17/96	NA	2,800	7.2	436	—	330	100	92	6.5	300	1,200
FC-3	04/10/97	NA	3,030	6.9	394	—	360	84	120	5.5	250	1,500
FC-3	06/14/00	NA	3,180	6.8	434	.05	450	94	120	—	230	1,460
FC-4	09/13/96	NA	2,140	7.1	469	—	150	110	60	4.7	280	540
FC-4	12/18/96	NA	2,010	7.4	442	—	120	110	61	5.0	310	510
FC-4	04/09/97	NA	2,060	7.3	424	—	100	110	68	4.1	250	530
FC-5	09/13/96	NA	1,800	7.4	465	—	59	110	48	5.4	280	310
FC-5	12/18/97	NA	1,740	7.6	436	—	55	110	49	5.5	320	330
FC-5	04/09/97	NA	1,770	7.6	208	—	53	110	50	4.0	270	360
FC-7	09/14/96	NA	3,500	7.5	—	—	—	—	—	—	—	—
FC-7	12/18/96	NA	3,210	7.5	256	—	580	27	170	8.0	90	1,900
FC-7	04/09/97	NA	2,920	7.4	208	—	560	2	160	8.8	20	1,827
FC-8	09/14/96	NA	2,350	7.2	479	—	180	110	75	5.5	300	710
FC-8	12/18/96	NA	2,250	7.2	470	—	140	110	75	5.5	320	610
FC-8	04/09/97	NA	2,110	7.2	440	—	110	110	64	3.7	260	510
FC-17	05/12/99	NA	1,700	7.7	434	<.20	50	110	45	4.2	260	320
FC-18	09/10/98	NA	2,620	7.1	236	—	—	—	—	—	—	—
FC-19	09/10/98	NA	2,470	6.9	422	—	—	—	—	—	—	—
FRY CREEK1	09/14/96	—	220	—	—	25	13	10	4.6	2.8	20	—
FRY CREEK2	12/18/96	.036	2,440	8.6	548	—	66	180	78	7.0	440	500
FRY CREEK2	04/09/97	.025	1,850	8.6	410	—	39	130	51	5.0	290	380
FRY CREEK2	09/25/97	.002	1,740	8.1	396	.10	—	—	—	—	—	—
FRY CREEK2	10/30/97	.021	1,750	8.2	408	<2	50	—	40	6.4	310	—
FRY CREEK2	11/19/97	.035	1,700	8.3	422	<.05	—	—	—	—	—	—
FRY CREEK2	01/28/98	.025	1,510	8.4	408	<.20	40	110	<.01	.1	280	310
FRY CREEK2	04/23/98	.005	1,740	7.9	420	<.20	—	—	—	—	—	—
FRY CREEK2	06/25/98	0	1,830	7.9	446	<.20	50	120	<.01	.2	350	350

Table 2. Discharge, physical properties, and results of chemical analyses for surface- and ground-water samples from sites near the permeable reactive barriers, Fry Canyon, Utah—Continued

Location	Aluminum, dissolved (µg/L as Al)	Copper, dis- solved (µg/L as Cu)	Iron, dis- solved (mg/L as Fe)	Lithium, dis- solved (mg/L as Li)	Man- ganese, dissolved (mg/L as Mn)	Phos- phorus, dissolved (mg/L as P)	Silica, dis- solved (mg/L as SiO ₂)	Stron- tium, dis- solved (mg/L as Sr)	Zinc, dis- solved (µg/L as Zn)	Ura- nium, dis- solved (µg/L as U)
DS-1	<170	40	2.14	.2	.50	<1.0	7.2	1.8	<20	1,480
DS-1	<170	50	.34	.2	.10	8.2	5.8	1.3	<20	8,930
DS-2	—	—	—	—	—	—	—	—	—	1,660
DS-2	170	30	2.37	.2	.50	.8	6.1	1.5	20	1,540
DS-2	<170	<20	2.25	.2	.40	<1.0	6.3	1.5	<20	2,340
DS-2	540	40	.04	.3	<.02	<1.0	10.5	3.9	<20	700
DS-2	<170	50	.84	.2	.20	<1.0	5.4	1.9	<20	1,850
FC-1	<50	<4	<0.02	1.4	10	<0.1	9.5	1.3	<10	80
FC-1	<50	<4	<.02	1.4	<.01	<.1	7.7	1.3	<10	60
FC-1	<50	<5	<.02	1.3	<.01	<.1	7.2	1.3	<10	60
FC-2	—	—	—	—	—	—	—	—	—	880
FC-2	40	<5	1.09	.2	.40	<.1	5.3	1.6	10	940
FC-2	—	—	—	—	—	—	—	—	—	990
FC-2	<50	<4	.18	1.7	.22	<.1	6.1	1.1	<10	1,070
FC-2	<50	<4	.03	1.5	.15	<.1	5.0	1.2	<10	870
FC-2	50	10	<.02	1.9	.18	<.1	4.9	1.6	15	1,020
FC-3	—	—	—	—	—	—	—	—	—	3,230
FC-3	70	10	.90	.2	1.90	<.1	6.3	2.3	30	3,260
FC-3	—	—	—	—	—	—	—	—	—	3,270
FC-3	75	<4	1.51	2.0	1.05	<.1	7.2	1.9	10	3,850
FC-3	60	<4	.58	1.8	6.10	<.1	6.3	1.0	<10	2,550
FC-3	85	10	.43	2.3	5.10	<.1	5.6	2.4	10	2,800
FC-3	<170	<20	3.11	.3	9.40	<1.0	6.7	2.3	30	2,750
FC-4	<50	<4	.09	1.7	3.20	<.1	5.3	1.2	40	1,100
FC-4	<50	<4	.17	1.6	1.90	<.1	4.9	1.3	<10	840
FC-4	<50	<4	.17	1.8	1.20	<.1	4.5	1.6	<10	770
FC-5	<50	<4	.03	1.6	.16	<.1	6.2	1.2	20	260
FC-5	<50	<4	.06	1.4	.02	<.1	6.4	1.3	<10	110
FC-5	<50	<4	.05	1.4	.02	<.1	5.7	1.5	<10	110
FC-7	—	—	—	—	—	—	—	—	—	—
FC-7	180	10	<.02	2.3	.02	<.1	5.3	2.6	11	11,200
FC-7	370	20	<.02	1.9	.02	<.1	3.8	3.2	15	16,300
FC-8	<50	<4	1.12	1.8	.59	<.1	6.2	1.6	70	640
FC-8	<50	30	1.52	2.4	1.68	<.1	6.0	1.5	450	530
FC-8	<50	40	.87	1.7	1.90	<.1	5.0	1.3	570	550
FC-17	<170	<20	<.03	.1	.02	<1.0	8.3	1.3	<20	280
FC-18	—	—	—	—	—	—	—	—	—	4,730
FC-19	—	—	—	—	—	—	—	—	—	1,500
FRY CREEK1	<50	<4	<.02	.1	<.01	<.1	1.5	.2	<10	<50
FRY CREEK2	<50	<4	<.02	2.1	.02	<.1	8.5	1.8	<10	90
FRY CREEK2	<50	<4	<.02	1.5	<.01	<.1	6.2	1.4	—	60
FRY CREEK2	—	—	—	—	—	—	—	—	—	70
FRY CREEK2	<20	<5	<.02	.1	.02	<.1	6.2	1.5	<4	70
FRY CREEK2	—	—	—	—	—	—	—	—	—	60
FRY CREEK2	<20	20	.03	.4	<.1	4.6	10	1.2	<2	60
FRY CREEK2	—	—	—	—	—	—	—	—	—	70
FRY CREEK2	<20	<2	.01	.5	<.1	6.5	8.5	1.6	<2	80

Table 2. Discharge, physical properties, and results of chemical analyses for surface- and ground-water samples from sites near the permeable reactive barriers, Fry Canyon, Utah—Continued

Location	Date	Discharge (ft ³ /s)	Specific con- ductance (μS/cm)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO ₃)	Pho- sphate, field (mg/L as PO ₄)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Magne- sium, dis- solved (mg/L as Mg)	Potas- sium, dis- solved (mg/L as K)	Sodium, dis- solved (mg/L as Na)	Sulfate, dis- solved (mg/L as SO ₄)
FRY CREEK2	09/10/98	0	2,030	7.9	462	<.20	—	—	—	—	—	—
FRY CREEK2	12/16/98	.005	1,300	8.4	332	—	30	90	35	4.2	210	250
FRY CREEK2	05/12/99	—	1,810	8.2	440	.40	50	130	45	10	300	340
FRY CREEK2	08/12/99	.004	1,420	8.3	355	—	70	87	30	10	200	240
FRY CREEK2	12/01/99	.057	1,650	8.4	388	—	50	120	40	6.5	290	320
FRY CREEK3	12/18/96	.043	2,110	8.4	512	—	61	160	65	6.5	410	460
FRY CREEK3	04/09/97	.040	1,870	8.6	406	—	48	130	52	5.0	290	400
FRY CREEK3	09/25/97	.005	1,840	8.5	422	<.20	—	—	—	—	—	—
FRY CREEK3	10/30/97	.035	1,850	8.4	422	<2	60	—	50	6.5	320	—
FRY CREEK3	11/19/97	.040	1,780	8.4	424	<.05	—	—	—	—	—	—
FRY CREEK3	01/28/98	.048	1,600	8.4	414	<.20	50	120	<.01	.1	300	360
FRY CREEK3	04/23/98	.006	1,870	8.1	428	<.20	—	—	—	—	—	—
FRY CREEK3	06/25/98	.000	2,280	8.1	448	<.20	70	160	.2	.2	430	530
FRY CREEK3	09/10/98	.000	2,230	8.4	462	<.20	—	—	—	—	—	—
FRY CREEK3	12/16/98	.045	1,620	8.1	365	—	300	100	4.1	4.1	220	310
FRY CREEK3	05/12/99	.005	2,130	8.5	421	.15	50	160	10	10	340	505
FRY CREEK3	08/12/99	—	1,510	8.3	342	—	100	89	10	10	280	295
FRY CREEK3	12/02/99	.045	1,830	8.5	410	<2	50	130	6.0	6.0	280	405
PO4T1	09/23/97	NA	2,180	6.8	414	>5.0	—	—	—	—	—	—
PO4T1	10/28/97	NA	2,260	7.0	428	26	160	110	70	6.7	280	680
PO4T1	11/18/97	NA	2,240	7.0	438	18	—	—	—	—	—	—
PO4T1	01/27/98	NA	2,290	7.1	438	19	150	130	60	5.9	290	570
PO4T1	04/21/98	NA	2,340	7.0	402	10	—	—	—	—	—	—
PO4T1	06/23/98	NA	2,520	7.0	416	7.0	250	110	80	7.3	260	900
PO4T1	09/09/98	NA	2,130	6.9	430	25	—	—	—	—	—	—
PO4T1	12/15/98	NA	2,410	7.2	440	2.0	230	100	80	7.7	270	830
PO4T1	05/11/99	NA	2,420	7.5	432	4.0	210	105	80	6.6	260	875
PO4T1	08/10/99	NA	2,770	7.3	379	2.0	350	78	110	9.0	210	1,330
PO4T1	11/30/99	NA	2,760	7.2	384	2.0	320	—	120	8.1	240	—
PO4T1	06/14/00	NA	—	—	—	—	280	—	96	—	220	—
PO4T2	09/23/97	NA	2,130	7.0	446	>5.0	—	—	—	—	—	—
PO4T2	10/28/97	NA	2,220	7.1	454	12	140	120	70	6.9	270	640
PO4T2	11/18/97	NA	2,140	7.2	456	9.0	—	—	—	—	—	—
PO4T2	01/27/98	NA	3,260	7.2	458	3.0	140	150	60	6.9	310	540
PO4T2	04/21/98	NA	2,190	7.2	436	2.0	—	—	—	—	—	—
PO4T2	06/23/98	NA	2,230	7.2	426	10	170	110	70	6.2	270	700
PO4T2	09/09/98	NA	2,060	7.0	446	12	—	—	—	—	—	—
PO4T2	12/15/98	NA	2,080	7.1	470	3.0	140	110	70	11	300	590
PO4T2	05/11/99	NA	2,170	7.3	427	1.0	170	110	70	5.7	260	775
PO4T2	08/10/99	NA	2,440	7.2	427	<2.0	230	100	80	7.0	260	860
PO4T2	11/30/99	NA	2,180	7.3	442	2.0	150	—	70	5.8	260	—
TI-1	09/10/98	NA	2,730	7.0	384	—	—	—	—	—	—	—
TI-2	09/09/98	NA	2,420	7.0	422	<2.0	—	—	—	—	—	—
TI-3	09/09/98	NA	1,920	7.1	456	<2.0	—	—	—	—	—	—
W-1	09/10/98	NA	3,120	6.9	324	—	—	—	—	—	—	—
W-2	09/09/98	NA	1,970	7.1	—	<2.0	—	—	—	—	—	—
ZVIT1	09/24/97	NA	2,310	7.1	314	—	—	—	—	—	—	—

Table 2. Discharge, physical properties, and results of chemical analyses for surface- and ground-water samples from sites near the permeable reactive barriers, Fry Canyon, Utah—Continued

Location	Aluminum, dissolved (µg/L as Al)	Copper, dis- solved (µg/L as Cu)	Iron, dis- solved (mg/L as Fe)	Lithium, dis- solved (mg/L as Li)	Man- ganese, dissolved (mg/L as Mn)	Phos- phorus, dissolved (mg/L as P)	Silica, dis- solved (mg/L as SiO ₂)	Stron- tium, dis- solved (mg/L as Sr)	Zinc, dis- solved (µg/L as Zn)	Ura- nium, dis- solved (µg/L as U)
FRY CREEK2	—	—	—	—	—	—	—	—	—	80
FRY CREEK2	<20	30	.02	.1	<.01	<.1	4.9	.9	30	40
FRY CREEK2	<170	<20	<.03	.1	<.02	<1.0	7.7	1.3	<20	80
FRY CREEK2	<170	20	.04	.1	.10	<1.0	7.1	1.4	<20	90
FRY CREEK2	<170	<20	<.03	.1	<.02	<1.0	5.4	1.2	<20	80
FRY CREEK3	<50	<4	<.02	1.8	.02	<.1	6.9	1.5	<10	140
FRY CREEK3	<50	<4	<.02	1.5	<.01	<.1	5.9	1.4	15	140
FRY CREEK3	—	—	—	—	—	—	—	—	—	160
FRY CREEK3	<20	<5	<.02	.2	.02	<.1	5.6	1.6	10	170
FRY CREEK3	—	—	—	—	—	—	—	—	—	160
FRY CREEK3	<20	20	.02	.5	.20	4.9	10	1.3	<2	170
FRY CREEK3	—	—	—	—	—	—	—	—	—	190
FRY CREEK3	<20	20	.02	.6	<.10	8.3	7.6	1.8	<2	280
FRY CREEK3	—	—	—	—	—	—	—	—	—	160
FRY CREEK3	310	34	.02	.6	<.02	.4	5.8	2	26	110
FRY CREEK3	<170	<20	<.03	.2	<.02	<1.0	6.6	1.3	<20	360
FRY CREEK3	<170	<20	.03	<.06	<.02	<1.0	1.1	<.02	<20	160
FRY CREEK3	<170	<20	<.03	.1	<.02	<1.0	5.3	1.3	<20	250
PO4T1	—	—	—	—	—	—	—	—	—	3,050
PO4T1	30	<5	.50	.2	.80	10	6.7	.9	<4	1,550
PO4T1	—	—	—	—	—	—	—	—	—	1,230
PO4T1	<20	10	.23	.2	.40	10	6.1	.8	<2	1,010
PO4T1	—	—	—	—	—	—	—	—	—	4,600
PO4T1	120	20	.50	.2	.70	2.3	6.9	1.7	560	3,590
PO4T1	—	—	—	—	—	—	—	—	—	—
PO4T1	100	70	1.08	.4	.60	1.6	7.5	1.7	30	4,040
PO4T1	<170	20	.28	.3	.20	2.9	7.1	1.5	<20	3,160
PO4T1	<170	40	.14	.4	.30	1.2	8.1	2.4	20	8,240
PO4T1	<170	130	.80	.3	.40	2.1	6.8	2.2	30	7,050
PO4T1	<170	<20	1.13	.3	.97	1.0	6.4	2	<20	4,530
PO4T2	—	—	—	—	—	—	—	—	—	3,920
PO4T2	30	<5	.27	.2	.30	10	5.9	.7	10	1,920
PO4T2	—	—	—	—	—	—	—	—	—	2,250
PO4T2	<20	20	.30	.2	.40	1.4	6.3	1.2	<2	1,860
PO4T2	—	—	—	—	—	—	—	—	—	1,950
PO4T2	<20	10	2.03	.1	.70	2.2	6.1	1.4	<2	1,850
PO4T2	—	—	—	—	—	—	—	—	—	880
PO4T2	180	15	1.05	.2	.60	2.4	6.4	1.4	20	2,250
PO4T2	<170	<20	1.21	.2	.50	1.7	6.3	1.4	<20	2,070
PO4T2	<170	<20	.64	.2	.60	<1.0	7.4	1.9	20	4,100
PO4T2	<170	50	1.14	.2	.60	1.5	5.8	1.6	<20	1,400
TI-1	—	—	—	—	—	—	—	—	—	7,520
TI-2	—	—	—	—	—	—	—	—	—	1,430
TI-3	—	—	—	—	—	—	—	—	—	710
W-1	—	—	—	—	—	—	—	—	—	14,440
W-2	—	—	—	—	—	—	—	—	—	810
ZVIT1	—	—	—	—	—	—	—	—	—	8,550

Table 2. Discharge, physical properties, and results of chemical analyses for surface- and ground-water samples from sites near the permeable reactive barriers, Fry Canyon, Utah—Continued

Location	Date	Discharge (ft ³ /s)	Specific con- ductance (μS/cm)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO ₃)	Pho- sphate, field (mg/L as PO ₄)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Magne- sium, dis- solved (mg/L as Mg)	Potas- sium, dis- solved (mg/L as K)	Sodium, dis- solved (mg/L as Na)	Sulfate, dis- solved (mg/L as SO ₄)
ZVIT1	10/29/97	NA	2,340	7.5	220	.70	290	100	110	10	230	1,030
ZVIT1	11/18/97	NA	2,230	7.8	208	<2.0	—	—	—	—	—	—
ZVIT1	01/28/98	NA	2,030	8.5	182	<2.0	130	150	50	8.0	290	720
ZVIT1	04/21/98	NA	2,480	7.2	236	—	—	—	—	—	—	—
ZVIT1	06/24/98	NA	2,520	7.2	260	—	220	100	70	10	250	970
ZVIT1	09/10/98	NA	2,600	7.0	388	—	—	—	—	—	—	—
ZVIT1	12/15/98	NA	2,510	7.4	352	—	220	90	100	17	230	1,120
ZVIT1	05/11/99	NA	2,840	7.3	350	.15	360	90	110	11	230	1,315
ZVIT1	08/11/99	NA	3,060	7.1	330	—	440	66	140	10	160	1,610
ZVIT1	11/30/99	NA	2,970	7.1	372	—	400	—	130	11	230	—
ZVIT1	06/14/00	NA	—	—	—	—	400	76	120	—	210	1,410
ZVIT2	09/24/97	NA	2,080	6.9	308	—	—	—	—	—	—	—
ZVIT2	10/29/97	NA	2,220	7.0	398	18	160	110	70	6.9	290	720
ZVIT2	11/18/97	NA	2,240	7.1	408	16	—	—	—	—	—	—
ZVIT2	01/28/98	NA	2,150	7.3	394	4	200	100	70	6.8	280	500
ZVIT2	04/21/98	NA	2,280	7.1	364	—	—	—	—	—	—	—
ZVIT2	06/24/98	NA	2,360	7.1	386	—	180	110	70	7.1	280	730
ZVIT2	09/10/98	NA	2,240	6.9	384	—	—	—	—	—	—	—
ZVIT2	12/15/98	NA	2,270	7.3	434	—	180	110	70	12	290	680
ZVIT2	05/11/99	NA	2,480	7.3	419	—	290	100	90	7.3	240	1,075
ZVIT2	08/11/99	NA	2,870	7.1	361	—	350	77	120	8.4	210	1,385
ZVIT2	11/30/99	NA	2,760	7.1	350	—	140	—	100	9.4	230	—

Table 2. Discharge, physical properties, and results of chemical analyses for surface- and ground-water samples from sites near the permeable reactive barriers, Fry Canyon, Utah—Continued

Location	Aluminum, dissolved ($\mu\text{g/L}$ as Al)	Copper, dis- solved ($\mu\text{g/L}$ as Cu)	Iron, dis- solved (mg/L as Fe)	Lithium, dis- solved (mg/L as Li)	Man- ganese, dissolved (mg/L as Mn)	Phos- phorus, dissolved (mg/L as P)	Silica, dis- solved (mg/L as SiO_2)	Stron- tium, dis- solved (mg/L as Sr)	Zinc, dis- solved ($\mu\text{g/L}$ as Zn)	Ura- nium, dis- solved ($\mu\text{g/L}$ as U)
ZVIT1	190	20	.35	.2	.30	.3	5.6	2.6	<4	11,880
ZVIT1	—	—	—	—	—	—	—	—	—	9,180
ZVIT1	<20	20	.38	.2	.20	.2	2.7	1.1	<2	5,480
ZVIT1	—	—	—	—	—	—	—	—	—	8,710
ZVIT1	160	4	.56	.2	.10	<.1	4.6	1.6	<2	7,090
ZVIT1	—	—	—	—	—	—	—	—	—	5,990
ZVIT1	90	20	17.5	.5	.20	<.1	4.4	1.7	20	9,700
ZVIT1	340	<20	1.37	.4	<.02	<1.0	6.9	2.3	<20	10,760
ZVIT1	200	40	.51	.4	.10	<1.0	10.0	2.9	<20	13,610
ZVIT1	<170	30	1.79	.5	<.02	<1.0	6.6	2.7	<20	11,610
ZVIT1	<170	<20	2.91	.3	.36	<1.0	6.4	2.6	<20	6,830
ZVIT2	—	—	—	—	—	—	—	—	—	1,510
ZVIT2	60	<5	.50	.2	.50	8.2	5.9	.9	<4	1,730
ZVIT2	—	—	—	—	—	—	—	—	—	2,650
ZVIT2	<20	10	.63	.2	.50	1.2	5.1	1.6	<2	4,980
ZVIT2	—	—	—	—	—	—	—	—	—	5,590
ZVIT2	40	<2	1.04	.2	.40	3.2	5.5	1.4	<2	3,020
ZVIT2	—	—	—	—	—	—	—	—	—	1,200
ZVIT2	30	30	1.68	.4	.40	2.3	5.8	1.5	28	2,200
ZVIT2	180	40	1.60	.3	.30	<1.0	6.7	1.9	<20	5,330
ZVIT2	<170	<20	1.26	.3	.30	<1.0	10.0	2.4	<20	7,090
ZVIT2	<170	<20	7.83	.3	<.02	<1.0	2.0	1.3	<20	12,860

Table 3. Physical properties and results of chemical analyses for ground-water samples collected in the amorphous ferric oxyhydroxide permeable reactive barrier, Fry Canyon, Utah

[mg/L, milligrams per liter; µg/L, micrograms per liter; —, no data available; <, less than reporting limit; >, greater than reporting limit; **Specific conductance:** µS/cm, microsiemens per centimeter at 25 degrees Celsius, measured in the field]

Well	Date	Specific con- ductance (µS/cm)	pH, field (standard units)	Alk- alinity, field (mg/L as CaCO ₃)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Magne- sium, dis- solved (mg/L as Mg)	Potas- sium, dis- solved (mg/L as K)	Sod- ium, dis- solved (mg/L as Na)	Sulfate, dis- solved (mg/L as SO ₄)
AFOFS1	09/25/97	2,150	7.2	228	—	—	—	—	—	—
AFOFS1	10/30/97	2,120	7.7	150	120	110	40	8.7	290	790
AFOFS1	11/19/97	2,020	7.9	144	—	—	—	—	—	—
AFOFS1	01/29/98	1,800	8.2	156	80	120	40	7.0	270	610
AFOFS1	04/22/98	1,890	8.0	172	—	—	—	—	—	—
AFOFS1	06/24/98	1,910	7.7	182	90	110	40	8.7	290	610
AFOFS1	09/10/98	1,940	7.4	364	—	—	—	—	—	—
AFOFS1	12/16/98	2,470	7.3	391	170	100	80	8.1	260	780
AFOFS1	05/12/99	2,400	7.6	379	260	98	100	8.1	220	905
AFOFS1	08/11/99	2,600	7.3	361	280	76	100	10.0	200	1,130
AFOFS1	12/01/99	2,740	7.2	360	360	—	120	8.5	270	—
AFOR1S-1	10/30/97	2,420	7.6	164	180	90	80	7.9	250	1,000
AFOR1S-1	11/19/97	2,340	7.8	166	—	—	—	—	—	—
AFOR1S-1	01/29/98	2,190	8.0	176	170	110	70	7.2	240	870
AFOR1S-1	04/22/98	2,330	7.4	192	—	—	—	—	—	—
AFOR1S-1	06/25/98	2,210	7.9	208	170	100	70	9.0	240	850
AFOR1S-1	09/10/98	2,320	7.4	328	—	—	—	—	—	—
AFOR1S-1	12/16/98	2,640	7.6	369	280	90	110	9.4	250	1,040
AFOR1S-1	05/12/99	2,620	7.4	353	280	89	110	8.6	220	1,110
AFOR1S-1	08/12/99	2,930	7.2	316	550	57	190	11	160	1,405
AFOR1S-1	12/01/99	2,900	7.2	338	290	—	100	9.4	150	—
AFOR1-2	09/25/97	2,730	7.3	222	—	—	—	—	—	—
AFOR1-2	10/30/97	2,750	7.6	202	310	80	130	9.0	170	1,210
AFOR1-2	11/19/97	2,710	7.6	204	—	—	—	—	—	—
AFOR1-2	01/29/98	2,800	7.7	232	310	80	110	8.5	190	1,160
AFOR1-2	04/22/98	2,810	7.3	232	—	—	—	—	—	—
AFOR1-2	06/25/98	2,760	7.2	228	250	70	90	9.5	200	1,200
AFOR1-2	09/10/98	2,910	7.1	336	—	—	—	—	—	—
AFOR1-2	12/16/98	3,070	7.4	340	350	—	130	10	190	—
AFOR1-2	05/12/99	3,050	7.4	340	390	75	140	9.5	180	1,380
AFOR1-2	08/12/99	3,160	7.2	306	280	56	100	12	180	1,570
AFOR1-2	12/02/99	3,070	7.2	324	370	—	120	10	140	—
AFOR1-2	06/14/00	—	—	—	430	—	150	—	160	—
AFOR1-3	09/25/97	2,160	7.4	204	—	—	—	—	—	—
AFOR1-3	10/30/97	2,150	7.8	142	110	110	40	8.4	290	800
AFOR1-3	01/29/98	1,850	7.9	160	80	120	40	7.1	280	620
AFOR1-3	06/25/98	1,860	7.6	178	70	110	30	9.0	270	590
AFOR1-3	12/16/98	2,320	7.5	389	140	—	70	8.0	280	—
AFOR1-3	05/12/99	2,270	7.6	389	180	100	70	7.5	250	750
AFOR1-3	08/12/99	2,640	7.3	316	300	64	110	10	180	1,055
AFOR1-3	12/02/99	2,680	7.3	362	290	—	100	8.1	240	—
AFOR1S-4	10/30/97	2,110	7.9	144	120	110	50	8.4	310	810
AFOR1S-4	11/19/97	2,030	7.9	132	—	—	—	—	—	—
AFOR1S-4	01/29/98	1,790	8.3	160	80	120	40	7	280	620
AFOR1S-4	04/22/98	1,900	7.7	164	—	—	—	—	—	—
AFOR1S-4	06/25/98	1,820	7.9	180	70	110	40	8.9	280	580
AFOR1S-4	09/10/98	1,910	7.5	340	—	—	—	—	—	—
AFOR1S-4	12/16/98	2,180	7.6	399	140	100	70	8.1	260	680

Table 3. Physical properties and results of chemical analyses for ground-water samples collected in the amorphous ferric oxyhydroxide permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Aluminum, dis- solved (µg/L as Al)	Copper, dis- solved (µg/L as Cu)	Iron, dis- solved (mg/L as Fe)	Lithium, dis- solved (mg/L as L)	Manga- nese, dis- solved (mg/L as Mn)	Phos- phorus, dis- solved (mg/L as P)	Silica, dis- solved (mg/L as SiO ₂)	Stron- tium, dis- solved (mg/L as Sr)	Zinc, dis- solved (µg/L as Zn)	Uranium, dis- solved (µg/L as U)
AFOFS1	—	—	—	—	—	—	—	—	—	2,500
AFOFS1	30	<5	.40	.1	1.5	.15	3.0	1.8	20	1,360
AFOFS1	—	—	—	—	—	—	—	—	—	1,550
AFOFS1	<20	30	.03	.2	.40	<.1	2.0	.9	<2	2,270
AFOFS1	—	—	—	—	—	—	—	—	—	3,400
AFOFS1	170	<2	.01	.2	.40	<.1	2.6	.9	<2	1,530
AFOFS1	—	—	—	—	—	—	—	—	—	2,260
AFOFS1	310	50	.17	.4	.80	.5	4.9	1.5	30	4,220
AFOFS1	<170	<20	.16	.3	.20	<1.0	5.8	1.8	<20	6,980
AFOFS1	<170	20	<.03	.3	.20	<1.0	6.9	2.6	<20	9,550
AFOFS1	<170	20	.54	.4	.40	<1.0	6.1	2.7	<20	6,500
AFOR1S-1	70	<5	.03	.2	.90	<.1	2.8	2.3	<4	3,520
AFOR1S-1	—	—	—	—	—	—	—	—	—	4,350
AFOR1S-1	40	20	.01	.2	.20	.4	2.4	1.7	<2	6,150
AFOR1S-1	—	—	—	—	—	—	—	—	—	8,700
AFOR1S-1	120	10	.01	.2	.20	<.1	3.3	1.4	<2	6,860
AFOR1S-1	—	—	—	—	—	—	—	—	—	5,090
AFOR1S-1	320	20	<.01	.4	.10	1.5	6.1	2.2	<2	7,900
AFOR1S-1	290	<20	<.03	.3	<.02	<1.0	6.2	2.0	<20	9,310
AFOR1S-1	370	20	.16	.4	.10	<1.0	9.5	3.7	<20	16,920
AFOR1S-1	<170	70	.07	.2	.10	<1.0	4.8	2.0	<20	11,660
AFOR1-2	—	—	—	—	—	—	—	—	—	7,620
AFOR1-2	170	15	<.02	.2	.40	<.1	3.9	3.0	<4	10,200
AFOR1-2	—	—	—	—	—	—	—	—	—	11,000
AFOR1-2	120	40	.17	.2	.20	.3	4.3	2.5	<2	13,180
AFOR1-2	—	—	—	—	—	—	—	—	—	14,940
AFOR1-2	380	7	.30	.2	.10	<.1	4.5	1.8	7	10,880
AFOR1-2	—	—	—	—	—	—	—	—	—	10,000
AFOR1-2	570	40	.49	.4	.10	.7	6.5	2.5	14	11,310
AFOR1-2	340	<20	.22	.3	<.02	<1.0	7.0	2.6	<20	13,830
AFOR1-2	210	20	<.03	.3	.20	<1.0	8.0	2.5	<20	18,940
AFOR1-2	290	110	.37	.2	.10	<1.0	5.8	2.4	<20	16,550
AFOR1-2	220	<20	.68	.3	.06	<1.0	6.4	2.9	<20	14,470
AFOR1-3	—	—	—	—	—	—	—	—	—	1,770
AFOR1-3	30	<5	<.02	.2	.80	<.1	2.5	1.7	<4	890
AFOR1-3	<20	20	.04	.2	.20	.2	2	1.0	<2	2,900
AFOR1-3	120	<2	.04	.2	.20	.2	2.6	.8	<2	2,870
AFOR1-3	100	30	.01	.3	.20	2.0	5.0	1.3	20	3,100
AFOR1-3	<170	<20	<.03	.3	<.02	<1.0	5.4	1.4	<20	3,950
AFOR1-3	<170	30	<.03	.3	.10	<1.0	7.6	2.6	<20	11,810
AFOR1-3	<170	60	<.03	.3	.30	<1.0	5.4	2.2	<20	5,270
AFOR1S-4	30	<5	.13	.2	1.4	<.1	2.8	1.9	<4	950
AFOR1S-4	—	—	—	—	—	—	—	—	—	1,250
AFOR1S-4	<20	20	.05	.2	.40	.6	2	1.0	<2	2,560
AFOR1S-4	—	—	—	—	—	—	—	—	—	3,830
AFOR1S-4	50	<2	.25	.2	.30	.4	2.5	.8	<2	2,900
AFOR1S-4	—	—	—	—	—	—	—	—	—	1,110
AFOR1S-4	<20	15	<.01	.3	.20	1.4	4.9	1.2	10	2,940

Table 3. Physical properties and results of chemical analyses for ground-water samples collected in the amorphous ferric oxyhydroxide permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Date	Specific con- ductance (μ S/cm)	pH, field (standard units)	Alk- alinity, field (mg/L as CaCO ₃)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Magne- sium, dis- solved (mg/L as Mg)	Potas- sium, dis- solved (mg/L as K)	Sod- ium, dis- solved (mg/L as Na)	Sulfate, dis- solved (mg/L as SO ₄)
AFOR1S-4	05/12/99	2,180	7.5	391	100	70	7.5	250	180	750
AFOR1S-4	08/12/99	2,500	7.3	332	67	90	10	210	250	1,075
AFOR1S-4	12/02/99	2,720	7.3	342	310	110	8.3	250	250	—
AFOR1-5	09/25/97	2,210	7.4	206	—	—	—	—	—	—
AFOR1-5	10/30/97	2,180	7.8	144	120	110	50	8.2	300	810
AFOR1-5	11/19/97	2,000	8.0	142	—	—	—	—	—	—
AFOR1-5	01/29/98	1,800	8.5	156	90	120	40	7.0	280	640
AFOR1-5	04/22/98	1,920	8.0	168	—	—	—	—	—	—
AFOR1-5	06/25/98	1,940	7.9	184	90	110	40	8.8	280	630
AFOR1-5	09/10/98	1,980	7.6	348	—	—	—	—	—	—
AFOR1-5	12/16/98	2,260	7.6	395	160	100	70	8.3	260	720
AFOR1-5	05/12/99	2,340	7.5	389	190	99	80	7.6	240	805
AFOR1-5	08/12/99	2,590	7.4	334	260	67	90	10.0	210	1,135
AFOR1-5	12/02/99	2,740	7.3	346	300	—	100	8.2	230	—
AFOR1-5	06/14/00	—	—	—	300	—	100	—	—	—
AFOR1-6	09/25/97	2,010	7.6	218	—	—	—	—	—	—
AFOR1-6	10/30/97	2,090	7.8	138	110	110	40	7.9	290	780
AFOR1-6	01/29/98	1,760	8.5	150	80	120	40	6.8	290	620
AFOR1-6	06/25/98	1,820	8.1	184	70	110	30	8.9	280	580
AFOR1-6	12/16/98	2,070	7.7	399	120	100	60	7.8	270	640
AFOR1-6	05/12/99	2,120	7.5	393	160	100	70	7.1	250	680
AFOR1-6	08/12/99	2,360	7.4	346	390	70	140	9.0	140	980
AFOR1-6	12/02/99	2,690	7.3	362	300	—	110	8.0	250	—
AFOR1S-7	10/30/97	2,100	7.8	144	110	110	40	7.7	290	790
AFOR1S-7	11/19/97	1,970	8.0	142	—	—	—	—	—	—
AFOR1S-7	01/29/98	1,740	8.5	152	80	120	40	6.7	290	620
AFOR1S-7	04/22/98	1,820	8.1	162	—	—	—	—	—	—
AFOR1S-7	06/25/98	1,790	8.1	176	70	—	30	8.7	280	—
AFOR1S-7	09/10/98	1,790	7.6	334	—	—	—	—	—	—
AFOR1S-7	12/16/98	2,050	7.7	401	120	100	60	7.6	270	640
AFOR1S-7	05/12/99	1,980	7.6	393	150	110	70	7.1	260	675
AFOR1S-7	08/12/99	2,290	7.4	342	500	72	170	9.0	120	1,000
AFOR1S-7	12/02/99	2,680	7.3	356	300	—	110	7.9	250	—
AFOR1-8	09/25/97	1,990	7.6	220	—	—	—	—	—	—
AFOR1-8	10/30/97	2,070	7.9	144	110	110	40	7.9	300	790
AFOR1-8	11/19/97	1,950	8.0	138	—	—	—	—	—	—
AFOR1-8	01/29/98	1,760	8.4	148	80	120	40	6.5	290	610
AFOR1-8	04/22/98	1,830	8.2	156	—	—	—	—	—	—
AFOR1-8	06/25/98	1,830	8.1	178	80	110	40	8.7	280	600
AFOR1-8	09/10/98	1,810	7.6	336	—	—	—	—	—	—
AFOR1-8	12/16/98	2,060	7.6	391	140	100	70	7.9	270	670
AFOR1-8	05/12/99	2,160	7.7	389	170	100	70	7.2	250	745
AFOR1-8	08/12/99	2,480	7.4	332	290	70	100	10.0	180	1,065
AFOR1-8	12/02/99	2,730	7.3	354	300	—	110	8.3	250	—
AFOR1-8	06/14/00	—	—	—	300	—	100	—	230	—
AFOR2S-1	10/30/97	2,580	7.5	198	280	70	120	8.0	190	1,220
AFOR2S-1	01/29/98	2,380	8.0	220	270	90	100	7.2	200	1,100
AFOR2S-1	06/24/98	2,330	7.6	232	220	80	90	9.0	200	940
AFOR2S-1	12/16/98	2,530	7.5	387	90	100	7.7	230	220	910
AFOR2S-1	05/12/99	2,450	7.5	381	90	110	8.0	210	270	1,030

Table 3. Physical properties and results of chemical analyses for ground-water samples collected in the amorphous ferric oxyhydroxide permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Aluminum, dis- solved (µg/L as Al)	Copper, dis- solved (µg/L as Cu)	Iron, dis- solved (mg/L as Fe)	Lithium, dis- solved (mg/L as L)	Manga- nese, dis- solved (mg/L as Mn)	Phos- phorus, dis- solved (mg/L as P)	Silica, dis- solved (mg/L as SiO ₂)	Stron- tium, dis- solved (mg/L as Sr)	Zinc, dis- solved (µg/L as Zn)	Uranium, dis- solved (µg/L as U)
AFOR1S-4	<170	<20	<.03	.3	.10	1.0	5.4	1.4	<20	3,790
AFOR1S-4	<170	20	<.03	.3	.40	<1.0	6.2	2.4	<20	10,800
AFOR1S-4	<170	40	<.03	.3	.20	<1.0	5.6	2.3	<20	5,420
AFOR1-5	—	—	—	—	—	—	—	—	—	820
AFOR1-5	30	<5	<0.02	0.2	0.90	<0.1	2	2.0	<4	1,050
AFOR1-5	—	—	—	—	—	—	—	—	—	1,260
AFOR1-5	<20	10	.02	.2	.40	<.1	1.8	1.0	<2	2,910
AFOR1-5	—	—	—	—	—	—	—	—	—	4,470
AFOR1-5	40	<2	<.01	.2	.20	<.1	2.5	.9	<2	3,450
AFOR1-5	—	—	—	—	—	—	—	—	—	1,890
AFOR1-5	150	30	<.01	.4	<.02	1.5	5.0	1.3	14	3,620
AFOR1-5	<170	<20	<.03	.3	<.02	<1.0	5.4	1.5	<20	4,720
AFOR1-5	<170	30	.04	.3	.20	<1.0	6.7	2.4	20	11,250
AFOR1-5	<170	60	<.03	.3	.20	<1.0	5.3	2.2	<20	6,300
AFOR1-5	<170	<20	<.03	.2	<.02	<1.0	5.5	2.2	<20	5,500
AFOR1-6	—	—	—	—	—	—	—	—	—	480
AFOR1-6	30	<5	<.02	.2	.80	<.1	1.9	1.7	<4	600
AFOR1-6	<20	10	.02	.2	.30	<.1	1.6	1.0	<2	1,910
AFOR1-6	40	<2	<.01	.2	.30	<.1	2.2	.8	<2	2,640
AFOR1-6	90	15	<.01	.3	.20	1.0	4.1	1.1	10	2,360
AFOR1-6	<170	<20	<.03	.3	.10	<1.0	4.9	1.3	<20	2,860
AFOR1-6	260	60	<.03	.2	<.02	<1.0	8.3	3.0	<20	7,790
AFOR1-6	<170	120	<.03	.3	.10	<1.0	5.2	2.3	90	5,000
AFOR1S-7	20	<5	<.02	.2	.30	<.1	1.2	1.6	<4	250
AFOR1S-7	—	—	—	—	—	—	—	—	—	500
AFOR1S-7	<20	30	.02	.2	.30	.4	1.4	1.0	<2	1,460
AFOR1S-7	—	—	—	—	—	—	—	—	—	2,630
AFOR1S-7	<20	<2	<.01	.2	.20	<.1	1.9	.8	<2	2,200
AFOR1S-7	—	—	—	—	—	—	—	—	—	1,080
AFOR1S-7	<20	30	.01	.3	.20	.8	3.8	1.2	10	2,380
AFOR1S-7	<170	<20	<.03	.3	.10	<1.0	4.7	1.3	<20	2,390
AFOR1S-7	280	50	.09	.3	.10	<1.0	8.2	3.2	<20	6,830
AFOR1S-7	<170	30	<.03	.3	.10	<1.0	4.8	2.4	<20	4,580
AFOR1-8	—	—	—	—	—	—	—	—	—	330
AFOR1-8	<20	<5	<.02	.2	.50	<.1	1.6	1.7	<4	380
AFOR1-8	—	—	—	—	—	—	—	—	—	480
AFOR1-8	<20	10	<.01	.2	.20	.2	1.4	.9	<2	1,580
AFOR1-8	—	—	—	—	—	—	—	—	—	2,890
AFOR1-8	140	<2	.24	.2	.20	<.1	2.1	.9	2	2,530
AFOR1-8	—	—	—	—	—	—	—	—	—	1,260
AFOR1-8	100	25	<.01	.3	.10	1.1	4.2	1.3	10	2,870
AFOR1-8	<170	<20	<.03	.3	.10	1.0	5.1	1.4	<20	3,180
AFOR1-8	200	20	<.03	.3	.10	<1.0	7.5	2.5	<20	8,290
AFOR1-8	<170	70	<.03	.3	.10	<1.0	5.0	2.4	<20	5,240
AFOR1-8	<170	20	<.03	.3	<.02	<1.0	5.1	2.3	<20	4,950
AFOR2S-1	130	10	<.02	.2	.20	<.1	2.8	2.6	<4	7,000
AFOR2S-1	<20	30	.04	.2	.10	.2	3.5	2.1	<2	9,130
AFOR2S-1	170	<2	.29	.2	.20	<.1	3.5	1.7	<2	3,720
AFOR2S-1	140	<2	.41	.3	.70	.6	4.9	1.7	3	5,990
AFOR2S-1	290	<20	.39	.3	.40	<1.0	5.9	1.9	<20	8,100

Table 3. Physical properties and results of chemical analyses for ground-water samples collected in the amorphous ferric oxyhydroxide permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Date	Specific con- ductance ($\mu\text{S}/\text{cm}$)	pH, field (standard units)	Alk- alinity, field (mg/L as CaCO_3)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Magne- sium, dis- solved (mg/L as Mg)	Potas- sium, dis- solved (mg/L as K)	Sod- ium, dis- solved (mg/L as Na)	Sulfate, dis- solved (mg/L as SO_4)
AFOR2S-1	08/12/99	2,220	7.6	312	300	90	100	9.0	210	820
AFOR2S-1	12/02/99	2,670	7.3	364	280	—	100	8.1	240	—
AFOR2-2	09/25/97	2,790	7.4	240	—	—	—	—	—	—
AFOR2-2	10/30/97	2,840	7.5	256	390	40	170	9.1	110	1,570
AFOR2-2	11/19/97	2,920	7.6	260	—	—	—	—	—	—
AFOR2-2	01/29/98	2,720	7.7	270	420	60	150	9.2	140	1,510
AFOR2-2	04/22/98	2,900	7.4	262	—	—	—	—	—	—
AFOR2-2	06/24/98	2,700	7.4	280	400	40	140	9.7	120	1,560
AFOR2-2	09/10/98	2,970	7.1	306	—	—	—	—	—	—
AFOR2-2	12/16/98	3,070	7.5	330	390	60	150	9.8	150	1,440
AFOR2-2	05/12/99	3,020	7.3	338	460	67	170	10.0	160	1,545
AFOR2-2	08/12/99	3,210	7.1	304	310	50	110	12.0	200	1,860
AFOR2-2	12/02/99	3,320	7.1	296	590	—	190	11.6	100	—
AFOR2S-4	12/16/98	—	—	—	240	80	100	8.0	220	970
AFOR2S-4	12/02/99	2,630	7.3	364	300	—	110	7.7	250	—
AFOR2-5	09/25/97	2,200	7.6	224	—	—	—	—	—	—
AFOR2-5	10/30/97	2,440	7.6	174	220	80	90	7.5	220	1,030
AFOR2-5	11/19/97	2,490	7.6	192	—	—	—	—	—	—
AFOR2-5	01/29/98	2,380	7.6	202	250	90	90	7.5	220	1,040
AFOR2-5	04/22/98	2,600	7.4	208	—	—	—	—	—	—
AFOR2-5	06/24/98	2,440	7.4	228	230	70	90	8.6	210	1,110
AFOR2-5	09/10/98	2,380	7.1	308	—	—	—	—	—	—
AFOR2-5	12/16/98	2,760	7.5	357	260	80	100	8.3	210	1,010
AFOR2-5	05/12/99	2,830	7.4	340	320	81	120	8.7	190	1,235
AFOR2-5	08/12/99	1,560	7.4	312	190	65	70	10.0	250	1,450
AFOR2-5	12/02/99	2,760	7.3	352	320	—	120	8.3	240	—
AFOR2S-7	12/02/99	2,710	7.3	346	300	—	110	8.3	240	—
AFOR2-8	09/25/97	1,980	7.5	256	—	—	—	—	—	—
AFOR2-8	10/30/97	2,140	7.7	168	150	90	60	7.3	280	860
AFOR2-8	11/19/97	2,180	7.7	172	—	—	—	—	—	—
AFOR2-8	01/29/98	2,100	7.7	168	180	100	70	7.1	240	860
AFOR2-8	04/22/98	2,420	7.3	172	—	—	—	—	—	—
AFOR2-8	06/24/98	2,360	7.4	208	180	90	70	8.5	230	920
AFOR2-8	09/10/98	2,160	7.3	302	—	—	—	—	—	—
AFOR2-8	12/16/98	2,600	7.3	367	220	90	90	8.2	220	910
AFOR2-8	05/12/99	2,720	7.5	346	300	82	120	8.5	200	1,205
AFOR2-8	08/12/99	2,750	7.4	338	280	76	100	9.0	220	1,145
AFOR2-8	12/02/99	2,790	7.3	362	320	—	120	8.3	240	—
AFOT3	09/25/97	2,110	7.3	232	—	—	—	—	—	—
AFOT3	10/30/97	2,080	7.9	154	110	110	40	8.1	310	780
AFOT3	11/19/97	1,990	8.1	138	—	—	—	—	—	—
AFOT3	01/29/98	1,770	8.2	156	70	120	40	7.0	280	590
AFOT3	04/22/98	1,850	8.0	168	—	—	—	—	—	—
AFOT3	06/24/98	1,900	7.9	186	70	110	40	8.7	280	630
AFOT3	09/10/98	1,920	7.5	356	—	—	—	—	—	—
AFOT3	12/16/98	2,180	7.4	393	130	100	70	7.3	270	630
AFOT3	05/12/99	2,180	7.5	387	170	110	70	7.0	250	710
AFOT3	08/11/99	2,520	7.3	344	370	78	110	10.0	220	1,045
AFOT3	12/01/99	2,670	7.2	364	290	—	100	8.0	240	—

Table 3. Physical properties and results of chemical analyses for ground-water samples collected in the amorphous ferric oxyhydroxide permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Aluminum, dis- solved (µg/L as Al)	Copper, dis- solved (µg/L as Cu)	Iron, dis- solved (mg/L as Fe)	Lithium, dis- solved (mg/L as L)	Manga- nese, dis- solved (mg/L as Mn)	Phos- phorus, dis- solved (mg/L as P)	Silica, dis- solved (mg/L as SiO ₂)	Stron- tium, dis- solved (mg/L as Sr)	Zinc, dis- solved (µg/L as Zn)	Uranium, dis- solved (µg/L as U)
AFOR2S-1	<170	40	.39	.3	.50	<1.0	7.1	2.5	<20	3,980
AFOR2S-1	<170	<20	.37	.3	.80	<1.0	5.4	2.2	<20	4,510
AFOR2-2	—	—	—	—	—	—	—	—	—	10,670
AFOR2-2	190	20	<.02	.2	.10	<.1	4.2	3.5	<4	11,900
AFOR2-2	—	—	—	—	—	—	—	—	—	19,040
AFOR2-2	240	40	.03	.2	.10	.2	5.6	3.2	<2	17,940
AFOR2-2	—	—	—	—	—	—	—	—	—	16,560
AFOR2-2	400	20	.08	.2	.10	<.1	6.1	2.8	<2	18,810
AFOR2-2	—	—	—	—	—	—	—	—	—	13,980
AFOR2-2	470	40	.13	.3	.30	<.1	6.5	2.7	20	13,570
AFOR2-2	400	<20	<.03	.3	.10	<1.0	7.7	3.0	<20	16,770
AFOR2-2	<170	30	.04	.3	.10	<1.0	5.2	2.6	<20	19,270
AFOR2-2	270	70	.08	.3	.10	<1.0	8.2	3.8	<20	23,570
AFOR2S-4	250	30	.02	.3	.30	<.1	4.1	1.9	20	6,850
AFOR2S-4	<170	20	.11	.3	.60	<1.0	5.0	2.4	<20	4,450
AFOR2-5	—	—	—	—	—	—	—	—	—	1,880
AFOR2-5	70	<5	<.02	.2	.10	<.1	1.4	2.2	<4	3,450
AFOR2-5	—	—	—	—	—	—	—	—	—	5,900
AFOR2-5	<20	30	.02	.2	.03	<.1	2.7	2.0	<2	8,240
AFOR2-5	—	—	—	—	—	—	—	—	—	9,830
AFOR2-5	180	10	<.01	.2	.10	<.1	3.3	1.7	<2	5,210
AFOR2-5	—	—	—	—	—	—	—	—	—	7,050
AFOR2-5	310	40	<.01	.3	.20	<.1	4.7	1.9	20	7,580
AFOR2-5	310	<20	<.03	.3	.10	<1.0	5.7	2.2	<20	11,000
AFOR2-5	<170	50	.16	.3	.70	<1.0	5.7	1.9	<20	9,200
AFOR2-5	<170	20	<.03	.3	.30	<1.0	4.8	2.5	<20	6,660
AFOR2S-7	<170	40	<.03	.3	.30	<1.0	4.0	2.4	<20	5,640
AFOR2-8	—	—	—	—	—	—	—	—	—	160
AFOR2-8	30	<5	<.02	.2	.10	<.1	1.0	1.7	<4	1,360
AFOR2-8	—	—	—	—	—	—	—	—	—	3,480
AFOR2-8	<20	40	.06	.2	.03	<.1	1.8	1.5	<2	5,350
AFOR2-8	—	—	—	—	—	—	—	—	—	7,110
AFOR2-8	120	<2	<.01	.2	<.02	<.1	2.7	1.5	<2	3,430
AFOR2-8	—	—	—	—	—	—	—	—	—	5,090
AFOR2-8	280	50	<.01	.3	.20	<.1	3.9	1.7	20	6,870
AFOR2-8	310	<20	<.03	.3	.10	<1.0	5.6	2.1	<20	9,990
AFOR2-8	<170	30	.88	.3	.60	<1.0	7.4	2.4	<20	8,430
AFOR2-8	250	<20	<.03	.3	.30	<1.0	4.5	2.5	<20	6,490
AFOT3	—	—	—	—	—	—	—	—	—	2,440
AFOT3	30	<5	.62	.2	1.8	.8	3.2	1.6	<4	1,270
AFOT3	—	—	—	—	—	—	—	—	—	1,490
AFOT3	<20	20	.05	.2	.50	.5	1.9	.9	<2	1,820
AFOT3	—	—	—	—	—	—	—	—	—	3,020
AFOT3	90	3	.07	.2	.50	<.1	2.6	.8	<2	1,220
AFOT3	—	—	—	—	—	—	—	—	—	1,220
AFOT3	230	30	.42	.3	1.0	.8	4.5	1.2	20	2,440
AFOT3	<170	<20	.69	.3	.50	<1.0	5.5	1.4	<20	3,110
AFOT3	<170	<20	7.23	.3	.20	10.0	7.4	1.8	<20	9,140
AFOT3	<170	<20	1.20	.3	.50	<1.0	5.6	2.2	<20	5,050

Table 4. Physical properties and results of chemical analyses for ground-water samples collected in the phosphate permeable reactive barrier, Fry Canyon, Utah

[mg/L, milligrams per liter; µg/L, micrograms per liter; —, no data available; <, less than reporting limit; >, greater than reporting limit; **Specific conductance:** µS/cm, microsiemens per centimeter at 25 degrees Celsius, measured in the field.

Well	Date	Specific conductance (µS/cm)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO ₃)	Phosphate, field (mg/L as PO ₄)	Calcium, dissolved (mg/L as Ca)	Chloride, dissolved (mg/L as Cl)	Magnesium, dissolved (mg/L as Mg)	Potassium, dissolved (mg/L as K)	Sodium, dissolved (mg/L as Na)
PO4FS1	09/23/97	2,060	6.9	408	>5.0	—	—	—	—	—
PO4FS1	10/28/97	2,240	7.0	422	29	140	110	80	6.6	270
PO4FS1	11/18/97	2,190	7.0	434	25	—	—	—	—	—
PO4FS1	01/27/98	2,070	7.1	438	26	120	120	60	5.2	280
PO4FS1	04/21/98	2,010	7.1	430	24	—	—	—	—	—
PO4FS1	06/23/98	3,600	7.1	430	20	120	120	60	5.1	300
PO4FS1	09/09/98	1,930	7.0	460	22	—	—	—	—	—
PO4FS1	12/15/98	2,040	7.1	468	12	120	110	70	11.2	320
PO4FS1	05/11/99	1,930	7.3	454	11	100	120	60	5.1	260
PO4FS1	08/10/99	2,200	7.2	427	19	120	100	80	6.0	390
PO4FS1	11/30/99	2,140	7.2	414	13	150	—	80	5.4	270
PO4R1S-1	10/28/97	2,150	6.8	392	43	120	110	70	6.1	290
PO4R1S-1	11/18/97	2,070	7.2	408	45	—	—	—	—	—
PO4R1S-1	01/27/98	2,050	7.2	438	36	110	120	70	4.3	280
PO4R1S-1	04/21/98	1,970	7.1	434	42	—	—	—	—	—
PO4R1S-1	06/23/98	1,960	7.2	442	36	110	120	60	3.9	290
PO4R1S-1	09/09/98	1,930	7.0	460	42	—	—	—	—	—
PO4R1S-1	12/15/98	1,970	7.3	476	20	110	110	70	4.5	320
PO4R1S-1	05/11/99	1,990	7.2	454	19	120	110	60	4.7	260
PO4R1S-1	08/10/99	2,420	7.1	393	28	200	100	90	7.0	270
PO4R1S-1	11/30/99	2,470	7.1	374	24	230	—	100	6.5	230
PO4R1-2	09/23/97	2,200	6.4	340	>5.0	—	—	—	—	—
PO4R1-2	10/28/97	2,210	6.7	396	61	120	110	70	9.7	300
PO4R1-2	11/18/97	2,180	7.0	416	58	—	—	—	—	—
PO4R1-2	01/27/98	2,520	6.8	398	67	170	190	70	7.6	320
PO4R1-2	04/21/98	2,590	6.8	366	45	—	—	—	—	—
PO4R1-2	06/23/98	2,700	6.8	354	39	310	100	90	7.6	250
PO4R1-2	09/09/98	2,510	6.7	398	37	—	—	—	—	—
PO4R1-2	12/15/98	2,680	7.1	398	15	350	100	110	8.5	250
PO4R1-2	05/11/99	2,920	7.2	379	4.0	400	96	120	9.0	230
PO4R1-2	08/10/99	3,100	7.2	338	5.0	480	69	150	10.0	180
PO4R1-2	11/30/99	3,140	7.1	336	2.0	480	—	170	10.4	210
PO4R1-2	06/14/00	—	—	—	—	460	—	—	—	150
PO4R1-3	09/23/97	2,000	6.7	384	>5.0	—	—	—	—	—
PO4R1-3	10/28/97	2,060	7.0	416	43	120	110	70	6.6	290
PO4R1-3	01/27/98	2,130	7.0	444	37	120	140	70	5.1	300
PO4R1-3	06/23/98	2,160	7.1	424	38	160	110	70	5.1	280
PO4R1-3	12/15/98	2,070	7.3	448	25	160	110	80	5.3	300
PO4R1-3	05/11/99	2,250	7.2	423	6.0	200	110	80	5.9	260
PO4R1-3	08/10/99	2,610	7.1	381	24	270	92	100	7.0	230
PO4R1-3	11/30/99	2,630	7.1	346	14	280	—	110	7.5	220
PO4R1S-4	10/28/97	2,150	7.0	428	31	120	110	70	6.0	270
PO4R1S-4	11/18/97	2,130	7.1	422	30	—	—	—	—	—
PO4R1S-4	01/27/98	2,050	7.2	438	30	110	120	70	4.2	280
PO4R1S-4	04/21/98	1,960	7.1	450	31	—	—	—	—	—
PO4R1S-4	06/23/98	1,980	7.1	442	26	100	120	60	3.9	290

Table 4. Physical properties and results of chemical analyses for ground-water samples collected in the phosphate permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Sulfate, dis-solved (mg/L as SO ₄)	Aluminum, dis-solved (µg/L as Al)	Copper, dis-solved (µg/L as Cu)	Iron, dis-solved (mg/L as Fe)	Lithium, dis-solved (mg/L as Li)	Man-ganese, dissolved (mg/L as Mn)	Phos-phorus, dissolved (mg/L as P)	Silica, dis-solved (mg/L as SiO ₂)	Strontium, dis-solved (mg/L as Sr)	Zinc, dis-solved (µg/L as Zn)	Uranium, dis-solved (µg/L as U)
PO4FS1	—	—	—	—	—	—	—	—	—	—	1,040
PO4FS1	680	40	<.01	<.02	.2	<.01	10	5.3	.4	<4	1,170
PO4FS1	—	—	—	—	—	—	—	—	—	—	1,350
PO4FS1	520	<20	.01	<.02	.2	<.01	10	5.3	.7	<2	1,400
PO4FS1	—	—	—	—	—	—	—	—	—	—	1,490
PO4FS1	510	50	<.01	<.01	.1	<.01	7.7	5.6	.9	<2	1,130
PO4FS1	—	—	—	—	—	—	—	—	—	—	580
PO4FS1	540	40	.03	.05	.2	.10	6.7	5.6	.9	20	1,000
PO4FS1	470	<170	<.02	.17	.2	.10	4.8	5.9	1.0	<20	1,260
PO4FS1	615	<170	.03	.92	.2	.40	<1.0	6.9	1.9	<20	1,380
PO4FS1	—	<170	.07	1.65	.2	.30	3.6	5.5	2.0	<20	250
PO4R1S-1	650	50	<5	<0.02	0.2	<0.01	20	4.9	0.1	<4	2
PO4R1S-1	—	—	—	—	—	—	—	—	—	—	1
PO4R1S-1	500	<20	10	.03	.2	<.01	20	5.0	.1	20	3
PO4R1S-1	—	—	—	—	—	—	—	—	—	—	30
PO4R1S-1	500	30	<2	<.01	.1	<.01	13	4.9	.3	<2	210
PO4R1S-1	—	—	—	—	—	—	—	—	—	—	200
PO4R1S-1	530	110	20	<.01	.2	<.01	11	5.4	.7	20	310
PO4R1S-1	550	<170	<20	<.03	.2	<.02	8.2	5.7	1.0	<20	160
PO4R1S-1	875	<170	<20	<.03	.2	<.02	10	7.0	1.7	<20	110
PO4R1S-1	—	<170	50	<.03	.2	<.02	12	5.7	1.7	<20	240
PO4R1-2	—	—	—	—	—	—	—	—	—	—	70
PO4R1-2	660	50	<5	.06	.2	<.01	40	6.7	.1	<4	10
PO4R1-2	—	—	—	—	—	—	—	—	—	—	10
PO4R1-2	680	200	20	1.09	.2	.20	30	7.1	.3	10	210
PO4R1-2	—	—	—	—	—	—	—	—	—	—	1,000
PO4R1-2	1,170	<20	<2	4.24	.2	.50	13	6.8	1.3	50	850
PO4R1-2	—	—	—	—	—	—	—	—	—	—	300
PO4R1-2	1,200	60	20	2.57	.9	.60	5.8	6.9	1.9	20	1,270
PO4R1-2	1,390	<170	<20	.81	.4	.20	2.3	7.3	2.2	<20	4,300
PO4R1-2	1,615	<170	20	.44	.5	.20	2.1	7.8	2.9	<20	11,330
PO4R1-2	—	<170	80	.93	.4	.20	2.4	6.9	2.9	<20	7,110
PO4R1-2	—	<170	20	.94	.3	.18	2.0	6.1	2.8	<20	9,110
PO4R1-3	—	—	—	—	—	—	—	—	—	—	2
PO4R1-3	650	70	<5	<.02	.2	<.01	20	5.2	.1	<4	10
PO4R1-3	530	100	10	.09	.2	<.01	20	5.4	.1	3	70
PO4R1-3	650	<20	<2	.17	.2	<.01	14	5.4	.5	<2	230
PO4R1-3	660	90	15	.19	.3	.10	10	5.8	.9	10	150
PO4R1-3	770	<170	<20	.10	.2	.10	7.4	6.3	1.3	<20	190
PO4R1-3	1,080	<170	30	1.29	.3	.10	10	6.8	1.9	<20	690
PO4R1-3	—	<170	80	.13	.3	.10	8.3	5.7	1.9	<20	750
PO4R1S-4	650	20	10	<.02	.2	<.01	10	4.8	.1	10	3
PO4R1S-4	—	—	—	—	—	—	—	—	—	—	10
PO4R1S-4	510	<20	20	.02	.2	<.01	10	4.9	.3	<2	130
PO4R1S-4	—	—	—	—	—	—	—	—	—	—	420
PO4R1S-4	490	<20	<2	<.01	.1	<.01	9.4	4.9	.6	<2	430

Table 4. Physical properties and results of chemical analyses for ground-water samples collected in the phosphate permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Date	Specific conductance ($\mu\text{S}/\text{cm}$)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO_3)	Phos- phate, field (mg/L as PO_4)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Mag- nesium, dis- solved (mg/L as Mg)	Potas- sium, dis- solved (mg/L as K)	Sodium, dis- solved (mg/L as Na)
PO4R1S-4	09/09/98	1,920	7.0	448	29	—	—	—	—	—
PO4R1S-4	12/15/98	1,950	7.3	462	17	110	110	70	4.4	310
PO4R1S-4	05/11/99	1,890	7.3	466	12	100	115	60	4.1	270
PO4R1S-4	08/10/99	2,230	7.2	419	22	140	100	80	5.0	280
PO4R1S-4	11/30/99	2,360	7.1	364	25	200	—	100	6.1	240
PO4R1-5	09/23/97	2,110	6.7	406	>5	—	—	—	—	—
PO4R1-5	10/28/97	2,200	7.1	432	40	130	120	70	6.9	290
PO4R1-5	11/18/97	2,180	7.2	438	44	—	—	—	—	—
PO4R1-5	01/27/98	2,800	6.9	432	78	170	270	80	11.0	400
PO4R1-5	04/21/98	2,720	6.8	344	61	—	—	—	—	—
PO4R1-5	06/23/98	2,720	6.7	338	37	360	90	110	9.2	220
PO4R1-5	09/09/98	2,500	6.5	374	81	—	—	—	—	—
PO4R1-5	12/15/98	2,530	7.1	376	27	360	100	110	8.4	240
PO4R1-5	05/11/99	2,910	7.2	375	10	410	97	120	8.8	240
PO4R1-5	08/10/99	3,040	7.1	308	13	470	69	140	10.0	190
PO4R1-5	11/30/99	3,140	7.2	308	6.0	490	—	170	10.2	220
PO4R1-5	06/14/00	—	—	—	—	480	—	150	—	160
PO4R1-6	09/23/97	2,040	6.7	392	>5.0	—	—	—	—	—
PO4R1-6	10/28/97	2,180	7.0	428	32	130	120	70	5.7	280
PO4R1-6	01/27/98	2,120	7.1	446	34	120	130	70	4.6	290
PO4R1-6	06/23/98	2,030	7.2	430	21	150	110	70	4.8	280
PO4R1-6	12/15/98	2,010	7.3	436	12	140	110	70	4.9	300
PO4R1-6	05/11/99	2,120	7.2	448	14	160	110	70	5.2	260
PO4R1-6	08/10/99	2,400	7.1	401	22	210	98	90	6.0	250
PO4R1-6	11/30/99	2,520	7.2	370	13	270	—	110	7.0	230
PO4R1S-7	10/28/97	2,100	7.1	430	25	130	110	80	6.4	280
PO4R1S-7	11/18/97	2,150	7.2	436	21	—	—	—	—	—
PO4R1S-7	01/27/98	2,040	7.2	444	18	110	120	70	4	280
PO4R1S-7	04/21/98	1,960	7.1	450	14	—	—	—	—	—
PO4R1S-7	06/23/98	1,960	7.2	446	13	100	120	60	3.9	290
PO4R1S-7	09/09/98	1,900	7.0	458	16	—	—	—	—	—
PO4R1S-7	12/15/98	1,960	7.4	448	7.0	100	110	70	4.4	310
PO4R1S-7	05/11/99	1,880	7.4	466	5.0	90	115	60	4.0	270
PO4R1S-7	08/10/99	2,160	7.2	427	7.0	130	100	70	5.0	290
PO4R1S-7	11/30/99	2,260	7.3	402	5.0	180	—	90	5.6	230
PO4R1-8	09/23/97	2,010	7.0	444	>5.0	—	—	—	—	—
PO4R1-8	10/28/97	2,200	7.3	456	13	130	110	70	6.8	280
PO4R1-8	11/18/97	2,170	7.4	456	13	—	—	—	—	—
PO4R1-8	01/27/98	2,540	7.1	436	33	160	200	80	6.9	340
PO4R1-8	04/21/98	2,660	7.0	370	45	—	—	—	—	—
PO4R1-8	06/23/9	2,420	7.0	366	36	350	90	110	9.1	230
PO4R1-8	09/09/98	2,320	6.9	402	54	—	—	—	—	—
PO4R1-8	12/15/98	2,460	7.3	382	31	300	100	100	7.5	250
PO4R1-8	05/11/99	2,850	7.2	383	25	410	98	120	8.4	270
PO4R1-8	08/10/99	3,020	7.0	328	28	420	75	130	9.0	190
PO4R1-8	11/30/99	3,090	7.2	350	22	420	—	150	10.0	190
PO4R1-8	06/14/00	—	—	—	—	460	—	150	—	170
PO4R2S-1	10/28/97	2,190	7.0	432	26	130	110	70	5.8	280
PO4R2S-1	01/27/98	2,070	7.3	448	20	120	120	70	4.3	290
PO4R2S-1	06/23/98	1,980	7.2	448	20	110	120	60	4.1	300

Table 4. Physical properties and results of chemical analyses for ground-water samples collected in the phosphate permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Sulfate, dis- solved (mg/L as SO ₄)	Aluminum, dis- solved (µg/L as Al)	Copper, dis- solved (µg/L as Cu)	Iron, dis- solved (mg/L as Fe)	Lithium, dis- solved (mg/L as Li)	Man- ganese, dissolved (mg/L as Mn)	Phos- phorus, dissolved (mg/L as P)	Silica, dis- solved (mg/L as SiO ₂)	Strontium, dis- solved (mg/L as Sr)	Zinc, dis- solved (µg/L as Zn)	Uranium, dis- solved (µg/L as U)
PO4R1S-4	—	—	—	—	—	—	—	—	—	—	350
PO4R1S-4	530	100	20	0.01	0.2	<0.01	8.4	5.3	1.0	3	550
PO4R1S-4	455	<170	<20	<.03	.2	<.02	5.7	5.7	1.0	<20	320
PO4R1S-4	735	<170	<20	.04	.2	<.02	10	6.3	1.7	<20	280
PO4R1S-4	—	<170	50	.20	.2	.1	9.2	5.5	2.1	<20	230
PO4R1-5	—	—	—	—	—	—	—	—	—	—	—
PO4R1-5	660	<20	<5	<.02	.2	<.01	20	6.0	.3	<4	80
PO4R1-5	—	—	—	—	—	—	—	—	—	—	130
PO4R1-5	720	110	20	.24	.2	<.10	40	8.7	.4	<2	210
PO4R1-5	—	—	—	—	—	—	—	—	—	—	150
PO4R1-5	1,320	<20	<2	1.41	.2	.10	14	6.7	1.2	<2	60
PO4R1-5	—	—	—	—	—	—	—	—	—	—	<.06
PO4R1-5	1,250	<20	40	1.23	1.0	.10	12	6.9	1.4	20	0
PO4R1-5	1,385	<170	<20	.86	.5	.30	5.6	7.4	2.2	<20	16
PO4R1-5	1,595	<170	<20	.77	.5	.30	4.8	7.7	2.6	<20	40
PO4R1-5	—	<170	50	.54	.4	.20	4.2	7.0	2.8	<20	80
PO4R1-5	—	<170	<20	.70	.3	.21	1	6.2	2.8	<20	2,240
PO4R1-6	—	—	—	—	—	—	—	—	—	—	10
PO4R1-6	660	40	<5	<.02	.2	<.01	10	5.0	.2	<4	30
PO4R1-6	540	<20	10	.07	.2	<.01	10	5.2	.5	<2	350
PO4R1-6	610	<20	<2	.11	.1	<.01	9.3	5.2	.9	<2	410
PO4R1-6	620	<20	20	.36	.3	.10	8.0	5.5	1.1	10	240
PO4R1-6	650	<170	<20	.42	.2	.10	6.2	6.0	1.3	<20	280
PO4R1-6	945	<170	<20	.66	.3	.10	10	6.7	1.9	<20	230
PO4R1-6	—	<170	70	.78	.3	.20	9	5.9	2.2	<20	200
PO4R1S-7	670	<20	<5	<.02	.2	<.01	10	5.1	.3	<4	230
PO4R1S-7	—	—	—	—	—	—	—	—	—	—	290
PO4R1S-7	500	<20	10	.01	.2	<.01	10	4.8	.7	<2	530
PO4R1S-7	—	—	—	—	—	—	—	—	—	—	630
PO4R1S-7	490	40	<2	<.01	.1	<.01	4.6	4.8	1.0	<2	590
PO4R1S-7	—	—	—	—	—	—	—	—	—	—	480
PO4R1S-7	530	<20	20	.02	.2	<.01	4.1	5.2	1.2	10	1,870
PO4R1S-7	435	<170	<20	.19	.2	.20	2.4	5.6	1.1	<20	560
PO4R1S-7	650	<170	<20	1.23	.2	.30	3.0	6.2	1.8	<20	520
PO4R1S-7	—	<170	40	1.76	.2	.40	2.9	5.1	2.2	<20	640
PO4R1-8	—	—	—	—	—	—	—	—	—	—	230
PO4R1-8	650	40	<5	.61	.2	<.01	<.1	5.1	1.0	<4	490
PO4R1-8	—	—	—	—	—	—	—	—	—	—	560
PO4R1-8	680	<20	10	6.24	.2	.10	10	7.5	1.1	<2	450
PO4R1-8	—	—	—	—	—	—	—	—	—	—	220
PO4R1-8	1,280	<20	<2	6.78	.2	.10	11.7	6.5	1.4	<2	30
PO4R1-8	—	—	—	—	—	—	—	—	—	—	5
PO4R1-8	1,080	<20	5	5.56	.8	.10	13.7	6.6	1.1	10	30
PO4R1-8	1,300	<170	<20	4.21	.5	.10	11	7.7	1.8	<20	2
PO4R1-8	1,535	<170	<20	4.41	.4	.10	10	7.4	2.1	<20	<.06
PO4R1-8	—	<170	50	2.97	.4	.10	8.2	6.1	2.2	<20	<.06
PO4R1-8	—	<170	20	2.23	.3	.15	5	6.1	2.6	<20	56
PO4R2S-1	650	20	<5	<.02	.2	<.01	10	5.0	.2	<4	180
PO4R2S-1	510	120	20	.04	.2	<.01	10	5.2	.6	<2	750
PO4R2S-1	500	<20	<2	<.01	.1	<.01	7.0	5.0	1.0	<2	600

Table 4. Physical properties and results of chemical analyses for ground-water samples collected in the phosphate permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Date	Specific conductance (μS/cm)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO ₃)	Phosphate, field (mg/L as PO ₄)	Calcium, dissolved (mg/L as Ca)	Chloride, dissolved (mg/L as Cl)	Magnesium, dissolved (mg/L as Mg)	Potassium, dissolved (mg/L as K)	Sodium, dissolved (mg/L as Na)
PO4R2S-1	12/15/98	1,990	7.3	460	6.0	110	110	60	10.6	310
PO4R2S-1	05/11/99	1,900	7.3	462	4.0	100	120	60	4.2	280
PO4R2S-1	08/10/99	2,300	7.2	405	13	130	100	70	6.0	300
PO4R2S-1	11/30/99	2,440	7.2	386	9.0	100	—	70	6.4	260
PO4R2-2	09/23/97	2,060	6.9	438	>5.0	—	—	—	—	—
PO4R2-2	10/28/97	2,230	7.1	448	18	140	110	70	6.0	280
PO4R2-2	11/18/97	2,110	7.3	446	20	—	—	—	—	—
PO4R2-2	01/27/98	2,260	7.2	438	16	140	140	70	4.9	300
PO4R2-2	04/21/98	2,470	6.9	382	28	—	—	—	—	—
PO4R2-2	06/23/98	2,600	7.0	364	24	290	110	90	7.1	240
PO4R2-2	09/09/98	2,090	7.1	420	21	—	—	—	—	—
PO4R2-2	12/15/98	1,970	7.3	434	7.0	190	110	80	11.8	290
PO4R2-2	05/11/99	2,570	7.6	427	4.0	270	110	90	6.9	240
PO4R2-2	08/10/99	2,850	7.2	369	11	340	87	110	8.0	220
PO4R2-2	11/30/99	2,910	7.3	368	9.0	350	—	130	8.5	200
PO4R2-3	11/30/99	2,510	7.2	374	13	260	—	110	7.3	220
PO4R2S-4	12/15/98	—	—	—	8.0	110	110	70	10.6	310
PO4R2S-4	11/30/99	2,080	7.2	416	7.0	240	—	80	5.0	290
PO4R2-5	09/23/97	2,020	7.0	440	—	—	—	—	—	—
PO4R2-5	10/28/97	2,250	7.2	456	15	140	110	70	5.0	290
PO4R2-5	11/18/97	2,180	7.4	454	14	—	—	—	—	—
PO4R2-5	01/27/98	2,120	7.1	456	17	130	130	70	4.4	290
PO4R2-5	04/21/98	2,450	7.0	406	25	—	—	—	—	—
PO4R2-5	06/23/98	2,520	7.1	374	25	280	100	100	7.5	240
PO4R2-5	09/09/98	2,090	6.8	—	—	—	—	—	—	—
PO4R2-5	12/15/98	2,200	7.3	418	19	190	110	80	11.7	280
PO4R2-5	05/11/99	2,680	7.3	403	17	300	100	100	7.7	240
PO4R2-5	08/10/99	2,840	7.1	350	30	360	83	120	8.0	220
PO4R2-5	11/30/99	3,030	7.1	346	18	400	—	140	9.2	210
PO4R2S-7	11/30/99	1,920	7.3	424	<2.0	170	—	80	4.3	250
PO4R2-8	09/23/97	2,010	7.1	458	>5.0	—	—	—	—	—
PO4R2-8	10/28/97	2,220	7.3	454	3.0	130	110	70	4.7	270
PO4R2-8	11/18/97	2,170	7.3	464	3.0	—	—	—	—	—
PO4R2-8	01/27/98	2,090	7.3	454	2.0	120	120	70	3.6	290
PO4R2-8	04/21/98	2,210	7.1	436	1.0	—	—	—	—	—
PO4R2-8	06/23/98	2,270	7.3	400	4.0	230	110	90	5.6	290
PO4R2-8	09/09/98	1,950	7.0	448	3.0	—	—	—	—	—
PO4R2-8	12/15/98	1,820	7.4	464	<2.0	120	110	70	10.7	310
PO4R2-8	05/11/99	2,450	7.6	427	7.0	230	110	80	6.5	250
PO4R2-8	08/10/99	2,820	7.3	379	13	170	83	80	9.0	270
PO4R2-8	11/30/99	3,000	7.3	350	17	390	—	140	9.3	210
PO4T3	09/23/97	2,040	6.7	382	>5.0	—	—	—	—	—
PO4T3	10/28/97	2,210	6.8	398	40	140	110	70	6.7	280
PO4T3	11/18/97	2,160	6.9	414	43	—	—	—	—	—
PO4T3	01/27/98	2,100	7.2	438	28	140	120	50	7.7	270

Table 4. Physical properties and results of chemical analyses for ground-water samples collected in the phosphate permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Sulfate, dis-solved (mg/L as SO ₄)	Aluminum, dis-solved (µg/L as Al)	Copper, dis-solved (µg/L as Cu)	Iron, dis-solved (mg/L as Fe)	Lithium, dis-solved (mg/L as Li)	Manganese, dissolved (mg/L as Mn)	Phosphorus, dissolved (mg/L as P)	Silica, dis-solved (mg/L as SiO ₂)	Strontium, dis-solved (mg/L as Sr)	Zinc, dis-solved (µg/L as Zn)	Uranium, dis-solved (µg/L as U)
PO4R2S-1	530	<20	30	.36	.2	.10	5.1	5.3	1.2	20	320
PO4R2S-1	480	<170	<20	.95	.2	.20	2.9	5.9	1.3	<20	410
PO4R2S-1	775	<170	30	.59	.2	.20	10	6.7	1.3	<20	120
PO4R2S-1	—	<170	40	.28	.2	.20	<1.0	4.9	1.6	<20	530
PO4R2-2	—	—	—	—	—	—	—	—	—	—	420
PO4R2-2	650	20	<5	.24	.2	.10	10	5.5	.7	<4	600
PO4R2-2	—	—	—	—	—	—	—	—	—	—	660
PO4R2-2	580	<20	20	10.0	.2	.20	10	5.7	1	<2	820
PO4R2-2	—	—	—	—	—	—	—	—	—	—	160
PO4R2-2	1,150	<20	<2	22.4	.2	.50	8.7	6.5	1.4	<2	20
PO4R2-2	—	—	—	—	—	—	—	—	—	—	70
PO4R2-2	760	20	30	10.3	.5	.40	3.7	6.0	1.4	10	110
PO4R2-2	1,015	<170	<20	8.36	.3	.40	2.8	6.4	1.7	<20	170
PO4R2-2	1,260	<170	20	7.51	.4	.50	3.7	7.3	2.2	<20	80
PO4R2-2	—	<170	30	5.65	.3	.40	4.0	5.8	2.1	<20	90
PO4R2-3	—	<170	20	2.33	.3	.30	4.6	5.6	2.0	<20	50
PO4R2S-4	530	<20	25	.88	.2	.20	4.1	5.2	1.3	6	380
PO4R2S-4	—	<170	40	1.75	.2	2.1	<1.0	6.9	2.3	<20	1,790
PO4R2-5	—	—	—	—	—	—	—	—	—	—	220
PO4R2-5	670	40	<5	<.02	.2	<.01	10	5.2	1.0	<4	540
PO4R2-5	—	—	—	—	—	—	—	—	—	—	640
PO4R2-5	550	<20	20	.66	.2	.10	10	5.3	1	<2	710
PO4R2-5	—	—	—	—	—	—	—	—	—	—	440
PO4R2-5	1,140	<20	<2	6.61	.2	.20	8.3	6.3	1.7	<2	210
PO4R2-5	—	—	—	—	—	—	—	—	—	—	70
PO4R2-5	770	170	30	8.95	.5	.20	8.7	6.2	1.2	20	100
PO4R2-5	1,140	<170	<20	6.82	.4	.20	8.6	6.7	1.3	<20	10
PO4R2-5	1,370	<170	<20	13.3	.4	.60	4.6	7.4	2.1	<20	<.06
PO4R2-5	—	<170	110	5.58	.4	.20	11	6.2	2.0	30	<.06
PO4R2S-7	—	<170	<20	1.63	.2	.40	<1.0	5.7	1.8	<20	1,330
PO4R2-8	—	—	—	—	—	—	—	—	—	—	580
PO4R2-8	660	<20	<5	2.50	.2	.20	2.0	5.0	1.4	<4	750
PO4R2-8	—	—	—	—	—	—	—	—	—	—	750
PO4R2-8	530	<20	10	3.83	.2	.30	2.0	5.2	1.5	<2	740
PO4R2-8	—	—	—	—	—	—	—	—	—	—	510
PO4R2-8	880	<20	<2	34.5	.2	.80	1.9	6.4	2.1	<2	340
PO4R2-8	—	—	—	—	—	—	—	—	—	—	400
PO4R2-8	590	90	<2	5.06	.2	.30	1.2	5.5	1.5	10	440
PO4R2-8	910	<170	<20	13.5	.3	.50	3.4	6.3	1.4	<20	290
PO4R2-8	1,360	<170	<20	1.57	.2	.30	4.2	6.6	2.1	<20	140
PO4R2-8	—	<170	90	10.2	.4	.50	7.0	6.3	2.2	<20	20
PO4T3	—	—	—	—	—	—	—	—	—	—	1,790
PO4T3	680	80	.03	<.01	.2	<0.01	20	5.5	.2	<4	830
PO4T3	—	—	—	—	—	—	—	—	—	—	1,360
PO4T3	540	60	.02	.06	.2	.04	10	6	.6	<2	1,470

Table 4. Physical properties and results of chemical analyses for ground-water samples collected in the phosphate permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Date	Specific conduc- tance (μ S/cm)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO ₃)	Phos- phate, field (mg/L as PO ₄)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Mag- nesium, dis- solved (mg/L as Mg)	Potas- sium, dis- solved (mg/L as K)	Sodium, dis- solved (mg/L as Na)
PO4T3	04/21/98	2,090	7.3	424	22	—	—	—	—	—
PO4T3	06/23/98	2,070	7.0	432	31	130	120	60	5.9	300
PO4T3	09/09/98	1,960	6.9	442	34	—	—	—	—	—
PO4T3	12/15/98	2,120	7.1	458	14	130	110	70	11.8	300
PO4T3	05/11/99	2,280	7.3	434	10	180	110	70	6.4	260
PO4T3	08/10/99	2,510	7.2	409	20	230	97	80	7.0	270
PO4T3	11/30/99	2,590	7.2	402	10	230	—	100	7.0	240

Table 4. Physical properties and results of chemical analyses for ground-water samples collected in the phosphate permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Sulfate, dis- solved (mg/L as SO ₄)	Aluminum, dis- solved (µg/L as Al)	Copper, dis- solved (µg/L as Cu)	Iron, dis- solved (mg/L as Fe)	Lithium, dis- solved (mg/L as Li)	Man- ganese, dissolved (mg/L as Mn)	Phos- phorus, dissolved (mg/L as P)	Silica, dis- solved (mg/L as SiO ₂)	Strontium, dis- solved (mg/L as Sr)	Zinc, dis- solved (µg/L as Zn)	Uranium, dis- solved (µg/L as U)
PO4T3	—	—	—	—	—	—	—	—	—	—	1,440
PO4T3	540	<20	<.01	<.01	.1	.1	11	5.6	.8	<2	610
PO4T3	—	—	—	—	—	—	—	—	—	—	350
PO4T3	590	130	.03	.10	.2	.20	9.9	5.8	.7	20	1,650
PO4T3	845	<170	<.02	.59	.2	.20	5.0	6.6	1.3	<20	1,830
PO4T3	870	<170	<.02	1.02	.2	.20	10	7.3	1.7	<20	2,470
PO4T3	—	<170	.08	2.32	.3	.30	5.4	5.6	2.0	<20	60

Table 5. Physical properties and results of chemical analyses for ground-water samples collected in the zero-valent iron permeable reactive barrier, Fry Canyon, Utah

[mg/L, milligrams per liter; µg/L, micrograms per liter; —, no data available; <, less than reporting limit; >, greater than reporting limit; **Specific conductance:** µS/cm, microsiemens per centimeter at 25 degrees Celsius, measured in the field]

Well	Date	Specific conductance (µS/cm)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO ₃)	Sulfide, field (mg/L as S)	Calcium, dissolved (mg/L as Ca)	Chloride, dissolved (mg/L as Cl)	Magnesium, dissolved (mg/L as Mg)	Potassium, dissolved (mg/L as K)	Sodium, dissolved (mg/L as Na)
ZVIFS1	09/24/97	1,810	9.0	222	—	—	—	—	—	—
ZVIFS1	10/29/97	1,880	8.7	222	—	50	110	60	6.5	320
ZVIFS1	11/18/97	1,910	8.4	252	—	—	—	—	—	—
ZVIFS1	01/28/98	1,740	8.7	296	—	50	120	60	5.0	290
ZVIFS1	04/21/98	1,730	8.5	324	<.06	—	—	—	—	—
ZVIFS1	06/24/98	1,780	8.5	322	.06	40	120	40	5.5	290
ZVIFS1	09/10/98	1,760	8.9	404	—	—	—	—	—	—
ZVIFS1	12/15/98	1,820	9.3	320	.07	60	110	50	12	320
ZVIFS1	05/11/99	1,670	9.2	312	—	40	115	40	5.0	270
ZVIFS1	08/11/99	1,730	9.2	239	—	30	100	30	7.0	290
ZVIFS1	11/30/99	1,550	9.8	198	.47	10	—	50	5.9	290
ZVIFS1	06/14/00	—	—	—	—	12	100	28	—	280
ZVIR1S-1	10/29/97	1,940	8.2	246	—	110	70	60	8.2	330
ZVIR1S-1	11/18/97	1,950	8.1	230	—	100	—	60	5.2	260
ZVIR1S-1	01/28/98	1,670	8.8	238	—	70	120	40	7.4	300
ZVIR1S-1	04/22/98	1,830	8.3	274	<.06	—	—	—	—	—
ZVIR1S-1	06/24/98	1,800	8.2	312	<.06	70	120	50	7.3	300
ZVIR1S-1	09/10/98	1,900	8.2	480	—	—	—	—	—	—
ZVIR1S-1	12/16/98	1,910	8.1	492	<.06	25	110	60	12	310
ZVIR1S-1	05/11/99	1,960	8.1	482	—	100	110	60	5.2	260
ZVIR1S-1	08/11/99	2,420	7.8	361	—	170	100	80	7.6	260
ZVIR1S-1	12/01/99	2,140	8.1	366	.08	140	—	80	5.6	250
ZVIR1S-1	06/14/00	2,120	8.2	434	.11	130	98	79	—	270
ZVIR1-2	09/24/97	2,500	8.1	234	—	—	—	—	—	—
ZVIR1-2	10/29/97	2,470	7.8	240	—	260	80	120	9.0	220
ZVIR1-2	11/18/97	2,490	8.0	—	—	—	—	—	—	—
ZVIR1-2	01/28/98	2,270	7.7	284	—	240	100	100	8.0	220
ZVIR1-2	04/22/98	2,530	7.8	268	<.06	—	—	—	—	—
ZVIR1-2	06/24/98	2,370	8.3	278	<.06	250	80	100	9.4	230
ZVIR1-2	09/10/98	2,460	7.7	330	—	—	—	—	—	—
ZVIR1-2	12/16/98	2,380	7.9	336	<.06	110	100	70	14	280
ZVIR1-2	05/11/99	2,540	7.6	365	—	240	100	100	8.0	230
ZVIR1-2	08/11/99	2,830	7.3	231	—	320	72	130	10	170
ZVIR1-2	12/01/99	2,300	7.8	260	<.06	120	—	70	7.1	190
ZVIR1-2	06/14/00	2,100	8.2	223	.05	120	88	94	—	240
ZVIR1-3	09/24/97	1,940	8.1	330	—	—	—	—	—	—
ZVIR1-3	10/29/97	1,980	7.9	298	—	90	110	60	6.9	280
ZVIR1-3	01/28/98	1,740	8.2	344	—	80	120	60	6.0	280
ZVIR1-3	06/24/98	1,850	8.1	334	<.06	80	110	60	6.6	280
ZVIR1-3	12/16/98	1,830	8.2	434	<.06	180	110	100	12	230
ZVIR1-3	05/11/99	1,920	8.1	407	—	100	110	60	5.5	260
ZVIR1-3	08/11/99	2,390	7.6	385	—	170	100	80	7.3	260
ZVIR1-3	12/01/99	2,120	8.0	344	.06	130	—	80	5.5	270

Table 5. Physical properties and results of chemical analyses for ground-water samples collected in the zero-valent iron permeable reactive barrier, Fry Canyon, Utah—Continued

Well name	Sulfate, dis- solved (mg/L as SO ₄)	Alumi- num, dis- solved (µg/L as Al)	Copper, dis- solved (µg/L as Cu)	Iron, dis- solved (mg/L as Fe)	Lithium, dis- solved (mg/L as Li)	Man- ganese, dis- solved (mg/L as Mn)	Phos- phorus, dis- solved (mg/L as P)	Silica, dis- solved (mg/L as SiO ₂)	Stron- tium, dis- solved (mg/L as Sr)	Zinc, dis- solved (µg/L as Zn)	Ura- nium, dis- solved (µg/L as U)
ZVIFS1	—	—	—	—	—	—	—	—	—	—	<.06
ZVIFS1	600	<20	<5	4.20	.2	.30	<.1	1.7	.2	<4	1.3
ZVIFS1	—	—	—	—	—	—	—	—	—	—	<.06
ZVIFS1	470	<20	10	3.42	.2	.20	.3	2.1	.4	<2	<.06
ZVIFS1	—	—	—	—	—	—	—	—	—	—	3
ZVIFS1	440	<20	<2	.94	.1	.10	<.1	2.0	.3	<2	460
ZVIFS1	—	—	—	—	—	—	—	—	—	—	<.06
ZVIFS1	500	<20	44	1.64	.2	.10	.1	2.3	.6	28	<.06
ZVIFS1	405	<170	<20	.52	.2	<.02	<1.0	2.6	.5	<20	<.06
ZVIFS1	555	<170	<20	.14	.2	<.02	<1.0	2.4	.4	<20	2
ZVIFS1	—	<170	<20	<.03	.2	<.02	<1.0	.7	.3	<20	<.06
ZVIFS1	220	<170	20	.09	.2	<.02	<1.0	.9	.2	<20	3.4
ZVIR1S-1	1,230	<20	<5	13.8	.2	.70	3.9	3.1	.8	<4	40
ZVIR1S-1	—	<170	<20	7.76	.2	.40	<1.0	4.9	1.0	<20	10
ZVIR1S-1	540	<20	20	2.81	.2	.40	.4	1.4	.5	<2	10
ZVIR1S-1	—	—	—	—	—	—	—	—	—	—	40
ZVIR1S-1	500	40	<2	2.67	.2	.30	.6	2.4	.6	<2	50
ZVIR1S-1	—	—	—	—	—	—	—	—	—	—	1.0
ZVIR1S-1	510	<20	30	1.17	.2	.10	<.1	1.5	.3	23	10
ZVIR1S-1	465	<170	<20	7.76	.2	.40	<1.0	4.9	1.0	<20	10
ZVIR1S-1	805	<170	<20	6.89	.3	.40	<1.0	10.0	1.6	<20	180
ZVIR1S-1	—	<170	<20	13.9	.2	.40	<1.0	3.4	1.4	<20	70
ZVIR1S-1	640	<170	<20	7.82	.2	.30	<1.0	3.7	1.4	<20	170
ZVIR1-2	—	—	—	—	—	—	—	—	—	—	3,040
ZVIR1-2	1,180	<20	<5	22.1	.2	.90	<.1	2.7	2.9	<4	490
ZVIR1-2	—	—	—	—	—	—	—	—	—	—	350
ZVIR1-2	1,030	<20	10	20.3	.2	.40	<.1	3.4	2.1	<2	380
ZVIR1-2	—	—	—	—	—	—	—	—	—	—	340
ZVIR1-2	1,090	40	<2	19.4	.2	.30	<.1	4.2	2.0	<2	240
ZVIR1-2	—	—	—	—	—	—	—	—	—	—	190
ZVIR1-2	930	30	20	8.50	.3	.20	.2	3.8	1.1	17	290
ZVIR1-2	1,040	<170	<20	19.6	.3	.20	<1.0	5.1	1.9	<20	<.06
ZVIR1-2	1,365	<170	20	12.0	.3	.10	<1.0	4.2	2.4	<20	1,170
ZVIR1-2	—	<170	<20	8.46	.2	.10	<1.0	1.8	1.1	<20	200
ZVIR1-2	780	<170	<20	4.74	.2	.07	<1.0	2.1	1.4	<20	49
ZVIR1-3	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1-3	700	<20	<5	9.10	.2	.50	<.1	1.8	.9	<4	1.6
ZVIR1-3	560	<20	10	8.05	.2	.30	.5	2.7	.6	<2	1.0
ZVIR1-3	530	<20	<2	6.41	.2	.20	<.1	3.0	.9	<2	<.06
ZVIR1-3	570	140	15	13.7	.5	.30	.2	3.6	1.4	28	<.06
ZVIR1-3	525	<170	<20	5.77	.3	.10	<1.0	4.0	1.0	<20	1.0
ZVIR1-3	780	<170	<20	11.1	.3	.60	<1.0	10.0	1.6	<20	230
ZVIR1-3	—	<170	<20	13.6	.2	.40	<1.0	3.7	1.3	<20	90

Table 5. Physical properties and results of chemical analyses for ground-water samples collected in the zero-valent iron permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Date	Specific conductance (μ S/cm)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO ₃)	Sulfide, field (mg/L as S)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Magne- sium, dis- solved (mg/L as Mg)	Potassium, dis- solved (mg/L as K)	Sodium, dis- solved (mg/L as Na)
ZVIR1S-4	10/29/97	1,780	8.7	148	—	20	120	50	6.6	270
ZVIR1S-4	11/18/97	1,770	8.6	154	—	—	—	—	—	—
ZVIR1S-4	01/28/98	1,550	9.2	204	—	10	120	60	5.8	300
ZVIR1S-4	04/22/98	1,680	8.6	234	<.06	—	—	—	—	—
ZVIR1S-4	06/24/98	1,650	8.4	236	<.06	10	120	50	5.9	310
ZVIR1S-4	09/10/98	1,670	8.4	326	—	—	—	—	—	—
ZVIR1S-4	12/16/98	1,680	8.7	312	.07	25	110	60	11	310
ZVIR1S-4	05/11/99	1,580	9.7	375	—	10	110	50	5.4	270
ZVIR1S-4	08/11/99	1,810	9.5	284	—	20	105	50	7.0	270
ZVIR1S-4	12/01/99	1,650	9.6	288	0.97	10	—	70	5.6	260
ZVIR1S-4	06/14/00	—	—	—	—	42	98	73	—	270
ZVIR1-5	09/24/97	2,230	7.9	116	—	—	—	—	—	—
ZVIR1-5	10/29/97	2,250	8.3	138	—	180	80	100	8.6	200
ZVIR1-5	11/18/97	2,240	8.5	154	—	—	—	—	—	—
ZVIR1-5	01/28/98	2,000	8.0	214	—	170	120	90	7.2	240
ZVIR1-5	04/22/98	2,280	8.4	196	<.06	—	—	—	—	—
ZVIR1-5	06/24/98	2,090	8.4	180	<.06	200	80	100	9.6	220
ZVIR1-5	09/10/98	2,180	8.2	222	—	—	—	—	—	—
ZVIR1-5	12/16/98	2,140	8.3	271	<.06	60	90	70	14	280
ZVIR1-5	05/11/99	2,290	7.5	251	—	180	100	90	7.6	230
ZVIR1-5	08/11/99	2,500	7.3	182	—	250	79	120	9.6	180
ZVIR1-5	12/01/99	2,210	7.6	160	<.06	170	—	120	7.8	230
ZVIR1-5	06/14/00	—	—	—	—	92	88	87	—	250
ZVIR1-6	09/24/97	1,790	9.1	152	—	—	—	—	—	—
ZVIR1-6	10/29/97	1,840	8.6	166	—	60	110	70	7.0	320
ZVIR1-6	01/28/98	1,630	8.9	222	—	50	120	70	5.9	280
ZVIR1-6	06/24/98	1,720	8.4	234	<.06	50	110	70	6.6	280
ZVIR1-6	12/16/98	1,800	8.6	310	<.06	250	110	140	12	220
ZVIR1-6	05/11/99	1,730	8.7	304	—	50	110	60	5.8	270
ZVIR1-6	08/11/99	2,110	8.2	332	—	110	100	80	6.6	270
ZVIR1-6	12/01/99	1,850	8.7	234	.20	60	—	80	5.5	260
ZVIR1S-7	10/29/97	1,690	9.1	136	—	20	120	50	6.8	330
ZVIR1S-7	11/18/97	1,710	9.2	148	—	—	—	—	—	—
ZVIR1S-7	01/28/98	1,500	9.5	200	—	10	120	50	5.5	290
ZVIR1S-7	04/22/98	1,660	9.0	226	<.06	—	—	—	—	—
ZVIR1S-7	06/24/98	1,610	8.8	234	<.06	4	120	50	5.8	310
ZVIR1S-7	09/10/98	1,570	8.8	310	—	—	—	—	—	—
ZVIR1S-7	12/16/98	1,540	9.0	271	<.06	7	110	60	12	310
ZVIR1S-7	05/11/99	1,530	9.8	304	—	5	110	40	5.3	270
ZVIR1S-7	08/11/99	1,720	9.7	186	—	10	100	50	6.8	270
ZVIR1S-7	12/01/99	1,620	10.1	168	.97	10	—	60	5.5	250
ZVIR1S-7	06/14/00	—	—	—	—	9	97	64	—	270
ZVIR1-8	09/24/97	2,300	8.9	40	—	—	—	—	—	—
ZVIR1-8	10/29/97	2,420	8.7	64	—	250	70	140	9.2	180

Table 5. Physical properties and results of chemical analyses for ground-water samples collected in the zero-valent iron permeable reactive barrier, Fry Canyon, Utah—Continued

Well name	Sulfate, dis-solved (mg/L as SO ₄)	Aluminum, dis-solved (μg/L as Al)	Copper, dis-solved (μg/L as Cu)	Iron, dis-solved (mg/L as Fe)	Lithium, dis-solved (mg/L as Li)	Manganese, dis-solved (mg/L as Mn)	Phosphorus, dis-solved (mg/L as P)	Silica, dis-solved (mg/L as SiO ₂)	Strontium, dis-solved (mg/L as Sr)	Zinc, dis-solved (μg/L as Zn)	Uranium, dis-solved (μg/L as U)
ZVIR1S-4	620	<20	<5	.40	.2	.30	<.1	.4	.2	<4	.90
ZVIR1S-4	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1S-4	480	<20	10	.31	.2	.20	.1	.6	<.02	<2	<.06
ZVIR1S-4	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1S-4	430	60	<2	.30	.2	.10	<.1	.9	.0	<2	<.06
ZVIR1S-4	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1S-4	460	<20	<2	1.15	.2	.10	.2	1.2	.3	14	<.06
ZVIR1S-4	330	<170	<20	.12	.3	<.02	<1.0	1.7	.3	<20	<.06
ZVIR1S-4	470	<170	<20	.42	.2	<.02	<1.0	2.3	.5	<20	<.06
ZVIR1S-4	—	<170	<20	.28	.2	<.02	<1.0	.6	.2	<20	<.06
ZVIR1S-4	520	<170	20	2.39	.2	.08	<1.0	1.7	.4	<20	2.5
ZVIR1-5	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1-5	1,130	<20	<5	6.05	.2	.60	<.1	1.1	2	<4	.80
ZVIR1-5	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1-5	480	<20	10	10.3	.2	.60	<.1	2.2	1.5	<2	<.06
ZVIR1-5	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1-5	1,010	30	<2	11.4	.2	.50	<.1	2.7	1.6	<2	<.06
ZVIR1-5	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1-5	970	<20	20	3.62	.2	.20	<.1	2.5	.4	23	<.06
ZVIR1-5	940	<170	<20	14.5	.3	.30	<1.0	4.3	1.4	<20	<.06
ZVIR1-5	1,235	<170	20	11.6	.3	.20	<1.0	4.1	1.8	<20	<.06
ZVIR1-5	—	<170	<20	11.5	.3	.20	<1.0	2.4	1.2	<20	<.06
ZVIR1-5	700	<170	40	3.09	.2	.14	<1.0	2	.8	<20	28
ZVIR1-6	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1-6	720	<20	<5	1.50	.2	.30	<.1	.9	.6	<4	.80
ZVIR1-6	580	<20	10	1.67	.2	.30	.1	1.3	.3	<2	<.06
ZVIR1-6	560	<20	<2	2.05	.2	.20	<.1	1.6	.4	<2	<.06
ZVIR1-6	570	160	40	14.2	.7	.80	<.1	2.1	1.5	20	<.06
ZVIR1-6	490	<170	<20	1.92	.3	.10	<1.0	3.0	.4	<20	<.06
ZVIR1-6	715	<170	<20	3.79	.2	.20	<1.0	4.2	1.1	<20	10
ZVIR1-6	—	<170	<20	2.12	.2	.10	<1.0	2.3	.6	<20	5.0
ZVIR1S-7	620	<20	<5	.24	.2	.30	<.1	.4	.1	<4	.90
ZVIR1S-7	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1S-7	480	<20	3.1	14	.2	.10	.3	.4	<.015	<2	<.06
ZVIR1S-7	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1S-7	430	20	<2	.14	.2	.10	<.1	.7	.0	<2	<.06
ZVIR1S-7	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1S-7	450	<20	29	.40	.2	.10	.2	1.2	.0	14	<.06
ZVIR1S-7	340	<170	<20	.07	.2	<.02	<1.0	1.6	.1	<20	<.06
ZVIR1S-7	510	<170	<20	.13	.2	<.02	<1.0	1.6	.2	<20	<.06
ZVIR1S-7	—	<170	<20	<.03	.2	<.02	<1.0	.1	.0	<20	<.06
ZVIR1S-7	560	<170	<20	<.03	.2	.02	<1.0	.3	.1	<20	.50
ZVIR1-8	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1-8	1,350	20	<5	2.50	.2	1.50	<.1	.5	2.6	<4	.90

Table 5. Physical properties and results of chemical analyses for ground-water samples collected in the zero-valent iron permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Date	Specific conduc- tance ($\mu\text{S}/\text{cm}$)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO_3)	Sulfide, field (mg/L as S)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Magne- sium, dis- solved (mg/L as Mg)	Potassium, dis- solved (mg/L as K)	Sodium, dis- solved (mg/L as Na)
ZVIR1-8	11/18/97	2,380	8.8	56	—	—	—	—	—	—
ZVIR1-8	01/28/98	2,120	8.9	66	—	210	90	110	8.1	210
ZVIR1-8	04/22/98	2,410	8.6	58	<.06	—	—	—	—	—
ZVIR1-8	06/24/98	2,160	8.8	68	<.06	220	70	120	10	180
ZVIR1-8	09/10/98	2,310	8.2	72	—	—	—	—	—	—
ZVIR1-8	12/16/98	2,260	8.6	110	<.06	110	80	60	15	300
ZVIR1-8	05/11/99	2,490	7.0	103	—	210	90	120	9.1	200
ZVIR1-8	08/11/99	2,600	7.4	217	—	260	78	120	9.6	190
ZVIR1-8	12/01/99	2,120	7.9	294	.20	120	—	90	5.9	240
ZVIR1-8	06/14/00	—	—	—	—	97	120	81	—	270
ZVIR2S-1	10/29/97	2,160	7.6	462	—	130	110	70	6.6	300
ZVIR2S-1	01/28/98	1,880	8.3	478	—	110	120	70	4.6	290
ZVIR2S-1	06/24/98	1,940	8.3	458	.07	100	120	60	5.0	310
ZVIR2S-1	12/16/98	2,110	8.1	508	—	120	110	60	11	300
ZVIR2S-1	05/11/99	1,990	7.9	480	—	130	115	60	4.7	260
ZVIR2S-1	08/11/99	2,020	8.2	446	—	90	105	60	5.4	290
ZVIR2S-1	12/01/99	1,990	8.1	456	<0.06	140	—	100	4.9	240
ZVIR2-2	09/24/97	2,380	7.7	422	—	—	—	—	—	—
ZVIR2-2	10/29/97	2,430	7.6	418	—	230	110	90	8.1	280
ZVIR2-2	11/18/97	2,440	7.9	386	—	—	—	—	—	—
ZVIR2-2	01/28/98	2,290	8.2	404	—	230	110	90	7.5	260
ZVIR2-2	04/22/98	2,530	7.0	388	<.06	—	—	—	—	—
ZVIR2-2	06/24/98	2,300	8.0	382	<.06	210	100	90	7.0	270
ZVIR2-2	09/10/98	2,300	8.2	438	—	—	—	—	—	—
ZVIR2-2	12/16/98	2,630	7.9	392	—	280	100	100	13	250
ZVIR2-2	05/11/99	2,440	7.7	318	—	230	100	90	8.3	230
ZVIR2-2	08/11/99	2,580	7.4	251	—	270	83	120	8.7	210
ZVIR2-2	12/01/99	2,200	7.9	198	<.06	140	—	90	7.1	230
ZVIR2S-4	12/16/98	—	—	—	—	110	110	60	11	310
ZVIR2S-4	12/01/99	1,860	8.4	386	.06	420	—	150	4.8	200
ZVIR2-5	09/24/97	2,190	8.0	356	—	—	—	—	—	—
ZVIR2-5	10/29/97	2,290	7.8	328	—	170	110	80	12	280
ZVIR2-5	11/18/97	2,340	7.7	296	—	—	—	—	—	—
ZVIR2-5	01/28/98	2,180	8.2	356	—	190	110	80	7.2	260
ZVIR2-5	04/22/98	2,400	7.5	346	<.06	—	—	—	—	—
ZVIR2-5	06/24/98	2,230	7.8	372	<.06	180	100	80	6.8	270
ZVIR2-5	09/10/98	2,270	7.8	404	—	—	—	—	—	—
ZVIR2-5	12/16/98	2,160	8.0	382	—	240	110	90	13	260
ZVIR2-5	05/11/99	2,450	7.6	373	—	230	100	90	7.2	260
ZVIR2-5	08/11/99	2,590	7.5	276	—	250	85	110	8.2	210
ZVIR2-5	12/01/99	2,240	7.9	208	<.06	110	—	70	6.9	260
ZVIR2S-7	12/01/99	1,560	9.9	244	1.64	20	—	60	4.9	290
ZVIR2-8	09/24/97	2,180	7.9	314	—	—	—	—	—	—
ZVIR2-8	10/29/97	2,260	7.8	310	—	160	110	80	7.5	280

Table 5. Physical properties and results of chemical analyses for ground-water samples collected in the zero-valent iron permeable reactive barrier, Fry Canyon, Utah—Continued

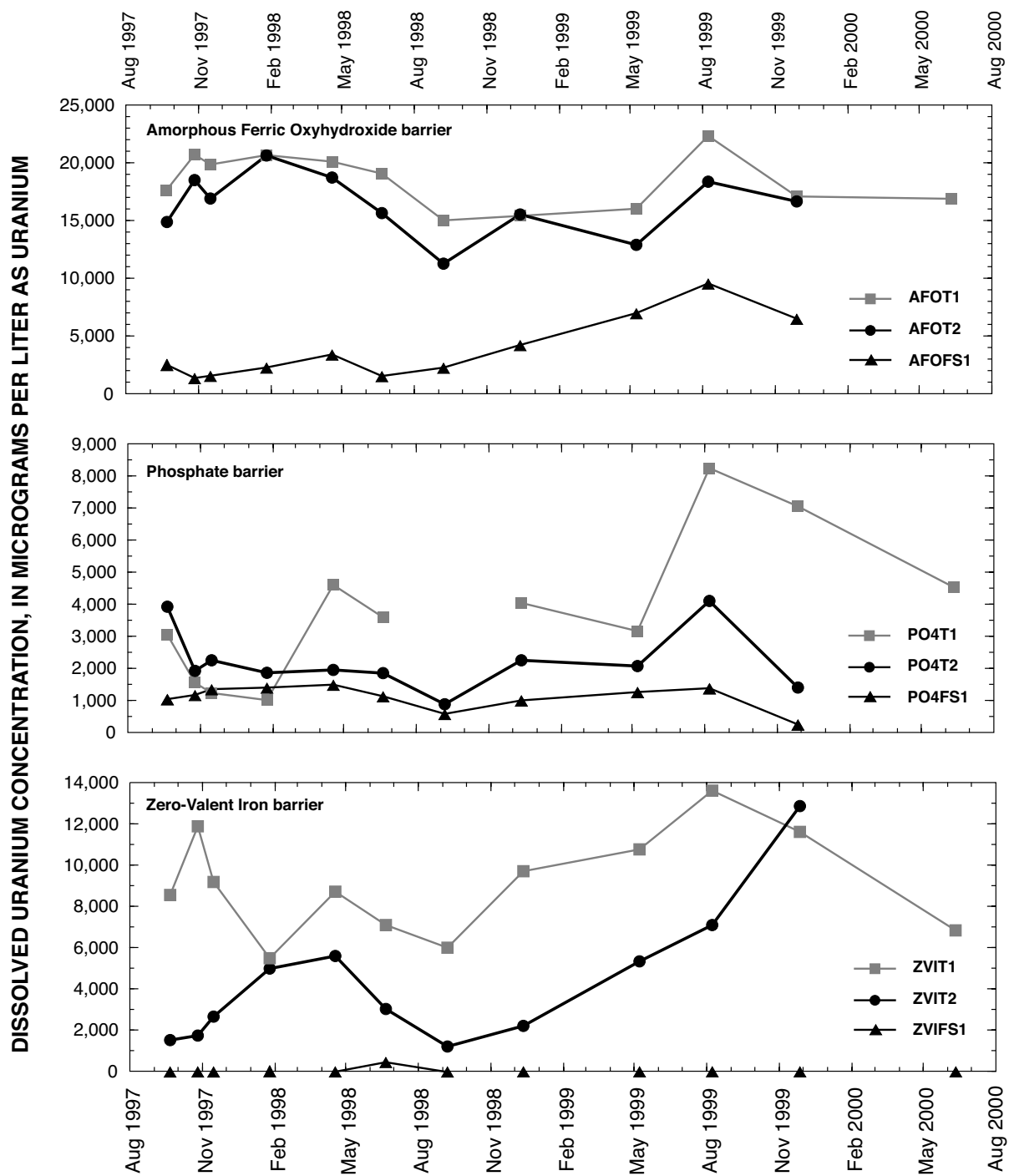
Well name	Sulfate, dis-solved (mg/L as SO ₄)	Aluminum, dis-solved (μg/L as Al)	Copper, dis-solved (μg/L as Cu)	Iron, dis-solved (mg/L as Fe)	Lithium, dis-solved (mg/L as Li)	Manganese, dis-solved (mg/L as Mn)	Phosphorus, dis-solved (mg/L as P)	Silica, dis-solved (mg/L as SiO ₂)	Strontium, dis-solved (mg/L as Sr)	Zinc, dis-solved (μg/L as Zn)	Uranium, dis-solved (μg/L as U)
ZVIR1-8	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1-8	1,170	<20	20	4.40	.2	1.10	.1	.5	1.6	<2	<.06
ZVIR1-8	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1-8	1,250	30	<2	7.83	.2	.70	<.1	1.1	1.5	<2	<.06
ZVIR1-8	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR1-8	1,220	20	30	10.1	.2	.50	1.3	5.0	1.1	20	<.06
ZVIR1-8	1,260	<170	<20	14.5	.4	.50	<1.0	3.1	1.2	<20	<.06
ZVIR1-8	1,240	<170	<20	12.5	.3	.50	<1.0	4.1	1.9	<20	40
ZVIR1-8	—	<170	<20	10.8	.2	.30	<1.0	3.1	1.1	<20	20
ZVIR1-8	640	<170	20	9.8	.2	.30	<1.0	3.8	1.3	<20	150
ZVIR2S-1	640	<20	<5	24.7	.2	.50	7.6	5.2	.4	<4	50
ZVIR2S-1	500	<20	10	11.6	.2	.20	3.9	4.5	.2	<2	50
ZVIR2S-1	460	<20	<2	7.95	.2	.10	2.8	4.9	.4	<2	20
ZVIR2S-1	540	<20	10	8.97	.2	.10	2.6	5.3	.6	14	20
ZVIR2S-1	545	<170	<20	12.9	.2	.20	<1.0	5.7	1.1	<20	90
ZVIR2S-1	505	<170	<20	4.34	.2	.10	<1.0	10.0	.8	<20	2.0
ZVIR2S-1	—	<170	<20	6.76	.3	<.02	<1.0	1.4	1.5	<20	20
ZVIR2-2	—	—	—	—	—	—	—	—	—	—	370
ZVIR2-2	890	30	<5	28.9	.2	1.10	.3	5.3	1.7	<4	220
ZVIR2-2	—	—	—	—	—	—	—	—	—	—	310
ZVIR2-2	890	<20	30	22.4	.2	.60	<.1	4.4	1.9	<2	570
ZVIR2-2	—	—	—	—	—	—	—	—	—	—	530
ZVIR2-2	870	810	60	21.6	.2	.50	<.1	5.5	1.8	350	70
ZVIR2-2	—	—	—	—	—	—	—	—	—	—	10
ZVIR2-2	1,090	50	25	30.0	.9	.40	<.1	5.5	2.0	26	20
ZVIR2-2	1,035	<170	<20	18.3	.3	.20	<1.0	4.3	1.7	<20	10
ZVIR2-2	1,215	<170	<20	13.7	.3	.20	<1.0	3.9	2.2	<20	10
ZVIR2-2	—	<170	20	9.39	.2	<.02	<1.0	2.4	1.2	<20	4.0
ZVIR2S-4	520	50	10	7.16	.2	.10	.1	4.8	.6	11	<.06
ZVIR2S-4	—	260	<20	2.31	.4	.30	<1.0	6.2	2.7	<20	<.06
ZVIR2-5	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR2-5	840	<20	<5	17.9	.2	.50	<.1	3.2	1.3	<4	.90
ZVIR2-5	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR2-5	810	<20	10	18.0	.2	.40	.1	3.7	1.6	<2	<.06
ZVIR2-5	—	—	—	—	—	—	—	—	—	—	2.0
ZVIR2-5	790	40	<2	15.9	.2	.30	<.1	4.3	1.6	<2	<.06
ZVIR2-5	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR2-5	990	90	20	23.6	.8	.30	<.1	5.1	1.9	17	<.06
ZVIR2-5	945	<170	<20	20.3	.3	.30	<1.0	5.4	1.7	<20	2.0
ZVIR2-5	1,155	<170	<20	11.3	.3	.10	<1.0	4.3	2.0	<20	<.06
ZVIR2-5	—	<170	<20	9.92	.2	.10	<1.0	4.6	1.1	<20	<.06
ZVIR2S-7	—	<170	<20	<.03	.2	<.02	<1.0	.7	.3	<20	<.06
ZVIR2-8	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR2-8	820	<20	<5	15.7	.2	.50	<.1	3.3	1.2	4.8	.90

Table 5. Physical properties and results of chemical analyses for ground-water samples collected in the zero-valent iron permeable reactive barrier, Fry Canyon, Utah—Continued

Well	Date	Specific conduc- tance (μ S/cm)	pH, field (standard units)	Alkalinity, field (mg/L as CaCO ₃)	Sulfide, field (mg/L as S)	Calcium, dis- solved (mg/L as Ca)	Chloride, dis- solved (mg/L as Cl)	Magne- sium, dis- solved (mg/L as Mg)	Potassium, dis- solved (mg/L as K)	Sodium, dis- solved (mg/L as Na)
ZVIR2-8	11/18/97	2,340	7.7	284	—	—	—	—	—	—
ZVIR2-8	01/28/98	2,150	8.2	324	—	170	120	80	7.1	270
ZVIR2-8	04/22/98	2,360	7.7	338	<.06	—	—	—	—	—
ZVIR2-8	06/24/98	2,220	7.7	364	<.06	160	100	80	6.6	270
ZVIR2-8	09/10/98	2,290	7.9	366	—	—	—	—	—	—
ZVIR2-8	12/16/98	2,230	8.2	355	—	240	100	100	13	260
ZVIR2-8	05/11/99	2,470	7.5	353	—	210	105	80	7.0	240
ZVIR2-8	08/11/99	2,660	7.5	276	—	260	84	110	8.7	200
ZVIR2-8	12/01/99	2,190	7.7	226	<.06	70	—	70	6.7	260
ZVIT3	09/24/97	1,920	8.1	—	—	—	—	—	—	—
ZVIT3	10/29/97	2,020	8.3	286	—	100	120	60	7.4	320
ZVIT3	11/18/97	1,960	8.3	276	—	—	—	—	—	—
ZVIT3	01/28/98	1,770	8.7	324	—	60	120	50	5.5	290
ZVIT3	04/21/98	1,810	8.3	378	<.06	—	—	—	—	—
ZVIT3	06/24/98	1,730	8.5	316	.06	40	120	70	5.7	350
ZVIT3	09/10/98	1,730	9.6	434	—	—	—	—	—	—
ZVIT3	12/15/98	1,750	8.9	304	<.06	50	110	50	12	310
ZVIT3	05/11/99	1,700	8.6	393	—	60	120	40	5.0	260

Table 5. Physical properties and results of chemical analyses for ground-water samples collected in the zero-valent iron permeable reactive barrier, Fry Canyon, Utah—Continued

Well name	Sulfate, dis- solved (mg/L as SO ₄)	Alumi- num, dis- solved (µg/L as Al)	Copper, dis- solved (µg/L as Cu)	Iron, dis- solved (mg/L as Fe)	Lithium, dis- solved (mg/L as Li)	Man- ganese, dis- solved (mg/L as Mn)	Phos- phorus, dis- solved (mg/L as P)	Silica, dis- solved (mg/L as SiO ₂)	Stron- tium, dis- solved (mg/L as Sr)	Zinc, dis- solved (µg/L as Zn)	Ura- nium, dis- solved (µg/L as U)
ZVIR2-8	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR2-8	800	<20	10	16.6	.2	.30	<.1	3.7	1.4	<2	<.06
ZVIR2-8	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR2-8	790	<20	<2	14.5	.2	.20	<.1	4.2	1.4	<2	<.06
ZVIR2-8	—	—	—	—	—	—	—	—	—	—	<.06
ZVIR2-8	970	<20	<2	24.1	.7	.30	<.1	5.1	1.8	14	<.06
ZVIR2-8	960	<170	<20	18.3	.3	.20	<1.0	5.1	1.5	<20	<.06
ZVIR2-8	1,165	<170	<20	14.0	.3	.10	<1.0	4.3	2.0	<20	<.06
ZVIR2-8	—	<170	30	4.96	.2	.10	<1.0	3.5	.9	<20	<.06
ZVIT3	—	—	—	—	—	—	—	—	—	—	60
ZVIT3	620	<20	<5	10.5	.2	.50	1.4	3	.6	<4	50
ZVIT3	—	—	—	—	—	—	—	—	—	—	10
ZVIT3	480	<20	10	4.93	.2	.20	.6	2.1	.3	<2	20
ZVIT3	—	—	—	—	—	—	—	—	—	—	80
ZVIT3	400	<20	<2	.63	.2	.10	.2	4.6	.3	<2	440
ZVIT3	—	—	—	—	—	—	—	—	—	—	3
ZVIT3	490	30	10	2.21	.2	.30	.4	2.2	.5	28	<.06
ZVIT3	395	<170	<20	2.51	.2	.20	<1.0	3.2	.7	<20	3



Samples labeled T1 and T2 were measured from water in wells upgradient from the permeable reactive barriers and reflect the input concentration of ground water. Samples labeled FS1 were collected within the barriers and are representative of treated ground water.

Figure 5. Seasonal fluctuation in uranium concentration for water from selected wells in and immediately upgradient from the permeable reactive barriers, Fry Canyon, Utah.

Table 6. Mean daily water-level altitude and mean daily water temperature in four wells within and adjacent to the amorphous ferric oxyhydroxide permeable reactive barrier, Fry Canyon, Utah

[—, no data available; mean daily water-level altitudes are calculated from hourly data recorded by a pressure transducer installed in each well; **mean daily water-level altitude:** In feet; **mean daily water temperature:** °C, degrees Celsius.

Date	Well AFOT1		Well AFOT2		Well AFOT3		Well DG-2	
	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)
09/04/97	5,355.83	17.9	5,355.8	18.3	5,355.83	18.3	5,355.83	17.1
09/09/97	5,355.85	17.4	5,355.8	17.8	5,355.82	17.5	5,355.88	17.0
09/14/97	5,355.93	17.3	5,355.9	17.5	5,355.87	17.3	5,355.85	16.9
09/19/97	5,355.97	17.2	5,355.9	17.4	5,355.92	17.1	5,355.84	16.8
09/22/97	5,355.83	17.2	5,355.7	17.4	5,355.73	17.1	5,355.68	16.8
09/27/97	5,355.77	17.1	5,355.7	17.3	5,355.69	17.0	5,355.60	16.7
10/02/97	5,355.67	16.9	5,355.7	17.1	5,355.71	16.9	5,355.60	16.5
10/07/97	5,355.97	16.7	5,355.9	17.0	5,355.93	16.7	5,355.81	16.4
10/12/97	5,355.78	16.6	5,355.7	17.0	5,355.74	16.5	5,355.63	16.2
10/17/97	5,355.80	16.3	5,355.8	16.5	5,355.78	16.3	5,355.65	15.9
10/22/97	5,355.80	16.0	5,355.8	16.1	5,355.79	16.0	5,355.66	15.5
10/27/97	5,355.81	15.6	5,355.8	15.8	5,355.81	15.6	5,355.68	15.2
11/04/97	5,355.82	15.0	5,355.8	15.1	5,355.82	15.0	5,355.70	14.4
11/09/97	5,355.83	14.5	5,355.8	14.7	5,355.83	14.5	5,355.72	14.0
11/14/97	5,355.82	14.2	5,355.8	14.3	5,355.82	14.1	5,355.73	13.7
11/20/97	5,355.84	13.8	5,355.8	13.9	5,355.82	13.8	5,355.76	13.2
11/25/97	5,355.86	13.4	5,355.8	13.5	5,355.84	13.2	5,355.76	12.7
11/30/97	5,355.86	13.0	5,355.8	13.1	5,355.84	12.8	5,355.77	12.3
12/05/97	5,355.87	12.6	5,355.8	12.8	5,355.84	12.4	5,355.77	12.0
12/10/97	5,355.86	12.3	5,355.8	12.5	5,355.82	12.1	5,355.75	11.7
12/15/97	5,355.90	12.0	5,355.9	12.1	5,355.86	11.8	5,355.79	11.3
12/20/97	5,355.86	11.6	5,355.9	11.8	5,355.88	11.4	5,355.79	10.9
12/25/97	5,355.85	11.3	5,355.9	11.4	5,355.85	11.0	5,355.77	10.6
12/30/97	5,355.89	10.9	5,355.9	11.1	5,355.88	10.7	5,355.80	10.2
01/04/98	5,355.88	10.6	5,355.9	10.8	5,355.86	10.4	5,355.77	9.9
01/09/98	5,355.87	10.3	5,355.9	10.5	5,355.85	10.1	5,355.77	9.6
01/14/98	5,355.86	10.1	5,355.8	10.3	5,355.82	9.8	5,355.74	9.4
01/19/98	5,355.89	9.9	5,355.9	10.1	5,355.84	9.6	5,355.76	9.3
01/24/98	5,355.89	9.7	5,355.8	9.9	5,355.83	9.5	5,355.74	9.2
01/30/98	5,355.87	9.5	5,355.8	9.7	5,355.82	9.6	5,355.75	9.1
02/04/98	5,355.87	9.4	5,355.8	9.6	5,355.83	9.4	5,355.75	9.0
02/09/98	5,355.87	9.3	5,355.8	9.5	5,355.84	9.3	5,355.75	9.0
02/14/98	5,355.86	9.3	5,355.8	9.4	5,355.86	9.3	5,355.75	9.0
02/19/98	5,355.83	9.2	5,355.8	9.4	5,355.82	9.2	5,355.73	8.9
02/24/98	5,355.84	9.2	5,355.8	9.4	5,355.90	9.2	5,355.75	8.9
03/01/98	5,355.82	9.1	5,355.8	9.3	5,355.83	9.1	5,355.75	8.9
03/06/98	5,355.86	9.1	5,355.9	9.3	5,355.87	9.1	5,355.80	8.7
03/11/98	5,355.82	9.1	5,355.8	9.2	5,355.85	9.1	5,355.75	8.7
03/16/98	5,355.81	9.0	5,355.8	9.2	5,355.86	9.0	5,355.75	8.6

Table 6. Mean daily water-level altitude and mean daily water temperature in four wells within and adjacent to the amorphous ferric oxyhydroxide permeable reactive barrier, Fry Canyon, Utah—Continued

Date	Well AFOT1		Well AFOT2		Well AFOT3		Well DG-2	
	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)
03/21/98	5,355.80	9.0	5,355.8	9.2	5,355.85	9.0	5,355.73	8.7
03/26/98	5,355.80	9.1	5,355.83	9.3	5,355.90	9.1	5,355.74	8.9
03/31/98	5,355.80	9.3	5,355.80	9.5	5,355.88	9.3	5,355.73	9.2
04/05/98	5,355.80	9.5	5,355.80	9.7	5,355.90	9.5	5,355.73	9.3
04/10/98	5,355.79	9.7	5,355.80	9.9	5,355.89	9.6	5,355.73	9.4
04/15/98	5,355.80	9.8	5,355.80	10.0	5,355.92	9.7	5,355.73	9.6
04/20/98	5,355.78	10.0	5,355.78	10.2	5,355.90	9.9	5,355.71	9.8
04/25/98	5,355.79	10.2	5,355.79	10.3	5,355.91	10.1	5,355.73	9.9
04/30/98	5,355.79	10.4	5,355.79	10.6	5,355.90	10.3	5,355.73	10.1
05/05/98	5,355.77	10.6	5,355.77	10.8	5,355.86	10.5	5,355.71	10.4
05/10/98	5,355.76	11.0	5,355.76	11.2	5,355.83	10.8	5,355.70	10.7
05/15/98	5,355.76	11.3	5,355.75	11.5	5,355.80	11.1	5,355.70	11.0
05/20/98	5,355.74	11.6	5,355.74	11.8	5,355.77	11.4	5,355.69	11.3
05/25/98	5,355.74	11.9	5,355.74	12.1	5,355.75	11.7	5,355.68	11.6
05/30/98	5,355.71	12.2	5,355.70	12.4	5,355.70	12.1	5,355.64	11.9
06/04/98	5,355.72	12.6	5,355.71	12.8	5,355.70	12.4	5,355.64	12.2
06/09/98	5,355.70	13.0	5,355.69	13.2	5,355.68	12.8	5,355.62	12.7
06/14/98	5,355.68	13.4	5,355.68	13.6	5,355.67	13.2	5,355.62	13.0
06/19/98	5,355.67	13.7	5,355.68	13.9	5,355.67	13.5	5,355.61	13.4
06/25/98	5,355.63	14.0	5,355.62	14.3	5,355.65	13.9	5,355.58	13.7
06/30/98	5,355.62	14.4	5,355.60	14.6	5,355.63	14.2	5,355.56	14.0
07/05/98	5,355.58	14.8	5,355.56	15.0	5,355.60	14.6	5,355.54	14.5
07/10/98	5,355.58	15.2	5,355.56	15.4	5,355.60	15.0	5,355.54	14.9
07/15/98	5,355.52	15.6	5,355.49	15.9	5,355.53	15.5	5,355.48	15.3
07/20/98	5,355.48	16.0	5,355.45	16.2	5,355.50	15.8	5,355.46	15.7
07/25/98	5,355.53	16.4	5,355.49	16.6	5,355.56	16.2	5,355.51	16.1
07/30/98	5,355.62	16.8	5,355.58	17.0	5,355.65	16.6	5,355.59	16.3
08/04/98	5,355.57	17.0	5,355.53	17.2	5,355.59	16.8	5,355.55	16.4
08/09/98	5,355.63	17.2	5,355.62	17.4	5,355.62	17.0	5,355.55	16.7
08/14/98	5,355.62	17.3	5,355.62	17.5	5,355.62	17.2	5,355.55	16.8
08/19/98	5,355.55	17.4	5,355.55	17.6	5,355.55	17.3	5,355.49	16.9
08/24/98	5,355.55	17.6	5,355.54	17.8	5,355.56	17.5	5,355.50	17.0
08/29/98	5,355.41	17.7	5,355.40	17.9	5,355.42	17.6	5,355.36	17.1
09/03/98	5,355.57	17.8	5,355.56	18.0	5,355.59	17.7	5,355.54	17.3
09/08/98	5,355.58	17.9	5,355.55	18.1	5,355.59	17.8	5,355.55	17.3
09/13/98	5,355.68	18.0	5,355.65	18.0	5,355.69	17.8	5,355.63	17.3
09/18/98	5,355.65	17.8	5,355.61	17.9	5,355.65	17.7	5,355.60	17.1
09/23/98	5,355.67	17.6	5,355.62	17.7	5,355.67	17.5	5,355.62	17.0
09/28/98	5,355.66	17.5	5,355.61	17.6	5,355.65	17.3	5,355.60	16.8
10/03/98	5,355.67	17.3	5,355.62	17.4	5,355.66	17.2	5,355.61	16.7
10/08/98	5,355.65	17.2	5,355.63	17.3	5,355.67	17.0	5,355.62	16.5

Table 6. Mean daily water-level altitude and mean daily water temperature in four wells within and adjacent to the amorphous ferric oxyhydroxide permeable reactive barrier, Fry Canyon, Utah—Continued

Date	Well AFOT1		Well AFOT2		Well AFOT3		Well DG-2	
	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)
10/13/98	5,355.67	16.9	5,355.63	17.0	5,355.67	16.8	5,355.63	16.3
10/18/98	5,355.72	16.7	5,355.68	16.8	5,355.72	16.6	5,355.67	16.1
10/23/98	5,355.83	16.4	5,355.83	16.5	5,355.83	16.3	5,355.78	15.8
10/28/98	5,355.71	16.0	5,355.72	16.1	5,355.71	15.9	5,355.65	15.4
11/02/98	5,355.71	15.6	5,355.72	15.7	5,355.71	15.5	5,355.64	15.0
11/07/98	5,355.70	15.2	5,355.70	15.3	5,355.70	15.1	5,355.65	14.6
11/12/98	5,355.75	14.8	5,355.75	14.9	5,355.74	14.8	5,355.69	14.2
12/17/98	—	—	—	—	—	—	5,355.64	11.8
12/22/98	—	—	—	—	—	—	5,355.69	11.4
12/27/98	—	—	—	—	—	—	5,355.66	11.0
01/01/99	—	—	—	—	—	—	5,355.67	10.7
01/06/99	—	—	—	—	—	—	5,355.70	10.4
01/11/99	—	—	—	—	—	—	5,355.72	10.2
01/16/99	—	—	—	—	—	—	5,355.75	10.0
01/21/99	—	—	—	—	—	—	5,355.75	9.8
01/26/99	—	—	—	—	—	—	5,355.74	9.6
01/31/99	—	—	—	—	—	—	5,355.76	9.6
02/05/99	—	—	—	—	—	—	5,355.77	9.5
02/10/99	—	—	—	—	—	—	5,355.74	9.4
02/15/99	—	—	—	—	—	—	5,355.74	9.4
02/20/99	—	—	—	—	—	—	5,355.70	9.3
02/25/99	—	—	—	—	—	—	5,355.70	9.3
03/02/99	—	—	—	—	—	—	5,355.68	9.3
03/07/99	—	—	—	—	—	—	5,355.69	9.4
03/12/99	—	—	—	—	—	—	5,355.70	9.5
03/17/99	—	—	—	—	—	—	5,355.68	9.6
03/22/99	—	—	—	—	—	—	5,355.66	9.7
03/27/99	—	—	—	—	—	—	5,355.65	9.9
04/01/99	—	—	—	—	—	—	5,355.66	10.1
04/06/99	—	—	—	—	—	—	5,355.69	10.3
04/11/99	—	—	—	—	—	—	5,355.67	10.3
04/16/99	—	—	—	—	—	—	5,355.66	10.3
04/21/99	—	—	—	—	—	—	5,355.66	10.4
04/26/99	—	—	—	—	—	—	5,355.69	10.5
05/01/99	—	—	—	—	—	—	5,355.67	10.7
05/06/99	—	—	—	—	—	—	5,355.65	10.8
05/11/99	—	—	—	—	—	—	5,355.63	10.9
05/16/99	—	—	—	—	—	—	5,355.63	11.1
05/21/99	—	—	—	—	—	—	5,355.62	11.5
05/26/99	—	—	—	—	—	—	5,355.63	12.0
05/31/99	—	—	—	—	—	—	5,355.71	12.2

Table 6. Mean daily water-level altitude and mean daily water temperature in four wells within and adjacent to the amorphous ferric oxyhydroxide permeable reactive barrier, Fry Canyon, Utah—Continued

Date	Well AFOT1		Well AFOT2		Well AFOT3		Well DG-2	
	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)
06/05/99	—	—	—	—	—	—	5,355.81	12.6
06/10/99	—	—	—	—	—	—	5,355.67	12.8
06/15/99	—	—	—	—	—	—	5,355.65	13.0
06/20/99	—	—	—	—	—	—	5,355.62	13.4
06/25/99	—	—	—	—	—	—	5,355.58	13.9
06/30/99	—	—	—	—	—	—	5,355.54	14.3
07/05/99	—	—	—	—	—	—	5,355.49	14.8
07/10/99	—	—	—	—	—	—	5,355.74	15.4
07/15/99	—	—	—	—	—	—	5,355.79	15.7
07/20/99	—	—	—	—	—	—	5,355.70	16.0
07/25/99	—	—	—	—	—	—	5,355.52	16.2
07/30/99	—	—	—	—	—	—	5,355.69	16.3
08/04/99	—	—	—	—	—	—	5,355.64	16.5
08/09/99	—	—	—	—	—	—	5,355.59	16.6
08/14/99	—	—	—	—	—	—	5,355.44	16.6
08/19/99	—	—	—	—	—	—	5,355.42	16.7
08/24/99	—	—	—	—	—	—	5,355.36	16.7
08/29/99	—	—	—	—	—	—	5,355.47	16.7
09/03/99	—	—	—	—	—	—	5,355.45	16.8
09/08/99	—	—	—	—	—	—	5,355.43	16.8
09/13/99	—	—	—	—	—	—	5,355.43	16.8
09/18/99	—	—	—	—	—	—	5,355.45	16.8
09/23/99	—	—	—	—	—	—	5,355.46	16.7
09/28/99	—	—	—	—	—	—	5,355.44	16.6
10/03/99	—	—	—	—	—	—	5,355.45	16.6
10/08/99	—	—	—	—	—	—	5,355.46	16.4
10/13/99	—	—	—	—	—	—	5,355.47	16.2
10/18/99	—	—	—	—	—	—	5,355.50	16.1
10/23/99	—	—	—	—	—	—	5,355.50	15.9
10/28/99	—	—	—	—	—	—	5,355.52	15.6
11/02/99	—	—	—	—	—	—	5,355.51	15.3
11/07/99	—	—	—	—	—	—	5,355.53	14.9
11/12/99	—	—	—	—	—	—	5,355.53	14.6
11/17/99	—	—	—	—	—	—	5,355.56	14.3
11/22/99	—	—	—	—	—	—	5,355.57	14.0
11/27/99	—	—	—	—	—	—	5,355.55	13.6
12/02/99	—	—	—	—	—	—	5,355.55	13.1
12/07/99	—	—	—	—	—	—	5,355.58	12.7
12/12/99	—	—	—	—	—	—	5,355.57	12.3
12/17/99	—	—	—	—	—	—	5,355.59	11.9
12/22/99	—	—	—	—	—	—	5,355.58	11.5

Table 6. Mean daily water-level altitude and mean daily water temperature in four wells within and adjacent to the amorphous ferric oxyhydroxide permeable reactive barrier, Fry Canyon, Utah—Continued

Date	Well AFOT1		Well AFOT2		Well AFOT3		Well DG-2	
	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)
12/27/99	—	—	—	—	—	—	5,355.58	11.1
01/01/00	—	—	—	—	—	—	5,355.61	10.7
01/06/00	—	—	—	—	—	—	5,355.63	10.4
01/11/00	—	—	—	—	—	—	5,355.62	10.2
01/16/00	—	—	—	—	—	—	5,355.58	9.9
01/21/00	—	—	—	—	—	—	5,355.57	9.8
01/26/00	—	—	—	—	—	—	5,355.64	9.8
01/31/00	—	—	—	—	—	—	5,355.58	9.8
02/05/00	—	—	—	—	—	—	5,355.56	9.7
02/10/00	—	—	—	—	—	—	5,355.58	9.6
02/15/00	—	—	—	—	—	—	5,355.55	9.5
02/20/00	—	—	—	—	—	—	5,355.56	9.5
02/25/00	—	—	—	—	—	—	5,355.54	9.5
03/01/00	—	—	—	—	—	—	5,355.57	9.5
03/06/00	—	—	—	—	—	—	5,355.64	9.5
03/11/00	—	—	—	—	—	—	5,355.57	9.5
03/16/00	—	—	—	—	—	—	5,355.55	9.5
03/21/00	—	—	—	—	—	—	5,355.57	9.5
03/26/00	—	—	—	—	—	—	5,355.55	9.5
03/31/00	—	—	—	—	—	—	5,355.55	9.6
04/05/00	—	—	—	—	—	—	5,355.54	9.7
04/10/00	—	—	—	—	—	—	5,355.53	9.9
04/15/00	—	—	—	—	—	—	5,355.53	10.2
04/20/00	—	—	—	—	—	—	5,355.53	10.5
04/25/00	—	—	—	—	—	—	5,355.53	10.8
04/30/00	—	—	—	—	—	—	5,355.52	11.1
05/05/00	—	—	—	—	—	—	5,355.51	11.4
05/10/00	—	—	—	—	—	—	5,355.50	11.8
05/15/00	—	—	—	—	—	—	5,355.49	12.2
05/20/00	—	—	—	—	—	—	5,355.48	12.5
05/25/00	—	—	—	—	—	—	5,355.46	12.7
05/30/00	—	—	—	—	—	—	5,355.42	13.0
06/04/00	—	—	—	—	—	—	5,355.39	13.4
06/09/00	—	—	—	—	—	—	5,355.37	13.8
06/14/00	—	—	—	—	—	—	5,355.32	14.2

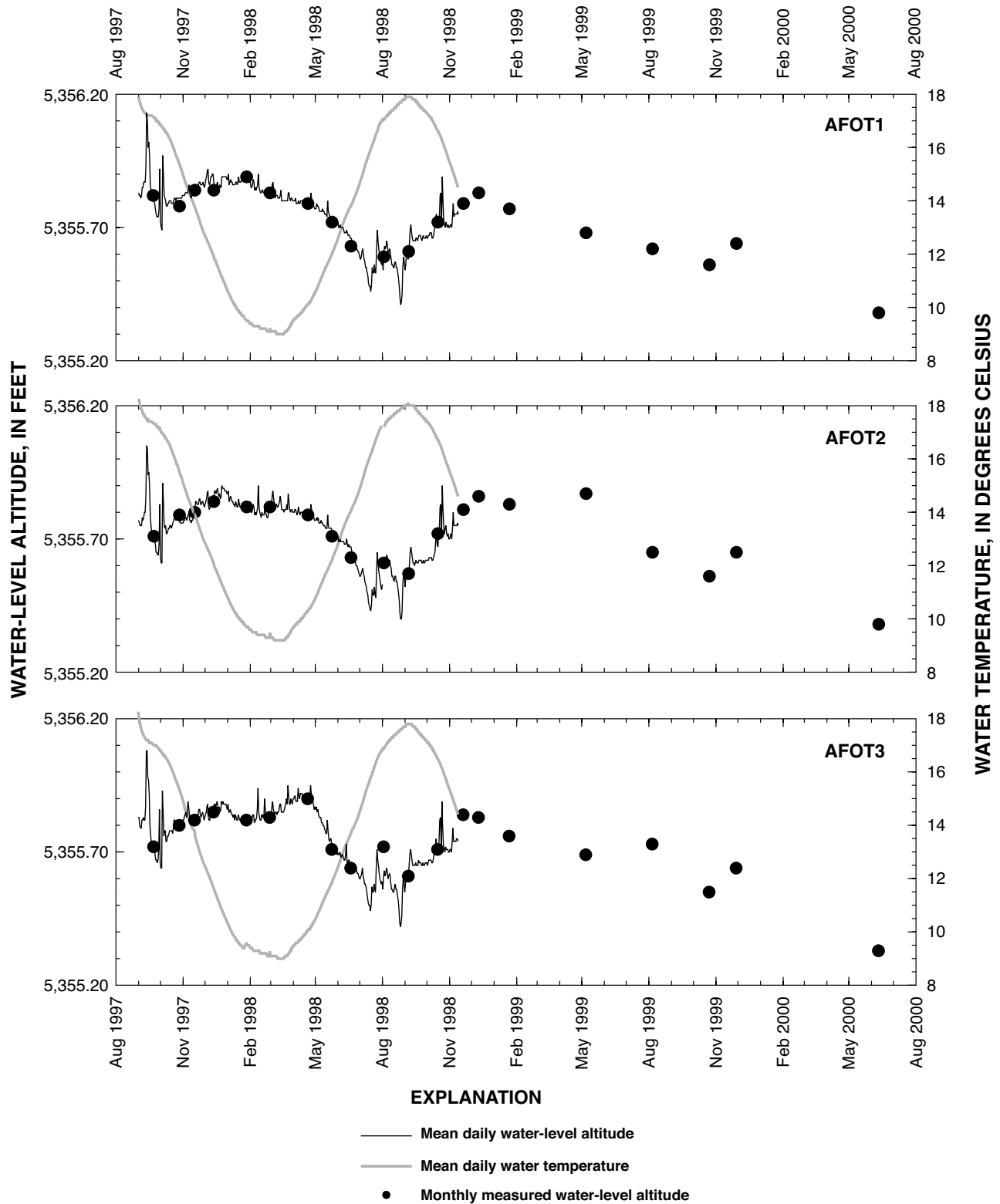


Figure 6. Mean daily and monthly measured water-level altitude and mean daily water temperature for selected wells in and immediately upgradient from the amorphous ferric oxyhydroxide permeable reactive barrier, Fry Canyon, Utah.

Table 7. Mean daily water-level altitude and mean daily water temperature in four wells within and adjacent to the phosphate permeable reactive barrier, Fry Canyon, Utah

[—, no data available; mean daily water-level altitudes are calculated from hourly data recorded by a pressure transducer installed in each well; **mean daily water-level altitude:** In feet; **mean daily water temperature:** °C, degrees Celsius.

Date	Well PO4T1		Well PO4T2		Well PO4T3		Well DG-4	
	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)
09/04/97	5,355.80	16.0	5,355.80	16.8	5,355.80	16.3	5,355.78	17.0
09/09/97	5,355.78	16.0	5,355.77	16.9	5,355.75	16.8	5,355.78	16.9
09/14/97	5,355.83	16.0	5,355.83	16.8	5,355.81	16.7	5,355.82	16.9
09/19/97	5,355.92	16.2	—	—	5,355.88	17.1	5,355.92	16.8
09/22/97	5,355.73	16.1	—	—	5,355.70	16.8	5,355.74	16.8
09/27/97	5,355.67	16.1	—	—	5,355.69	16.7	5,355.71	16.6
10/02/97	5,355.69	16.0	—	—	5,355.70	16.5	5,355.75	16.4
10/07/97	5,355.92	16.0	—	—	5,355.91	16.3	5,356.01	16.3
10/12/97	5,355.75	16.1	—	—	5,355.73	16.4	5,355.85	16.0
10/17/97	5,355.79	16.0	—	—	5,355.75	16.1	5,355.91	15.5
10/22/97	5,355.81	15.6	—	—	5,355.76	15.7	5,355.95	15.1
10/27/97	5,355.83	15.4	—	—	5,355.78	15.4	5,356.01	14.8
11/04/97	5,355.82	14.9	5,355.80	14.8	5,355.82	14.8	5,356.06	14.0
11/09/97	5,355.83	14.6	5,355.79	14.4	5,355.84	14.6	5,356.07	13.7
11/14/97	5,355.82	14.3	5,355.76	14.2	5,355.85	14.4	5,356.06	13.5
11/20/97	5,355.84	13.9	5,355.80	13.8	5,355.83	13.6	5,356.09	12.8
11/25/97	5,355.85	13.6	5,355.83	13.4	5,355.84	13.4	5,356.08	12.4
11/30/97	5,355.85	13.3	5,355.86	13.1	5,355.84	12.9	5,356.07	12.2
12/05/97	5,355.85	13.0	5,355.89	12.9	5,355.85	12.8	5,356.05	12.0
12/10/97	5,355.83	12.7	5,355.90	12.6	5,355.84	12.5	5,356.01	11.5
12/15/97	5,355.86	12.5	5,355.96	12.3	5,355.87	12.3	5,356.02	11.2
12/20/97	5,355.88	12.2	5,355.91	11.7	5,355.86	11.9	5,356.01	10.7
12/25/97	5,355.86	11.7	5,355.88	11.5	5,355.84	11.6	5,355.97	10.3
12/30/97	5,355.90	11.4	5,355.90	11.1	5,355.88	11.3	5,355.99	10.0
01/04/98	5,355.87	11.2	5,355.87	11.0	5,355.85	11.1	5,355.94	9.7
01/09/98	5,355.86	10.9	5,355.85	10.9	5,355.84	10.8	5,355.91	9.5
01/14/98	5,355.84	10.8	5,355.82	10.7	5,355.83	10.6	5,355.88	9.4
01/19/98	5,355.85	10.6	5,355.84	10.6	5,355.84	10.6	5,355.87	9.4
01/24/98	5,355.84	10.5	5,355.81	10.5	5,355.83	10.4	5,355.84	9.4
01/30/98	5,355.82	10.3	5,355.78	10.0	5,355.81	10.0	5,355.84	9.1
02/04/98	5,355.83	10.1	5,355.78	9.9	5,355.80	10.1	5,355.84	9.0
02/09/98	5,355.84	10.1	5,355.79	10.0	5,355.79	10.1	5,355.85	9.1
02/14/98	5,355.84	10.0	5,355.81	10.1	5,355.80	10.2	5,355.84	9.1
02/19/98	5,355.83	10.0	5,355.78	10.0	5,355.79	10.3	5,355.82	9.0
02/24/98	5,355.84	9.9	5,355.85	10.0	5,355.82	10.2	5,355.83	8.9
03/01/98	5,355.84	9.8	5,355.81	10.0	5,355.82	10.1	5,355.83	8.9

Table 7. Mean daily water-level altitude and mean daily water temperature in four wells within and adjacent to the phosphate permeable reactive barrier, Fry Canyon, Utah—Continued

Date	Well PO4T1		Well PO4T2		Well PO4T3		Well DG-4	
	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)
03/06/98	5,355.88	9.7	5,355.86	9.6	5,355.87	9.7	5,355.88	8.8
03/11/98	5,355.84	9.7	5,355.82	9.9	5,355.83	9.8	5,355.84	8.8
03/16/98	5,355.83	9.7	5,355.81	9.8	5,355.81	9.8	5,355.83	8.8
03/21/98	5,355.83	9.7	5,355.80	9.8	5,355.81	9.8	5,355.83	9.1
03/26/98	5,355.82	10.2	5,355.81	9.9	5,355.80	9.8	5,355.82	9.3
03/31/98	5,355.82	10.2	5,355.79	10.0	5,355.80	10.1	5,355.82	9.6
04/05/98	5,355.81	10.3	5,355.79	10.1	5,355.79	10.2	5,355.81	9.6
04/10/98	5,355.81	10.4	5,355.79	10.2	5,355.79	10.2	5,355.81	9.7
04/15/98	5,355.81	10.4	5,355.79	10.2	5,355.79	10.3	5,355.81	9.9
04/20/98	5,355.79	10.4	5,355.77	10.3	5,355.77	10.4	5,355.80	10.0
04/25/98	5,355.81	10.5	5,355.78	10.4	5,355.90	10.5	5,355.80	10.2
04/30/98	5,355.81	10.6	5,355.78	10.5	5,355.89	10.7	5,355.81	10.5
05/05/98	5,355.78	10.8	5,355.76	10.7	5,355.84	10.8	5,355.79	10.8
05/10/98	5,355.77	10.9	5,355.74	10.9	5,355.82	11.0	5,355.77	11.1
05/15/98	5,355.76	11.1	5,355.74	11.1	5,355.79	11.2	5,355.78	11.4
05/20/98	5,355.74	11.3	5,355.73	11.3	5,355.76	11.3	5,355.76	11.6
05/25/98	5,355.72	11.4	5,355.72	11.5	5,355.73	11.5	5,355.74	11.9
05/30/98	5,355.69	11.6	5,355.69	11.7	5,355.70	11.7	5,355.72	12.2
06/04/98	5,355.69	11.8	5,355.68	12.0	5,355.70	11.9	5,355.72	12.7
06/09/98	5,355.67	12.1	5,355.66	12.3	5,355.68	12.2	5,355.70	13.0
06/14/98	5,355.66	12.3	5,355.65	12.5	5,355.67	12.4	5,355.69	13.2
06/19/98	5,355.65	12.5	5,355.63	12.8	5,355.65	12.6	5,355.68	13.4
06/25/98	5,355.61	12.8	5,355.56	13.0	—	—	5,355.64	13.8
06/30/98	5,355.60	13.0	5,355.55	13.3	—	—	5,355.62	14.1
07/05/98	5,355.57	13.3	5,355.52	13.6	—	—	5,355.59	14.5
07/10/98	5,355.58	13.6	5,355.52	13.9	—	—	5,355.58	14.9
07/15/98	5,355.51	13.9	5,355.46	14.2	—	—	5,355.51	15.2
07/20/98	5,355.49	14.1	5,355.43	14.5	—	—	5,355.49	15.5
07/25/98	5,355.55	14.4	5,355.48	14.8	—	—	5,355.54	15.9
07/30/98	5,355.64	14.7	5,355.58	15.0	—	—	5,355.62	15.9
08/04/98	5,355.60	14.8	5,355.54	15.1	—	—	5,355.58	15.9
08/09/98	5,355.57	15.0	5,355.47	15.5	—	—	5,355.56	16.1
08/14/98	5,355.57	15.2	5,355.47	15.6	—	—	5,355.55	16.3
08/19/98	5,355.52	15.3	5,355.42	15.7	—	—	5,355.49	16.4
08/24/98	5,355.53	15.5	5,355.43	15.9	—	—	5,355.50	16.6
08/29/98	5,355.40	15.6	5,355.31	16.1	—	—	5,355.36	16.8
09/03/98	5,355.57	15.8	5,355.48	16.2	—	—	5,355.52	17.0

Table 7. Mean daily water-level altitude and mean daily water temperature in four wells within and adjacent to the phosphate permeable reactive barrier, Fry Canyon, Utah—Continued

Date	Well PO4T1		Well PO4T2		Well PO4T3		Well DG-4	
	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)
09/08/98	5,355.58	15.9	5,355.49	16.4	—	—	5,355.53	17.0
09/13/98	5,355.66	16.0	5,355.60	16.5	5,355.65	16.4	5,355.65	16.9
09/18/98	5,355.62	16.1	5,355.56	16.5	5,355.70	16.0	5,355.61	16.7
09/23/98	5,355.65	16.1	5,355.59	16.4	5,355.73	16.2	5,355.62	16.7
09/28/98	5,355.64	16.1	5,355.58	16.4	5,355.70	16.0	5,355.64	16.6
10/03/98	5,355.65	16.1	5,355.59	16.4	5,355.71	16.0	5,355.66	16.5
10/08/98	5,355.66	16.0	5,355.60	16.3	5,355.72	16.0	5,355.67	16.3
10/13/98	5,355.66	16.0	5,355.61	16.2	5,355.73	16.0	5,355.69	16.0
10/18/98	5,355.72	15.9	5,355.67	16.1	5,355.78	15.9	5,355.74	15.8
10/23/98	5,355.83	15.8	5,355.78	15.9	5,355.89	15.9	5,355.84	15.3
10/28/98	5,355.71	15.6	5,355.66	15.5	5,355.77	15.7	5,355.70	15.0
11/02/98	5,355.74	15.4	5,355.66	15.2	5,355.77	15.4	5,355.69	14.7
11/07/98	5,355.79	15.1	5,355.66	14.9	5,355.77	15.2	5,355.68	14.4
11/12/98	5,355.67	14.8	5,355.70	14.6	5,355.81	15.0	5,355.71	13.8
12/17/98	—	—	5,355.81	12.5	—	—	—	—
12/22/98	—	—	5,355.84	12.1	—	—	—	—
12/27/98	—	—	5,355.78	11.8	—	—	—	—
01/01/99	—	—	5,355.77	11.5	—	—	—	—
01/06/99	—	—	5,355.78	11.3	—	—	—	—
01/11/99	—	—	5,355.79	11.0	—	—	—	—
01/16/99	—	—	5,355.80	10.8	—	—	—	—
01/21/99	—	—	5,355.79	10.6	—	—	—	—
01/26/99	—	—	5,355.75	10.6	—	—	—	—
01/31/99	—	—	5,355.77	10.7	—	—	—	—
02/05/99	—	—	5,355.78	10.7	—	—	—	—
02/10/99	—	—	5,355.78	10.6	—	—	—	—
02/15/99	—	—	5,355.78	10.4	—	—	—	—
02/20/99	—	—	5,355.73	10.1	—	—	—	—
02/25/99	—	—	5,355.75	10.1	—	—	—	—
03/02/99	—	—	5,355.73	10.0	—	—	—	—
03/07/99	—	—	5,355.76	10.0	—	—	—	—
03/12/99	—	—	5,355.77	10.0	—	—	—	—
03/17/99	—	—	5,355.75	10.0	—	—	—	—
03/22/99	—	—	5,355.75	10.0	—	—	—	—
03/27/99	—	—	5,355.75	10.2	—	—	—	—
04/01/99	—	—	5,355.77	10.4	—	—	—	—
04/06/99	—	—	5,355.80	10.5	—	—	—	—

Table 7. Mean daily water-level altitude and mean daily water temperature in four wells within and adjacent to the phosphate permeable reactive barrier, Fry Canyon, Utah—Continued

Date	Well PO4T1		Well PO4T2		Well PO4T3		Well DG-4	
	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)
04/11/99	—	—	5,355.79	10.5	—	—	—	—
04/16/99	—	—	5,355.73	10.4	—	—	—	—
04/21/99	—	—	5,355.77	10.4	—	—	—	—
04/26/99	—	—	5,355.79	10.6	—	—	—	—
05/01/99	—	—	5,355.77	10.7	—	—	—	—
05/06/99	—	—	5,355.75	10.8	—	—	—	—
05/11/99	—	—	5,355.71	10.9	—	—	—	—
05/16/99	—	—	5,355.68	11.1	—	—	—	—
05/21/99	—	—	5,355.66	11.3	—	—	—	—
05/26/99	—	—	5,355.67	11.6	—	—	—	—
05/31/99	—	—	5,355.76	11.9	—	—	—	—
06/05/99	—	—	5,355.86	12.2	—	—	—	—
06/10/99	—	—	5,355.72	12.4	—	—	—	—
06/15/99	—	—	5,355.69	12.6	—	—	—	—
06/20/99	—	—	5,355.66	12.7	—	—	—	—
06/25/99	—	—	5,355.62	13.1	—	—	—	—
06/30/99	—	—	5,355.57	13.4	—	—	—	—
07/05/99	—	—	5,355.52	13.8	—	—	—	—
07/10/99	—	—	5,355.77	14.2	—	—	—	—
07/15/99	—	—	5,355.82	14.6	—	—	—	—
07/20/99	—	—	5,355.74	14.8	—	—	—	—
07/25/99	—	—	5,355.58	14.9	—	—	—	—
07/30/99	—	—	5,355.74	15.2	—	—	—	—
08/04/99	—	—	5,355.69	15.3	—	—	—	—
08/09/99	—	—	5,355.64	15.4	—	—	—	—
08/14/99	—	—	5,355.50	15.4	—	—	—	—
08/19/99	—	—	5,355.48	15.5	—	—	—	—
08/24/99	—	—	5,355.42	15.6	—	—	—	—
08/29/99	—	—	5,355.52	15.7	—	—	—	—
09/03/99	—	—	5,355.51	15.8	—	—	—	—
09/08/99	—	—	5,355.48	15.9	—	—	—	—
09/13/99	—	—	5,355.48	16.0	—	—	—	—
09/18/99	—	—	5,355.50	16.0	—	—	—	—
09/23/99	—	—	5,355.51	16.0	—	—	—	—
09/28/99	—	—	5,355.49	16.0	—	—	—	—
10/03/99	—	—	5,355.50	16.0	—	—	—	—
10/08/99	—	—	5,355.51	16.0	—	—	—	—

Table 7. Mean daily water-level altitude and mean daily water temperature in four wells within and adjacent to the phosphate permeable reactive barrier, Fry Canyon, Utah—Continued

Date	Well PO4T1		Well PO4T2		Well PO4T3		Well DG-4	
	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)
10/13/99	—	—	5,355.52	15.9	—	—	—	—
10/18/99	—	—	5,355.54	15.8	—	—	—	—
10/23/99	—	—	5,355.55	15.7	—	—	—	—
10/28/99	—	—	5,355.57	15.5	—	—	—	—
11/02/99	—	—	5,355.60	15.3	—	—	—	—
11/07/99	—	—	5,355.63	15.0	—	—	—	—
11/12/99	—	—	5,355.65	14.8	—	—	—	—
11/17/99	—	—	5,355.69	14.6	—	—	—	—
11/22/99	—	—	5,355.74	14.4	—	—	—	—
11/27/99	—	—	5,355.74	14.1	—	—	—	—
12/02/99	—	—	5,355.60	13.6	—	—	—	—
12/07/99	—	—	5,355.63	13.2	—	—	—	—
12/12/99	—	—	5,355.63	12.7	—	—	—	—
12/17/99	—	—	5,355.66	12.4	—	—	—	—
12/22/99	—	—	5,355.65	12.0	—	—	—	—
12/27/99	—	—	5,355.65	11.7	—	—	—	—
01/01/00	—	—	5,355.67	11.4	—	—	—	—
01/06/00	—	—	5,355.71	11.1	—	—	—	—
01/11/00	—	—	5,355.70	10.8	—	—	—	—
01/16/00	—	—	5,355.66	10.7	—	—	—	—
01/21/00	—	—	5,355.64	10.5	—	—	—	—
01/26/00	—	—	5,355.71	10.5	—	—	—	—
01/31/00	—	—	5,355.66	10.5	—	—	—	—
02/05/00	—	—	5,355.65	10.4	—	—	—	—
02/10/00	—	—	5,355.66	10.2	—	—	—	—
02/15/00	—	—	5,355.65	10.2	—	—	—	—
02/20/00	—	—	5,355.65	10.2	—	—	—	—
02/25/00	—	—	5,355.65	10.1	—	—	—	—
03/01/00	—	—	5,355.67	10.1	—	—	—	—
03/06/00	—	—	5,355.75	10.0	—	—	—	—
03/11/00	—	—	5,355.67	10.0	—	—	—	—
03/16/00	—	—	5,355.66	10.0	—	—	—	—
03/21/00	—	—	5,355.69	10.0	—	—	—	—
03/26/00	—	—	5,355.66	9.9	—	—	—	—
03/31/00	—	—	5,355.67	10.0	—	—	—	—
04/05/00	—	—	5,355.66	10.1	—	—	—	—
04/10/00	—	—	5,355.65	10.2	—	—	—	—

Table 7. Mean daily water-level altitude and mean daily water temperature in four wells within and adjacent to the phosphate permeable reactive barrier, Fry Canyon, Utah—Continued

Date	Well PO4T1		Well PO4T2		Well PO4T3		Well DG-4	
	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)	Water-level altitude	Water temperature (°C)
04/15/00	—	—	5,355.66	10.5	—	—	—	—
04/20/00	—	—	5,355.66	10.7	—	—	—	—
04/25/00	—	—	5,355.66	10.9	—	—	—	—
04/30/00	—	—	5,355.65	11.1	—	—	—	—
05/05/00	—	—	5,355.65	11.3	—	—	—	—
05/10/00	—	—	5,355.64	11.5	—	—	—	—
05/15/00	—	—	5,355.64	11.8	—	—	—	—
05/20/00	—	—	5,355.62	12.0	—	—	—	—
05/25/00	—	—	5,355.61	12.3	—	—	—	—
05/30/00	—	—	5,355.56	12.5	—	—	—	—
06/04/00	—	—	5,355.54	12.7	—	—	—	—
06/09/00	—	—	5,355.52	13.0	—	—	—	—
06/14/00	—	—	5,355.47	13.4	—	—	—	—