0074017
Section 4 of 4

APPENDIX C

HISTORICAL BOREHOLE SOIL ANALYTICAL RESULTS

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APPENDIX C

HISTORICAL BOREHOLE SOIL ANALYTICAL RESULTS

INTRODUCTION

The tables in this appendix list the chemical, radiochemical, and physical results obtained from the following boreholes for this remedial investigation report:

- Wells 299-W15-84, 299-W15-95, 299-W15-216, 299-W15-217, 299-W15-218, 299-W15-219, and 299-W15-220 at the 216-Z-9 Trench
- Wells 299-W18-174, 299-W18-246, 299-W18-248, and 299-W18-252 at the 216-Z-1A Tile Field
- Wells 299-W18-96, 299-W18-247, and 299-W18-249 at the 216-Z-18 Crib.

These results apply mainly to samples from the vadose zone. The tables omit any groundwater samples retrieved from the boreholes, most of the sediment samples in the groundwater region, and most of the trip blanks associated with samples in the groundwater region.

The "Sample" column gives the sample number used in the *Hanford Environmental Information System* database.

The "Sample Type" column indicates whether the sample was soil or vapor

The "Lab Code" column indicates the name of the laboratory that performed the analyses:

- DATACH = DataChem Laboratories, Inc., Salt Lake City, Utah
- ITASRL = International Technology Analytical Services, Richland, Washington
- PNL1 = Pacific Northwest Laboratory Sigma 5, Hanford Site, Washington
- RLNP = Lionville Laboratory, Inc., Exton, Pennsylvania (formerly Recra LabNet Philadelphia)
- TMANC = TNU/NORCAL (formerly TMA/NORCAL or Thermo Analytical, Inc.), Richmond, California.

The letters in the columns labeled "Q" are quality control flags affixed by the laboratories. The flags have the following meanings. Where more than one letter is used for a result, the meanings of the individual letters are combined.

B: For organic analyses, indicates that the blank was contaminated with the analyte. For inorganic analysis, indicates that the analyte was detected in the sample at a level below the target quantitation limit.

D: Result was determined on a dilution of the sample.

J: Result is an estimate.

L: Laboratory quality control sample had low recovery

U: Analyte was undetected, with the indicated reporting limit

X: Some data necessary to compute the result; error or minimum detectable activity was entered or modified manually.

Where validation qualifier flags were assigned by the data validator, they are entered in a separate column labeled "VQ." Where validation flags do not occur, this column is omitted. Validation flags have the following meanings.

J: Result is an estimate
U: Analyte was undetected, with the indicated reporting limit.

For radionuclide analysis, a column labeled "MDA" appears. This column gives the "minimum detectable activity" as reported by the laboratory.

Columns with blank data and a corresponding laboratory code indicate results that were analyzed for but were not detected.

Analyte names are given in the top row of each table. Below each analyte name are shown the Chemical Abstracts Service number and/or U.S. Environmental Protection Agency (EPA) or American Society for Testing and Materials number (numbers beginning with D) and/or brief descriptive name(s) of the analytical method(s) used for the analyte. The method numbers and their definitions are referenced in the following table.

Method	Definition	Reference
502.2	502.2 water/purge and trap for volatile organic compounds	EPA/600/R-95/131
6010	6010 method for atomic emission spectrometry of inorganics by inductively coupled plasma	SW-846, update IV-B
7421	7421 furnace technique for lead-AA	SW-846 (1986)
7470	7470 manual cold-vapor techniques for mercury in liquid waste	SW-846 (1994)
7471	7471 manual cold-vapor techniques for mercury in solid/semisolid waste	SW-846, update IV-A
8260	8260 capillary column technique for volatile organic analysis by gas chromatography/mass spectrometry	SW-846 (1996)
8270	8270 semivolatile organic analysis by gas chromatography/mass spectrometry	SW-846, update IV-A
9010	9010 distillation of cyanide, total and amenable	SW-846, update III-B
9012	9012 colorimetric method for cyanide, total and amenable	SW-846, update III-B
9071	9071 method for oil and grease	SW-846 (1998)
9310	9310 gross alpha and beta particles	SW-846 (1986)
D4327	D4327 anions in water by chemically suppressed ion chromatography	ASTM D4327-03

Following are the abbreviations and definitions of the method names.

Term	Definition	Term	Definition
AEA	alpha energy analysis	IX	ion exchange
GEA	gamma energy analysis	PLATE	alpha mount by electroplating
GPC	gas proportional counting	SEP	chemical separation

REFERENCES

ASTM D4327-03, 2003, *Standard Test Method for Anions in Water by Chemically Suppressed Ion Chromatography*, American Society for Testing and Materials, West Conshohocken, Pennsylvania.

EPA/600/R-95/131, 1995, *Methods for the Determination of Organic Compounds in Drinking Water, Supplement III* (with Errata Sheets), Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C.

SW-846, 2005, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-B*, as amended, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C. Available on the Internet at www.epa.gov/SW-846/main.htm .

SW-846, 2007, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update IV-A*, as amended, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C. Available on the Internet at: www.epa.gov/epaoswer/hazwaste/test/up4b.htm .

SW-846, 2007, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update IV-B*, as amended, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C. Available on the Internet at www.epa.gov/epaoswer/hazwaste/test/up4b.htm .

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Table C-1. Metal Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Aluminum (7429-90-5)				Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)			
							6010				6010				6010				6010			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	RLNP	5590000	µg/kg			200	µg/kg	U		66400	µg/kg			280	µg/kg		
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	RLNP	10600000	µg/kg			210	µg/kg			90200	µg/kg			500	µg/kg		
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	RLNP	8020000	µg/kg			220	µg/kg	U		88900	µg/kg			460	µg/kg		
299-W15-84	117	119	B120Y2	Soil	6/11/2001	RLNP	7600000	µg/kg			230	µg/kg	U		72400	µg/kg			400	µg/kg		
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	RLNP	8170000	µg/kg			220	µg/kg	U		85200	µg/kg			440	µg/kg		
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	RLNP	4400000	µg/kg			200	µg/kg	U		96400	µg/kg			380	µg/kg		
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	RLNP	6580000	µg/kg			190	µg/kg	U		92000	µg/kg			460	µg/kg		
299-W15-84	127	129	B120Y6	Soil	6/11/2001	RLNP	7120000	µg/kg			190	µg/kg	U		99200	µg/kg			790	µg/kg		
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	RLNP	7410000	µg/kg			230	µg/kg			60300	µg/kg			740	µg/kg		
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	RLNP	5950000	µg/kg			200	µg/kg	U		57700	µg/kg			720	µg/kg		
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	RLNP	6360000	µg/kg			200	µg/kg			60300	µg/kg			620	µg/kg		
299-W15-84	151	153	B12100	Soil	6/12/2001	RLNP	5570000	µg/kg			200	µg/kg	U		45400	µg/kg			600	µg/kg		
299-W15-84	161	162.5	B12101	Soil	6/13/2001	RLNP	4290000	µg/kg			190	µg/kg	U		63700	µg/kg			580	µg/kg		
299-W15-84	171	173	B12640	Soil	6/13/2001	RLNP	3770000	µg/kg			190	µg/kg	U		50900	µg/kg			330	µg/kg	B	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	RLNP	4110000	µg/kg			190	µg/kg	U		57700	µg/kg			270	µg/kg	B	

Table C-1. Metal Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cadmium (7440-43-9)				Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	30	µg/kg			8300000	µg/kg			12000	µg/kg			6200	µg/kg		
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	60	µg/kg			10600000	µg/kg			20400	µg/kg			8800	µg/kg		
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	50	µg/kg			12100000	µg/kg			13100	µg/kg			7400	µg/kg		
299-W15-84	117	119	B120Y2	Soil	6/11/2001	40	µg/kg	U		9920000	µg/kg			16400	µg/kg			6600	µg/kg		
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	30	µg/kg	U		51400000	µg/kg			16300	µg/kg			7200	µg/kg		
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	90	µg/kg			109000000	µg/kg			36400	µg/kg			8800	µg/kg		
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	30	µg/kg	U		20400000	µg/kg			17900	µg/kg			10100	µg/kg		
299-W15-84	127	129	B120Y6	Soil	6/11/2001	30	µg/kg	U		5210000	µg/kg			60600	µg/kg			9100	µg/kg		
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	110	µg/kg			5280000	µg/kg			18400	µg/kg			6800	µg/kg		
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	120	µg/kg			3960000	µg/kg			22800	µg/kg			6500	µg/kg		
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	140	µg/kg			4750000	µg/kg			9800	µg/kg			6600	µg/kg		
299-W15-84	151	153	B12100	Soil	6/12/2001	90	µg/kg			3070000	µg/kg			8600	µg/kg			6400	µg/kg		
299-W15-84	161	162.5	B12101	Soil	6/13/2001	80	µg/kg	B		2990000	µg/kg			11200	µg/kg			6500	µg/kg		
299-W15-84	171	173	B12640	Soil	6/13/2001	40	µg/kg	U		1920000	µg/kg			18100	µg/kg			3800	µg/kg	B	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	30	µg/kg	U		2270000	µg/kg			77500	µg/kg			4800	µg/kg	B	

Table C-1. Metal Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Copper (7440-50-8)				Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	12900	µg/kg			18900000	µg/kg			5400	µg/kg			4100000	µg/kg		
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	19100	µg/kg			20800000	µg/kg			8600	µg/kg			6750000	µg/kg		
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	16200	µg/kg			16700000	µg/kg			8500	µg/kg			6170000	µg/kg		
299-W15-84	117	119	B120Y2	Soil	6/11/2001	17200	µg/kg			15400000	µg/kg			7000	µg/kg			6130000	µg/kg		
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	20800	µg/kg			17100000	µg/kg			6200	µg/kg			6780000	µg/kg		
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	17400	µg/kg			22000000	µg/kg			2700	µg/kg			8330000	µg/kg		
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	21100	µg/kg			23900000	µg/kg			3500	µg/kg			5490000	µg/kg		
299-W15-84	127	129	B120Y6	Soil	6/11/2001	19100	µg/kg			26900000	µg/kg			3800	µg/kg			4600000	µg/kg		
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	30000	µg/kg			18900000	µg/kg			3900	µg/kg			4070000	µg/kg		
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	15200	µg/kg			19000000	µg/kg			3300	µg/kg			3700000	µg/kg		
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	12600	µg/kg			21200000	µg/kg			4800	µg/kg			4590000	µg/kg		
299-W15-84	151	153	B12100	Soil	6/12/2001	11200	µg/kg			18000000	µg/kg			4000	µg/kg			4000000	µg/kg		
299-W15-84	161	162.5	B12101	Soil	6/13/2001	13000	µg/kg			15100000	µg/kg			2900	µg/kg			3180000	µg/kg		
299-W15-84	171	173	B12640	Soil	6/13/2001	8200	µg/kg			9550000	µg/kg			3500	µg/kg			2710000	µg/kg		
299-W15-84	193.5	195	B12632	Soil	6/15/2001	9100	µg/kg			12800000	µg/kg			3200	µg/kg			2720000	µg/kg		

Table C-1. Metal Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Manganese (7439-96-5)				Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)			
						6010				7471				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	341000	µg/kg			20	µg/kg	U		12100	µg/kg			1360000	µg/kg		
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	396000	µg/kg			20	µg/kg	U		19700	µg/kg			2210000	µg/kg		
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	326000	µg/kg			20	µg/kg	U		13300	µg/kg			1880000	µg/kg		
299-W15-84	117	119	B120Y2	Soil	6/11/2001	221000	µg/kg			20	µg/kg	U		16200	µg/kg			1950000	µg/kg		
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	289000	µg/kg			20	µg/kg	U		16900	µg/kg			1600000	µg/kg		
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	291000	µg/kg			20	µg/kg	U		23900	µg/kg			548000	µg/kg		
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	382000	µg/kg			20	µg/kg	U		17000	µg/kg			809000	µg/kg		
299-W15-84	127	129	B120Y6	Soil	6/11/2001	331000	µg/kg			20	µg/kg	U		37400	µg/kg			979000	µg/kg		
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	263000	µg/kg			20	µg/kg	U		18500	µg/kg			766000	µg/kg		
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	266000	µg/kg			20	µg/kg			16600	µg/kg			968000	µg/kg		
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	415000	µg/kg			30	µg/kg			9800	µg/kg			926000	µg/kg		
299-W15-84	151	153	B12100	Soil	6/12/2001	309000	µg/kg			20	µg/kg	U		11400	µg/kg			778000	µg/kg		
299-W15-84	161	162.5	B12101	Soil	6/13/2001	239000	µg/kg			20	µg/kg	U		12700	µg/kg			739000	µg/kg		
299-W15-84	171	173	B12640	Soil	6/13/2001	224000	µg/kg			20	µg/kg	U		16900	µg/kg			850000	µg/kg		
299-W15-84	193.5	195	B12632	Soil	6/15/2001	199000	µg/kg			20	µg/kg	U		45600	µg/kg			932000	µg/kg		

Table C-1. Metal Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Silver (7440-22-4)				Sodium (7440-23-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	110	µg/kg	U		112000	µg/kg			25300	µg/kg			32800	µg/kg		
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	110	µg/kg	U		188000	µg/kg			37500	µg/kg			50500	µg/kg		
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	110	µg/kg	U		146000	µg/kg			28500	µg/kg			42500	µg/kg		
299-W15-84	117	119	B120Y2	Soil	6/11/2001	120	µg/kg	U		157000	µg/kg			24800	µg/kg			38600	µg/kg		
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	120	µg/kg	U		217000	µg/kg			43400	µg/kg			36700	µg/kg		
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	100	µg/kg	U		411000	µg/kg			46300	µg/kg			36200	µg/kg		
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	100	µg/kg	U		510000	µg/kg			69500	µg/kg			48900	µg/kg		
299-W15-84	127	129	B120Y6	Soil	6/11/2001	100	µg/kg	U		721000	µg/kg			83600	µg/kg			49300	µg/kg		
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	110	µg/kg	U		616000	µg/kg			52400	µg/kg			45300	µg/kg		
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	110	µg/kg	U		448000	µg/kg			51200	µg/kg			42600	µg/kg		
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	100	µg/kg	U		120000	µg/kg			52100	µg/kg			40400	µg/kg		
299-W15-84	151	153	B12100	Soil	6/12/2001	100	µg/kg	U		322000	µg/kg			43600	µg/kg			33900	µg/kg		
299-W15-84	161	162.5	B12101	Soil	6/13/2001	100	µg/kg	U		434000	µg/kg	B		37900	µg/kg			33400	µg/kg		
299-W15-84	171	173	B12640	Soil	6/13/2001	100	µg/kg	U		370000	µg/kg	B		19400	µg/kg			24200	µg/kg		
299-W15-84	193.5	195	B12632	Soil	6/15/2001	100	µg/kg	U		445000	µg/kg	B		24200	µg/kg			25600	µg/kg		

Table C-2. General Chemistry Analysis Results for Well 299-W15-84 (216-Z-9 Trench)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Oil and grease (OIL/GREASE) 9071			
							Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	RLNP	147000	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	RLNP	146000	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	RLNP	152000	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	RLNP	367000	µg/kg		
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	RLNP	154000	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	RLNP	357000	µg/kg		
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	RLNP	152000	µg/kg		
299-W15-84	127	129	B120Y6	Soil	6/11/2001	RLNP	219000	µg/kg		
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	RLNP	196000	µg/kg		
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	RLNP	151000	µg/kg		
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	RLNP	208000	µg/kg		
299-W15-84	151	153	B12100	Soil	6/12/2001	RLNP	141000	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	RLNP	138000	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	RLNP	259000	µg/kg		
299-W15-84	193.5	195	B12632	Soil	6/15/2001	RLNP	136000	µg/kg	U	

Table C-3. Radiochemical Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Americium-241 (14596-10-2) GEA					Americium-241 (14596-10-2) IX/Plate/AEA					Antimony-125 (14234-35-6) GEA				
							Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-84	110	111.8	B120X9		6/8/2001	TMANC	0.041	pCi/g	U		0.041	0.039	pCi/g	U		0.05	0.064	pCi/g	U		0.064
299-W15-84	112.5	114.5	B120Y0		6/8/2001	TMANC	0.39	pCi/g	U		0.39	0	pCi/g	U		0.03	0.084	pCi/g	U		0.084
299-W15-84	114.5	116.5	B120Y1		6/11/2001	TMANC	0.11	pCi/g	U		0.11	-0.017	pCi/g	U		0.075	0.068	pCi/g	U		0.068
299-W15-84	117	119	B120Y2		6/11/2001	TMANC	0.042	pCi/g	U		0.042	0.009	pCi/g	U		0.053	0.068	pCi/g	U		0.068
299-W15-84	119.5	121	B120Y3		6/11/2001	TMANC	0.29	pCi/g	U		0.29	0.05	pCi/g	U		0.066	0.17	pCi/g	U		0.17
299-W15-84	121.5	123.5	B120Y4		6/11/2001	TMANC	0.13	pCi/g	U		0.13	0.033	pCi/g	U		0.081	0.071	pCi/g	U		0.071
299-W15-84	123.5	125.4	B120Y5		6/11/2001	TMANC	0.044	pCi/g	U		0.044	0.011	pCi/g	U		0.062	0.072	pCi/g	U		0.072
299-W15-84	125.5	127	B121H2		6/11/2001	TMANC	0.32	pCi/g	U		0.32	-0.003	pCi/g	U		0.024	0.077	pCi/g	U		0.077
299-W15-84	127	129	B120Y6		6/11/2001	TMANC	0.048	pCi/g	U		0.048	-0.008	pCi/g	U		0.032	0.073	pCi/g	U		0.073
299-W15-84	130	132.3	B120Y7		6/12/2001	TMANC	0.044	pCi/g	U		0.044	0	pCi/g	U		0.18	0.072	pCi/g	U		0.072
299-W15-84	132	134.3	B120Y8		6/12/2001	TMANC	0.089	pCi/g	U		0.089	0.047	pCi/g	U		0.18	0.042	pCi/g	U		0.042
299-W15-84	141.5	143.5	B120Y9		6/12/2001	TMANC	0.32	pCi/g	U		0.32	-0.04	pCi/g	U		0.38	0.067	pCi/g	U		0.067
299-W15-84	151	153	B12100		6/12/2001	TMANC	0.12	pCi/g	U		0.12	0	pCi/g	U		0.22	0.062	pCi/g	U		0.062
299-W15-84	161	162.5	B12101		6/13/2001	TMANC	0.053	pCi/g	U		0.053	-0.033	pCi/g	U		0.31	0.072	pCi/g	U		0.072
299-W15-84	171	173	B12640		6/13/2001	TMANC	0.043	pCi/g	U		0.043	0.027	pCi/g	U		0.21	0.067	pCi/g	U		0.067
299-W15-84	193.5	195	B12632		6/15/2001	TMANC	0.043	pCi/g	U		0.043	-0.03	pCi/g	U		0.23	0.068	pCi/g	U		0.068

Table C-3. Radiochemical Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cesium-137 (10045-97-3)					Cobalt-60 (10198-40-0)					Europium-152 (14683-23-9)				
						GEA					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-84	110	111.8	B120X9		6/8/2001	0.029	pCi/g	U		0.029	0.033	pCi/g	U		0.033	0.069	pCi/g	U		0.069
299-W15-84	112.5	114.5	B120Y0		6/8/2001	0.039	pCi/g	U		0.039	0.04	pCi/g	U		0.04	0.087	pCi/g	U		0.087
299-W15-84	114.5	116.5	B120Y1		6/11/2001	0.03	pCi/g	U		0.03	0.03	pCi/g	U		0.03	0.08	pCi/g	U		0.08
299-W15-84	117	119	B120Y2		6/11/2001	0.033	pCi/g	U		0.033	0.035	pCi/g	U		0.035	0.073	pCi/g	U		0.073
299-W15-84	119.5	121	B120Y3		6/11/2001	0.081	pCi/g	U		0.081	0.09	pCi/g	U		0.09	0.22	pCi/g	U		0.22
299-W15-84	121.5	123.5	B120Y4		6/11/2001	0.027	pCi/g	U		0.027	0.032	pCi/g	U		0.032	0.078	pCi/g	U		0.078
299-W15-84	123.5	125.4	B120Y5		6/11/2001	0.033	pCi/g	U		0.033	0.038	pCi/g	U		0.038	0.08	pCi/g	U		0.08
299-W15-84	125.5	127	B121H2		6/11/2001	0.034	pCi/g	U		0.034	0.042	pCi/g	U		0.042	0.081	pCi/g	U		0.081
299-W15-84	127	129	B120Y6		6/11/2001	0.035	pCi/g	U		0.035	0.045	pCi/g	U		0.045	0.082	pCi/g	U		0.082
299-W15-84	130	132.3	B120Y7		6/12/2001	0.032	pCi/g	U		0.032	0.045	pCi/g	U		0.045	0.081	pCi/g	U		0.081
299-W15-84	132	134.3	B120Y8		6/12/2001	0.019	pCi/g	U		0.019	0.023	pCi/g	U		0.023	0.052	pCi/g	U		0.052
299-W15-84	141.5	143.5	B120Y9		6/12/2001	0.038	pCi/g	U		0.038	0.037	pCi/g	U		0.037	0.091	pCi/g	U		0.091
299-W15-84	151	153	B12100		6/12/2001	0.03	pCi/g	U		0.03	0.033	pCi/g	U		0.033	0.071	pCi/g	U		0.071
299-W15-84	161	162.5	B12101		6/13/2001	0.041	pCi/g	U		0.041	0.059	pCi/g	U		0.059	0.09	pCi/g	U		0.09
299-W15-84	171	173	B12640		6/13/2001	0.031	pCi/g	U		0.031	0.037	pCi/g	U		0.037	0.073	pCi/g	U		0.073
299-W15-84	193.5	195	B12632		6/15/2001	0.03	pCi/g	U		0.03	0.033	pCi/g	U		0.033	0.074	pCi/g	U		0.074

Table C-3. Radiochemical Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Europium-154 (15585-10-1)					Europium-155 (14391-16-3)					Plutonium-238 (13981-16-3)				
						GEA					GEA					Sep/Plate/AEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-84	110	111.8	B120X9		6/8/2001	0.11	pCi/g	U		0.11	0.064	pCi/g	U		0.064	0.028	pCi/g	U		0.21
299-W15-84	112.5	114.5	B120Y0		6/8/2001	0.14	pCi/g	U		0.14	0.15	pCi/g	U		0.15	0	pCi/g	U		0.43
299-W15-84	114.5	116.5	B120Y1		6/11/2001	0.11	pCi/g	U		0.11	0.13	pCi/g	U		0.13	0.064	pCi/g	U		0.31
299-W15-84	117	119	B120Y2		6/11/2001	0.12	pCi/g	U		0.12	0.11	pCi/g	U		0.11	0	pCi/g	U		0.23
299-W15-84	119.5	121	B120Y3		6/11/2001	0.24	pCi/g	U		0.24	0.2	pCi/g	U		0.2	0	pCi/g	U		0.25
299-W15-84	121.5	123.5	B120Y4		6/11/2001	0.093	pCi/g	U		0.093	0.086	pCi/g	U		0.086	0	pCi/g	U		0.21
299-W15-84	123.5	125.4	B120Y5		6/11/2001	0.12	pCi/g	U		0.12	0.071	pCi/g	U		0.071	0.051	pCi/g	U		0.2
299-W15-84	125.5	127	B121H2		6/11/2001	0.13	pCi/g	U		0.13	0.13	pCi/g	U		0.13	-0.053	pCi/g	U		0.25
299-W15-84	127	129	B120Y6		6/11/2001	0.15	pCi/g	U		0.15	0.064	pCi/g	U		0.064	0	pCi/g	U		0.18
299-W15-84	130	132.3	B120Y7		6/12/2001	0.14	pCi/g	U		0.14	0.06	pCi/g	U		0.06	0.003	pCi/g	U		0.021
299-W15-84	132	134.3	B120Y8		6/12/2001	0.078	pCi/g	U		0.078	0.064	pCi/g	U		0.064	0.015	pCi/g	U		0.023
299-W15-84	141.5	143.5	B120Y9		6/12/2001	0.13	pCi/g	U		0.13	0.12	pCi/g	U		0.12	0.003	pCi/g	U		0.027
299-W15-84	151	153	B12100		6/12/2001	0.11	pCi/g	U		0.11	0.083	pCi/g	U		0.083	0.003	pCi/g	U		0.021
299-W15-84	161	162.5	B12101		6/13/2001	0.17	pCi/g	U		0.17	0.069	pCi/g	U		0.069	-0.019	pCi/g	U		0.14
299-W15-84	171	173	B12640		6/13/2001	0.13	pCi/g	U		0.13	0.07	pCi/g	U		0.07	0.018	pCi/g	U		0.14
299-W15-84	193.5	195	B12632		6/15/2001	0.11	pCi/g	U		0.11	0.069	pCi/g	U		0.069	-0.027	pCi/g	U		0.21

Table C-3. Radiochemical Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Plutonium-239/240 (PU-239/240)					Potassium-40 (13966-00-2)					Radium-226 (13982-63-3)				
						Sep/Plate/AEA					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-84	110	111.8	B120X9		6/8/2001	0.028	pCi/g	U		0.21	17.3	pCi/g			0.34	0.589	pCi/g			0.063
299-W15-84	112.5	114.5	B120Y0		6/8/2001	0.056	pCi/g	U		0.43	18.3	pCi/g			0.4	0.831	pCi/g			0.077
299-W15-84	114.5	116.5	B120Y1		6/11/2001	0.032	pCi/g	U		0.25	16.7	pCi/g			0.44	0.825	pCi/g			0.069
299-W15-84	117	119	B120Y2		6/11/2001	0	pCi/g	U		0.23	16.8	pCi/g			0.34	1.04	pCi/g			0.065
299-W15-84	119.5	121	B120Y3		6/11/2001	0.032	pCi/g	U		0.25	9.51	pCi/g			0.98	0.94	pCi/g			0.17
299-W15-84	121.5	123.5	B120Y4		6/11/2001	0	pCi/g	U		0.21	6.05	pCi/g			0.39	1.69	pCi/g			0.063
299-W15-84	123.5	125.4	B120Y5		6/11/2001	0	pCi/g	U		0.2	10	pCi/g			0.36	0.838	pCi/g			0.066
299-W15-84	125.5	127	B121H2		6/11/2001	0.027	pCi/g	U		0.2	13.5	pCi/g			0.36	0.539	pCi/g			0.074
299-W15-84	127	129	B120Y6		6/11/2001	0.048	pCi/g	U		0.18	9.05	pCi/g			0.52	0.397	pCi/g			0.081
299-W15-84	130	132.3	B120Y7		6/12/2001	0.003	pCi/g	U		0.021	10.4	pCi/g			0.36	0.407	pCi/g			0.066
299-W15-84	132	134.3	B120Y8		6/12/2001	0.027	pCi/g	J		0.023	12.1	pCi/g			0.2	0.335	pCi/g			0.042
299-W15-84	141.5	143.5	B120Y9		6/12/2001	-0.003	pCi/g	U		0.031	15.7	pCi/g			0.38	0.437	pCi/g			0.069
299-W15-84	151	153	B12100		6/12/2001	0.003	pCi/g	U		0.026	14	pCi/g			0.3	0.365	pCi/g			0.057
299-W15-84	161	162.5	B12101		6/13/2001	0.019	pCi/g	U		0.14	12.1	pCi/g			0.43	0.38	pCi/g			0.073
299-W15-84	171	173	B12640		6/13/2001	-0.018	pCi/g	U		0.14	16.7	pCi/g			0.33	0.461	pCi/g			0.06
299-W15-84	193.5	195	B12632		6/15/2001	0	pCi/g	U		0.21	11.6	pCi/g			0.3	0.461	pCi/g			0.064

Table C-3. Radiochemical Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Radium-228 (15262-20-1)					Thorium-228 (14274-82-9)					Thorium-232 (TH-232)				
						GEA					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-84	110	111.8	B120X9		6/8/2001	0.911	pCi/g			0.14	0.786	pCi/g			0.032	0.911	pCi/g			0.14
299-W15-84	112.5	114.5	B120Y0		6/8/2001	1.27	pCi/g			0.17	1.09	pCi/g			0.045	1.27	pCi/g			0.17
299-W15-84	114.5	116.5	B120Y1		6/11/2001	1.24	pCi/g			0.17	1.23	pCi/g			0.039	1.24	pCi/g			0.17
299-W15-84	117	119	B120Y2		6/11/2001	1.66	pCi/g			0.13	1.43	pCi/g			0.034	1.66	pCi/g			0.13
299-W15-84	119.5	121	B120Y3		6/11/2001	1.18	pCi/g			0.37	1.09	pCi/g			0.1	1.18	pCi/g			0.37
299-W15-84	121.5	123.5	B120Y4		6/11/2001	0.371	pCi/g			0.12	0.356	pCi/g			0.04	0.371	pCi/g			0.12
299-W15-84	123.5	125.4	B120Y5		6/11/2001	0.494	pCi/g			0.14	0.477	pCi/g			0.039	0.494	pCi/g			0.14
299-W15-84	125.5	127	B121H2		6/11/2001	0.639	pCi/g			0.19	0.515	pCi/g			0.042	0.639	pCi/g			0.19
299-W15-84	127	129	B120Y6		6/11/2001	0.677	pCi/g			0.17	0.47	pCi/g			0.04	0.677	pCi/g			0.17
299-W15-84	130	132.3	B120Y7		6/12/2001	0.477	pCi/g			0.13	0.44	pCi/g			0.037	0.477	pCi/g			0.13
299-W15-84	132	134.3	B120Y8		6/12/2001	0.592	pCi/g			0.092	0.478	pCi/g			0.025	0.592	pCi/g			0.092
299-W15-84	141.5	143.5	B120Y9		6/12/2001	0.791	pCi/g			0.19	0.698	pCi/g			0.04	0.791	pCi/g			0.19
299-W15-84	151	153	B12100		6/12/2001	0.666	pCi/g			0.11	0.572	pCi/g			0.032	0.666	pCi/g			0.11
299-W15-84	161	162.5	B12101		6/13/2001	0.728	pCi/g			0.22	0.56	pCi/g			0.044	0.728	pCi/g			0.22
299-W15-84	171	173	B12640		6/13/2001	0.899	pCi/g			0.14	0.677	pCi/g			0.037	0.899	pCi/g			0.14
299-W15-84	193.5	195	B12632		6/15/2001	0.988	pCi/g			0.14	0.876	pCi/g			0.038	0.988	pCi/g			0.14

Table C-3. Radiochemical Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Total beta radiostrontium (SR-RAD)					Uranium-235 (15117-96-1)					Uranium-238 (U-238)				
						Sep/GPC					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-84	110	111.8	B120X9		6/8/2001	0.03	pCi/g	U		0.22	0.1	pCi/g	U		0.1	3.8	pCi/g	U		3.8
299-W15-84	112.5	114.5	B120Y0		6/8/2001	-0.017	pCi/g	U		0.25	0.19	pCi/g	U		0.19	4.9	pCi/g	U		4.9
299-W15-84	114.5	116.5	B120Y1		6/11/2001	-0.068	pCi/g	U		0.3	0.11	pCi/g	U		0.11	3.9	pCi/g	U		3.9
299-W15-84	117	119	B120Y2		6/11/2001	-0.063	pCi/g	U		0.32	0.15	pCi/g	U		0.15	4.5	pCi/g	U		4.5
299-W15-84	119.5	121	B120Y3		6/11/2001	-0.052	pCi/g	U		0.29	0.3	pCi/g	U		0.3	11	pCi/g	U		11
299-W15-84	121.5	123.5	B120Y4		6/11/2001	0.107	pCi/g	U		0.33	0.16	pCi/g	U		0.16	4.2	pCi/g	U		4.2
299-W15-84	123.5	125.4	B120Y5		6/11/2001	0.133	pCi/g	U		0.28	0.13	pCi/g	U		0.13	5	pCi/g	U		5
299-W15-84	125.5	127	B121H2		6/11/2001	-0.017	pCi/g	U		0.28	0.16	pCi/g	U		0.16	4.7	pCi/g	U		4.7
299-W15-84	127	129	B120Y6		6/11/2001	0.017	pCi/g	U		0.27	0.11	pCi/g	U		0.11	5.9	pCi/g	U		5.9
299-W15-84	130	132.3	B120Y7		6/12/2001	-0.011	pCi/g	U		0.26	0.096	pCi/g	U		0.096	5.2	pCi/g	U		5.2
299-W15-84	132	134.3	B120Y8		6/12/2001	-0.008	pCi/g	U		0.26	0.086	pCi/g	U		0.086	2.6	pCi/g	U		2.6
299-W15-84	141.5	143.5	B120Y9		6/12/2001	-0.028	pCi/g	U		0.27	0.16	pCi/g	U		0.16	4.5	pCi/g	U		4.5
299-W15-84	151	153	B12100		6/12/2001	0.016	pCi/g	U		0.26	0.12	pCi/g	U		0.12	4.1	pCi/g	U		4.1
299-W15-84	161	162.5	B12101		6/13/2001	-0.003	pCi/g	U		0.27	0.11	pCi/g	U		0.11	6	pCi/g	U		6
299-W15-84	171	173	B12640		6/13/2001	0.038	pCi/g	U		0.29	0.11	pCi/g	U		0.11	3.9	pCi/g	U		3.9
299-W15-84	193.5	195	B12632		6/15/2001	-0.065	pCi/g	U		0.28	0.11	pCi/g	U		0.11	3.5	pCi/g	U		3.5

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,2,4-Trichloro benzene (120-82-1)				1,2-Dichlorobenzene (95-50-1)				1,3-Dichlorobenzene (541-73-1)				1,4-Dichlorobenzene (106-46-7)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	RLNP	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	RLNP	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	RLNP	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	RLNP	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	RLNP	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	RLNP	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	RLNP	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4,5-Trichlorophenol (95-95-4)				2,4,6-Trichlorophenol (88-06-2)				2,4-Dichlorophenol (120-83-2)				2,4-Dimethylphenol (105-67-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	920	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	920	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	950	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	1000	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	960	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	890	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	830	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	950	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	870	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	880	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	840	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4-Dinitrophenol (51-28-5)				2,4-Dinitrotoluene (121-14-2)				2,6-Dinitrotoluene (606-20-2)				2-Chloronaphthalene (91-58-7)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	920	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	920	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	950	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	1000	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	960	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	890	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	830	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	950	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	870	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	880	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	840	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Chlorophenol (95-57-8)				2-Methylnaphthalene (91-57-6)				2-Methylphenol (cresol, o-) (95-48-7)				2-Nitroaniline (88-74-4)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		920	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		920	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		950	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		1000	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		960	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		890	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		850	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		830	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		860	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		950	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		860	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		870	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		880	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		860	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		850	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		840	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Nitrophenol (88-75-5)				3,3"-Dichloro benzidine (91-94-1)				3-Nitroaniline (99-09-2)				4,6-Dinitro-2-methylphenol (534-52-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		920	µg/kg	U		920	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		920	µg/kg	U		920	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		950	µg/kg	U		950	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		400	µg/kg	U		1000	µg/kg	U		1000	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		960	µg/kg	U		960	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		350	µg/kg	U		890	µg/kg	U		890	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		850	µg/kg	U		850	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		330	µg/kg	U		830	µg/kg	U		830	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		860	µg/kg	U		860	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		380	µg/kg	U		950	µg/kg	U		950	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		340	µg/kg	U		860	µg/kg	U		860	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		870	µg/kg	U		870	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		880	µg/kg	U		880	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		860	µg/kg	U		860	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		850	µg/kg	U		850	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		340	µg/kg	U		840	µg/kg	U		840	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Bromophenyl phenyl ether (101-55-3)				4-Chloro-3-methylphenol (59-50-7)				4-Chloroaniline (106-47-8)				4-Chlorophenyl phenyl ether (7005-72-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Methylphenol (cresol, p-) (106-44-5)				4-Nitroaniline (100-01-6)				4-Nitrophenol (100-02-7)				Acenaphthene (83-32-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		920	µg/kg	U		920	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		920	µg/kg	U		920	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		950	µg/kg	U		950	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		1000	µg/kg	U		1000	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		960	µg/kg	U		960	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		890	µg/kg	U		890	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		850	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		830	µg/kg	U		830	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		860	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		950	µg/kg	U		950	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		860	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		870	µg/kg	U		870	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		880	µg/kg	U		880	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		860	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		850	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		840	µg/kg	U		840	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Acenaphthylene (208-96-8)				Anthracene (120-12-7)				Benzo(a)anthracene (56-55-3)				Benzo(a)pyrene (50-32-8)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzo(b)fluoranthene (205-99-2)				Benzo(ghi)perylene (191-24-2)				Benzo(k)fluoranthene (207-08-9)				Bis(2-chloro-1-methylethyl)ether (108-60-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bis(2-Chloroethoxy) methane (111-91-1)				Bis(2-chloroethyl) ether (111-44-4)				Bis(2-ethylhexyl) phthalate (117-81-7)				Butylbenzylphthalate (85-68-7)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		101.751	µg/kg	J		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		26	µg/kg	J		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		36	µg/kg	J		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		350	µg/kg	U		37	µg/kg	J		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		330	µg/kg	U		1700	µg/kg			330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		380	µg/kg	U		44	µg/kg	J		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		340	µg/kg	U		49	µg/kg	J		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		27	µg/kg	JB		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		25	µg/kg	JB		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Carbazole (86-74-8)				Chrysene (218-01-9)				Dibenz[a,h] anthracene (53-70-3)				Dibenzofuran (132-64-9)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	RLNP	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	RLNP	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	RLNP	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	RLNP	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	RLNP	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	RLNP	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	RLNP	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Diethylphthalate (84-66-2)				Dimethyl phthalate (131-11-3)				Di-n-butylphthalate (84-74-2)				Di-n-octylphthalate (117-84-0)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Fluoranthene (206-44-0)				Fluorene (86-73-7)				Hexachlorobenzene (118-74-1)				Hexachlorobutadiene (87-68-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Hexachlorocyclo pentadiene (77-47-4)				Hexachloroethane (67-72-1)				Indeno(1,2,3-cd) pyrene (193-39-5)				Isophorone (78-59-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Naphthalene (91-20-3)				Nitrobenzene (98-95-3)				n-Nitrosodi-n-dipropylamine (621-64-7)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	n-Nitrosodiphenyl amine (86-30-6)				Pentachlorophenol (87-86-5)				Phenanthrene (85-01-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		920	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		920	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		950	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		1000	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		960	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		890	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		830	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		950	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		870	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		880	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		840	µg/kg	U		340	µg/kg	U	

Table C-4. Semivolatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phenol (108-95-2)				Pyrene (129-00-0)				Tributyl phosphate (126-73-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	370	µg/kg	U		370	µg/kg	U		370	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	330	µg/kg	U		330	µg/kg	U		330	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	380	µg/kg	U		380	µg/kg	U		380	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-5. Volatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1,2,2-Tetrachloro ethane (79-34-5)				1,1,2-Trichloroethane (79-00-5)				1,1-Dichloroethane (75-34-3)			
							8260				8260				8260				8260			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	

Table C-5. Volatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,1-Dichloroethene (75-35-4)				1,2-Dichloroethane (107-06-2)				1,2-Dichloroethene (total) (540-59-0)				1,2-Dichloropropane (78-87-5)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	

Table C-5. Volatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Butanone (78-93-3)				2-Hexanone (591-78-6)				2-Pentanone, 4-Methyl (108-10-1)				Acetone (67-64-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	12	µg/kg	U		12	µg/kg	U		12	µg/kg	U		12	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		10	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		10	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	12	µg/kg	U		12	µg/kg	U		12	µg/kg	U		12	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	12	µg/kg	U		12	µg/kg	U		12	µg/kg	U		12	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	7	µg/kg	J		11	µg/kg	U		11	µg/kg	U		19	µg/kg	B	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		9	µg/kg	J	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		5	µg/kg	JB	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		10	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	11	µg/kg	U		11	µg/kg	U		11	µg/kg	U		7	µg/kg	J	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		12	µg/kg		
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		6	µg/kg	JB	
299-W15-84	151	153	B12100	Soil	6/12/2001	11	µg/kg	U		11	µg/kg	U		11	µg/kg	U		8	µg/kg	JB	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		10	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		10	µg/kg	JB	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	11	µg/kg	U		11	µg/kg	U		11	µg/kg	U		11	µg/kg	U	

Table C-5. Volatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzene (71-43-2)				Bromodichloro methane (75-27-4)				Bromoform (75-25-2)				Bromomethane (74-83-9)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	

Table C-5. Volatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon disulfide (75-15-0)				Carbon tetrachloride (56-23-5)				Chlorobenzene (108-90-7)				Chloroethane (75-00-3)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	6	µg/kg	U		2	µg/kg	J		6	µg/kg	U		12	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	6	µg/kg	U		9	µg/kg			6	µg/kg	U		12	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	

Table C-5. Volatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chloroform (67-66-3)				Chloromethane (74-87-3)				cis-1,3-Dichloro propene (10061-01-5)				Dibromochloro methane (124-48-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	6	µg/kg	U		12	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	5	µg/kg	J		12	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	5	µg/kg	J		12	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	

Table C-5. Volatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Ethylbenzene (100-41-4)				Methylene chloride (75-09-2)				Styrene (100-42-5)			
						8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	6	µg/kg	U		7	µg/kg	B		6	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	5	µg/kg	U		7	µg/kg	B		5	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	5	µg/kg	U		6	µg/kg	B		5	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	6	µg/kg	U		24	µg/kg	B		6	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	6	µg/kg	U		9	µg/kg	B		6	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	6	µg/kg	U		21	µg/kg	B		6	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	5	µg/kg	U		7	µg/kg	B		5	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	5	µg/kg	U		16	µg/kg	B		5	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	5	µg/kg	U		6	µg/kg	B		5	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	6	µg/kg	U		20	µg/kg	B		6	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	5	µg/kg	U		14	µg/kg	B		5	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	5	µg/kg	U		17	µg/kg	B		5	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	6	µg/kg	U		17	µg/kg	B		6	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	5	µg/kg	U		10	µg/kg	B		5	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	5	µg/kg	U		19	µg/kg	B		5	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	6	µg/kg	U		15	µg/kg	B		6	µg/kg	U	

Table C-5. Volatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetrachloroethene (127-18-4)				Toluene (108-88-3)				trans-1,3-Dichloro propene (10061-02-6)			
						8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	

Table C-5. Volatile Organic Analysis Results for Well 299-W15-84 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Trichloroethene (79-01-6)				Vinyl chloride (75-01-4)				Xylenes (total) (1330-20-7)			
						8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-84	110	111.8	B120X9	Soil	6/8/2001	6	µg/kg	U		12	µg/kg	U		6	µg/kg	U	
299-W15-84	112.5	114.5	B120Y0	Soil	6/8/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-84	114.5	116.5	B120Y1	Soil	6/11/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-84	117	119	B120Y2	Soil	6/11/2001	6	µg/kg	U		12	µg/kg	U		6	µg/kg	U	
299-W15-84	119.5	121	B120Y3	Soil	6/11/2001	6	µg/kg	U		12	µg/kg	U		6	µg/kg	U	
299-W15-84	121.5	123.5	B120Y4	Soil	6/11/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U	
299-W15-84	123.5	125.4	B120Y5	Soil	6/11/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-84	125.5	127	B121H2	Soil	6/11/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-84	127	129	B120Y6	Soil	6/11/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-84	130	132.3	B120Y7	Soil	6/12/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U	
299-W15-84	132	134.3	B120Y8	Soil	6/12/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-84	141.5	143.5	B120Y9	Soil	6/12/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-84	151	153	B12100	Soil	6/12/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U	
299-W15-84	161	162.5	B12101	Soil	6/13/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-84	171	173	B12640	Soil	6/13/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-84	193.5	195	B12632	Soil	6/15/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U	

Table C-6. Metal Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Aluminum (7429-90-5)				Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)			
							6010				6010				6010				6010			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	RLNP	5640000	µg/kg			961	µg/kg	U		68400	µg/kg			208	µg/kg		
299-W15-95	99999	107	B120W9	Soil	5/21/2001	RLNP	8470000	µg/kg			214	µg/kg	U		94700	µg/kg			364	µg/kg		
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	RLNP	10500000	µg/kg			223	µg/kg	U		115000	µg/kg			497	µg/kg		
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	RLNP	9240000	µg/kg			220	µg/kg	U		81200	µg/kg			330	µg/kg		
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	RLNP	3930000	µg/kg			220	µg/kg	U		120000	µg/kg			100	µg/kg		
299-W15-95	116	118	B120X3	Soil	5/22/2001	RLNP	6920000	µg/kg			190	µg/kg	U		95300	µg/kg			170	µg/kg		
299-W15-95	120	122	B120X4	Soil	5/22/2001	RLNP	6460000	µg/kg			190	µg/kg	U		74500	µg/kg			190	µg/kg		
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	RLNP	6990000	µg/kg			192	µg/kg	U		56700	µg/kg			383	µg/kg		
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	RLNP	7380000	µg/kg			195	µg/kg	U		57700	µg/kg			330	µg/kg		
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	RLNP	5120000	µg/kg			195	µg/kg	U		38300	µg/kg			243	µg/kg		
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	RLNP	6240000	µg/kg			195	µg/kg	U		58100	µg/kg			268	µg/kg		

Table C-6. Metal Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cadmium (7440-43-9)				Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	774	µg/kg			7630000	µg/kg			19200	µg/kg			25900	µg/kg		
299-W15-95	99999	107	B120W9	Soil	5/21/2001	195	µg/kg			13100000	µg/kg			14200	µg/kg			7900	µg/kg		
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	222	µg/kg			14200000	µg/kg			16000	µg/kg			9000	µg/kg		
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	180	µg/kg			10500000	µg/kg			20000	µg/kg			7500	µg/kg		
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	130	µg/kg			231000000	µg/kg			5600	µg/kg			4200	µg/kg		
299-W15-95	116	118	B120X3	Soil	5/22/2001	170	µg/kg			10700000	µg/kg			30800	µg/kg			7700	µg/kg		
299-W15-95	120	122	B120X4	Soil	5/22/2001	160	µg/kg			5710000	µg/kg			16900	µg/kg			7800	µg/kg		
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	30	µg/kg	U		4630000	µg/kg			31300	µg/kg			7200	µg/kg		
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	31	µg/kg	U		5920000	µg/kg			9800	µg/kg			5300	µg/kg		
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	31	µg/kg	U		2440000	µg/kg			13300	µg/kg			4900	µg/kg		
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	31	µg/kg	U		2630000	µg/kg			21400	µg/kg			5700	µg/kg		

Table C-6. Metal Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Copper (7440-50-8)				Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	2580000	µg/kg			99700000	µg/kg			401000	µg/kg			3870000	µg/kg		
299-W15-95	99999	107	B120W9	Soil	5/21/2001	17100	µg/kg			17400000	µg/kg			8200	µg/kg			6380000	µg/kg		
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	21500	µg/kg			20500000	µg/kg			10900	µg/kg			7700000	µg/kg		
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	19600	µg/kg			18400000	µg/kg			7600	µg/kg			6820000	µg/kg		
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	19400	µg/kg			7550000	µg/kg			1600	µg/kg			14400000	µg/kg		
299-W15-95	116	118	B120X3	Soil	5/22/2001	16700	µg/kg			22300000	µg/kg			2500	µg/kg			4210000	µg/kg		
299-W15-95	120	122	B120X4	Soil	5/22/2001	17000	µg/kg			21400000	µg/kg			2500	µg/kg			3850000	µg/kg		
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	16900	µg/kg			19400000	µg/kg			2500	µg/kg			3970000	µg/kg		
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	12400	µg/kg			19000000	µg/kg			3600	µg/kg			4960000	µg/kg		
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	10600	µg/kg			12200000	µg/kg			3600	µg/kg			3570000	µg/kg		
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	9900	µg/kg			14100000	µg/kg			3600	µg/kg			3710000	µg/kg		

Table C-6. Metal Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Manganese (7439-96-5)				Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)			
						6010				7471				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	917000	µg/kg			17	µg/kg	U		24300	µg/kg			1370000	µg/kg		
299-W15-95	99999	107	B120W9	Soil	5/21/2001	373000	µg/kg			19	µg/kg	U		14000	µg/kg			2040000	µg/kg		
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	411000	µg/kg			19	µg/kg	U		15700	µg/kg			2410000	µg/kg		
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	290000	µg/kg			20	µg/kg	U		18800	µg/kg			2070000	µg/kg		
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	277000	µg/kg			30	µg/kg			7400	µg/kg			758000	µg/kg		
299-W15-95	116	118	B120X3	Soil	5/22/2001	268000	µg/kg			10	µg/kg	U		20400	µg/kg			753000	µg/kg		
299-W15-95	120	122	B120X4	Soil	5/22/2001	283000	µg/kg			10	µg/kg	U		15100	µg/kg			750000	µg/kg		
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	271000	µg/kg			15	µg/kg	U		19600	µg/kg			944000	µg/kg		
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	343000	µg/kg			40	µg/kg			8800	µg/kg			1140000	µg/kg		
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	192000	µg/kg			16	µg/kg	U		16000	µg/kg			925000	µg/kg		
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	217000	µg/kg			17	µg/kg	U		17800	µg/kg			1440000	µg/kg		

Table C-6. Metal Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Silver (7440-22-4)				Sodium (7440-23-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	506	µg/kg	U		124000	µg/kg			24200	µg/kg			202000	µg/kg		
299-W15-95	99999	107	B120W9	Soil	5/21/2001	113	µg/kg	U		170000	µg/kg			30400	µg/kg			43500	µg/kg		
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	118	µg/kg	U		179000	µg/kg			34600	µg/kg			53400	µg/kg		
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	120	µg/kg	U		224000	µg/kg			29700	µg/kg			43300	µg/kg		
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	110	µg/kg	U		326000	µg/kg			28800	µg/kg			14000	µg/kg		
299-W15-95	116	118	B120X3	Soil	5/22/2001	100	µg/kg	U		803000	µg/kg			81300	µg/kg			38000	µg/kg		
299-W15-95	120	122	B120X4	Soil	5/22/2001	100	µg/kg	U		648000	µg/kg			69200	µg/kg			37700	µg/kg		
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	101	µg/kg	U		667000	µg/kg			58800	µg/kg			44800	µg/kg		
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	102	µg/kg	U		214000	µg/kg			47400	µg/kg			40900	µg/kg		
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	103	µg/kg	U		295000	µg/kg			25200	µg/kg			30000	µg/kg		
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	103	µg/kg	U		385000	µg/kg			25500	µg/kg			30000	µg/kg		

Table C-7. General Chemistry Analysis Results for Well 299-W15-95 (216-Z-9 Trench)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Oil and grease (OIL/GREASE)				
							9071				
							Conc'n	Units	Q	VQ	
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	RLNP	738000	µg/kg			
299-W15-95	99999	107	B120W9	Soil	5/21/2001	RLNP	209000	µg/kg			
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	RLNP	240000	µg/kg			
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	RLNP	236000	µg/kg			
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	RLNP	159000	µg/kg	U		
299-W15-95	116	118	B120X3	Soil	5/22/2001	RLNP	164000	µg/kg			
299-W15-95	120	122	B120X4	Soil	5/22/2001	RLNP	136000	µg/kg			
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	RLNP	274000	µg/kg			
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	RLNP	362000	µg/kg			
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	RLNP	137000	µg/kg	U		
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	RLNP	273000	µg/kg			

Table C-8. Radiochemical Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Americium-241 (14596-10-2)					Americium-241 (14596-10-2)					Antimony-125 (14234-35-6)				
							GEA					IX/Plate/AEA					GEA				
							Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	TMANC	0.098	pCi/g	U		0.098	-0.069	pCi/g	U		0.18	0.047	pCi/g	U		0.047
299-W15-95	99999	107	B120W9		5/21/2001	TMANC	0.32	pCi/g	U		0.32	0.056	pCi/g	U		0.21	0.077	pCi/g	U		0.077
299-W15-95	99999	109.5	B120X0		5/21/2001	TMANC	0.052	pCi/g	U		0.052	-0.046	pCi/g	U		0.18	0.084	pCi/g	U		0.084
299-W15-95	109.5	112	B120X1		5/22/2001	TMANC	0.4	pCi/g	U		0.4	0.1	pCi/g	U		0.26	0.086	pCi/g	U		0.086
299-W15-95	112	114.5	B120X2		5/22/2001	TMANC	0.062	pCi/g	U		0.062	0.033	pCi/g	U		0.25	0.093	pCi/g	U		0.093
299-W15-95	116	118	B120X3		5/22/2001	TMANC	0.12	pCi/g	U		0.12	0	pCi/g	U		0.34	0.071	pCi/g	U		0.071
299-W15-95	118	118.5	B121H0		5/22/2001	TMANC	0.24	pCi/g	U		0.24	-0.09	pCi/g	U		0.34	0.064	pCi/g	U		0.064
299-W15-95	120	122	B120X4		5/22/2001	TMANC	0.059	pCi/g	U		0.059	0.065	pCi/g	U		0.5	0.034	pCi/g	U		0.034
299-W15-95	122.5	125	B120X5		5/23/2001	TMANC	0.081	pCi/g	U		0.081	0.025	pCi/g	U		0.061	0.04	pCi/g	U		0.04
299-W15-95	130	132.5	B120X6		5/25/2001	TMANC	0.28	pCi/g	U		0.28	0	pCi/g	U		0.28	0.074	pCi/g	U		0.074
299-W15-95	145	146.5	B121H1		5/25/2001	TMANC	0.26	pCi/g	U		0.26	0	pCi/g	U		0.23	0.066	pCi/g	U		0.066
299-W15-95	155	157.5	B120X7		5/29/2001	TMANC	0.044	pCi/g	U		0.044	-0.016	pCi/g	U		0.13	0.065	pCi/g	U		0.065
299-W15-95	185	187.5	B120X8		5/31/2001	TMANC	0.17	pCi/g	U		0.17	0.073	pCi/g	U		0.19	0.1	pCi/g	U		0.1

Table C-8. Radiochemical Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Barium-133 (13981-41-4)					Cesium-137 (10045-97-3)					Cobalt-60 (10198-40-0)				
						GEA					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	0.024	pCi/g	U		0.024	0.024	pCi/g	U		0.024	0.026	pCi/g	U		0.026
299-W15-95	99999	107	B120W9		5/21/2001	0.039	pCi/g	U		0.039	0.04	pCi/g	U		0.04	0.044	pCi/g	U		0.044
299-W15-95	99999	109.5	B120X0		5/21/2001	0.038	pCi/g	U		0.038	0.036	pCi/g	U		0.036	0.042	pCi/g	U		0.042
299-W15-95	109.5	112	B120X1		5/22/2001	0.044	pCi/g	U		0.044	0.045	pCi/g	U		0.045	0.049	pCi/g	U		0.049
299-W15-95	112	114.5	B120X2		5/22/2001	0.043	pCi/g	U		0.043	0.041	pCi/g	U		0.041	0.042	pCi/g	U		0.042
299-W15-95	116	118	B120X3		5/22/2001	0.038	pCi/g	U		0.038	0.031	pCi/g	U		0.031	0.038	pCi/g	U		0.038
299-W15-95	118	118.5	B121H0		5/22/2001	0.029	pCi/g	U		0.029	0.03	pCi/g	U		0.03	0.034	pCi/g	U		0.034
299-W15-95	120	122	B120X4		5/22/2001	0.019	pCi/g	U		0.019	0.016	pCi/g	U		0.016	0.019	pCi/g	U		0.019
299-W15-95	122.5	125	B120X5		5/23/2001						0.018	pCi/g	U		0.018	0.02	pCi/g	U		0.02
299-W15-95	130	132.5	B120X6		5/25/2001						0.035	pCi/g	U		0.035	0.041	pCi/g	U		0.041
299-W15-95	145	146.5	B121H1		5/25/2001						0.034	pCi/g	U		0.034	0.034	pCi/g	U		0.034
299-W15-95	155	157.5	B120X7		5/29/2001						0.032	pCi/g	U		0.032	0.033	pCi/g	U		0.033
299-W15-95	185	187.5	B120X8		5/31/2001						0.041	pCi/g	U		0.041	0.055	pCi/g	U		0.055

Table C-8. Radiochemical Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Europium-152 (14683-23-9)					Europium-154 (15585-10-1)					Europium-155 (14391-16-3)				
						GEA					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	0.06	pCi/g	U		0.06	0.082	pCi/g	U		0.082	0.07	pCi/g	U		0.07
299-W15-95	99999	107	B120W9		5/21/2001	0.088	pCi/g	U		0.088	0.13	pCi/g	U		0.13	0.14	pCi/g	U		0.14
299-W15-95	99999	109.5	B120X0		5/21/2001	0.087	pCi/g	U		0.087	0.13	pCi/g	U		0.13	0.079	pCi/g	U		0.079
299-W15-95	109.5	112	B120X1		5/22/2001	0.1	pCi/g	U		0.1	0.14	pCi/g	U		0.14	0.17	pCi/g	U		0.17
299-W15-95	112	114.5	B120X2		5/22/2001	0.11	pCi/g	U		0.11	0.12	pCi/g	U		0.12	0.092	pCi/g	U		0.092
299-W15-95	116	118	B120X3		5/22/2001	0.088	pCi/g	U		0.088	0.13	pCi/g	U		0.13	0.13	pCi/g	U		0.13
299-W15-95	118	118.5	B121H0		5/22/2001	0.073	pCi/g	U		0.073	0.11	pCi/g	U		0.11	0.11	pCi/g	U		0.11
299-W15-95	120	122	B120X4		5/22/2001	0.037	pCi/g	U		0.037	0.062	pCi/g	U		0.062	0.048	pCi/g	U		0.048
299-W15-95	122.5	125	B120X5		5/23/2001	0.042	pCi/g	U		0.042	0.07	pCi/g	U		0.07	0.058	pCi/g	U		0.058
299-W15-95	130	132.5	B120X6		5/25/2001	0.081	pCi/g	U		0.081	0.14	pCi/g	U		0.14	0.12	pCi/g	U		0.12
299-W15-95	145	146.5	B121H1		5/25/2001	0.075	pCi/g	U		0.075	0.12	pCi/g	U		0.12	0.12	pCi/g	U		0.12
299-W15-95	155	157.5	B120X7		5/29/2001	0.074	pCi/g	U		0.074	0.12	pCi/g	U		0.12	0.07	pCi/g	U		0.07
299-W15-95	185	187.5	B120X8		5/31/2001	0.12	pCi/g	U		0.12	0.19	pCi/g	U		0.19	0.12	pCi/g	U		0.12

Table C-8. Radiochemical Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Plutonium-238 (13981-16-3)					Plutonium-239/240 (PU-239/240)					Potassium-40 (13966-00-2)				
						Sep/Plate/AEA					Sep/Plate/AEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	-0.029	pCi/g	U		0.23	0	pCi/g	U		0.23	13.5	pCi/g			0.2
299-W15-95	99999	107	B120W9		5/21/2001	-0.022	pCi/g	U		0.17	0	pCi/g	U		0.17	15.7	pCi/g			0.4
299-W15-95	99999	109.5	B120X0		5/21/2001	0	pCi/g	U		0.26	0	pCi/g	U		0.26	18.7	pCi/g			0.38
299-W15-95	109.5	112	B120X1		5/22/2001	-0.026	pCi/g	U		0.25	0	pCi/g	U		0.2	17.3	pCi/g			0.46
299-W15-95	112	114.5	B120X2		5/22/2001	0.044	pCi/g	U		0.24	0.022	pCi/g	U		0.24	2.88	pCi/g			0.47
299-W15-95	116	118	B120X3		5/22/2001	-0.005	pCi/g	U		0.05	-0.011	pCi/g	U		0.042	8.44	pCi/g			0.56
299-W15-95	118	118.5	B121H0		5/22/2001	0.007	pCi/g	U		0.039	0.01	pCi/g	U		0.033	10.7	pCi/g			0.34
299-W15-95	120	122	B120X4		5/22/2001	-0.006	pCi/g	U		0.038	0.014	pCi/g	U		0.022	8.81	pCi/g			0.16
299-W15-95	122.5	125	B120X5		5/23/2001	0	pCi/g	U		0.18	0.024	pCi/g	U		0.18	10.7	pCi/g			0.22
299-W15-95	130	132.5	B120X6		5/25/2001	0.084	pCi/g	U		0.21	0.056	pCi/g	U		0.21	13.2	pCi/g			0.42
299-W15-95	145	146.5	B121H1		5/25/2001	0	pCi/g	U		0.21	0.027	pCi/g	U		0.21	14.2	pCi/g			0.19
299-W15-95	155	157.5	B120X7		5/29/2001	0.028	pCi/g	U		0.27	0.056	pCi/g	U		0.21	16.2	pCi/g			0.36
299-W15-95	185	187.5	B120X8		5/31/2001	0	pCi/g	U		0.23	-0.024	pCi/g	U		0.18	11.6	pCi/g			0.86

Table C-8. Radiochemical Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Radium-226 (13982-63-3)					Radium-228 (15262-20-1)					Thorium-228 (14274-82-9)				
						GEA					GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	0.414	pCi/g			0.048	0.723	pCi/g			0.11	0.62	pCi/g			0.03
299-W15-95	99999	107	B120W9		5/21/2001	0.731	pCi/g			0.074	1.15	pCi/g			0.19	1.01	pCi/g			0.043
299-W15-95	99999	109.5	B120X0		5/21/2001	0.855	pCi/g			0.077	1.52	pCi/g			0.16	1.32	pCi/g			0.045
299-W15-95	109.5	112	B120X1		5/22/2001	1.05	pCi/g			0.08	1.57	pCi/g			0.2	1.44	pCi/g			0.052
299-W15-95	112	114.5	B120X2		5/22/2001	2.55	pCi/g			0.08	0.339	pCi/g			0.17	0.31	pCi/g			0.05
299-W15-95	116	118	B120X3		5/22/2001	0.498	pCi/g			0.071	0.55	pCi/g			0.14	0.475	pCi/g			0.042
299-W15-95	118	118.5	B121H0		5/22/2001	0.552	pCi/g			0.054	0.634	pCi/g			0.13	0.487	pCi/g			0.034
299-W15-95	120	122	B120X4		5/22/2001	0.302	pCi/g			0.035	0.487	pCi/g			0.062	0.394	pCi/g			0.022
299-W15-95	122.5	125	B120X5		5/23/2001	0.344	pCi/g			0.037	0.517	pCi/g			0.085	0.464	pCi/g			0.025
299-W15-95	130	132.5	B120X6		5/25/2001	0.292	pCi/g			0.076	0.492	pCi/g			0.13	0.474	pCi/g			0.07
299-W15-95	145	146.5	B121H1		5/25/2001	0.354	pCi/g			0.058	0.505	pCi/g			0.16	0.401	pCi/g			0.038
299-W15-95	155	157.5	B120X7		5/29/2001	0.356	pCi/g			0.053	0.707	pCi/g			0.14	0.648	pCi/g			0.035
299-W15-95	185	187.5	B120X8		5/31/2001	0.406	pCi/g			0.11	0.826	pCi/g			0.23	0.708	pCi/g			0.057

Table C-8. Radiochemical Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Thorium-232 (TH-232)					Total beta radiostrontium (SR-RAD)				
						GEA					Sep/GPC				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	0.723	pCi/g			0.11	0.067	pCi/g	U		0.27
299-W15-95	99999	107	B120W9		5/21/2001	1.15	pCi/g			0.19	0.083	pCi/g	U		0.27
299-W15-95	99999	109.5	B120X0		5/21/2001	1.52	pCi/g			0.16	0.001	pCi/g	U		0.27
299-W15-95	109.5	112	B120X1		5/22/2001	1.57	pCi/g			0.2	0.364	pCi/g	J		0.26
299-W15-95	112	114.5	B120X2		5/22/2001	0.339	pCi/g			0.17	-0.085	pCi/g	U		0.25
299-W15-95	116	118	B120X3		5/22/2001	0.55	pCi/g			0.14	-0.042	pCi/g	U		0.25
299-W15-95	118	118.5	B121H0		5/22/2001	0.634	pCi/g			0.13	0.355	pCi/g	J		0.28
299-W15-95	120	122	B120X4		5/22/2001	0.487	pCi/g			0.062	0.017	pCi/g	U		0.24
299-W15-95	122.5	125	B120X5		5/23/2001	0.517	pCi/g			0.085	0.123	pCi/g	U		0.27
299-W15-95	130	132.5	B120X6		5/25/2001	0.492	pCi/g			0.13	0.069	pCi/g	U		0.28
299-W15-95	145	146.5	B121H1		5/25/2001	0.505	pCi/g			0.16	-0.161	pCi/g	U		0.3
299-W15-95	155	157.5	B120X7		5/29/2001	0.707	pCi/g			0.14	-0.021	pCi/g	U		0.2
299-W15-95	185	187.5	B120X8		5/31/2001	0.826	pCi/g			0.23	-0.002	pCi/g	U		0.27

Table C-8. Radiochemical Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (7 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Uranium-235 (15117-96-1)					Uranium-238 (U-238)				
						GEA					GEA				
						Conc'n	Units	Q	VQ	MDA	Conc'n	Units	Q	VQ	MDA
299-W15-95	102.5	104.5	B120W8		5/21/2001	0.097	pCi/g	U		0.097	3	pCi/g	U		3
299-W15-95	99999	107	B120W9		5/21/2001	0.17	pCi/g	U		0.17	5.1	pCi/g	U		5.1
299-W15-95	99999	109.5	B120X0		5/21/2001	0.13	pCi/g	U		0.13	4.6	pCi/g	U		4.6
299-W15-95	109.5	112	B120X1		5/22/2001	0.2	pCi/g	U		0.2	5.4	pCi/g	U		5.4
299-W15-95	112	114.5	B120X2		5/22/2001	0.166	pCi/g	U		0.21	5.6	pCi/g	U		5.6
299-W15-95	116	118	B120X3		5/22/2001	0.13	pCi/g	U		0.13	4.4	pCi/g	U		4.4
299-W15-95	118	118.5	B121H0		5/22/2001	0.14	pCi/g	U		0.14	3.9	pCi/g	U		3.9
299-W15-95	120	122	B120X4		5/22/2001	0.067	pCi/g	U		0.067	2.3	pCi/g	U		2.3
299-W15-95	122.5	125	B120X5		5/23/2001	0.081	pCi/g	U		0.081	2.2	pCi/g	U		2.2
299-W15-95	130	132.5	B120X6		5/25/2001	0.16	pCi/g	U		0.16	5.2	pCi/g	U		5.2
299-W15-95	145	146.5	B121H1		5/25/2001	0.15	pCi/g	U		0.15	4.8	pCi/g	U		4.8
299-W15-95	155	157.5	B120X7		5/29/2001	0.11	pCi/g	U		0.11	4.2	pCi/g	U		4.2
299-W15-95	185	187.5	B120X8		5/31/2001	0.17	pCi/g	U		0.17	6.4	pCi/g	U		6.4

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,2,4-Trichlorobenzene (120-82-1)				1,2-Dichlorobenzene (95-50-1)				1,3-Dichlorobenzene (541-73-1)				1,4-Dichlorobenzene (106-46-7)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	RLNP	1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	RLNP	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	RLNP	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	RLNP	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	RLNP	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	RLNP	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4,5-Trichlorophenol (95-95-4)				2,4,6-Trichlorophenol (88-06-2)				2,4-Dichlorophenol (120-83-2)				2,4-Dimethylphenol (105-67-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	4400	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	900	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	990	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	980	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	1000	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	1800	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	870	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2,4-Dinitrophenol (51-28-5)				2,4-Dinitrotoluene (121-14-2)				2,6-Dinitrotoluene (606-20-2)				2-Chloronaphthalene (91-58-7)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	4400	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	900	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	990	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	980	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	1000	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	1800	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	870	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	850	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	860	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Chlorophenol (95-57-8)				2-Methylnaphthalene (91-57-6)				2-Methylphenol (cresol, o-) (95-48-7)				2-Nitroaniline (88-74-4)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U		250	µg/kg	J		1700	µg/kg	U		4400	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		900	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		990	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		980	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		1000	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		1800	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		850	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		850	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		850	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		860	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		870	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		850	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		860	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		860	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Nitrophenol (88-75-5)				3,3"-Dichloro benzidine (91-94-1)				3-Nitroaniline (99-09-2)				4,6-Dinitro-2-methylphenol (534-52-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U		1700	µg/kg	U		4400	µg/kg	U		4400	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		360	µg/kg	U		900	µg/kg	U		900	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		390	µg/kg	U		990	µg/kg	U		990	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		390	µg/kg	U		980	µg/kg	U		980	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		400	µg/kg	U		1000	µg/kg	U		1000	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		730	µg/kg	U		1800	µg/kg	U		1800	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		850	µg/kg	U		850	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		850	µg/kg	U		850	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		850	µg/kg	U		850	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		340	µg/kg	U		860	µg/kg	U		860	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		350	µg/kg	U		870	µg/kg	U		870	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		340	µg/kg	U		850	µg/kg	U		850	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		340	µg/kg	U		860	µg/kg	U		860	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		340	µg/kg	U		860	µg/kg	U		860	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Bromophenyl phenyl ether (101-55-3)				4-Chloro-3-methylphenol (59-50-7)				4-Chloroaniline (106-47-8)				4-Chlorophenyl phenyl ether (7005-72-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	4-Methylphenol (cresol, p-) (106-44-5)				4-Nitroaniline (100-01-6)				4-Nitrophenol (100-02-7)				Acenaphthene (83-32-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U		4400	µg/kg	U		4400	µg/kg	U		170	µg/kg	J	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		900	µg/kg	U		900	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		990	µg/kg	U		990	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		980	µg/kg	U		980	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		1000	µg/kg	U		1000	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		1800	µg/kg	U		1800	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		850	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		850	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		850	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		860	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		870	µg/kg	U		870	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		850	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		860	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		860	µg/kg	U		860	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Acenaphthylene (208-96-8)				Anthracene (120-12-7)				Benzo(a)anthracene (56-55-3)				Benzo(a)pyrene (50-32-8)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	340	µg/kg	J		88	µg/kg	J		150	µg/kg	J		110	µg/kg	J	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzo(b)fluoranthene (205-99-2)				Benzo(ghi)perylene (191-24-2)				Benzo(k)fluoranthene (207-08-9)				Bis(2-chloro-1-methylethyl)ether (108-60-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	130	µg/kg	J		310	µg/kg	J		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Bis(2-Chloroethoxy) methane (111-91-1)				Bis(2-chloroethyl) ether (111-44-4)				Bis(2-ethylhexyl) phthalate (117-81-7)				Butylbenzylphthalate (85-68-7)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8		5/21/2001	1700	µg/kg	U		1700	µg/kg	U		3200	µg/kg			1700	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		360	µg/kg	U		500	µg/kg			360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		390	µg/kg	U		45	µg/kg	J		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		400	µg/kg	U		37	µg/kg	J		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		730	µg/kg	U		126.004	µg/kg	J		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		19.676	µg/kg	J		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		340	µg/kg	U		18	µg/kg	J		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		340	µg/kg	U		34	µg/kg	JB		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		340	µg/kg	U		60	µg/kg	JB		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Carbazole (86-74-8)				Chrysene (218-01-9)				Dibenz[a,h] anthracene (53-70-3)				Dibenzofuran (132-64-9)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	RLNP	1700	µg/kg	U		270	µg/kg	J		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	RLNP	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	RLNP	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	RLNP	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	RLNP	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	RLNP	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	RLNP	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	RLNP	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Diethylphthalate (84-66-2)				Dimethyl phthalate (131-11-3)				Di-n-butylphthalate (84-74-2)				Di-n-octylphthalate (117-84-0)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Fluoranthene (206-44-0)				Fluorene (86-73-7)				Hexachlorobenzene (118-74-1)				Hexachlorobutadiene (87-68-3)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	350	µg/kg	J		290	µg/kg	J		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Hexachlorocyclo pentadiene (77-47-4)				Hexachloroethane (67-72-1)				Indeno(1,2,3-cd) pyrene (193-39-5)				Isophorone (78-59-1)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	1700	µg/kg	U		1700	µg/kg	U		110	µg/kg	J		1700	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Naphthalene (91-20-3)				Nitrobenzene (98-95-3)				n-Nitrosodi-n-dipropylamine (621-64-7)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	390	µg/kg	J		1700	µg/kg	U		1700	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	n-Nitrosodiphenyl amine (86-30-6)				Pentachlorophenol (87-86-5)				Phenanthrene (85-01-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	1700	µg/kg	U		4400	µg/kg	U		1200	µg/kg	J	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		900	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		990	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		980	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		1000	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		1800	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		870	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		850	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		860	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		860	µg/kg	U		340	µg/kg	U	

Table C-9. Semivolatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (17 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phenol (108-95-2)				Pyrene (129-00-0)				Tributyl phosphate (126-73-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	1700	µg/kg	U		960	µg/kg	J		1700	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	360	µg/kg	U		360	µg/kg	U		360	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	390	µg/kg	U		390	µg/kg	U		390	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	400	µg/kg	U		400	µg/kg	U		400	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	730	µg/kg	U		730	µg/kg	U		730	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	350	µg/kg	U		350	µg/kg	U		350	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	340	µg/kg	U		340	µg/kg	U		340	µg/kg	U	

Table C-10. Volatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1,2,2-Tetrachloroethane (79-34-5)				1,1,2-Trichloroethane (79-00-5)				1,1-Dichloroethane (75-34-3)			
							8260				8260				8260				8260			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	RLNP	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	RLNP	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	

Table C-10. Volatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	1,1-Dichloroethene (75-35-4)				1,2-Dichloroethane (107-06-2)				1,2-Dichloroethene (total) (540-59-0)				1,2-Dichloropropane (78-87-5)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	

Table C-10. Volatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	2-Butanone (78-93-3)				2-Hexanone (591-78-6)				2-Pentanone, 4-Methyl (108-10-1)				Acetone (67-64-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	12	µg/kg			11	µg/kg	U		11	µg/kg	U		11	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	11	µg/kg	U		11	µg/kg	U		11	µg/kg	U		11	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	12	µg/kg	U		12	µg/kg	U		12	µg/kg	U		12	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	12	µg/kg	U		12	µg/kg	U		12	µg/kg	U		12	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	12	µg/kg	U		12	µg/kg	U		12	µg/kg	U		12	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	11	µg/kg	U		11	µg/kg	U		11	µg/kg	U		19	µg/kg		
299-W15-95	116	118	B120X3	Soil	5/22/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		10	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		10	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		5	µg/kg	J	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	11	µg/kg	U		11	µg/kg	U		11	µg/kg	U		11	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	11	µg/kg	U		11	µg/kg	U		11	µg/kg	U		11	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	11	µg/kg	U		11	µg/kg	U		11	µg/kg	U		11	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		6	µg/kg	JB	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	10	µg/kg	U		10	µg/kg	U		10	µg/kg	U		6	µg/kg	JB	

Table C-10. Volatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Benzene (71-43-2)				Bromodichloro methane (75-27-4)				Bromoform (75-25-2)				Bromomethane (74-83-9)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	

Table C-10. Volatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon disulfide (75-15-0)				Carbon tetrachloride (56-23-5)				Chlorobenzene (108-90-7)				Chloroethane (75-00-3)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	6	µg/kg	U		5	µg/kg			6	µg/kg	U		11	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		12	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U		11	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U		10	µg/kg	U	

Table C-10. Volatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chloroform (67-66-3)				Chloromethane (74-87-3)				cis-1,3-Dichloro propene (10061-01-5)				Dibromochloro methane (124-48-1)			
						8260				8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	2	µg/kg	J		12	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	6	µg/kg	U		12	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	6	µg/kg	U		12	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U		5	µg/kg	U	

Table C-10. Volatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Ethylbenzene (100-41-4)				Methylene chloride (75-09-2)				Styrene (100-42-5)			
						8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	6	µg/kg	U		18	µg/kg	B		1	µg/kg	J	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	6	µg/kg	U		16	µg/kg	B		6	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	6	µg/kg	U		18	µg/kg	B		6	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	6	µg/kg	U		14	µg/kg	B		6	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	6	µg/kg	U		11	µg/kg	B		6	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	6	µg/kg	U		14	µg/kg	B		6	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	5	µg/kg	U		11	µg/kg	B		5	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	5	µg/kg	U		13	µg/kg	B		5	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	5	µg/kg	U		11	µg/kg	B		5	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	6	µg/kg	U		4	µg/kg	J		6	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	6	µg/kg	U		7	µg/kg			6	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	6	µg/kg	U		3	µg/kg	J		6	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	5	µg/kg	U		26	µg/kg	B		5	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	5	µg/kg	U		26	µg/kg	B		5	µg/kg	U	

Table C-10. Volatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetrachloroethene (127-18-4)				Toluene (108-88-3)				trans-1,3-Dichloro propene (10061-02-6)			
						8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	2	µg/kg	J		1	µg/kg	J		6	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	6	µg/kg	U		6	µg/kg	U		6	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	5	µg/kg	U		5	µg/kg	U		5	µg/kg	U	

Table C-10. Volatile Organic Analysis Results for Well 299-W15-95 (216-Z-9 Trench) (9 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Trichloroethene (79-01-6)				Vinyl chloride (75-01-4)				Xylenes (total) (1330-20-7)			
						8260				8260				8260			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-95	102.5	104.5	B120W8	Soil	5/21/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	107	B120W9	Soil	5/21/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U	
299-W15-95	99999	109.5	B120X0	Soil	5/21/2001	6	µg/kg	U		12	µg/kg	U		6	µg/kg	U	
299-W15-95	109.5	112	B120X1	Soil	5/22/2001	6	µg/kg	U		12	µg/kg	U		6	µg/kg	U	
299-W15-95	112	114.5	B120X2	Soil	5/22/2001	6	µg/kg	U		12	µg/kg	U		6	µg/kg	U	
299-W15-95	114.5	116	B121F9	Soil	5/22/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U	
299-W15-95	116	118	B120X3	Soil	5/22/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-95	118	118.5	B121H0	Soil	5/22/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-95	120	122	B120X4	Soil	5/22/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-95	122.5	125	B120X5	Soil	5/23/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U	
299-W15-95	130	132.5	B120X6	Soil	5/25/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U	
299-W15-95	145	146.5	B121H1	Soil	5/25/2001	6	µg/kg	U		11	µg/kg	U		6	µg/kg	U	
299-W15-95	155	157.5	B120X7	Soil	5/29/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	
299-W15-95	185	187.5	B120X8	Soil	5/31/2001	5	µg/kg	U		10	µg/kg	U		5	µg/kg	U	

Table C-11. Metal Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)				Cadmium (7440-43-9)			
							6010				6010				6010				6010			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2	Soil	5/20/1992	DATACH			U		87000	µg/kg			370	µg/kg					U	
299-W15-216	110.2	110.7	B067K1	Soil	6/2/1992	DATACH			U		110000	µg/kg			620	µg/kg					U	
299-W15-216	116.3	116.8	B066V6	Soil	6/3/1992	DATACH			U		73000	µg/kg			300	µg/kg					U	
299-W15-216	120.5	121	B066W4	Soil	6/8/1992	DATACH			U		110000	µg/kg			310	µg/kg					U	
299-W15-216	128.5	129	B066W8	Soil	6/10/1992	DATACH			U		72000	µg/kg			340	µg/kg					U	

Table C-11. Metal Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2	Soil	5/20/1992	8600000	µg/kg			12000	µg/kg			6500	µg/kg			9600	µg/kg		
299-W15-216	110.2	110.7	B067K1	Soil	6/2/1992	14000000	µg/kg			18000	µg/kg			8200	µg/kg			20000	µg/kg		
299-W15-216	116.3	116.8	B066V6	Soil	6/3/1992	160000000	µg/kg			5900	µg/kg			3500	µg/kg			20000	µg/kg		
299-W15-216	120.5	121	B066W4	Soil	6/8/1992	11000000	µg/kg			17000	µg/kg			11000	µg/kg			22000	µg/kg		
299-W15-216	128.5	129	B066W8	Soil	6/10/1992	5700000	µg/kg			10000	µg/kg			9100	µg/kg			16000	µg/kg		

Table C-11. Metal Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2	Soil	5/20/1992	16000000	µg/kg			4100	µg/kg			5300000	µg/kg			400000	µg/kg		
299-W15-216	110.2	110.7	B067K1	Soil	6/2/1992	21000000	µg/kg			11000	µg/kg			7700000	µg/kg			360000	µg/kg		
299-W15-216	116.3	116.8	B066V6	Soil	6/3/1992	7700000	µg/kg			1500	µg/kg			12000000	µg/kg			130000	µg/kg		
299-W15-216	120.5	121	B066W4	Soil	6/8/1992	25000000	µg/kg			2600	µg/kg			4600000	µg/kg			270000	µg/kg		
299-W15-216	128.5	129	B066W8	Soil	6/10/1992	21000000	µg/kg			1900	µg/kg			6100000	µg/kg			340000	µg/kg		

Table C-11. Metal Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2	Soil	5/20/1992			U		13000	µg/kg			1500000	µg/kg					U	
299-W15-216	110.2	110.7	B067K1	Soil	6/2/1992			U		16000	µg/kg			2900000	µg/kg					U	
299-W15-216	116.3	116.8	B066V6	Soil	6/3/1992			U		6000	µg/kg			660000	µg/kg					U	
299-W15-216	120.5	121	B066W4	Soil	6/8/1992			U		15000	µg/kg			740000	µg/kg					U	
299-W15-216	128.5	129	B066W8	Soil	6/10/1992			U		31000	µg/kg			790000	µg/kg					U	

Table C-11. Metal Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2	Soil	5/20/1992	180000	µg/kg					U		30000	µg/kg			35000	µg/kg		
299-W15-216	110.2	110.7	B067K1	Soil	6/2/1992	300000	µg/kg					U		36000	µg/kg			53000	µg/kg		
299-W15-216	116.3	116.8	B066V6	Soil	6/3/1992	550000	µg/kg					U		28000	µg/kg			17000	µg/kg		
299-W15-216	120.5	121	B066W4	Soil	6/8/1992	2500000	µg/kg					U		78000	µg/kg			41000	µg/kg		
299-W15-216	128.5	129	B066W8	Soil	6/10/1992	1000000	µg/kg					U		54000	µg/kg			39000	µg/kg		

Table C-12. Semivolatile Organic Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Decane (124-18-5)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992	DATACH			U				U				U				U	
299-W15-216	110.2	110.7	B067K1		6/2/1992	DATACH			U				U				U				U	
299-W15-216	116.3	116.8	B066V6		6/3/1992	DATACH			U				U				U				U	
299-W15-216	120.5	121	B066W4		6/8/1992	DATACH			U				U				U				U	
299-W15-216	128.5	129	B066W8		6/10/1992	DATACH			U				U				U				U	

Table C-12. Semivolatile Organic Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992			U				U				U	
299-W15-216	110.2	110.7	B067K1		6/2/1992			U				U				U	
299-W15-216	116.3	116.8	B066V6		6/3/1992			U				U				U	
299-W15-216	120.5	121	B066W4		6/8/1992			U				U				U	
299-W15-216	128.5	129	B066W8		6/10/1992			U				U				U	

Table C-12. Semivolatile Organic Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phenol (108-95-2)				Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2		5/20/1992			U				U				U	
299-W15-216	110.2	110.7	B067K1		6/2/1992			U				U				U	
299-W15-216	116.3	116.8	B066V6		6/3/1992			U				U				U	
299-W15-216	120.5	121	B066W4		6/8/1992			U				U				U	
299-W15-216	128.5	129	B066W8		6/10/1992			U				U				U	

Table C-13. Volatile Organic Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2	Soil	5/20/1992	PNL1			U				U								U	
299-W15-216	110.2	110.7	B066V1	Soil	6/2/1992	PNL1			U				U				U				U	
299-W15-216	110.2	110.7	B066V2	Soil	6/2/1992	PNL1			U				U				U				U	
299-W15-216	110.2	110.7	B067K1	Soil	6/2/1992	PNL1			U				U				U				U	
299-W15-216	116.3	116.8	B066V6	Soil	6/3/1992	PNL1			U				U				U				U	
299-W15-216	120.5	121	B066W4	Soil	6/8/1992	PNL1			U				U				U				U	
299-W15-216	128.5	129	B066W8	Soil	6/10/1992	PNL1			U				U				U				U	

Table C-13. Volatile Organic Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2	Soil	5/20/1992	67	µg/kg					U				U				U	
299-W15-216	110.2	110.7	B066V1	Soil	6/2/1992	40	µg/kg					U				U				U	
299-W15-216	110.2	110.7	B066V2	Soil	6/2/1992			U				U				U				U	
299-W15-216	110.2	110.7	B067K1	Soil	6/2/1992	54	µg/kg					U				U				U	
299-W15-216	116.3	116.8	B066V6	Soil	6/3/1992	27	µg/kg					U				U				U	
299-W15-216	120.5	121	B066W4	Soil	6/8/1992			U				U				U				U	
299-W15-216	128.5	129	B066W8	Soil	6/10/1992			U				U				U				U	

Table C-13. Volatile Organic Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2	Soil	5/20/1992			U		2754	µg/kg					U		7	µg/kg		
299-W15-216	110.2	110.7	B066V1	Soil	6/2/1992			U		338	µg/kg					U				U	
299-W15-216	110.2	110.7	B066V2	Soil	6/2/1992			U		198	µg/kg					U				U	
299-W15-216	110.2	110.7	B067K1	Soil	6/2/1992			U				U				U				U	
299-W15-216	116.3	116.8	B066V6	Soil	6/3/1992			U				U				U				U	
299-W15-216	120.5	121	B066W4	Soil	6/8/1992			U				U				U				U	
299-W15-216	128.5	129	B066W8	Soil	6/10/1992			U		428	µg/kg					U				U	

Table C-13. Volatile Organic Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)				Xylenes (total) (1330-20-7)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2	Soil	5/20/1992			U				U				U					
299-W15-216	110.2	110.7	B066V1	Soil	6/2/1992	220	µg/kg					U				U					
299-W15-216	110.2	110.7	B066V2	Soil	6/2/1992			U				U				U					
299-W15-216	110.2	110.7	B067K1	Soil	6/2/1992	171	µg/kg					U				U					
299-W15-216	116.3	116.8	B066V6	Soil	6/3/1992	348	µg/kg					U				U					
299-W15-216	120.5	121	B066W4	Soil	6/8/1992	13	µg/kg					U				U					
299-W15-216	128.5	129	B066W8	Soil	6/10/1992			U				U				U					

Table C-14. Wet Chemistry Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)				Chloride (16887-00-6)			
							D4327				D4327				D4327				D4327			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2	Soil	5/20/1992	DATACH	6500	µg/kg					U				U		1400	µg/kg		
299-W15-216	110.2	110.7	B067K1	Soil	6/2/1992	DATACH			U				U				U		800	µg/kg		
299-W15-216	116.3	116.8	B066V6	Soil	6/3/1992	DATACH	1200	µg/kg					U				U		1500	µg/kg		
299-W15-216	120.5	121	B066W4	Soil	6/8/1992	DATACH	800	µg/kg					U				U		1900	µg/kg		
299-W15-216	128.5	129	B066W8	Soil	6/10/1992	DATACH	500	µg/kg					U				U		1900	µg/kg		

Table C-14. Wet Chemistry Analysis Results for Well 299-W15-216 (216-Z-9 Trench) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-216	49.1	49.6	B067J2	Soil	5/20/1992			U				U				U		3000	µg/kg		
299-W15-216	110.2	110.7	B067K1	Soil	6/2/1992			U				U				U				U	
299-W15-216	116.3	116.8	B066V6	Soil	6/3/1992			U		1300	µg/kg					U		9100	µg/kg		
299-W15-216	120.5	121	B066W4	Soil	6/8/1992			U		1300	µg/kg					U		15000	µg/kg		
299-W15-216	128.5	129	B066W8	Soil	6/10/1992			U		600	µg/kg					U		3000	µg/kg		

Table C-15. Metal Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)				Cadmium (7440-43-9)			
							6010				6010				6010				6010			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07	Soil	6/9/1992	DATACH			U		92000	µg/kg			590	µg/kg					U	
299-W15-217	25.5	26	B06K12	Soil	6/10/1992	DATACH			U		77000	µg/kg			480	µg/kg					U	
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992	DATACH			U		60000	µg/kg					U				U	
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992	DATACH			U		61000	µg/kg					U				U	
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992	DATACH			U		64000	µg/kg			400	µg/kg					U	
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992	DATACH			U		78000	µg/kg			380	µg/kg					U	
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992	DATACH			U		92000	µg/kg			330	µg/kg					U	
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992	DATACH			U		110000	µg/kg					U				U	

Table C-15. Metal Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07	Soil	6/9/1992	12000000	µg/kg			9400	µg/kg			14000	µg/kg			21000	µg/kg		
299-W15-217	25.5	26	B06K12	Soil	6/10/1992	10000000	µg/kg			8200	µg/kg			10000	µg/kg			14000	µg/kg		
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992	6400000	µg/kg			9800	µg/kg			8900	µg/kg			16000	µg/kg		
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992	8000000	µg/kg			15000	µg/kg			7100	µg/kg			13000	µg/kg		
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992	9600000	µg/kg			21000	µg/kg			8300	µg/kg			18000	µg/kg		
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992	8800000	µg/kg			15000	µg/kg			7600	µg/kg			13000	µg/kg		
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992	23000000	µg/kg			14000	µg/kg			7000	µg/kg			14000	µg/kg		
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992	140000000	µg/kg			11000	µg/kg			5800	µg/kg			16000	µg/kg		

Table C-15. Metal Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07	Soil	6/9/1992	29000000	µg/kg			8000	µg/kg			5500000	µg/kg			380000	µg/kg		
299-W15-217	25.5	26	B06K12	Soil	6/10/1992	31000000	µg/kg			2100	µg/kg			5300000	µg/kg			380000	µg/kg		
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992	26000000	µg/kg			2600	µg/kg			4800000	µg/kg			280000	µg/kg		
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992	20000000	µg/kg			4700	µg/kg			5700000	µg/kg			290000	µg/kg		
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992	19000000	µg/kg			7600	µg/kg			6400000	µg/kg			340000	µg/kg		
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992	17000000	µg/kg			5900	µg/kg			5600000	µg/kg			310000	µg/kg		
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992	19000000	µg/kg			5000	µg/kg			6000000	µg/kg			350000	µg/kg		
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992	10000000	µg/kg			2800	µg/kg			7700000	µg/kg			270000	µg/kg		

Table C-15. Metal Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07	Soil	6/9/1992			U		9300	µg/kg			1900000	µg/kg					U	
299-W15-217	25.5	26	B06K12	Soil	6/10/1992			U		8400	µg/kg			1200000	µg/kg					U	
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992			U		15000	µg/kg			820000	µg/kg					U	
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992			U		16000	µg/kg			1600000	µg/kg					U	
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992			U		20000	µg/kg			2500000	µg/kg					U	
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992			U		15000	µg/kg			2000000	µg/kg					U	
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992			U		15000	µg/kg			1800000	µg/kg					U	
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992			U		10000	µg/kg			940000	µg/kg					U	

Table C-15. Metal Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07	Soil	6/9/1992	1200000	µg/kg					U		89000	µg/kg			57000	µg/kg		
299-W15-217	25.5	26	B06K12	Soil	6/10/1992	1500000	µg/kg					U		80000	µg/kg			55000	µg/kg		
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992	390000	µg/kg					U		64000	µg/kg			44000	µg/kg		
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992	230000	µg/kg					U		41000	µg/kg			39000	µg/kg		
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992	270000	µg/kg					U		37000	µg/kg			48000	µg/kg		
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992	210000	µg/kg					U		33000	µg/kg			40000	µg/kg		
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992	280000	µg/kg					U		45000	µg/kg			44000	µg/kg		
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992	640000	µg/kg					U		24000	µg/kg			20000	µg/kg		

Table C-16. Semivolatile Organic Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)			
							8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07	Soil	6/9/1992	DATACH			U				U				U	
299-W15-217	25.5	26	B06K12	Soil	6/10/1992	DATACH			U				U				U	
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992	DATACH			U				U				U	
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992	DATACH			U				U				U	
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992	DATACH			U				U				U	
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992	DATACH			U				U				U	
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992	DATACH			U				U				U	
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992	DATACH			U				U				U	

Table C-16. Semivolatile Organic Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Decane (124-18-5)				Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07	Soil	6/9/1992			U				U				U				U	
299-W15-217	25.5	26	B06K12	Soil	6/10/1992			U				U				U				U	
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992			U				U				U				U	
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992			U				U				U				U	
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992			U				U				U				U	
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992			U				U				U		220	µg/kg	J	
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992			U				U				U				U	
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992			U				U				U				U	

Table C-16. Semivolatile Organic Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phenol (108-95-2)				Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07	Soil	6/9/1992			U				U				U	
299-W15-217	25.5	26	B06K12	Soil	6/10/1992			U				U				U	
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992			U				U				U	
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992			U				U				U	
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992			U				U		62	µg/kg	J	
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992			U				U				U	
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992			U				U				U	
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992			U				U				U	

Table C-17. Volatile Organic Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	5	5	B06K01	Soil	6/8/1992	PNL1			U				U				U				U	
299-W15-217	10	10	B06K02	Soil	6/8/1992	PNL1			U				U				U				U	
299-W15-217	15	15	B06K03	Soil	6/9/1992	PNL1			U				U				U				U	
299-W15-217	20	20	B06K04	Soil	6/9/1992	PNL1			U				U				U				U	
299-W15-217	20.5	21	B06K07	Soil	6/9/1992	PNL1			U				U				U				U	
299-W15-217	24.5	24.5	B06K09	Soil	6/10/1992	PNL1			U		7	µg/kg					U				U	
299-W15-217	25.5	26	B06K12	Soil	6/10/1992	PNL1			U				U				U				U	
299-W15-217	30	30	B06K10	Soil	6/11/1992	PNL1			U				U				U				U	
299-W15-217	35	35	B06K14	Soil	6/11/1992	PNL1			U				U				U				U	
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992	PNL1			U				U				U				U	
299-W15-217	45	45	B06K16	Soil	6/16/1992	PNL1			U				U				U				U	
299-W15-217	50	50	B06K17	Soil	6/16/1992	PNL1			U				U				U				U	
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992	PNL1			U				U				U		3	µg/kg		
299-W15-217	53.8	54.3	B06VX0	Soil	6/17/1992	PNL1			U				U				U				U	
299-W15-217	53.8	54.3	B06VX1	Soil	6/17/1992	PNL1			U				U				U				U	
299-W15-217	55	55	B06K20	Soil	6/17/1992	PNL1			U				U				U				U	
299-W15-217	60	60	B06K21	Soil	6/17/1992	PNL1			U				U				U				U	
299-W15-217	65	65	B06K22	Soil	6/18/1992	PNL1			U				U				U				U	
299-W15-217	70	70	B06K24	Soil	6/18/1992	PNL1			U				U				U				U	
299-W15-217	75	75	B06K25	Soil	6/18/1992	PNL1			U				U				U				U	
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992	PNL1			U				U				U		3	µg/kg		
299-W15-217	85	85	B06K28	Soil	6/23/1992	PNL1			U				U				U				U	
299-W15-217	90	90	B06K29	Soil	6/26/1992	PNL1			U				U								U	
299-W15-217	95	95	B06K30	Soil	6/26/1992	PNL1			U				U				U				U	
299-W15-217	100	100	B06K31	Soil	6/26/1992	PNL1			U				U				U				U	
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992	PNL1			U				U				U				U	
299-W15-217	105	105	B06K32	Soil	6/29/1992	PNL1			U				U				U				U	
299-W15-217	110	110	B06K33	Soil	6/29/1992	PNL1			U				U				U				U	
299-W15-217	114	114	B06K34	Soil	6/29/1992	PNL1	3	µg/kg			18	µg/kg					U				U	
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992	PNL1			U				U				U				U	
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992	PNL1			U				U				U				U	

Table C-17. Volatile Organic Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	5	5	B06K01	Soil	6/8/1992			U				U				U				U	
299-W15-217	10	10	B06K02	Soil	6/8/1992	20	µg/kg					U				U				U	
299-W15-217	15	15	B06K03	Soil	6/9/1992	16	µg/kg					U				U				U	
299-W15-217	20	20	B06K04	Soil	6/9/1992	38	µg/kg					U				U				U	
299-W15-217	20.5	21	B06K07	Soil	6/9/1992	4	µg/kg					U				U				U	
299-W15-217	24.5	24.5	B06K09	Soil	6/10/1992	6	µg/kg					U				U				U	
299-W15-217	25.5	26	B06K12	Soil	6/10/1992	41	µg/kg					U				U				U	
299-W15-217	30	30	B06K10	Soil	6/11/1992	17	µg/kg					U				U				U	
299-W15-217	35	35	B06K14	Soil	6/11/1992	47	µg/kg					U				U				U	
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992	60	µg/kg					U				U				U	
299-W15-217	45	45	B06K16	Soil	6/16/1992	61	µg/kg					U				U				U	
299-W15-217	50	50	B06K17	Soil	6/16/1992	239	µg/kg			4	µg/kg					U				U	
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992	330	µg/kg			8	µg/kg					U				U	
299-W15-217	53.8	54.3	B06VX0	Soil	6/17/1992	212	µg/kg			6	µg/kg					U				U	
299-W15-217	53.8	54.3	B06VX1	Soil	6/17/1992			U				U				U				U	
299-W15-217	55	55	B06K20	Soil	6/17/1992	2928	µg/kg	D		29	µg/kg					U				U	
299-W15-217	60	60	B06K21	Soil	6/17/1992	705	µg/kg			20	µg/kg					U				U	
299-W15-217	65	65	B06K22	Soil	6/18/1992	5698	µg/kg			115	µg/kg					U				U	
299-W15-217	70	70	B06K24	Soil	6/18/1992	3068	µg/kg	D		96	µg/kg					U				U	
299-W15-217	75	75	B06K25	Soil	6/18/1992	2333	µg/kg	D		33	µg/kg					U				U	
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992	1770	µg/kg			17	µg/kg					U				U	
299-W15-217	85	85	B06K28	Soil	6/23/1992	2336	µg/kg	D		66	µg/kg					U				U	
299-W15-217	90	90	B06K29	Soil	6/26/1992	9445	µg/kg	D		88	µg/kg					U				U	
299-W15-217	95	95	B06K30	Soil	6/26/1992	4876	µg/kg	D		34	µg/kg					U				U	
299-W15-217	100	100	B06K31	Soil	6/26/1992	1280	µg/kg			18	µg/kg					U				U	
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992	5369	µg/kg	D		82	µg/kg					U				U	
299-W15-217	105	105	B06K32	Soil	6/29/1992	906	µg/kg			13	µg/kg					U				U	
299-W15-217	110	110	B06K33	Soil	6/29/1992	1879	µg/kg			20	µg/kg					U				U	
299-W15-217	114	114	B06K34	Soil	6/29/1992	37817	µg/kg	D		248	µg/kg					U				U	
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992	551	µg/kg			11	µg/kg					U		4	µg/kg		
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992	4377	µg/kg	D		35	µg/kg					U				U	

Table C-17. Volatile Organic Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	5	5	B06K01	Soil	6/8/1992			U		6	µg/kg					U				U	
299-W15-217	10	10	B06K02	Soil	6/8/1992			U				U				U				U	
299-W15-217	15	15	B06K03	Soil	6/9/1992			U		6	µg/kg					U				U	
299-W15-217	20	20	B06K04	Soil	6/9/1992			U				U				U				U	
299-W15-217	20.5	21	B06K07	Soil	6/9/1992			U				U				U				U	
299-W15-217	24.5	24.5	B06K09	Soil	6/10/1992			U		90	µg/kg					U				U	
299-W15-217	25.5	26	B06K12	Soil	6/10/1992			U				U				U				U	
299-W15-217	30	30	B06K10	Soil	6/11/1992			U		67	µg/kg					U				U	
299-W15-217	35	35	B06K14	Soil	6/11/1992			U				U				U				U	
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992			U				U				U				U	
299-W15-217	45	45	B06K16	Soil	6/16/1992			U		67	µg/kg					U				U	
299-W15-217	50	50	B06K17	Soil	6/16/1992			U				U				U				U	
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992			U				U				U		8	µg/kg		
299-W15-217	53.8	54.3	B06VX0	Soil	6/17/1992			U				U				U		8	µg/kg		
299-W15-217	53.8	54.3	B06VX1	Soil	6/17/1992			U				U				U				U	
299-W15-217	55	55	B06K20	Soil	6/17/1992			U		215	µg/kg	U				U		13	µg/kg		
299-W15-217	60	60	B06K21	Soil	6/17/1992			U				U				U		12	µg/kg		
299-W15-217	65	65	B06K22	Soil	6/18/1992			U		75	µg/kg					U		17	µg/kg		
299-W15-217	70	70	B06K24	Soil	6/18/1992			U				U				U		15	µg/kg		
299-W15-217	75	75	B06K25	Soil	6/18/1992			U				U				U		14	µg/kg		
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992			U				U				U		14	µg/kg		
299-W15-217	85	85	B06K28	Soil	6/23/1992			U		31	µg/kg					U		15	µg/kg		
299-W15-217	90	90	B06K29	Soil	6/26/1992			U				U				U		21	µg/kg		
299-W15-217	95	95	B06K30	Soil	6/26/1992			U				U				U		17	µg/kg		
299-W15-217	100	100	B06K31	Soil	6/26/1992			U				U				U		13	µg/kg		
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992			U		669	µg/kg					U		11	µg/kg		
299-W15-217	105	105	B06K32	Soil	6/29/1992			U		8	µg/kg					U		11	µg/kg		
299-W15-217	110	110	B06K33	Soil	6/29/1992			U				U				U		12	µg/kg		
299-W15-217	114	114	B06K34	Soil	6/29/1992			U		14	µg/kg					U		28	µg/kg		
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992	9	µg/kg					U		3	µg/kg			5	µg/kg		
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992			U				U				U		17	µg/kg		

Table C-17. Volatile Organic Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	5	5	B06K01	Soil	6/8/1992			U				U				U	
299-W15-217	10	10	B06K02	Soil	6/8/1992			U				U				U	
299-W15-217	15	15	B06K03	Soil	6/9/1992			U				U				U	
299-W15-217	20	20	B06K04	Soil	6/9/1992			U				U				U	
299-W15-217	20.5	21	B06K07	Soil	6/9/1992			U				U				U	
299-W15-217	24.5	24.5	B06K09	Soil	6/10/1992			U		8	µg/kg					U	
299-W15-217	25.5	26	B06K12	Soil	6/10/1992			U				U				U	
299-W15-217	30	30	B06K10	Soil	6/11/1992			U				U				U	
299-W15-217	35	35	B06K14	Soil	6/11/1992			U				U				U	
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992			U				U				U	
299-W15-217	45	45	B06K16	Soil	6/16/1992			U				U				U	
299-W15-217	50	50	B06K17	Soil	6/16/1992			U				U				U	
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992	3	µg/kg					U				U	
299-W15-217	53.8	54.3	B06VX0	Soil	6/17/1992			U				U				U	
299-W15-217	53.8	54.3	B06VX1	Soil	6/17/1992			U				U				U	
299-W15-217	55	55	B06K20	Soil	6/17/1992			U				U				U	
299-W15-217	60	60	B06K21	Soil	6/17/1992			U				U				U	
299-W15-217	65	65	B06K22	Soil	6/18/1992			U				U				U	
299-W15-217	70	70	B06K24	Soil	6/18/1992			U				U		3	µg/kg		
299-W15-217	75	75	B06K25	Soil	6/18/1992			U				U				U	
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992			U				U				U	
299-W15-217	85	85	B06K28	Soil	6/23/1992	20	µg/kg					U				U	
299-W15-217	90	90	B06K29	Soil	6/26/1992			U				U				U	
299-W15-217	95	95	B06K30	Soil	6/26/1992			U				U				U	
299-W15-217	100	100	B06K31	Soil	6/26/1992			U				U				U	
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992			U				U				U	
299-W15-217	105	105	B06K32	Soil	6/29/1992	4	µg/kg					U				U	
299-W15-217	110	110	B06K33	Soil	6/29/1992			U				U				U	
299-W15-217	114	114	B06K34	Soil	6/29/1992			U				U		13	µg/kg		
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992	400	µg/kg					U				U	
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992			U				U				U	

Table C-18. Wet Chemistry Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)				Chloride (16887-00-6)			
							D4327				D4327				D4327				D4327			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07	Soil	6/9/1992	DATACH	13000	µg/kg					U				U		1400	µg/kg		
299-W15-217	25.5	26	B06K12	Soil	6/10/1992	DATACH	2700	µg/kg					U				U		600	µg/kg		
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992	DATACH	2200	µg/kg					U				U		600	µg/kg		
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992	DATACH	20000	µg/kg					U				U		7600	µg/kg		
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992	DATACH	65000	µg/kg					U				U		54000	µg/kg		
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992	DATACH	260000	µg/kg					U				U		16000	µg/kg		
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992	DATACH	350000	µg/kg					U				U		5100	µg/kg		
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992	DATACH	1600000	µg/kg					U				U		12000	µg/kg		

Table C-18. Wet Chemistry Analysis Results for Well 299-W15-217 (216-Z-9 Trench) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-217	20.5	21	B06K07	Soil	6/9/1992			U		1600	µg/kg					U		18000	µg/kg		
299-W15-217	25.5	26	B06K12	Soil	6/10/1992			U				U				U		17000	µg/kg		
299-W15-217	40.5	41	B06JZ2	Soil	6/15/1992			U		300	µg/kg					U		27000	µg/kg		
299-W15-217	53.8	54.3	B06VW8	Soil	6/17/1992			U		300	µg/kg					U		17000	µg/kg		
299-W15-217	80.5	81	B06VX4	Soil	6/19/1992			U		800	µg/kg					U		69000	µg/kg		
299-W15-217	101	101.5	B06VX8	Soil	6/29/1992			U		700	µg/kg					U		25000	µg/kg		
299-W15-217	115.1	115.6	B06VY2	Soil	6/30/1992			U		1000	µg/kg					U		7800	µg/kg		
299-W15-217	121.6	122.1	B06VY4	Soil	6/30/1992			U		2600	µg/kg					U		22000	µg/kg		

Table C-19. Volatile Organic Analysis Results for Well 299-W15-218 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	7	7	B01MT6	Soil	2/4/1993	PNL1			U				U				U				U	
299-W15-218	10	10	B01MT7	Soil	2/4/1993	PNL1			U				U				U				U	
299-W15-218	15	15	B01MT9	Soil	2/5/1993	PNL1			U				U				U				U	
299-W15-218	15	15	B01MV0	Soil	2/5/1993	PNL1			U				U				U				U	
299-W15-218	20	20	B01MV1	Soil	2/5/1993	PNL1			U				U				U				U	
299-W15-218	25	25	B01MV3	Soil	2/8/1993	PNL1			U				U				U				U	
299-W15-218	27	27	B01MV4	Soil	2/8/1993	PNL1			U				U				U				U	
299-W15-218	30	30	B01MV5	Soil	2/8/1993	PNL1			U				U				U				U	
299-W15-218	30	30	B01MV6	Soil	2/8/1993	PNL1			U				U				U				U	
299-W15-218	35	35	B01MV7	Soil	2/9/1993	PNL1			U				U				U				U	
299-W15-218	35	35	B01MV8	Soil	2/9/1993	PNL1			U				U				U				U	
299-W15-218	35	35	B01MV9	Soil	2/9/1993	PNL1			U				U				U				U	
299-W15-218	35	35	B01MW0	Soil	2/9/1993	PNL1			U				U				U				U	
299-W15-218	42	42	B01MW1	Soil	2/10/1993	PNL1			U				U				U				U	
299-W15-218	51	51	B01MW2	Soil	2/10/1993	PNL1			U				U				U				U	
299-W15-218	52.5	52.5	B01NV3	Soil	2/11/1993	PNL1			U				U				U				U	
299-W15-218	55	55	B01NV4	Soil	2/11/1993	PNL1			U				U				U				U	
299-W15-218	60	60	B01NV5	Soil	2/11/1993	PNL1			U				U				U				U	
299-W15-218	65	65	B01NV7	Soil	2/12/1993	PNL1			U				U				U				U	
299-W15-218	70	70	B01NV8	Soil	2/12/1993	PNL1			U				U				U				U	
299-W15-218	75	75	B01NV9	Soil	2/12/1993	PNL1			U				U				U				U	
299-W15-218	80	80	B01NW6	Soil	2/12/1993	PNL1			U				U				U				U	
299-W15-218	85	85	B01NW0	Soil	2/16/1993	PNL1			U				U				U				U	
299-W15-218	90	90	B01NW1	Soil	2/16/1993	PNL1			U				U				U				U	
299-W15-218	95	95	B01NW3	Soil	2/17/1993	PNL1			U				U				U				U	
299-W15-218	100	100	B01NW2	Soil	2/17/1993	PNL1			U				U				U				U	
299-W15-218	104.5	104.5	B01NW5	Soil	2/17/1993	PNL1			U				U				U				U	
299-W15-218	110	110	B01NW4	Soil	2/17/1993	PNL1			U				U				U				U	
299-W15-218	116.5	116.5	B01P75	Soil	2/24/1993	PNL1			U				U				U				U	
299-W15-218	116.5	116.5	B01P76	Soil	2/24/1993	PNL1			U				U				U				U	
299-W15-218	120	120	B01P77	Soil	2/25/1993	PNL1			U				U				U				U	
299-W15-218	125	125	B08435	Soil	3/8/1993	PNL1			U				U				U				U	
299-W15-218	130	130	B08436	Soil	3/8/1993	PNL1			U				U				U				U	
299-W15-218	140	140	B01P79	Soil	3/9/1993	PNL1			U				U				U				U	
299-W15-218	145	145	B01P80	Soil	3/10/1993	PNL1			U				U				U				U	
299-W15-218	150	150	B01P81	Soil	3/10/1993	PNL1			U				U				U				U	
299-W15-218	155	155	B01P82	Soil	3/10/1993	PNL1			U				U				U				U	

Table C-19. Volatile Organic Analysis Results for Well 299-W15-218 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	160	160	B01P83	Soil	3/11/1993	PNL1			U				U				U				U	
299-W15-218	165	165	B01P84	Soil	3/11/1993	PNL1			U				U				U				U	
299-W15-218	170	170	B01P85	Soil	3/12/1993	PNL1			U				U				U				U	
299-W15-218	175	175	B01P86	Soil	3/12/1993	PNL1			U				U				U				U	
299-W15-218	180	180	B01P87	Soil	3/15/1993	PNL1			U				U				U				U	
299-W15-218	185	185	B01P89	Soil	3/16/1993	PNL1			U				U				U				U	
299-W15-218	190	190	B01P90	Soil	3/16/1993	PNL1			U				U				U				U	
299-W15-218	195	195	B01NX0	Soil	3/18/1993	PNL1			U				U				U				U	
299-W15-218	200	200	B08438	Soil	3/18/1993	PNL1			U				U				U				U	
299-W15-218	205	205	B08439	Soil	3/18/1993	PNL1			U				U				U				U	

Table C-19. Volatile Organic Analysis Results for Well 299-W15-218 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	7	7	B01MT6	Soil	2/4/1993	82	µg/kg					U				U				U	
299-W15-218	10	10	B01MT7	Soil	2/4/1993	84	µg/kg	J				U				U				U	
299-W15-218	15	15	B01MT9	Soil	2/5/1993	15	µg/kg	J				U				U				U	
299-W15-218	15	15	B01MV0	Soil	2/5/1993	23	µg/kg	J				U				U				U	
299-W15-218	20	20	B01MV1	Soil	2/5/1993	17	µg/kg	J				U				U				U	
299-W15-218	25	25	B01MV3	Soil	2/8/1993	36	µg/kg					U				U				U	
299-W15-218	27	27	B01MV4	Soil	2/8/1993	106	µg/kg					U				U				U	
299-W15-218	30	30	B01MV5	Soil	2/8/1993	96	µg/kg					U				U				U	
299-W15-218	30	30	B01MV6	Soil	2/8/1993	112	µg/kg					U				U				U	
299-W15-218	35	35	B01MV7	Soil	2/9/1993	9	µg/kg	J				U				U				U	
299-W15-218	35	35	B01MV8	Soil	2/9/1993	7	µg/kg	J				U				U				U	
299-W15-218	35	35	B01MV9	Soil	2/9/1993	11	µg/kg	J				U				U				U	
299-W15-218	35	35	B01MW0	Soil	2/9/1993	16	µg/kg	J				U				U				U	
299-W15-218	42	42	B01MW1	Soil	2/10/1993			U				U				U				U	
299-W15-218	51	51	B01MW2	Soil	2/10/1993	40	µg/kg					U				U				U	
299-W15-218	52.5	52.5	B01NV3	Soil	2/11/1993	1876	µg/kg			30	µg/kg	J				U				U	
299-W15-218	55	55	B01NV4	Soil	2/11/1993	198	µg/kg					U				U				U	
299-W15-218	60	60	B01NV5	Soil	2/11/1993	354	µg/kg					U				U				U	
299-W15-218	65	65	B01NV7	Soil	2/12/1993	75	µg/kg					U				U				U	
299-W15-218	70	70	B01NV8	Soil	2/12/1993	175	µg/kg					U				U				U	
299-W15-218	75	75	B01NV9	Soil	2/12/1993	389	µg/kg					U				U				U	
299-W15-218	80	80	B01NW6	Soil	2/12/1993	1334	µg/kg			7	µg/kg	J				U				U	
299-W15-218	85	85	B01NW0	Soil	2/16/1993	206	µg/kg					U				U				U	
299-W15-218	90	90	B01NW1	Soil	2/16/1993	810	µg/kg			7	µg/kg	J				U				U	
299-W15-218	95	95	B01NW3	Soil	2/17/1993	11804	µg/kg	D		44	µg/kg					U				U	
299-W15-218	100	100	B01NW2	Soil	2/17/1993	1182	µg/kg			10	µg/kg	J				U				U	
299-W15-218	104.5	104.5	B01NW5	Soil	2/17/1993	2600	µg/kg			15	µg/kg	J				U				U	
299-W15-218	110	110	B01NW4	Soil	2/17/1993	15794	µg/kg	D		93	µg/kg					U				U	
299-W15-218	116.5	116.5	B01P75	Soil	2/24/1993	6816	µg/kg	D		128	µg/kg					U				U	
299-W15-218	116.5	116.5	B01P76	Soil	2/24/1993	9932	µg/kg	D		166	µg/kg					U				U	
299-W15-218	120	120	B01P77	Soil	2/25/1993	31	µg/kg					U				U				U	
299-W15-218	125	125	B08435	Soil	3/8/1993			U		439	µg/kg					U				U	
299-W15-218	130	130	B08436	Soil	3/8/1993	19	µg/kg			730	µg/kg					U				U	
299-W15-218	140	140	B01P79	Soil	3/9/1993	244	µg/kg			11	µg/kg	J				U				U	
299-W15-218	145	145	B01P80	Soil	3/10/1993	3915	µg/kg	D		27	µg/kg					U				U	
299-W15-218	150	150	B01P81	Soil	3/10/1993	81	µg/kg					U				U				U	
299-W15-218	155	155	B01P82	Soil	3/10/1993	54	µg/kg					U				U				U	

Table C-19. Volatile Organic Analysis Results for Well 299-W15-218 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	160	160	B01P83	Soil	3/11/1993	37	µg/kg	J				U				U				U	
299-W15-218	165	165	B01P84	Soil	3/11/1993	175	µg/kg			7	µg/kg	J				U				U	
299-W15-218	170	170	B01P85	Soil	3/12/1993	11	µg/kg	J				U				U				U	
299-W15-218	175	175	B01P86	Soil	3/12/1993	25	µg/kg	J				U				U				U	
299-W15-218	180	180	B01P87	Soil	3/15/1993	45	µg/kg	J				U				U				U	
299-W15-218	185	185	B01P89	Soil	3/16/1993	3	µg/kg	J				U				U				U	
299-W15-218	190	190	B01P90	Soil	3/16/1993	9	µg/kg	J				U				U				U	
299-W15-218	195	195	B01NX0	Soil	3/18/1993	38	µg/kg					U				U		4	µg/kg	J	
299-W15-218	200	200	B08438	Soil	3/18/1993	323	µg/kg			42	µg/kg					U				U	
299-W15-218	205	205	B08439	Soil	3/18/1993	308	µg/kg			61	µg/kg					U				U	

Table C-19. Volatile Organic Analysis Results for Well 299-W15-218 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	7	7	B01MT6	Soil	2/4/1993			U				U				U				U	
299-W15-218	10	10	B01MT7	Soil	2/4/1993			U		307	µg/kg					U				U	
299-W15-218	15	15	B01MT9	Soil	2/5/1993			U				U				U				U	
299-W15-218	15	15	B01MV0	Soil	2/5/1993			U				U				U				U	
299-W15-218	20	20	B01MV1	Soil	2/5/1993			U				U				U				U	
299-W15-218	25	25	B01MV3	Soil	2/8/1993			U				U				U				U	
299-W15-218	27	27	B01MV4	Soil	2/8/1993			U				U				U				U	
299-W15-218	30	30	B01MV5	Soil	2/8/1993			U				U				U				U	
299-W15-218	30	30	B01MV6	Soil	2/8/1993			U				U				U				U	
299-W15-218	35	35	B01MV7	Soil	2/9/1993			U				U				U				U	
299-W15-218	35	35	B01MV8	Soil	2/9/1993			U				U				U				U	
299-W15-218	35	35	B01MV9	Soil	2/9/1993			U				U				U				U	
299-W15-218	35	35	B01MW0	Soil	2/9/1993			U				U				U				U	
299-W15-218	42	42	B01MW1	Soil	2/10/1993			U				U				U				U	
299-W15-218	51	51	B01MW2	Soil	2/10/1993			U				U				U				U	
299-W15-218	52.5	52.5	B01NV3	Soil	2/11/1993			U				U				U				U	
299-W15-218	55	55	B01NV4	Soil	2/11/1993			U				U				U				U	
299-W15-218	60	60	B01NV5	Soil	2/11/1993			U				U				U				U	
299-W15-218	65	65	B01NV7	Soil	2/12/1993			U				U				U				U	
299-W15-218	70	70	B01NV8	Soil	2/12/1993			U				U				U				U	
299-W15-218	75	75	B01NV9	Soil	2/12/1993			U				U				U				U	
299-W15-218	80	80	B01NW6	Soil	2/12/1993			U				U				U				U	
299-W15-218	85	85	B01NW0	Soil	2/16/1993			U				U				U				U	
299-W15-218	90	90	B01NW1	Soil	2/16/1993			U				U				U		2	µg/kg	J	
299-W15-218	95	95	B01NW3	Soil	2/17/1993			U				U				U		11	µg/kg	J	
299-W15-218	100	100	B01NW2	Soil	2/17/1993			U				U				U		7	µg/kg	J	
299-W15-218	104.5	104.5	B01NW5	Soil	2/17/1993			U				U				U		8	µg/kg	J	
299-W15-218	110	110	B01NW4	Soil	2/17/1993			U				U				U		12	µg/kg	J	
299-W15-218	116.5	116.5	B01P75	Soil	2/24/1993			U				U				U		9	µg/kg	J	
299-W15-218	116.5	116.5	B01P76	Soil	2/24/1993			U				U				U		12	µg/kg		
299-W15-218	120	120	B01P77	Soil	2/25/1993			U				U				U				U	
299-W15-218	125	125	B08435	Soil	3/8/1993			U		206	µg/kg					U				U	
299-W15-218	130	130	B08436	Soil	3/8/1993			U		221	µg/kg					U		4	µg/kg	J	
299-W15-218	140	140	B01P79	Soil	3/9/1993			U				U				U				U	
299-W15-218	145	145	B01P80	Soil	3/10/1993			U				U				U				U	
299-W15-218	150	150	B01P81	Soil	3/10/1993			U				U				U				U	
299-W15-218	155	155	B01P82	Soil	3/10/1993			U				U				U				U	

Table C-19. Volatile Organic Analysis Results for Well 299-W15-218 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	160	160	B01P83	Soil	3/11/1993			U				U				U				U	
299-W15-218	165	165	B01P84	Soil	3/11/1993			U				U				U				U	
299-W15-218	170	170	B01P85	Soil	3/12/1993			U				U				U				U	
299-W15-218	175	175	B01P86	Soil	3/12/1993			U				U				U				U	
299-W15-218	180	180	B01P87	Soil	3/15/1993			U				U				U				U	
299-W15-218	185	185	B01P89	Soil	3/16/1993	5	µg/kg					U		8	µg/kg					U	
299-W15-218	190	190	B01P90	Soil	3/16/1993			U				U				U				U	
299-W15-218	195	195	B01NX0	Soil	3/18/1993	6	µg/kg	J		412	µg/kg			16	µg/kg					U	
299-W15-218	200	200	B08438	Soil	3/18/1993			U				U				U				U	
299-W15-218	205	205	B08439	Soil	3/18/1993			U				U				U				U	

Table C-19. Volatile Organic Analysis Results for Well 299-W15-218 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	7	7	B01MT6	Soil	2/4/1993			U				U				U	
299-W15-218	10	10	B01MT7	Soil	2/4/1993			U				U				U	
299-W15-218	15	15	B01MT9	Soil	2/5/1993			U				U				U	
299-W15-218	15	15	B01MV0	Soil	2/5/1993			U				U				U	
299-W15-218	20	20	B01MV1	Soil	2/5/1993			U				U				U	
299-W15-218	25	25	B01MV3	Soil	2/8/1993			U				U				U	
299-W15-218	27	27	B01MV4	Soil	2/8/1993			U				U				U	
299-W15-218	30	30	B01MV5	Soil	2/8/1993			U				U				U	
299-W15-218	30	30	B01MV6	Soil	2/8/1993			U				U				U	
299-W15-218	35	35	B01MV7	Soil	2/9/1993			U				U				U	
299-W15-218	35	35	B01MV8	Soil	2/9/1993			U				U				U	
299-W15-218	35	35	B01MV9	Soil	2/9/1993			U				U				U	
299-W15-218	35	35	B01MW0	Soil	2/9/1993			U				U				U	
299-W15-218	42	42	B01MW1	Soil	2/10/1993			U				U				U	
299-W15-218	51	51	B01MW2	Soil	2/10/1993			U				U				U	
299-W15-218	52.5	52.5	B01NV3	Soil	2/11/1993			U				U				U	
299-W15-218	55	55	B01NV4	Soil	2/11/1993			U				U				U	
299-W15-218	60	60	B01NV5	Soil	2/11/1993			U				U				U	
299-W15-218	65	65	B01NV7	Soil	2/12/1993			U				U				U	
299-W15-218	70	70	B01NV8	Soil	2/12/1993			U				U				U	
299-W15-218	75	75	B01NV9	Soil	2/12/1993			U				U				U	
299-W15-218	80	80	B01NW6	Soil	2/12/1993			U				U				U	
299-W15-218	85	85	B01NW0	Soil	2/16/1993			U				U				U	
299-W15-218	90	90	B01NW1	Soil	2/16/1993			U				U				U	
299-W15-218	95	95	B01NW3	Soil	2/17/1993			U				U		6	µg/kg	J	
299-W15-218	100	100	B01NW2	Soil	2/17/1993			U				U				U	
299-W15-218	104.5	104.5	B01NW5	Soil	2/17/1993			U				U				U	
299-W15-218	110	110	B01NW4	Soil	2/17/1993			U				U		10	µg/kg	J	
299-W15-218	116.5	116.5	B01P75	Soil	2/24/1993			U				U				U	
299-W15-218	116.5	116.5	B01P76	Soil	2/24/1993			U				U				U	
299-W15-218	120	120	B01P77	Soil	2/25/1993			U				U				U	
299-W15-218	125	125	B08435	Soil	3/8/1993			U				U				U	
299-W15-218	130	130	B08436	Soil	3/8/1993			U				U				U	
299-W15-218	140	140	B01P79	Soil	3/9/1993			U				U				U	
299-W15-218	145	145	B01P80	Soil	3/10/1993			U				U				U	
299-W15-218	150	150	B01P81	Soil	3/10/1993	35	µg/kg					U				U	
299-W15-218	155	155	B01P82	Soil	3/10/1993			U				U				U	

Table C-19. Volatile Organic Analysis Results for Well 299-W15-218 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-218	160	160	B01P83	Soil	3/11/1993			U				U				U	
299-W15-218	165	165	B01P84	Soil	3/11/1993	161	µg/kg					U				U	
299-W15-218	170	170	B01P85	Soil	3/12/1993			U				U				U	
299-W15-218	175	175	B01P86	Soil	3/12/1993	285	µg/kg	J				U				U	
299-W15-218	180	180	B01P87	Soil	3/15/1993	87	µg/kg					U				U	
299-W15-218	185	185	B01P89	Soil	3/16/1993	207	µg/kg					U				U	
299-W15-218	190	190	B01P90	Soil	3/16/1993			U				U				U	
299-W15-218	195	195	B01NX0	Soil	3/18/1993	33	µg/kg					U				U	
299-W15-218	200	200	B08438	Soil	3/18/1993			U				U				U	
299-W15-218	205	205	B08439	Soil	3/18/1993	13	µg/kg					U				U	

Table C-20. Volatile Organic Analysis Results for Well 299-W15-219 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	25.9	25.9	B01NT5	Soil	4/22/1993	PNL1			U				U				U				U	
299-W15-219	29.5	29.5	B01NT7	Soil	4/23/1993	PNL1			U				U				U				U	
299-W15-219	35.5	35.5	B01NT8	Soil	4/23/1993	PNL1			U				U				U				U	
299-W15-219	39.8	39.8	B01NT6	Soil	4/27/1993	PNL1			U				U				U				U	
299-W15-219	44.8	44.8	B01NT9	Soil	4/27/1993	PNL1			U				U				U				U	
299-W15-219	49.5	49.5	B01NV0	Soil	4/27/1993	PNL1			U				U				U				U	
299-W15-219	53.5	53.5	B01NV1	Soil	4/28/1993	PNL1			U				U				U				U	
299-W15-219	54.3	54.3	B01PW6	Soil	4/28/1993	PNL1			U				U				U				U	
299-W15-219	56.5	56.5	B01PW7	Soil	4/28/1993	PNL1			U				U				U				U	
299-W15-219	57.9	57.9	B01NV2	Soil	4/29/1993	PNL1			U				U				U				U	
299-W15-219	65	65	B01PR8	Soil	4/29/1993	PNL1			U				U				U				U	
299-W15-219	70	70	B01PR9	Soil	4/29/1993	PNL1			U				U				U				U	
299-W15-219	75.5	75.5	B01PS0	Soil	4/29/1993	PNL1			U				U				U				U	
299-W15-219	79.5	79.5	B01PS1	Soil	4/30/1993	PNL1			U				U				U				U	
299-W15-219	84.5	84.5	B01PS2	Soil	4/30/1993	PNL1			U				U				U				U	
299-W15-219	87	87	B01PW8	Soil	5/3/1993	PNL1			U				U				U				U	
299-W15-219	89.5	89.5	B01PS3	Soil	5/3/1993	PNL1			U				U				U				U	
299-W15-219	91	91	B01PW9	Soil	5/3/1993	PNL1			U				U				U				U	
299-W15-219	95.5	95.5	B01PX0	Soil	5/4/1993	PNL1			U				U				U				U	
299-W15-219	96.5	96.5	B01PS4	Soil	5/4/1993	PNL1			U				U				U				U	
299-W15-219	100	100	B01PS5	Soil	5/4/1993	PNL1			U				U				U				U	
299-W15-219	105.5	105.5	B01PS6	Soil	5/4/1993	PNL1			U				U				U				U	
299-W15-219	109.5	109.5	B01PS7	Soil	5/4/1993	PNL1			U				U				U				U	
299-W15-219	111.1	111.1	B01PX1	Soil	5/5/1993	PNL1			U				U				U				U	
299-W15-219	114.5	114.5	B01PX2	Soil	5/5/1993	PNL1			U				U				U				U	
299-W15-219	114.5	114.5	B01PX3	Soil	5/5/1993	PNL1			U				U				U				U	
299-W15-219	114.9	114.9	B01PS8	Soil	5/5/1993	PNL1			U				U				U				U	
299-W15-219	120	120	B01PS9	Soil	5/5/1993	PNL1			U				U				U				U	
299-W15-219	124.5	124.5	B01PT0	Soil	5/11/1993	PNL1			U				U				U				U	
299-W15-219	129.5	129.5	B01PT1	Soil	5/11/1993	PNL1			U				U				U				U	
299-W15-219	131.5	131.5	B01PT2	Soil	5/11/1993	PNL1			U				U				U				U	
299-W15-219	140	140	B01PT3	Soil	5/13/1993	PNL1			U				U				U				U	
299-W15-219	145	145	B01PT4	Soil	5/13/1993	PNL1			U				U				U				U	
299-W15-219	149	149	B01PT5	Soil	5/14/1993	PNL1			U				U				U				U	
299-W15-219	150.3	150.3	B01PX4	Soil	5/14/1993	PNL1			U				U				U				U	
299-W15-219	153.4	153.4	B01PX5	Soil	5/17/1993	PNL1			U				U				U				U	
299-W15-219	155	155	B01PT6	Soil	5/17/1993	PNL1			U				U				U				U	

Table C-20. Volatile Organic Analysis Results for Well 299-W15-219 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	160	160	B01PT7	Soil	5/17/1993	PNL1			U				U				U				U	
299-W15-219	165	165	B01PT8	Soil	5/18/1993	PNL1			U				U				U				U	
299-W15-219	170	170	B01PT9	Soil	5/18/1993	PNL1			U				U				U				U	
299-W15-219	175	175	B01PV0	Soil	5/18/1993	PNL1			U				U				U				U	
299-W15-219	180	180	B01PV1	Soil	5/19/1993	PNL1			U				U				U				U	
299-W15-219	185	185	B01PV2	Soil	5/19/1993	PNL1			U				U				U				U	
299-W15-219	187	187	B01PV3	Soil	5/19/1993	PNL1			U				U				U				U	
299-W15-219	190.3	190.3	B01PV4	Soil	5/20/1993	PNL1			U				U				U				U	
299-W15-219	195	195	B01PV5	Soil	5/20/1993	PNL1			U				U				U				U	
299-W15-219	200	200	B01PV6	Soil	5/21/1993	PNL1			U				U				U				U	
299-W15-219	205	205	B01PV7	Soil	5/24/1993	PNL1			U				U				U				U	
299-W15-219	210.5	210.5	B01PV8	Soil	5/25/1993	PNL1			U				U				U				U	

Table C-20. Volatile Organic Analysis Results for Well 299-W15-219 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	25.9	25.9	B01NT5	Soil	4/22/1993			U				U				U				U	
299-W15-219	29.5	29.5	B01NT7	Soil	4/23/1993	8	µg/kg					U				U				U	
299-W15-219	35.5	35.5	B01NT8	Soil	4/23/1993	12	µg/kg	J				U				U				U	
299-W15-219	39.8	39.8	B01NT6	Soil	4/27/1993			U				U				U				U	
299-W15-219	44.8	44.8	B01NT9	Soil	4/27/1993	117	µg/kg					U				U				U	
299-W15-219	49.5	49.5	B01NV0	Soil	4/27/1993	407	µg/kg					U				U				U	
299-W15-219	53.5	53.5	B01NV1	Soil	4/28/1993	182	µg/kg					U				U				U	
299-W15-219	54.3	54.3	B01PW6	Soil	4/28/1993	288	µg/kg			3	µg/kg	J				U				U	
299-W15-219	56.5	56.5	B01PW7	Soil	4/28/1993	213	µg/kg					U				U				U	
299-W15-219	57.9	57.9	B01NV2	Soil	4/29/1993	495	µg/kg			6	µg/kg	J				U				U	
299-W15-219	65	65	B01PR8	Soil	4/29/1993	283	µg/kg			4	µg/kg	J				U				U	
299-W15-219	70	70	B01PR9	Soil	4/29/1993	679	µg/kg	D		8	µg/kg	J				U				U	
299-W15-219	75.5	75.5	B01PS0	Soil	4/29/1993	867	µg/kg			5	µg/kg	J				U				U	
299-W15-219	79.5	79.5	B01PS1	Soil	4/30/1993	9558	µg/kg	D		77	µg/kg					U				U	
299-W15-219	84.5	84.5	B01PS2	Soil	4/30/1993	2039	µg/kg	D		23	µg/kg					U				U	
299-W15-219	87	87	B01PW8	Soil	5/3/1993	577	µg/kg			23	µg/kg					U				U	
299-W15-219	89.5	89.5	B01PS3	Soil	5/3/1993	1557	µg/kg					U				U				U	
299-W15-219	91	91	B01PW9	Soil	5/3/1993	3095	µg/kg	D		13	µg/kg	J				U				U	
299-W15-219	95.5	95.5	B01PX0	Soil	5/4/1993	106	µg/kg					U				U				U	
299-W15-219	96.5	96.5	B01PS4	Soil	5/4/1993	80	µg/kg					U				U				U	
299-W15-219	100	100	B01PS5	Soil	5/4/1993	198	µg/kg					U				U				U	
299-W15-219	105.5	105.5	B01PS6	Soil	5/4/1993	376	µg/kg					U				U				U	
299-W15-219	109.5	109.5	B01PS7	Soil	5/4/1993	606	µg/kg			12	µg/kg					U				U	
299-W15-219	111.1	111.1	B01PX1	Soil	5/5/1993	288	µg/kg					U				U				U	
299-W15-219	114.5	114.5	B01PX2	Soil	5/5/1993	10488	µg/kg	D		57	µg/kg					U				U	
299-W15-219	114.5	114.5	B01PX3	Soil	5/5/1993	11688	µg/kg	D		53	µg/kg					U				U	
299-W15-219	114.9	114.9	B01PS8	Soil	5/5/1993	9866	µg/kg	D		61	µg/kg					U				U	
299-W15-219	120	120	B01PS9	Soil	5/5/1993	1349	µg/kg			39	µg/kg					U				U	
299-W15-219	124.5	124.5	B01PT0	Soil	5/11/1993	2345	µg/kg	D		168	µg/kg					U				U	
299-W15-219	129.5	129.5	B01PT1	Soil	5/11/1993	4905	µg/kg	D		241	µg/kg					U				U	
299-W15-219	131.5	131.5	B01PT2	Soil	5/11/1993	574	µg/kg			227	µg/kg					U				U	
299-W15-219	140	140	B01PT3	Soil	5/13/1993	3752	µg/kg	D		595	µg/kg					U				U	
299-W15-219	145	145	B01PT4	Soil	5/13/1993	55	µg/kg			19	µg/kg					U				U	
299-W15-219	149	149	B01PT5	Soil	5/14/1993	3798	µg/kg	D		65	µg/kg					U				U	
299-W15-219	150.3	150.3	B01PX4	Soil	5/14/1993	172	µg/kg			18	µg/kg	J				U				U	
299-W15-219	153.4	153.4	B01PX5	Soil	5/17/1993	23	µg/kg					U				U				U	
299-W15-219	155	155	B01PT6	Soil	5/17/1993			U				U				U				U	

Table C-20. Volatile Organic Analysis Results for Well 299-W15-219 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	160	160	B01PT7	Soil	5/17/1993	1305	µg/kg	D		162	µg/kg					U				U	
299-W15-219	165	165	B01PT8	Soil	5/18/1993	242	µg/kg			230	µg/kg					U				U	
299-W15-219	170	170	B01PT9	Soil	5/18/1993	1311	µg/kg	D		703	µg/kg	D				U				U	
299-W15-219	175	175	B01PV0	Soil	5/18/1993	1620	µg/kg	D		207	µg/kg					U				U	
299-W15-219	180	180	B01PV1	Soil	5/19/1993	1418	µg/kg	D		130	µg/kg					U				U	
299-W15-219	185	185	B01PV2	Soil	5/19/1993	876	µg/kg	D		154	µg/kg					U				U	
299-W15-219	187	187	B01PV3	Soil	5/19/1993	705	µg/kg			164	µg/kg					U				U	
299-W15-219	190.3	190.3	B01PV4	Soil	5/20/1993	5	µg/kg	J				U				U				U	
299-W15-219	195	195	B01PV5	Soil	5/20/1993	120	µg/kg					U				U				U	
299-W15-219	200	200	B01PV6	Soil	5/21/1993	13	µg/kg	J				U				U				U	
299-W15-219	205	205	B01PV7	Soil	5/24/1993	382	µg/kg			78	µg/kg					U				U	
299-W15-219	210.5	210.5	B01PV8	Soil	5/25/1993	107	µg/kg			139	µg/kg					U				U	

Table C-20. Volatile Organic Analysis Results for Well 299-W15-219 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	25.9	25.9	B01NT5	Soil	4/22/1993			U				U				U				U	
299-W15-219	29.5	29.5	B01NT7	Soil	4/23/1993			U				U				U				U	
299-W15-219	35.5	35.5	B01NT8	Soil	4/23/1993			U				U				U				U	
299-W15-219	39.8	39.8	B01NT6	Soil	4/27/1993			U				U				U				U	
299-W15-219	44.8	44.8	B01NT9	Soil	4/27/1993			U				U				U				U	
299-W15-219	49.5	49.5	B01NV0	Soil	4/27/1993			U				U				U				U	
299-W15-219	53.5	53.5	B01NV1	Soil	4/28/1993			U				U				U				U	
299-W15-219	54.3	54.3	B01PW6	Soil	4/28/1993			U				U				U		3	µg/kg	J	
299-W15-219	56.5	56.5	B01PW7	Soil	4/28/1993			U				U				U				U	
299-W15-219	57.9	57.9	B01NV2	Soil	4/29/1993			U				U				U				U	
299-W15-219	65	65	B01PR8	Soil	4/29/1993			U				U				U		4	µg/kg	J	
299-W15-219	70	70	B01PR9	Soil	4/29/1993			U				U				U		5	µg/kg	J	
299-W15-219	75.5	75.5	B01PS0	Soil	4/29/1993			U				U				U		7	µg/kg	J	
299-W15-219	79.5	79.5	B01PS1	Soil	4/30/1993			U				U				U		9	µg/kg	J	
299-W15-219	84.5	84.5	B01PS2	Soil	4/30/1993			U				U				U		10	µg/kg	J	
299-W15-219	87	87	B01PW8	Soil	5/3/1993			U				U				U				U	
299-W15-219	89.5	89.5	B01PS3	Soil	5/3/1993			U				U				U				U	
299-W15-219	91	91	B01PW9	Soil	5/3/1993			U				U				U				U	
299-W15-219	95.5	95.5	B01PX0	Soil	5/4/1993			U				U				U				U	
299-W15-219	96.5	96.5	B01PS4	Soil	5/4/1993			U				U				U		11	µg/kg		
299-W15-219	100	100	B01PS5	Soil	5/4/1993			U				U				U		5	µg/kg	J	
299-W15-219	105.5	105.5	B01PS6	Soil	5/4/1993			U								U				U	
299-W15-219	109.5	109.5	B01PS7	Soil	5/4/1993			U								U		3	µg/kg	J	
299-W15-219	111.1	111.1	B01PX1	Soil	5/5/1993			U				U				U				U	
299-W15-219	114.5	114.5	B01PX2	Soil	5/5/1993			U				U				U				U	
299-W15-219	114.5	114.5	B01PX3	Soil	5/5/1993			U				U				U				U	
299-W15-219	114.9	114.9	B01PS8	Soil	5/5/1993			U				U				U				U	
299-W15-219	120	120	B01PS9	Soil	5/5/1993			U				U				U				U	
299-W15-219	124.5	124.5	B01PT0	Soil	5/11/1993			U				U				U				U	
299-W15-219	129.5	129.5	B01PT1	Soil	5/11/1993			U				U				U				U	
299-W15-219	131.5	131.5	B01PT2	Soil	5/11/1993			U				U				U				U	
299-W15-219	140	140	B01PT3	Soil	5/13/1993			U				U				U				U	
299-W15-219	145	145	B01PT4	Soil	5/13/1993			U				U				U				U	
299-W15-219	149	149	B01PT5	Soil	5/14/1993			U				U				U				U	
299-W15-219	150.3	150.3	B01PX4	Soil	5/14/1993			U				U				U				U	
299-W15-219	153.4	153.4	B01PX5	Soil	5/17/1993			U				U				U				U	
299-W15-219	155	155	B01PT6	Soil	5/17/1993			U				U				U				U	

Table C-20. Volatile Organic Analysis Results for Well 299-W15-219 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	160	160	B01PT7	Soil	5/17/1993			U				U				U				U	
299-W15-219	165	165	B01PT8	Soil	5/18/1993			U				U				U				U	
299-W15-219	170	170	B01PT9	Soil	5/18/1993			U				U				U				U	
299-W15-219	175	175	B01PV0	Soil	5/18/1993			U				U				U				U	
299-W15-219	180	180	B01PV1	Soil	5/19/1993			U				U				U				U	
299-W15-219	185	185	B01PV2	Soil	5/19/1993			U				U				U				U	
299-W15-219	187	187	B01PV3	Soil	5/19/1993			U				U				U				U	
299-W15-219	190.3	190.3	B01PV4	Soil	5/20/1993			U				U				U				U	
299-W15-219	195	195	B01PV5	Soil	5/20/1993			U				U				U				U	
299-W15-219	200	200	B01PV6	Soil	5/21/1993			U				U				U				U	
299-W15-219	205	205	B01PV7	Soil	5/24/1993			U				U				U				U	
299-W15-219	210.5	210.5	B01PV8	Soil	5/25/1993			U				U				U				U	

Table C-20. Volatile Organic Analysis Results for Well 299-W15-219 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	25.9	25.9	B01NT5	Soil	4/22/1993			U				U				U	
299-W15-219	29.5	29.5	B01NT7	Soil	4/23/1993			U				U				U	
299-W15-219	35.5	35.5	B01NT8	Soil	4/23/1993			U				U				U	
299-W15-219	39.8	39.8	B01NT6	Soil	4/27/1993			U				U				U	
299-W15-219	44.8	44.8	B01NT9	Soil	4/27/1993			U				U				U	
299-W15-219	49.5	49.5	B01NV0	Soil	4/27/1993			U				U				U	
299-W15-219	53.5	53.5	B01NV1	Soil	4/28/1993			U				U				U	
299-W15-219	54.3	54.3	B01PW6	Soil	4/28/1993			U				U				U	
299-W15-219	56.5	56.5	B01PW7	Soil	4/28/1993			U				U				U	
299-W15-219	57.9	57.9	B01NV2	Soil	4/29/1993			U				U				U	
299-W15-219	65	65	B01PR8	Soil	4/29/1993			U				U				U	
299-W15-219	70	70	B01PR9	Soil	4/29/1993			U				U				U	
299-W15-219	75.5	75.5	B01PS0	Soil	4/29/1993			U				U				U	
299-W15-219	79.5	79.5	B01PS1	Soil	4/30/1993			U				U				U	
299-W15-219	84.5	84.5	B01PS2	Soil	4/30/1993			U				U				U	
299-W15-219	87	87	B01PW8	Soil	5/3/1993			U				U		7	µg/kg	J	
299-W15-219	89.5	89.5	B01PS3	Soil	5/3/1993			U				U				U	
299-W15-219	91	91	B01PW9	Soil	5/3/1993			U				U				U	
299-W15-219	95.5	95.5	B01PX0	Soil	5/4/1993			U				U				U	
299-W15-219	96.5	96.5	B01PS4	Soil	5/4/1993			U				U				U	
299-W15-219	100	100	B01PS5	Soil	5/4/1993			U				U				U	
299-W15-219	105.5	105.5	B01PS6	Soil	5/4/1993			U				U				U	
299-W15-219	109.5	109.5	B01PS7	Soil	5/4/1993			U				U				U	
299-W15-219	111.1	111.1	B01PX1	Soil	5/5/1993			U				U				U	
299-W15-219	114.5	114.5	B01PX2	Soil	5/5/1993			U				U				U	
299-W15-219	114.5	114.5	B01PX3	Soil	5/5/1993			U				U				U	
299-W15-219	114.9	114.9	B01PS8	Soil	5/5/1993			U				U				U	
299-W15-219	120	120	B01PS9	Soil	5/5/1993			U				U				U	
299-W15-219	124.5	124.5	B01PT0	Soil	5/11/1993			U				U				U	
299-W15-219	129.5	129.5	B01PT1	Soil	5/11/1993			U				U				U	
299-W15-219	131.5	131.5	B01PT2	Soil	5/11/1993			U				U				U	
299-W15-219	140	140	B01PT3	Soil	5/13/1993			U				U				U	
299-W15-219	145	145	B01PT4	Soil	5/13/1993			U				U				U	
299-W15-219	149	149	B01PT5	Soil	5/14/1993			U				U				U	
299-W15-219	150.3	150.3	B01PX4	Soil	5/14/1993			U				U				U	
299-W15-219	153.4	153.4	B01PX5	Soil	5/17/1993	34	µg/kg					U				U	
299-W15-219	155	155	B01PT6	Soil	5/17/1993	37	µg/kg					U				U	

Table C-20. Volatile Organic Analysis Results for Well 299-W15-219 (216-Z-9 Trench) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-219	160	160	B01PT7	Soil	5/17/1993			U				U				U	
299-W15-219	165	165	B01PT8	Soil	5/18/1993			U				U				U	
299-W15-219	170	170	B01PT9	Soil	5/18/1993			U				U				U	
299-W15-219	175	175	B01PV0	Soil	5/18/1993			U				U				U	
299-W15-219	180	180	B01PV1	Soil	5/19/1993			U				U				U	
299-W15-219	185	185	B01PV2	Soil	5/19/1993			U				U				U	
299-W15-219	187	187	B01PV3	Soil	5/19/1993			U				U				U	
299-W15-219	190.3	190.3	B01PV4	Soil	5/20/1993	47	µg/kg					U				U	
299-W15-219	195	195	B01PV5	Soil	5/20/1993	376	µg/kg	J				U				U	
299-W15-219	200	200	B01PV6	Soil	5/21/1993	1329	µg/kg	J				U				U	
299-W15-219	205	205	B01PV7	Soil	5/24/1993			U				U				U	
299-W15-219	210.5	210.5	B01PV8	Soil	5/25/1993			U				U				U	

Table C-21. Volatile Organic Analysis Results for Well 299-W15-220 (216-Z-9 Trench) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-220	24.8	24.8	B07BT4	Soil	6/3/1993	PNL1			U				U				U				U	
299-W15-220	29.7	29.7	B07BT5	Soil	6/5/1993	PNL1			U				U				U				U	
299-W15-220	34.7	34.7	B07BT6	Soil	6/7/1993	PNL1			U				U				U				U	
299-W15-220	40	40	B07BT7	Soil	6/8/1993	PNL1			U				U				U				U	
299-W15-220	45	45	B07BT8	Soil	6/9/1993	PNL1			U				U				U				U	
299-W15-220	50	50	B07BT9	Soil	6/9/1993	PNL1			U				U				U				U	
299-W15-220	55	55	B07BV0	Soil	6/9/1993	PNL1			U				U				U				U	
299-W15-220	60	60	B07BV1	Soil	6/10/1993	PNL1			U				U				U				U	
299-W15-220	64.8	64.8	B07BV2	Soil	6/10/1993	PNL1			U				U				U				U	
299-W15-220	69.6	69.6	B07BV3	Soil	6/11/1993	PNL1			U				U				U				U	
299-W15-220	75	75	B07BV4	Soil	6/14/1993	PNL1			U				U				U				U	
299-W15-220	79.8	79.8	B07BV5	Soil	6/14/1993	PNL1			U				U				U				U	
299-W15-220	84.6	84.6	B07BV6	Soil	6/15/1993	PNL1			U				U				U				U	
299-W15-220	90.5	90.5	B07BV7	Soil	6/15/1993	PNL1			U				U				U				U	
299-W15-220	94.6	94.6	B07BV8	Soil	6/16/1993	PNL1			U				U				U				U	
299-W15-220	100.5	100.5	B07BV9	Soil	6/16/1993	PNL1			U				U				U				U	
299-W15-220	104.5	104.5	B07BW0	Soil	6/16/1993	PNL1			U				U				U				U	
299-W15-220	109.6	109.6	B07BW1	Soil	6/17/1993	PNL1			U				U				U				U	
299-W15-220	114.8	114.8	B07BW2	Soil	6/24/1993	PNL1			U				U				U				U	
299-W15-220	120	120	B07BW3	Soil	6/25/1993	PNL1			U				U				U				U	
299-W15-220	123	123	B07BW4	Soil	6/25/1993	PNL1			U				U				U				U	
299-W15-220	127	127	B07BW5	Soil	6/28/1993	PNL1			U				U				U				U	
299-W15-220	133	133	B07BW6	Soil	6/28/1993	PNL1			U				U				U				U	
299-W15-220	138.5	138.5	B07BW7	Soil	6/29/1993	PNL1			U				U				U				U	
299-W15-220	146	146	B07BW8	Soil	7/9/1993	PNL1			U				U				U				U	
299-W15-220	150	150	B07BW9	Soil	7/12/1993	PNL1			U				U				U				U	
299-W15-220	155	155	B07BX0	Soil	7/12/1993	PNL1			U				U				U				U	
299-W15-220	160	160	B07BX1	Soil	7/12/1993	PNL1			U				U				U				U	
299-W15-220	164.5	164.5	B07BX2	Soil	7/14/1993	PNL1			U				U				U				U	
299-W15-220	170	170	B07BX3	Soil	7/14/1993	PNL1			U				U				U				U	
299-W15-220	175	175	B07BX4	Soil	7/15/1993	PNL1			U				U				U				U	
299-W15-220	180.5	180.5	B07BX5	Soil	7/15/1993	PNL1			U				U				U				U	
299-W15-220	185	185	B07BX6	Soil	7/19/1993	PNL1			U				U				U				U	
299-W15-220	190	190	B07BX7	Soil	7/20/1993	PNL1			U				U				U				U	
299-W15-220	195	195	B07BX8	Soil	7/21/1993	PNL1			U				U				U				U	
299-W15-220	200	200	B07BX9	Soil	7/21/1993	PNL1			U				U				U				U	

Table C-21. Volatile Organic Analysis Results for Well 299-W15-220 (216-Z-9 Trench) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-220	24.8	24.8	B07BT4	Soil	6/3/1993			U				U				U				U	
299-W15-220	29.7	29.7	B07BT5	Soil	6/5/1993	29	µg/kg					U				U				U	
299-W15-220	34.7	34.7	B07BT6	Soil	6/7/1993	8	µg/kg	J				U				U				U	
299-W15-220	40	40	B07BT7	Soil	6/8/1993			U				U				U				U	
299-W15-220	45	45	B07BT8	Soil	6/9/1993	133	µg/kg	J				U				U				U	
299-W15-220	50	50	B07BT9	Soil	6/9/1993	1052	µg/kg					U				U				U	
299-W15-220	55	55	B07BV0	Soil	6/9/1993	772	µg/kg					U				U				U	
299-W15-220	60	60	B07BV1	Soil	6/10/1993	296	µg/kg					U				U				U	
299-W15-220	64.8	64.8	B07BV2	Soil	6/10/1993	544	µg/kg					U				U				U	
299-W15-220	69.6	69.6	B07BV3	Soil	6/11/1993	544	µg/kg					U				U				U	
299-W15-220	75	75	B07BV4	Soil	6/14/1993	261	µg/kg					U				U				U	
299-W15-220	79.8	79.8	B07BV5	Soil	6/14/1993	174	µg/kg					U				U				U	
299-W15-220	84.6	84.6	B07BV6	Soil	6/15/1993	107	µg/kg			4	µg/kg	J				U				U	
299-W15-220	90.5	90.5	B07BV7	Soil	6/15/1993	1132	µg/kg			4	µg/kg	J				U				U	
299-W15-220	94.6	94.6	B07BV8	Soil	6/16/1993	699	µg/kg					U				U				U	
299-W15-220	100.5	100.5	B07BV9	Soil	6/16/1993	545	µg/kg					U				U				U	
299-W15-220	104.5	104.5	B07BW0	Soil	6/16/1993	56	µg/kg			12	µg/kg	J				U				U	
299-W15-220	109.6	109.6	B07BW1	Soil	6/17/1993	109	µg/kg			10	µg/kg	J				U				U	
299-W15-220	114.8	114.8	B07BW2	Soil	6/24/1993			U				U				U				U	
299-W15-220	120	120	B07BW3	Soil	6/25/1993			U				U				U				U	
299-W15-220	123	123	B07BW4	Soil	6/25/1993	18	µg/kg	J				U				U				U	
299-W15-220	127	127	B07BW5	Soil	6/28/1993	6	µg/kg	J				U				U				U	
299-W15-220	133	133	B07BW6	Soil	6/28/1993	4	µg/kg	J				U				U				U	
299-W15-220	138.5	138.5	B07BW7	Soil	6/29/1993			U				U				U				U	
299-W15-220	146	146	B07BW8	Soil	7/9/1993	5	µg/kg	J				U				U				U	
299-W15-220	150	150	B07BW9	Soil	7/12/1993	8	µg/kg	J				U				U				U	
299-W15-220	155	155	B07BX0	Soil	7/12/1993			U				U				U				U	
299-W15-220	160	160	B07BX1	Soil	7/12/1993	5	µg/kg	J				U				U				U	
299-W15-220	164.5	164.5	B07BX2	Soil	7/14/1993			U				U				U				U	
299-W15-220	170	170	B07BX3	Soil	7/14/1993			U				U				U				U	
299-W15-220	175	175	B07BX4	Soil	7/15/1993			U				U				U				U	
299-W15-220	180.5	180.5	B07BX5	Soil	7/15/1993			U				U				U				U	
299-W15-220	185	185	B07BX6	Soil	7/19/1993			U				U				U				U	
299-W15-220	190	190	B07BX7	Soil	7/20/1993	5	µg/kg	J				U				U				U	
299-W15-220	195	195	B07BX8	Soil	7/21/1993	5	µg/kg	J		2	µg/kg	J				U				U	
299-W15-220	200	200	B07BX9	Soil	7/21/1993	101	µg/kg			32	µg/kg					U				U	

Table C-21. Volatile Organic Analysis Results for Well 299-W15-220 (216-Z-9 Trench) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-220	24.8	24.8	B07BT4	Soil	6/3/1993			U				U				U				U	
299-W15-220	29.7	29.7	B07BT5	Soil	6/5/1993			U				U				U				U	
299-W15-220	34.7	34.7	B07BT6	Soil	6/7/1993			U				U				U				U	
299-W15-220	40	40	B07BT7	Soil	6/8/1993			U				U				U				U	
299-W15-220	45	45	B07BT8	Soil	6/9/1993			U				U				U				U	
299-W15-220	50	50	B07BT9	Soil	6/9/1993			U				U				U				U	
299-W15-220	55	55	B07BV0	Soil	6/9/1993			U				U				U				U	
299-W15-220	60	60	B07BV1	Soil	6/10/1993			U				U				U				U	
299-W15-220	64.8	64.8	B07BV2	Soil	6/10/1993			U				U				U				U	
299-W15-220	69.6	69.6	B07BV3	Soil	6/11/1993			U				U				U				U	
299-W15-220	75	75	B07BV4	Soil	6/14/1993			U				U				U				U	
299-W15-220	79.8	79.8	B07BV5	Soil	6/14/1993			U				U				U				U	
299-W15-220	84.6	84.6	B07BV6	Soil	6/15/1993			U				U				U				U	
299-W15-220	90.5	90.5	B07BV7	Soil	6/15/1993			U				U				U				U	
299-W15-220	94.6	94.6	B07BV8	Soil	6/16/1993			U				U				U				U	
299-W15-220	100.5	100.5	B07BV9	Soil	6/16/1993			U		1171	µg/kg					U				U	
299-W15-220	104.5	104.5	B07BW0	Soil	6/16/1993			U		86	µg/kg					U				U	
299-W15-220	109.6	109.6	B07BW1	Soil	6/17/1993			U		380	µg/kg					U				U	
299-W15-220	114.8	114.8	B07BW2	Soil	6/24/1993			U				U				U				U	
299-W15-220	120	120	B07BW3	Soil	6/25/1993			U				U				U				U	
299-W15-220	123	123	B07BW4	Soil	6/25/1993			U				U				U				U	
299-W15-220	127	127	B07BW5	Soil	6/28/1993			U				U				U				U	
299-W15-220	133	133	B07BW6	Soil	6/28/1993			U				U				U				U	
299-W15-220	138.5	138.5	B07BW7	Soil	6/29/1993			U				U				U				U	
299-W15-220	146	146	B07BW8	Soil	7/9/1993			U				U				U				U	
299-W15-220	150	150	B07BW9	Soil	7/12/1993			U				U				U				U	
299-W15-220	155	155	B07BX0	Soil	7/12/1993			U				U				U				U	
299-W15-220	160	160	B07BX1	Soil	7/12/1993			U				U				U				U	
299-W15-220	164.5	164.5	B07BX2	Soil	7/14/1993			U				U				U				U	
299-W15-220	170	170	B07BX3	Soil	7/14/1993			U				U				U				U	
299-W15-220	175	175	B07BX4	Soil	7/15/1993			U				U				U				U	
299-W15-220	180.5	180.5	B07BX5	Soil	7/15/1993			U				U				U				U	
299-W15-220	185	185	B07BX6	Soil	7/19/1993			U				U				U				U	
299-W15-220	190	190	B07BX7	Soil	7/20/1993			U				U				U				U	
299-W15-220	195	195	B07BX8	Soil	7/21/1993			U				U				U				U	
299-W15-220	200	200	B07BX9	Soil	7/21/1993			U		4	µg/kg	J				U				U	

Table C-21. Volatile Organic Analysis Results for Well 299-W15-220 (216-Z-9 Trench) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W15-220	24.8	24.8	B07BT4	Soil	6/3/1993			U				U				U	
299-W15-220	29.7	29.7	B07BT5	Soil	6/5/1993			U				U				U	
299-W15-220	34.7	34.7	B07BT6	Soil	6/7/1993			U				U				U	
299-W15-220	40	40	B07BT7	Soil	6/8/1993			U				U				U	
299-W15-220	45	45	B07BT8	Soil	6/9/1993			U				U				U	
299-W15-220	50	50	B07BT9	Soil	6/9/1993			U				U				U	
299-W15-220	55	55	B07BV0	Soil	6/9/1993			U				U				U	
299-W15-220	60	60	B07BV1	Soil	6/10/1993			U				U				U	
299-W15-220	64.8	64.8	B07BV2	Soil	6/10/1993			U				U				U	
299-W15-220	69.6	69.6	B07BV3	Soil	6/11/1993			U				U				U	
299-W15-220	75	75	B07BV4	Soil	6/14/1993			U				U				U	
299-W15-220	79.8	79.8	B07BV5	Soil	6/14/1993			U				U				U	
299-W15-220	84.6	84.6	B07BV6	Soil	6/15/1993			U				U				U	
299-W15-220	90.5	90.5	B07BV7	Soil	6/15/1993			U				U				U	
299-W15-220	94.6	94.6	B07BV8	Soil	6/16/1993			U				U				U	
299-W15-220	100.5	100.5	B07BV9	Soil	6/16/1993			U				U				U	
299-W15-220	104.5	104.5	B07BW0	Soil	6/16/1993			U				U				U	
299-W15-220	109.6	109.6	B07BW1	Soil	6/17/1993			U				U				U	
299-W15-220	114.8	114.8	B07BW2	Soil	6/24/1993	59	µg/kg					U				U	
299-W15-220	120	120	B07BW3	Soil	6/25/1993			U				U				U	
299-W15-220	123	123	B07BW4	Soil	6/25/1993	25	µg/kg					U				U	
299-W15-220	127	127	B07BW5	Soil	6/28/1993			U				U				U	
299-W15-220	133	133	B07BW6	Soil	6/28/1993	29	µg/kg					U				U	
299-W15-220	138.5	138.5	B07BW7	Soil	6/29/1993	22	µg/kg					U				U	
299-W15-220	146	146	B07BW8	Soil	7/9/1993			U				U				U	
299-W15-220	150	150	B07BW9	Soil	7/12/1993			U				U				U	
299-W15-220	155	155	B07BX0	Soil	7/12/1993			U				U				U	
299-W15-220	160	160	B07BX1	Soil	7/12/1993			U				U				U	
299-W15-220	164.5	164.5	B07BX2	Soil	7/14/1993			U				U				U	
299-W15-220	170	170	B07BX3	Soil	7/14/1993			U				U				U	
299-W15-220	175	175	B07BX4	Soil	7/15/1993			U				U				U	
299-W15-220	180.5	180.5	B07BX5	Soil	7/15/1993			U				U				U	
299-W15-220	185	185	B07BX6	Soil	7/19/1993			U				U				U	
299-W15-220	190	190	B07BX7	Soil	7/20/1993			U				U				U	
299-W15-220	195	195	B07BX8	Soil	7/21/1993			U				U				U	
299-W15-220	200	200	B07BX9	Soil	7/21/1993	6	µg/kg					U				U	

Table C-22. Metal Analysis Results for 299-W18-96 (216-Z-18 Crib) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Aluminum (7429-90-5)				Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)			
							6010				6010				6010				6010			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993	DATACH							U		87000	µg/kg			400	µg/kg		
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993	DATACH							U		73000	µg/kg			400	µg/kg		
299-W18-96	120	120	B01NY7	Soil	2/17/1993	DATACH							U		87000	µg/kg			300	µg/kg		
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993	DATACH	12000000	µg/kg			8100	µg/kg	L		90000	µg/kg			420	µg/kg		
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993	DATACH							U		70000	µg/kg					U	
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993	DATACH							U		86000	µg/kg			300	µg/kg		
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993	DATACH							U		84000	µg/kg			400	µg/kg		
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993	DATACH							U		110000	µg/kg			600	µg/kg		
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993	DATACH	13000000	µg/kg			6300	µg/kg	L		88000	µg/kg			580	µg/kg		
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993	DATACH	9300000	µg/kg			8600	µg/kg	L		78000	µg/kg			530	µg/kg		

Table C-22. Metal Analysis Results for 299-W18-96 (216-Z-18 Crib) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cadmium (7440-43-9)				Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993			U				U		12000	µg/kg			9000	µg/kg		
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993			U		8600000	µg/kg			12000	µg/kg			6000	µg/kg		
299-W18-96	120	120	B01NY7	Soil	2/17/1993			U		9500000	µg/kg			14000	µg/kg			9000	µg/kg		
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993			U		1200000	µg/kg			22000	µg/kg			10000	µg/kg		
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993			U		6300000	µg/kg			10000	µg/kg			9000	µg/kg		
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993			U		8600000	µg/kg			13000	µg/kg			7000	µg/kg		
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993			U		8800000	µg/kg			16000	µg/kg			7000	µg/kg		
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993			U				U		17000	µg/kg			9000	µg/kg		
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993			U		11000000	µg/kg			20000	µg/kg			7700	µg/kg		
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993			U		23000000	µg/kg			22000	µg/kg			6800	µg/kg		

Table C-22. Metal Analysis Results for 299-W18-96 (216-Z-18 Crib) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Copper (7440-50-8)				Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)			
						6010				6010				7421				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993	16000	µg/kg					U		5300	µg/kg			5000000	µg/kg		
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993	10000	µg/kg					U		4900	µg/kg			5300000	µg/kg		
299-W18-96	120	120	B01NY7	Soil	2/17/1993	14000	µg/kg					U		2900	µg/kg			4600000	µg/kg		
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993	30000	µg/kg			28000000	µg/kg			5900	µg/kg			4800000	µg/kg		
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993	14000	µg/kg					U		1800	µg/kg			3800000	µg/kg		
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993	13000	µg/kg					U		3200	µg/kg			3800000	µg/kg		
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993	13000	µg/kg					U		6100	µg/kg			5600000	µg/kg		
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993	20000	µg/kg					U		12000	µg/kg			7000000	µg/kg		
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993	21000	µg/kg			19000000	µg/kg			10000	µg/kg			7300000	µg/kg		
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993	15000	µg/kg			20000000	µg/kg			5400	µg/kg			5900000	µg/kg		

Table C-22. Metal Analysis Results for 299-W18-96 (216-Z-18 Crib) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Manganese (7439-96-5)				Mercury (7439-97-6)				Nickel (7440-02-0)			
						6010				7470				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993	420000	µg/kg					U		14000	µg/kg		
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993	330000	µg/kg					U		12000	µg/kg		
299-W18-96	120	120	B01NY7	Soil	2/17/1993	270000	µg/kg					U		12000	µg/kg		
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993	330000	µg/kg					U		14000	µg/kg		
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993	220000	µg/kg					U		16000	µg/kg		
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993	230000	µg/kg					U		13000	µg/kg		
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993	330000	µg/kg					U		20000	µg/kg		
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993	330000	µg/kg					U		17000	µg/kg		
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993	280000	µg/kg					U		16000	µg/kg		
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993	260000	µg/kg					U		14000	µg/kg		

Table C-22. Metal Analysis Results for 299-W18-96 (216-Z-18 Crib) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Potassium (7440-09-7)				Silver (7440-22-4)				Sodium (7440-23-5)			
						6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993	1400000	µg/kg					U		1300000	µg/kg		
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993	2000000	µg/kg					U		170000	µg/kg		
299-W18-96	120	120	B01NY7	Soil	2/17/1993	900000	µg/kg					U		440000	µg/kg		
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993	750000	µg/kg			330	µg/kg	L		970000	µg/kg		
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993	630000	µg/kg					U		450000	µg/kg		
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993	790000	µg/kg					U		420000	µg/kg		
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993	1900000	µg/kg					U		200000	µg/kg		
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993	2100000	µg/kg					U		170000	µg/kg		
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993	2200000	µg/kg					U		200000	µg/kg		
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993	1200000	µg/kg			500	µg/kg	L		400000	µg/kg		

Table C-22. Metal Analysis Results for 299-W18-96 (216-Z-18 Crib) (6 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993			U		54000	µg/kg			39000	µg/kg		
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993			U		30000	µg/kg			37000	µg/kg		
299-W18-96	120	120	B01NY7	Soil	2/17/1993			U		57000	µg/kg			43000	µg/kg		
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993	5700	µg/kg	L		77000	µg/kg			74000	µg/kg		
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993			U		47000	µg/kg			31000	µg/kg		
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993			U		49000	µg/kg			36000	µg/kg		
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993			U		37000	µg/kg			42000	µg/kg		
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993			U		33000	µg/kg			54000	µg/kg		
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993	5500	µg/kg	L		34000	µg/kg			52000	µg/kg		
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993			U		67000	µg/kg			41000	µg/kg		

Table C-23. Semivolatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2,4-Dichlorophenol (120-83-2)				2-Fluorobiphenyl (321-60-8)				2-Methylphenol (cresol, o-) (95-48-7)				2-Nitrophenol (88-75-5)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993	DATACH					2900	µg/kg					U					
299-W18-96	86.5	86.5	B01NX1	Soil	2/11/1993	DATACH					2600	µg/kg					U					
299-W18-96	86.5	86.5	B01NX3	Soil	2/11/1993	DATACH					3100	µg/kg					U					
299-W18-96	90	90	B01NW9	Soil	2/12/1993	DATACH					2800	µg/kg					U					
299-W18-96	92.3	92.3	B01NX5	Soil	2/12/1993	DATACH					3600	µg/kg					U					
299-W18-96	95	95	B01NX8	Soil	2/12/1993	DATACH					3100	µg/kg					U					
299-W18-96	98	98	B01NY1	Soil	2/12/1993	DATACH					3000	µg/kg					U					
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993	DATACH					2900	µg/kg					U					
299-W18-96	104	104	B01NY3	Soil	2/12/1993	DATACH					2900	µg/kg					U					
299-W18-96	110.1	110.1	B01NY4	Soil	2/16/1993	DATACH					3200	µg/kg					U					
299-W18-96	116	116	B01NY6	Soil	2/16/1993	DATACH					2900	µg/kg					U					
299-W18-96	119	119	B01NY9	Soil	2/17/1993	DATACH					2900	µg/kg					U					
299-W18-96	120	120	B01NY7	Soil	2/17/1993	DATACH					3100	µg/kg					U					
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993	DATACH			U								U				U	
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993	DATACH					3100	µg/kg					U					
299-W18-96	125.5	125.5	B01P93	Soil	2/18/1993	DATACH					3300	µg/kg					U					
299-W18-96	129	129	B01NZ9	Soil	2/22/1993	DATACH					3200	µg/kg					U					
299-W18-96	129	129	B01P00	Soil	2/22/1993	DATACH					3300	µg/kg					U					
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993	DATACH					3000	µg/kg					U					
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993	DATACH					3300	µg/kg					U					
299-W18-96	134.5	134.5	B01P05	Soil	2/22/1993	DATACH					3300	µg/kg					U					
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993	DATACH					3700	µg/kg					U					
299-W18-96	138.5	138.5	B01NZ3	Soil	2/24/1993	DATACH			U								U				U	
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993	DATACH			U								U				U	
299-W18-96	144.5	144.5	B01PB1	Soil	2/25/1993	DATACH			U								U				U	
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993	DATACH			U								U				U	

Table C-23. Semivolatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Benzothiazole (95-16-9)				Bis(2-ethylhexyl) phthalate (117-81-7)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993			U				U									
299-W18-96	86.5	86.5	B01NX1	Soil	2/11/1993			U				U									
299-W18-96	86.5	86.5	B01NX3	Soil	2/11/1993			U				U									
299-W18-96	90	90	B01NW9	Soil	2/12/1993			U				U									
299-W18-96	92.3	92.3	B01NX5	Soil	2/12/1993			U				U									
299-W18-96	95	95	B01NX8	Soil	2/12/1993			U				U									
299-W18-96	98	98	B01NY1	Soil	2/12/1993			U				U									
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993			U				U									
299-W18-96	104	104	B01NY3	Soil	2/12/1993			U				U									
299-W18-96	110.1	110.1	B01NY4	Soil	2/16/1993			U				U									
299-W18-96	116	116	B01NY6	Soil	2/16/1993			U				U									
299-W18-96	119	119	B01NY9	Soil	2/17/1993			U				U									
299-W18-96	120	120	B01NY7	Soil	2/17/1993			U				U									
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993			XU				U				U				U	
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993			U				U									
299-W18-96	125.5	125.5	B01P93	Soil	2/18/1993			U				U									
299-W18-96	129	129	B01NZ9	Soil	2/22/1993			U				U									
299-W18-96	129	129	B01P00	Soil	2/22/1993			U				U									
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993			U				U									
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993			U				U									
299-W18-96	134.5	134.5	B01P05	Soil	2/22/1993			U				U									
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993			U				U									
299-W18-96	138.5	138.5	B01NZ3	Soil	2/24/1993			XU				U				U				U	
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993			XU				U				U				U	
299-W18-96	144.5	144.5	B01PB1	Soil	2/25/1993			XU				U				U				U	
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993			XU				U				U				U	

Table C-23. Semivolatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Decane (124-18-5)				Dodecane (112-40-3)				Naphthalene (91-20-3)				Nitrobenzene-d5 (4165-60-0)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993			U				U				U		2900	µg/kg		
299-W18-96	86.5	86.5	B01NX1	Soil	2/11/1993			U				U				U		2900	µg/kg		
299-W18-96	86.5	86.5	B01NX3	Soil	2/11/1993			U				U				U		3300	µg/kg		
299-W18-96	90	90	B01NW9	Soil	2/12/1993			U				U				U		3000	µg/kg		
299-W18-96	92.3	92.3	B01NX5	Soil	2/12/1993			U				U				U		4100	µg/kg		
299-W18-96	95	95	B01NX8	Soil	2/12/1993			U				U				U		3700	µg/kg		
299-W18-96	98	98	B01NY1	Soil	2/12/1993			U				U				U		3400	µg/kg		
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993			U				U				U		3000	µg/kg		
299-W18-96	104	104	B01NY3	Soil	2/12/1993			U				U				U		3200	µg/kg		
299-W18-96	110.1	110.1	B01NY4	Soil	2/16/1993			U				U				U		3600	µg/kg		
299-W18-96	116	116	B01NY6	Soil	2/16/1993			U				U				U		3300	µg/kg		
299-W18-96	119	119	B01NY9	Soil	2/17/1993			U				U				U		3100	µg/kg		
299-W18-96	120	120	B01NY7	Soil	2/17/1993			U				U				U		3400	µg/kg		
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993			U				U				U					
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993			U				U				U		3400	µg/kg		
299-W18-96	125.5	125.5	B01P93	Soil	2/18/1993			U				U				U		3600	µg/kg		
299-W18-96	129	129	B01NZ9	Soil	2/22/1993			U				U				U		3400	µg/kg		
299-W18-96	129	129	B01P00	Soil	2/22/1993			U				U				U		3600	µg/kg		
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993			U				U				U		3300	µg/kg		
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993			U				U				U		3600	µg/kg		
299-W18-96	134.5	134.5	B01P05	Soil	2/22/1993			U				U				U		3600	µg/kg		
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993			U				U				U		3900	µg/kg		
299-W18-96	138.5	138.5	B01NZ3	Soil	2/24/1993			U				U				U					
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993			U				U				U					
299-W18-96	144.5	144.5	B01PB1	Soil	2/25/1993			U				U				U					
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993			U				U				U					

Table C-23. Semivolatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Pentachlorophenol (87-86-5)				Phenol (108-95-2)				Phenol-d6 (13127-88-3)				Terphenyl-d14 (7Cl) (98904-43-9)			
						8270				8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993			U				U		6300	µg/kg			3400	µg/kg		
299-W18-96	86.5	86.5	B01NX1	Soil	2/11/1993			U				U		6000	µg/kg			3100	µg/kg		
299-W18-96	86.5	86.5	B01NX3	Soil	2/11/1993			U				U		7000	µg/kg			3200	µg/kg		
299-W18-96	90	90	B01NW9	Soil	2/12/1993			U				U		6200	µg/kg			3100	µg/kg		
299-W18-96	92.3	92.3	B01NX5	Soil	2/12/1993			U				U		8400	µg/kg			3900	µg/kg		
299-W18-96	95	95	B01NX8	Soil	2/12/1993			U				U		7300	µg/kg			3500	µg/kg		
299-W18-96	98	98	B01NY1	Soil	2/12/1993			U				U		7000	µg/kg			3500	µg/kg		
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993			U				U		6200	µg/kg			3300	µg/kg		
299-W18-96	104	104	B01NY3	Soil	2/12/1993			U				U		6800	µg/kg			3000	µg/kg		
299-W18-96	110.1	110.1	B01NY4	Soil	2/16/1993			U				U		7300	µg/kg			3200	µg/kg		
299-W18-96	116	116	B01NY6	Soil	2/16/1993			U				U		6900	µg/kg			3000	µg/kg		
299-W18-96	119	119	B01NY9	Soil	2/17/1993			U				U		6300	µg/kg			3200	µg/kg		
299-W18-96	120	120	B01NY7	Soil	2/17/1993			U				U		6900	µg/kg			3200	µg/kg		
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993			U				U									
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993			U				U		7200	µg/kg			3100	µg/kg		
299-W18-96	125.5	125.5	B01P93	Soil	2/18/1993			U				U		7200	µg/kg			3300	µg/kg		
299-W18-96	129	129	B01NZ9	Soil	2/22/1993			U				U		7100	µg/kg			3300	µg/kg		
299-W18-96	129	129	B01P00	Soil	2/22/1993			U				U		7600	µg/kg			3400	µg/kg		
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993			U				U		6600	µg/kg			3300	µg/kg		
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993			U				U		7200	µg/kg			3200	µg/kg		
299-W18-96	134.5	134.5	B01P05	Soil	2/22/1993			U				U		7600	µg/kg			3400	µg/kg		
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993			U				U		8400	µg/kg			3900	µg/kg		
299-W18-96	138.5	138.5	B01NZ3	Soil	2/24/1993			U				U									
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993			U				U									
299-W18-96	144.5	144.5	B01PB1	Soil	2/25/1993			U				U									
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993			U				U									

Table C-23. Semivolatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)				Tris-2-chloroethyl phosphate (115-96-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993			U				U					
299-W18-96	86.5	86.5	B01NX1	Soil	2/11/1993			U				U					
299-W18-96	86.5	86.5	B01NX3	Soil	2/11/1993			U				U					
299-W18-96	90	90	B01NW9	Soil	2/12/1993			U				U					
299-W18-96	92.3	92.3	B01NX5	Soil	2/12/1993			U				U					
299-W18-96	95	95	B01NX8	Soil	2/12/1993			U				U					
299-W18-96	98	98	B01NY1	Soil	2/12/1993			U				U					
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993			U				U					
299-W18-96	104	104	B01NY3	Soil	2/12/1993			U				U					
299-W18-96	110.1	110.1	B01NY4	Soil	2/16/1993			U				U					
299-W18-96	116	116	B01NY6	Soil	2/16/1993			U				U					
299-W18-96	119	119	B01NY9	Soil	2/17/1993			U				U					
299-W18-96	120	120	B01NY7	Soil	2/17/1993			U				U					
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993			U				U				U	
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993			U				U					
299-W18-96	125.5	125.5	B01P93	Soil	2/18/1993			U				U					
299-W18-96	129	129	B01NZ9	Soil	2/22/1993			U				U					
299-W18-96	129	129	B01P00	Soil	2/22/1993			U				U					
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993			U				U					
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993			U				U					
299-W18-96	134.5	134.5	B01P05	Soil	2/22/1993			U				U					
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993			U				U					
299-W18-96	138.5	138.5	B01NZ3	Soil	2/24/1993			U				U				U	
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993			U				U				U	
299-W18-96	144.5	144.5	B01PB1	Soil	2/25/1993			U				U				U	
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993			U				U				U	

Table C-24. Volatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993	PNL1			U				U				U				U	
299-W18-96	86.5	86.5	B01NX1	Soil	2/11/1993	PNL1			U				U				U				U	
299-W18-96	86.5	86.5	B01NX3	Soil	2/11/1993	PNL1			U				U				U				U	
299-W18-96	90	90	B01NW8	Soil	2/12/1993	PNL1			U				U				U				U	
299-W18-96	90	90	B01NW9	Soil	2/12/1993	PNL1			U				U				U				U	
299-W18-96	92.3	92.3	B01NX5	Soil	2/12/1993	PNL1			U				U				U				U	
299-W18-96	92.3	92.3	B01NX7	Soil	2/12/1993	PNL1			U				U				U				U	
299-W18-96	95	95	B01NX8	Soil	2/12/1993	PNL1			U				U				U				U	
299-W18-96	98	98	B01NY1	Soil	2/12/1993	PNL1			U				U				U				U	
299-W18-96	98	98	B01NY2	Soil	2/12/1993	PNL1			U				U				U				U	
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993	PNL1			U				U				U				U	
299-W18-96	100.5	100.5	B01NY0	Soil	2/12/1993	PNL1			U				U				U				U	
299-W18-96	104	104	B01NY3	Soil	2/12/1993	PNL1			U				U				U				U	
299-W18-96	110.1	110.1	B01NY4	Soil	2/16/1993	PNL1			U				U				U				U	
299-W18-96	110.1	110.1	B01NY5	Soil	2/16/1993	PNL1			U				U				U				U	
299-W18-96	116	116	B01NY6	Soil	2/16/1993	PNL1			U				U				U				U	
299-W18-96	119	119	B01NY9	Soil	2/17/1993	PNL1			U				U				U				U	
299-W18-96	120	120	B01NY7	Soil	2/17/1993	PNL1			U				U				U				U	
299-W18-96	120	120	B01NY8	Soil	2/17/1993	PNL1			U				U				U				U	
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993	PNL1			U				U				U				U	
299-W18-96	123.5	123.5	B01NZ2	Soil	2/17/1993	PNL1			U				U				U				U	
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993	PNL1			U				U				U				U	
299-W18-96	125.5	125.5	B01P92	Soil	2/18/1993	PNL1			U				U				U				U	
299-W18-96	125.5	125.5	B01P93	Soil	2/18/1993	PNL1			U				U				U				U	
299-W18-96	125.5	125.5	B01P94	Soil	2/18/1993	PNL1			U				U				U				U	
299-W18-96	129	129	B01NZ9	Soil	2/22/1993	PNL1			U				U				U				U	
299-W18-96	129	129	B01P00	Soil	2/22/1993	PNL1			U				U				U				U	
299-W18-96	129	129	B01P01	Soil	2/22/1993	PNL1			U				U				U				U	
299-W18-96	129	129	B01P02	Soil	2/22/1993	PNL1			U				U				U				U	
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993	PNL1			U				U				U				U	
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993	PNL1			U				U				U				U	
299-W18-96	130.5	130.5	B01NZ7	Soil	2/22/1993	PNL1			U				U				U				U	
299-W18-96	130.5	130.5	B01NZ8	Soil	2/22/1993	PNL1			U				U				U				U	
299-W18-96	134.5	134.5	B01P05	Soil	2/22/1993	PNL1			U				U				U				U	
299-W18-96	134.5	134.5	B01P06	Soil	2/22/1993	PNL1			U				U				U				U	
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993	PNL1			U				U				U				U	
299-W18-96	136.5	136.5	B01P04	Soil	2/23/1993	PNL1			U				U				U				U	

Table C-24. Volatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	138.5	138.5	B01NZ3	Soil	2/24/1993	PNL1			U				U				U				U	
299-W18-96	138.5	138.5	B01NZ4	Soil	2/24/1993	PNL1			U				U				U				U	
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993	PNL1			U				U				U				U	
299-W18-96	143.8	143.8	B01P96	Soil	2/25/1993	PNL1			U				U				U				U	
299-W18-96	143.8	143.8	B01P98	Soil	2/25/1993	PNL1			U				U				U				U	
299-W18-96	144.5	144.5	B01PB0	Soil	2/25/1993	PNL1			U				U				U				U	
299-W18-96	144.5	144.5	B01PB1	Soil	2/25/1993	PNL1			U				U				U				U	
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993	PNL1			U				U				U				U	
299-W18-96	146.5	146.5	B01PB2	Soil	2/25/1993	PNL1			U				U				U				U	

Table C-24. Volatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993	89	µg/kg					U				U				U	
299-W18-96	86.5	86.5	B01NX1	Soil	2/11/1993	79	µg/kg					U				U				U	
299-W18-96	86.5	86.5	B01NX3	Soil	2/11/1993	93	µg/kg					U				U				U	
299-W18-96	90	90	B01NW8	Soil	2/12/1993	332	µg/kg			16	µg/kg	J				U				U	
299-W18-96	90	90	B01NW9	Soil	2/12/1993	440	µg/kg			21	µg/kg	J				U				U	
299-W18-96	92.3	92.3	B01NX5	Soil	2/12/1993	99	µg/kg					U				U				U	
299-W18-96	92.3	92.3	B01NX7	Soil	2/12/1993	56	µg/kg					U				U				U	
299-W18-96	95	95	B01NX8	Soil	2/12/1993	124	µg/kg					U				U				U	
299-W18-96	98	98	B01NY1	Soil	2/12/1993	111	µg/kg					U				U				U	
299-W18-96	98	98	B01NY2	Soil	2/12/1993	193	µg/kg					U				U				U	
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993	242	µg/kg					U				U				U	
299-W18-96	100.5	100.5	B01NY0	Soil	2/12/1993	127	µg/kg					U				U				U	
299-W18-96	104	104	B01NY3	Soil	2/12/1993	140	µg/kg					U				U				U	
299-W18-96	110.1	110.1	B01NY4	Soil	2/16/1993	10	µg/kg	J				U				U				U	
299-W18-96	110.1	110.1	B01NY5	Soil	2/16/1993	4	µg/kg	J				U				U				U	
299-W18-96	116	116	B01NY6	Soil	2/16/1993	12	µg/kg					U				U				U	
299-W18-96	119	119	B01NY9	Soil	2/17/1993	6	µg/kg	J				U				U				U	
299-W18-96	120	120	B01NY7	Soil	2/17/1993	7	µg/kg	J				U				U				U	
299-W18-96	120	120	B01NY8	Soil	2/17/1993	2	µg/kg	J				U				U				U	
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993	41	µg/kg					U				U				U	
299-W18-96	123.5	123.5	B01NZ2	Soil	2/17/1993	52	µg/kg					U				U				U	
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993	41	µg/kg					U				U				U	
299-W18-96	125.5	125.5	B01P92	Soil	2/18/1993	68	µg/kg					U				U				U	
299-W18-96	125.5	125.5	B01P93	Soil	2/18/1993	5	µg/kg	J				U				U				U	
299-W18-96	125.5	125.5	B01P94	Soil	2/18/1993	8	µg/kg	J				U				U				U	
299-W18-96	129	129	B01NZ9	Soil	2/22/1993	65	µg/kg					U				U				U	
299-W18-96	129	129	B01P00	Soil	2/22/1993	43	µg/kg					U				U				U	
299-W18-96	129	129	B01P01	Soil	2/22/1993	28	µg/kg					U				U				U	
299-W18-96	129	129	B01P02	Soil	2/22/1993	39	µg/kg					U				U				U	
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993	16	µg/kg					U				U				U	
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993	14	µg/kg					U				U				U	
299-W18-96	130.5	130.5	B01NZ7	Soil	2/22/1993	5	µg/kg	J				U				U				U	
299-W18-96	130.5	130.5	B01NZ8	Soil	2/22/1993	4	µg/kg	J				U				U				U	
299-W18-96	134.5	134.5	B01P05	Soil	2/22/1993	111	µg/kg			44	µg/kg					U				U	
299-W18-96	134.5	134.5	B01P06	Soil	2/22/1993	17	µg/kg	J				U				U				U	
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993	786	µg/kg			7	µg/kg	J				U				U	
299-W18-96	136.5	136.5	B01P04	Soil	2/23/1993	759	µg/kg			5	µg/kg	J				U				U	

Table C-24. Volatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	138.5	138.5	B01NZ3	Soil	2/24/1993	334	µg/kg			4	µg/kg	J				U				U	
299-W18-96	138.5	138.5	B01NZ4	Soil	2/24/1993	494	µg/kg			4	µg/kg	J				U				U	
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993	861	µg/kg			5	µg/kg	J				U				U	
299-W18-96	143.8	143.8	B01P96	Soil	2/25/1993	714	µg/kg			4	µg/kg	J				U				U	
299-W18-96	143.8	143.8	B01P98	Soil	2/25/1993	626	µg/kg					U				U				U	
299-W18-96	144.5	144.5	B01PB0	Soil	2/25/1993	24	µg/kg	J		4	µg/kg	J				U				U	
299-W18-96	144.5	144.5	B01PB1	Soil	2/25/1993	28	µg/kg			3	µg/kg	J				U				U	
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993	33	µg/kg					U				U				U	
299-W18-96	146.5	146.5	B01PB2	Soil	2/25/1993	33	µg/kg					U				U				U	

Table C-24. Volatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993			U				U				U				U	
299-W18-96	86.5	86.5	B01NX1	Soil	2/11/1993			U				U				U				U	
299-W18-96	86.5	86.5	B01NX3	Soil	2/11/1993			U				U				U				U	
299-W18-96	90	90	B01NW8	Soil	2/12/1993			U				U				U				U	
299-W18-96	90	90	B01NW9	Soil	2/12/1993			U				U				U				U	
299-W18-96	92.3	92.3	B01NX5	Soil	2/12/1993			U				U				U				U	
299-W18-96	92.3	92.3	B01NX7	Soil	2/12/1993			U				U				U				U	
299-W18-96	95	95	B01NX8	Soil	2/12/1993			U				U				U				U	
299-W18-96	98	98	B01NY1	Soil	2/12/1993			U				U				U				U	
299-W18-96	98	98	B01NY2	Soil	2/12/1993			U				U				U				U	
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993			U				U				U				U	
299-W18-96	100.5	100.5	B01NY0	Soil	2/12/1993			U				U				U				U	
299-W18-96	104	104	B01NY3	Soil	2/12/1993			U				U				U				U	
299-W18-96	110.1	110.1	B01NY4	Soil	2/16/1993			U				U				U				U	
299-W18-96	110.1	110.1	B01NY5	Soil	2/16/1993			U				U				U				U	
299-W18-96	116	116	B01NY6	Soil	2/16/1993			U				U				U				U	
299-W18-96	119	119	B01NY9	Soil	2/17/1993			U				U				U				U	
299-W18-96	120	120	B01NY7	Soil	2/17/1993			U				U				U				U	
299-W18-96	120	120	B01NY8	Soil	2/17/1993			U				U				U				U	
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993			U				U				U				U	
299-W18-96	123.5	123.5	B01NZ2	Soil	2/17/1993			U				U				U				U	
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993			U		61	µg/kg					U				U	
299-W18-96	125.5	125.5	B01P92	Soil	2/18/1993			U				U				U				U	
299-W18-96	125.5	125.5	B01P93	Soil	2/18/1993			U				U				U				U	
299-W18-96	125.5	125.5	B01P94	Soil	2/18/1993			U		85	µg/kg					U				U	
299-W18-96	129	129	B01NZ9	Soil	2/22/1993			U				U				U				U	
299-W18-96	129	129	B01P00	Soil	2/22/1993			U				U				U				U	
299-W18-96	129	129	B01P01	Soil	2/22/1993			U				U				U				U	
299-W18-96	129	129	B01P02	Soil	2/22/1993			U				U				U				U	
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993			U				U				U				U	
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993			U				U				U				U	
299-W18-96	130.5	130.5	B01NZ7	Soil	2/22/1993			U		182	µg/kg					U				U	
299-W18-96	130.5	130.5	B01NZ8	Soil	2/22/1993			U				U				U				U	
299-W18-96	134.5	134.5	B01P05	Soil	2/22/1993			U				U				U				U	
299-W18-96	134.5	134.5	B01P06	Soil	2/22/1993			U				U				U				U	
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993			U				U				U				U	
299-W18-96	136.5	136.5	B01P04	Soil	2/23/1993			U				U				U				U	

Table C-24. Volatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	138.5	138.5	B01NZ3	Soil	2/24/1993			U				U				U				U	
299-W18-96	138.5	138.5	B01NZ4	Soil	2/24/1993			U				U				U				U	
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993			U				U				U				U	
299-W18-96	143.8	143.8	B01P96	Soil	2/25/1993			U				U				U				U	
299-W18-96	143.8	143.8	B01P98	Soil	2/25/1993			U				U				U				U	
299-W18-96	144.5	144.5	B01PB0	Soil	2/25/1993			U				U				U				U	
299-W18-96	144.5	144.5	B01PB1	Soil	2/25/1993			U				U				U				U	
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993			U				U				U				U	
299-W18-96	146.5	146.5	B01PB2	Soil	2/25/1993			U				U				U				U	

Table C-24. Volatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993			U				U				U	
299-W18-96	86.5	86.5	B01NX1	Soil	2/11/1993	94	µg/kg					U				U	
299-W18-96	86.5	86.5	B01NX3	Soil	2/11/1993			U				U				U	
299-W18-96	90	90	B01NW8	Soil	2/12/1993			U				U				U	
299-W18-96	90	90	B01NW9	Soil	2/12/1993			U				U				U	
299-W18-96	92.3	92.3	B01NX5	Soil	2/12/1993			U				U				U	
299-W18-96	92.3	92.3	B01NX7	Soil	2/12/1993			U				U				U	
299-W18-96	95	95	B01NX8	Soil	2/12/1993			U				U				U	
299-W18-96	98	98	B01NY1	Soil	2/12/1993			U				U				U	
299-W18-96	98	98	B01NY2	Soil	2/12/1993			U				U				U	
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993			U				U				U	
299-W18-96	100.5	100.5	B01NY0	Soil	2/12/1993			U				U				U	
299-W18-96	104	104	B01NY3	Soil	2/12/1993			U				U				U	
299-W18-96	110.1	110.1	B01NY4	Soil	2/16/1993			U				U				U	
299-W18-96	110.1	110.1	B01NY5	Soil	2/16/1993			U				U				U	
299-W18-96	116	116	B01NY6	Soil	2/16/1993			U				U				U	
299-W18-96	119	119	B01NY9	Soil	2/17/1993			U				U				U	
299-W18-96	120	120	B01NY7	Soil	2/17/1993	14	µg/kg					U				U	
299-W18-96	120	120	B01NY8	Soil	2/17/1993			U				U				U	
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993	12	µg/kg					U				U	
299-W18-96	123.5	123.5	B01NZ2	Soil	2/17/1993			U				U				U	
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993			U				U				U	
299-W18-96	125.5	125.5	B01P92	Soil	2/18/1993			U				U				U	
299-W18-96	125.5	125.5	B01P93	Soil	2/18/1993	55	µg/kg					U				U	
299-W18-96	125.5	125.5	B01P94	Soil	2/18/1993	54	µg/kg					U				U	
299-W18-96	129	129	B01NZ9	Soil	2/22/1993			U				U				U	
299-W18-96	129	129	B01P00	Soil	2/22/1993			U				U				U	
299-W18-96	129	129	B01P01	Soil	2/22/1993			U				U				U	
299-W18-96	129	129	B01P02	Soil	2/22/1993			U				U				U	
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993	7	µg/kg					U				U	
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993	12	µg/kg					U				U	
299-W18-96	130.5	130.5	B01NZ7	Soil	2/22/1993	84	µg/kg					U				U	
299-W18-96	130.5	130.5	B01NZ8	Soil	2/22/1993			U				U				U	
299-W18-96	134.5	134.5	B01P05	Soil	2/22/1993	15	µg/kg					U				U	
299-W18-96	134.5	134.5	B01P06	Soil	2/22/1993	25	µg/kg					U				U	
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993			U				U				U	
299-W18-96	136.5	136.5	B01P04	Soil	2/23/1993			U				U				U	

Table C-24. Volatile Organic Analysis Results for 299-W18-96 (216-Z-18 Crib) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	138.5	138.5	B01NZ3	Soil	2/24/1993	12	µg/kg					U				U	
299-W18-96	138.5	138.5	B01NZ4	Soil	2/24/1993	13	µg/kg					U				U	
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993			U				U				U	
299-W18-96	143.8	143.8	B01P96	Soil	2/25/1993			U				U				U	
299-W18-96	143.8	143.8	B01P98	Soil	2/25/1993			U				U				U	
299-W18-96	144.5	144.5	B01PB0	Soil	2/25/1993			U				U				U	
299-W18-96	144.5	144.5	B01PB1	Soil	2/25/1993			U				U				U	
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993			U				U				U	
299-W18-96	146.5	146.5	B01PB2	Soil	2/25/1993			U				U				U	

Table C-25. Wet Chemistry Analysis Results for Well 299-W18-96 (216-Z-18 Crib) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)			
							D4327				D4327				D4327			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993	DATACH	4400000	µg/kg			1900	µg/kg					U	
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993	DATACH	990000	µg/kg					U				U	
299-W18-96	120	120	B01NY7	Soil	2/17/1993	DATACH	12000	µg/kg					U				U	
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993	DATACH	11000	µg/kg			600	µg/kg					U	
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993	DATACH	6000	µg/kg					U				U	
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993	DATACH	2400	µg/kg					U				U	
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993	DATACH	1800	µg/kg					U		600	µg/kg		
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993	DATACH	1200	µg/kg					U				U	
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993	DATACH	1400	µg/kg					U				U	
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993	DATACH	1200	µg/kg					U				U	

Table C-25. Wet Chemistry Analysis Results for Well 299-W18-96 (216-Z-18 Crib) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chloride (16887-00-6)				Cyanide (57-12-5)				Cyanide (57-12-5)			
						D4327				9010				9012			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993	22000	µg/kg					U					
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993	6300	µg/kg					U					
299-W18-96	120	120	B01NY7	Soil	2/17/1993	3800	µg/kg					U					
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993	3900	µg/kg									U	
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993	3400	µg/kg					U					
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993	1800	µg/kg					U					
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993	1800	µg/kg					U					
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993	900	µg/kg					U					
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993	1900	µg/kg									U	
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993	1600	µg/kg									U	

Table C-25. Wet Chemistry Analysis Results for Well 299-W18-96 (216-Z-18 Crib) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-96	84	84.5	B01NW7	Soil	2/10/1993	4700	µg/kg					U		22000	µg/kg		
299-W18-96	100.5	100.5	B01NX9	Soil	2/12/1993	1000	µg/kg					U		7000	µg/kg		
299-W18-96	120	120	B01NY7	Soil	2/17/1993	1000	µg/kg					U		19000	µg/kg		
299-W18-96	123.5	123.5	B01NZ1	Soil	2/17/1993	400	µg/kg					U		15000	µg/kg		
299-W18-96	125.5	125.5	B01P91	Soil	2/18/1993	900	µg/kg					U		18000	µg/kg		
299-W18-96	130.5	130.5	B01NZ5	Soil	2/22/1993	700	µg/kg					U		8000	µg/kg		
299-W18-96	130.5	130.5	B01NZ6	Soil	2/22/1993	700	µg/kg					U		8000	µg/kg		
299-W18-96	136.5	136.5	B01P03	Soil	2/23/1993	300	µg/kg					U		3000	µg/kg		
299-W18-96	143.8	143.8	B01P95	Soil	2/25/1993	600	µg/kg			800	µg/kg	L		4800	µg/kg		
299-W18-96	146.5	146.5	B01P99	Soil	2/25/1993	300	µg/kg			1100	µg/kg			3200	µg/kg		

Table C-26. Metal Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)				Cadmium (7440-43-9)			
							6010				6010				6010				6010			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	56	56	B01PH5	Soil	3/22/1993	DATACH			U		120000	µg/kg			700	µg/kg					U	
299-W18-174	74.5	74.5	B01PH7	Soil	3/25/1993	DATACH			U		93000	µg/kg			600	µg/kg					U	
299-W18-174	93.5	93.5	B01PH9	Soil	3/30/1993	DATACH			U		63000	µg/kg			500	µg/kg					U	
299-W18-174	114.2	114.2	B01PJ1	Soil	4/5/1993	DATACH			U		79000	µg/kg			600	µg/kg					U	
299-W18-174	118.5	118.5	B01PJ3	Soil	4/5/1993	DATACH			U		160000	µg/kg			600	µg/kg					U	
299-W18-174	124.9	124.9	B01PJ5	Soil	4/6/1993	DATACH			U		110000	µg/kg			700	µg/kg					U	
299-W18-174	124.9	125.4	B01PN6	Soil	4/6/1993	DATACH			U		110000	µg/kg			700	µg/kg					U	
299-W18-174	128.9	128.9	B01PJ7	Soil	4/7/1993	DATACH			U		79000	µg/kg			500	µg/kg					U	

Table C-26. Metal Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	56	56	B01PH5	Soil	3/22/1993	11000000	µg/kg			15000	µg/kg			9000	µg/kg			24000	µg/kg		
299-W18-174	74.5	74.5	B01PH7	Soil	3/25/1993	9500000	µg/kg			10000	µg/kg			7000	µg/kg			10000	µg/kg		
299-W18-174	93.5	93.5	B01PH9	Soil	3/30/1993	11000000	µg/kg			11000	µg/kg			10000	µg/kg			23000	µg/kg		
299-W18-174	114.2	114.2	B01PJ1	Soil	4/5/1993	9900000	µg/kg			14000	µg/kg			7000	µg/kg			21000	µg/kg		
299-W18-174	118.5	118.5	B01PJ3	Soil	4/5/1993	12000000	µg/kg			19000	µg/kg			7000	µg/kg			16000	µg/kg		
299-W18-174	124.9	124.9	B01PJ5	Soil	4/6/1993	13000000	µg/kg			16000	µg/kg			9000	µg/kg			18000	µg/kg		
299-W18-174	124.9	125.4	B01PN6	Soil	4/6/1993	13000000	µg/kg			15000	µg/kg			8000	µg/kg			17000	µg/kg		
299-W18-174	128.9	128.9	B01PJ7	Soil	4/7/1993	18000000	µg/kg			17000	µg/kg			9000	µg/kg			16000	µg/kg		

Table C-26. Metal Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	56	56	B01PH5	Soil	3/22/1993	21000000	µg/kg			6000	µg/kg			6500000	µg/kg			430000	µg/kg		
299-W18-174	74.5	74.5	B01PH7	Soil	3/25/1993	18000000	µg/kg			3300	µg/kg			4900000	µg/kg			340000	µg/kg		
299-W18-174	93.5	93.5	B01PH9	Soil	3/30/1993	23000000	µg/kg			1800	µg/kg			5400000	µg/kg			270000	µg/kg		
299-W18-174	114.2	114.2	B01PJ1	Soil	4/5/1993	17000000	µg/kg			6200	µg/kg			5400000	µg/kg			320000	µg/kg		
299-W18-174	118.5	118.5	B01PJ3	Soil	4/5/1993	19000000	µg/kg			4100	µg/kg			5900000	µg/kg			340000	µg/kg		
299-W18-174	124.9	124.9	B01PJ5	Soil	4/6/1993	19000000	µg/kg			5900	µg/kg			7400000	µg/kg			330000	µg/kg		
299-W18-174	124.9	125.4	B01PN6	Soil	4/6/1993	19000000	µg/kg			11000	µg/kg			7200000	µg/kg			310000	µg/kg		
299-W18-174	128.9	128.9	B01PJ7	Soil	4/7/1993	15000000	µg/kg			4600	µg/kg			6100000	µg/kg			240000	µg/kg		

Table C-26. Metal Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	56	56	B01PH5	Soil	3/22/1993			U		13000	µg/kg			2700000	µg/kg					U	
299-W18-174	74.5	74.5	B01PH7	Soil	3/25/1993			U		9000	µg/kg			1400000	µg/kg					U	
299-W18-174	93.5	93.5	B01PH9	Soil	3/30/1993			U		15000	µg/kg			1100000	µg/kg					U	
299-W18-174	114.2	114.2	B01PJ1	Soil	4/5/1993			U		14000	µg/kg			1600000	µg/kg					U	
299-W18-174	118.5	118.5	B01PJ3	Soil	4/5/1993			U		12000	µg/kg			1800000	µg/kg					U	
299-W18-174	124.9	124.9	B01PJ5	Soil	4/6/1993			U		15000	µg/kg			2200000	µg/kg					U	
299-W18-174	124.9	125.4	B01PN6	Soil	4/6/1993			U		15000	µg/kg			2100000	µg/kg					U	
299-W18-174	128.9	128.9	B01PJ7	Soil	4/7/1993			U		16000	µg/kg			1500000	µg/kg					U	

Table C-26. Metal Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	56	56	B01PH5	Soil	3/22/1993	1300000	µg/kg					U		40000	µg/kg			52000	µg/kg		
299-W18-174	74.5	74.5	B01PH7	Soil	3/25/1993	550000	µg/kg					U		40000	µg/kg			38000	µg/kg		
299-W18-174	93.5	93.5	B01PH9	Soil	3/30/1993	1600000	µg/kg					U		52000	µg/kg			42000	µg/kg		
299-W18-174	114.2	114.2	B01PJ1	Soil	4/5/1993	510000	µg/kg					U		36000	µg/kg			41000	µg/kg		
299-W18-174	118.5	118.5	B01PJ3	Soil	4/5/1993	590000	µg/kg					U		43000	µg/kg			42000	µg/kg		
299-W18-174	124.9	124.9	B01PJ5	Soil	4/6/1993	600000	µg/kg					U		31000	µg/kg			47000	µg/kg		
299-W18-174	124.9	125.4	B01PN6	Soil	4/6/1993	580000	µg/kg					U		30000	µg/kg			45000	µg/kg		
299-W18-174	128.9	128.9	B01PJ7	Soil	4/7/1993	410000	µg/kg					U		28000	µg/kg			35000	µg/kg		

Table C-27. Semivolatile Organic Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Decane (124-18-5)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	53	53	B01PF1		3/19/1993	DATACH			U				U				U				U	
299-W18-174	56	56	B01PH5		3/22/1993	DATACH			U				U				U				U	
299-W18-174	57.5	57.5	B01PK9		3/24/1993	DATACH			U				U				U				U	
299-W18-174	61	61	B01PL1		3/24/1993	DATACH			U				U				U				U	
299-W18-174	66	66	B01PL3		3/25/1993	DATACH			U				U				U				U	
299-W18-174	71.5	71.5	B01PF3		3/25/1993	DATACH			U				U				U				U	
299-W18-174	74.5	74.5	B01PH7		3/25/1993	DATACH			U				U				U				U	
299-W18-174	76	76	B01PL5		3/26/1993	DATACH			U				U				U				U	
299-W18-174	80.6	80.6	B01PL7		3/29/1993	DATACH			U				U				U				U	
299-W18-174	86.6	86.6	B01PL9		3/29/1993	DATACH			U				U				U				U	
299-W18-174	90.4	90.4	B01PF5		3/29/1993	DATACH			U				U				U				U	
299-W18-174	93.5	93.5	B01PH9		3/30/1993	DATACH			U				U				U				U	
299-W18-174	96	96	B01PM1		3/30/1993	DATACH			U				U				U				U	
299-W18-174	101.1	101.1	B01PF7		4/1/1993	DATACH			U				U				U				U	
299-W18-174	105	105	B01PM3		4/2/1993	DATACH			U				U				U				U	
299-W18-174	111.5	111.5	B01PM5		4/2/1993	DATACH			U				U				U				U	
299-W18-174	114.2	114.2	B01PJ1		4/5/1993	DATACH			U				U				U				U	
299-W18-174	116.1	116.1	B01PM7		4/5/1993	DATACH			U				U				U				U	
299-W18-174	118.5	118.5	B01PJ3		4/5/1993	DATACH			U				U				U				U	
299-W18-174	122.2	122.2	B01PF9		4/6/1993	DATACH			U				U				U				U	
299-W18-174	124.9	124.9	B01PJ5		4/6/1993	DATACH			U				U				U				U	
299-W18-174	124.9	125.4	B01PN6		4/6/1993	DATACH			U				U				U				U	
299-W18-174	127.1	127.1	B01PG1		4/7/1993	DATACH			U				U				U				U	
299-W18-174	128.9	128.9	B01PJ7		4/7/1993	DATACH			U				U				U				U	
299-W18-174	131	131	B01PG3		4/8/1993	DATACH			U				U				U				U	

Table C-27. Semivolatile Organic Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	53	53	B01PF1		3/19/1993			U				U				U	
299-W18-174	56	56	B01PH5		3/22/1993			U				U				U	
299-W18-174	57.5	57.5	B01PK9		3/24/1993			U				U				U	
299-W18-174	61	61	B01PL1		3/24/1993			U				U				U	
299-W18-174	66	66	B01PL3		3/25/1993			U				U				U	
299-W18-174	71.5	71.5	B01PF3		3/25/1993			U				U				U	
299-W18-174	74.5	74.5	B01PH7		3/25/1993			U				U				U	
299-W18-174	76	76	B01PL5		3/26/1993			U				U				U	
299-W18-174	80.6	80.6	B01PL7		3/29/1993			U				U				U	
299-W18-174	86.6	86.6	B01PL9		3/29/1993			U				U				U	
299-W18-174	90.4	90.4	B01PF5		3/29/1993			U				U				U	
299-W18-174	93.5	93.5	B01PH9		3/30/1993			U				U				U	
299-W18-174	96	96	B01PM1		3/30/1993			U				U				U	
299-W18-174	101.1	101.1	B01PF7		4/1/1993			U				U				U	
299-W18-174	105	105	B01PM3		4/2/1993			U				U				U	
299-W18-174	111.5	111.5	B01PM5		4/2/1993			U				U				U	
299-W18-174	114.2	114.2	B01PJ1		4/5/1993			U				U				U	
299-W18-174	116.1	116.1	B01PM7		4/5/1993			U				U				U	
299-W18-174	118.5	118.5	B01PJ3		4/5/1993			U				U				U	
299-W18-174	122.2	122.2	B01PF9		4/6/1993			U				U				U	
299-W18-174	124.9	124.9	B01PJ5		4/6/1993			U				U				U	
299-W18-174	124.9	125.4	B01PN6		4/6/1993			U				U				U	
299-W18-174	127.1	127.1	B01PG1		4/7/1993			U				U				U	
299-W18-174	128.9	128.9	B01PJ7		4/7/1993			U				U				U	
299-W18-174	131	131	B01PG3		4/8/1993			U				U				U	

Table C-27. Semivolatile Organic Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phenol (108-95-2)				Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	53	53	B01PF1		3/19/1993			UJ				U				U	
299-W18-174	56	56	B01PH5		3/22/1993			U				U				U	
299-W18-174	57.5	57.5	B01PK9		3/24/1993			U				U				U	
299-W18-174	61	61	B01PL1		3/24/1993			U				U				U	
299-W18-174	66	66	B01PL3		3/25/1993			U				U				U	
299-W18-174	71.5	71.5	B01PF3		3/25/1993			U				U				U	
299-W18-174	74.5	74.5	B01PH7		3/25/1993			U				U				U	
299-W18-174	76	76	B01PL5		3/26/1993			U				U				U	
299-W18-174	80.6	80.6	B01PL7		3/29/1993			U				U				U	
299-W18-174	86.6	86.6	B01PL9		3/29/1993			U				U				U	
299-W18-174	90.4	90.4	B01PF5		3/29/1993			U				U				U	
299-W18-174	93.5	93.5	B01PH9		3/30/1993			U				U				U	
299-W18-174	96	96	B01PM1		3/30/1993			U				U				U	
299-W18-174	101.1	101.1	B01PF7		4/1/1993			U				U				U	
299-W18-174	105	105	B01PM3		4/2/1993			U				U				U	
299-W18-174	111.5	111.5	B01PM5		4/2/1993			U				U				U	
299-W18-174	114.2	114.2	B01PJ1		4/5/1993			U				U				U	
299-W18-174	116.1	116.1	B01PM7		4/5/1993			U				U				U	
299-W18-174	118.5	118.5	B01PJ3		4/5/1993			U				U				U	
299-W18-174	122.2	122.2	B01PF9		4/6/1993			U				U				U	
299-W18-174	124.9	124.9	B01PJ5		4/6/1993			U				U				U	
299-W18-174	124.9	125.4	B01PN6		4/6/1993			U				U				U	
299-W18-174	127.1	127.1	B01PG1		4/7/1993			U				U				U	
299-W18-174	128.9	128.9	B01PJ7		4/7/1993			U				U				U	
299-W18-174	131	131	B01PG3		4/8/1993			U				U				U	

Table C-28. Volatile Organic Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	53	53	B01PF0	Soil	3/22/1993	PNL1			U				U				U				U	
299-W18-174	53	53	B01PF1	Soil	3/19/1993	PNL1			U				U				U				U	
299-W18-174	56	56	B01PH4	Soil	3/22/1993	PNL1			U				U				U				U	
299-W18-174	56	56	B01PH5	Soil	3/22/1993	PNL1			U				U				U				U	
299-W18-174	57.5	57.5	B01PK8	Soil	3/24/1993	PNL1			U				U				U				U	
299-W18-174	57.5	57.5	B01PK9	Soil	3/24/1993	PNL1			U				U				U				U	
299-W18-174	61	61	B01PL0	Soil	3/24/1993	PNL1			U				U				U				U	
299-W18-174	61	61	B01PL1	Soil	3/24/1993	PNL1			U				U				U				U	
299-W18-174	65.8	65.8	B01PL2	Soil	3/25/1993	PNL1			U				U				U				U	
299-W18-174	66	66	B01PL3	Soil	3/25/1993	PNL1			U				U				U				U	
299-W18-174	71.3	71.3	B01PF2	Soil	3/25/1993	PNL1			U				U				U				U	
299-W18-174	71.5	71.5	B01PF3	Soil	3/25/1993	PNL1			U				U				U				U	
299-W18-174	74.5	74.5	B01PH6	Soil	3/25/1993	PNL1			U				U				U				U	
299-W18-174	74.5	74.5	B01PH7	Soil	3/25/1993	PNL1			U				U				U				U	
299-W18-174	75.8	75.8	B01PL4	Soil	3/26/1993	PNL1			U				U				U				U	
299-W18-174	76	76	B01PL5	Soil	3/26/1993	PNL1			U				U				U				U	
299-W18-174	80.5	80.5	B01PL6	Soil	3/29/1993	PNL1			U				U				U				U	
299-W18-174	80.6	80.6	B01PL7	Soil	3/29/1993	PNL1			U				U				U				U	
299-W18-174	86.1	86.1	B01PL8	Soil	3/29/1993	PNL1			U				U				U				U	
299-W18-174	86.6	86.6	B01PL9	Soil	3/29/1993	PNL1			U				U				U				U	
299-W18-174	90.4	90.4	B01PF4	Soil	3/29/1993	PNL1			U				U				U				U	
299-W18-174	90.4	90.4	B01PF5	Soil	3/29/1993	PNL1			U				U				U				U	
299-W18-174	93.5	93.5	B01PH8	Soil	3/30/1993	PNL1							U				U					
299-W18-174	93.5	93.5	B01PH9	Soil	3/30/1993	PNL1			UJ				U				U				UJ	
299-W18-174	96	96	B01PM0	Soil	3/30/1993	PNL1			UJ				U				U					
299-W18-174	96	96	B01PM1	Soil	3/30/1993	PNL1			UJ				U				U					
299-W18-174	101.1	101.1	B01PF6	Soil	4/1/1993	PNL1			U				U				U				U	
299-W18-174	101.1	101.1	B01PF7	Soil	4/1/1993	PNL1			U				U				U				U	
299-W18-174	105	105	B01PM2	Soil	4/2/1993	PNL1			U				U				U				U	
299-W18-174	105	105	B01PM3	Soil	4/2/1993	PNL1			U				U				U				U	
299-W18-174	111.5	111.5	B01PM4	Soil	4/2/1993	PNL1			U				U				U				U	
299-W18-174	111.5	111.5	B01PM5	Soil	4/2/1993	PNL1			U				U				U				U	
299-W18-174	114.2	114.2	B01PJ0	Soil	4/5/1993	PNL1			U				U				U				U	
299-W18-174	114.2	114.2	B01PJ1	Soil	4/5/1993	PNL1			U				U				U				U	
299-W18-174	115.8	115.8	B01PM6	Soil	4/5/1993	PNL1			U				U				U				U	
299-W18-174	116.1	116.1	B01PM7	Soil	4/5/1993	PNL1			U				U				U				U	
299-W18-174	118.5	118.5	B01PJ2	Soil	4/5/1993	PNL1			U				U				U				U	

Table C-28. Volatile Organic Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	118.5	118.5	B01PJ3	Soil	4/5/1993	PNL1			U				U				U				U	
299-W18-174	122.1	122.1	B01PF8	Soil	4/6/1993	PNL1			U				U				U				U	
299-W18-174	122.1	122.1	B01PN4	Soil	4/6/1993	PNL1			U				U				U				U	
299-W18-174	122.2	122.2	B01PF9	Soil	4/6/1993	PNL1			U				U				U				U	
299-W18-174	122.2	122.2	B01PN5	Soil	4/6/1993	PNL1			U				U				U				U	
299-W18-174	124.9	124.9	B01PJ4	Soil	4/6/1993	PNL1			U				U				U				U	
299-W18-174	124.9	124.9	B01PJ5	Soil	4/6/1993	PNL1			U				U				U				U	
299-W18-174	124.9	124.9	B01PN2	Soil	4/6/1993	PNL1			U				U				U				U	
299-W18-174	124.9	124.9	B01PN3	Soil	4/6/1993	PNL1			U				U				U				U	
299-W18-174	126.8	126.8	B01PG0	Soil	4/7/1993	PNL1			U				U				U				U	
299-W18-174	127.1	127.1	B01PG1	Soil	4/7/1993	PNL1			U				U				U				U	
299-W18-174	128.9	128.9	B01PJ6	Soil	4/7/1993	PNL1			U				U				U				U	
299-W18-174	128.9	128.9	B01PJ7	Soil	4/7/1993	PNL1			U				U				U				U	
299-W18-174	130.4	130.4	B01PG2	Soil	4/8/1993	PNL1			U				U				U				U	
299-W18-174	131	131	B01PG3	Soil	4/8/1993	PNL1			U				U				U				U	

Table C-28. Volatile Organic Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	53	53	B01PF0	Soil	3/22/1993	31	µg/kg					U				U				U	
299-W18-174	53	53	B01PF1	Soil	3/19/1993	28	µg/kg	J				U				U				U	
299-W18-174	56	56	B01PH4	Soil	3/22/1993	41	µg/kg					U				U				U	
299-W18-174	56	56	B01PH5	Soil	3/22/1993	95	µg/kg					U				U				U	
299-W18-174	57.5	57.5	B01PK8	Soil	3/24/1993	75	µg/kg					U				U				U	
299-W18-174	57.5	57.5	B01PK9	Soil	3/24/1993	143	µg/kg			8	µg/kg	J				U				U	
299-W18-174	61	61	B01PL0	Soil	3/24/1993	83	µg/kg					U				U				U	
299-W18-174	61	61	B01PL1	Soil	3/24/1993	126	µg/kg					U				U				U	
299-W18-174	65.8	65.8	B01PL2	Soil	3/25/1993	69	µg/kg					U				U				U	
299-W18-174	66	66	B01PL3	Soil	3/25/1993	150	µg/kg					U				U				U	
299-W18-174	71.3	71.3	B01PF2	Soil	3/25/1993	52	µg/kg					U				U				U	
299-W18-174	71.5	71.5	B01PF3	Soil	3/25/1993	349	µg/kg			20	µg/kg					U				U	
299-W18-174	74.5	74.5	B01PH6	Soil	3/25/1993	151	µg/kg					U				U				U	
299-W18-174	74.5	74.5	B01PH7	Soil	3/25/1993	337	µg/kg					U				U				U	
299-W18-174	75.8	75.8	B01PL4	Soil	3/26/1993	67	µg/kg			6	µg/kg	J				U				U	
299-W18-174	76	76	B01PL5	Soil	3/26/1993	67	µg/kg			5	µg/kg	J				U				U	
299-W18-174	80.5	80.5	B01PL6	Soil	3/29/1993	56	µg/kg					U				U				U	
299-W18-174	80.6	80.6	B01PL7	Soil	3/29/1993	51	µg/kg					U				U				U	
299-W18-174	86.1	86.1	B01PL8	Soil	3/29/1993	35	µg/kg					U				U				U	
299-W18-174	86.6	86.6	B01PL9	Soil	3/29/1993	60	µg/kg					U				U				U	
299-W18-174	90.4	90.4	B01PF4	Soil	3/29/1993	18	µg/kg	J				U				U				U	
299-W18-174	90.4	90.4	B01PF5	Soil	3/29/1993	6	µg/kg	J				U				U				U	
299-W18-174	93.5	93.5	B01PH8	Soil	3/30/1993	13	µg/kg	J								U				U	
299-W18-174	93.5	93.5	B01PH9	Soil	3/30/1993	15	µg/kg	J				UJ				U				UJ	
299-W18-174	96	96	B01PM0	Soil	3/30/1993	13	µg/kg	J				UJ				U				UJ	
299-W18-174	96	96	B01PM1	Soil	3/30/1993	19	µg/kg	J				UJ				U					
299-W18-174	101.1	101.1	B01PF6	Soil	4/1/1993	3	µg/kg	J				U				U				U	
299-W18-174	101.1	101.1	B01PF7	Soil	4/1/1993	2	µg/kg	J				U				U				U	
299-W18-174	105	105	B01PM2	Soil	4/2/1993	3	µg/kg	J				U				U				U	
299-W18-174	105	105	B01PM3	Soil	4/2/1993			U				U				U				U	
299-W18-174	111.5	111.5	B01PM4	Soil	4/2/1993	24	µg/kg	J				U				U				U	
299-W18-174	111.5	111.5	B01PM5	Soil	4/2/1993	103	µg/kg					U				U				U	
299-W18-174	114.2	114.2	B01PJ0	Soil	4/5/1993	246	µg/kg					U				U				U	
299-W18-174	114.2	114.2	B01PJ1	Soil	4/5/1993	498	µg/kg					U				U				U	
299-W18-174	115.8	115.8	B01PM6	Soil	4/5/1993	34	µg/kg					U				U				U	
299-W18-174	116.1	116.1	B01PM7	Soil	4/5/1993	230	µg/kg					U				U				U	
299-W18-174	118.5	118.5	B01PJ2	Soil	4/5/1993	37	µg/kg					U				U				U	

Table C-28. Volatile Organic Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	118.5	118.5	B01PJ3	Soil	4/5/1993	68	µg/kg					U				U				U	
299-W18-174	122.1	122.1	B01PF8	Soil	4/6/1993	20	µg/kg					U				U				U	
299-W18-174	122.1	122.1	B01PN4	Soil	4/6/1993	26	µg/kg					U				U				U	
299-W18-174	122.2	122.2	B01PF9	Soil	4/6/1993	427	µg/kg			40	µg/kg					U				U	
299-W18-174	122.2	122.2	B01PN5	Soil	4/6/1993	357	µg/kg			85	µg/kg					U				U	
299-W18-174	124.9	124.9	B01PJ4	Soil	4/6/1993	789	µg/kg			12	µg/kg	J				U				U	
299-W18-174	124.9	124.9	B01PJ5	Soil	4/6/1993	1247	µg/kg			19	µg/kg	J				U				U	
299-W18-174	124.9	124.9	B01PN2	Soil	4/6/1993	796	µg/kg					U				U				U	
299-W18-174	124.9	124.9	B01PN3	Soil	4/6/1993	890	µg/kg					U				U				U	
299-W18-174	126.8	126.8	B01PG0	Soil	4/7/1993	749	µg/kg			38	µg/kg					U				U	
299-W18-174	127.1	127.1	B01PG1	Soil	4/7/1993	6561	µg/kg	D		120	µg/kg					U				U	
299-W18-174	128.9	128.9	B01PJ6	Soil	4/7/1993	3088	µg/kg	D		63	µg/kg					U				U	
299-W18-174	128.9	128.9	B01PJ7	Soil	4/7/1993	4124	µg/kg	D		95	µg/kg					U				U	
299-W18-174	130.4	130.4	B01PG2	Soil	4/8/1993	374	µg/kg			50	µg/kg					U				U	
299-W18-174	131	131	B01PG3	Soil	4/8/1993	317	µg/kg			135	µg/kg					U				U	

Table C-28. Volatile Organic Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	53	53	B01PF0	Soil	3/22/1993			U				U				U				U	
299-W18-174	53	53	B01PF1	Soil	3/19/1993			U				U				U				U	
299-W18-174	56	56	B01PH4	Soil	3/22/1993			U				U				U				U	
299-W18-174	56	56	B01PH5	Soil	3/22/1993			U				U				U				U	
299-W18-174	57.5	57.5	B01PK8	Soil	3/24/1993			U				U				U				U	
299-W18-174	57.5	57.5	B01PK9	Soil	3/24/1993			U				U				U		5	µg/kg		
299-W18-174	61	61	B01PL0	Soil	3/24/1993			U				U				U		4	µg/kg	J	
299-W18-174	61	61	B01PL1	Soil	3/24/1993			U				U				U		7	µg/kg		
299-W18-174	65.8	65.8	B01PL2	Soil	3/25/1993			U				U				U				U	
299-W18-174	66	66	B01PL3	Soil	3/25/1993			U				U				U				U	
299-W18-174	71.3	71.3	B01PF2	Soil	3/25/1993			U				U				U				U	
299-W18-174	71.5	71.5	B01PF3	Soil	3/25/1993			U				U				U		4	µg/kg	J	
299-W18-174	74.5	74.5	B01PH6	Soil	3/25/1993			U				U				U				U	
299-W18-174	74.5	74.5	B01PH7	Soil	3/25/1993			U				U				U				U	
299-W18-174	75.8	75.8	B01PL4	Soil	3/26/1993			U				U				U		3	µg/kg	J	
299-W18-174	76	76	B01PL5	Soil	3/26/1993			U				U				U		3	µg/kg	J	
299-W18-174	80.5	80.5	B01PL6	Soil	3/29/1993			U				U				U				U	
299-W18-174	80.6	80.6	B01PL7	Soil	3/29/1993			U				U				U				U	
299-W18-174	86.1	86.1	B01PL8	Soil	3/29/1993			U				U				U				U	
299-W18-174	86.6	86.6	B01PL9	Soil	3/29/1993			U				U				U				U	
299-W18-174	90.4	90.4	B01PF4	Soil	3/29/1993			U				U				U				U	
299-W18-174	90.4	90.4	B01PF5	Soil	3/29/1993			U				U				U				U	
299-W18-174	93.5	93.5	B01PH8	Soil	3/30/1993			U								U				U	
299-W18-174	93.5	93.5	B01PH9	Soil	3/30/1993			U								U				UJ	
299-W18-174	96	96	B01PM0	Soil	3/30/1993			U								U				UJ	
299-W18-174	96	96	B01PM1	Soil	3/30/1993			U								U				UJ	
299-W18-174	101.1	101.1	B01PF6	Soil	4/1/1993			U				U				U				U	
299-W18-174	101.1	101.1	B01PF7	Soil	4/1/1993			U				U				U				U	
299-W18-174	105	105	B01PM2	Soil	4/2/1993			U				U				U				U	
299-W18-174	105	105	B01PM3	Soil	4/2/1993			U				U				U				U	
299-W18-174	111.5	111.5	B01PM4	Soil	4/2/1993			U				U				U				U	
299-W18-174	111.5	111.5	B01PM5	Soil	4/2/1993			U				U				U				U	
299-W18-174	114.2	114.2	B01PJ0	Soil	4/5/1993			U				U				U				U	
299-W18-174	114.2	114.2	B01PJ1	Soil	4/5/1993			U				U				U				U	
299-W18-174	115.8	115.8	B01PM6	Soil	4/5/1993			U				U				U				U	
299-W18-174	116.1	116.1	B01PM7	Soil	4/5/1993			U				U				U				U	
299-W18-174	118.5	118.5	B01PJ2	Soil	4/5/1993			U				U				U				U	

Table C-28. Volatile Organic Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	118.5	118.5	B01PJ3	Soil	4/5/1993			U				U				U				U	
299-W18-174	122.1	122.1	B01PF8	Soil	4/6/1993			U				U				U				U	
299-W18-174	122.1	122.1	B01PN4	Soil	4/6/1993			U				U				U				U	
299-W18-174	122.2	122.2	B01PF9	Soil	4/6/1993			U				U				U				U	
299-W18-174	122.2	122.2	B01PN5	Soil	4/6/1993			U				U				U				U	
299-W18-174	124.9	124.9	B01PJ4	Soil	4/6/1993			U				U				U				U	
299-W18-174	124.9	124.9	B01PJ5	Soil	4/6/1993			U				U				U		8	µg/kg	J	
299-W18-174	124.9	124.9	B01PN2	Soil	4/6/1993			U				U				U				U	
299-W18-174	124.9	124.9	B01PN3	Soil	4/6/1993			U				U				U				U	
299-W18-174	126.8	126.8	B01PG0	Soil	4/7/1993			U				U				U		24	µg/kg		
299-W18-174	127.1	127.1	B01PG1	Soil	4/7/1993			U				U				U		29	µg/kg		
299-W18-174	128.9	128.9	B01PJ6	Soil	4/7/1993			U				U				U		33	µg/kg		
299-W18-174	128.9	128.9	B01PJ7	Soil	4/7/1993			U				U				U		50	µg/kg		
299-W18-174	130.4	130.4	B01PG2	Soil	4/8/1993			U				U				U		34	µg/kg		
299-W18-174	131	131	B01PG3	Soil	4/8/1993			U				U				U		47	µg/kg		

Table C-28. Volatile Organic Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	53	53	B01PF0	Soil	3/22/1993			U				U				U	
299-W18-174	53	53	B01PF1	Soil	3/19/1993			U				U				U	
299-W18-174	56	56	B01PH4	Soil	3/22/1993			U				U				U	
299-W18-174	56	56	B01PH5	Soil	3/22/1993			U				U				U	
299-W18-174	57.5	57.5	B01PK8	Soil	3/24/1993			U				U				U	
299-W18-174	57.5	57.5	B01PK9	Soil	3/24/1993			U				U				U	
299-W18-174	61	61	B01PL0	Soil	3/24/1993			U				U				U	
299-W18-174	61	61	B01PL1	Soil	3/24/1993			U				U				U	
299-W18-174	65.8	65.8	B01PL2	Soil	3/25/1993			U				U				U	
299-W18-174	66	66	B01PL3	Soil	3/25/1993			U				U				U	
299-W18-174	71.3	71.3	B01PF2	Soil	3/25/1993	6	µg/kg					U				U	
299-W18-174	71.5	71.5	B01PF3	Soil	3/25/1993	40	µg/kg					U				U	
299-W18-174	74.5	74.5	B01PH6	Soil	3/25/1993			U				U				U	
299-W18-174	74.5	74.5	B01PH7	Soil	3/25/1993			U				U				U	
299-W18-174	75.8	75.8	B01PL4	Soil	3/26/1993			U				U				U	
299-W18-174	76	76	B01PL5	Soil	3/26/1993			U				U				U	
299-W18-174	80.5	80.5	B01PL6	Soil	3/29/1993			U				U				U	
299-W18-174	80.6	80.6	B01PL7	Soil	3/29/1993			U				U				U	
299-W18-174	86.1	86.1	B01PL8	Soil	3/29/1993			U				U				U	
299-W18-174	86.6	86.6	B01PL9	Soil	3/29/1993			U				U				U	
299-W18-174	90.4	90.4	B01PF4	Soil	3/29/1993			U				U				U	
299-W18-174	90.4	90.4	B01PF5	Soil	3/29/1993			U				U				U	
299-W18-174	93.5	93.5	B01PH8	Soil	3/30/1993							U				U	
299-W18-174	93.5	93.5	B01PH9	Soil	3/30/1993			UJ				U				U	
299-W18-174	96	96	B01PM0	Soil	3/30/1993							U				U	
299-W18-174	96	96	B01PM1	Soil	3/30/1993							U				U	
299-W18-174	101.1	101.1	B01PF6	Soil	4/1/1993			U				U				U	
299-W18-174	101.1	101.1	B01PF7	Soil	4/1/1993			U				U				U	
299-W18-174	105	105	B01PM2	Soil	4/2/1993			U				U				U	
299-W18-174	105	105	B01PM3	Soil	4/2/1993			U				U				U	
299-W18-174	111.5	111.5	B01PM4	Soil	4/2/1993			U				U				U	
299-W18-174	111.5	111.5	B01PM5	Soil	4/2/1993			U				U				U	
299-W18-174	114.2	114.2	B01PJ0	Soil	4/5/1993			U				U				U	
299-W18-174	114.2	114.2	B01PJ1	Soil	4/5/1993			U				U				U	
299-W18-174	115.8	115.8	B01PM6	Soil	4/5/1993			U				U				U	
299-W18-174	116.1	116.1	B01PM7	Soil	4/5/1993			U				U				U	
299-W18-174	118.5	118.5	B01PJ2	Soil	4/5/1993			U				U				U	

Table C-28. Volatile Organic Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	118.5	118.5	B01PJ3	Soil	4/5/1993			U				U				U	
299-W18-174	122.1	122.1	B01PF8	Soil	4/6/1993			U				U				U	
299-W18-174	122.1	122.1	B01PN4	Soil	4/6/1993			U				U				U	
299-W18-174	122.2	122.2	B01PF9	Soil	4/6/1993			U				U				U	
299-W18-174	122.2	122.2	B01PN5	Soil	4/6/1993			U				U				U	
299-W18-174	124.9	124.9	B01PJ4	Soil	4/6/1993			U				U				U	
299-W18-174	124.9	124.9	B01PJ5	Soil	4/6/1993			U				U				U	
299-W18-174	124.9	124.9	B01PN2	Soil	4/6/1993			U				U				U	
299-W18-174	124.9	124.9	B01PN3	Soil	4/6/1993			U				U				U	
299-W18-174	126.8	126.8	B01PG0	Soil	4/7/1993			U				U		31	µg/kg		
299-W18-174	127.1	127.1	B01PG1	Soil	4/7/1993			U				U		41	µg/kg		
299-W18-174	128.9	128.9	B01PJ6	Soil	4/7/1993			U				U		42	µg/kg		
299-W18-174	128.9	128.9	B01PJ7	Soil	4/7/1993			U				U		68	µg/kg		
299-W18-174	130.4	130.4	B01PG2	Soil	4/8/1993			U				U		44	µg/kg		
299-W18-174	131	131	B01PG3	Soil	4/8/1993			U				U		61	µg/kg		

Table C-29. Wet Chemistry Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)				Chloride (16887-00-6)			
							D4327				D4327				D4327				D4327			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	56	56	B01PH5		3/22/1993	DATACH	250000	µg/kg			600	µg/kg					U		6300	µg/kg		
299-W18-174	74.5	74.5	B01PH7		3/25/1993	DATACH	4500	µg/kg					U				U		1000	µg/kg		
299-W18-174	93.5	93.5	B01PH9		3/30/1993	DATACH	7200	µg/kg			500	µg/kg					U		1500	µg/kg		
299-W18-174	114.2	114.2	B01PJ1		4/5/1993	DATACH	3300	µg/kg					U				U		700	µg/kg		
299-W18-174	118.5	118.5	B01PJ3		4/5/1993	DATACH	13000	µg/kg					U				U		600	µg/kg		
299-W18-174	124.9	124.9	B01PJ5		4/6/1993	DATACH	8800	µg/kg					U				U		3400	µg/kg		
299-W18-174	124.9	125.4	B01PN6		4/6/1993	DATACH	8100	µg/kg					U				U		3100	µg/kg		
299-W18-174	128.9	128.9	B01PJ7		4/7/1993	DATACH	7300	µg/kg					U				U		2300	µg/kg		

Table C-29. Wet Chemistry Analysis Results for Well 299-W18-174 (216-Z-1A Tile Field) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-174	56	56	B01PH5		3/22/1993			U		15000	µg/kg			1000	µg/kg			10000	µg/kg		
299-W18-174	74.5	74.5	B01PH7		3/25/1993			U		3300	µg/kg					U		3000	µg/kg		
299-W18-174	93.5	93.5	B01PH9		3/30/1993			U		7300	µg/kg					U		6000	µg/kg		
299-W18-174	114.2	114.2	B01PJ1		4/5/1993			U		7900	µg/kg					U		3000	µg/kg		
299-W18-174	118.5	118.5	B01PJ3		4/5/1993			U		7500	µg/kg					U		2000	µg/kg		
299-W18-174	124.9	124.9	B01PJ5		4/6/1993			U		16000	µg/kg					U		8000	µg/kg		
299-W18-174	124.9	125.4	B01PN6		4/6/1993			U		15000	µg/kg					U		7000	µg/kg		
299-W18-174	128.9	128.9	B01PJ7		4/7/1993			U		16000	µg/kg					U		8000	µg/kg		

Table C-30. Metal Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)				Cadmium (7440-43-9)			
							6010				6010				6010				6010			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0	Soil	3/27/1992	DATACH			U		98000	µg/kg					U				U	
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992	DATACH			U		58000	µg/kg			400	µg/kg					U	
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992	DATACH			U		97000	µg/kg			500	µg/kg					U	
299-W18-246	146	146.5	B066R2	Soil	4/20/1992	DATACH			U		75000	µg/kg					U				U	
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992	DATACH			U		30000	µg/kg					U				U	

Table C-30. Metal Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0	Soil	3/27/1992	9700000	µg/kg			13000	µg/kg			8000	µg/kg			17000	µg/kg		
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992	9000000	µg/kg			14000	µg/kg			6000	µg/kg			22000	µg/kg		
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992	20000000	µg/kg			22000	µg/kg			6000	µg/kg			34000	µg/kg		
299-W18-246	146	146.5	B066R2	Soil	4/20/1992	190000000	µg/kg			6000	µg/kg			4000	µg/kg			22000	µg/kg		
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992	2300000	µg/kg			14000	µg/kg			5000	µg/kg			36000	µg/kg		

Table C-30. Metal Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0	Soil	3/27/1992	22000000	µg/kg							5100000	µg/kg			380000	µg/kg		
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992	18000000	µg/kg			3300	µg/kg			4700000	µg/kg			250000	µg/kg		
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992	17000000	µg/kg			5300	µg/kg			8500000	µg/kg			270000	µg/kg		
299-W18-246	146	146.5	B066R2	Soil	4/20/1992	5600000	µg/kg			2000	µg/kg			21000000	µg/kg			120000	µg/kg		
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992	10000000	µg/kg			5000	µg/kg	D		3000000	µg/kg			190000	µg/kg		

Table C-30. Metal Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0	Soil	3/27/1992			U		11000	µg/kg			1700000	µg/kg					U	
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992			U		12000	µg/kg			1100000	µg/kg					U	
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992			U		17000	µg/kg			2600000	µg/kg					U	
299-W18-246	146	146.5	B066R2	Soil	4/20/1992			U		6000	µg/kg			840000	µg/kg					U	
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992			U		16000	µg/kg			620000	µg/kg					U	

Table C-30. Metal Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0	Soil	3/27/1992	410000	µg/kg					U		57000	µg/kg			45000	µg/kg		
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992	310000	µg/kg					U		40000	µg/kg			41000	µg/kg		
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992	400000	µg/kg					U		31000	µg/kg			40000	µg/kg		
299-W18-246	146	146.5	B066R2	Soil	4/20/1992	440000	µg/kg					U		23000	µg/kg			12000	µg/kg		
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992	290000	µg/kg					U		16000	µg/kg			22000	µg/kg		

Table C-31. Semivolatile Organic Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Decane (124-18-5)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0	Soil	3/27/1992	DATACH			U				U				U				U	
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992	DATACH			U				U				U				U	
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992	DATACH			U				U				U				U	
299-W18-246	146	146.5	B066R2	Soil	4/20/1992	DATACH			U				U				U				U	
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992	DATACH			U				U				U				U	

Table C-31. Semivolatile Organic Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0	Soil	3/27/1992			U				U				U	
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992			U				U				U	
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992			U				U				U	
299-W18-246	146	146.5	B066R2	Soil	4/20/1992			U				U				U	
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992			U				U				U	

Table C-31. Semivolatile Organic Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phenol (108-95-2)				Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0	Soil	3/27/1992			U				U				U	
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992			U				U				U	
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992			U				U				U	
299-W18-246	146	146.5	B066R2	Soil	4/20/1992	880	µg/kg					U				U	
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992			U				U				U	

Table C-32. Volatile Organic Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS2	Soil	3/27/1992	PNL1			U				U								U	
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992	PNL1			U				U								U	
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992	PNL1			U				U								U	
299-W18-246	146	146.5	B066R2	Soil	4/20/1992	PNL1			U				U								U	
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992	PNL1			U				U								U	

Table C-32. Volatile Organic Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS2	Soil	3/27/1992	133	µg/kg			3	µg/kg	J				U				U	
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992	10	µg/kg					U				U				U	
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992	261	µg/kg					U				U				U	
299-W18-246	146	146.5	B066R2	Soil	4/20/1992	772	µg/kg					U				U				U	
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992			U				U				U				U	

Table C-32. Volatile Organic Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS2	Soil	3/27/1992			U								U		3	µg/kg		
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992			U								U				U	
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992			U								U				U	
299-W18-246	146	146.5	B066R2	Soil	4/20/1992			U								U				U	
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992			U		19854	µg/kg					U				U	

Table C-32. Volatile Organic Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)				Xylenes (total) (1330-20-7)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS2	Soil	3/27/1992			U				U		1	µg/kg						
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992			U				U				U					
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992	126	µg/kg					U				U					
299-W18-246	146	146.5	B066R2	Soil	4/20/1992			U								U					
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992			U				U				U					

Table C-33. Wet Chemistry Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)				Chloride (16887-00-6)			
							D4327				D4327				D4327				D4327			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0	Soil	3/27/1992	DATACH	11000	µg/kg					U				U		20000	µg/kg		
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992	DATACH	7400	µg/kg					U				U		3500	µg/kg		
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992	DATACH	6600	µg/kg					U				U		1200	µg/kg		
299-W18-246	146	146.5	B066R2	Soil	4/20/1992	DATACH	10000	µg/kg					U				U		2000	µg/kg		
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992	DATACH	3100	µg/kg					U				U		3500	µg/kg		

Table C-33. Wet Chemistry Analysis Results for Well 299-W18-246 (216-Z-1A Tile Field) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-246	56.3	56.8	B01WS0	Soil	3/27/1992			U				U				U		45000	µg/kg		
299-W18-246	106.5	107	B01WT5	Soil	4/13/1992			U		500	µg/kg					U		12000	µg/kg		
299-W18-246	141.8	142.3	B01WQ0	Soil	4/16/1992			U		400	µg/kg					U		6000	µg/kg		
299-W18-246	146	146.5	B066R2	Soil	4/20/1992			U		2800	µg/kg					U		19000	µg/kg		
299-W18-246	194.4	194.9	B066S8	Soil	4/30/1992			U		900	µg/kg					U		3100	µg/kg		

Table C-34. Metal Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)				Cadmium (7440-43-9)			
							6010				6010				6010				6010			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992	DATACH			U		120000	µg/kg			400	µg/kg					U	
299-W18-247	110.5	111	B01WF9	Soil	3/18/1992	DATACH			U		54000	µg/kg			400	µg/kg					U	
299-W18-247	135.4	135.9	B01WJ5	Soil	3/19/1992	DATACH			U		160000	µg/kg			1000	µg/kg					U	
299-W18-247	149.5	150	B01WK5	Soil	3/20/1992	DATACH			U		120000	µg/kg			500	µg/kg					U	
299-W18-247	154.7	155.2	B01WL2	Soil	3/25/1992	DATACH			U		120000	µg/kg			500	µg/kg			1000	µg/kg		

Table C-34. Metal Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992	11000000	µg/kg			11000	µg/kg			14000	µg/kg			22000	µg/kg		
299-W18-247	110.5	111	B01WF9	Soil	3/18/1992	6800000	µg/kg			14000	µg/kg			5000	µg/kg			14000	µg/kg		
299-W18-247	135.4	135.9	B01WJ5	Soil	3/19/1992	13000000	µg/kg			24000	µg/kg			9000	µg/kg			23000	µg/kg		
299-W18-247	149.5	150	B01WK5	Soil	3/20/1992	80000000	µg/kg			17000	µg/kg			8000	µg/kg			41000	µg/kg		
299-W18-247	154.7	155.2	B01WL2	Soil	3/25/1992	48000000	µg/kg			28000	µg/kg			8000	µg/kg			25000	µg/kg		

Table C-34. Metal Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992	33000000	µg/kg			5100	µg/kg			5900000	µg/kg			520000	µg/kg		
299-W18-247	110.5	111	B01WF9	Soil	3/18/1992	16000000	µg/kg			3300	µg/kg			4300000	µg/kg			240000	µg/kg		
299-W18-247	135.4	135.9	B01WJ5	Soil	3/19/1992	22000000	µg/kg			14000	µg/kg			7900000	µg/kg			440000	µg/kg		
299-W18-247	149.5	150	B01WK5	Soil	3/20/1992	22000000	µg/kg			5800	µg/kg			7100000	µg/kg			230000	µg/kg		
299-W18-247	154.7	155.2	B01WL2	Soil	3/25/1992	21000000	µg/kg			3700	µg/kg			6600000	µg/kg			360000	µg/kg		

Table C-34. Metal Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992			U		11000	µg/kg			1800000	µg/kg					U	
299-W18-247	110.5	111	B01WF9	Soil	3/18/1992			U		10000	µg/kg			1100000	µg/kg					U	
299-W18-247	135.4	135.9	B01WJ5	Soil	3/19/1992			U		18000	µg/kg			5000000	µg/kg					U	
299-W18-247	149.5	150	B01WK5	Soil	3/20/1992			U		12000	µg/kg			3100000	µg/kg					U	
299-W18-247	154.7	155.2	B01WL2	Soil	3/25/1992			U		18000	µg/kg			2200000	µg/kg					U	

Table C-34. Metal Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992	690000	µg/kg					U		86000	µg/kg			62000	µg/kg		
299-W18-247	110.5	111	B01WF9	Soil	3/18/1992	280000	µg/kg					U		36000	µg/kg			35000	µg/kg		
299-W18-247	135.4	135.9	B01WJ5	Soil	3/19/1992	350000	µg/kg					U		41000	µg/kg			63000	µg/kg		
299-W18-247	149.5	150	B01WK5	Soil	3/20/1992	1100000	µg/kg					U		69000	µg/kg			46000	µg/kg		
299-W18-247	154.7	155.2	B01WL2	Soil	3/25/1992	590000	µg/kg					U		49000	µg/kg			43000	µg/kg		

Table C-35. Semivolatile Organic Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Decane (124-18-5)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992	DATACH			U				U				U				U	
299-W18-247	110.5	111	B01WF9	Soil	3/18/1992	DATACH			U				U				U				U	
299-W18-247	135.4	135.9	B01WJ5	Soil	3/19/1992	DATACH			U				U				U				U	
299-W18-247	149.5	150	B01WK5	Soil	3/20/1992	DATACH			U				U				U				U	
299-W18-247	154.7	155.2	B01WL2	Soil	3/25/1992	DATACH			U				U				U				U	

Table C-35. Semivolatile Organic Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992			U				U				U	
299-W18-247	110.5	111	B01WF9	Soil	3/18/1992			U				U				U	
299-W18-247	135.4	135.9	B01WJ5	Soil	3/19/1992			U				U				U	
299-W18-247	149.5	150	B01WK5	Soil	3/20/1992			U				U				U	
299-W18-247	154.7	155.2	B01WL2	Soil	3/25/1992			U				U				U	

Table C-35. Semivolatile Organic Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phenol (108-95-2)				Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992	160	µg/kg	J				U				U	
299-W18-247	110.5	111	B01WF9	Soil	3/18/1992			U				U				U	
299-W18-247	135.4	135.9	B01WJ5	Soil	3/19/1992	340	µg/kg					U				U	
299-W18-247	149.5	150	B01WK5	Soil	3/20/1992	520	µg/kg					U				U	
299-W18-247	154.7	155.2	B01WL2	Soil	3/25/1992	700	µg/kg					U				U	

Table C-36. Volatile Organic Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992	PNL1			U				U								U	
299-W18-247	110.5	111	B01WG2	Soil	3/18/1992	PNL1			U				U								U	
299-W18-247	134.9	135.4	B01WH6	Soil	3/19/1992	PNL1			U				U								U	
299-W18-247	148	148.5	B01WK1	Soil	3/20/1992	PNL1			U				U								U	
299-W18-247	154.2	154.7	B01WL4	Soil	3/25/1992	PNL1			U				U								U	

Table C-36. Volatile Organic Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992	13	µg/kg					U				U		61	µg/kg		
299-W18-247	110.5	111	B01WG2	Soil	3/18/1992	17	µg/kg					U				U				U	
299-W18-247	134.9	135.4	B01WH6	Soil	3/19/1992	717	µg/kg			4	µg/kg	J				U		1	µg/kg	J	
299-W18-247	148	148.5	B01WK1	Soil	3/20/1992	47	µg/kg					U				U				U	
299-W18-247	154.2	154.7	B01WL4	Soil	3/25/1992	0.3	µg/kg	J				U				U				U	

Table C-36. Volatile Organic Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992	266	µg/kg							150	µg/kg					U	
299-W18-247	110.5	111	B01WG2	Soil	3/18/1992			U								U				U	
299-W18-247	134.9	135.4	B01WH6	Soil	3/19/1992	5	µg/kg	J						3	µg/kg	J				U	
299-W18-247	148	148.5	B01WK1	Soil	3/20/1992			U								U				U	
299-W18-247	154.2	154.7	B01WL4	Soil	3/25/1992			U								U				U	

Table C-36. Volatile Organic Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)				Xylenes (total) (1330-20-7)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992	3427	µg/kg					U				U					
299-W18-247	110.5	111	B01WG2	Soil	3/18/1992			U				U				U					
299-W18-247	134.9	135.4	B01WH6	Soil	3/19/1992	333	µg/kg					U				U					
299-W18-247	148	148.5	B01WK1	Soil	3/20/1992			U				U				U					
299-W18-247	154.2	154.7	B01WL4	Soil	3/25/1992			U				U				U					

Table C-37. Wet Chemistry Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)				Chloride (16887-00-6)			
							D4327				D4327				D4327				D4327			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992	DATACH	3400	µg/kg					U				U		4200	µg/kg		
299-W18-247	110.5	111	B01WF9	Soil	3/18/1992	DATACH	600	µg/kg					U				U		400	µg/kg		
299-W18-247	135.4	135.9	B01WJ5	Soil	3/19/1992	DATACH	900	µg/kg					U				U		1200	µg/kg		
299-W18-247	149.5	150	B01WK5	Soil	3/20/1992	DATACH	1700	µg/kg					U				U		3100	µg/kg		
299-W18-247	154.7	155.2	B01WL2	Soil	3/25/1992	DATACH	1300	µg/kg					U				U		1100	µg/kg		

Table C-37. Wet Chemistry Analysis Results for Well 299-W18-247 (216-Z-18 Crib) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-247	55.6	56.1	B01WD0	Soil	3/4/1992			U		300	µg/kg					U		5800	µg/kg		
299-W18-247	110.5	111	B01WF9	Soil	3/18/1992			U				U				U		2800	µg/kg		
299-W18-247	135.4	135.9	B01WJ5	Soil	3/19/1992			U		600	µg/kg					U		4300	µg/kg		
299-W18-247	149.5	150	B01WK5	Soil	3/20/1992			U		1100	µg/kg					U		6500	µg/kg		
299-W18-247	154.7	155.2	B01WL2	Soil	3/25/1992			U		1600	µg/kg					U		5800	µg/kg		

Table C-38. Metal Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)				Cadmium (7440-43-9)			
							6010				6010				6010				6010			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1	Soil	5/4/1992	DATACH			U		65000	µg/kg			300	µg/kg					U	
299-W18-248	39.5	40	B06JS9	Soil	5/6/1992	DATACH			U		44000	µg/kg					U				U	
299-W18-248	59.6	60.1	B06JT6	Soil	5/11/1992	DATACH			U		92000	µg/kg			350	µg/kg					U	
299-W18-248	81	81.5	B06JV5	Soil	5/15/1992	DATACH			U		65000	µg/kg					U				U	
299-W18-248	89	89.5	B06JW1	Soil	5/19/1992	DATACH			U		82000	µg/kg					U				U	
299-W18-248	102	102.5	B06JW9	Soil	5/21/1992	DATACH			U		96000	µg/kg			530	µg/kg					U	
299-W18-248	121	121.5	B06JX6	Soil	5/22/1992	DATACH			U		57000	µg/kg			330	µg/kg					U	
299-W18-248	126.5	127	B06JY3	Soil	5/22/1992	DATACH			U		120000	µg/kg			390	µg/kg					U	
299-W18-248	140	140.5	B06JS2	Soil	5/26/1992	DATACH			U		120000	µg/kg					U				U	

Table C-38. Metal Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1	Soil	5/4/1992	6600000	µg/kg			9400	µg/kg			8200	µg/kg			24000	µg/kg		
299-W18-248	39.5	40	B06JS9	Soil	5/6/1992	7200000	µg/kg			6800	µg/kg			9000	µg/kg			17000	µg/kg		
299-W18-248	59.6	60.1	B06JT6	Soil	5/11/1992	9300000	µg/kg			10000	µg/kg			6100	µg/kg			12000	µg/kg		
299-W18-248	81	81.5	B06JV5	Soil	5/15/1992	5900000	µg/kg			9000	µg/kg			4100	µg/kg			8600	µg/kg		
299-W18-248	89	89.5	B06JW1	Soil	5/19/1992	7100000	µg/kg			8500	µg/kg			8000	µg/kg			16000	µg/kg		
299-W18-248	102	102.5	B06JW9	Soil	5/21/1992	9600000	µg/kg			18000	µg/kg			8500	µg/kg			15000	µg/kg		
299-W18-248	121	121.5	B06JX6	Soil	5/22/1992	9300000	µg/kg			15000	µg/kg			6500	µg/kg			13000	µg/kg		
299-W18-248	126.5	127	B06JY3	Soil	5/22/1992	14000000	µg/kg			17000	µg/kg			6900	µg/kg			13000	µg/kg		
299-W18-248	140	140.5	B06JS2	Soil	5/26/1992	230000000	µg/kg			4800	µg/kg			3800	µg/kg			13000	µg/kg		

Table C-38. Metal Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1	Soil	5/4/1992	23000000	µg/kg			2100	µg/kg			4300000	µg/kg			250000	µg/kg		
299-W18-248	39.5	40	B06JS9	Soil	5/6/1992	25000000	µg/kg			6200	µg/kg			4200000	µg/kg			270000	µg/kg		
299-W18-248	59.6	60.1	B06JT6	Soil	5/11/1992	17000000	µg/kg			4600	µg/kg			4900000	µg/kg			310000	µg/kg		
299-W18-248	81	81.5	B06JV5	Soil	5/15/1992	12000000	µg/kg			1600	µg/kg			3600000	µg/kg			200000	µg/kg		
299-W18-248	89	89.5	B06JW1	Soil	5/19/1992	20000000	µg/kg			1900	µg/kg			3300000	µg/kg			240000	µg/kg		
299-W18-248	102	102.5	B06JW9	Soil	5/21/1992	19000000	µg/kg			6400	µg/kg			6400000	µg/kg			350000	µg/kg		
299-W18-248	121	121.5	B06JX6	Soil	5/22/1992	15000000	µg/kg			4700	µg/kg			4300000	µg/kg			230000	µg/kg		
299-W18-248	126.5	127	B06JY3	Soil	5/22/1992	17000000	µg/kg			5100	µg/kg			5400000	µg/kg			310000	µg/kg		
299-W18-248	140	140.5	B06JS2	Soil	5/26/1992	6800000	µg/kg			1500	µg/kg			8900000	µg/kg			760000	µg/kg		

Table C-38. Metal Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1	Soil	5/4/1992			U				U		820000	µg/kg					U	
299-W18-248	39.5	40	B06JS9	Soil	5/6/1992			U				U		790000	µg/kg					U	
299-W18-248	59.6	60.1	B06JT6	Soil	5/11/1992			U				U		1700000	µg/kg					U	
299-W18-248	81	81.5	B06JV5	Soil	5/15/1992			U				U		1000000	µg/kg					U	
299-W18-248	89	89.5	B06JW1	Soil	5/19/1992			U				U		740000	µg/kg					U	
299-W18-248	102	102.5	B06JW9	Soil	5/21/1992			U		16000	µg/kg			2700000	µg/kg					U	
299-W18-248	121	121.5	B06JX6	Soil	5/22/1992			U		15000	µg/kg			1200000	µg/kg					U	
299-W18-248	126.5	127	B06JY3	Soil	5/22/1992			U		11000	µg/kg			2300000	µg/kg					U	
299-W18-248	140	140.5	B06JS2	Soil	5/26/1992			U		5500	µg/kg			1000000	µg/kg					U	

Table C-38. Metal Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1	Soil	5/4/1992	540000	µg/kg					U		59000	µg/kg			50000	µg/kg		
299-W18-248	39.5	40	B06JS9	Soil	5/6/1992	390000	µg/kg					U		56000	µg/kg			45000	µg/kg		
299-W18-248	59.6	60.1	B06JT6	Soil	5/11/1992	240000	µg/kg					U		37000	µg/kg			42000	µg/kg		
299-W18-248	81	81.5	B06JV5	Soil	5/15/1992	190000	µg/kg					U				U		29000	µg/kg		
299-W18-248	89	89.5	B06JW1	Soil	5/19/1992	630000	µg/kg					U		57000	µg/kg			41000	µg/kg		
299-W18-248	102	102.5	B06JW9	Soil	5/21/1992	290000	µg/kg					U		37000	µg/kg			52000	µg/kg		
299-W18-248	121	121.5	B06JX6	Soil	5/22/1992	300000	µg/kg					U		33000	µg/kg			34000	µg/kg		
299-W18-248	126.5	127	B06JY3	Soil	5/22/1992	460000	µg/kg					U		41000	µg/kg			38000	µg/kg		
299-W18-248	140	140.5	B06JS2	Soil	5/26/1992	360000	µg/kg					U		16000	µg/kg			13000	µg/kg		

Table C-39. Semivolatile Organic Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Decane (124-18-5)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992	DATACH			U				U				U				U	
299-W18-248	39.5	40	B06JS9		5/6/1992	DATACH			U				U				U				U	
299-W18-248	59.6	60.1	B06JT6		5/11/1992	DATACH			U				U				U				U	
299-W18-248	81	81.5	B06JV5		5/15/1992	DATACH			U				U				U				U	
299-W18-248	89	89.5	B06JW1		5/19/1992	DATACH			U				U				U				U	
299-W18-248	102	102.5	B06JW9		5/21/1992	DATACH			U				U				U				U	
299-W18-248	121	121.5	B06JX6		5/22/1992	DATACH			U				U				U				U	
299-W18-248	126.5	127	B06JY3		5/22/1992	DATACH			U				U				U				U	
299-W18-248	140	140.5	B06JS2		5/26/1992	DATACH			U				U				U				U	

Table C-39. Semivolatile Organic Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992			U				U				U	
299-W18-248	39.5	40	B06JS9		5/6/1992			U				U				U	
299-W18-248	59.6	60.1	B06JT6		5/11/1992			U				U				U	
299-W18-248	81	81.5	B06JV5		5/15/1992			U				U				U	
299-W18-248	89	89.5	B06JW1		5/19/1992			U				U				U	
299-W18-248	102	102.5	B06JW9		5/21/1992			U				U				U	
299-W18-248	121	121.5	B06JX6		5/22/1992			U				U				U	
299-W18-248	126.5	127	B06JY3		5/22/1992			U				U				U	
299-W18-248	140	140.5	B06JS2		5/26/1992			U				U				U	

Table C-39. Semivolatile Organic Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phenol (108-95-2)				Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1		5/4/1992			U				U				U	
299-W18-248	39.5	40	B06JS9		5/6/1992			U				U				U	
299-W18-248	59.6	60.1	B06JT6		5/11/1992			U				U				U	
299-W18-248	81	81.5	B06JV5		5/15/1992			U				U				U	
299-W18-248	89	89.5	B06JW1		5/19/1992			U				U				U	
299-W18-248	102	102.5	B06JW9		5/21/1992			U				U				U	
299-W18-248	121	121.5	B06JX6		5/22/1992			U				U				U	
299-W18-248	126.5	127	B06JY3		5/22/1992			U				U				U	
299-W18-248	140	140.5	B06JS2		5/26/1992			U				U				U	

Table C-40. Volatile Organic Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1	Soil	5/4/1992	PNL1			U				U								U	
299-W18-248	39.5	40	B06JS9	Soil	5/6/1992	PNL1			U				U								U	
299-W18-248	59.6	60.1	B06JT6	Soil	5/11/1992	PNL1			U				U								U	
299-W18-248	65	65	B06JT9	Soil	5/12/1992	PNL1			U		100	µg/kg	J								U	
299-W18-248	70	70	B06JV0	Soil	5/12/1992	PNL1			U		75	µg/kg	J								U	
299-W18-248	75	75	B06JV1	Soil	5/12/1992	PNL1			U				U								U	
299-W18-248	79.9	79.9	B06JV2	Soil	5/12/1992	PNL1			U				U								U	
299-W18-248	81	81.5	B06JV5	Soil	5/15/1992	PNL1			U				U								U	
299-W18-248	85	85	B06JV7	Soil	5/18/1992	PNL1			U				U								U	
299-W18-248	90	90	B06JW3	Soil	5/19/1992	PNL1			U				U								U	
299-W18-248	95	95	B06JW4	Soil	5/19/1992	PNL1			U				U								U	
299-W18-248	100	100	B06JW5	Soil	5/20/1992	PNL1			U				U								U	
299-W18-248	102	102.5	B06JW9	Soil	5/21/1992	PNL1			U				U								U	
299-W18-248	105	105	B06JX1	Soil	5/21/1992	PNL1			U				U								U	
299-W18-248	110	110	B06JX2	Soil	5/21/1992	PNL1			U				U								U	
299-W18-248	115	115	B06JX3	Soil	5/21/1992	PNL1			U				U				U				U	
299-W18-248	120	120	B06JX8	Soil	5/21/1992	PNL1			U				U								U	
299-W18-248	121	121.5	B06JX6	Soil	5/22/1992	PNL1			U				U				U				U	
299-W18-248	125	125	B06JX9	Soil	5/22/1992	PNL1			U				U				U				U	
299-W18-248	126.5	127	B06JY3	Soil	5/22/1992	PNL1			U				U				U				U	
299-W18-248	130	130	B06JR7	Soil	5/26/1992	PNL1			U				U				U				U	
299-W18-248	135	135	B06JR9	Soil	5/26/1992	PNL1			U				U				U				U	
299-W18-248	140	140	B06JZ5	Soil	5/26/1992	PNL1			U				U				U				U	
299-W18-248	140	140.5	B06JS2	Soil	5/26/1992	PNL1			U		6	µg/kg					U				U	

Table C-40. Volatile Organic Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1	Soil	5/4/1992	3	µg/kg	J				U				U				U	
299-W18-248	39.5	40	B06JS9	Soil	5/6/1992	26	µg/kg					U				U				U	
299-W18-248	59.6	60.1	B06JT6	Soil	5/11/1992	126	µg/kg					U				U				U	
299-W18-248	65	65	B06JT9	Soil	5/12/1992	360	µg/kg			31	µg/kg			80	µg/kg	J				U	
299-W18-248	70	70	B06JV0	Soil	5/12/1992	147	µg/kg			21	µg/kg					U				U	
299-W18-248	75	75	B06JV1	Soil	5/12/1992	115	µg/kg					U				U				U	
299-W18-248	79.9	79.9	B06JV2	Soil	5/12/1992	137	µg/kg					U				U				U	
299-W18-248	81	81.5	B06JV5	Soil	5/15/1992	95	µg/kg					U				U				U	
299-W18-248	85	85	B06JV7	Soil	5/18/1992	99	µg/kg					U				U				U	
299-W18-248	90	90	B06JW3	Soil	5/19/1992	74	µg/kg					U				U				U	
299-W18-248	95	95	B06JW4	Soil	5/19/1992	44	µg/kg					U				U				U	
299-W18-248	100	100	B06JW5	Soil	5/20/1992	16	µg/kg					U				U				U	
299-W18-248	102	102.5	B06JW9	Soil	5/21/1992	61	µg/kg					U				U				U	
299-W18-248	105	105	B06JX1	Soil	5/21/1992	35	µg/kg					U				U				U	
299-W18-248	110	110	B06JX2	Soil	5/21/1992	116	µg/kg					U				U				U	
299-W18-248	115	115	B06JX3	Soil	5/21/1992	50	µg/kg					U				U				U	
299-W18-248	120	120	B06JX8	Soil	5/21/1992	63	µg/kg					U				U				U	
299-W18-248	121	121.5	B06JX6	Soil	5/22/1992	32	µg/kg					U				U				U	
299-W18-248	125	125	B06JX9	Soil	5/22/1992	72	µg/kg					U				U				U	
299-W18-248	126.5	127	B06JY3	Soil	5/22/1992	45	µg/kg					U				U				U	
299-W18-248	130	130	B06JR7	Soil	5/26/1992	24	µg/kg					U				U				U	
299-W18-248	135	135	B06JR9	Soil	5/26/1992	1093	µg/kg			12	µg/kg					U				U	
299-W18-248	140	140	B06JZ5	Soil	5/26/1992	51	µg/kg					U				U				U	
299-W18-248	140	140.5	B06JS2	Soil	5/26/1992	644	µg/kg			3	µg/kg					U				U	

Table C-40. Volatile Organic Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1	Soil	5/4/1992			U								U				U	
299-W18-248	39.5	40	B06JS9	Soil	5/6/1992			U		4679	µg/kg					U				U	
299-W18-248	59.6	60.1	B06JT6	Soil	5/11/1992			U		1062	µg/kg					U		5	µg/kg		
299-W18-248	65	65	B06JT9	Soil	5/12/1992			U		2264	µg/kg					U		21	µg/kg		
299-W18-248	70	70	B06JV0	Soil	5/12/1992			U		771	µg/kg					U		10	µg/kg		
299-W18-248	75	75	B06JV1	Soil	5/12/1992			U		538	µg/kg					U		4	µg/kg		
299-W18-248	79.9	79.9	B06JV2	Soil	5/12/1992			U				U				U		5	µg/kg		
299-W18-248	81	81.5	B06JV5	Soil	5/15/1992			U				U				U		5	µg/kg		
299-W18-248	85	85	B06JV7	Soil	5/18/1992			U				U				U		6	µg/kg		
299-W18-248	90	90	B06JW3	Soil	5/19/1992			U		116	µg/kg					U		2	µg/kg		
299-W18-248	95	95	B06JW4	Soil	5/19/1992			U		181	µg/kg					U				U	
299-W18-248	100	100	B06JW5	Soil	5/20/1992			U		194	µg/kg					U				U	
299-W18-248	102	102.5	B06JW9	Soil	5/21/1992			U		1858	µg/kg					U		3	µg/kg		
299-W18-248	105	105	B06JX1	Soil	5/21/1992			U		153	µg/kg					U		3	µg/kg		
299-W18-248	110	110	B06JX2	Soil	5/21/1992			U				U				U		4	µg/kg		
299-W18-248	115	115	B06JX3	Soil	5/21/1992			U		113	µg/kg					U		2	µg/kg		
299-W18-248	120	120	B06JX8	Soil	5/21/1992			U		122	µg/kg					U		2	µg/kg		
299-W18-248	121	121.5	B06JX6	Soil	5/22/1992			U		578	µg/kg					U				U	
299-W18-248	125	125	B06JX9	Soil	5/22/1992			U				U				U				U	
299-W18-248	126.5	127	B06JY3	Soil	5/22/1992			U				U				U				U	
299-W18-248	130	130	B06JR7	Soil	5/26/1992			U				U				U				U	
299-W18-248	135	135	B06JR9	Soil	5/26/1992			U				U				U				U	
299-W18-248	140	140	B06JZ5	Soil	5/26/1992			U				U				U				U	
299-W18-248	140	140.5	B06JS2	Soil	5/26/1992			U				U				U				U	

Table C-40. Volatile Organic Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3) 502.2				trans-1,2-Dichloroethylene (156-60-5) 502.2				Trichloroethene (79-01-6) 502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1	Soil	5/4/1992			U								U	
299-W18-248	39.5	40	B06JS9	Soil	5/6/1992			U				U				U	
299-W18-248	59.6	60.1	B06JT6	Soil	5/11/1992	40	µg/kg					U		4	µg/kg		
299-W18-248	65	65	B06JT9	Soil	5/12/1992	133	µg/kg			150	µg/kg	J		30	µg/kg		
299-W18-248	70	70	B06JV0	Soil	5/12/1992	84	µg/kg			100	µg/kg	J		21	µg/kg		
299-W18-248	75	75	B06JV1	Soil	5/12/1992			U				U		4	µg/kg		
299-W18-248	79.9	79.9	B06JV2	Soil	5/12/1992			U				U		4	µg/kg		
299-W18-248	81	81.5	B06JV5	Soil	5/15/1992			U				U		5	µg/kg		
299-W18-248	85	85	B06JV7	Soil	5/18/1992			U				U		6	µg/kg		
299-W18-248	90	90	B06JW3	Soil	5/19/1992			U				U		2	µg/kg		
299-W18-248	95	95	B06JW4	Soil	5/19/1992			U				U				U	
299-W18-248	100	100	B06JW5	Soil	5/20/1992			U				U		2	µg/kg		
299-W18-248	102	102.5	B06JW9	Soil	5/21/1992			U				U		3	µg/kg		
299-W18-248	105	105	B06JX1	Soil	5/21/1992			U				U		5	µg/kg		
299-W18-248	110	110	B06JX2	Soil	5/21/1992			U				U		4	µg/kg		
299-W18-248	115	115	B06JX3	Soil	5/21/1992			U				U		3	µg/kg		
299-W18-248	120	120	B06JX8	Soil	5/21/1992			U				U		2	µg/kg		
299-W18-248	121	121.5	B06JX6	Soil	5/22/1992	26	µg/kg					U				U	
299-W18-248	125	125	B06JX9	Soil	5/22/1992	26	µg/kg					U				U	
299-W18-248	126.5	127	B06JY3	Soil	5/22/1992	59	µg/kg					U		2	µg/kg		
299-W18-248	130	130	B06JR7	Soil	5/26/1992			U				U				U	
299-W18-248	135	135	B06JR9	Soil	5/26/1992			U				U		3	µg/kg		
299-W18-248	140	140	B06JZ5	Soil	5/26/1992			U				U				U	
299-W18-248	140	140.5	B06JS2	Soil	5/26/1992			U				U		3	µg/kg		

Table C-41. Wet Chemistry Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)				Chloride (16887-00-6)			
							D4327				D4327				D4327				D4327			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1	Soil	5/4/1992	DATACH	2700	µg/kg					U				U		9400	µg/kg		
299-W18-248	39.5	40	B06JS9	Soil	5/6/1992	DATACH	1000	µg/kg					U				U		8100	µg/kg		
299-W18-248	59.6	60.1	B06JT6	Soil	5/11/1992	DATACH	5000	µg/kg					U				U		1500	µg/kg		
299-W18-248	81	81.5	B06JV5	Soil	5/15/1992	DATACH	2200	µg/kg			400	µg/kg					U		2600	µg/kg		
299-W18-248	89	89.5	B06JW1	Soil	5/19/1992	DATACH	2400	µg/kg			1600	µg/kg					U		3400	µg/kg		
299-W18-248	102	102.5	B06JW9	Soil	5/21/1992	DATACH	6900	µg/kg					U				U		6400	µg/kg		
299-W18-248	121	121.5	B06JX6	Soil	5/22/1992	DATACH	4000	µg/kg					U				U		3700	µg/kg		
299-W18-248	126.5	127	B06JY3	Soil	5/22/1992	DATACH	4300	µg/kg					U				U		4400	µg/kg		
299-W18-248	140	140.5	B06JS2	Soil	5/26/1992	DATACH	4200	µg/kg					U				U		4000	µg/kg		

Table C-41. Wet Chemistry Analysis Results for Well 299-W18-248 (216-Z-1A Tile Field) (2 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Cyanide (57-12-5)				Fluoride (16984-48-8)				Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						9010				D4327				D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-248	19.5	20	B06JL1	Soil	5/4/1992			U				U				U		26000	µg/kg		
299-W18-248	39.5	40	B06JS9	Soil	5/6/1992			U		300	µg/kg					U		17000	µg/kg		
299-W18-248	59.6	60.1	B06JT6	Soil	5/11/1992			U				U				U		6000	µg/kg		
299-W18-248	81	81.5	B06JV5	Soil	5/15/1992			U				U				U		8000	µg/kg		
299-W18-248	89	89.5	B06JW1	Soil	5/19/1992			U		400	µg/kg					U		11000	µg/kg		
299-W18-248	102	102.5	B06JW9	Soil	5/21/1992			U				U				U		7000	µg/kg		
299-W18-248	121	121.5	B06JX6	Soil	5/22/1992			U		1900	µg/kg					U		4800	µg/kg		
299-W18-248	126.5	127	B06JY3	Soil	5/22/1992			U		6600	µg/kg					U		10000	µg/kg		
299-W18-248	140	140.5	B06JS2	Soil	5/26/1992			U		1200	µg/kg					U		12000	µg/kg		

Table C-42. Metal Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Antimony (7440-36-0)				Barium (7440-39-3)				Beryllium (7440-41-7)				Cadmium (7440-43-9)			
							6010				6010				6010				6010			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9	Soil	7/7/1992	DATACH			U		81000	µg/kg			320	µg/kg					U	
299-W18-249	30.8	31.3	B06VZ3	Soil	7/8/1992	DATACH			U		100000	µg/kg			500	µg/kg					U	
299-W18-249	33	33.5	B06VZ7	Soil	7/8/1992	DATACH			U		92000	µg/kg			500000	µg/kg					U	
299-W18-249	35	35.5	B06W01	Soil	7/8/1992	DATACH			U		86000	µg/kg			300	µg/kg					U	
299-W18-249	37	37.5	B06W05	Soil	7/8/1992	DATACH			U		100000	µg/kg			500	µg/kg					U	
299-W18-249	38.9	39.3	B06W09	Soil	7/9/1992	DATACH			U		9000	µg/kg					U				U	
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992	DATACH			U		120000	µg/kg			600	µg/kg					U	
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992	DATACH			U		110000	µg/kg			500	µg/kg					U	
299-W18-249	100	100.5	B06W20	Soil	7/16/1992	DATACH			U		86000	µg/kg					U				U	
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992	DATACH			U		120000	µg/kg					U				U	
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992	DATACH			U		88000	µg/kg					U				U	

Table C-42. Metal Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Calcium (7440-70-2)				Chromium (7440-47-3)				Cobalt (7440-48-4)				Copper (7440-50-8)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9	Soil	7/7/1992	7000000	µg/kg			9600	µg/kg			10000	µg/kg			17000	µg/kg		
299-W18-249	30.8	31.3	B06VZ3	Soil	7/8/1992	13000000	µg/kg			13000	µg/kg			17000	µg/kg			16000	µg/kg		
299-W18-249	33	33.5	B06VZ7	Soil	7/8/1992	11000000	µg/kg			11000	µg/kg			18000	µg/kg			14000	µg/kg		
299-W18-249	35	35.5	B06W01	Soil	7/8/1992	15000000	µg/kg			11000	µg/kg			15000	µg/kg			14000	µg/kg		
299-W18-249	37	37.5	B06W05	Soil	7/8/1992	15000000	µg/kg			13000	µg/kg			19000	µg/kg			16000	µg/kg		
299-W18-249	38.9	39.3	B06W09	Soil	7/9/1992	3100000	µg/kg					U				U		2000	µg/kg		
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992	13000000	µg/kg			7000	µg/kg			22000	µg/kg			15000	µg/kg		
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992	15000000	µg/kg			20000	µg/kg			9000	µg/kg			20000	µg/kg		
299-W18-249	100	100.5	B06W20	Soil	7/16/1992	9500000	µg/kg			18000	µg/kg			6000	µg/kg			12000	µg/kg		
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992	15000000	µg/kg			16000	µg/kg			12000	µg/kg			17000	µg/kg		
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992	23000000	µg/kg			20000	µg/kg			8000	µg/kg			18000	µg/kg		

Table C-42. Metal Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Iron (7439-89-6)				Lead (7439-92-1)				Magnesium (7439-95-4)				Manganese (7439-96-5)			
						6010				7421				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9	Soil	7/7/1992	30000000	µg/kg			3100	µg/kg			4900000	µg/kg			360000	µg/kg		
299-W18-249	30.8	31.3	B06VZ3	Soil	7/8/1992	34000000	µg/kg			3000	µg/kg			6600000	µg/kg			450000	µg/kg		
299-W18-249	33	33.5	B06VZ7	Soil	7/8/1992	32000000	µg/kg			3200	µg/kg			5700000	µg/kg			470000	µg/kg		
299-W18-249	35	35.5	B06W01	Soil	7/8/1992	28000000	µg/kg			2600	µg/kg			5300000	µg/kg			350000	µg/kg		
299-W18-249	37	37.5	B06W05	Soil	7/8/1992	35000000	µg/kg			2600	µg/kg			5900000	µg/kg			430000	µg/kg		
299-W18-249	38.9	39.3	B06W09	Soil	7/9/1992	4700000	µg/kg			2100	µg/kg			2000000	µg/kg			71000	µg/kg		
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992	35000000	µg/kg			3600	µg/kg			5000000	µg/kg			5900000	µg/kg		
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992	22000000	µg/kg			8600	µg/kg			7400000	µg/kg			430000	µg/kg		
299-W18-249	100	100.5	B06W20	Soil	7/16/1992	19000000	µg/kg			5400	µg/kg			6100000	µg/kg			330000	µg/kg		
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992	28000000	µg/kg			7000	µg/kg			6600000	µg/kg			530000	µg/kg		
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992	20000000	µg/kg			5500	µg/kg			8500000	µg/kg			280000	µg/kg		

Table C-42. Metal Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Mercury (7439-97-6)				Nickel (7440-02-0)				Potassium (7440-09-7)				Silver (7440-22-4)			
						7470				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9	Soil	7/7/1992			U		12000	µg/kg			940000	µg/kg					U	
299-W18-249	30.8	31.3	B06VZ3	Soil	7/8/1992			U		14000	µg/kg			1200000	µg/kg					U	
299-W18-249	33	33.5	B06VZ7	Soil	7/8/1992			U		14000	µg/kg			920000	µg/kg					U	
299-W18-249	35	35.5	B06W01	Soil	7/8/1992			U		14000	µg/kg			860000	µg/kg					U	
299-W18-249	37	37.5	B06W05	Soil	7/8/1992			U		130000	µg/kg			1000000	µg/kg					U	
299-W18-249	38.9	39.3	B06W09	Soil	7/9/1992			U				U		350000	µg/kg					U	
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992			U		10000	µg/kg			1200000	µg/kg					U	
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992			U		15000	µg/kg			2800000	µg/kg					U	
299-W18-249	100	100.5	B06W20	Soil	7/16/1992			U		12000	µg/kg			2000000	µg/kg					U	
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992			U		16000	µg/kg			2200000	µg/kg					U	
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992			U		18000	µg/kg			1900000	µg/kg					U	

Table C-42. Metal Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (5 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Sodium (7440-23-5)				Tin (7440-31-5)				Vanadium (7440-62-2)				Zinc (7440-66-6)			
						6010				6010				6010				6010			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9	Soil	7/7/1992	470000	µg/kg					U		77000	µg/kg			55000	µg/kg		
299-W18-249	30.8	31.3	B06VZ3	Soil	7/8/1992	1600000	µg/kg					U		98000	µg/kg			61000	µg/kg		
299-W18-249	33	33.5	B06VZ7	Soil	7/8/1992	1600000	µg/kg					U		110000	µg/kg			56000	µg/kg		
299-W18-249	35	35.5	B06W01	Soil	7/8/1992	1800000	µg/kg					U		87000	µg/kg			48000	µg/kg		
299-W18-249	37	37.5	B06W05	Soil	7/8/1992	1800000	µg/kg					U		1200000	µg/kg			60000	µg/kg		
299-W18-249	38.9	39.3	B06W09	Soil	7/9/1992	650000	µg/kg					U		7000	µg/kg			38000	µg/kg		
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992	1900000	µg/kg					U		110000	µg/kg			54000	µg/kg		
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992	410000	µg/kg					U		45000	µg/kg			52000	µg/kg		
299-W18-249	100	100.5	B06W20	Soil	7/16/1992	550000	µg/kg					U		43000	µg/kg			36000	µg/kg		
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992	750000	µg/kg					U		67000	µg/kg			47000	µg/kg		
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992	990000	µg/kg					U		49000	µg/kg			38000	µg/kg		

Table C-43. Semivolatile Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	2-Methylphenol (cresol, o-) (95-48-7)				3-Methylphenol (cresol, m-) (108-39-4)				4-Methylphenol (cresol, p-) (106-44-5)				Decane (124-18-5)			
							8270				8270				8270				8270			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9	Soil	7/7/1992	DATACH			U				U				U				U	
299-W18-249	30.8	31.3	B06VZ3	Soil	7/8/1992	DATACH			U				U				U				U	
299-W18-249	33	33.5	B06VZ7	Soil	7/8/1992	DATACH			U				U				U				U	
299-W18-249	35	35.5	B06W01	Soil	7/8/1992	DATACH			U				U				U				U	
299-W18-249	37	37.5	B06W05	Soil	7/8/1992	DATACH			U				U				U				U	
299-W18-249	38.9	39.3	B06W09	Soil	7/9/1992	DATACH			U				U				U				U	
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992	DATACH			U				U				U				U	
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992	DATACH			U				U				U				U	
299-W18-249	100	100.5	B06W20	Soil	7/16/1992	DATACH			U				U				U		40	µg/kg	J	
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992	DATACH			U				U				U				U	
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992	DATACH			U				U				U		110	µg/kg	J	

Table C-43. Semivolatile Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Dodecane (112-40-3)				Naphthalene (91-20-3)				Pentachlorophenol (87-86-5)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9	Soil	7/7/1992			U				U				U	
299-W18-249	30.8	31.3	B06VZ3	Soil	7/8/1992			U				U				U	
299-W18-249	33	33.5	B06VZ7	Soil	7/8/1992			U				U				U	
299-W18-249	35	35.5	B06W01	Soil	7/8/1992			U				U				U	
299-W18-249	37	37.5	B06W05	Soil	7/8/1992			U				U				U	
299-W18-249	38.9	39.3	B06W09	Soil	7/9/1992			U				U				U	
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992			U				U				U	
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992			U				U				U	
299-W18-249	100	100.5	B06W20	Soil	7/16/1992	19	µg/kg	J				U				U	
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992			U				U				U	
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992	110	µg/kg	J				U				U	

Table C-43. Semivolatile Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phenol (108-95-2)				Tetradecane (629-59-4)				Tributyl phosphate (126-73-8)			
						8270				8270				8270			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9	Soil	7/7/1992			U				U				U	
299-W18-249	30.8	31.3	B06VZ3	Soil	7/8/1992			U				U				U	
299-W18-249	33	33.5	B06VZ7	Soil	7/8/1992			U				U				U	
299-W18-249	35	35.5	B06W01	Soil	7/8/1992			U				U				U	
299-W18-249	37	37.5	B06W05	Soil	7/8/1992			U				U				U	
299-W18-249	38.9	39.3	B06W09	Soil	7/9/1992			U				U				U	
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992			U				U				U	
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992			U				U				U	
299-W18-249	100	100.5	B06W20	Soil	7/16/1992			U				U				U	
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992			U				U				U	
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992			U		29	µg/kg	J				U	

Table C-44. Volatile Organic Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9		7/7/1992	PNL1			U				U				U				U	
299-W18-249	26	26	B06704		7/7/1992	PNL1			U				U				U				U	
299-W18-249	30	30	B06705		7/7/1992	PNL1			U				U				U				U	
299-W18-249	30.8	31.3	B06VZ3		7/8/1992	PNL1			U				U				U				U	
299-W18-249	33	33.5	B06VZ7		7/8/1992	PNL1			U				U				U				U	
299-W18-249	35	35.5	B06W01		7/8/1992	PNL1			U				U				U		2	µg/kg		
299-W18-249	37	37.5	B06W05		7/8/1992	PNL1			U				U				U				U	
299-W18-249	38.9	39.3	B06W09		7/9/1992	PNL1			U				U				U				U	
299-W18-249	45	45	B06709		7/10/1992	PNL1			U				U				U				U	
299-W18-249	50	50	B06710	Soil	7/10/1992	PNL1			U				U				U				U	
299-W18-249	55	55	B06711	Soil	7/13/1992	PNL1			U				U				U				U	
299-W18-249	59	59	B06712	Soil	7/13/1992	PNL1			U				U				U				U	
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992	PNL1			U				U				U				U	
299-W18-249	65	65	B06714	Soil	7/13/1992	PNL1			U				U				U				U	
299-W18-249	70	70	B06715	Soil	7/13/1992	PNL1			U				U				U				U	
299-W18-249	75	75	B06716	Soil	7/13/1992	PNL1			U				U				U				U	
299-W18-249	80	80	B06717	Soil	7/13/1992	PNL1			U				U				U				U	
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992	PNL1			U				U				U				U	
299-W18-249	85	85	B06719	Soil	7/14/1992	PNL1			U				U				U				U	
299-W18-249	90	90	B06720	Soil	7/14/1992	PNL1			U				U								U	
299-W18-249	95	95	B06721	Soil	7/14/1992	PNL1			U				U				U				U	
299-W18-249	99	99	B06722	Soil	7/16/1992	PNL1	13	µg/kg					U				U				U	
299-W18-249	100	100.5	B06W20	Soil	7/16/1992	PNL1			U				U				U		4	µg/kg		
299-W18-249	100	100.5	B06W22	Soil	7/16/1992	PNL1	103	µg/kg					U				U				U	
299-W18-249	100	100.5	B06W23	Soil	7/16/1992	PNL1	5	µg/kg					U				U		11	µg/kg		
299-W18-249	107	107	B06723	Soil	7/16/1992	PNL1			U				U				U				U	
299-W18-249	110	110	B06724	Soil	7/16/1992	PNL1			U				U				U				U	
299-W18-249	115	115	B06726	Soil	7/16/1992	PNL1			U				U				U				U	
299-W18-249	120	120	B06727	Soil	7/17/1992	PNL1			U				U				U				U	
299-W18-249	125	125	B06728	Soil	7/17/1992	PNL1			U				U				U				U	
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992	PNL1			U				U				U					
299-W18-249	133	133	B06731	Soil	7/21/1992	PNL1			U				U				U				U	
299-W18-249	135	135	B06732	Soil	7/21/1992	PNL1			U				U				U				U	
299-W18-249	140	140	B06733	Soil	7/21/1992	PNL1			U				U				U				U	
299-W18-249	145	145	B06734	Soil	7/21/1992	PNL1			U				U				U				U	
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992	PNL1			U				U								U	

Table C-44. Volatile Organic Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9		7/7/1992			U				U				U		3	µg/kg		
299-W18-249	26	26	B06704		7/7/1992	3	µg/kg					U				U				U	
299-W18-249	30	30	B06705		7/7/1992	4	µg/kg					U				U				U	
299-W18-249	30.8	31.3	B06VZ3		7/8/1992			U				U				U				U	
299-W18-249	33	33.5	B06VZ7		7/8/1992	3	µg/kg					U				U				U	
299-W18-249	35	35.5	B06W01		7/8/1992	6	µg/kg					U				U				U	
299-W18-249	37	37.5	B06W05		7/8/1992	6	µg/kg					U				U				U	
299-W18-249	38.9	39.3	B06W09		7/9/1992	7	µg/kg					U				U		14	µg/kg		
299-W18-249	45	45	B06709		7/10/1992	9	µg/kg					U				U		27	µg/kg		
299-W18-249	50	50	B06710	Soil	7/10/1992	15	µg/kg					U				U				U	
299-W18-249	55	55	B06711	Soil	7/13/1992	24	µg/kg					U				U				U	
299-W18-249	59	59	B06712	Soil	7/13/1992	122	µg/kg					U				U				U	
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992	39	µg/kg					U				U				U	
299-W18-249	65	65	B06714	Soil	7/13/1992	31	µg/kg					U				U				U	
299-W18-249	70	70	B06715	Soil	7/13/1992	74	µg/kg					U				U				U	
299-W18-249	75	75	B06716	Soil	7/13/1992	216	µg/kg					U				U				U	
299-W18-249	80	80	B06717	Soil	7/13/1992	184	µg/kg					U				U				U	
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992	139	µg/kg					U				U				U	
299-W18-249	85	85	B06719	Soil	7/14/1992	133	µg/kg					U				U				U	
299-W18-249	90	90	B06720	Soil	7/14/1992	566	µg/kg			4	µg/kg					U				U	
299-W18-249	95	95	B06721	Soil	7/14/1992	188	µg/kg			3	µg/kg					U				U	
299-W18-249	99	99	B06722	Soil	7/16/1992	168	µg/kg			23	µg/kg					U		14	µg/kg		
299-W18-249	100	100.5	B06W20	Soil	7/16/1992	53	µg/kg					U				U				U	
299-W18-249	100	100.5	B06W22	Soil	7/16/1992			U				U				U				U	
299-W18-249	100	100.5	B06W23	Soil	7/16/1992	4	µg/kg					U				U				U	
299-W18-249	107	107	B06723	Soil	7/16/1992	14	µg/kg					U				U		8	µg/kg		
299-W18-249	110	110	B06724	Soil	7/16/1992	44	µg/kg					U				U				U	
299-W18-249	115	115	B06726	Soil	7/16/1992	34	µg/kg					U				U				U	
299-W18-249	120	120	B06727	Soil	7/17/1992	28	µg/kg					U				U				U	
299-W18-249	125	125	B06728	Soil	7/17/1992	9	µg/kg					U				U				U	
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992	58	µg/kg			18	µg/kg					U		34	µg/kg		
299-W18-249	133	133	B06731	Soil	7/21/1992	1618	µg/kg			7	µg/kg					U				U	
299-W18-249	135	135	B06732	Soil	7/21/1992	134	µg/kg					U				U				U	
299-W18-249	140	140	B06733	Soil	7/21/1992	481	µg/kg			4	µg/kg					U				U	
299-W18-249	145	145	B06734	Soil	7/21/1992	1957	µg/kg			8	µg/kg					U				U	
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992	1755	µg/kg			7	µg/kg					U				U	

Table C-44. Volatile Organic Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9		7/7/1992	4	µg/kg			134	µg/kg			4	µg/kg					U	
299-W18-249	26	26	B06704		7/7/1992			U		80	µg/kg					U				U	
299-W18-249	30	30	B06705		7/7/1992			U				U				U				U	
299-W18-249	30.8	31.3	B06VZ3		7/8/1992			U				U				U				U	
299-W18-249	33	33.5	B06VZ7		7/8/1992			U				U				U				U	
299-W18-249	35	35.5	B06W01		7/8/1992			U				U				U				U	
299-W18-249	37	37.5	B06W05		7/8/1992			U		272	µg/kg					U				U	
299-W18-249	38.9	39.3	B06W09		7/9/1992	10	µg/kg					U		116	µg/kg					U	
299-W18-249	45	45	B06709		7/10/1992	14	µg/kg			1992	µg/kg					U				U	
299-W18-249	50	50	B06710	Soil	7/10/1992			U		237	µg/kg					U				U	
299-W18-249	55	55	B06711	Soil	7/13/1992			U		56	µg/kg					U				U	
299-W18-249	59	59	B06712	Soil	7/13/1992			U		17	µg/kg					U				U	
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992			U				U				U				U	
299-W18-249	65	65	B06714	Soil	7/13/1992			U		125	µg/kg					U				U	
299-W18-249	70	70	B06715	Soil	7/13/1992			U				U				U				U	
299-W18-249	75	75	B06716	Soil	7/13/1992			U		126	µg/kg					U				U	
299-W18-249	80	80	B06717	Soil	7/13/1992			U				U				U		2	µg/kg		
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992			U		10983	µg/kg	D				U				U	
299-W18-249	85	85	B06719	Soil	7/14/1992			U		1108	µg/kg					U				U	
299-W18-249	90	90	B06720	Soil	7/14/1992			U		83	µg/kg					U				U	
299-W18-249	95	95	B06721	Soil	7/14/1992			U		559	µg/kg					U		5	µg/kg		
299-W18-249	99	99	B06722	Soil	7/16/1992	8	µg/kg			89996	µg/kg	D		7	µg/kg			6	µg/kg		
299-W18-249	100	100.5	B06W20	Soil	7/16/1992			U				U				U				U	
299-W18-249	100	100.5	B06W22	Soil	7/16/1992			U				U				U		2	µg/kg		
299-W18-249	100	100.5	B06W23	Soil	7/16/1992			U				U		3	µg/kg			2	µg/kg		
299-W18-249	107	107	B06723	Soil	7/16/1992	3	µg/kg					U		69	µg/kg					U	
299-W18-249	110	110	B06724	Soil	7/16/1992			U		89	µg/kg					U				U	
299-W18-249	115	115	B06726	Soil	7/16/1992			U		1325	µg/kg					U				U	
299-W18-249	120	120	B06727	Soil	7/17/1992			U				U				U				U	
299-W18-249	125	125	B06728	Soil	7/17/1992			U				U				U				U	
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992	42	µg/kg			88800	µg/kg	DJ		34	µg/kg			2	µg/kg		
299-W18-249	133	133	B06731	Soil	7/21/1992			U		1612	µg/kg					U				U	
299-W18-249	135	135	B06732	Soil	7/21/1992			U		79	µg/kg					U				U	
299-W18-249	140	140	B06733	Soil	7/21/1992			U		27731	µg/kg	D				U				U	
299-W18-249	145	145	B06734	Soil	7/21/1992			U		1613	µg/kg					U				U	
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992			U				U				U		2	µg/kg		

Table C-44. Volatile Organic Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (4 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9		7/7/1992	4	µg/kg					U				U	
299-W18-249	26	26	B06704		7/7/1992			U				U				U	
299-W18-249	30	30	B06705		7/7/1992			U				U				U	
299-W18-249	30.8	31.3	B06VZ3		7/8/1992	3	µg/kg					U				U	
299-W18-249	33	33.5	B06VZ7		7/8/1992	3	µg/kg					U				U	
299-W18-249	35	35.5	B06W01		7/8/1992	466	µg/kg					U				U	
299-W18-249	37	37.5	B06W05		7/8/1992	9	µg/kg					U				U	
299-W18-249	38.9	39.3	B06W09		7/9/1992	1162	µg/kg					U				U	
299-W18-249	45	45	B06709		7/10/1992	130	µg/kg					U				U	
299-W18-249	50	50	B06710	Soil	7/10/1992			U				U				U	
299-W18-249	55	55	B06711	Soil	7/13/1992			U				U				U	
299-W18-249	59	59	B06712	Soil	7/13/1992			U				U				U	
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992	46	µg/kg					U				U	
299-W18-249	65	65	B06714	Soil	7/13/1992			U				U				U	
299-W18-249	70	70	B06715	Soil	7/13/1992			U				U				U	
299-W18-249	75	75	B06716	Soil	7/13/1992			U				U				U	
299-W18-249	80	80	B06717	Soil	7/13/1992			U				U		2	µg/kg		
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992	62	µg/kg					U				U	
299-W18-249	85	85	B06719	Soil	7/14/1992			U				U				U	
299-W18-249	90	90	B06720	Soil	7/14/1992			U				U				U	
299-W18-249	95	95	B06721	Soil	7/14/1992			U				U		5	µg/kg		
299-W18-249	99	99	B06722	Soil	7/16/1992	77	µg/kg					U		8	µg/kg		
299-W18-249	100	100.5	B06W20	Soil	7/16/1992			U				U				U	
299-W18-249	100	100.5	B06W22	Soil	7/16/1992			U				U				U	
299-W18-249	100	100.5	B06W23	Soil	7/16/1992	5	µg/kg					U				U	
299-W18-249	107	107	B06723	Soil	7/16/1992	17	µg/kg					U				U	
299-W18-249	110	110	B06724	Soil	7/16/1992			U				U				U	
299-W18-249	115	115	B06726	Soil	7/16/1992			U				U				U	
299-W18-249	120	120	B06727	Soil	7/17/1992			U				U				U	
299-W18-249	125	125	B06728	Soil	7/17/1992			U				U				U	
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992	2961	µg/kg	D				U				U	
299-W18-249	133	133	B06731	Soil	7/21/1992			U				U				U	
299-W18-249	135	135	B06732	Soil	7/21/1992			U				U				U	
299-W18-249	140	140	B06733	Soil	7/21/1992			U				U				U	
299-W18-249	145	145	B06734	Soil	7/21/1992			U				U				U	
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992	12	µg/kg					U				U	

Table C-45. Wet Chemistry Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	Nitrate (14797-55-8)				Nitrite (14797-65-0)				Bromide (24959-67-9)			
							D4327				D4327				D4327			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9	Soil	7/7/1992	DATACH	4500	µg/kg					U				U	
299-W18-249	30.8	31.3	B06VZ3	Soil	7/8/1992	DATACH												
299-W18-249	33	33.5	B06VZ7	Soil	7/8/1992	DATACH												
299-W18-249	35	35.5	B06W01	Soil	7/8/1992	DATACH												
299-W18-249	37	37.5	B06W05	Soil	7/8/1992	DATACH												
299-W18-249	38.9	39.3	B06W09	Soil	7/9/1992	DATACH												
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992	DATACH												
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992	DATACH	7100	µg/kg					U				U	
299-W18-249	100	100.5	B06W20	Soil	7/16/1992	DATACH	4100	µg/kg					U				U	
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992	DATACH	1500	µg/kg					U				U	
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992	DATACH	1400	µg/kg					U				U	

Table C-45. Wet Chemistry Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Chloride (16887-00-6)				Cyanide (57-12-5)				Fluoride (16984-48-8)			
						D4327				9010				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9	Soil	7/7/1992	2300	µg/kg					U		500	µg/kg		
299-W18-249	30.8	31.3	B06VZ3	Soil	7/8/1992							U					
299-W18-249	33	33.5	B06VZ7	Soil	7/8/1992							U					
299-W18-249	35	35.5	B06W01	Soil	7/8/1992							U					
299-W18-249	37	37.5	B06W05	Soil	7/8/1992							U					
299-W18-249	38.9	39.3	B06W09	Soil	7/9/1992							U					
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992							U					
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992	12000	µg/kg					U		300	µg/kg		
299-W18-249	100	100.5	B06W20	Soil	7/16/1992	4400	µg/kg					U				U	
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992	2300	µg/kg					U		400	µg/kg		
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992	1400	µg/kg					U				U	

Table C-45. Wet Chemistry Analysis Results for Well 299-W18-249 (216-Z-18 Crib) (3 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Phosphate (14265-44-2)				Sulfate (14808-79-8)			
						D4327				D4327			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-249	22.4	22.9	B06VY9	Soil	7/7/1992			U		19000	µg/kg		
299-W18-249	30.8	31.3	B06VZ3	Soil	7/8/1992								
299-W18-249	33	33.5	B06VZ7	Soil	7/8/1992								
299-W18-249	35	35.5	B06W01	Soil	7/8/1992								
299-W18-249	37	37.5	B06W05	Soil	7/8/1992								
299-W18-249	38.9	39.3	B06W09	Soil	7/9/1992								
299-W18-249	59.1	59.6	B06W12	Soil	7/13/1992								
299-W18-249	80.9	81.4	B06W16	Soil	7/14/1992			U		10000	µg/kg		
299-W18-249	100	100.5	B06W20	Soil	7/16/1992			U		6900	µg/kg		
299-W18-249	127.8	128.3	B06W25	Soil	7/21/1992			U		4000	µg/kg		
299-W18-249	146.2	146.7	B06W28	Soil	7/21/1992			U		2800	µg/kg		

Table C-46. Volatile Organic Analysis Results for Well 299-W18-252 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-252	4.5	4.5	B01PH2	Soil	5/3/1993	PNL1			U				U				U				U	
299-W18-252	9.5	9.5	B01PH3	Soil	5/3/1993	PNL1			U				U				U				U	
299-W18-252	15	15	B01PG5	Soil	5/3/1993	PNL1			U				U				U				U	
299-W18-252	20	20	B01PG4	Soil	5/3/1993	PNL1			U				U				U				U	
299-W18-252	25	25	B01PG6	Soil	5/4/1993	PNL1			U				U				U				U	
299-W18-252	30.6	30.6	B01PG7	Soil	5/4/1993	PNL1			U				U				U				U	
299-W18-252	35	35	B01PG8	Soil	5/5/1993	PNL1			U				U				U				U	
299-W18-252	39.5	39.5	B01PG9	Soil	5/5/1993	PNL1			U				U				U				U	
299-W18-252	44.7	44.7	B01PH1	Soil	5/6/1993	PNL1			U				U				U				U	
299-W18-252	49.5	49.5	B07BD5	Soil	5/10/1993	PNL1			U				U				U				U	
299-W18-252	55	55	B07BD6	Soil	5/10/1993	PNL1			U				U				U				U	
299-W18-252	59.5	59.5	B07BD7	Soil	5/11/1993	PNL1			U				U				U				U	
299-W18-252	65.5	65.5	B07BD8	Soil	5/11/1993	PNL1			U				U				U				U	
299-W18-252	70.5	70.5	B07BD9	Soil	5/12/1993	PNL1			U				U				U				U	
299-W18-252	75.5	75.5	B07BF0	Soil	5/12/1993	PNL1			U				U				U				U	
299-W18-252	80.2	80.2	B07BF1	Soil	5/12/1993	PNL1			U				U				U				U	
299-W18-252	85.5	85.5	B07BF2	Soil	5/13/1993	PNL1			U				U				U				U	
299-W18-252	89.7	89.7	B07BF3	Soil	5/13/1993	PNL1			U				U				U				U	
299-W18-252	96	96	B07BF4	Soil	5/13/1993	PNL1			U				U				U				U	
299-W18-252	99.5	99.5	B07BF5	Soil	5/14/1993	PNL1			U				U				U				U	
299-W18-252	105	105	B07BF6	Soil	5/14/1993	PNL1			U				U				U				U	
299-W18-252	115	115	B07BF7	Soil	5/17/1993	PNL1			U				U				U				U	
299-W18-252	121.3	121.3	B07BF8	Soil	5/18/1993	PNL1			U				U				U				U	
299-W18-252	126.5	126.5	B07BF9	Soil	5/19/1993	PNL1			U				U				U				U	
299-W18-252	129.5	129.5	B07BG0	Soil	5/19/1993	PNL1			U				U				U				U	
299-W18-252	134.8	134.8	B07BG1	Soil	5/19/1993	PNL1			U				U				U				U	
299-W18-252	142.1	142.1	B07BG2	Soil	5/25/1993	PNL1			U				U				U				U	
299-W18-252	145.5	145.5	B07BG3	Soil	5/25/1993	PNL1			U				U				U				U	
299-W18-252	149.7	149.7	B07BG4	Soil	5/26/1993	PNL1			U				U				U				U	
299-W18-252	154.5	154.5	B07BG5	Soil	5/26/1993	PNL1			U				U				U				U	
299-W18-252	159.5	159.5	B07BG6	Soil	5/26/1993	PNL1			U				U				U				U	
299-W18-252	164.5	164.5	B07BG7	Soil	5/27/1993	PNL1			U				U				U				U	
299-W18-252	164.5	164.5	B07BG8	Soil	5/27/1993	PNL1			U				U				U				U	
299-W18-252	172	172	B07BG9	Soil	5/28/1993	PNL1			U				U				U				U	
299-W18-252	175.5	175.5	B07BH0	Soil	6/1/1993	PNL1			U				U				U				U	
299-W18-252	182	182	B07BH1	Soil	6/1/1993	PNL1			U				U				U				U	
299-W18-252	185.1	185.1	B07BH2	Soil	6/1/1993	PNL1			U				U				U				U	

Table C-46. Volatile Organic Analysis Results for Well 299-W18-252 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Lab Code	1,1,1-Trichloroethane (71-55-6)				1,1-Dichloroethane (75-34-3)				1,2-Dichloroethane (107-06-2)				Benzene (71-43-2)			
							502.2				502.2				502.2				502.2			
							Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-252	191.7	191.7	B07BH3	Soil	6/1/1993	PNL1			U				U				U				U	
299-W18-252	195.8	195.8	B07BH4	Soil	6/3/1993	PNL1			U				U				U				U	
299-W18-252	199.5	199.5	B07BH5	Soil	6/3/1993	PNL1			U				U				U				U	
299-W18-252	206.1	206.1	B07BH6	Soil	6/7/1993	PNL1			U				U				U				U	
299-W18-252	211.1	211.1	B07C87	Soil	6/7/1993	PNL1			U				U				U				U	
299-W18-252	214.7	214.7	B07C88	Soil	6/8/1993	PNL1			U				U				U				U	
299-W18-252	220.2	220.2	B07C89	Soil	6/8/1993	PNL1			U				U				U				U	
299-W18-252	225.6	225.6	B07C90	Soil	6/9/1993	PNL1			U				U				U				U	

Table C-46. Volatile Organic Analysis Results for Well 299-W18-252 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-252	4.5	4.5	B01PH2	Soil	5/3/1993	6	µg/kg	J				U				U				U	
299-W18-252	9.5	9.5	B01PH3	Soil	5/3/1993	2	µg/kg	J				U				U				U	
299-W18-252	15	15	B01PG5	Soil	5/3/1993			U				U				U				U	
299-W18-252	20	20	B01PG4	Soil	5/3/1993			U				U				U				U	
299-W18-252	25	25	B01PG6	Soil	5/4/1993			U				U				U				U	
299-W18-252	30.6	30.6	B01PG7	Soil	5/4/1993			U				U				U				U	
299-W18-252	35	35	B01PG8	Soil	5/5/1993	7	µg/kg	J				U				U				U	
299-W18-252	39.5	39.5	B01PG9	Soil	5/5/1993	57	µg/kg					U				U				U	
299-W18-252	44.7	44.7	B01PH1	Soil	5/6/1993	18	µg/kg	J				U				U				U	
299-W18-252	49.5	49.5	B07BD5	Soil	5/10/1993			U				U				U				U	
299-W18-252	55	55	B07BD6	Soil	5/10/1993	16	µg/kg	J				U				U				U	
299-W18-252	59.5	59.5	B07BD7	Soil	5/11/1993			U				U				U				U	
299-W18-252	65.5	65.5	B07BD8	Soil	5/11/1993	48	µg/kg					U				U				U	
299-W18-252	70.5	70.5	B07BD9	Soil	5/12/1993	77	µg/kg					U				U				U	
299-W18-252	75.5	75.5	B07BF0	Soil	5/12/1993	62	µg/kg					U				U				U	
299-W18-252	80.2	80.2	B07BF1	Soil	5/12/1993	84	µg/kg					U				U				U	
299-W18-252	85.5	85.5	B07BF2	Soil	5/13/1993	25	µg/kg	J				U				U				U	
299-W18-252	89.7	89.7	B07BF3	Soil	5/13/1993	155	µg/kg					U				U				U	
299-W18-252	96	96	B07BF4	Soil	5/13/1993	101	µg/kg					U				U				U	
299-W18-252	99.5	99.5	B07BF5	Soil	5/14/1993	22	µg/kg					U				U				U	
299-W18-252	105	105	B07BF6	Soil	5/14/1993	9	µg/kg	J				U				U				U	
299-W18-252	115	115	B07BF7	Soil	5/17/1993			U				U				U				U	
299-W18-252	121.3	121.3	B07BF8	Soil	5/18/1993	6	µg/kg	J				U				U				U	
299-W18-252	126.5	126.5	B07BF9	Soil	5/19/1993	519	µg/kg			9	µg/kg	J				U				U	
299-W18-252	129.5	129.5	B07BG0	Soil	5/19/1993	74	µg/kg					U				U				U	
299-W18-252	134.8	134.8	B07BG1	Soil	5/19/1993	307	µg/kg			36	µg/kg					U				U	
299-W18-252	142.1	142.1	B07BG2	Soil	5/25/1993	53	µg/kg			68	µg/kg					U				U	
299-W18-252	145.5	145.5	B07BG3	Soil	5/25/1993	140	µg/kg			12	µg/kg	J				U				U	
299-W18-252	149.7	149.7	B07BG4	Soil	5/26/1993	56	µg/kg			12	µg/kg	J				U				U	
299-W18-252	154.5	154.5	B07BG5	Soil	5/26/1993	281	µg/kg					U				U				U	
299-W18-252	159.5	159.5	B07BG6	Soil	5/26/1993	205	µg/kg			11	µg/kg	J				U				U	
299-W18-252	164.5	164.5	B07BG7	Soil	5/27/1993	177	µg/kg					U				U				U	
299-W18-252	164.5	164.5	B07BG8	Soil	5/27/1993	377	µg/kg					U				U				U	
299-W18-252	172	172	B07BG9	Soil	5/28/1993	10	µg/kg	J				U				U				U	
299-W18-252	175.5	175.5	B07BH0	Soil	6/1/1993	116	µg/kg					U				U				U	
299-W18-252	182	182	B07BH1	Soil	6/1/1993			U				U				U				U	
299-W18-252	185.1	185.1	B07BH2	Soil	6/1/1993	159	µg/kg					U				U				U	

Table C-46. Volatile Organic Analysis Results for Well 299-W18-252 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Carbon tetrachloride (56-23-5)				Chloroform (67-66-3)				cis-1,2-Dichloroethylene (156-59-2)				Ethylbenzene (100-41-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-252	191.7	191.7	B07BH3	Soil	6/1/1993	8	µg/kg	J				U				U				U	
299-W18-252	195.8	195.8	B07BH4	Soil	6/3/1993			U				U				U				U	
299-W18-252	199.5	199.5	B07BH5	Soil	6/3/1993	130	µg/kg			10	µg/kg	J				U				U	
299-W18-252	206.1	206.1	B07BH6	Soil	6/7/1993	24	µg/kg	J				U				U				U	
299-W18-252	211.1	211.1	B07C87	Soil	6/7/1993			U				U				U				U	
299-W18-252	214.7	214.7	B07C88	Soil	6/8/1993			U				U				U				U	
299-W18-252	220.2	220.2	B07C89	Soil	6/8/1993			U				U				U				U	
299-W18-252	225.6	225.6	B07C90	Soil	6/9/1993			U				U				U				U	

Table C-46. Volatile Organic Analysis Results for Well 299-W18-252 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-252	4.5	4.5	B01PH2	Soil	5/3/1993			U				U				U				U	
299-W18-252	9.5	9.5	B01PH3	Soil	5/3/1993			U				U				U				U	
299-W18-252	15	15	B01PG5	Soil	5/3/1993			U				U				U				U	
299-W18-252	20	20	B01PG4	Soil	5/3/1993			U				U				U				U	
299-W18-252	25	25	B01PG6	Soil	5/4/1993			U				U				U				U	
299-W18-252	30.6	30.6	B01PG7	Soil	5/4/1993			U				U				U				U	
299-W18-252	35	35	B01PG8	Soil	5/5/1993			U				U				U				U	
299-W18-252	39.5	39.5	B01PG9	Soil	5/5/1993			U				U				U				U	
299-W18-252	44.7	44.7	B01PH1	Soil	5/6/1993			U								U				U	
299-W18-252	49.5	49.5	B07BD5	Soil	5/10/1993			U				U				U				U	
299-W18-252	55	55	B07BD6	Soil	5/10/1993			U				U				U				U	
299-W18-252	59.5	59.5	B07BD7	Soil	5/11/1993			U				U				U				U	
299-W18-252	65.5	65.5	B07BD8	Soil	5/11/1993			U				U				U				U	
299-W18-252	70.5	70.5	B07BD9	Soil	5/12/1993			U				U				U				U	
299-W18-252	75.5	75.5	B07BF0	Soil	5/12/1993			U				U				U				U	
299-W18-252	80.2	80.2	B07BF1	Soil	5/12/1993			U				U				U				U	
299-W18-252	85.5	85.5	B07BF2	Soil	5/13/1993			U				U				U				U	
299-W18-252	89.7	89.7	B07BF3	Soil	5/13/1993			U				U				U		6	µg/kg	J	
299-W18-252	96	96	B07BF4	Soil	5/13/1993			U				U				U				U	
299-W18-252	99.5	99.5	B07BF5	Soil	5/14/1993			U				U				U				U	
299-W18-252	105	105	B07BF6	Soil	5/14/1993			U				U				U				U	
299-W18-252	115	115	B07BF7	Soil	5/17/1993			U				U				U				U	
299-W18-252	121.3	121.3	B07BF8	Soil	5/18/1993			U				U				U				U	
299-W18-252	126.5	126.5	B07BF9	Soil	5/19/1993			U				U				U				U	
299-W18-252	129.5	129.5	B07BG0	Soil	5/19/1993			U				U				U				U	
299-W18-252	134.8	134.8	B07BG1	Soil	5/19/1993			U				U				U				U	
299-W18-252	142.1	142.1	B07BG2	Soil	5/25/1993			U								U				U	
299-W18-252	145.5	145.5	B07BG3	Soil	5/25/1993			U								U				U	
299-W18-252	149.7	149.7	B07BG4	Soil	5/26/1993			U								U				U	
299-W18-252	154.5	154.5	B07BG5	Soil	5/26/1993			U				U				U				U	
299-W18-252	159.5	159.5	B07BG6	Soil	5/26/1993			U								U				U	
299-W18-252	164.5	164.5	B07BG7	Soil	5/27/1993			U								U				U	
299-W18-252	164.5	164.5	B07BG8	Soil	5/27/1993			U								U				U	
299-W18-252	172	172	B07BG9	Soil	5/28/1993			U				U				U				U	
299-W18-252	175.5	175.5	B07BH0	Soil	6/1/1993			U				U				U				U	
299-W18-252	182	182	B07BH1	Soil	6/1/1993			U				U				U				U	
299-W18-252	185.1	185.1	B07BH2	Soil	6/1/1993			U				U				U				U	

Table C-46. Volatile Organic Analysis Results for Well 299-W18-252 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	m+p-Xylene (136777-61-2)				Methylene chloride (75-09-2)				o-Xylene (95-47-6)				Tetrachloroethene (127-18-4)			
						502.2				502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-252	191.7	191.7	B07BH3	Soil	6/1/1993			U				U				U				U	
299-W18-252	195.8	195.8	B07BH4	Soil	6/3/1993			U				U				U				U	
299-W18-252	199.5	199.5	B07BH5	Soil	6/3/1993			U		68	µg/kg					U				U	
299-W18-252	206.1	206.1	B07BH6	Soil	6/7/1993			U				U				U				U	
299-W18-252	211.1	211.1	B07C87	Soil	6/7/1993			U				U				U				U	
299-W18-252	214.7	214.7	B07C88	Soil	6/8/1993			U				U				U				U	
299-W18-252	220.2	220.2	B07C89	Soil	6/8/1993			U				U				U				U	
299-W18-252	225.6	225.6	B07C90	Soil	6/9/1993			U				U				U				U	

Table C-46. Volatile Organic Analysis Results for Well 299-W18-252 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-252	4.5	4.5	B01PH2	Soil	5/3/1993			U				U				U	
299-W18-252	9.5	9.5	B01PH3	Soil	5/3/1993			U				U				U	
299-W18-252	15	15	B01PG5	Soil	5/3/1993			U				U				U	
299-W18-252	20	20	B01PG4	Soil	5/3/1993			U				U				U	
299-W18-252	25	25	B01PG6	Soil	5/4/1993	11	µg/kg					U				U	
299-W18-252	30.6	30.6	B01PG7	Soil	5/4/1993	12	µg/kg					U				U	
299-W18-252	35	35	B01PG8	Soil	5/5/1993	280	µg/kg					U				U	
299-W18-252	39.5	39.5	B01PG9	Soil	5/5/1993			U				U				U	
299-W18-252	44.7	44.7	B01PH1	Soil	5/6/1993	260	µg/kg					U				U	
299-W18-252	49.5	49.5	B07BD5	Soil	5/10/1993			U				U				U	
299-W18-252	55	55	B07BD6	Soil	5/10/1993	17	µg/kg					U				U	
299-W18-252	59.5	59.5	B07BD7	Soil	5/11/1993			U				U				U	
299-W18-252	65.5	65.5	B07BD8	Soil	5/11/1993	37	µg/kg					U				U	
299-W18-252	70.5	70.5	B07BD9	Soil	5/12/1993			U				U				U	
299-W18-252	75.5	75.5	B07BF0	Soil	5/12/1993			U				U				U	
299-W18-252	80.2	80.2	B07BF1	Soil	5/12/1993			U				U				U	
299-W18-252	85.5	85.5	B07BF2	Soil	5/13/1993			U				U				U	
299-W18-252	89.7	89.7	B07BF3	Soil	5/13/1993			U				U				U	
299-W18-252	96	96	B07BF4	Soil	5/13/1993			U				U				U	
299-W18-252	99.5	99.5	B07BF5	Soil	5/14/1993			U				U				U	
299-W18-252	105	105	B07BF6	Soil	5/14/1993	151	µg/kg					U				U	
299-W18-252	115	115	B07BF7	Soil	5/17/1993	58	µg/kg					U				U	
299-W18-252	121.3	121.3	B07BF8	Soil	5/18/1993			U				U				U	
299-W18-252	126.5	126.5	B07BF9	Soil	5/19/1993			U				U				U	
299-W18-252	129.5	129.5	B07BG0	Soil	5/19/1993			U				U				U	
299-W18-252	134.8	134.8	B07BG1	Soil	5/19/1993	21	µg/kg					U				U	
299-W18-252	142.1	142.1	B07BG2	Soil	5/25/1993	71	µg/kg					U				U	
299-W18-252	145.5	145.5	B07BG3	Soil	5/25/1993	201	µg/kg					U				U	
299-W18-252	149.7	149.7	B07BG4	Soil	5/26/1993	21	µg/kg					U				U	
299-W18-252	154.5	154.5	B07BG5	Soil	5/26/1993			U				U				U	
299-W18-252	159.5	159.5	B07BG6	Soil	5/26/1993	53	µg/kg					U				U	
299-W18-252	164.5	164.5	B07BG7	Soil	5/27/1993			U				U				U	
299-W18-252	164.5	164.5	B07BG8	Soil	5/27/1993			U				U				U	
299-W18-252	172	172	B07BG9	Soil	5/28/1993	15	µg/kg					U				U	
299-W18-252	175.5	175.5	B07BH0	Soil	6/1/1993			U				U				U	
299-W18-252	182	182	B07BH1	Soil	6/1/1993	15	µg/kg					U				U	
299-W18-252	185.1	185.1	B07BH2	Soil	6/1/1993			U				U				U	

Table C-46. Volatile Organic Analysis Results for Well 299-W18-252 (216-Z-1A Tile Field) (8 Pages)

Location	Sample Top (ft bgs)	Sample Bottom (ft bgs)	Sample	Sample Type	Sample Date	Toluene (108-88-3)				trans-1,2-Dichloroethylene (156-60-5)				Trichloroethene (79-01-6)			
						502.2				502.2				502.2			
						Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ	Conc'n	Units	Q	VQ
299-W18-252	191.7	191.7	B07BH3	Soil	6/1/1993	19	µg/kg					U				U	
299-W18-252	195.8	195.8	B07BH4	Soil	6/3/1993			U				U				U	
299-W18-252	199.5	199.5	B07BH5	Soil	6/3/1993	626	µg/kg					U				U	
299-W18-252	206.1	206.1	B07BH6	Soil	6/7/1993			U				U				U	
299-W18-252	211.1	211.1	B07C87	Soil	6/7/1993	20	µg/kg					U				U	
299-W18-252	214.7	214.7	B07C88	Soil	6/8/1993			U				U				U	
299-W18-252	220.2	220.2	B07C89	Soil	6/8/1993			U				U				U	
299-W18-252	225.6	225.6	B07C90	Soil	6/9/1993			U				U				U	

APPENDIX D

AMERICIUM AND PLUTONIUM RESULTS FROM THE 216-Z-1A TILE FIELD

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APPENDIX D

AMERICIUM AND PLUTONIUM RESULTS FROM THE 216-Z-1A TILE FIELD

This appendix presents analytical results documented in RHO-ST-17, *Distribution of Plutonium and Americium Beneath the 216-Z-1A Crib: A Status Report*. The report documents work performed to characterize the distribution of plutonium and americium in sediments beneath the crib. Data summarized in this appendix are presented in RHO-ST-17, Appendix A, and include a combined Pu-239/240 soil concentration, an Am-241 soil concentration, and a counting standard deviation (sigma) for each sample analyzed. The data in the RHO-ST-17 report are provided in nanocuries per gram (nCi/g). To convert to picocuries per gram (pCi/g), multiply nCi/g by 1,000. The data set was provided electronically and was checked against RHO-ST-17, Appendix A, for accuracy. No laboratory data sheets were provided in RHO-ST-17 to validate the accuracy of the Appendix A data summary table. The table also identifies which of four laboratories performed each analysis. RHO-ST-17 provides information regarding the types of analyses performed and the rationale for selecting the sampling locations and depths.

REFERENCE

RHO-ST-17, 1979, *Distribution of Plutonium and Americium Beneath the 216-Z-1A Crib: A Status Report*, Rockwell Hanford Operations, Richland, Washington.

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-85	18.3	1.35 E-05	3.51 E-06		7.66 E-06	4.82 E-06	U	LFE
	24.4	5.86 E-06	3.10 E-06	U	9.46 E-06	5.73 E-06	U	LFE
	30.5	0.00 E+00	3.15 E-06	U	7.21 E-06	6.41 E-06	U	LFE
299-W18-86	18.3	1.08 E-05	7.46 E-06	U	5.86 E-06	3.69 E-06	U	LFE
	30.5	4.50 E-06	2.66 E-06	U	5.41 E-06	4.05 E-06	U	LFE
	44.2	2.21 E-05	4.64 E-06		-1.44 E-05	9.37 E-06	U	LFE
299-W18-87	9.1	1.98 E-05	4.36 E-06		7.21 E-06	4.11 E-06	U	LFE
	21.3	4.95 E-06	4.66 E-06	U	-4.50 E-06	4.23 E-06	U	LFE
	25.9	2.25 E-06	2.91 E-06	U	-4.50 E-06	4.64 E-06	U	LFE
	44.2	1.26 E-05	7.44 E-06	U	-7.21 E-06	6.41 E-06	U	LFE
299-W18-88	9.1	9.01 E-06	7.66 E-06	U	1.40 E-05	5.86 E-06	U	LFE
	16.8	9.00 E-05	9.19 E-07		-4.95 E-06	4.86 E-06	U	LFE
	41.1	5.18 E-05	6.73 E-06		0.00 E+00	4.50 E-06	U	LFE
299-W18-149	3.4	3.82 E+04	3.82 E+02		2.59 E+03	2.30 E+00		RHO
	3.7	8.24 E+03	2.47 E+02		5.09 E+02	1.30 E+00		RHO
	4.0	6.71 E+03	2.21 E+02		3.86 E+02	1.20 E+00		RHO
	4.3	2.08 E+04	3.96 E+02		1.31 E+03	2.10 E+00		RHO
	4.6	1.30 E+03	9.62 E+01		7.00 E+01	5.00 E-01		RHO
	4.9	2.18 E+03	1.23 E+02		5.57 E+01	4.00 E-01		RHO
	5.2	3.12 E+02	3.31 E+01		2.31 E+01	1.90 E-01		RHO
	5.5	7.43 E+02	5.45 E+00		1.34 E+02	2.79 E-01		PNL
	5.8	1.88 E+02	0.00 E+00	U	1.34 E+01	1.50 E-01		RHO
	6.1	2.93 E+02	8.50 E+00		9.77 E+01	1.60 E-01		RHO
	6.4	4.77 E+01	3.48 E+00		3.46 E+01	1.50 E-01		RHO
	6.7	--	--		1.10 E+01	1.30 E-01		RHO
	6.9	-	--		1.39 E+01	1.50 E-01		RHO
	7.3	1.59 E+01	2.18 E+00		7.24 E+00	1.10 E-01		RHO
	7.6	--	--		9.35 E+00	1.20 E-01		RHO
	8.2	1.95 E+00	4.91 E-01		5.14 E+01	7.21 E-02		PNL
	8.2	--	--		5.72 E+00	9.49 E-02		RHO
	8.8	--	--		3.70 E+01	2.40 E-01		RHO
	9.3	--	--		1.11 E-01	4.39 E-03		RHO
	9.4	--	--		1.91 E+01	1.70 E-01		RHO
	9.8	--	--		1.79 E+01	5.74 E-02		RHO
	10.1	--	--		2.10 E+01	6.09 E-02		RHO
	10.4	2.26 E+01	9.28 E-01		1.34 E+01	6.31 E-02		PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-149 (cont)	10.4	--	--		7.65 E+00	3.75 E-02		RHO
	10.7	--	--		2.53 E+00	2.20 E-02		RHO
	11.0	--	--		2.61 E+00	2.24 E-02		RHO
	11.6	--	--		1.95 E+00	1.87 E-02		RHO
	11.9	--	--		1.54 E+00	1.68 E-02		RHO
	12.2	--	--		4.14 E-01	7.16 E-03		RHO
	12.5	--	--		5.85 E-01	8.30 E-03		RHO
	13.7	1.18 E+01	1.77 E+00		1.86 E+01	5.54 E-02		PNL
	14.3	1.05 E+02	7.52 E+00		1.26 E+02	2.66 E-01		PNL
	14.3	--	--		1.96 E+01	5.48 E-02		RHO
	15.2	-2.78 E-02	1.52 E-02	U	1.83 E-02	3.26 E-04		PNL
	16.2	6.67 E-03	9.64 E-03	U	9.95 E-04	7.97 E-05		PNL
	16.8	-8.92 E-05	9.28 E-03	U	6.44 E-04	6.62 E-05		PNL
	17.4	--	--		7.12 E-02	2.66 E-03		RHO
	17.5	--	--		9.29 E-02	3.33 E-03		RHO
	18.3	-4.20 E-03	1.07 E-02	U	2.99 E-03	1.34 E-04		PNL
	18.3	5.50 E-01	4.95 E-02		1.82 E-01	1.01 E-03		PNL
	18.4	--	--		6.59 E-02	8.56 E-04		RHO
	18.7	--	--		4.84 E-02	7.45 E-04		RHO
	19.1	--	--		7.65 E-02	9.48 E-04		RHO
	19.8	1.26 E-02	9.01 E-03	U	4.86 E-05	3.20 E-05	U	PNL
	20	--	--		1.55 E-02	4.01 E-04		RHO
	20.4	--	--		2.09 E-02	4.77 E-04		RHO
	21.3	3.06 E-05	2.24 E-02	U	5.32 E-02	5.45 E-04		PNL
	21.6	--	--		1.54 E-02	4.13 E-04		RHO
	21.9	--	--		2.22 E-02	5.29 E-04		RHO
	23.2	--	--		2.04 E-02	4.92 E-04		RHO
	24.4	--	--		4.46 E-02	7.09 E-04		RHO
	24.7	2.59 E-02	1.49 E-02	U	1.70 E-02	3.60 E-04		PNL
	25.9	2.50 E-03	8.78 E-03	U	1.46 E-04	4.23 E-05	U	PNL
	26.8	--	--		1.72 E-02	4.38 E-04		RHO
	27.4	-1.35 E-03	9.86 E-03	U	1.80 E-03	1.08 E-04		PNL
	27.4	--	--		1.69 E-02	6.47 E-04		RHO
	27.7	--	--		2.02 E-02	5.29 E-04		RHO
	28.7	--	--		1.62 E-02	6.53 E-04		RHO
	29	--	--		1.44 E-02	5.66 E-04		RHO

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-150	2.4	4.35 E-01	0.00 E+00	U	1.31 E-01	8.88 E-03		RHO
	2.9	2.73 E+01	4.37 E+00		7.47 E-01	8.22 E-03		RHO
	2.9	3.08 E+00	3.07 E-01		2.12 E-01	5.84 E-03		RHO
	4.0	4.36 E+03	4.80 E+01		7.24 E+00	1.30 E-02		RHO
	4.6	1.15 E+03	2.41 E+01		1.64 E+00	5.91 E-03		RHO
	4.7	5.30 E+02	1.64 E+01		1.08 E+01	3.77 E-02		RHO
	4.9	1.70 E+00	2.55 E-01		4.34 E+00	1.48 E-02		RHO
	5.3	3.16 E+01	1.36 E+00		1.42 E+01	4.41 E-02		RHO
	5.3	3.22 E+02	1.42 E+01		5.74 E+00	2.98 E-02		RHO
	5.6	--	--		5.52 E+00	1.05 E-02		RHO
	5.6	5.74 E+02	1.78 E+01		3.60 E+01	6.84 E-02		RHO
	6.1	6.53 E+02	2.22 E+01		4.59 E+01	8.73 E-02		RHO
	6.2	4.22 E+01	1.60 E+00		4.24 E+01	7.21 E-02		RHO
	6.4	3.26 E+02	1.44 E+01		1.81 E+01	5.06 E-02		RHO
	6.4	3.71 E+02	4.08 E+01		2.01 E+02	6.42 E-01		RHO
	6.7	1.11 E+02	8.56 E+00		1.16 E+01	3.73 E-02		RHO
	7.3	2.30 E+02	3.45 E+01		1.60 E+02	5.76 E-01		RHO
	7.5	8.59 E+02	6.01 E+01		3.68 E+02	8.84 E-01		RHO
	8.2	7.12 E+01	6.90 E+00		3.41 E+00	2.01 E-02		RHO
	9.1	1.24 E+02	0.00 E+00	U	4.30 E+01	4.21 E-01		RHO
	9.1	--	--		2.52 E+00	1.67 E-02		RHO
	9.4	1.29 E+00	3.11 E-01		8.06 E+00	2.98 E-02		RHO
	11.6	3.39 E+00	4.40 E-01		2.72 E+01	4.90 E-02		RHO
	11.7	3.01 E+00	6.39 E-01		3.65 E+01	7.31 E-02		RHO
	12.0	2.01 E+00	5.03 E-01		2.34 E+01	5.85 E-02		RHO
	12.3	2.40 E+00	5.76 E-01		2.56 E+01	6.16 E-02		RHO
	13	2.88 E+00	0.00 E+00	U	2.49 E+01	6.48 E-02		RHO
	13.3	2.14 E+00	5.14 E-01		2.05 E+01	4.93 E-02		RHO
	13.6	8.24 E-01	0.00 E+00	U	1.68 E+01	4.37 E-02		RHO
	14.2	7.65 E-01	0.00 E+00	U	2.04 E+01	4.88 E-02		RHO
	14.5	1.53 E+00	0.00 E+00	U	2.74 E+01	6.02 E-02		RHO
	21.2	1.76 E-01	8.70 E-02	U	1.01 E+00	2.30 E-03		PNL
	25	1.39 E-01	5.40 E-02	U	3.10 E-01	1.26 E-03		PNL
	26.1	-1.80 E-01	1.10 E-02	U	1.90 E-03	1.08 E-04		PNL
	26.5	1.50 E-02	7.92 E-03	U	1.32 E-04	4.68 E-05	U	PNL
	28.7	3.90 E-02	4.20 E-02	U	2.30 E-01	1.10 E-03		PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-150 (cont)	29.7	3.40 E-02	2.20 E-02	U	4.50 E-02	4.86 E-04		PNL
	34.1	-3.02 E-03	6.03 E-03	U	2.18 E-04	4.36 E-05		PNL
	34.7	1.03 E-02	7.11 E-03	U	1.66 E-04	8.55 E-05	U	PNL
	35.7	-1.00 E-02	7.47 E-03	U	-7.52 E-05	3.15 E-05	U	PNL
	36.6	1.33 E-02	9.82 E-03	U	4.00 E-04	6.04 E-05		PNL
	36.6	2.02 E-02	5.67 E-03		-1.48 E-05	3.15 E-05	U	PNL
	37.8	1.69 E-02	8.86 E-03	U	1.40 E-05	3.92 E-05	U	PNL
	37.8	0.00 E+00	3.60 E-06	U	0.00 E+00	7.66 E-06	U	LFE
	39	-6.01 E-03	8.51 E-03	U	-1.98 E-05	3.33 E-05	U	PNL
	39	5.41 E-06	4.05 E-06	U	7.03 E-05	7.73 E-06		LFE
299-W18-158	6.1	6.76 E-03	0.00 E+00	U	2.39 E-05	0.00 E+00	U	PNL
	13.1	7.39 E-03	0.00 E+00	U	1.04 E-05	8.56 E-06	U	PNL
	15.2	3.76 E-02	2.97 E-03		2.07 E-03	2.70 E-05		PNL
	19.8	7.03 E-03	0.00 E+00	U	2.34 E-05	8.56 E-06	U	PNL
	24.4	6.35 E-03	0.00 E+00	U	2.12 E-05	8.11 E-06	U	PNL
	28.3	4.55 E-03	2.61 E-03	U	7.66 E-06	9.91 E-06	U	PNL
299-W18-159	3.4	1.34 E+02	2.41 E+01		3.66 E+01	6.00 E-02		RHO
	3.4	3.05 E+02	7.12 E+00		5.45 E+01	1.75 E-01		PNL
	4.0	1.03 E+03	7.46 E+01		9.92 E+01	1.30 E-01		RHO
	4.7	3.24 E+02	3.56 E+01		6.32 E+01	8.00 E-02		RHO
	4.7	5.99 E+02	1.30 E+01		7.48 E+01	2.90 E-01		PNL
	5.5	4.82 E+02	3.76 E+01		7.43 E+01	8.00 E-02		RHO
	6.4	1.26 E+03	9.83 E+01		9.09 E+01	1.80 E-01		RHO
	7.2	5.31 E+02	3.82 E+01		6.48 E+01	8.00 E-02		RHO
	7.9	4.96 E+02	3.92 E+01		7.13 E+01	8.00 E-02		RHO
	8.7	4.80 E+01	0.00 E+00	U	2.09 E+01	0.00 E+00	U	RHO
	8.7	6.80 E+00	1.50 E+00		2.37 E+01	3.65 E-02		PNL
	9.8	4.80 E+01	0.00 E+00	U	2.31 E+01	4.00 E-02		RHO
	10.5	5.90 E+01	0.00 E+00	U	2.16 E+01	4.00 E-02		RHO
	11.3	4.50 E+01	0.00 E+00	U	3.65 E+01	6.00 E-02		RHO
	11.3	2.99 E+01	3.65 E+00		4.07 E+01	1.25 E-01		PNL
	12.0	3.70 E+01	0.00 E+00	U	3.03 E+01	5.00 E-02		RHO
	12.8	2.49 E+02	2.74 E+01		5.37 E+01	6.00 E-02		RHO
	12.8	3.82 E+02	1.12 E+01		6.78 E+01	2.76 E-01		PNL
	14.3	1.56 E+02	1.22 E+01		4.12 E+02	4.60 E-01		PNL
	14.5	2.29 E+00	2.76 E+00	U	2.67 E+01	1.10 E-01		PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-159 (cont)	14.6	5.50 E-01	5.00 E-02		2.80 E-01	1.30 E-02		PNL
	17.4	1.59 E+02	7.92 E+00		2.26 E+02	3.11 E-01		PNL
	17.8	-2.50 E-01	1.97 E+00	U	5.18 E+00	8.80 E-02		PNL
	18.6	1.03 E+00	4.86 E+00	U	3.08 E+01	2.10 E-01		PNL
	21.0	7.81 E-03	6.90 E-03	U	6.17 E-04	5.85 E-05		PNL
	22.9	6.48 E-04	1.20 E-02	U	4.90 E-03	1.76 E-04		PNL
	23.2	-3.91 E-03	9.71 E-03	U	3.65 E-03	1.44 E-04		PNL
	23.8	5.23 E-03	1.01 E-02	U	2.06 E-03	1.12 E-04		PNL
	23.8	2.21 E-02	9.20 E-03	U	1.27 E-03	1.12 E-04		PNL
	24.7	-2.20 E-03	6.56 E-03	U	1.10 E-03	7.20 E-05		PNL
	25.0	4.26 E-03	8.09 E-03	U	4.61 E-03	1.40 E-04		PNL
	25.0	1.40 E-02	1.10 E-02	U	5.71 E-03	1.94 E-04		PNL
	25.9	6.98 E-03	3.02 E-03	U	1.88 E-03	3.60 E-05		PNL
	27.0	4.90 E-03	6.13 E-03	U	1.26 E-04	3.60 E-05	U	PNL
	28.3	-6.00 E-03	6.22 E-03	U	8.10 E-05	3.15 E-05	U	PNL
	29.9	-2.30 E-03	8.78 E-03	U	-1.62 E-05	2.59 E-05	U	PNL
	29.9	1.83 E-02	9.67 E-03	U	-5.85 E-06	3.15 E-05	U	PNL
	31.4	-3.45 E-03	7.20 E-03	U	1.94 E-04	4.50 E-05		PNL
	33.8	-1.10 E-02	8.60 E-03	U	3.15 E-05	3.15 E-05	U	PNL
	35.4	7.52 E-03	9.55 E-03	U	1.80 E-05	3.15 E-05	U	PNL
	37.2	3.87 E-03	7.30 E-03	U	1.80 E-05	3.60 E-05	U	PNL
	39.6	1.02 E-02	1.00 E-02	U	5.00 E-04	7.20 E-05		PNL
299-W18-163	6.1	1.08 E-03	6.71 E-03	U	4.76 E-05	3.24 E-05	U	PNL
	7.6	3.22 E-03	6.41 E-03	U	-2.65 E-05	2.61 E-05	U	PNL
	11.0	4.77 E-03	6.15 E-03	U	4.60 E-06	2.75 E-05	U	PNL
	14.0	1.10 E-02	5.72 E-03	U	5.09 E-03	9.01 E-05		PNL
	15.1	4.30 E-01	1.10 E-01		1.58 E+00	3.10 E-02		PNL
	16.2	-2.40 E-03	2.77 E-03	U	3.24 E-05	1.30 E-05	U	PNL
	18.3	3.32 E-03	7.14 E-03	U	6.30 E-05	3.69 E-05	U	PNL
	19.8	4.50 E-04	3.60 E-03	U	1.17 E-04	1.80 E-05		PNL
	21.3	3.34 E-03	8.34 E-03	U	0.00 E+00	3.65 E-05	U	PNL
	25.9	1.11 E-02	5.23 E-03	U	2.25 E-05	2.25 E-05	U	PNL
	28.8	4.30 E-03	8.11 E-03	U	-4.45 E-05	3.20 E-05	U	PNL
	32.0	1.07 E-02	9.85 E-03	U	-5.90 E-05	4.19 E-05	U	PNL
	33.8	1.49 E-05	3.58 E-06		4.95 E-06	5.40 E-06	U	LFE
	35.1	0.00 E+00	3.15 E-06	U	0.00 E+00	3.15 E-06	U	LFE

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-163 (cont)	36.6	-9.00 E-04	4.90 E-03	U	5.10 E-05	2.20 E-05	U	PNL
	36.6	4.82 E-03	0.00 E+00	U	4.50 E-05	1.80 E-05	U	PNL
	36.6	0.00 E+00	2.25 E-06	U	0.00 E+00	3.15 E-06	U	LFE
	37.9	0.00 E+00	2.25 E-06	U	0.00 E+00	4.05 E-06	U	LFE
	39.6	4.05 E-06	2.47 E-06	U	6.76 E-06	4.12 E-06	U	LFE
	41.1	1.71 E-03	2.88 E-03	U	1.04 E-05	1.13 E-05	U	PNL
	41.1	2.25 E-06	2.90 E-06	U	3.60 E-06	3.31 E-06	U	LFE
299-W18-164	3.0	-3.70 E-04	2.00 E-03	U	1.08 E-05	8.36 E-06	U	PNL
	3.0	4.05 E-06	3.16 E-06	U	0.00 E+00	9.01 E-06	U	LFE
	7.6	4.30 E-03	6.60 E-03	U	-1.76 E-05	3.87 E-05	U	PNL
	9.1	5.49 E-03	2.59 E-03	U	4.18 E-06	1.00 E-05	U	PNL
	9.1	5.41 E-03	3.15 E-03	U	4.05 E-06	9.01 E-06	U	PNL
	10.7	2.20 E-01	0.00 E+00	U	6.37 E-02	0.00 E+00	U	IRT
	10.8	4.86 E+00	1.76 E+00	U	9.50 E+00	5.30 E-02		PNL
	10.8	1.85 E+00	7.56 E-01	U	9.63 E+00	2.38 E+00		PNL
	10.8	1.03 E+00	6.80 E-01	U	9.91 E+00	2.34 E-02		PNL
	10.8	7.86 E+00	3.11 E+00	U	1.92 E+01	4.70 E-01		IRT
	15.2	-9.50 E-04	2.30 E-03	U	5.06 E-01	8.06 E-03		PNL
	16.8	2.40 E-01	0.00 E+00	U	5.38 E-02	0.00 E+00	U	IRT
	19.8	-1.86 E-03	5.18 E-03	U	-1.60 E-06	2.29 E-05	U	PNL
	19.8	2.40 E-01	0.00 E+00	U	6.09 E-02	0.00 E+00	U	IRT
	20.7	8.18 E-01	3.45 E-01	U	5.90 E-01	4.89 E-02		IRT
	21.3	6.17 E+00	7.25 E-02	U	1.36 E+01	2.39 E-02		PNL
	21.3	2.02 E+01	3.30 E+00		1.65 E+01	9.55 E-02		PNL
	21.3	1.76 E+01	3.41 E+00		1.83 E+01	1.00 E-01		PNL
	21.3	1.39 E+01	3.39 E+00		1.83 E+01	1.00 E-01		PNL
	21.3	9.50 E+00	3.52 E+00	U	1.91 E+01	1.06 E-01		PNL
	21.3	1.87 E+01	3.45 E+00		1.83 E+01	1.00 E-01		PNL
	21.3	6.94 E+00	3.27 E+00	U	1.80 E+01	9.95 E-02		PNL
	21.3	1.36 E+01	3.28 E+00		1.73 E+01	9.82 E-02		PNL
	21.3	1.54 E+01	3.34 E+00		1.69 E+01	9.68 E-02		PNL
	21.3	2.77 E+01	3.86 E+00		2.35 E+01	1.14 E-01		PNL
	21.3	6.40 E+00	3.51 E+00	U	1.94 E+01	1.48 E-01		PNL
	21.3	8.96 E+00	2.49 E+00		1.23 E+01	1.02 E-01		PNL
	21.3	6.75 E+00	7.90 E-01		1.36 E+01	2.38 E-02		PNL
	21.3	1.25 E+00	4.02 E-01	U	4.00 E-01	5.70 E-02		IRT

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-164 (cont)	21.8	3.84 E+01	6.26 E+00		6.48 E+01	1.93 E-01		PNL
	21.8	4.59 E+01	1.86 E+00		6.04 E+01	5.86 E-02		PNL
	21.8	5.68 E+01	5.32 E+00		4.41 E+01	4.93 E-01		IRT
	21.8	1.24 E+00	0.00 E+00	U	2.54 E+00	1.68 E-01		IRT
	21.8	6.95 E+00	1.46 E+00		3.22 E+00	2.09 E-01		IRT
	21.8	7.36 E+00	1.43 E+00		3.44 E+00	2.02 E-01		IRT
	21.8	1.75 E+00	1.43 E+00	U	3.48 E+00	2.02 E-01		IRT
	22.1	6.37 E+01	5.59 E+00		3.51 E+01	6.53 E-01		IRT
	22.9	0.00 E+00	2.10 E+00	U	3.45 E+00	6.12 E-02		PNL
	22.9	5.00 E-01	3.90 E-01	U	3.56 E+00	1.09 E-02		PNL
	22.9	3.04 E-01	1.40 E-01	U	3.73 E+00	4.95 E-03		PNL
	22.9	9.87 E+00	3.13 E+00	U	1.22 E+01	4.29 E-01		IRT
	23.2	3.64 E-01	1.47 E-01	U	5.05 E-02	0.00 E+00	U	IRT
	24.4	3.36 E-01	0.00 E+00	U	1.03 E-01	4.03 E-02	U	IRT
	25.0	2.68 E-02	2.27 E-02	U	7.49 E-02	5.99 E-04		PNL
	25.0	3.35 E-01	2.00 E-01	U	7.30 E-02	0.00 E+00	U	IRT
	25.9	2.58 E+00	3.55 E+00	U	2.71 E+01	1.11 E-01		PNL
	25.9	6.70 E+00	1.18 E+00		2.94 E+01	3.60 E-02		PNL
	25.9	6.17 E+00	1.08 E+00		2.94 E+01	3.60 E-02		PNL
	25.9	1.56 E+01	3.17 E+00		1.69 E+01	4.07 E-01		IRT
	26.5	8.09 E+01	1.03 E+01		2.52 E+02	4.35 E-01		PNL
	27.1	1.17 E+02	8.50 E+00		1.59 E+02	3.45 E-01		PNL
	27.1	7.90 E+01	1.25 E+01		1.08 E+02	1.07 E+00		IRT
	28.0	1.74 E+01	2.30 E+00		2.64 E+01	6.84 E-02		PNL
	28.0	1.76 E+01	1.17 E+00		2.91 E+01	3.49 E-02		PNL
	28.0	1.62 E+01	1.07 E+00		2.91 E+01	3.51 E-02		PNL
	30.6	3.01 E+00	1.81 E+00	U	6.37 E+00	2.50 E-01		IRT
	32.0	-6.30 E-04	3.25 E-03	U	9.59 E-04	3.51 E-05		PNL
	32.0	9.91 E-06	8.13 E-06	U	0.00 E+00	4.50 E-06	U	LFE
	32.6	2.70 E-01	0.00 E+00	U	6.00 E-02	0.00 E+00	U	IRT
	35.1	1.80 E-06	1.44 E-04	U	0.00 E+00	4.50 E-06	U	LFE
	36.6	1.05 E-03	2.07 E-03	U	1.08 E-05	8.68 E-06	U	PNL
	36.6	1.04 E-03	2.07 E-03	U	9.91 E-06	8.11 E-06		PNL
	36.6	9.91 E-06	2.97 E-06	U	0.00 E+00	4.50 E-06		LFE
	39.0	6.26 E-03	3.02 E-03	U	-1.08 E-05	1.26 E-05		PNL
	39.6	0.00 E+00	6.31 E-06	U	1.44 E-05	2.59 E-06		LFE

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-164 (cont)	41.1	0.00 E+00	5.41 E-06	U	3.65 E-05	1.05 E-05		LFE
	42.7	9.34 E-03	2.64 E-02	U	-4.36 E-05	1.14 E-04		PNL
	42.7	5.41 E-06	2.54 E-06	U	6.31 E-06	3.98 E-06		LFE
	44.3	0.00 E+00	4.95 E-06	U	1.26 E-05	1.12 E-05		LFE
	45.7	-4.72 E-03	8.19 E-03	U	4.77 E-05	3.47 E-05		PNL
	45.7	0.00 E+00	2.70 E-06	U	3.47 E-05	5.90 E-06		LFE
	46.8	2.25 E-06	1.40 E-06	U	1.76 E-05	7.53 E-06		LFE
299-W18-165	4.6	1.33 E-03	2.39 E-03	U	1.71 E-05	1.80 E-05	U	PNL
	6.1	4.21 E-01	0.00 E+00	U	8.45 E-02	0.00 E+00	U	IRT
	7.9	0.00 E+00	8.45 E-03	U	1.08 E-05	2.56 E-05	U	PNL
	9.1	-1.20 E-02	9.45 E-03	U	4.41 E-05	3.74 E-05	U	PNL
	9.1	2.81 E-01	0.00 E+00	U	6.17 E-02	0.00 E+00	U	IRT
	10.7	2.19 E-01	0.00 E+00	U	6.48 E-02	0.00 E+00	U	IRT
	14.3	1.15 E-02	7.96 E-03	U	0.00 E+00	2.97 E-05	U	PNL
	16.2	4.15 E+00	9.59 E-02		4.86 E-01	1.67 E-03		PNL
	16.2	6.19 E+00	6.12 E-01		5.12 E-01	7.95 E-02		IRT
	17.4	3.13 E+00	9.73 E-02		2.21 E-01	1.44 E-03		PNL
	17.4	3.53 E-01	1.88 E-01	U	5.96 E-02	0.00 E+00	U	IRT
	18.4	2.74 E-01	2.52 E-02		2.41 E-02	3.69 E-04		PNL
	19.8	2.45 E-01	0.00 E+00	U	6.78 E-02	0.00 E+00	U	IRT
	21.3	8.06 E-03	8.54 E-03	U	-1.00 E-05	3.46 E-05	U	PNL
	23.2	1.58 E-01	0.00 E+00	U	4.54 E-02	0.00 E+00	U	IRT
	24.4	0.00 E+00	8.45 E-03	U	2.16 E-05	3.15 E-05	U	PNL
	26.1	2.11 E-01	0.00 E+00	U	5.42 E-02	0.00 E+00	U	IRT
	27.4	5.75 E-03	8.68 E-03	U	5.90 E-06	3.46 E-05	U	PNL
	27.4	2.83 E-01	0.00 E+00	U	5.86 E-02	0.00 E+00	U	IRT
	27.7	1.96 E+02	3.84 E+01		2.87 E+02	9.96 E-01		PNL
	27.7	1.00 E+00	0.00 E+00	U	1.86 E+00	1.30 E-01		IRT
	28.3	4.82 E+02	5.77 E+01		7.93 E+02	1.65 E+00		PNL
	29.3	2.48 E+00	6.63 E-01		7.85 E-01	1.40 E-02		PNL
	29.9	6.98 E+00	1.90 E+00		1.14 E+01	6.98 E-02		PNL
	32.5	3.03 E-01	2.95 E-01	U	9.73 E-02	0.00 E+00	U	IRT
	33.8	0.00 E+00	9.63 E-03	U	5.40 E-06	4.36 E-06	U	PNL
	33.8	4.50 E-06	2.79 E-06	U	5.86 E-05	1.29 E-05		LFE
	35.1	0.00 E+00	3.60 E-06	U	5.14 E-05	9.25 E-06		LFE
	37.5	5.75 E-03	9.96 E-03	U	1.35 E-04	4.50 E-05	U	PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-165 (cont)	40.5	2.70 E-06	3.94 E-06	U	3.60 E-06	3.46 E-06	U	LFE
	41.1	0.00 E+00	1.40 E-02	U	-5.90 E-06	2.84 E-05	U	PNL
	41.1	0.00 E+00	2.70 E-06	U	0.00 E+00	8.11 E-06	U	LFE
299-W18-166	1.5	1.35 E-05	5.00 E-06	U	5.86 E-06	4.57 E-06	U	LFE
	6.1	1.30 E-02	9.14 E-03	U	7.67 E-05	2.84 E-05	U	PNL
	13.6	0.00 E+00	9.63 E-03	U	7.02 E-05	3.15 E-05	U	PNL
	15.2	3.44 E-03	6.03 E-03	U	0.00 E+00	3.70 E-05	U	PNL
	15.2	2.51 E-01	0.00 E+00	U	5.25 E-02	0.00 E+00	U	IRT
	16.8	0.00 E+00	9.50 E-03	U	4.32 E-05	3.60 E-05	U	PNL
	18.3	-2.21 E-03	8.73 E-03	U	5.30 E-05	4.14 E-05	U	PNL
	18.3	3.39 E-01	0.00 E+00	U	1.51 E-01	4.20 E-02		IRT
	19.8	8.06 E-03	7.70 E-03	U	-7.08 E-05	3.28 E-05	U	PNL
	19.8	4.97 E-01	0.00 E+00	U	8.74 E-02	0.00 E+00	U	IRT
	20.3	0.00 E+00	8.78 E-03	U	-3.54 E-05	3.46 E-05	U	PNL
	22.3	1.00 E-01	8.06 E-03		2.70 E-05	3.74 E-05	U	PNL
	24.1	3.69 E-01	0.00 E+00	U	9.12 E-02	0.00 E+00	U	IRT
	25.9	3.91 E-01	0.00 E+00	U	9.11 E-02	4.98 E-02	U	IRT
	27.7	6.90 E-03	8.91 E-03	U	-1.18 E-05	3.46 E-05	U	PNL
	28.3	1.11 E+02	2.54 E+01		1.58 E+02	7.39 E-01		PNL
	28.3	7.22 E+01	7.39 E+00		5.77 E+01	7.35 E-01		IRT
	29.1	5.90 E-01	0.00 E+00	U	1.42 E-01	6.64 E-02	U	IRT
	29.9	-6.00 E-03	1.10 E-02	U	5.95 E-03	1.67 E-04		PNL
	30.5	1.05 E+01	1.53 E+00		9.50 E+00	4.86 E-02		PNL
	31.7	-1.07 E-03	1.80 E-02	U	3.14 E-02	4.23 E-04		PNL
	33.5	2.03 E-01	0.00 E+00	U	5.22 E-02	0.00 E+00	U	IRT
	34.9	4.10 E-03	7.40 E-03	U	2.93 E-05	3.69 E-03	U	PNL
	36.4	2.25 E-06	1.31 E-06	U	0.00 E+00	6.31 E-06	U	LFE
	38.1	2.18 E-02	9.68 E-03	U	1.17 E-04	0.00 E+00	U	PNL
	38.1	8.56 E-06	3.51 E-06	U	3.42 E-05	6.84 E-06		LFE
	40.2	6.76 E-06	4.06 E-06	U	1.22 E-05	7.32 E-06	U	LFE
	41.8	3.00 E-02	8.92 E-03		-5.85 E-06	3.60 E-05	U	PNL
	41.8	4.05 E-06	3.32 E-06	U	0.00 E+00	6.31 E-06	U	LFE
299-W18-167	6.1	-1.26 E-04	2.53 E-03	U	1.48 E-05	1.09 E-05	U	PNL
	13.4	5.37 E-03	7.36 E-03	U	4.14 E-05	3.69 E-05	U	PNL
	14.8	-8.33 E-03	5.65 E-03	U	-1.81 E-05	2.92 E-05	U	PNL
	16.2	-3.43 E-03	3.46 E-03	U	2.74 E-05	1.22 E-05	U	PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-167 (cont)	16.2	2.30 E-01	0.00 E+00	U	7.70 E-02	0.00 E+00	U	IRT
	16.8	8.79 E+02	4.39 E+01		4.15 E+02	3.05 E+00		IRT
	17.1	2.09 E+00	7.51 E-01	U	4.31 E-01	1.10 E-01		IRT
	17.7	1.80 E+00	5.80 E-01	U	4.10 E+00	2.48 E-02		PNL
	17.7	3.25 E-01	1.05 E-01	U	4.82 E+00	1.38 E-01		IRT
	18.3	-4.40 E-02	1.60 E-02	U	3.00 E-02	3.96 E-04		PNL
	18.3	1.57 E-01	0.00 E+00	U	3.81 E-02	0.00 E+00	U	IRT
	19.5	3.36 E-01	0.00 E+00	U	7.03 E-02	4.31 E-02	U	IRT
	21.6	-8.60 E-04	6.67 E-03	U	6.75 E-05	3.42 E-05	U	PNL
	23.2	4.34 E-03	6.96 E-03	U	7.88 E-05	4.05 E-05	U	PNL
	31.1	3.15 E-06	4.06 E-06	U	4.95 E-05	9.41 E-06		LFE
	31.4	-4.32 E-03	8.53 E-03	U	1.76 E-05	3.96 E-05	U	PNL
	36.9	2.70 E-06	3.48 E-06	U	5.86 E-06	7.03 E-06	U	LFE
	39.0	-1.18 E-03	9.32 E-03	U	8.86 E-05	3.87 E-05	U	PNL
	40.8	0.00 E+00	1.80 E-06	U	0.00 E+00	4.50 E-06	U	LFE
299-W18-168	8.2	-4.30 E-03	7.44 E-03	U	5.85 E-06	2.97 E-05	U	PNL
	13.7	1.08 E-03	8.11 E-03	U	5.85 E-06	3.28 E-05	U	PNL
	14.9	1.15 E+01	7.36 E+00	U	1.92 E+01	2.80 E-01		PNL
	16.2	-2.33 E-03	3.39 E-03	U	6.58 E-03	6.48 E-05		PNL
	17.7	1.36 E+02	1.30 E+01		1.94 E+02	5.20 E-01		PNL
	19.8	-1.26 E-04	4.24 E-03	U	1.79 E-03	1.04 E-04		PNL
	22.6	1.17 E-04	1.05 E-02	U	1.24 E-04	4.23 E-05	U	PNL
	22.9	2.45 E-03	2.92 E-03	U	7.38 E-04	2.43 E-05		PNL
	25.9	3.82 E-04	2.86 E-03	U	1.04 E-04	1.53 E-05		PNL
	29.0	-9.90 E-05	9.72 E-03	U	8.28 E-05	5.13 E-05	U	PNL
	33.5	0.00 E+00	1.80 E-06	U	1.17 E-05	9.59 E-06	U	LFE
	34.7	7.21 E-06	2.60 E-06	U	3.42 E-05	6.84 E-06		LFE
	36.3	1.67 E-05	8.85 E-06	U	1.26 E-05	4.54 E-06	U	LFE
	38.6	8.56 E-06	4.71 E-06	U	1.46 E-03	7.30 E-05		LFE
299-W18-169	7.0	0.00 E+00	7.02 E-03	U	-1.40 E-05	3.06 E-05	U	PNL
	7.0	1.25 E-04	1.13 E-05		1.35 E-06	1.80 E-06	U	LFE
	10.1	-1.10 E-02	7.89 E-03	U	4.72 E-05	3.24 E-05	U	PNL
	11.0	1.39 E+01	3.01 E+00		2.04 E+01	1.20 E-01		PNL
	11.4	6.84 E+01	4.90 E+00		5.49 E+01	1.40 E-01		PNL
	13.3	6.41 E-01	3.26 E-01	U	2.21 E+02	1.20 E-02		PNL
	14.3	1.35 E-03	7.11 E-03	U	1.09 E-03	7.42 E-05		PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-169 (cont)	16.3	1.26 E-03	2.53 E-03	U	4.00 E-06	1.12 E-05	U	PNL
	18.3	2.12 E-03	9.00 E-03	U	2.97 E-05	3.87 E-05	U	PNL
	20.1	-1.42 E-03	5.49 E-03	U	6.39 E-05	2.70 E-05	U	PNL
	20.1	0.00 E+00	3.60 E-06	U	1.04 E-05	4.47 E-06	U	LFE
	22.4	-6.00 E-03	5.93 E-03	U	4.77 E-05	2.74 E-05	U	PNL
	26.2	5.58 E-03	1.02 E-02	U	7.29 E-04	7.34 E-05		PNL
	27.4	-1.40 E-02	1.15 E-02	U	2.06 E-03	1.11 E-04		PNL
	27.7	3.22 E-03	5.98 E-03	U	1.77 E-05	4.91 E-05	U	PNL
	28.3	5.09 E-03	5.49 E-03	U	4.50 E-05	3.20 E-05	U	PNL
	28.3	7.66 E-06	4.67 E-06	U	4.46 E-05	7.14 E-06		LFE
	29.3	7.85 E-03	1.15 E-02	U	2.00 E-04	5.88 E-05		PNL
	31.7	-3.38 E-03	5.76 E-03	U	1.94 E-05	3.46 E-05	U	PNL
	31.7	2.70 E-06	2.38 E-06	U	2.97 E-05	1.13 E-05	U	LFE
	33.5	1.29 E-03	6.39 E-03	U	-3.80 E-06	2.97 E-05	U	PNL
	33.5	0.00 E+00	1.80 E-06	U	1.80 E-05	4.68 E-06		LFE
	35.1	-2.62 E-03	6.75 E-03	U	1.89 E-05	2.79 E-05	U	PNL
	35.1	0.00 E+00	4.50 E-06	U	6.89 E-05	5.42 E-05	U	LFE
	36.6	1.29 E-03	7.02 E-03	U	-1.48 E-05	3.28 E-05	U	PNL
	36.6	0.00 E+00	3.60 E-06	U	1.26 E-05	9.77 E-06	U	LFE
	40.2	6.44 E-04	6.84 E-03	U	-5.67 E-05	3.28 E-05	U	PNL
	40.2	2.70 E-06	2.54 E-06	U	-7.66 E-06	8.58 E-06	U	LFE
299-W18-171	13.1	1.01 E-02	1.06 E-02	U	7.34 E-05	3.74 E-05	U	PNL
	16.2	-6.20 E-03	1.05 E-02	U	3.92 E-05	3.78 E-05	U	PNL
	19.8	0.00 E+00	1.10 E-02	U	-4.41 E-05	4.00 E-05	U	PNL
	20.4	5.13 E-03	1.17 E-02	U	1.44 E-05	4.28 E-05	U	PNL
	21.0	-7.30 E-03	9.68 E-03	U	6.34 E-05	4.00 E-05	U	PNL
	22.9	-5.31 E-05	2.30 E-03	U	-8.10 E-06	9.00 E-06	U	PNL
	22.9	0.00 E+00	2.70 E-06	U	4.50 E-05	6.75 E-06		LFE
	25.9	-4.20 E-03	8.04 E-03	U	-4.14 E-05	3.89 E-05	U	PNL
	26.5	7.52 E-03	8.39 E-03	U	-2.34 E-05	3.54 E-05	U	PNL
	26.8	-6.20 E-03	1.07 E-02	U	1.84 E-03	1.08 E-04		PNL
	27.7	0.00 E+00	7.60 E-03	U	1.59 E-04	4.50 E-05	U	PNL
	27.7	1.35 E-06	1.35 E-06	U	4.19 E-04	1.68 E-05		LFE
	29.0	1.60 E-03	8.56 E-03	U	4.77 E-04	5.63 E-05		PNL
	29.0	3.02 E-03	7.39 E-03	U	5.22 E-04	5.40 E-05		PNL
	29.0	2.25 E-06	2.16 E-06	U	5.18 E-04	2.59 E-05		LFE

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-171 (cont)	38.3	-1.18 E-02	9.76 E-03	U	8.10 E-05	4.05 E-05	U	PNL
	38.3	1.80 E-06	2.16 E-06	U	5.95 E-05	6.55 E-06		LFE
	40.2	9.04 E-03	7.56 E-03	U	-3.38 E-05	3.60 E-05	U	PNL
	40.2	5.86 E-06	2.58 E-06	U	6.31 E-06	2.90 E-06	U	LFE
	41.5	-9.70 E-03	8.64 E-03	U	9.54 E-05	3.60 E-05	U	PNL
	41.5	0.00 E+00	2.25 E-06	U	1.80 E-05	4.32 E-06		LFE
299-W18-172	22.9	1.08 E-02	8.06 E-03	U	9.00 E-06	3.60 E-05	U	PNL
	22.9	0.00 E+00	1.35 E-06	U	0.00 E+00	2.70 E-06	U	LFE
	35.4	-1.23 E-03	6.16 E-03	U	-5.63 E-05	3.20 E-05	U	PNL
	35.4	1.35 E-06	3.22 E-06	U	7.66 E-06	1.45 E-05	U	LFE
	36.9	-6.12 E-03	7.47 E-03	U	1.80 E-05	3.20 E-05	U	PNL
	36.9	7.21 E-06	4.04 E-06	U	1.80 E-06	2.45 E-06	U	LFE
	38.1	3.22 E-03	9.18 E-03	U	-4.72 E-05	4.50 E-05	U	PNL
	38.1	3.60 E-06	2.56 E-06	U	2.25 E-06	3.29 E-06	U	LFE
	39.9	1.43 E-02	8.19 E-03	U	-9.90 E-06	3.60 E-05	U	PNL
	39.9	8.11 E-06	3.24 E-06	U	3.60 E-06	3.46 E-06	U	LFE
	40.8	1.00 E-01	3.15 E-03		2.20 E-06	1.40 E-05	U	PNL
	40.8	-4.05 E-06	2.71 E-06	U	4.50 E-06	3.20 E-06	U	LFE
299-W18-173	5.0	2.40 E+00	4.50 E-01		3.89 E+00	1.00 E-02		PNL
	5.5	4.80 E-03	1.85 E-02	U	3.53 E-02	4.28 E-04		PNL
	6.4	5.36 E-03	9.88 E-03	U	1.62 E-03	9.45 E-05		PNL
	7.8	-4.60 E-03	1.01 E-02	U	8.60 E-04	7.65 E-05		PNL
	8.8	2.40 E+01	7.70 E+00	U	7.38 E+01	3.30 E-01		PNL
	10.5	3.20 E+01	1.20 E+01	U	2.00 E+02	5.50 E-01		PNL
	12.5	9.30 E-02	2.30 E-02	U	4.20 E-02	4.95 E-04		PNL
	14.0	5.08 E+01	7.40 E+00		2.09 E+02	3.00 E-01		PNL
	14.6	1.00 E-01	7.60 E-02	U	7.20 E-01	1.94 E-03		PNL
	15.5	5.35 E+00	2.24 E-01		7.36 E+00	6.17 E-03		PNL
299-W18-174	4.9	1.46 E-01	5.50 E-02	U	3.90 E-01	5.13 E-04		PNL
	6.4	1.80 E-02	9.80 E-03	U	2.58 E-03	1.22 E-04		PNL
	9.1	-4.40 E-03	8.80 E-03	U	3.90 E-05	3.82 E-05	U	PNL
	10.7	3.38 E+01	9.50 E+00		8.29 E+01	3.06 E-01		PNL
	11.6	3.05 E-01	7.48 E-01	U	1.09 E+01	2.40 E-02		PNL
	13.4	3.58 E-01	5.60 E-02		4.90 E-01	1.59 E-03		PNL
	14.2	1.92 E+02	1.60 E+01		2.24 E+02	5.00 E-01		PNL
	14.9	2.83 E-01	4.70 E-02		2.08 E-01	1.13 E-03		PNL

Table D-1. Radionuclide Concentrations in Sediments Beneath the 216-Z-1A Tile Field. (13 Pages)

Well	Depth (m)	Pu-239/240			Am-241			Lab
		nCi/g	sigma	Q	nCi/g	sigma	Q	
299-W18-175	5.3	1.24 E+02	5.86 E+00		5.23 E-01	1.71 E-01		PNL
	7.5	1.16 E+02	6.17 E+00		6.13 E+01	1.86 E-01		PNL
	8.7	3.47 E+01	6.20 E+00		1.29 E+02	2.70 E-01		PNL
	10.2	4.72 E+00	4.72 E+00	U	7.97 E+01	1.80 E-01		PNL
	11.4	8.60 E+01	1.80 E+00		2.04 E+01	3.50 E-02		PNL
	12.5	9.78 E+01	8.02 E+00		5.27 E+01	2.40 E-01		PNL
	12.6	1.09 E+02	1.70 E+00		8.20 E+00	2.40 E-02		PNL
	15.7	9.68 E+01	5.70 E+00		9.00 E+01	2.00 E-01		PNL
	16.8	2.76 E+02	1.28 E+01		1.30 E+02	3.80 E-01		PNL
	17.7	5.09 E+01	6.20 E+00		1.22 E+02	2.30 E-01		PNL
	18.3	7.38 E+01	7.74 E+00		1.37 E+02	3.20 E-01		PNL
	19.2	1.95 E+01	5.09 E+00		2.67 E+01	1.70 E-01		PNL
	19.8	2.02 E+00	6.20 E-01		4.10 E+00	1.50 E-02		PNL
	21.6	3.20 E-03	1.57 E-02	U	3.99 E-02	4.00 E-04		PNL
	23.5	2.84 E+01	5.13 E+00		9.18 E+01	2.00 E-01		PNL
	24.1	-3.90 E-02	5.44 E-03	U	4.86 E-01	1.58 E-03		PNL
	25.8	8.68 E-02	4.77 E-02	U	3.12 E-01	1.40 E-03		PNL
	28.3	6.08 E+00	3.40 E+00	U	3.82 E+01	1.30 E-01		PNL
	29.0	2.75 E+02	1.61 E+01		2.27 E+02	5.00 E-01		PNL
	29.3	1.70 E+01	8.42 E+00	U	6.98 E+00	2.80 E-01		PNL
	30.5	-1.44 E-02	1.03 E-02	U	4.77 E-03	1.65 E-04		PNL
	32.0	-3.84 E-03	8.00 E-03	U	7.52 E-04	7.65 E-05		PNL
	34.1	-4.77 E-03	9.75 E-03	U	1.30 E-03	9.45 E-05		PNL
	37.8	1.29 E-02	8.99 E-03	U	9.18 E-04	8.55 E-05		PNL
	37.8	-2.18 E-03	1.02 E-02	U	7.43 E-04	7.39 E-05		PNL
	39.6	1.90 E-02	9.98 E-03	U	2.79 E-04	4.95 E-05		PNL
	39.6	3.11 E-03	1.01 E-02	U	2.49 E-04	5.50 E-05		PNL

Results from RHO-ST-17, *Distribution of Plutonium and Americium Beneath the 216-Z-1A Crib: A Status Report.*

LABORATORIES
IRT = Intelcom Radiation Technology Laboratory.
LFE = Laboratory for Electronics Environmental Analysis Laboratories.
PNL = Pacific Northwest Laboratory.
RHO = Rockwell Hanford Operations.

-- = not analyzed.
nCi/g = nanocuries per gram.
Q = data qualifier.
sigma = counting standard deviations.
U = undetected. Value listed represents upper limit of the 99% confidence interval around the concentration determined.

APPENDIX E

DATA SUMMARY TABLES FOR WASTE SITES

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TABLES

Table E-1. Data Summary – 216-A-7 Crib (200-PW-3 Operable Unit). E-11

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APPENDIX E

DATA SUMMARY TABLES FOR WASTE SITES

The data summary tables in Appendix E were prepared to document the information that was used to prepare the conceptual site models, presented in Chapter 3.0 of the Remedial Investigation Report, for each of the waste sites in the 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units. The information presented in the data summary tables is a compilation of those key pieces of data that describe the nature and extent of contamination. The data summary tables compile and present information on the following elements for each waste site:

- Site Identification
- Site Location
- Type of Site
- Site Construction
- Operating History
- Effluent Volume Discharged
- Period of Operation
- Inventory Information
- Vicinity Waste Sites
- Characterization Summary
- Data
- References
- Bibliography.

These data summary tables are based on data summaries previously prepared to support a supplemental data quality objectives process conducted by the U.S. Department of Energy, U.S. Environmental Protection Agency, and Washington State Department of Ecology (Tri-Parties) in 2005–2006. The data quality objectives process identified data needs to support the Central Plateau remedial investigation/feasibility study process by augmenting and filling gaps in existing remedial investigation/feasibility study data. Based on the supplemental data quality objectives evaluation, the Tri-Parties agreed that the existing data are sufficient for *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* decision making for the waste sites in the 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units.

The data summaries prepared for the supplemental data quality objectives process used the most recent Hanford Soil Inventory Model (SIM) (RPP-26744, *Hanford Soil Inventory Model, Rev. 1*) to represent the contaminant inventory at each waste site. The SIM was developed between 1999 and 2005 to project inventory estimates for all major Hanford Site 200 Area waste-disposal sites and unplanned release sites in support of an activity to develop site-wide inventory estimates for historical Hanford Site operations. The SIM provides inventory estimates for almost 300 waste disposal and unplanned release sites. The SIM is an extension of the Hanford Defined Waste (HDW) Model, a previous activity to develop inventory estimates for materials stored in the Hanford Site's single- and double-shell tanks. In both the SIM and the HDW Model, inventory estimates were developed by combining best estimates of waste compositions with waste volume discharge data. The SIM inventory estimates are very sensitive to the "waste

composition" estimates. In early 2000 when SIM input data were being compiled for Z Plant waste sites, very little chemical process data were available for historical Z Plant operations. Thus, this limited amount of Z Plant chemical processing information was used to project a similar waste composition for plant effluents being discharged to the "Z" Cribs and the 216-Z-10 Injection Well. However, information uncovered since the completion of the SIM leads to a better understanding of the complexity of Z Plant liquid waste discharges and leads to the conclusion that much of the SIM inventory estimate data for Z Plant waste sites is in error.

Significant information about the Z Plant operations comes from recent documents associated with current decommissioning and decontamination activities. The Z Plant Complex facilities have been associated with many facets of plutonium processing and component fabrication. Over the more than 50 years of Z Plant operational history, these activities changed to meet the critical needs at that point in time. As chemical processes changed so did waste-stream compositions, as did processing facilities. Thus, documentation needed for facility decommissioning and decontamination activities also provides considerable insight into waste-stream compositions. Information gleaned from Z Plant decommissioning and decontamination documentation will be extremely valuable in any future revisions of the SIM. In the mean time, SIM inventory estimates for Z Plant waste sites will not be used in site remediation decisions. Inventory estimates for Z Plant waste sites will be based on historical and site characterization information. Sources of inventory information for Z Plant waste sites in the 200-PW-1 and 200-PW-6 Operable Units are documented in the data summary tables in this appendix.

REFERENCES

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Table E-1. Data Summary – 216-A-7 Crib (200-PW-3 Operable Unit). (5 Pages)

Background	
Site Identification	216-A-7 Crib
Site Location	200 East Area, 200-E Ponds Zone, east of 241-A Tank Farm; south of the 216-A-1 Crib, and west of the 207-A North and 207-A South Retention Basins
Type of Site	Crib
Site Construction	The crib is 3 by 3 m (10 ft by 10 ft) at the bottom and 4.9 m (16 ft) deep. It was fed by a 15 cm (6-in.) diameter perforated vitrified clay pipe placed horizontally 3.0 m (10 ft) below grade. A 3.0 m (10 ft) length of 15 cm (6-in.) diameter perforated vitrified clay pipe connects perpendicularly to the inlet pipe in a horizontal cross pattern to distribute the liquid. The pipes rest on approximately 2.1 m (7 ft) of coarse rock. The site has been backfilled with 0.46 to 0.6 m (18 to 24 in) of clean fill. The crib is marked and posted with Underground Radioactive Material (URM) signs. Both the 216-A-7 and 216-A-1 cribs are inside this URM area. The site is monitored by vadose-zone well 299-E25-54.
Operating History	The 216-A-7 Crib began receiving catch tank and sump waste from the 241-A-152 Diversion Box in January 1956. The effluent pipeline between the 241-A-152 Diversion Box sump and the crib was blanked off in July 1959. The sump waste was rerouted to the catch tank. From July 1959 through November 1966, the crib received tributyl phosphate (TBP)-Soltrol* from PUREX and pump pit/catch tank drainage from the 241-A-152 Diversion Box. In November 1966, the site received the TBP-Soltrol organic inventory from the 202-A Building. The waste is low salt and is neutral to basic. *Soltrol is a trademark of Chevron Phillips Chemical Company LP, The Woodlands, Texas. Soltrol -170 is a mixture of C10 to C14 isoparaffins used in combination with tributyl phosphate as a diluent in the PUREX solvent extraction system.
Effluent Volume Discharged	326,000 L (86,100 gal) (ARH-CD-745)
Period of Operation	1956 to 1966
Inventory Information	Inventory information is available in the following historical references: DOE/RL-2001-01; RPP-26744; DOE/RL-96-81; ARH-ST-156; RHO-CD-673; ARH-CD-745; DOE/RL-92-04; HW-48518; HW-44784; HW-53336; HW-55593; HW-57649; HW-59359; HW-63646; HW-64375; HW-69071; HW-69072; HW-71971; HW-72956; HW-76638; HW-80877; BNWC-91; ISO-98; ISO-698; ARH-486; ARH-1159; ARH-1608; ARH-2015; ARH-2353; ARH-2757; ARH-2806; ARH-3093; ARH-CD-743; HAN-93855 Report #11; ARH-1562 A summary of the 216-A-7 Crib discharge history is provided in the data section below. While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-A-7 Crib (RPP-26744, mean values; radionuclides decayed to 01/01/2001): Constituent — Inventory Cesium-137 — 2,988 Ci Uranium (total) — 481 kg Tributyl phosphate — 159,548 kg Normal paraffin hydrocarbon — 68,367 kg Soltrol* (inventory based on tank size) — 246,000 L Nitrate — 1,492 kg *RPP-26744 lists the Soltrol, a proprietary hydrocarbon compound, as normal paraffin hydrocarbon.
Vicinity Waste Sites	216-A-1 Crib; 207-A North and South Retention Basins
Characterization Summary	The 216-A-7 Crib operating history and downhole geophysical logs of wells 299-E25-2 and 299-E25-54 suggest contamination associated with the waste inlet (3 m [10 ft] bgs) and the crib bottom (4.9 m [16 ft] bgs). Cesium-137 was identified in well 299-E25-54 from 3 to 4.3 m (10 to 14 ft) bgs. The maximum concentration was 600 pCi/g at 3.7 m (12 ft) bgs. Vadose zone contamination was not identified in well 299-E25-2. Groundwater monitoring in the area is limited to well 299-E25-2, located 11 m (36 ft) north of the 216-A-7 Crib. The effluent volume and inventory indicate some potential for deeper contamination. Geophysical logging at well 299-E25-54 showed cobalt-60 and europium-154, more mobile contaminants, between 8.5 and 12.8 m (28 and 42 ft) bgs, and indications of elevated moisture around 35 and 41 m (115 and 135 ft) bgs.

Table E-1. Data Summary – 216-A-7 Crib (200-PW-3 Operable Unit). (5 Pages)

Data

Summary of 216-A-7 Crib Discharge History (prepared by Theresa Bergman, Fluor Hanford, in 2006)

- The 216-A-7 Crib received sump wastes from the 241-A-152 Diversion box at the 241-A Tank Farm from the start of PUREX operation (November 1955) to July 1959 when the 241-A-302B catch tank was installed. However, no discharges are reported to the 216-A-7 Crib from December 1956 through July 1959 in the semi-annual/annual reports of liquid wastes discharged to the ground in the 200 Areas (table of reported discharges provided below). After the catch tank was installed, the crib was piped to receive overflow from the catch tank.
- Wastes discharged into the 241-A-152 sump generally consisted of jumper leakage and flush water. During early PUREX operations, most of the wastes transferred through the diversion box were cladding waste and first cycle waste (high-level wastes) from fuel dissolution operations. The sump may have also received jumper leakage from lines going to the 216-A-8 Crib (tank farm condensate from self-concentrating wastes in the 241-A tank farm.) The diversion box was also capable of receiving wastes from any PUREX liquid waste source routed from the 241-A-151 Diversion Box (figure of discharge paths provided below).
- The WIDS database reports that the crib received Soltrol*-tributyl phosphate (TBP) wastes from PUREX from July 1959 through November 1966, although other documents indicate that there was a one-time only discharge of Soltrol, not a routine discharge of Soltrol-TBP.
- HAN-93855 and ARH-1562 report that a one-time discharge of approximately 65,000 gal of Soltrol was made to the 216-A-7 Crib in November 1966. This discharge was verified by personal communication with Ron Walser, one of the process engineers involved in the process test performed to evaluate replacement of Soltrol with normal paraffin hydrocarbon. Following completion of a 6-month evaluation period, the entire inventory of Soltrol was disposed of from the PUREX chemical storage area to the 216-A-7 Crib.
- The Hanford Soil Inventory Model (SIM), as documented in RPP-26744, indicates that the 216-A-7 Crib received approximately 330,000 L (88,000 gal) of PUREX miscellaneous drainage and that it is best represented by PUREX tank farm condensate and PUREX organic wastes. Given the potential for high-level and cladding waste leaks to the sump and the one-time discharge of a large volume of solvent to the crib, the composition of wastes discharged can be expected to be similar to, but potentially more concentrated than, typical PUREX tank farm condensate and organic wastes. This site may be similar to the 216-A-4 Crib – the sump discharges from the diversion box undoubtedly contained at least some cladding and first cycle waste. It is very likely that there will be high levels of fission products compared to the expected inventory.
- The organic inventory discharge reported in SIM (RPP-26744) is shown in the table below.

Discharge year	Analyte	RPP-26744 Mean Value	Weight percent
1966	TBP	159,548 kg	70 %
1966	NPH	68,367 kg	30 %
		227,915 kg	(calculated)

- The SIM reports NPH rather than Soltrol. There are enough similarities between the two solvents that NPH would be a reasonable approximation of Soltrol, but they are slightly different. The total mean value of TBP and NPH is approximately the expected weight of 246,000 L (65,000 gal) of solvent; however, the solvent discharged to the crib was reported at the time to have been Soltrol only and not a Soltrol-TBP mixture. It is possible that some TBP was mixed with the discharged Soltrol inventory, but at most, it would have most likely been at the 30% TBP level of the solvent mixture used in PUREX solvent extraction. If the solvent inventory discharged to the crib had been at the standard plant mixture, the weight percent of NPH to TBP would be reversed, e.g. ~65-70% NPH and ~30-35% TBP. Further research into the source data used in SIM would be necessary to understand the relative distribution of TBP and NPH in the discharge inventory reported in RPP-26744.
- The actual volume discharged to the crib would almost certainly have included a significant volume of flush water. If the total discharge was 65,000 gal, it is likely that only about half to two-thirds of that volume was solvent, while the remainder was flush water. If 65,000 gal of solvent was discharged, then it is likely that 50-100% of that amount of flush water was discharged behind it.
- The capacity of the diluent storage tank in the chemical storage area (TK-40) is 65,000 gal, which may be the basis for the discharge volume estimate. Because the discharge occurred after a 6-month process test of NPH, it is not likely that any of the solvent treatment system tanks (G & R Cells) contained Soltrol by the time the discharge was made to the crib. According to HW-31000, normal diluent inventory in TK-40 is 50,000 – 60,000 gal. While the readily available records do not have further information about the exact volume discharged, the capacity of the tank indicates that the 65,000-gal estimate is a reliable maximum volume.
- The discharge route is highly uncertain. Because the normal discharge routes to the crib had been blanked off by 1966, it is likely that a special routing was established through a tank within PUREX (probably TK-F-18) through the 241-A-151 and 152 diversion boxes and into the 241-A-302B catch tank, where it was pumped into the 216-A-7 Crib.
- Based on discussions with senior chemists, it is expected that after 40 years Soltrol should continue to be contained in the soil near the bottom of the crib. Substantial bio-degradation would require an environment with water and oxygen not present at that depth.
- If some bio-degradation has occurred, it would cause the straight chain hydrocarbon to breakdown to flammable gasses, such as methane, ethane, etc. In characterization, field methods to investigate the site concentrations of methane could be used as an indicator of diluent presence.
- To determine quantities of organics, laboratory analysis such as the Washington Total Petroleum Hydrocarbon (WTPH) method and/or total organic carbon (TOC) could be used. Fourier Transform Infrared (FTIR) could be used to qualitatively analyze for the different types of organic present.

*Soltrol is a trademark of Chevron Phillips Chemical Company LP, The Woodlands, TX. Soltrol -170 is a mixture of C10 to C14 isoparaffins used in combination with tributyl phosphate as a diluent in the PUREX solvent extraction system.

Table E-1. Data Summary – 216-A-7 Crib (200-PW-3 Operable Unit). (5 Pages)

Cumulative reported waste volume discharges to 216-A-7 Crib

Discharge through	Reference	Volume (L)	Volume (gal)	Pu (g)	Beta (Ci)	U (kg)	^{90}Sr (Ci)	^{137}Cs (Ci)	^{106}Ru (Ci)	^{60}Co (Ci)	Notes
June 1956	HW-44784	66,400	17,541	--	--	N/R	N/R	N/R	N/R	N/R	PUREX operations started November 1955
December 1956	HW-48518	80,000	21,134	--	2	N/R	N/R	N/R	N/R	N/R	No further discharges reported after December 1956, although the sump was not disconnected until 1959.
June 1957	HW-53336	80,000	21,134	--	17	N/R	N/R	N/R	N/R	N/R	
December 1957	HW-55593	80,000	21,134	--	17	N/R	N/R	N/R	N/R	N/R	
June 1958	HW-57649	80,000	21,134	--	17	N/R	N/R	N/R	N/R	N/R	
December 1958	HW-59359	80,000	21,134	--	17	N/R	N/R	N/R	N/R	N/R	
June 1959	HW-63646	80,000	21,134	--	17	N/R	N/R	N/R	N/R	N/R	
December 1959	HW-64375	80,000	21,134	--	17	N/R	N/R	N/R	N/R	N/R	Sump discharge rerouted through 320B catch tank to tank farms
June 1960	HW-69071	80,000	21,134	--	17	N/R	N/R	N/R	N/R	N/R	
December 1960	HW-69072	80,000	21,134	--	17	N/R	N/R	N/R	N/R	N/R	
July 1961	HW-71971	80,000	21,134	--	17	N/R	N/R	N/R	N/R	N/R	
December 1961	HW-72956	N/R		--	17	N/R	N/R	N/R	N/R	N/R	
December 1962	HW-76638	N/R		--	17	N/R	N/R	N/R	N/R	N/R	
December 1963	HW-80877	N/R		--	17	N/R	N/R	N/R	N/R	N/R	
December 1964	BNWC-91	N/R		--	17	N/R	N/R	N/R	N/R	N/R	
December 1965	ISO-98	N/R		--	17	N/R	N/R	N/R	N/R	N/R	
December 1966	ISO-698	N/R		--	17	N/R	N/R	N/R	N/R	N/R	ARH-231/HAN-93855 reported 65,000 gal of Soltrol mixture discharged from PUREX to the 216-A-7 Crib in November 1966. Inventory discrepancy corrected in 1972 report.
December 1967	ARH-486	238,000	62,873	1	20	6.81	1	5	30	<0.1	
December 1968	ARH-1159	238,481	63,000	1	20	6.82	1	5	30	<0.1	
December 1969	ARH-1608	238,481	63,000	1	20	6.82	1	5	30	<0.1	
December 1970	ARH-2015 Pt 3	238,481	63,000	1	20	6.82	1	5	30	<0.1	
December 1971	ARH-2353 Pt 3	238,481	63,000	1	20	6.80	1	5	30	<0.1	
December 1972	ARH-2757 Pt 3	326,000	86,120	1	80	6.80	1	5	30	0.1	
December 1973	ARH-2806 4Q	326,000	86,120	1	80	6.80	1	5	30	0.1	
December 1974	ARH-3093 4Q	326,000	86,120	1	80	6.80	1	5	30	0.1	
December 1975	ARH-CD-745	326,000	86,120	1	80	6.80	1	5	30	0.1	
December 1976	ARH-CD-743 4Q	326,000	86,120	1	73	6.80	1	5	30	0.1	
			calculated based on reported value								

Routine Waste Discharge Reports

HW-44784, HW-48518, HW-53336, HW-55593, HW-57649, HW-59359, HW-63646, HW-64375, HW-69071, HW-69072, HW-71971, HW-72956, HW-76638, HW-80877, BNWC-91, ISO-98, ISO-698, ARH-486, ARH-1159, ARH-1608, ARH-2015, Pt 3, ARH-2353, Pt 3, ARH-2757, Pt 3, ARH-2806 4Q, ARH-3093 4Q, ARH-CD-745, ARH-CD-743 4Q

Other Reports Documenting Discharges to the 216-A-7 Crib

WIDS report for 216-A-1 Crib, HAN-93855 Report #11, ARH-1562, RPP-26744, HW-31000, RHO-CD-673,

Personal communication between Curtis Stroup and Ron Walser, retired principal engineer, member of the PUREX Separations Process Engineering organization in 1966, October 2006.

Personal communication between Curtis Stroup and Markus Stauffer and John Trechter (Fluor Hanford Analytical Services), Mark Marcus (222-S Laboratory), and Andrea Prignano (Fluor Hanford Environmental Protection) on chemistry of Soltrol, October 2006.

Table E-1. Data Summary – 216-A-7 Crib (200-PW-3 Operable Unit). (5 Pages)

	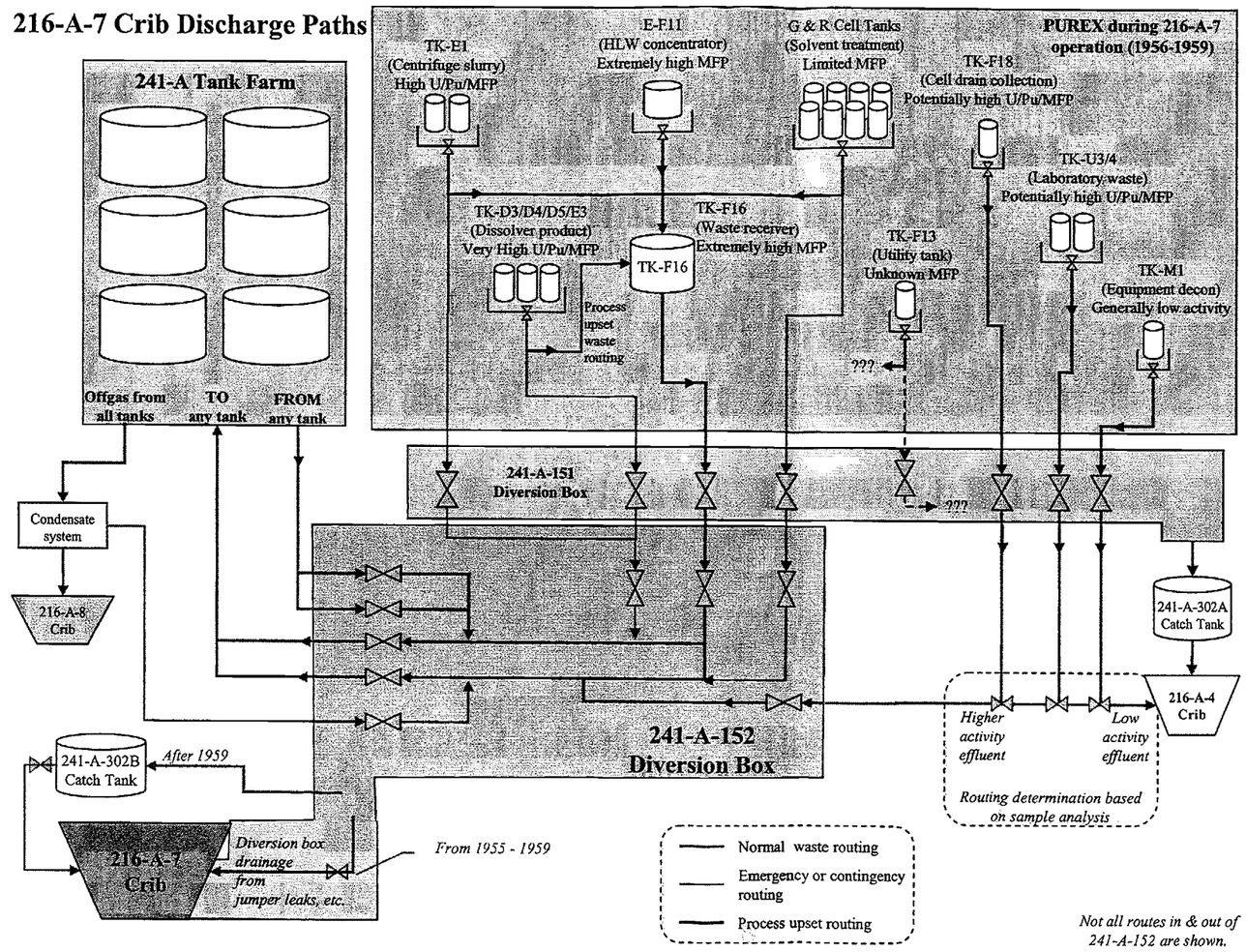
Scintillation Logs (1959)	Information on scintillation logs can be found in ARH-ST-156.
299-E25-2 (375 ft) (1959)	Well 299-W25-2, located 12 m (39 ft) north of the northeast corner of the 216-A-7 Crib and 10 m (33 ft) south of the southwest corner of the 216-A-1 Crib. Radioactive contaminants were detected 3.4 m (11 ft) below the distribution pipe and increased to a maximum radiation intensity at 9.1 m (30 ft) below the pipe. (ARH-ST-156)

Table E-1. Data Summary – 216-A-7 Crib (200-PW-3 Operable Unit). (5 Pages)

Radionuclide Logging System (RLS) Logs (1999)	
299-E25-54 (154 ft) (1999)	Well 299-E25-54, located approximately 6.1 m (20 ft) east of the 216-A-7 Crib. Cesium-137 was detected from 1.8 to 3.1 m (6 to 10 ft) with a maximum activity of 880 pCi/g at 2.7 m (9 ft) bgs. This depth corresponds to the depth of the distributor pipes in the crib. The corresponding gross gamma-ray log was higher than expected for the amount of cesium-137 present between 1.5 and 3.1 m (5 and 10 ft). Because all other identified radionuclides are at very low levels, the high gross gamma response indicates either a strong remote source (most likely cesium-137) or the presence of a strong beta emitter such as strontium-90 contributing to the gross gamma-ray intensity. Cobalt-60 was detected between depths of 7.3 and 11.9 m (24 and 39 ft) with a maximum activity of 0.3 pCi/g at 9.4 m (31 ft); the minimum detection level is 0.2 pCi/g. Uranium-238 was found between 7.6 and 11.3 m (25 and 37 ft) at the detection threshold (minimum detection level of 25 pCi/g). Europium-154 was identified from 2.4 to 3.1 m (8 to 10 ft) bgs at its minimum detection level (2.5 pCi/g). Previous gross gamma-ray logs from this borehole, obtained in 1976 and 1986, show a maximum activity at depths of about 2.4 to 2.7 m (8 to 9 ft), corresponding to the cesium-137 maximum in the 1999 RLS log. Both older logs show a second, but smaller, maximum activity between about 8.5 and 12.2 m (28 and 40 ft). This second maximum activity corresponds to the depth at which cobalt-60 and uranium-238 are found on the 1999 log. The decrease in the relatively intensity of the 9.1 to 12.2 m (30 to 40 ft) deep maximum relatively to the intensity of the 2.7 to 3.1 m (9 to 10 ft) deep maximum reflects the decay of cobalt-60 between 1976 and 1999 in the deeper zone. The moisture log shows several maxima throughout the borehole. There does not appear to be any correlation between the moisture values and the gross gamma values. The largest moisture values are near 32 percent by volume and are between depths of 33.5 and 41.1 m (110 and 135 ft). Such moisture values are high for the Hanford formation and almost certainly reflect the influx of liquid effluent. The two zones with the highest moisture content are near the upper and lower contacts of a sand, silt, and gravel unit between two finer-grained sand units, as noted on the driller's log. (PNNL-13077)
Spectral Gamma Logging System (SGLS) Logs (2006)	The data source for the SGLS logs is Stoller Log Data Reports.
299-E25-54 (150 ft) (2006)	Well 299-E25-54, located approximately 6.1 m (20 ft) east of the 216-A-7 Crib. Cesium-137 was detected from 3.1 to 4.3 m (10 to 14 ft), with the maximum of 600 pCi/g at 3.7 m (12 ft) bgs. Europium-154 and cobalt-60 were detected near detection limits. Manmade uranium was detected at 8.5 m (28 ft), at 10.4 m (34 ft), and from 8.5 to 10.4 m (28 to 34 ft) bgs with at maximum concentration of 18 pCi/g at 11.9 m (39 ft) bgs. The data compared favorably with the RLS log from 1999 and do not indicate changes in gamma profiles except for decay.
Neutron Moisture Logging (2006)	The data source for the Neutron Moisture Logs is Stoller Log Data Reports
299-E25-54 (2006)	Well 299-E25-54, located approximately 6.1 m (20 ft) east of the 216-A-7 Crib. The neutron moisture log showed elevated moisture at 16.8, 21.3, 35.1, and 41.1 m (55, 70, 115, and 135 ft) bgs. These correlate with lithology changes, and the log is in good agreement with the past moisture log.

References

ARH-231
ARH-486
ARH-1159
ARH-1562
ARH-1608
ARH-2015, Pt 3
ARH-2353, Pt 3
ARH-2757, Pt 3
ARH-2806 4Q
ARH-3093 4Q
ARH-CD-743 4Q
ARH-CD-745
ARH-ST-156
BNWC-91
DOE/RL-92-04
DOE/RL-96-81
DOE/RL-2001-01
HAN-93855 Report #11
HW-31000
HW-44784
HW-48518
HW-53336
HW-55593
HW-57649
HW-59359
HW-63646
HW-64375
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HW-69072
HW-71971
HW-72956
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HW-80877
ISO-98
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Personal communication between Curtis Stroup and Markus Stauffer & John Trechter (Fluor Hanford Analytical Services), Mark Marcus (222-S Laboratory), and Andrea Prignano (Fluor Hanford Environmental Protection) on chemistry of Soltrol, October 2006.
Personal communication between Curtis Stroup and Ron Walser, retired principal engineer, member of the PUREX Separations Process Engineering organization in 1966, October 2006.
PNNL-13077
RHO-CD-673
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Bibliography

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HW-83718
RHO-RE-SR-84-24 P

Table E-2. Data Summary – 216-A-8 Crib (200-PW-3 Operable Unit). (3 Pages)

Background	
Site Identification	216-A-8 Crib
Site Location	200 East Area, 200-E Ponds Zone, east of 241-A Tank Farm; south of the 216-A-1 Crib, and west of the 207-A North and 207-A South Retention Basins
Type of Site	Crib
Site Construction	The bottom dimensions of the 216-A-8 Crib are 259 m by 6 m (850 ft by 20 ft). The long axis of the crib trends to the east-northeast. A 60 cm (24-in.) diameter, schedule 20, perforated distribution line extends the length of the crib and rests on a 2 m (6.5 ft) thick layer of rock capped by a 30 cm (12 in.) thick layer of gravel. The gravel fill is mounded over the distribution line. Two layers of Sisalkraft paper* cover the gravel and prevent filling of void space by the overlying native sand backfill. The crib floor was excavated to a uniform elevation of 195 m (639.5 ft) above mean sea level. The depth of the excavation varied from 4.9 to 5.8 m (16 to 19 ft.) below the 1955 ground surface. The site was surface stabilized in September 1990 by the addition of 0.6 m (2 ft) of clean fill (DOE/RL-92-04). Two 41 cm (16-in.) diameter gooseneck structures were built onto the distribution line, one at each end of the crib, to improve water flow into the crib gravels. These structures provided overflow capacity into the head-end of the crib and to a surface pond at the distal end of the crib. Four regularly spaced, perforated risers with filter housings were set into the crib rock layer, offset 1.5 m (5 ft) from the distribution line. Water entered the crib through the 216-A-508 Diversion Box, located due west of the crib. The crib was permanently isolated in April 1995 by filling the 216-A-508 Control Structure with concrete. (DOE/RL-2001-01)
Operating History	The 216-A-8 Crib received vapor condensate from operation of several ventilation systems associated with the A, AX, AY, and AZ Tank Farms. The 241-A Tank Farms complex first received self-boiling waste from PUREX in early 1956. The self-boiling waste generated a vapor phase that contained radioactive, organic, and inorganic contaminants. Between 1955 and 1958, the vapor phase was mixed directly with cooling water in two contact condensers, resulting in a large volume of liquid waste. During this time, the crib received over 99 percent of its reported uranium load, 98 percent of its plutonium load, and 83 percent of its beta fission product load. Approximately 87 percent of the liquid waste, by volume, that the crib received over its 30-year-long operational life came from the contact condenser system during these 30 months (DOE/RL/92-04). In 1960, a surface condenser system was installed in the 241-A-401 Tank Farm Condenser Pit to replace the contact condenser system. This system used cooling water in pipe coils to indirectly contact (i.e., chill) the vapor phase. This condensation system reduced the volume of liquid waste sent to the crib but increased the concentration of most contaminants in the waste. Between 1966 and 1976, the 216-A-8 Crib received over 149 million liters of liquid waste from the surface condenser system. During this time, the AY and AZ Tank Farms were added to the then-active A and AX Tank Farms. Process changes at PUREX, or in tank farm operations, reduced the concentration of uranium and plutonium transported in vapors to the surface condenser system. The 216-A-8 Crib also received 600 L of surface condenser liquid waste in 1978. In the early 1980s, surface condenser systems were installed on individual tanks in the AY and AZ Tank Farms. In these systems, the condensed vapor was routed back to the tank. Because the cooling water in the pipe coils could become contaminated by a coil failure or pinhole leak, the waste stream was discharged to cribs. The cooling water would routinely have no or minimal amounts of contamination. The 216-A-8 Crib received cooling water from the individual surface condensers in 1983 and from 1984 to 1985. Tri Party Agreement (*Hanford Federal Facility Agreement and Consent Order*) Milestone M-17-28 required that all discharge to the crib be ceased by September 1991. This site was surface stabilized in September 1990. The unit was permanently isolated on April 20, 1995 by filling the distribution box with concrete, performed under work package 2E-94-01538.
Effluent Volume Discharged	1,150,000,000 L (303,800,000 gal) (ARH-CD-745)
Period of Operation	1955 to 1985
Inventory Information	Inventory information is available in the following historical references: DOE/RL-2001-01; RPP-26744; DOE/RL-96-81; ARH-ST-156; RHO-CD-673; ARH-CD-745; DOE/RL-92-04; HW-48518; HW-44784; HW-53336; HW-55593; HW-57649; ISO-698; ARH-486; ARH-1159; ARH-1608; ARH-2015; ARH-2353; ARH-2757; ARH-2806; ARH-3093; ARH-CE-371; RHO-CD-78-34; RHO-HS-SR-81-3; RHO-HS-SR-85-10 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-A-8 Crib (RPP-26744 mean values; radionuclides decayed to 01/01/2001) (detailed discussion of the inventories is included in DOE/RL-2001-01): Constituent — Inventory Cesium-137 — 2,410 Ci Uranium (total) — 391 kg Tritium — 24,561 Ci Tributyl phosphate — 128,582 kg Normal paraffin hydrocarbon — 55,107 kg Butanol — 1,364 kg *RPP-26744 lists the Soltrol, a proprietary hydrocarbon compound, as normal paraffin hydrocarbon.
Vicinity Waste Sites	216-A-24 Crib, 216-A-19 Crib, 207-A North and South Retention Basins

Table E-2. Data Summary – 216-A-8 Crib (200-PW-3 Operable Unit). (3 Pages)

Characterization Summary	The 216-A-8 Crib was characterized during the remedial investigation in accordance with DOE/RL-2001-01. A deep borehole (C4545) was drilled, sampled, and geophysically logged near the head end of the crib (west end). Additionally, 6 existing boreholes were geophysically logged to assess the distribution of gamma-emitting radionuclides. Five shallow direct push holes were installed to evaluate organic vapors in the crib; five existing wells were also sampled for organic vapors. The results of the soil-vapor sampling investigations in the shallow and deep vadose zone did not conclusively indicate the presence of organics at any of the locations sampled. However, the geophysical logging investigation clearly identified the location with the highest radionuclide concentrations. Existing well 299-E25-5 exhibited the highest radionuclide concentrations, with a maximum Cs-137 value of 30,800 pCi/g found at 7.6 m (25 ft) below the top of the casing. The second highest levels were found in existing well 299-E25-6, with a cesium-137 concentration of 50 pCi/g in the interval from 7.6 to 9.1 m (25 to 30 ft) below the top of the casing. The area with the highest radionuclide concentrations is located near the west end of the 216-A-8 Crib, as anticipated in DOE/RL-2001-01, Appendix B. Therefore, based on the Work Plan guidance and on the results of the soil-vapor sampling and borehole geophysical logging at the 216-A-8 Crib, Borehole C4545 was located on the south side of well 299-E25-5. This location is close to the center of the 216-A-8 Crib and closer to well 299-E25-6, where contamination appeared to be slightly deeper (DOE/RL-2006-51, Section 2.7.1).
Data	
Scintillation Logs: (1958 – 1976)	Information on scintillation logs can be found in ARH-ST-156
299-E25-4 (291 ft) (1958, 1959, 1963, 1976)	Well 299-E25-4, at the west end of the 216-A-8 Crib, adjacent to the central distribution pipe. A zone of gamma radiation was detected from near surface to approximately 40 m (131 ft) bgs with concentrations to 3 million counts per minute in 1959. By 1976, the short-lived radionuclides had decayed, resulting in a reduction in concentration of almost 2 orders of magnitude.
299-E25-5 (293 ft) (1958, 1959, 1963, 1976)	Well 299-E25-5, near the west end of the 216-A-8 Crib, north of the central distribution pipe. The 1958 log shows relatively high gamma activity (4 million counts per minute) from 4 m (13 ft) to 40 m (131 ft). By 1976, gamma activity (2 million counts per minute) was detected from 5 m (16 ft) to 12 m (39 ft). Comparison of these gross gamma logs indicates that a contamination event occurred prior to 1958.
299-E25-6 (290 ft) (1958, 1959, 1963, 1968, 1976)	Well 299-E25-6, near the west end of the 216-A-8 Crib, south of the central distribution pipe. The 1958 log shows high gamma activity from approximately 4.6 to 18.3 m (15 to 60-ft) bgs. By 1963, the interval of detector saturation extends to about 32.0 m (105 ft). Gamma activity levels increased significantly between 32.0 and 41.1 m (105 and 135 ft), suggesting additional contamination events and/or downward contaminant migration between 1959 and 1963. The 1968 and 1976 logs show significantly lower gamma activity levels and generally reflect the profile of later logs (see information under spectral gamma logs below). Below 12.2 to 18.3 m (40 to 60 ft) depth, the dominant contaminant may have been a radionuclide with a relatively short half-life, such as ruthenium-106 or cobalt-60.
Spectral Gamma Logging System (SGLS) Logs (2004 – 2005)	The data source for the SGLS logs is Stoller Log Data Reports.
299-E25-4 (291 ft) (2004)	Well 299-E25-4, at the west end of the 216-A-8 Crib, adjacent to the central distribution pipe. Cesium-137 was detected from ground surface to 9.1 m (30 ft) at concentrations from 0.3 pCi/g to 13.1 pCi/g, with the maximum at 7.9 m (26 ft). Cesium-137 was also detected from 50.3 to 80.5 m (165 to 264 ft), with a peak concentration of 1.6 pCi/g.
299-E25-5 (293 ft) (2004)	Well 299-E25-5, near the west end of the 216-A-8 Crib, north of the central distribution pipe. Cesium-137 was detected from the ground surface to 1.8 m (6 ft) with a maximum concentration of 12.8 pCi/g; from 6.1 to 16.2 m (20 to 53 ft) with a maximum concentration of 30,800 pCi/g; and from 70.7 to 78.9 m (232 to 259 ft) near the minimum detectable limit of 0.8 pCi/g.
299-E25-6 (290 ft) (2004)	Well 299-E25-6, near the west end of the 216-A-8 Crib, south of the central distribution pipe. Cesium-137 was detected from 2.7 to 3.4 m (9 to 11 ft) at a maximum concentration of 9.8 pCi/g; from 6.7 to 22.3 m (22 to 73 ft) at a maximum concentration of 50 pCi/g; and from 69.2 to 71.3 m (227 to 234 ft) with a maximum concentration of 3.2 pCi/g.
299-E25-7 (290 ft) (2004)	Well 299-E25-7, near the center of the 216-A-8 Crib. Cesium-137 was detected from the ground surface to 2.7 m (9 ft) with a maximum concentration of 57 pCi/g; from 6.1 to 18.0 m (20 to 59 ft) with a maximum concentration of 3.6 pCi/g; and from 68.6 to 71.9 m (225 to 236 ft) with a maximum concentration of 3.2 pCi/g.
299-E25-08 (290 ft) (2004)	Well 299-E25-08, approximately one third of the crib length from the east end of the 216-A-8 Crib. Cesium-137 was detected sporadically throughout out this borehole. Concentrations ranged from 0.2 (minimum detectable level) to 4.5 pCi/g.
299-E25-09 (288 ft) (2004)	Well 299-E25-09, located at the east end of the 216-A-8 Crib. Cesium-137 was detected sporadically from the ground surface to 76.2 m (250 ft) in concentrations from 0.2 (minimum detectable level) to 13 pCi/g.
C4545 (265 ft) (2005)	Borehole C4545, near the west end of the 216-A-8 Crib. Cesium-137 was detected in two intervals: one interval from the ground surface to 1.5 m (5 ft) bgs and the other from 3.4 to 22.3 m (11 to 73 ft) bgs, with a maximum concentration of 1,500,000 pCi/g at 6.1 m (20 ft); and sporadically from 56.4 to 67.1 m (185 to 220 ft).

Table E-2. Data Summary – 216-A-8 Crib (200-PW-3 Operable Unit). (3 Pages)

Soil Sample Analytical Results (2005)

Soil sample analytical results are presented in DOE/RL-2006-51, Section 3.2.5.3. Radioactive contaminants were detected in the vadose zone beneath the 216-A-8 Crib in Borehole C4545 to total depth (80 m [264.5 ft] bgs). However, only two radionuclides (carbon-14 and tritium) were detected above background levels below the sample interval at 14.9 to 15.7 m (49 to 51.5 ft). The following table presents the radionuclides detected above background levels and the depth interval of the maximum concentration.

Radionuclide Contaminant of Potential Concern	Maximum Concentration (pCi/g)	Depth Interval (ft bgs)	
		Top	Bottom
Carbon-14	89.7	27.5	30
Cesium-137	877,000	19	21.5
Europium-155	0.055	49	51.5
Plutonium-239/240	55.7	19	21.5
Technetium-99	79.6	19	21.5
Total radioactive strontium	4,380	19	21.5
Tritium	8.5	234	236.5

The following table presents the nonradionuclide contaminants detected above background levels (and those with no available background value) and the depth interval of the maximum concentration.

Nonradionuclide Contaminants of Potential Concerns	Maximum Concentration (mg/kg)	Depth Interval (ft bgs)	
		Top	Bottom
Cadmium	0.240	104	106.5
Chromium (III)	41.8	178	180.5
Hexavalent chromium	0.278	27.5	30
Selenium	1.8	19	21.5
Acetone	0.019 J	19	21.5
Acetonitrile	0.012 J	25	27.5
Ethyl acetate	0.023	25	27.5
Decane	0.5 J	104	106.5
Nonadecane	1.6 J	104	106.5
Di-n-butylphthalate	0.69	178	180.5
Aroclor-1254	0.039	234	236.5

bgs = below ground surface.
J = laboratory-estimated value.
Aroclor is an expired trademark.

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Table E-3. Data Summary – 216-A-24 Crib (200-PW-3 Operable Unit). (3 Pages)

Background	
Site Identification	216-A-24 Crib
Site Location	200 East Area, 200-E Ponds Zone, north of 216-A-8 Crib
Type of Site	Crib
Site Construction	The 216-A-24 Crib was built in four in-line sections, each 107 m (350 ft) long, separated by soil berms installed at increasingly lower elevations, to allow the effluent to cascade from one section to the next. The crib is a total of 427 m (1,400 ft) long and 6 m (20 ft) wide. The crib was constructed with a 38 cm (15-in.) diameter perforated steel pipe placed horizontally 3 m (10 ft) below grade and backfilled with a polyethylene barrier between the gravel and the backfill. The crib excavation has 4,100 cubic meters (146,000 cubic feet) of gravel fill. The side slope is 1.5:1. Eight 20 cm (8-in.) diameter wells on concrete pads are located on this crib. The wells extend from the bottom of the crib to 0.9 m (3 ft) above grade. Four 38 cm (15-in.) corrugated risers with filter box assemblies extend from the distributor pipe to grade. The site is surrounded with concrete AC-540 markers and posted with Underground Radioactive Material signs.
Operating History	The 216-A-24 Crib was a liquid waste site used for disposal of low salt, neutral/basic radioactive vapor condensate from the 241-A, 241-AX, 241-AY, and 241-AZ tank farms. This crib replaced the 216-A-8 Crib. After crib construction, surface condensers were installed in the tank farms, which greatly reduced the waste volume discharged to the crib. As a result, most of the waste volume was discharged to the first two of the four crib sections. This site is associated with UPR-200-E-56. The crib was believed to have been deactivated in 1966 by closing the valve on the inlet pipe, but the valve was discovered to be open in 1979; the crib could potentially have received waste until then. The site was surface stabilized in 1988.
Effluent Volume Discharged	820,000,000 L (216,480,000 gal) (ARH-CD-745)
Period of Operation	1958 to 1966 (and potentially to 1979 due to open valve)
Inventory Information	Inventory information is available in the following historical references: DOE/RL-2001-01; RPP-26744; DOE/RL-96-81; ARH-ST-156; RHO-CD-673; ARH-CD-745; DOE/RL-92-04; HW-59359; HW-63646; HW-64375, HW-69071, HW-69072, HW-71971, HW-72956, HW-76638, HW-80877, BNWC-91, ISO-98, ISO-698, ARH-486 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-A-8 Crib (RPP-26744 mean values; radionuclides decayed to 01/01/2001): Constituent — Inventory Cesium-137 — 401 Ci Uranium (total) — 65 kg Tritium — 8,798 Ci Tributyl phosphate — 21,420 kg Normal paraffin hydrocarbon — 9,192 kg Butanol — 1,034 kg
Vicinity Waste Sites	UPR-200-E-56 Unplanned Release, 216-A-8 Crib, 216-A-19 Crib, 216-A-29 Crib
Characterization Summary	The 216-A-24 Crib has been investigated with downhole geophysical logging of 28 boreholes in and around the crib. Sixteen of these boreholes are within the surface footprint of the crib and located along the discharge pipe, at the head end of each segment, and around the boundary of the crib. Data show that high concentrations of cesium-137 are located beneath the crib, with the highest levels associated with the two head end western segments. Concentrations exceeded 1,000,000 pCi/g at these boreholes. Concentrations decrease with depth to about 16 m (54 ft) bgs, where the cesium-137 is below 10 pCi/g. Logging data indicate the cesium-137 has not spread outside the crib boundaries except at the UPR-200-E-56 unplanned release to the north. Organics and tritium are identified as being discharged to the crib; a borehole drilled in 1981 (299-E26-53) noted a liquid, blue-green sample at 10 m (33 ft) and organic odors from 4.6 to 12 m (15 to 40 ft) bgs. Drilling logs from boreholes in the crib indicate strong organic odors. The effluent volume and inventory indicate some potential for deep contamination, and groundwater monitoring indicates breakthrough (e.g., tritium) beneath the first two crib segments.
Data	
Spectral Gamma Logging System (SGLS) Logs (2005)	The data source for the SGLS logs is Stoller Log Data Reports.
299-E26-51 (53 ft) (2005)	Well 299-E26-51, at the west end of the crib in the first section of the 216-A-24 Crib. Cesium-137 was detected between the ground surface and 6.7 m (22 ft) bgs with a maximum concentration of 7 pCi/g at 1.7 m (5.5 ft) bgs.
299-E26-52 (53 ft) (2005)	Well 299-E26-52, north of the first section of the 216-A-24 Crib. Cesium-137 was detected from the ground surface to 2.7 m (9 ft) bgs and from 5.2 to 6.4 m (17 to 21 ft) bgs. The maximum concentration was approximately 1 pCi/g at 5.5 m (18 ft).
299-E26-53 (54 ft) (2005)	Well 299-E26-53, north of the first section of the 216-A-24 Crib. Cesium-137 was detected from the ground surface to 4.0 m (13 ft), from 6.7 to 12.2 m (22-40 ft), and from 15.2 to 16.5 m (50-54 ft). The maximum concentration was approximately 110 pCi/g at 7.3 m (24 ft).

Table E-3. Data Summary – 216-A-24 Crib (200-PW-3 Operable Unit). (3 Pages)

299-E26-54 (42 ft) (2005)	Well 299-E26-54, north of the second section of the 216-A-24 Crib. Cesium-137 was detected from the ground surface to 5.9 m (19.5 ft), from 6.9 m to 7.5 m (22.5 to 24.5 ft) and at 8.9 m (28.5 ft) with a maximum concentration at approximately 2 pCi/g at 7.2 m (23.5 ft).
299-E26-55 (55 ft) (2005)	Well 299-E26-55, north of the second section of the 216-A-24 Crib. Cesium-137 was detected from 1.4 to 7.0 m (4.5 ft. to 23 ft) and at 8.5 m (28 ft). The maximum concentration was approximately 2 pCi/g at 2.1 m (7 ft).
299-E26-56 (54 ft) (2005)	Well 299-E26-56, south of the first section of the 216-A-24 Crib. Cesium-137 was detected from the ground surface to 3.1 m (10 ft). The maximum concentration was approximately 1 pCi/g at 1.5 m (5 ft).
299-E26-57 (53 ft) (2005)	Well 299-E26-57, south of the first section of the 216-A-24 Crib. Cesium-137 was detected at discontinuous depth locations from the ground surface to 9.0 m (29.5 ft), with the maximum concentration at 6 pCi/g at 6.6 m (21.5 ft).
299-E26-58 (41 ft) (2005)	Well 299-E26-58, south of the second section of the 216-A-24 Crib. Cesium-137 was detected from the ground surface to 4.1 m (13.5 ft). The maximum concentration was approximately 0.7 pCi/g at 7.0 m (4.5 ft).
299-E26-59 (30 ft) (2005	Well 299-E26-59, south of the second section of the 216-A-24 Crib. Cesium-137 was detected from the ground surface to 7.9 m (26 ft). The maximum concentration was approximately 4 pCi/g at 2.4 m (8 ft).
299-E26-60 (54 ft) (2005)	Well 299-E26-60, at the west end of the crib in the first section of the 216-A-24 Crib. Cesium-137 was detected between the ground surface and the bottom of the borehole, 16.3 m (53.5 ft). The maximum concentration was measured at approximately 700,000 pCi/g at 6.2 m (20.5 ft).
299-E26-61 (50 ft) (2005)	Well 299-E26-61, in the second section of the 216-A-24 Crib. Cesium-137 was detected between the ground surface and the bottom of the borehole, 15.2 m (50 ft). The maximum concentration was approximately 180,000 pCi/g at 6.7 m (22 ft).
299-E26-62 (54 ft) (2005)	Well 299-E26-62, in the third section of the 216-A-24 Crib. Cesium-137 was detected from the ground surface to 16.0 m (52.5 ft). The maximum concentration was approximately 340 pCi/g at 6.6 m (21.5 ft).
299-E26-63 (51 ft) (2005)	Well 299-E26-63, in the fourth section of the 216-A-24 Crib. Cesium-137 was detected between the ground surface and the bottom of the borehole, 15.2 m (50 ft). The maximum concentration was approximately 16,000 pCi/g at 6.4 m (21 ft).
299-E26-64 (40 ft) (2005)	Well 299-E26-64, south of the 216-A-24 Crib. Cesium-137 was detected from 0.9 to 2.1 m (3 to 7 ft) at concentrations ranging from 0.1 pCi/g to 0.25 pCi/g, with the maximum concentration at 2.1 m (7 ft).
299-E26-66 (38 ft) (2005)	Well 299-E26-66, north of the 216-A-24 Crib. Cesium-137 was detected continuously from 0.2 to 5.6 m (0.5 ft. to 18.5 ft), and discontinuously to the bottom of the borehole. The maximum concentration was measured at approximately 80 pCi/g at 3.8 m (12.5 ft) bgs.
299-E26-68 (38.5 ft) (2005)	Well 299-E26-68, north of the 216-A-24 Crib. Cesium-137 was detected from 1.1 to 3.5 m (3.5 ft to 11.5 ft), with a maximum concentration at approximately 3 pCi/g at 2.9 m (9.5 ft).
299-E26-69 (33 ft) 2005)	Well 299-E26-69, north of the 216-A-24 Crib. Cesium-137 was detected continuously throughout this borehole with the exceptions of 0.9, 1.2, and 8.5 m (3.0, 4.0, and 28.0 ft) (below top of casing). The maximum concentration was approximately 46 pCi/g at 2.7 m (9.0 ft) bgs.
299-E26-71 (43 ft) (2005)	Well 299-E26-71, in the first section of the 216-A-24 Crib. Cesium-137 was detected between the ground surface and the bottom of the borehole, 13.0 m (42.5 ft). The maximum concentration was approximately 217,000 pCi/g at 6.6 m (21.5 ft).
299-E26-72 (25 ft) (2005)	Well 299-E26-72, in the third section of the 216-A-24 Crib. Cesium-137 was detected intermittently from 0.9 to 5.8 m (3. to 19 ft), with many measurements just above the minimum detectable level. The maximum concentration measured was approximately 0.7 pCi/g at 1.5 m (5 ft) bgs.
299-E26-73 (60 ft) (2005)	Well 299-E26-73, in the fourth section of the 216-A-24 Crib. Cesium-137 was detected intermittently from 1.1 to 3.2 m (3.5 ft to 10.5 ft) and at 5.9 m (19.5 ft), with many measurements just above the minimum detectable level. The maximum concentration was measured at approximately 0.5 pCi/g at 1.4 m (4.5 ft).
299-E26-74 (44 ft) (2005)	Well 299-E26-74, in the first section of the 216-A-24 Crib. Cesium-137 was detected from 0.9 m (3 ft) to the bottom of the borehole, 13.4 m (44 ft). The maximum concentration was approximately 1 million pCi/g at 5.5 m (18 ft).
299-E26-75 (22 ft) (2005)	Well 299-E26-75, north of the 216-A-24 Crib. Cesium-137 was detected continuously from 1.7 to 4.4 m (5.5 to 14.5 ft) and discontinuously throughout the rest of the borehole. The maximum concentration was measured at approximately 11 pCi/g at 2.6 m (8.5 ft).
299-E26-76 (43 ft) (2005)	Well 299-E26-76, north of the first section of the 216-A-24 Crib. Cesium-137 was detected from the ground surface to the total depth of the borehole at concentrations ranging from the minimum detectable level (0.1 pCi/g) to 53 pCi/g. The maximum concentration was at 6.2 m (20.5 ft).
Scintillation Logs – Gross Gamma (1959 – 1976)	The scintillation probe profiles reflect the waste discharge history at the 216-A-24 Crib. Wells 299-E26-4, 299-E26-5 and 299-E26-6 monitor the first and second sections of the crib. These sections received most of the volume and total beta activity discharged during 1958 and 1959. The profile from these wells show high radiation intensity from these discharges. After December 1959 the volume and the amount of radioactive effluent sent to the crib were greatly reduced. The condensate was later rerouted to the third and fourth crib sections. Wells E26-2 and E26-3 monitor these sections of the crib where little radioactive effluent was discharged. In 1976 these profiles show radiation intensity at background levels. On the basis of the five wells monitoring the 216-A-24 Crib, measurable movement of radionuclides disposed to the ground is detected in all wells during crib operations. After waste disposal to the crib was terminated, radiation intensity increased in the lower portion of the sediment column in well 299-E26-7. These data indicate breakthrough to the groundwater could have occurred from the first and second sections of the crib (ARH-ST-156). Information on scintillation logs can be found in ARH-ST-156.
299-E26-2 (266 ft) (1959, 1963, 1976, 1987)	Well 299-E26-2, in the fourth section of the 216-A-24 Crib.
299-E26-3 (261 ft) (1959, 1963, 1976, 1987)	Well 299-E26-3, in the third section of the 216-A-24 Crib.
299-E26-4 (263 ft) (1958, 1959, 1963, 1976, 1984, 1990)	Well 299-E26-4, in the second section of the 216-A-24 Crib.
299-E26-5 (275 ft) (1958, 1959, 1963, 1976, 1984, 1988)	Well 299-E26-5, in the first section of the 216-A-24 Crib.
299-E26-7 (260 ft) (1958, 1959, 1963, 1968, 1976, 1984, 1990)	Well 299-E26-7, in the first section of the 216-A-24 Crib.

Table E-3. Data Summary – 216-A-24 Crib (200-PW-3 Operable Unit). (3 Pages)

References	
ARH-486 ARH-CD-745 ARH-ST-156 BNWC-91 DOE/RL-92-04 DOE/RL-96-81 DOE/RL-2001-01 HW-59359 HW-63646 HW-64375	HW-69071 HW-69072 HW-71971 HW-72956 HW-76638 HW-80877 ISO-98 ISO-698 RHO-CD-673 RPP-26744 Stoller Log Data Reports (http://www.hanford.gov/cp/gpp/data/vzcp/vzcp.cfm)
Bibliography	
PNL-1948 RPP-7494 SD-RE-PRS-001 WIDS	

Table E-4. Data Summary – 216-A-31 Crib (200-PW-3 Operable Unit). (2 Pages)

Background	
Site Identification	216-A-31 Crib
Site Location	200 East Area, PUREX Zone, south of PUREX
Type of Site	Crib
Site Construction	The 216-A-31 Crib is 21 by 3 m (70 by 10 ft) at the bottom and is 7.3 m (24 ft) deep. A 7.6 cm (3-in.) diameter Schedule 10 stainless steel perforated distribution pipe was placed horizontally 6.4 m (21 ft) below grade on 0.9 m (3 ft) of gravel. The excavation has 1.8 m (6 ft) of gravel fill and has been backfilled. The side slope is 1:1.5. The 216-A-31 Crib is located inside a large Underground Radioactive Material area that has a WIDS sitecode of 200-E-103. The crib is marked with cement posts on four corners.
Operating History	The 216-A-31 Crib received organic and radioactive effluent from 202-A L-Cell, where the final plutonium concentration step in the PUREX process occurred. L-cell waste was sent to the 216-A-31 Crib via the 241-A-151 Diversion Box after the 216-A-2 Crib was shut down. The site was deactivated in 1966 by blanking the L Cell nozzles to the 241-A-151 Diversion Box, which routed effluents to the unit. The site received waste from 1964 to 1966; however, WIDS indicates some discrepancy on the actual usage dates.
Effluent Volume Discharged	30,545 L (8,070 gal) (ARH-231) 10,000 L (2,600 gal) (RHO-CD-673) The exact effluent volume is uncertain; however, the volume is consistently reported to be very low.
Period of Operation	1964 to 1966
Inventory Information	Inventory information is available in the following historical references: DOE/RL-2001-01; RPP-26744; DOE/RL-96-81; ARH-ST-156; RHO-CD-673; ARH-CD-745; DOE/RL-92-04; ARH-231; ISO-698 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-A-31 Crib (RPP-26744, mean values; radionuclides decayed to 01/01/2001): Constituent — Inventory Cesium-137 — 371 Ci Uranium (total) — 60 kg Tributyl phosphate — 19,800 kg Normal paraffin hydrocarbon — 8,491 kg
Vicinity Waste Sites	216-A-2 Crib, 216-A-4 Crib
Characterization Summary	The 216-A-31 Crib was not directly characterized during the remedial investigation. An existing well located south of the crib has been geophysically logged for gamma-emitting radionuclides in the past. Geophysical resistivity exploration surveys have been conducted in the area south of PUREX, including over the 216-A-31 Crib.
Data	
Geophysical Resistivity Exploration (surveys conducted for area south of PUREX)	This site is located above an elevated conductivity plume; however, site is not likely a contributor to the plume due to the low volume discharged.
Scintillation Logs (1959 – 1987)	Information on scintillation logs can be found in ARH-ST-156.
299-E24-9 (370 ft) (1963, 1970, 1976)	Well 299-E24-9, located 10 m (33 ft) south of the southeast edge of the crib. No radioactive contaminants were detected in the vadose zone over the three different logging efforts.
299-E24-9 (370 ft) (1987)	Well 299-E24-9, located 10 m (33 ft) south of the southeast edge of the crib. The gamma log shows only background counts for gamma radiation (raw data strip chart only).

Table E-4. Data Summary – 216-A-31 Crib (200-PW-3 Operable Unit). (2 Pages)

References	
ARH-231 ARH-1172 ARH-CD-745 ARH-ST-156 DOE/RL-92-04	DOE/RL-96-81 DOE/RL-2001-01 ISO-698 RHO-CD-673 RPP-26744 WIDS
Bibliography	
ARH-2806 BNWC-91 HW-80877	

Table E-5. Data Summary – 216-Z-1 Crib and 216-Z-2 Crib (200-PW-1 Operable Unit). (3 Pages)

Background	
Site Identification	216-Z-1 Crib and 216-Z-2 Crib
Site Location	200 West Area; Plutonium Finishing Plant (PFP) Zone; south of the PFP facility and immediately north of the 216-Z-1A Tile Field
Type of Site	Crib
Site Construction	The 216-Z-1 Crib and 216-Z-2 Crib consist of two open-bottom, 3.7 m (12 ft) square wooden timber boxes set in excavations that were 4.3 m (14 ft) square at the bottom, 6.4 m (21 ft) deep, and backfilled to grade. The cribs were connected and fed by a 20 cm (8-in.) diameter stainless steel central pipe with an outlet pipe to the 216-Z-1A Tile Field. The 216-Z-2 Crib overflowed into the 216-Z-1 Crib, which overflowed into the 216-Z-1A Tile Field. Two risers are visible from the surface of each crib. Construction information is available in the following historical references: WIDS, HW-55176, RHO-LD-114
Operating History	From 1949 to 1952, the 216-Z-1 Crib and 216-Z-2 Crib received basic (pH 8 to 10) process waste and analytical and development laboratory waste from the 234-5Z Building via the 241-Z-361 Settling Tank. The 216-Z-1 Crib and 216-Z-2 Crib received acidic (pH 1 to 2.5), high-salt aqueous waste and organic waste directly from the Plutonium Reclamation Facility in the 236-Z Building and the 242-Z Waste Treatment and Americium Recovery Building for two brief periods of a few weeks, once in 1966 and once in 1967, while the 216-Z-1A Tile Field discharge point was being moved further south along the main distribution pipe. From 1968 to 1969, the cribs received uranium wastes directly from the 236-Z Building. The cribs were administratively retired in 1969 and physically isolated when the inlet piping was cut and blanked.
Effluent Volume Discharged	33,700,000 L (10,271,000 gal) (RHO-LD-114) • 33,500,000 L between 1949 and 1952 • 104,000 L between 1966 and 1967 • 98,000 L between 1968 and 1969
Period of Operation	1949 to 1969
Inventory Information	Inventory information is available in the following historical references: WIDS, RHO-LD-114, ARH-CD-745, RHO-CD-673, DOE/RL-2001-01, DOE/RL-96-81, ARH-ST-156, DOE/RL-91-58, HNF-1989, ARH-1608, ISO-698, HW-28121 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-Z-1 and 216-Z-2 Cribs: Constituent / Inventory / Reference Plutonium / 7.0 kg / RHO-LD-114 Americium-241 / Unknown / Uranium (total) / 80.9 kg / RHO-LD-114 Nitrate / 100,000 kg / DOE/RL-91-58 Fluoride / 30,000 kg / DOE/RL-91-58
Vicinity Waste Sites	216-Z-1A Tile Field, 216-Z-3 Crib
Characterization Summary	Site-specific sampling data for the 216-Z-1 Crib and 216-Z-2 Crib are limited. A borehole to the north of the 216-Z-2 Crib (299-W18-172) was geophysically logged in 2006; no manmade radionuclides were detected. No radionuclide contamination was detected during drilling of new well 299-W18-253 (P57) west of the cribs in 2006 (299-W18-253 [C4965] Borehole Log). As part of the remedial investigation, well 299-W18-253 (P57) and five other wells in the vicinity of the 216-Z-1A Tile Field were used to conduct a cross-well seismic investigation to refine the subsurface geometry of specific vadose-zone layers (DOE/RL-2006-51, Section 3.2.4.2). In 1986, drop cords, visual inspection, and foil activation methods were used to evaluate alpha contamination in 11 wells at the 216-Z-1 and 216-Z-2 Cribs and the 216-Z-1A Tile Field (CCN 65632-86-095). Wells 299-W18-60, 299-W18-61, and 299-W18-65 near the 216-Z-1 and 216-Z-2 Cribs were found to contain plutonium and americium concentrations estimated as high as 900 nCi/g. The contamination was believed to have resulted from contaminated sediments entering and accumulating in the wells.
Data	
Scintillation Logs (1986)	Information on scintillation logs can be found in ARH-ST-156, WHC-SD-EN-TI-021, DOE/RL-91-58, WHC-SD-EN-DP-020

Table E-5. Data Summary – 216-Z-1 Crib and 216-Z-2 Crib (200-PW-1 Operable Unit). (3 Pages)

299-W18-60 (150 ft deep) (1986)	Logging at well 299-W18-60 (at the northwest corner of the 216-Z-2 Crib) detected a natural gamma response. Uncertainty is noted in DOE/RL-91-58 because this well was reportedly contaminated with alpha-emitting particles. (DOE/RL-91-58, Table A-9)
299-W18-61 (150 ft deep) (1986)	Logging at well 299-W18-61 (at the northeast corner of the 216-Z-2 Crib) detected an elevated gamma response between depths of 7 and 21 m (23 and 69 ft), from approximately 3 m (10 ft) to 15 m (45 ft) below the base of the crib. A secondary interval of elevated gamma response also was detected near the top of the fine-grained unit of the Hanford formation. Elevated gamma response also is evident beneath the crib associated with the Cold Creek unit. It is difficult to determine whether the elevated gamma response is natural or due to the retention of radionuclides in these fine-grained horizons (DOE/RL-91-58). The logging results were identified as indicating "possible contamination" in WHC-SD-EN-TI-021. (DOE/RL-91-58, Section A.1.4.3.2, Table A-9) (WHC-SD-EN-TI-021, Table B2-2)
299-W18-62 (151 ft deep) (1986)	Logging at well 299-W18-62 (at the southwest corner of the 216-Z-2 Crib) detected a natural gamma response. (DOE/RL-91-58, Table A-9)
299-W18-63 (150 ft deep) (1986)	Logging at well 299-W18-63 (at the southeast corner of the 216-Z-2 Crib) detected an elevated gamma response between depths of 7 and 17 m (23 and 56 ft). DOE/RL-91-58, Table A-9)
299-W18-64 (150 ft deep) (1963, 1965, 1967)	Logging at well 299-W18-64 (at the southwest corner of the 216-Z-1 Crib) detected an elevated gamma response. DOE/RL-91-58, Table A-9)
299-W18-65 (140 ft deep) (1986)	Logging at well 299-W18-65 (at the southeast corner of the 216-Z-1 Crib) detected an elevated gamma response between depths of 7 and 20 m (23 and 66 ft), from approximately 3 m (10 ft) to 15 m (45 ft) below the base of the crib. A secondary interval of elevated gamma response also was detected near the top of the fine-grained unit of the Hanford formation. Elevated gamma response also is evident beneath the crib associated with the Cold Creek unit. It is difficult to determine whether the elevated gamma response is natural or due to the retention of radionuclides in these fine-grained horizons (DOE/RL-91-58). (DOE/RL-91-58, Section A.1.4.3.2, Table A-9)
299-W18-172 (134 ft deep) (1986)	Logging at well 299-W18-172 (8 m [25 ft] north of the 216-Z-2 Crib) detected a natural gamma response, suggesting that the lateral extent of radionuclide migration is limited. (DOE/RL-91-58, Section A.1.4.3.2, Table A-9)
Spectral Gamma Logging System (SGLS) Logs (2006)	Information on SGLS logs can be found at: http://www.hanford.gov/cp/gpp/data/vzcp/vzcp.cfm
299-W18-172 (134 ft deep) (2006)	Well 299-W18-172, located 8 m (25 ft) north of the 216-Z-2 Crib: No manmade radionuclides were detected during spectral logging (Pu-239, Am-241, and Np-237 were assessed). This log was compared to a log acquired in 1986 with a sodium-iodide (NaI) detection system; no changes were identified between the logs that would indicate contamination or movement. (Stoller Log Data Report)
299-W18-172 (134 ft deep) (Moisture log, 2006)	Well 299-W18-172, located 8 m (25 ft) north of the 216-Z-2 Crib: Moisture varied from 3 to 10 percent in the borehole; fluctuations are associated with lithologic changes. (Stoller Log Data Report)
Monitoring during Drilling of Well 299-W18-253 (P57) (185 ft deep) (2006)	Located 5 m (16 ft) southwest of the 216-Z-2 Crib and 5 m (16 ft) northwest of the 216-Z-1 Crib. No radionuclide contamination was detected during drilling of well 299-W18-253 (P57) west of the 216-Z-1 and 216-Z-2 Cribs in 2006. (299-W18-253 [C4965] Borehole Log)
Alpha Contamination Investigation (1986)	In 1986, drop cords, visual inspection, and foil activation methods were used to evaluate alpha contamination in 11 wells at the 216-Z-1 and 216-Z-2 Cribs and the 216-Z-1A Tile Field (CCN 65632-86-095). Of the 11 wells, 7 were found to contain significant alpha contamination. Wells 299-W18-60, 299-W18-61, and 299-W18-65 near the 216-Z-1 and 216-Z-2 Cribs were found to contain plutonium and americium concentrations estimated as high as 900 nCi/g. The contamination in the wells was believed to have resulted from contaminated sediments entering and accumulating in the wells. Ten of the 11 wells were decommissioned; one uncontaminated well was retrofitted and retained for gamma monitoring. (Note: In CCN 65632-86-095, well 299-W18-65 was identified as contaminated and well 299-W18-64 was identified as the uncontaminated well to be retained. However, well 299-W18-65 was later identified as the well to be retained in the work order for the decommissioning and retrofitting activities.) (CCN 65632-86-095)

Table E-5. Data Summary – 216-Z-1 Crib and 216-Z-2 Crib (200-PW-1 Operable Unit). (3 Pages)

Soil Sampling Data at 216-Z-12 Crib (1980)	Sampling was conducted at the 216-Z-12 Crib in 1980 to collect data to evaluate the distribution of plutonium and americium. The 216-Z-12 Crib received the same waste stream from 1959 to 1973 that the 216-Z-1 and 216-Z-2 Cribs received from 1949 to 1952. Because similar wastes were discharged, the data from the 216-Z-12 Crib provide analogous information for the 216-Z-1 and 216-Z-2 Cribs. Data indicate that (1) the highest concentration of plutonium is found in the sediments immediately below the crib bottom; (2) activity decreases rapidly with distance from the crib bottom; (3) the distributions of plutonium and americium activity are similar; (4) a low level of plutonium and americium activity that occurs from 30 to 36 m below the 216-Z-12 Crib bottom (the maximum depth sampled) is associated with a massive silt unit that probably concentrated most of the plutonium remaining in solution. (RHO-ST-44)
Soil Sampling Data at 216-Z-1A Tile Field (1973-1977)	Sampling was conducted at the 216-Z-1A Tile Field from 1973 through 1977 to collect data to evaluate the distribution of plutonium and americium. The 216-Z-1A Tile Field received overflow waste from the 216-Z-1 and 216-Z-2 Cribs from 1949 to 1952. For two brief periods in 1966 and 1967, the 216-Z-1 and 216-Z-2 Cribs received the same waste that the 216-Z-1A Tile Field received from 1964 to 1969. Although these 216-Z-1A Tile Field data were not collected directly from either the 216-Z-1 Crib or the 216-Z-2 Crib, the data provide analogous information for the 216-Z-1 and 216-Z-2 Cribs. Data indicate that (1) the highest concentration of plutonium and americium occurs in sediments located immediately beneath the crib, below the distribution pipe; (2) the concentration of plutonium and americium in sediments generally decreases with depth beneath the waste-distribution system, with the exception of silt-enriched horizons and boundary areas between major sedimentary units; (3) the maximum vertical extent of plutonium and americium contamination (defined by the 10 pCi/g isopleth) is located approximately 30 m (100 ft) below the bottom of the crib; (4) the estimated lateral extent of contamination is within a 10 m (33-ft) wide zone encompassing the perimeter of the crib. (RHO-ST-17)

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ARH-ST-156
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HNF-1744
SGW-33829

Table E-6. Data Summary – 216-Z-1A Tile Field (200-PW-1 Operable Unit). (10 Pages)

Background	
Site Identification	216-Z-1A Tile Field
Site Location	200 West Area; Plutonium Finishing Plant (PFP) Zone; south of the PFP facility
Type of Site	Tile Field
Site Construction	The 216-Z-1A Tile Field consists of a 30 m (100 ft) wide, 79 m (260 ft) long, and 5.8 m (19 ft) deep excavation. The 20 cm (8-in.) diameter vitrified clay distribution pipes lie on a 1.5 m (5-ft) thick gravel bed, 4.3 m (14 ft) below ground surface. The distribution pipes are covered with a 1.8 m (6-ft) thick sand layer. The central distribution pipe is a continuous line without perforations; the seven pairs of lateral pipes are divided into 0.3 m (1-ft) long segments. Between 1964 and 1969, the tile field was divided into three operational sections (216-Z-1AA, 216-Z-1AB, and 216-Z-1AC) to preclude waste buildup at the northern end of the tile field. In 1966, a 5 cm (2-in.) diameter stainless steel pipe was added inside the central distributor clay pipe to reposition the discharge point 30 m (100 ft) further south from the 216-Z-1AA operational section at the northern end of the field to the 216-Z-1AB operational section. In 1967, the discharge point was moved 23 m (75 ft) further south from the 216-Z-1AB section to the 216-Z-1AC section. The tile field was designed and operated as a specific-retention facility. The site was deactivated in 1969 by plugging facility discharge piping to the tile field and diverting the waste stream to the 216-Z-18 Crib. The excavation was never backfilled to grade, and the current surface of the tile field is 2.4 m (8 ft) below the surrounding land surface. Construction information is available in the following historical references: WIDS, HW-55176, RHO-LD-114, RHO-ST-17
Operating History	The 216-Z-1A Tile Field received liquid waste from the 234-5Z, 236-Z, and 242-Z facility operations at Z Plant from 1949 to 1969. Between 1949 and 1959, the tile field received liquid waste overflow from the 216-Z-1, 216-Z-2, and 216-Z-3 Cribs. This waste stream consisted of basic (pH 8 to 10) process waste and analytical and development laboratory waste from Z Plant via the 241-Z-361 Settling Tank. The tile field received approximately 1 million liters of overflow waste. In 1964, the 216-Z-1A Tile Field was reactivated to receive 5.2 million liters of acidic (pH 1 to 2.5), high-salt aqueous waste and organic waste from the Plutonium Reclamation Facility in the 236-Z Building and the 242-Z Waste Treatment and Americium Recovery Building. This waste stream was routed directly to the tile field from 1964 to 1969. The carbon tetrachloride was discharged to the 216-Z-1A Tile Field as dissolved or entrained phases in the aqueous phase liquid and also, in mixtures with other organics, as a dense, non-aqueous phase liquid (DNAPL). Upon retirement, the 216-Z-1A Tile Field had received approximately 6.2 million liters of liquid waste, approximately 60 percent of the calculated specific retention volume of the facility (RHO-ST-17). Soil-vapor extraction has been in operation at the 216-Z-1A Tile Field since 1992 as an interim action to remove carbon tetrachloride from the vadose-zone soils. Between 1991 (when the soil-vapor-extraction system pilot test was conducted at the 216-Z-1A Tile Field) and 2006, the carbon tetrachloride mass removed from the combined 216-Z-1A/216-Z-18/216-Z-12 well field was 24,604 kg (SGW-33746).
Effluent Volume Discharged	6,200,000 L (1,600,000 gal) (RHO-LD-114) • 1,000,000 L overflow from the 216-Z-1, 216-Z-2, and 216-Z-3 Cribs between 1949 and 1959 • 1,900,000 L to the 216-Z-1AA subsection between 1964 and 1966 • 1,900,000 L to the 216-Z-1AA subsection between 1966 and 1967 • 1,410,000 L to the 216-Z-1AA subsection between 1967 and 1969
Period of Operation	1949 – 1969
Estimated Discharged Inventory	Inventory information is available in the following historical references: WIDS, DOE/RL-91-32, RHO-CD-673, ARH-CD-745, DOE/RL-88-30, HNF-1989, DOE/RL-91-58, RHO-LD-114, RHO-ST-17, ARH-1608, ARH-1159, ARH-486, ISO-698, ISO-98, BNWC-91 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-Z-1A Tile Field: Constituent / Inventory / Reference Plutonium / 57 kg / RHO-LD-114 Americium-241 / 1 kg / RHO-ST-17 Carbon tetrachloride / 270,000 kg / WHC-SD-EN-TI-248 Tributyl phosphate / 23,900 L / WHC-SD-EN-TI-248 Dibutylbutyl phosphonate / 27,500 L / WHC-SD-EN-TI-248 Lard oil / 11,000 L / WHC-SD-EN-TI-248 Nitrate / 3,000 kg / DOE/RL-91-58
Vicinity Waste Sites	216-Z-1 Crib, 216-Z-2 Crib, and 216-Z-3 Crib

Table E-6. Data Summary – 216-Z-1A Tile Field (200-PW-1 Operable Unit). (10 Pages)

Characterization Summary	Data collection activities have been ongoing at the 216-Z-1A Tile Field since early operations. The distribution of plutonium and americium was characterized at 16 wells at this site between 1974 and 1977 (RHO-ST-17). Characterization was conducted in 1991-1993 to support soil-vapor extraction, which has been ongoing at this site since 1992. During this time, soil samples were collected from 1 well that was deepened in the 216-Z-1A Tile Field and from 3 wells that were drilled in the vicinity of the 216-Z-1A Tile Field (WHC-SD-EN-TI-248). As part of the remedial investigation, information from additional characterization boreholes was used to evaluate the distribution of carbon tetrachloride and other organic contaminants. Numerous wells in and around the tile field have been geophysically logged between 1959 and 2007 (ARH-ST-156, WHC-SD-EN-TI-021, PNNL-11978, SGW-33829). Soil-vapor sampling in support of soil-vapor-extraction operations has been conducted at this since between 1991 and 2007 (SGW-33746).
Data	
Soil Sampling Data at 216-Z-1A Tile Field (1973-1977)	Sixteen boreholes were drilled and sampled from 1973 through 1977 to determine the distribution of plutonium and americium (i.e., actinides) in sediments beneath the tile field. Soil samples were collected approximately every 1.5 m (5 ft) where contamination was not detected, every 0.3 m (1 ft) in zones of contamination, and wherever there was a change in sediment type. Screening of sediments was performed with portable radiation survey instruments. Selected samples were analyzed by granulometric and actinide analytical techniques. Data indicate that: (1) the highest concentration of plutonium-239/240 (40,000,000 pCi/g) and americium-241 (2,500,000 pCi/g) occurs in sediments located immediately beneath the crib, below the distribution pipe; (2) the concentration of actinides in sediments generally decreases with depth beneath the waste-distribution system, with the exception of silt-enriched horizons and boundary areas between major sedimentary units; (3) the maximum vertical extent of actinide contamination (defined by the 10 pCi/g isopleth) is located approximately 30 m (100 ft) below the bottom of the crib and 30 m (100 ft) above the 1978 water table; (4) the estimated lateral extent of contamination is within a 10 m (33-ft) wide zone encompassing the perimeter of the crib. The radioactive contaminants of potential concern (COPC) americium-241 and plutonium-239/240 for the 200-PW-1 OU were detected in the vadose-zone soil beneath the 216-Z-1A Tile Field in wells 299-W18-149, 299-W18-150, 299-W18-159, 299-W18-163, 299-W18-164, 299-W18-165, 299-W18-166, 299-W18-167, 299-W18-168, 299-W18-169, 299-W18-172, 299-W18-173, 299-W18-174, and 299-W18-175. In addition, plutonium-239/240 was detected in wells 299-W18-85, 299-W18-86, 299-W18-87, and 299-W18-88, and americium-241 was detected in well 299-W18-171. Plutonium-239/240 was detected above background to a maximum depth of 41.8 m (137.14 ft) in well 299-W18-156. Americium-241 was detected at a maximum depth of 46.8 m (153.54 ft) in well 299-W18-164. The following table presents the radionuclide COPCs detected above background levels (and those with no available background levels), and the depth interval of the maximum concentration. **Radionuclide Contaminant of Potential Concern** / **Maximum Concentration (pCi/g)** / **Borehole Number** / **Depth Interval (ft bgs)**: **Top**, **Bottom** Americium-241 / 2,590,000 / 299-W18-149 / 11.2 / 11.2 Neptunium-237 / 40 / 299-W18-174 / 48.0 / 48.0 Plutonium-239/240 / 38,200,000 / 299-W18-149 / 11.2 / 11.2 Protactinium-233 / 36.7 / 299-W18-174 / 14.6 / 14.6 Data from RHO-ST-17, *Distribution of Plutonium and Americium Beneath the 216-Z-1A Crib: A Status Report*; see Appendix D of this RI report. bgs = below ground surface. (RHO-ST-17; DOE/RL-2006-51, Section 3.2.2.3)
Alpha Contamination Investigation (1986)	In 1986, drop cords, visual inspection, and foil activation methods were used to evaluate alpha contamination in 11 wells at the 216-Z-1 and 216-Z-2 Cribs and the 216-Z-1A Tile Field (CCN 65632-86-095). Of the 11 wells, 7 were found to contain significant alpha contamination. Wells 299-W18-56, 299-W18-57, 299-W18-58, and 299-W18-59 in the 216-Z-1A Tile Field were found to contain plutonium and americium concentrations estimated as high as 420 nCi/g. The contamination in the wells was believed to have resulted from contaminated sediments entering and accumulating in the wells. The four wells listed above plus well 299-W18-66 in the 216-Z-1A Tile Field were decommissioned. (CCN 65632-86-095)

Table E-6. Data Summary – 216-Z-1A Tile Field (200-PW-1 Operable Unit). (10 Pages)

Soil Sampling in the 216-Z-1A Tile Field (1993)

Well 299-W18-174 was deepened in 1993 to further evaluate subsurface impacts from the tile field. The well was deepened from a depth of 14.9 m to 40 m (48.88 to 131.23 ft). The following COPCs were detected in soil samples collected from the borehole: americium-241, neptunium-237, chromium, copper, nickel, lead, chloride, fluoride, nitrate, nitrite, phosphate, sulfate, phenol, chloroform, carbon tetrachloride, methyl ethyl ketone, methyl isobutyl ketone, tetrachloroethylene, toluene, and trichloroethylene.

The following table presents the nonradionuclide COPCs detected above background levels (and those with no available background value) in samples from well 299-W18-174 and the depth interval of the maximum concentration.

Nonradionuclide Contaminant of Potential Concern	Maximum Concentration (mg/kg)	Depth Interval (ft bgs)	
		Top	Bottom
Chromium (III)	19	118.5	118.5
Copper	24	56.0	56.0
Lead	11	124.9	125.4
Fluoride	16	124.9 and 128.9	124.9 and 128.9
Nitrate	250	56.0	56.0
Phosphate	1	56.0	56.0
Chloroform	0.135	131.0	131.0
Carbon Tetrachloride	6.561	127.1	127.1
Methyl ethyl ketone	0.180	56.0	56.0
Methyl isobutyl ketone	0.156	74.5	74.5
Tetrachloroethylene	0.050	128.9	128.9
Toluene	0.040	71.5	71.5
Trichloroethylene	0.068	128.9	128.9

bgs = below ground surface.

Well 299-W18-248 (east of the 216-Z-1A Tile Field), well 299-W18-252 (west of the 216-Z-1A Tile Field), and well 299-W18-246 (west of the 216-Z-1A Tile Field) also were drilled and sampled during 1992 and 1993 in support of soil-vapor-extraction operations. The maximum concentrations of carbon tetrachloride in soil samples from these wells were: 772 µg/kg in well 299-W18-246 (146 ft bgs); 1,093 µg/kg in well 299-W18-248 (135 ft bgs); and 519 µg/kg in well 299-W18-252 (126.5 ft bgs).

Wells 299-W18-248 and 299-W18-246 both show slightly elevated levels of nitrate (~ 4 to 11 mg/kg). Nitrate was a primary component of the aqueous liquid waste discharged to the tile field. The vertical and lateral extent of contamination associated with nitrate within the tile field area is uncertain.

(WHC-SD-EN-TI-248; DOE/RL-2006-51, Section 3.2.2.3)

Soil-Vapor Sampling during Drilling of Characterization Boreholes Near the 216-Z-1A Tile Field (1992 – 1993)

Soil-vapor samples were not collected during deepening of well 299-W18-174 within the 216-Z-1A Tile Field. However, soil-vapor samples were collected during drilling of nearby wells 299-W18-246, 299-W18-248, and 299-W18-252. The samples were analyzed for volatile organic compounds (VOC) (carbon tetrachloride and associated breakdown products). The highest carbon tetrachloride vapor concentrations detected within these boreholes were 1,420 ppmv from a depth of 48.8 m (160 ft) in well 299-W18-252; 1,300 ppmv from a depth of 43.0 m (141 ft) in well 299-W18-248; and 279 ppmv from a depth of 46.3 m (152 ft) in well 299-W18-246.

(WHC-SD-EN-TI-063; WHC-SD-EN-TI-248; BHI-01631; DOE/RL-2006-51, Section 3.2.4.8)

Remedial Investigation (2005-2007)

As part of the remedial investigation, cone penetrometer technology (CPT) was used to collect depth-discrete soil and soil-vapor samples at selected locations within and in the vicinity of the 216-Z-1A Tile Field. The highest carbon tetrachloride soil-vapor concentration measured during the active soil-vapor sampling using the CPT was 512 ppmv at location P30E from a depth of 18.7 m (61.3 ft) in the west central part of the 216-Z-1A Tile Field. Carbon tetrachloride was not detected in any of the soil samples above the analytical reporting limits.

(CP-13514; SGW-33829; DOE/RL-2006-58; DOE/RL-2007-22; DOE/RL-2006-51, Section 3.2.4.1)

Soil-Vapor Extraction in the 216-Z-1A Tile Field (1992-2007)

A soil-vapor extraction system installed in 1992 continues to extract from well within and near the 216-Z-1A Tile Field, the 216-Z-18 Crib, and the 216-Z-12 Crib. Between April 1991 (when the pilot test was conducted) and July 2006, approximately 24,604 kg of carbon tetrachloride were removed from the 216-Z-1A/Z-18/Z-12 well field by the soil-vapor extraction system (SGW-33746). Soil-vapor samples have been collected from numerous existing wells and soil gas probes between 1991 and 2007 to evaluate carbon tetrachloride concentrations and to monitor concentration trends in support of soil-vapor-extraction operations. Soil-vapor samples collected during operation of the soil-vapor extraction demonstrate that soil-vapor concentrations in the vicinity of the 216-Z-1A Tile Field have been decreasing over time.

(DOE/RL-91-32, BHI-00720 [Rev. 6], WMP-17869, WMP-21327, WMP-26178, SGW-33746)

Table E-6. Data Summary – 216-Z-1A Tile Field (200-PW-1 Operable Unit). (10 Pages)

Scintillation Logs (1963 – 1998)	Before 1973, scintillation (gross gamma) surveys were used as the principal means of detecting contamination from gamma-emitting radionuclides. In 1963, all scintillation probe profiles monitoring the tile field indicated background levels of radiation. By 1973, 26 wells had been drilled in and around the 216-Z-1A Tile Field. No chemical data were collected from these 26 wells. Radioactive contaminants were detected in three boreholes (wells 299-W18-56, 299-W18-57, and 299-W18-58) at the tile field in 1965 (ARH-ST-156). The maximum vertical extent of contamination (21.3 m [70 ft]) was observed in well 299-W18-56. The radiation intensity increased in two of these wells between 1965 and 1968 as a result of continuing disposal. Radiation intensity decreased 3 years after discharges to the tile field were terminated in 1969. Based on the scintillation profiles in ARH-ST-156, radioactive contaminants were detected relatively high up in the sediment column beneath the tile field, and breakthrough to groundwater had not occurred. Gross gamma logging was conducted during drilling of one well at the 216-Z-1A Tile Field in 1992 and during drilling of one well in 2004. Gross gamma logging also was conducted in three existing wells between 1991 and 1998. Information on scintillation logs can be found in ARH-ST-156, WHC-SD-EN-TI-021, DOE/RL-91-58, WHC-SD-EN-DP-020; information on gross gamma logging can be found in PNNL-16103.
299-W18-6 (216.8 ft) (1970, 1976, 1987)	Well 299-W18-6, west of the 216-Z-1A Tile Field: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Section A.1.4.3.2, Table A-9) Neutron (1977) and density (1976) logs also were collected for well 299-W18-6 (WHC-SD-EN-DP-020).
299-W18-7 (205.8 ft) (1964, 1965, 1968, 1970, 1973, 1976, 1986, 1987, 1992)	Well 299-W18-7, east of the 216-Z-1A Tile Field: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Section A.1.4.3.2, Table A-9) Neutron (1965 [2], 1970, 1973, 1977) and density (1976) logs also were collected for well 299-W18-7 (WHC-SD-EN-DP-020).
299-W18-16 (348 ft) (2004)	Well 299-W18-16, east of the 216-Z-1A Tile Field. (PNNL-16103)
299-W18-56 (150 ft) (1963, 1965, 1973)	Well 299-W18-56, between the central distributor pipe and the first western lateral: Scintillation logs showed an elevated gamma response between depths of 10 and 22 m (33 and 72 ft). (DOE/RL-91-58, Table A-9) Neutron (1973) log also was collected for well 299-W18-56 (WHC-SD-EN-DP-020).
299-W18-57 (150 ft) (1963, 1965 [2], 1966)	Well 299-W18-57, along the first eastern lateral: Scintillation logs showed an elevated gamma response between depths of 5 and 19 m (16 and 62 ft). (DOE/RL-91-58, Table A-9) Neutron (1973) log also was collected for well 299-W18-57 (WHC-SD-EN-DP-020).
299-W18-58 (150 ft) (1963, 1965, 1966, 1967)	Well 299-W18-58, between the distal ends of the fourth and fifth western laterals: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1965) log also was collected for well 299-W18-58 (WHC-SD-EN-DP-020).
299-W18-59 (150 ft) (1963, 1965, 1967, 1973)	Well 299-W18-59, between the distal ends of the fourth and fifth eastern laterals: Scintillation logs showed an elevated gamma response between depths of 12 and 25 m (39 and 82 ft). (DOE/RL-91-58, Table A-9) Neutron (1965, 1973) logs also were collected for well 299-W18-59 (WHC-SD-EN-DP-020).
299-W18-66 (150 ft) (1986)	Well 299-W18-66, south of the central distributor pipe: Scintillation log showed an elevated gamma response between depths of 5 and 29 m (16 and 95 ft). (DOE/RL-91-58, Table A-9) Neutron (1965) log also was collected for well 299-W18-66 (WHC-SD-EN-DP-020).
299-W18-76 (19.6 ft) (1973)	Well 299-W18-76, between the central distributor pipe and the first western lateral: Scintillation log showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1973) log also was collected for well 299-W18-76 (WHC-SD-EN-DP-020).
299-W18-78 (17 ft) (1973)	Well 299-W18-78, along the central distributor pipe between the first and second laterals: Scintillation log showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1973) log also was collected for well 299-W18-78 (WHC-SD-EN-DP-020).
299-W18-81 (40.87 ft) (1973)	Well 299-W18-81, near the junction of the central distributor pipe and the second lateral: Scintillation log showed an elevated gamma response. (DOE/RL-91-58, Table A-9) Neutron (1973) log also was collected for well 299-W18-81 (WHC-SD-EN-DP-020).
299-W18-85 (152.88 ft) (1970, 1973, 1976, 1987)	Well 299-W18-85, southwest of the 216-Z-1A Tile Field: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1970, 1972, 1973, 1977) and density (1976) logs also were collected for well 299-W18-85 (WHC-SD-EN-DP-020).
299-W18-86 (150.6 ft) (1970, 1973, 1976, 1987)	Well 299-W18-86, west of the 216-Z-1A Tile Field: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1970, 1972, 1973, 1977) and density (1976) logs also were collected for well 299-W18-86 (WHC-SD-EN-DP-020).
299-W18-87 (151.3 ft) (1970, 1973, 1976, 1987)	Well 299-W18-87, south of the 216-Z-1A Tile Field: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1970, 1972, 1973, 1977) and density (1976) logs also were collected for well 299-W18-87 (WHC-SD-EN-DP-020).

Table E-6. Data Summary – 216-Z-1A Tile Field (200-PW-1 Operable Unit). (10 Pages)

299-W18-88 (149 ft) (1973, 1976, 1986)	Well 299-W18-88, east of the 216-Z-1A Tile Field: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1970, 1973, 1977) and density (1976) logs also were collected for well 299-W18-88 (WHC-SD-EN-DP-020).
299-W18-89 (146 ft) (1970, 1973, 1976, 1987)	Well 299-W18-89, west of the 216-Z-1A Tile Field: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1970, 1973, 1977) and density (1976) logs also were collected for well 299-W18-89 (WHC-SD-EN-DP-020).
299-W18-150 (53.2 ft) (1986)	Well 299-W18-150, south of the central distributor pipe: Scintillation log showed an elevated gamma response between depths of 2 and 24 m (7 and 79 ft). (DOE/RL-91-58, Table A-9)
299-W18-158 (127.1 ft) (1986)	Well 299-W18-158, between the distal ends of the first and second western laterals: Scintillation log showed an elevated gamma response between depths of 15 and 18 m (49 and 59 ft). (DOE/RL-91-58, Table A-9)
299-W18-159 (122 ft) (1986, 1991, 1998)	Well 299-W18-159, along central distributor pipe between the junctions with the third and fourth laterals: Scintillation log showed an elevated gamma response between depths of 2 and 20 m (7 and 66 ft). (DOE/RL-91-58, Table A-9)
299-W18-163 (52.3 ft) (1986)	Well 299-W18-163, near distal end of first eastern lateral: Scintillation log showed an elevated gamma response between depths of 12 and 14 m (39 and 46 ft). (DOE/RL-91-58, Table A-9)
299-W18-164 (149.6 ft) (1986)	Well 299-W18-164, south of the central distributor pipe: Scintillation log showed an elevated gamma response between depths of 23 and 30 m (75 and 98 ft). (DOE/RL-91-58, Table A-9)
299-W18-165 (128.45 ft) (1986)	Well 299-W18-165, at distal end of fourth western lateral: Scintillation log showed an elevated gamma response between depths of 28 and 29 m (92 and 95 ft). (DOE/RL-91-58, Table A-9)
299-W18-166 (132.16 ft) (1986)	Well 299-W18-166, at distal end of sixth western lateral: Scintillation log showed an elevated gamma response between depths of 25 and 30 m (82 and 98 ft). (DOE/RL-91-58, Table A-9)
299-W18-167 (129.48 ft) (1986, 1998)	Well 299-W18-167, at distal end of third eastern lateral: Scintillation log showed an elevated gamma response between depths of 15 and 18 m (49 and 59 ft). (DOE/RL-91-58, Table A-9)
299-W18-168 (127.43 ft) (1986)	Well 299-W18-168, at distal end of fifth eastern lateral: Scintillation log showed an elevated gamma response between depths of 13 and 19 m (43 and 62 ft). (DOE/RL-91-58, Table A-9)
299-W18-169 (128.71 ft) (1986)	Well 299-W18-169, at distal end of seventh eastern lateral: Scintillation log showed a natural gamma response. (DOE/RL-91-58, Table A-9)
299-W18-170 (31.73 ft) (1986)	Well 299-W18-170, near the junction of the central distributor pipe and the sixth set of laterals: Scintillation log showed an elevated gamma response between depths of 0 and 8 m (0 and 26 ft). (DOE/RL-91-58, Table A-9)
299-W18-171 (128.7 ft) (1986, 1987, 1991)	Well 299-W18-171, south of the 216-Z-1A Tile Field: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9)
299-W18-173 (51 ft) (1986)	Well 299-W18-173, along the first eastern lateral: Scintillation log showed an elevated gamma response between depths of 2 and 5 m (7 and 16 ft) and 8 and 11 m (26 and 36 ft). (DOE/RL-91-58, Table A-9)
299-W18-174 (48 ft before deepening in 1993; 126.45 ft after deepening in 1993) (1986)	Well 299-W18-174, along the first eastern lateral: Scintillation logs showed an elevated gamma response between depths of 2 and 7 m (7 and 23 ft) and 9 and 12 m (30 and 39 ft). (DOE/RL-91-58, Table A-9)
299-W18-175 (121.35 ft) (1986)	Well 299-W18-175, near the junction of the central distributor pipe and the sixth set of laterals: Scintillation log showed an elevated gamma response between depths of 1 and 20 m (3 and 66 ft) and 23 and 29 m (75 and 95 ft). (DOE/RL-91-58, Table A-9)
299-W18-248 (141 ft) (1992)	Well 299-W18-248, west of the 216-Z-1A Tile Field. (PNNL-16103)

Table E-6. Data Summary – 216-Z-1A Tile Field (200-PW-1 Operable Unit). (10 Pages)

Radionuclide Logging System (RLS) Spectral Gamma Ray Logs (1991 - 1998)	The RLS has been used to evaluate the extent of radionuclide contamination in 13 boreholes in and adjacent to the 216-Z-1A Tile Field. Most of the boreholes were logged in 1993 and 1998 (PNNL-11978). The predominant radionuclides detected during logging were americium-241, protactinium-233, and plutonium-239. Cesium-137 and cobalt-60 were detected less frequently. However, it appears that americium was misinterpreted as cesium-137 in the geophysical logs. Maximum contaminant levels generally were detected along the central axis of the tile field near the main discharge pipe at wells 299-W18-81, 299-W18-149, 299-W18-159, and 299-W18-170. Results from the survey indicate that higher levels of contamination were detected on the north end of the tile field (head end) associated with the main discharge pipe. Contamination generally decreases with depth and distance from the discharge pipe and head end of the tile field. Maximum activities typically were detected at depth within 3.4 m (11 ft) of the discharge pipe. The maximum vertical extent of radiological contamination (8 pCi/g of protactinium-233) detected was 37 m (121 ft) bgs at borehole well 299-W18-174. However, the bulk of the contamination detected was less than 21.3 m (70 ft) bgs. Maximum activities were detected in well 299-W18-159 as follows: • americium-241 (2,500,000 pCi/g) • protactinium-233 (63 pCi/g) • plutonium-239 (25,000,000 pCi/g) • cesium-137 (23 pCi/g).
299-W18-78 (17 ft) (1993)	Well 299-W18-78, near the central distributor pipe between the first and second set of laterals: This borehole was logged in 1993 using the RLS spectral gamma logging system. The maximum depth achieved in this logging event was 3.7 m (12 ft). No detections of manmade radionuclides were reported. (Stoller Log Data Report)
299-W18-81 (40.87 ft)	Well 299-W18-81, near the junction of the central distributor pipe and the second lateral. The data collected at this well using the RLS system was not available for inclusion in this data summary.
299-W18-86 (150.6 ft) (1992)	Well 299-W18-86, west of the 216-Z-1A Tile Field: The RLS log data collected in 1992 did not indicate the presence of man-made radionuclides. (Stoller Log Data Report)
299-W18-149 (24.4 ft) (1993, 1998)	Well 299-W18-149, at the junction of the central distributor pipe and the first set of laterals. In 1998, cesium-137, protactinium-233, plutonium-239, and americium-241 were identified between 1.2 and 7.3 m (4 and 24 ft). Maximum activity for each radionuclide was at 3.0 to 3.2 m (10 to 10.5 ft) (11 pCi/g for cesium-137, 20 pCi/g for protactinium-233, 8,400 nCi/g for plutonium-239, and 900 nCi/g for americium-241), which coincides with the base of the tile field. In 1993, protactinium-233, plutonium-239, and americium-241 were identified between ~1.2 and 6.7 m (~4 and 22 ft). Maximum activity for each radionuclide was between 3.0 to 3.4 m (10 to 11 ft) (36 pCi/g for protactinium-33, 19,000 nCi/g for plutonium-239, and 1,800 nCi/g for americium-241). Cesium-137 was not reported, but was present as determined by reprocessing of the data. The system dead-time limits were exceeded between 2.7 and 3.7 m (9 and 12 ft) for both systems, indicating that activities in this interval were higher than reported and precluding comparison of the 1993 and 1998 data from this interval. (PNNL-11978)
299-W18-158 (127.1 ft) (1998)	Well 299-W18-158, between the distal ends of the first and second western laterals. The only manmade radionuclide identified in this borehole was protactinium-233 at 13.7 m (45 ft) (4 pCi/g) and at 17.7 m (58 ft) (11 pCi/g). (PNNL-11978)
299-W18-159 (122 ft) (1991, 1998)	Well 299-W18-159, along central distributor pipe between the junctions with the third and fourth laterals. In 1998, cesium-137 was found between 2.7 and 17.7 m (9 and 58 ft), with a maximum activity of 23 pCi/g at 3.4 m (11 ft). Protactinium-233 was found between 3.4 and 16.2 m (11 and 53 ft), with a maximum activity of 63 pCi/g at 16.0 m (52.5 ft). Plutonium-239 was identified between 1.5 and 19.2 m (5 and 63 ft), with a maximum activity of 25,000 nCi/g at 3.4 m (11 ft) and a second but lesser maximum of 3,683 nCi/g at 13.1 m (43 ft). The maximum americium-241 activity was identified at 4.0 m (13 ft) (2,500 nCi/g) with a secondary maximum at 13.1 m (43 ft) (1,293 nCi/g). Most of the radionuclides identified in this borehole show two maxima: one at the base of the tile field at ~3.4 m (11 ft) and the other at a gradual lithologic transition (coarse sand to underlying fine to medium sand) at ~13.7 m (45 ft). In 1991, only cesium-137 and europium-152 were reported. However, reprocessing of the 1991 spectra showed that cesium-137, protactinium-233, plutonium-239, and americium-241 were present. The system dead-time limits were exceeded between 1.5 and 4.3 m (5 and 14 ft) for both systems, indicating that activities in this interval were higher than reported and precluding comparison of the 1991 and 1998 data from this interval. (PNNL-11978)
299-W18-167 (129.48 ft) (1998)	Well 299-W18-167, at distal end of third eastern lateral. Protactinium-233 (19 pCi/g), plutonium-239 (19 nCi/g), and americium-241 (128 nCi/g) were identified in a thin zone at 16.8 m (55 ft). (PNNL-11978)
299-W18-168 (127.43 ft) (1998)	Well 299-W18-168, at distal end of fifth eastern lateral. Cesium-137 (<1 pCi/g between 15.5 and 20.1 m [51 and 66 ft]), protactinium-233 (15 pCi/g at 14.9 m [49 ft]), plutonium-239 (below minimum detection level between 15.8 and 19.5 m [52 and 64 ft]), and americium-241 (70 nCi/g at 14.9 m [49 ft]) were identified. (PNNL-11978)
299-W18-169 (128.71 ft) (1993, 1998)	Well 299-W18-169, at distal end of seventh eastern lateral. In 1998, protactinium-233 was the only radionuclide identified in this borehole and was found at 10.8 m (35.5 ft) with an activity of 1.3 pCi/g. In 1993, cesium-137 was the only manmade radionuclide reported and was found in the backfill material between 0.5 and 0.6 m (1.5 to 2 ft) with an activity of 0.3 pCi/g. However, protactinium-233 was identified when the 1993 log data were reprocessed. (PNNL-11978)
299-W18-170 (31.73 ft) (1993)	Well 299-W18-170, near the junction of the central distributor pipe and the sixth set of laterals. The data collected at this well using the RLS system was not available for inclusion in this data summary. However, the results are compared to the data collected using the SGLS in 2006 in the Stoller Log Data Report described below for this well.
299-W18-171 (128.7 ft) (1991)	Well 299-W18-171, south of the 216-Z-1A Tile Field. Manmade radionuclides (plutonium and americium) were encountered only in the depth interval from 25.3 to 25.6 m (83 to 84 ft), (DOE/RL-91-32, Appendix C)

Table E-6. Data Summary – 216-Z-1A Tile Field (200-PW-1 Operable Unit). (10 Pages)

299-W18-173 (51 ft) (1993, 1998)	Well 299-W18-173, along the first eastern lateral. In 1998, cesium-137 was found at <1 pCi/g between 0.3 and 1.4 m (1 and 4.5 ft), 4.0 and 4.3 m (13 and 14 ft), and 8.2 and 12.2 m (27 and 40 ft). Protactinium-233 was identified in two zones: one at 3.4 to 7.0 m (11 to 23 ft) and the other at 7.6 to 12.8 m (25 to 42 ft) with a maximum of 7 pCi/g at 8.7 m (28.5 ft). Plutonium-239 and americium-241 were found in three zones between 3.5 and 4.9 m (11.5 and 16 ft), 8.5 and 9.1 m (28 and 30 ft), and 12.2 and 12.8 m (40 and 42 ft). The maximum plutonium-239 value is just below the base of the file field at 4.0 m (13 ft) (34 nCi/g); the maximum americium-241 value is at 8.7 m (28.5 ft) (80 nCi/g). In 1993, protactinium-233 was found between 3.7 and 6.4 m (12 and 21 ft) and between 7.8 and 13.1 m (25.5 and 43 ft), with a maximum activity of 7.3 pCi/g at 13.1 m (43 ft). Plutonium-239 was found between 4.0 and 4.6 m (13 and 15 ft) and between 8.5 and 8.7 m (28 and 28.5 ft), with a maximum activity of 58.9 nCi/g at 4.0 m (13 ft). Americium-241 was identified at 4.0 m (13 ft) and intermittently between 8.4 and 12.3 m (27.5 and 40.5 ft), with a maximum of 50 nCi/g at 10.2 m (33.5 ft). (PNNL-11978)
299-W18-175 (121.35 ft) (1993, 1998)	Well 299-W18-175, near the junction of the central distributor pipe and the sixth set of laterals. In 1998, cesium-137 was identified in three zones: 2.7 to 19.5 m (9 to 64 ft), 22.9 to 23.5 m (75 to 77 ft), and 27.4 to 29.3 m (90 to 96 ft). The maximum (8 pCi/g) occurs in the upper zone beneath the base of the tile field at 3.7 m (12 ft). The lower zones coincide with silt units. Protactinium-233 was found in two zones: 3.1 to 20.4 m (10 to 67 ft) and 21.9 to 29.6 m (72 to 97 ft). The maximum activity was 24 pCig at 3.8 m (12.5 ft). Five other maxima occur at depth and correspond to thin silt beds bounded by sand beds. Plutonium-239 was identified between 3.1 and 20.4 m (10 to 67 ft) and 21.9 and 29.6 m (72 and 97 ft), with a maximum of 6,600 nCi/g at 3.8 m (12.5 ft). The plutonium-239 distribution also may correspond to thin silt units within sand beds. Americium-241 was found between 3.1 and 19.5 m (10 and 64 ft), 22.9 to 23.5 m (75 to 77 ft), and 28.0 to 29.0 m (92 to 95 ft). The maximum value was 800 nCi/g at 4.3 m (14 ft). Comparison of the 1998 logging data to the 1993 logging data suggests that the distribution of the protactinium-233 activity has changed since 1993. (PNNL-11978)
Spectral Gamma Logging System (SGLS) Logs (2003 - 2007)	The data source for the SGLS logs is Stoller Log Data Reports.
299-W18-7 (205.8 ft) (2006)	Well 299-W18-7, east of the 216-Z-1A Tile Field: Americium-241 was interpreted to be present from 41.9 to 48.0 m (137.5 to 157.5 ft) bgs at levels less than 100 nCi/g. The vertical profiles of naturally occurring potassium, uranium, and thorium isotopes suggest that the top of the Cold Creek Unit exists at 41.9 m (137.5 ft) bgs. The americium-241 contamination appears to be associated with the unit. (Stoller Log Data Report) (Note: The depth measurements, which are referenced to the top of the well casing in the log data report, have been corrected to reference ground surface by subtracting the length of the casing stickup.)
299-W18-16 (348 ft) (2004)	Well 299-W18-16, east of the 216-Z-1A Tile Field: Cesium-137 was detected at a few locations near the minimum detectable level of 0.2 pCi/g. It is likely these detections are the result of statistical fluctuations. (Stoller Log Data Report)
299-W18-77 (25 ft) (2006)	Well 299-W18-77, between the central distributor pipe and the second western lateral: No evidence of man-made radionuclides was detected in this borehole. (Stoller Log Data Report)
299-W18-78 (17 ft) (2006)	Well 299-W18-78, near the central distributor pipe between the first and second set of laterals: Plutonium-239 was detected at 4.0 and 4.1 m (13 and 13.5 ft) bgs at a maximum concentration of approximately 25,000 pCi/g. Americium-241 was detected from 3.7 to 4.1 m (12 to 13.5 ft) bgs with a maximum concentration of approximately 85,000 pCi/g. Neptunium-237 was detected from 3.4 to 4.1 m (11 to 13.5 ft) at a maximum concentration of approximately 6 pCi/g. The maximum concentrations were measured at the bottom of the logged interval at 4.1 m (13.5 ft) bgs, approximately 1.1 m (3.5 ft) above the depth where the driller reported contamination. Therefore, it is likely the concentrations are much higher at 5.2 m (17 ft) bgs. (Stoller Log Data Report)
299-W18-79 (23 ft) (2006)	Well 299-W18-79, between the central distributor pipe and the second eastern lateral: Neptunium-237 was detected at less than 1 pCi/g at 5.5 m (18 ft) bgs, approximately 1.5 m (5 ft) above the depth where the driller reported contamination. Therefore, it is likely the neptunium-237 concentration is much higher at 7.0 m (23 ft) bgs. (Stoller Log Data Report)
299-W18-80 (21.5 ft) (2006)	Well 299-W18-80, at the junction of the central distributor pipe and the third set of laterals: No evidence of manmade contamination was detected in this borehole from spectra collected using routine (i.e., 200-seconds-long) count times. However, spectra were collected at 1.9 and 5.9 m (6.3 and 19.5 ft) bgs, using 1,000-seconds-long count times. The spectra collected at 5.9 m (19.5 ft) bgs represent a measurement at the bottom of the borehole, where the driller's log indicated contamination at 20,000 d/min. Examination of spectra shows evidence of americium-241 at about 11,400 pCi/g and of neptunium-237 at about 0.88 pCi/g. These levels are below the minimum detectable activity for the 200-seconds-long measurements. From this it can be inferred that some degree of contamination is present near the bottom of the borehole. (Stoller Log Data Report) (Note: The depth measurements, which are referenced to the top of the well casing in the log data report, have been corrected to reference ground surface by subtracting the length of the casing stickup.)
299-W18-85 (152.88 ft) (2006)	Well 299-W18-85, southwest of the 216-Z-1A Tile Field: No manmade radionuclides were detected. A comparison of the total gamma profile acquired with the SGLS in 2006 and one acquired in July 1987 with a sodium iodide (NaI) detection system indicates no changes. (Stoller Log Data Report)
299-W18-86 (150.6 ft) (2003)	Well 299-W18-86, west of the 216-Z-1A Tile Field: Man-made radionuclides were not detected in this borehole. (Stoller Log Data Report)

Table E-6. Data Summary – 216-Z-1A Tile Field (200-PW-1 Operable Unit). (10 Pages)

299-W18-87 (151.3 ft) (2006)	Well 299-W18-87, south of the 216-Z-1A Tile Field: No man-made radionuclides were detected. The potassium-uranium-thorium (KUT) data indicate considerable variability throughout the borehole. Most notable is an interval from 36.9 to 42.6 m (120.9 to 139.9 ft) bgs where fine-grained sediments are indicated. The "caliche" appears to begin at 42.9 m (140.9 ft) bgs where the potassium-40 and thorium-232 concentrations decrease. Moisture data also indicate variability. (Stoller Log Data Report) (Note: The depth measurements, which are referenced to the top of the well casing in the log data report, have been corrected to reference ground surface by subtracting the length of the casing stickup.)
299-W18-88 (149 ft) (2003)	Well 299-W18-88, east of the 216-Z-1A Tile Field: Cesium-137 was detected at -0.2 and 0.4 m (-0.55 and 1.45 ft) bgs with a concentration near the minimum detectable level (0.2 pCi/g). Cesium-137 was also detected at 6.5 m and 25.4 m (21.45 ft and 83.45 ft) bgs with a concentration near the minimum detectable level; however, these reported peaks are probably the result of statistical fluctuation. Changes of 4 pCi/g or more in apparent potassium-40 concentrations occur at approximately 3.5, 15.7, 24.8, 28.5, 41.3, 43.4 m (11.45, 51.45, 81.45, 93.45, 135.45 and 142.456 ft) bgs. Relative to the surrounding sediments, potassium-uranium-thorium (KUT) concentrations are slightly elevated in the interval between 15.7 and 24.8 m (51.45 and 81.45 ft) bgs. (Stoller Log Data Report) (Note: The depth measurements, which are referenced to the top of the well casing in the log data report, have been corrected to reference ground surface by subtracting the length of the casing stickup.)
299-W18-167 (129.48 ft) (2006)	Well 299-W18-167, at the southeastern end of the third eastern lateral: Americium-241 was detected from 16.6 to 17.8 m (54.5 to 58.5 ft) bgs. The maximum concentration was approximately 250,000 pCi/g at 17.8 m (54.5 ft) bgs. Plutonium-239 was detected at 17.8 m (54.5 ft) bgs. The maximum concentration was approximately 40,000 pCi/g. Neptunium-237 was detected by measuring a daughter product (protactinium-233). Protactinium-233 was detected between 14.8 and 15.1 m (48.5 and 49.5 ft) bgs and from 16.3 to 16.9 m (53.5 to 55.5 ft) bgs. The maximum concentration was approximately 19 pCi/g at 17.8 m (54.5 ft) bgs. Passive-neutron logging was performed in the borehole from 14.5 to 19.4 m (47.5 to 63.5 ft) bgs. The passive-neutron log indicated a maximum count rate of 3 counts per second at 17.8 m (54.5 ft) bgs. (Stoller Log Data Report) (Note: The depth measurements, which are referenced to the top of the well casing in the log data report, have been corrected to reference ground surface by subtracting the length of the casing stickup.)
299-W18-168 (127.43 ft) (2006)	Well 299-W18-168, at the southeastern end of the fifth eastern lateral: Americium-241 was detected from 14.6 to 14.9 m (48 to 49 ft) bgs and from 16.2 to 18.6 m (53 to 61 ft) bgs. The maximum concentration was approximately 145,000 pCi/g at 14.9 m (49 ft) bgs. Plutonium-239 was not detected in this borehole above a minimum detectable level of approximately 25,000 pCi/g. Neptunium-237 was detected by measuring a daughter product (protactinium-233). Protactinium-233 was detected between 14.0 and 19.2 m (46 and 63 ft) bgs. The maximum concentration was approximately 16 pCi/g at 14.9 m (49 ft) bgs. Passive-neutron logging was performed in the borehole from 11.6 to 25.3 m (38 to 83 ft) bgs. The passive-neutron log indicated a maximum count rate of 3 counts per second at 14.9 m (49 ft) bgs. Moisture data indicate some variability. (Stoller Log Data Report) (Note: The depth measurements, which are referenced to the top of the well casing in the log data report, have been corrected to reference ground surface by subtracting the length of the casing stickup.)
299-W18-169 (128.71 ft) (2006)	Well 299-W18-169, at the southeastern end of the seventh eastern lateral: Cesium-137 was detected at 0.5 m (1.6 ft) bgs at 0.2 pCi/g. Neptunium-237 was detected by measuring a daughter product (protactinium-233). Protactinium-233 was detected between 9.9 and 12.1 m (32.6 and 39.6 ft) bgs. The maximum concentration was approximately 2 pCi/g at 10.9 m (35.6 ft) bgs. Americium-241 was inferred to be present at relatively low concentrations between 9.9 and 11.8 m (32.6 and 38.6 ft) bgs. This is consistent with the low concentrations observed for protactinium-233 (and neptunium-237, which is a decay product of americium-241). Plutonium-239 was not detected in this borehole above a minimum detectable level of approximately 15,000 pCi/g. Passive-neutron logging was performed in the borehole from 8.4 to 13.0 m (27.6 to 42.6 ft) bgs. The passive-neutron log indicated a maximum count rate of 0.8 counts per second at 10.2 m (33.6 ft) bgs. Moisture data indicate some variability. (Stoller Log Data Report) (Note: The depth measurements, which are referenced to the top of the well casing in the log data report, have been corrected to reference ground surface by subtracting the length of the casing stickup.)
299-W18-170 (31.73 ft) (2006)	Well 299-W18-170, near the junction of the central distributor pipe and the sixth set of laterals: Americium-241 was detected from 2.4 to 8.2 m (8 to 27 ft) bgs with a maximum concentration of approximately 3,000,000 pCi/g at 3.0 m (10 ft) bgs. Based on the decay of uranium-237, and assuming that uranium-237 has grown into equilibrium with its parent plutonium-241, plutonium-241 was determined to occur between 2.4 to 8.2 m (8 and 27 ft) bgs at concentrations ranging from 200 to 265,000 pCi/g, with the maximum concentration at 4.9 m (16 ft) bgs. Even though plutonium-241 is not measured at each depth location where plutonium-239 is detected, it is likely the two isotopes exist together. Plutonium-239 was detected from 1.5 to 8.2 m (5 to 27 ft) bgs at concentrations ranging from 43,000 to 9,600,000 pCi/g. The maximum concentration was detected at 4.9 m (16 ft). Neptunium-237 was detected by measuring a daughter product (protactinium-233). Protactinium-233 was detected from 1.8 to 8.2 m (6 to 27 ft) bgs. The maximum concentration is approximately 43 pCi/g at a 4.9 m (16 ft) depth. An elevated thorium-232 concentration is indicated from 2.7 to 8.2 m (9 to 27 ft) bgs. The concentration of uranium-232 was determined to range from 0.3 to 4.8 pCi/g. It was inferred, on the basis of the uranium-232 concentration, that uranium-233 may exist at concentrations between 100 and 1000 pCi/g in this waste stream. Passive neutron logging indicated a maximum count rate of approximately 440 counts per second (cps) at 3.1 m (10 ft) bgs. The passive neutron log data suggest that plutonium likely exists as a fluoride compound. Moisture data indicate some variability. A relatively high moisture content exhibited at 3.1 m (10 ft) bgs could be influenced by the large neutron flux indicated by the passive neutron at that depth. A comparison plot of the 1993 RLS spectral gamma data and 2006 SGLS data shows generally poor agreement in the data sets as a result of different analysis techniques. Available information from a plot of RLS data shows plutonium-239 is "off scale" and no concentrations are reported. The SGLS data indicates plutonium-239 concentrations up to 10,000,000 pCi/g. Additionally plutonium-241 is detected and reported. The americium-241 concentrations determined in 1993 and 2006 are different by more than an order of magnitude. It is possible the RLS and SGLS analyses used different energy peaks to determine concentrations. Uranium-232 was identified by the 2006 SGLS analysis; uranium-233 was inferred to exist as well. The RLS analysis does not report the existence of these radionuclides. Neptunium-237, based on detections of the daughter protactinium-233, exhibits a similar profile in both analyses. Different calibrations for the two systems may have resulted in slightly lower concentrations (approximately 25 percent) reported by the RLS. Alternatively, it is possible the apparent increase since 1993 is at least partially the result of ingrowth of neptunium-237 from decay of the parent americium-241. Approximately 10 pCi/g of neptunium-237 would build in from an initial americium-241 activity of 3,000,000 pCi/g in 10 years. It is not believed migration of neptunium-237 has occurred. The RLS analysis reported cesium-137 concentrations ranging from 1 to 10 pCi/g. The 2006 SGLS analysis reports no cesium-137 and attributes this activity as originating from americium-241. (Stoller Log Data Report) (Note: The depth measurements, which are referenced to the top of the well casing in the log data report, have been corrected to reference ground surface by subtracting the length of the casing stickup.)

Table E-6. Data Summary – 216-Z-1A Tile Field (200-PW-1 Operable Unit). (10 Pages)

299-W18-173 (51 ft) (2007)	Well 299-W18-173, on the first eastern lateral: Cesium-137 was detected at 0.3 and 0.9 m (0.85 and 2.85 ft) bgs at approximately 0.2 pCi/g. Neptunium-237 was detected by measuring a daughter product (protactinium-233). Protactinium-233 was detected from 2.1 to 13.4 m (6.85 to 43.85 ft) bgs with a maximum concentration of approximately 75 pCi/g at 13.4 m (43.85 ft) bgs. The maximum plutonium-239 concentration was approximately 36,000 pCi/g at 3.9 m (12.85 ft) bgs. Americium-241 was detected from 7.9 to 12.2 m (25.85 to 39.85 ft) bgs and at 13.4 m (43.85 ft) bgs. The maximum concentration was approximately 155,000 pCi/g at 8.3 m (27.15 ft) bgs. It is postulated that internal contamination exists between 3.6 and 4.8 m (11.85 and 15.85 ft) bgs. Consequently, it was interpreted that no americium-241 exists in the sediments between 3.6 and 4.8 m (11.85 and 15.85 ft) bgs above the minimum detectable level of approximately 16,000 pCi/g. An elevated thorium-232 concentration was indicated from 8.2 to 9.1 m (26.85 to 29.85 ft) and at 7.0 m (22.85 ft) bgs. The concentration of uranium-232 was determined to range from 0.1 to 0.3 pCi/g. It was inferred, on the basis of the uranium-232 concentration, that uranium-233 may exist at concentrations between 100 and 1000 pCi/g in this waste stream. Passive neutron logging indicated a maximum count rate of approximately 1.5 counts per second (cps) at 13.7 m (44.85 ft) bgs. Two intervals of slightly elevated count rates can be observed from 3.3 to 4,2 m (10.85 to 13.85 ft) and from 7.9 to 11.2 m (25.85 to 36.85 ft) bgs. These count rates can be correlated with americium-241, plutonium-239, or neptunium-237 contamination. SGLS measurements at the bottom of the borehole (13.4 m [43.85 ft] bgs) indicate concentration increases. Soil sample results indicated plutonium at levels of 50,000 and 5,300 pCi/g, at 13.4 and 14.9 m (43.85 and 48.85 ft) bgs, respectively. The borehole may not have completely penetrated the contamination. The naturally occurring radionuclides potassium, uranium, and thorium (KUT) and moisture data suggest the possibility of grout in the upper 3.7 m (12 ft) of the borehole. Elevated moisture is observed at 0.6 and 3.3 m (1.85 and 10.85 ft) bgs. This could represent grout that was not uniformly emplaced around the borehole. Elevated moisture at the bottom of the borehole may also represent grout (e.g., as a result of a "plug" in the bottom of the borehole). This is speculative but should be considered during decommissioning of the borehole. A comparison plot of the 1993 and 1998 RLS spectral gamma data and 2007 SGLS data shows generally good agreement in the assays for neptunium-237 and plutonium-239. The assays for americium-241 are quite different, but this is believed to be the result of using different energy peaks for the assay. Cesium-137 is reported by the RLS analysis. The 2007 SGLS analysis indicates that the energy peak used for this determination was erroneously attributed to cesium-137 rather than to americium-241. The 2007 SGLS analysis agrees with cesium-137 concentrations reported near the 0.9 m (2.85 ft) bgs depth. The 2007 SGLS analysis suggests uranium-232 contamination from 8.2 to 9.1 m (26.85 to 29.85 ft) bgs. This possibility was not reported in the 1993 or 1998 RLS analyses. Possible concentration increases in neptunium-237 are observed between 7.9 and 10.3 m (25.85 and 33.85 ft) bgs since 1993. Part of the reason for differing measurements is the relative efficiency of the three detectors and counting times. (Stoller Log Data Report) (Note: The depth measurements, which are referenced to the top of the well casing in the log data report, have been corrected to reference ground surface by subtracting the length of the casing stickup.)
Prompt Fission Neutron System Logs (1978 – 1993)	In 1993, the U.S. Department of Energy Grand Junction Projects Office logging team produced prompt fission neutron logs of 4 boreholes at the 216-Z-1A Tile Field. Those results have not been published but a draft report states that all the boreholes at the 216-Z-1A Tile Field showed large concentrations of fissionable isotopes. Two of the boreholes in the 216-Z-1A Tile field had been logged with the prompt fission neutron tool in 1978 and again 1984 (prior to the 1993 logging). The distribution of contaminants (undifferentiated fissionable isotopes, primarily uranium-235, plutonium-239, and plutonium-241) agreed well with the previous logs, indicating that fissionable radionuclides, including plutonium, had not moved substantially over the span of 15 years. (PNNL-11978)
299-W18-149 (24.4 ft) (1993)	Well 299-W18-149, at the junction of the central distributor pipe and the first set of laterals. Prompt fission neutron logging identified plutonium-239 between 1.5 and 6.1 m (5 and 20 ft), with a maximum of ~16,300 nCi/g at slightly less than 3 m (10 ft). (PNNL-11978)
299-W18-159 (122 ft) (1978, 1984, 1993)	Well 299-W18-159, along central distributor pipe between the junctions with the third and fourth laterals. Prompt fission neutron logging showed that the maximum plutonium-239 activity was ~80,000 nCi/g at slightly less than 3 m (10 ft), the activity decreased and leveled out to ~1,000 nCi/g between 5.5 and 7.6 m (18 and 25 ft), then dropped to ~50 nCi/g before peaking again at 13.7 m (45 ft) at ~1,000 nCi/g. This borehole also was logged by prompt fission neutron methods in 1978 and 1984. It was concluded that there had been no movement of plutonium at this borehole between 1978 and 1993. (PNNL-11978)
299-W18-170 (31.73 ft) (1993)	Well 299-W18-170, near the junction of the central distributor pipe and the sixth set of laterals. Logging results were not available for inclusion in this data summary.
299-W18-175 (121.35 ft) (1978, 1984, 1993)	Well 299-W18-175, near the junction of the central distributor pipe and the sixth set of laterals. The results of the prompt fission neutron logging conducted in 1978, 1984, and 1993 indicate that there was no change in the distribution of plutonium-239 between 1978 and 1993. (PNNL-11978)

Table E-6. Data Summary – 216-Z-1A Tile Field (200-PW-1 Operable Unit). (10 Pages)

References		
ARH-486 ARH-1159 ARH-1608 ARH-CD-745 ARH-ST-156 BHI-00720 BNWC-91 CCN 65632-86-095 CP-13514 DOE/RL-88-30 DOE/RL-91-32 DOE/RL-91-58 DOE/RL-2001-01	DOE/RL-2006-58 DOE/RL-2007-22 HNF-1744 HNF-1989 HW-55176 ISO-98 ISO-698 PNNL-11978 PNNL-16103 RHO-CD-673 RHO-LD-114 RHO-ST-17	RHO-ST-44 SGW-33746 SGW-33829 Stoller Log Data Reports (http://www.hanford.gov/cp/gpp/data/vzcp/vzcp.cfm) WHC-SD-EN-DP-020 WHC-SD-EN-TI-021 WHC-SD-EN-TI-248 WIDS WMP-17869 WMP-21327 WMP-26178

Table E-7. Data Summary – 216-Z-3 Crib (200-PW-1 Operable Unit). (3 pages)

Background	
Site Identification	216-Z-3 Crib
Site Location	200 West Area; Plutonium Finishing Plant (PFP) Zone; south of the PFP facility and immediately northeast of the 216-Z-1A Tile Field
Type of Site	Crib
Site Construction	The 216-Z-3 Crib consists of three 1.2 m (4 ft) diameter, 6.7 m (22 ft) long, perforated corrugated metal culverts that were laid horizontally, end to end, in the upper portion of a 21-m (70-ft) long, 7.6-m (25-ft) deep excavation. Wire screens were welded on the ends of the culverts to prevent gravel intrusion into the culverts. The culverts rest on a 5-m (17-ft) thick bed of gravel, 2.4 m (8 ft) below grade. Two layers of asphalt roofing paper were laid over the crib construction, and the site was backfilled to grade. Holes that were 2.5 cm (1 in.) in diameter were drilled every 15 cm (6 in.) around the circumference of the culverts at 30 cm (1 ft) intervals. The inlet and outlet lines are 20 cm (8-in.) diameter vitrified clay pipe. A 1.2 m (4-ft) wide, 1.8 m (6-ft) long, and 10 cm (4-in.) thick concrete slab with penetrating risers is centered over the culvert. Construction information is available in the following historical references: WIDS, HW-55176, RHO-LD-114
Operating History	From 1952 to 1959, the 216-Z-3 Crib received basic (pH 8 to 10) process waste and analytical and development laboratory waste from the 234-5Z Building via the 241-Z-361 Settling Tank. Overflow from the crib went to the 216-Z-1A Tile Field. The 216-Z-3 Crib replaced the 216-Z-1 and 216-Z-2 Cribs, which received this waste stream from 1949 to 1952. The 216-Z-3 Crib was replaced by the 216-Z-12 Crib. The 216-Z-3 Crib was deactivated by valving out the pipeline to the crib at Diversion Box No. 1 and plugging the overflow line to the 216-Z-1A Tile Field.
Effluent Volume Discharged	178,000,000 L (46,992,000 gal) (RHO-LD-114)
Period of Operation	1952-1959
Inventory Information	Inventory information is available in the following historical references: WIDS, RHO-LD-114, ARH-CD-745, RHO-CD-673, DOE/RL-2001-01, DOE/RL-96-81, ARH-ST-156, DOE/RL-91-58, HNF-1989, ARH-1608, HW-80877, HW-76638, HW-72956, HW-63646, HW-59359, HW-57649, HW-55593, HW-53336, HW-48518, HW-44784, HW-38562, HW-33591 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-Z-3 Crib: Constituent / Inventory / Reference Plutonium / 5.7 kg / RHO-LD-114 Americium-241 / Unknown / Nitrate / 600,000 kg / DOE/RL-91-58 Fluoride / 160,000 kg / DOE/RL-91-58
Vicinity Waste Sites	216-Z-1A Tile Field, 216-Z-1 Crib, 216-Z-2 Crib
Characterization Summary	Characterization activities include geophysical logging of 2 boreholes drilled through the crib. The logs show plutonium and americium contamination from about 5.5 to 9 m (18 to 30 ft) bgs at concentrations exceeding 1,000,000 pCi/g for plutonium.
Data	
Scintillation Logs (1973-1986)	Information on scintillation logs can be found in ARH-ST-156, WHC-SD-EN-TI-021, DOE/RL-91-58, WHC-SD-EN-DP-020
299-W18-88 (149 ft deep); (1973, 1976, 1986)	Well 299-W18-88, located approximately 8 m (25 ft) southeast of 216-Z-3 Crib: scintillation logs showed background levels of radiation (natural gamma responses), suggesting that gamma contamination did not spread laterally in this direction. Neutron (1970, 1973, 1977) and density (1976) logs also were collected for well 299-W18-88 (WHC-SD-EN-DP-020). (ARH ST-156) (DOE/RL-91-58, Table A-9) (WHC-SD-EN-TI-021)
Spectral Gamma Logging System (SGLS) Logs (2006)	Information on SGLS logs can be found at: http://www.hanford.gov/cp/gpp/data/vzcp/vzcp.cfm

Table E-7. Data Summary – 216-Z-3 Crib (200-PW-1 Operable Unit). (3 pages)

299-W18-67 (47 ft deep) (2006)	Well 299-W18-67, at the northwest end of the 216-Z-3 Crib: Americium-241 was detected from 5.9 to 8.8 m (19.5 to 29 ft). The maximum concentration was approximately 230,000 pCi/g at 6.6 m (21.5 ft). Cesium-137 was detected from 5.8 to 9.8 m (19 to 32 ft). The maximum concentration of 10 pCi/g was detected at approximately 9.1 m (30 ft). Plutonium--241 was estimated to occur between 5.9 and 8.8 m (19.5 and 29 ft) at concentrations ranging from 100,000 to 3,300,000 pCi/g, with the maximum concentration at 6.6 m (21.5 ft). Plutonium-239 was detected between 5.5 and 9.1 m (18 and 30 ft). The maximum concentration was approximately 1,700,000 pCi/g at 6.6 m (21.5 ft). Protactinium-233 (an indicator for Neptunium-237) was detected from 5.8 to 9.1 m (19 to 30 ft). The maximum concentration was approximately 6 pCi/g at 6.7 m (22 ft). The passive neutron log indicated a maximum count rate of 111 counts per second at 6.7 m (22 ft). Sodium-22 was detected from 5.5 to 9.1 m (18 to 30 ft) at similar depth intervals as the relatively high neutron flux detected by the passive neutron logging system. The maximum concentration of sodium-22 was approximately 5 pCi/g at 6.6 m (21.5 ft). The presence of sodium-22 strongly suggests that at least some of the alpha-emitting radionuclides are present as a fluoride. (Stoller Log Data Report)
299-W18-68 (47 ft deep) (2006)	Well 299-W18-68, on the southwest side of the 216-Z-3 Crib: Americium-241 was detected from 6.1 to 9.3 m (20 to 30.5 ft). The maximum concentration was approximately 90,000 pCi/g at 6.7 m (22 ft). Cesium-137 was detected from 6.4 to 10.2 m (21 to 33.5 ft), with a maximum concentration of 3 pCi/g at approximately 10.0 m (33 ft). Plutonium-241 was estimated to occur from 5.8 to 9.3 m (19 to 30.5 ft) at concentrations ranging from 15,000 to 473,000 pCi/g. The maximum concentration was at 9.1 m (30 ft). Plutonium-239 was detected from 5.6 to 9.5 m (18.5 to 31 ft). The maximum concentration was approximately 480,000 pCi/g at 9.1 m (30 ft). Protactinium-233 (an indicator for Neptunium-237) was detected from 5.8 to 10.2 m (19 to 33.5 ft). The maximum concentration was approximately 3 pCi/g at 9.1 m (30 ft). The passive neutron log indicated a maximum count rate of 111 counts per second at 6.7 m (22 ft). Sodium-22 was detected from 5.5 to 9.1 m (18 to 30 ft) at similar depth intervals as the relatively high neutron flux detected by the passive neutron logging system. The maximum concentration of sodium-22 was approximately 0.6 pCi/g at 6.4 m (21 ft). The presence of sodium-22 strongly suggests that at least some of the alpha-emitting radionuclides are present as a fluoride. (Stoller Log Data Report)
Neutron Moisture Logs (2006)	Information on neutron moisture logs can be found at: http://www.hanford.gov/cp/gpp/data/vzcp/vzcp.cfm
299-W18-67 (47 ft deep) (2006)	Well 299-W18-67, at the northwest end of the 216-Z-3 Crib: Moisture data indicated some variability. Based on relatively high moisture and potassium-40 increases, a fine-grained sediment interval begins at approximately 8.8 m (29 ft). The transuranic contamination appears to lie above this interval, while the apparent cesium-137 exhibits its highest concentration within this interval. (Stoller Log Data Report)
299-W18-68 (47 ft deep) (2006)	Well 299-W18-68, on the southwest side of the 216-Z-3 Crib: Moisture data indicated some variability. Based on relatively high moisture and potassium-40 increases, a fine-grained sediment interval begins at approximately 8.8 m (29 ft). The transuranic contamination appears to lie above this interval, while the apparent cesium-137 exhibits its highest concentration within this interval. (Stoller Log Data Report)
Soil Sampling Data at 216-Z-12 Crib (1980)	Sampling was conducted at the 216-Z-12 Crib in 1980 to collect data to evaluate the distribution of plutonium and americium. The 216-Z-12 Crib received the same waste stream from 1959 to 1973 that the 216-Z-3 Crib received from 1952 to 1959. Because similar wastes were discharged, the data from the 216-Z-12 Crib provide analogous information for the 216-Z-3 Crib. Data indicate that (1) the highest concentration of plutonium is found in the sediments immediately below the crib bottom; (2) activity decreases rapidly with distance from the crib bottom; (3) the distributions of plutonium and americium activity are similar; (4) a low level of plutonium and americium activity that occurs from 30 to 36 m below the 216-Z-12 Crib bottom (the maximum depth sampled) is associated with a massive silt unit that probably concentrated most of the plutonium remaining in solution. (RHO-ST-44)
Soil Sampling Data at 216-Z-1A Tile Field (1973-1977)	Sampling was conducted at the 216-Z-1A Tile Field from 1973 through 1977 to collect data to evaluate the distribution of plutonium and americium. The 216-Z-1A Tile Field received overflow waste from the 216-Z-3 Crib from 1952 to 1959. Although these 216-Z-1A Tile Field data were not collected directly from the 216-Z-3 Crib, the data provide analogous information for the 216-Z-3 Crib. Data indicate that: (1) the highest concentration of plutonium and americium occurs in sediments located immediately beneath the crib, below the distribution pipe; (2) the concentration of plutonium and americium in sediments generally decreases with depth beneath the waste-distribution system, with the exception of silt-enriched horizons and boundary areas between major sedimentary units; (3) the maximum vertical extent of plutonium and americium contamination (defined by the 10 pCi/g isopleth) is located approximately 30 m (100 ft) below the bottom of the crib; (4) the estimated lateral extent of contamination is within a 10 m (33-ft) wide zone encompassing the perimeter of the crib. (RHO-ST-17)

Table E-7. Data Summary – 216-Z-3 Crib (200-PW-1 Operable Unit). (3 pages)

References

ARH-1608
ARH-CD-745
ARH-ST-156
DOE/RL-91-58
DOE/RL-96-81
DOE/RL-2001-01
HNF-1989
HW-33591
HW-38562
HW-44784
HW-48518
HW-53336
HW-55176
HW-55593
HW-57649
HW-59359
HW-63646
HW-72956
HW-76638
HW-80877
RHO-CD-673
RHO-LD-114
RHO-ST-17
RHO-ST-44
Stöller Log Data Reports (http://www.hanford.gov/cp/gpp/data/vzcp/vzcp.cfm)
WHC-SD-EN-DP-020
WHC-SD-EN-TI-021
WIDS

Bibliography

CCN 65632-86-095
CP-13514
DOE/RL-88-30
HNF-1744
SGW-33829

Table E-8. Data Summary – 216-Z-5 Crib (200-PW-1 Operable Unit). (2 Pages)

Background	
Site Identification	216-Z-5 Crib
Site Location	200 West Area, Plutonium Finishing Plant (PFP) Zone, northeast of 231-Z Building
Type of Site	Crib
Site Construction	The crib consists of two, in-line, interconnected 3.8-m (12-ft) square, 1.2-m (4-ft) deep wooden sump boxes that are open at the bottom and fed by the same transfer pipe. Each box was placed at the bottom of a 5.5-m (18-ft) deep rectangular excavation, constructed with 1:1 side slopes, that was 4.3-m (14-ft) square at the bottom and then backfilled to grade. The two crib structures are about 21 m (70 ft) apart. The unit began operation in June 1945 and was deactivated in February 1947 after waste sludge blocked the system. The 216-Z-5 Crib waste was diverted to the 216-Z-7 Crib. The crib was deactivated by capping the inlet waste pipeline west of the 231-W-151 Vault. The site was interim stabilized in 1990.
Operating History	The 216-Z-5 Crib was a liquid waste disposal site that was used to dispose of 231-Z Building plutonium-contaminated process waste from the 231-W-151 Vault.
Effluent Volume Discharged	31,000,000 L (8,184,000 gal) (RHO-LD-114)
Period of Operation	1945 - 1947
Estimated Discharged Inventory	Inventory information is available in the following historical references: WIDS, DOE/RL-91-58, RHO-CD-673, ARH-CD-745, RHO-LD-114, ARH-1608, HW-38562, HW-33591, HW-28121, HW-9671, HW-12468 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-Z-5 Crib: Constituent — Inventory — Reference Plutonium — 340 g — RHO-LD-114 Nitrate — 100,000 kg — DOE/RL-91-58
Vicinity Waste Sites	216-Z-4 Crib, 216-Z-6 Crib, 216-Z-10 Injection/Reverse Well, and 216-Z-17 Crib
Characterization Summary	Eight wells were drilled around the first crib structure in 1947 to determine the plutonium distribution in soils around the 216-Z-5 Crib. None of the wells penetrated the bottom of the crib structures. More recent geophysical logging of 6 of these wells in 2005 support the initial results of the 1947 effort. Cobalt-60 and europium-154 (which do not represent current contaminants of potential concern but do indicate where contaminants moved in the soil column) were detected at very low levels in the geophysical logs up to 150 ft bgs. This could indicate the passage of effluent containing more mobile contaminants (e.g., nitrate). Geologic changes at 18 m (60 ft) and 34 m (110 ft) may be zones of elevated concentrations of mobile contaminants.
Data	
Scintillation Logs (1959 – 1986)	Information on scintillation logs can be found in ARH-ST-156, WHC-SD-EN-TI-021, DOE/RL-91-58, WHC-SD-EN-DP-020
299-W15-1 (233 ft) (1959, 1963)	Well 299-W15-1, southeast of the bottom of the northern wooden box: Scintillation logs showed an elevated gamma response between depth of 30 and 40 m (98 to 131 ft) (above the water table) and from 50 to 63 m (164 to 207 ft) (below the water table). (DOE/RL-91-58, Table A-9) Neutron (1965) and temperature (1962 [5], 1963[3], 1964) logs also were collected for well 299-W15-1 (WHC-SD-EN-DP-020).
Spectral Gamma Logging System (SGLS) Logs (2005)	The data source for the SGLS logs is Stoller Log Data Reports.
299-W15-01 (233 ft) (2005)	Well 299-W15-1, southeast of the bottom of the northern wooden box: Cesium-137, cobalt-60, and europium-154 were sporadically detected throughout well at concentrations less than 1 pCi/g. No significant neutron flux was detected. (Stoller Log Data Report)
299-W15-53 (79 ft) (2005)	Well 299-W15-53, south of the 216-Z-5 Crib: Cesium-137, cobalt-60, and europium-154 were sporadically detected throughout well at concentrations less than 3 pCi/g. No significant neutron flux was detected. (Stoller Log Data Report)
299-W15-54 (70 ft) (2005)	Well 299-W15-54, west of the bottom of the southern wooden box: Cesium-137, cobalt-60, and europium-154 were sporadically detected throughout well at concentrations less than 2 pCi/g. (Stoller Log Data Report)
299-W15-55 (152 ft) (2005)	Well 299-W15-55, south of the bottom of the southern wooden box: Cesium-137 was detected in a zone between 10.4 and 22.9 m (34 and 75 ft) with a maximum concentration of 11 pCi/g at 17.7 m (58 ft). Cobalt-60 was continuously detected in a zone between 13.4 and 24.4 m (44 and 80 ft) at concentrations of 0.3 pCi/g or less. Europium-154 was sporadically detected in several zones with a maximum concentration 4 pCi/g at 17.7 m (58 ft). No significant neutron flux was detected. (Stoller Log Data Report)
299-W15-56 (139 ft) (2005)	Well 299-W15-56, west of the bottom of the southern wooden box: Cesium-137 was detected primarily in a zone between 11.0 and 18.9 m (36 and 62 ft) with a maximum concentration of 3 pCi/g at 41 ft. Co-60 was continuously detected in a zone between 9.4 and 18.9 m (31 and 62 ft) at concentrations of 0.15 pCi/g or less. Europium-154 was sporadically detected in several zones with a maximum concentration 1.5 pCi/g at 12.5 m (41 ft). No significant neutron flux was detected. (Stoller Log Data Report)
299-W15-57 (156 ft) (2005)	Well 299-W15-57, at the northeast corner of the bottom of the southern wooden box: Cesium-137 was detected primarily in a zone between 11.0 and 13.4 m (36 and 44 ft) with a maximum concentration of 5 pCi/g at 12.2 m (40 ft). Cobalt-60 was continuously detected between 11.3 and 13.4 m (37 and 44 ft) and 20.1 and 21.3 m (66 and 70 ft) at a maximum concentration of 0.4 pCi/g. Europium-154 was sporadically detected in several zones with a maximum concentration 2 pCi/g at 12.8 m (42 ft). No significant neutron flux was detected. (Stoller Log Data Report)

Table E-8. Data Summary – 216-Z-5 Crib (200-PW-1 Operable Unit). (2 Pages)

Soil Sampling Analytical Data (1947)	Data indicate that only 0.5 g of the plutonium inventory could be accounted for and that the remainder of the plutonium discharged to this crib likely remains directly beneath the crib bottom. Sample results confirmed that the plutonium had not migrated far beneath the crib bottom. (HW-9671)
References	
ARH-1608 ARH-CD-745 ARH-ST-156 DOE/RL-91-58 HW-12468 HW-28121 HW-33591	HW-38562 HW-9671 RHO-CD-673 RHO-LD-114 Stoller Log Data Reports (http://www.hanford.gov/cp/gpp/data/vzcp/vzcp.cfm) WHC-SD-EN-DP-020 WHC-SD-EN-TI-021 WIDS
Bibliography	
ARH-2806 ARH-947 BHI-00175 DOE/RL-2001-01 HW-33305 HW-55176 HW-57830 HW-83718 RPP-26744	

Table E-9. Data Summary – 216-Z-8 French Drain (200-PW-6 Operable Unit). (2 Pages)

Background	
Site Identification	216-Z-8 French Drain
Site Location	200 West Area; Plutonium Finishing Plant (PFP) Zone; east of the 234-5Z Building; approximately 11 m (36 ft) east of the 241-Z-8 Settling Tank.
Type of Site	French Drain
Site Construction	The 216-Z-8 French Drain is constructed of two, 0.9 m (3-ft) long clay tile culverts, stacked vertically underground and filled with gravel. At the base of the culverts is a 10 cm (4-in.) thick concrete collar that rests on a 1.5 m (5-ft) square by 0.9 m (3-ft) deep gravel bed that is approximately 5.6 m (17 ft) deep at the bottom. The unit contains 100 cubic feet of 1- to 3-in. gravel and 25 square feet 15-pound building paper over the gravel bed and beneath the top.
Operating History	The 216-Z-8 French Drain is a liquid waste site that was used from 1955 to 1962 to dispose of overflow liquid waste from the 241-Z-8 Settling Tank. The tank was used as a solids settling tank for effluent waste from back flushes of the recovery of uranium and plutonium by extraction (RECUPLEX) feed filters. Tank waste flowed 11 m (36 ft) east to the french drain via a 10 cm (4-in.) steel effluent pipe. Between 1957, when the tank first overflowed, and 1962, an estimated 9,590 L (2,530 gal) overflowed from the 241-Z-8 Settling Tank to the 216-Z-8 French Drain. The drain ceased operations in 1962 when discharge piping in the 234-5Z Building was disconnected.
Effluent Volume Discharged	9,590 L (2,530 gal) (RHO-LD-114)
Period of Operation	1955 to 1962
Inventory Information	Inventory information is available in the following historical references: DOE/RL-2001-01; RPP-26744; DOE/RL-96-81; RHO-CD-673; ARH-CD-745; DOE/RL-91-58; RHO-RE-EV-46 P; HNF-1744; WHC-SC-DD-TI-057; RHO-LD-114; HW-59359; HW-63646; HW-64375; HW-69071; HW-69072; HW-71971; HW-72956; HW-76638; HW-80877 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-Z-8 French Drain: Constituent — Inventory — Reference Plutonium — 48.4 g — RHO-LD-114
Vicinity Waste Sites	241-Z-8 Settling Tank
Characterization Summary	Characterization activities at the 216-Z-8 French Drain consist of geophysical logging and soil sampling. A 1984 study focused on evaluating the distribution of transuranic constituents beneath the french drain. Samples were collected and analyzed from well 299-W15-202 (RHO-RE-EV-46 P). Maximum plutonium-239 and americium-241 concentrations were 4,620 and 457 pCi/g, respectively, located near the bottom of the drain structure. Geophysical logging in well 299-W15-213 in 2005 showed plutonium contamination up to 25,000 pCi/g near the bottom of the drain structure.
Data	
Spectral Gamma Logging System (SGLS) Logs (2005)	The data source for the SGLS logs is Stoller Log Data Reports.
299-W15-198 (25 ft) (2005)	Well 299-W15-198. Cesium-137 was detected at 4.6 and 6.1 m (15 and 20 ft) bgs with a concentration of approximately 0.2 pCi/g.
299-W15-199 (26 ft) (2005)	Well 299-W15-199. Cesium-137 was detected at the ground surface (0.6 m [2 ft] below top of casing) at a concentration of approximately 0.2 pCi/g
299-W15-200 (26 ft) (2005)	299-W15-200. Cesium-137 was detected by the SGLS at the ground surface (0.8 m [2.5 ft] below top of casing) at a concentration of approximately 0.1 pCi/g.
299-W15-201 (25 ft) (2005)	299-W15-201. No man-made radionuclides were detected.
299-W15-213 (44 ft) (2005)	299-W15-213. Cesium-137, plutonium-239, and americium-241 were detected by the SGLS during logging. Americium-241 was interpreted to exist at 5.6 m (18.5 ft) at a concentration of approximately 17,000 pCi/g. Cesium-137 was identified at 1.1 m (3.5 ft) at a concentration of approximately 0.2 pCi/g. Plutonium-239 was detected between 5.5 and 6.4 m (18 and 21 ft) ranging in concentrations from approximately 10,000 to 25,000 pCi/g; the maximum concentration was detected at 5.6 m (18.5 ft) bgs.
299-W15-214 (15 ft) (2005)	299-W15-214. Cesium-137 was detected between 2.1 and 3.4 m (7 and 11 ft) near its minimum detectable level of approximately 0.2 pCi/g.
299-W15-215 (15 ft) (2005)	299-W15-215. Cesium-137 was detected between the ground surface (1.4 m [4.5 ft]) and the bottom of the borehole (4.4 m [14.5 ft]). The maximum concentration was approximately 0.4 pCi/g at 4.4 m (14.5 ft) bgs.
Soil Sampling and Analysis (1984)	Soil sampling was conducted in a 53.6 m (176-ft) borehole (299-W15-202) drilled at the south edge of the french drain. RHO-RE-EV-46 P presents that data from this sampling, including transuranic activity results and geologic information with depth. Samples were also collected at the nearby 241-Z-8 Settling Tank; these data are presented in this report as well. Data from the 299-W15-202 borehole showed plutonium-239 at concentrations greater than 1 pCi/g extending to just over 10 m (33 ft) bgs. The highest concentrations were found at the bottom of the french drain structure with a maximum concentration of 4,410 pCi/g at 6.1 m (20 ft) bgs. Americium-241 at concentrations greater than 1 pCi/g were found to a depth of 9 m (30 ft) bgs with a maximum concentration of 457 pCi/g at 6.1 m (20 ft) bgs. The document suggests that concentrations of plutonium-239 greater than 10,000 pCi/g may exist in a small area directly below the bottom of french drain. This area was not sampled because the borehole was placed just to the side of the drain structure. The document also concludes that the nearby 241-Z-8 Settling Tank did not likely leak. (RHO-RE-EV-46 P)

Table E-9. Data Summary – 216-Z-8 French Drain (200-PW-6 Operable Unit). (2 Pages)

References	
ARH-CD-745	HW-71971
DOE/RL-2001-01	HW-72956
DOE/RL-91-58	HW-72956
DOE/RL-96-81	HW-76638
HNF-1744	HW-80877
HW-59359	RHO-CD-673
HW-63646	RHO-LD-114
HW-64375	RHO-RE-EV-46 P
HW-69071	RPP-26744
HW-69072	WHC-SC-DD-TI-057
Bibliography	
DOE/RL-88-30	
HW-55176	
WIDS	

Table E-10. Data Summary – 216-Z-9 Trench (200-PW-1 Operable Unit). (8 Pages)

Background	
Site Identification	216-Z-9 Trench
Site Location	200 West Area; Plutonium Finishing Plant (PFP) Zone; east of the 234-5Z facility
Type of Site	Trench
Site Construction	The site is a rectangular, enclosed trench with a concrete cover supported by six columns. The trench is 36.5 by 27.4 m (120 by 90 ft) at the surface, 18.3 by 9.1 m (60 by 30 ft) at the bottom, and 6.1 m (21 ft) deep. The concrete cover is 0.23 m (0.75 ft) thick. The underside of the concrete cover was lined with acid resistant bricks. Two 3.8 cm (1.5-in.) diameter stainless steel pipes discharged effluent above the trench bottom. In 1999, a gravel bio-barrier, measuring 6.1 by 4 m (20 by 13 ft), was placed over an area of surface contamination. Alpha contamination was found on the soil surface that apparently had been brought to the surface by ants. Cement parking curbs were placed around the perimeter of the gravel barrier. Construction information is available in the following historical references: WIDS, HW-55176, RHO-LD-114.
Operating History	The 216-Z-9 Trench is an enclosed, below-grade trench that was used from 1955 to 1962 for disposal of Z Plant recovery of uranium and plutonium by extraction (RECUPLEX) aqueous and organic liquid waste. This was the only waste site used for solvent disposal during the RECUPLEX operation. Carbon tetrachloride was received in the aqueous phase liquid and, mixed with other organics, as a dense, non-aqueous phase liquid (DNAPL). In 1976 and 1977, the upper 0.3 m (1 ft) of the trench floor was mined to reduce the amount of plutonium in the trench; after mining, 38 to 48 kg (84 to 106 lb) of plutonium were estimated to remain in the soils beneath the trench. Soil-vapor extraction has been ongoing at the 216-Z-9 Trench since 1993 to remove carbon tetrachloride from the vadose zone. A pond, created by discharge of overflow effluent from the Z Plant elevated water tank and storm water, existed north and east of the 216-Z-9 Trench in the 1960s (WIDS site code 200-W-124). The pond is visible in 200 West Area photographs dated 1963 and 1969. A 1971 drawing states that the discharge line to this location was abandoned. The effluent was rerouted to the 216-Z-11 Ditch and then to the 216-Z-21 Pond (WIDS). Soil-vapor extraction has been in operation at the 216-Z-9 Trench since 1993 as an interim action to remove carbon tetrachloride from the vadose-zone soils. Between 1993 and 2006, the carbon tetrachloride mass removed from the 216-Z-9 Well Field was 54,280 kg (SGW-33746).
Effluent Volume Discharged	4,090,000 L (1,081,000 gal) (RHO-LD-114)
Period of Operation	1955 – 1962
Estimated Discharged Inventory	Inventory information is available in the following historical references: WIDS, DOE/RL-91-32, RHO-CD-673, ARH-CD-745, DOE/RL-88-30, DOE/RL-91-58, RHO-LD-114, BNWC-91, HW-80877, HW-76638, HW-72956, HW-71971, HW-69072, HW-69071, HW-64375, HW-63646, HW-59359, HW-57649, HW-55593, HW-53336, HW-48518, HW-44784, ARH-2806, ARH-2757, ARH-2353, ARH-2015, ARH-1608 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-Z-9 Trench: Constituent / Inventory / Reference Plutonium / 38-48 kg (remaining) / RHO-ST-21 Americium-241 / 2.5 kg / RHO-LD-114 Carbon tetrachloride / 83,000 to 300,000 L / DOE/RL-91-32 Tributyl phosphate / 27,900 L / WHC-SD-EN-TI-248 Dibutylbutyl phosphonate / 46,500 L / WHC-SD-EN-TI-248 Lard oil / 9,300 L / WHC-SD-EN-TI-248 Nitrate / 1,361,000 kg / HNF-31792
Vicinity Waste Sites	216-Z-21 Pond
Characterization Summary	Wells were installed around the 216-Z-9 Trench beginning in the 1950s to monitor contaminant migration. Many of these wells have been geophysically logged. Characterization was conducted in 1961, 1963, and 1973 to evaluate the plutonium and americium in the trench (ARH-2915). Characterization was conducted in 1991 to 1993 to support soil-vapor extraction activities. A DNAPL investigation conducted on the northeast corner of the 216-Z-9 Trench in 1995 detected no DNAPL in well 299-W15-32 (BHI-00431). Remedial investigation activities conducted at the trench included sampling from one deep well (299-W15-46) and one slant well (299-W15-48) and a phased carbon tetrachloride investigation. DNAPL was identified in a silt lens 20 m (65 ft) bgs south of the trench.

Table E-10. Data Summary – 216-Z-9 Trench (200-PW-1 Operable Unit). (8 Pages)

Data	
Soil Sampling in the 216-Z-9 Trench (1959, 1961, 1963)	Sampling for the collection of data necessary to evaluate the mass of plutonium in the trench was conducted through the trench roof during 1959, 1961, and 1963. Concern over the potential for a critical mass accumulation of plutonium on the floor of the trench prompted an additional sampling event through the trench roof during 1973. The maximum depth of penetration for these samples was 3 m (9 ft) below the trench floor. Both plutonium and americium were found in relatively high concentrations from the bottom of the trench to total depth (DOE/RL-2006-51, Section 3.2.1.1 and Tables 3-1 and 3-2). Samples from the bottom of the trench to 15 cm (6 in.) below the floor yielded plutonium-239 concentrations of up to 1.2×10^{12} pCi/L and americium-241 concentrations of up to 1.4×10^{11} pCi/L. At a depth of 3 m (9 ft), plutonium-239 and americium-241 concentrations were 2.0×10^{9} pCi/L and 1.4×10^{8} pCi/L, respectively. ARH-2915 reports that the soil pH was 4.1 at a depth of 2.4 m (8 ft) and generally acidic through the 3 m (9-ft) soil column tested below the base of the trench. Details of the sampling are found in ARH-2915. The uppermost 30 cm (12 in.) of the trench floor subsequently were excavated in 1976 (RHO-ST-21). The mining results are summarized in DOE/RL-2006-51, Section 2.1.3. (ARH-2915; RHO-ST-21; DOE/RL-2006-51, Section 3.2.1.1)
Soil Sampling Near the 216-Z-9 Trench (1992 – 2001)	Analyses of soil samples from borings completed during 1992 and 1993 (wells 299-W15-216, 299-W15-217, 299-W15-218, 299-W15-219, 299-W15-220, and 299-W15-223) and deepened in 2001 (wells 299-W15-84 and 299-W15-95) indicate that radioactive contaminants are present within two intervals of one well near the southwest edge of the trench (WHC-SD-EN-TI-063). Well 299-W15-217, approximately 12 m (39 ft) west of the trench, contains two lead and two radium isotopes, along with gross alpha and gross beta contamination; maximum concentrations of metals and gross alpha are found at depths of 35.3 and 37.1 m (116 and 122 ft) bgs, and maximum concentrations of gross beta are found at 16.6 m (54.5 ft) bgs. Groundwater samples collected from the southernmost well (well 299-W15-216) contained cobalt-60 (maximum of 2.19 pCi/L), ruthenium-106 (maximum of 29.5 pCi/L), antimony-125 (maximum of 6.84 pCi/L), and cesium-137 (maximum of 3.47 pCi/L). These contaminants could have been in the inventory from the 216-Z-9 Trench, although there are no direct data to support that conclusion. During drilling of wells 299-W15-216, 299-W15-217, 299-W15-218, 299-W15-219, 299-W15-220, and 299-W15-223, soil samples were collected for analyses of volatile organic compounds (carbon tetrachloride and associated breakdown products). Soil samples also were collected from wells 299-W15-84 and 299-W15-95 when these wells were deepened in 2001. The highest concentrations of carbon tetrachloride detected in the soil samples were from well 299-W15-217 (37,817 µg/kg at a depth of 34.7 m [114 ft]), from well 299-W15-218 (15,794 µg/kg from a depth of 33.5 m [110 ft]), and from well 299-W15-219 (11,688 µg/kg from a depth of 34.9 m [114.5 ft]). The maximum carbon tetrachloride concentrations in soil samples from the other two wells drilled in 1992-1993 were: 1,132 µg/kg in well 299-W15-220 from a depth of 27.6 m (90.5 ft); and 67 µg/kg in well 299-W15-216 from a depth of 15.0 m (49.1 ft). The highest concentrations of carbon tetrachloride in soil vapor and soil generally were associated with finer grained units (i.e., Hanford formation silts and the Cold Creek Unit) within the vadose zone. The maximum carbon tetrachloride concentration in soil samples from wells 299-W15-84 and 299-W15-95 (collected in 2001) was 9 µg/kg , which is significantly lower than the FY 1992-1993 well results and shows the impact of the soil-vapor extraction system near the release sites in reducing the carbon tetrachloride concentrations in the vadose zone (WHC-SD-EN-TI-063; WHC-SD-EN-TI-248; BHI-01631; DOE/RL-2006-51, Section 3.2.1.1)
Soil-Vapor Sampling during Drilling of Characterization Boreholes Near the 216-Z-9 Trench (1992 – 2001)	During drilling of wells 299-W15-216, 299-W15-217, 299-W15-218, 299-W15-219, 299-W15-220, and 299-W15-223, soil-vapor samples were collected for analyses of volatile organic compounds (carbon tetrachloride and associated breakdown products). Soil-vapor samples also were collected from wells 299-W15-84 and 299-W15-95 when these wells were deepened in 2001. The highest carbon tetrachloride vapor concentrations detected within these boreholes were from well 299-W15-217 (7,126 ppmv from a depth of 24.7 m [81 ft]) and well 299-W15-218 (20,910 ppmv from a depth of 34 m [111.8 ft], and 10,380 ppmv from a depth of 57.8 m [189.7 ft]). (WHC-SD-EN-TI-063; WHC-SD-EN-TI-248; BHI-01631; DOE/RL-2006-51, Section 3.2.4.8)
Soil-Vapor Extraction at the 216-Z-9 Trench (1993-2007)	A soil-vapor extraction system was installed in March 1993 and operated from that time to the present in the vicinity of the 216-Z-9 Trench. Between March 1993 and September 2006, approximately 54,280 kg of carbon tetrachloride were removed from the 216-Z-9 Well Field by the soil-vapor extraction system (SGW-33746). Soil-vapor samples have been collected from numerous existing wells and soil gas probes between 1991 and 2007 to evaluate carbon tetrachloride concentrations and to monitor concentration trends in support of soil-vapor-extraction operations. Soil-vapor samples collected during operation of the soil-vapor extraction demonstrate that soil-vapor concentrations in the vicinity of the 216-Z-9 Trench have been decreasing over time. (DOE/RL-91-32, BHI-00720 [Rev. 6], WMP-17869, WMP-21327, WMP-26178, SGW-33746)
Remedial Investigation Soil Sampling, Well 299-W15-46 (C3426) (2003 – 2004)	Radioactive contaminants of potential concern (COPC) for the 200-PW-1 OU were detected in the vadose zone at the 216-Z-9 Trench in Borehole C3426 (well 299-W15-46) to a depth of 57 m (186.3 ft) bgs. Background levels for the 200-PW-1 OU radionuclide COPCs are shown in DOE/RL-2006-51, Table 3-5. Only the background values for naturally occurring radionuclides in subsurface soils were used to screen the remedial investigation results. The maximum results for the Borehole C3426 samples are presented in DOE/RL-2006-51, Appendix A, and are summarized in the following table, which presents the radionuclide COPCs detected above background levels (and those with no available background value) and the depth interval of the maximum concentration.

Radionuclide Contaminant of Potential Concern	Maximum Concentration (pCi/g)	Depth Interval (ft bgs)	
		Top	Bottom
Americium-241	309,000	109.5	112
Neptunium-237	28.9	109.5	112
Plutonium-238	657	109.5	112
Plutonium-239/240	115,000	63.5	66
Radium-228	2.79	109.5	112
Strontium-89,90	13.4	63.5	66
Technetium-99	18	47.5	50
Uranium-234	11.8	48.5	50
Uranium-235	0.13	119.5	122

bgs = below ground surface.

Table E-10. Data Summary – 216-Z-9 Trench (200-PW-1 Operable Unit). (8 Pages)

Background levels for the 200-PW-1 OU nonradionuclide COPCs are shown in DOE/RL-2006-51, Table 3-6. The following table presents the nonradionuclide COPCs detected above background levels (and those with no available background value) and the depth interval of the maximum concentration.

Contaminant of Potential Concern	Maximum Concentration (mg/kg)	Depth Interval (ft bgs)	
		Top	Bottom
Arsenic	11	47.5	50
Cadmium	40.2	90	92.5
Chromium	162	119.5	122
Copper	26.3	119.5	122
Hexavalent chromium	0.75	63.5	66
Lead	620	115	117.5
Mercury	1.02	174	176.5
Nickel	72.9	119.5	122
Selenium	3.76	119.5	122
Silver	2.88	174	176.5
Ammonium ion	192	109.5	112
Fluoride	7.8	90	92.5
Nitrate	5,910	109.5	112
Nitrite	12.1	47.5	50
Sulfate	456	63.5	66
Acetone	0.66	117	119.5
Carbon tetrachloride	380	63.5	66
Chlorobenzene	0.00098	115	117.5
Chloroform	4.9	63.5	66
1,1-Dichloroethane	0.0011	115	117.5
Methyl ethyl ketone[a]	0.080	117	119.5
Methyl isobutyl ketone[b]	0.0012	117	119.5
Methylene chloride	0.020	119.5	122
Tetrachloroethene	17	63.6	66
Toluene	0.0013	117	119.5
Trichloroethene	0.0011	115	117.5
Tributyl phosphate	2,100	63.5	66
Aroclor-1248	1.6	63.5	66
Oil and grease	2,400	63.5	66

[a] 2-Butanone (CAS 78-93-3).
[b] 2-Pentanone, 4-Methyl (CAS 108-10-1).
Aroclor is an expired trademark.
bgs = below ground surface.
CAS = Chemical Abstracts Service.

(DOE/RL-2006-51, Section 3.2.1.3)

Remedial Investigation Soil Sampling, Well 299-W15-48 (C3427) (2006)

Radioactive COPCs for the 200-PW-1 OU were detected in the vadose zone beneath the 216-Z-9 Trench in Borehole C3427 (well 299-W15-48) to a downhole depth of 42.7 m (140 ft) bgs. Background levels for the 200-PW-1 OU radionuclide COPCs are shown in DOE/RL-2006-51, Table 3-5. The maximum results for the Borehole C3427 samples are presented in DOE/RL-2006-51, Appendix A, and are summarized in the following table, which presents the radionuclide COPCs detected above background levels (and those with no available background value) and the depth interval of the maximum concentration.

Radionuclide Contaminant of Potential Concern	Maximum Concentration (pCi/g)	Downhole Depth Interval (ft bgs)	
		Top	Bottom
Americium-241	131,000	118.5	120.5
Neptunium-237	10.5	122.5	124.5
Plutonium-238	3,680	70	72
Plutonium-239/240	254,000	70	72
Radium-226	2.16	131.5	133
Radium-228	1.64	70	72

Table E-10. Data Summary – 216-Z-9 Trench (200-PW-1 Operable Unit). (8 Pages)

Total beta radiostrontium	1.18	131.5	133
Technetium-99	272	70	72
Thorium-232	1.89	135	140

bgs = below ground surface.

Background levels for the 200-PW-1 OU nonradionuclide COPCs are shown in DOE/RL-2006-51, Table 3-6. The following table presents the nonradionuclide COPCs detected above background levels (and those with no available background value) and the depth interval of the maximum concentration.

Chemicals of Potential Concern	Maximum Concentration (mg/kg)	Downhole Depth Interval (ft bgs)	
		Top	Bottom
Arsenic	8.4	131.5	133
Bismuth	156	135	140
Cadmium	118	122.5	124.5
Chromium	22.8	52.5	54.5
Hexavalent chromium	0.45	52.5	54.5
Lead	17	122.5	124.5
Mercury	0.799	100	102
Nickel	23.3	100	102
Selenium	2.93	131.5	133
Silver	1.23	135	140
Ammonium ion	21.5	135	140
Fluoride	51.4	118.5	120.5
Nitrate	6,990	100	102
Phosphate	3.9	135	140
Sulfate	255	70	72
Acetone	2.9	131.5	133
Benzene	0.0037	70	72
Carbon tetrachloride	6.3	128.5	130.5
Chloroform	0.36	131.5	133
Ethylbenzene	0.0008	73	75
Hydraulic fluids (Grease)[a]	2,440	70	72
Normal paraffins (greases and cutting oils)[a]			
Methyl ethyl ketone [b]	1.7	122.5	124.5
Methylene chloride	0.140	100	102
Tetrachloroethene	0.22	70	72
Toluene	0.0038	131.5	133
Trichloroethene	0.0013	73	75
Tributyl phosphate	3,000	70	72
Xylene	0.003	73	75
Aroclor-1248	1.3	70	72

Depth Interval = downhole depth (not converted to vertical).
[a]Result reported for oil and grease.
[b]2-Butanone (CAS 78-93-3).
bgs = below ground surface.
CAS = Chemical Abstracts Service.
Aroclor is an expired trademark.

(DOE/RL-2006-51, Section 3.2.1.3)

Investigation of Dense, Non-Aqueous Phase Liquid (DNAPL) Carbon Tetrachloride at the 216-Z-9 Trench (1995 – 2007)

In 1995, well 299-W15-32 was drilled and sampled to investigate DNAPL occurrence on the northeast corner of the 216-Z-9 Trench. No DNAPL was detected in the samples from this well (BHI-00431).

The vadose-zone soil samples in remedial investigation wells 299-W15-46 and 299-W15-48 were field screened for visual indication of the presence of carbon tetrachloride as DNAPL (WMP-26264, WMP-30566). The only soil sample that had a positive field test for carbon tetrachloride DNAPL was a sample from 19.5 m (64 ft) bgs from well 299-W15-46. This was the first time that positive evidence of carbon tetrachloride DNAPL was found at any location in the subsurface of the 200 West Area since the beginning of the carbon tetrachloride contamination investigation in the early 1990s. This sample was in a thin silt layer from 19.8 to 20.4 m (65 to 67 ft) deep in well 299-W15-46. This silt layer reported a high carbon tetrachloride soil concentration (380,000 µg/kg) and one of the highest carbon tetrachloride soil-vapor concentrations (8,560 ppmv) in the borehole (WMP-26264). Within this same silt lens, the highest carbon tetrachloride soil concentration was reported at Borehole C5336 (P66) of 390,000 µg/kg as part of the hydraulic hammer rig (HHR) investigation south of the 216-Z-9 Trench and approximately 6 m (20 ft) east of well 299-W15-46 (DOE/RL-2007-22). However, 6 m (20 ft) south and 6 m (20 ft) west of well 299-W15-46, the carbon tetrachloride concentrations in the silt layer reduce significantly to levels of only a few 100 µg/kg. This shows that a

Table E-10. Data Summary – 216-Z-9 Trench (200-PW-1 Operable Unit). (8 Pages)

	large variability exists in the distribution of carbon tetrachloride in the vadose zone. Relatively low concentrations of carbon tetrachloride (i.e., less than 300 µg/kg) were detected in the other samples collected from Borehole C3426. The highest carbon tetrachloride concentration in Borehole C3427 was detected near the thin silt layers (i.e., a depth of approximately 19.8 m [65 ft] bgs) and the Cold Creek Unit. Concentrations at depths of 20.4 to 21.0 m (67 to 69 ft) and 22.3 to 22.9 m (73 to 75 ft) were 2,600 and 1,500 µg/kg, respectively. Concentrations near the Cold Creek Unit were 6,300 µg/kg (39.2 to 39.8 m or 128.5 to 130.5 ft) and 4,100 µg/kg (40.1 to 40.5 m [131.5 to 133 ft]). The detections of the highest concentrations of carbon tetrachloride within fine-grained vadose-zone sediments is consistent with the current conceptual site model that DNAPL, if present, is located in fine-grained units within the vadose zone (i.e., 19.8 m [65 ft] silt lens of the Hanford formation). The HHR investigation collected soil samples through the top of the Cold Creek Unit on all sides of the 216-Z-9 Trench. At HHR push location Borehole C5336 (P66) 390,000 µg/kg of carbon tetrachloride was detected south of the 216-Z-9 Trench, suggesting a DNAPL source. This result is consistent with the concentration of carbon tetrachloride at well 299-W15-46 at 19.8 m (65 ft) of 380,000 µg/kg. However, significant carbon tetrachloride concentrations only were found south of the 216-Z-9 Trench, consistent with the results from well 299-W15-46. (BHI-00431; WMP-26264; WMP-30566; DOE/RL-2007-22; DOE/RL-2006-51, Section 3.2.1.3)
Scintillation Logs (1959 – 1998)	Between 1954 and 1967, nine wells were drilled around the 216-Z-9 Trench. Scintillation probe profiles were completed on each of the borings at least once between 1963 and 1970, and at least once more between 1973 and 1976. Contamination was detected in two borings (wells 299-W15-8 and 299-W15-86) at 15.2 to 38.1 m (49.5 to 125 ft) bgs. Gross gamma logging was conducted during drilling of four wells around the 216-Z-9 Trench in 1992 and 1993. Gross gamma logging also was conducted in six existing wells between 1992 and 1998 Information on scintillation logs can be found in ARH-ST-156, WHC-SD-EN-TI-021, DOE/RL-91-58, and WHC-SD-EN-DP-020. Information on gross gamma logging can be found in PNNL-16103.
299-W15-6 (410 ft) (1959, 1963, 1968, 1976, 1987 [2])	Well 299-W15-6, 20 m (65 ft) northeast of the 216-Z-9 Trench. Scintillation logs showed an elevated gamma response between depths of 1 and 9 m (0.3 and 30 ft). (DOE/RL-91-58, Table A-9) Neutron (1965, 1970, 1973, 1977, 1987), temperature (1962 [2], 1967, 1974) and density (1976, 1987) logs also were collected for well 299-W15-6 (WHC-SD-EN-DP-020).
299-W15-8 (206 ft) (1968, 1970, 1973, 1987 [2], 1992)	Well 299-W15-8, 15 m (49 ft) south of the 216-Z-9 Trench. Scintillation logs showed an elevated gamma response between depths of 15 and 38 m (49 and 125 ft). (DOE/RL-91-58, Table A-9) Neutron (1968, 1970, 1973, 1987) and density (1987) logs also were collected for well 299-W15-8 (WHC-SD-EN-DP-020).
299-W15-9 (194 ft) (1967, 1970, 1973, 1976, 1987 [2], 1995)	Well 299-W15-9, north of the 216-Z-9 Trench. Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1967, 1970, 1973, 1977, 1987) and density (1976, 1987) logs also were collected for well 299-W15-9 (WHC-SD-EN-DP-020).
299-W15-82 (101 ft) (1963, 1976, 1987, 1993)	Well 299-W15-82, east of the 216-Z-9 Trench. Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1970, 1977) and density (1976) logs also were collected for well 299-W15-82 (WHC-SD-EN-DP-020).
299-W15-84 (110 ft before being deepened in 2001) (1963, 1973, 1976, 1987, 1998)	Well 299-W15-84, west of the 216-Z-9 Trench. Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1970, 1973, 1977) and density (1976) logs also were collected for well 299-W15-84 (WHC-SD-EN-DP-020).
299-W15-85 (102 ft) (1963, 1973, 1976, 1987)	Well 299-W15-85, north of the 216-Z-9 Trench. Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1970, 1973, 1977) and density (1976) logs also were collected for well 299-W15-85 (WHC-SD-EN-DP-020).
299-W15-86 (143 ft) (1963, 1973, 1987 [2], 1992)	Well 299-W15-86, southwest of the 216-Z-9 Trench. Scintillation logs showed an elevated gamma response between depths of 15 and 38 m (49 and 125 ft). (DOE/RL-91-58, Table A-9) Neutron (1970, 1973) logs also were collected for well 299-W15-86 (WHC-SD-EN-DP-020).
299-W15-95 (101 ft before being deepened in 2001) (1963, 1973, 1976, 1987, 1998)	Well 299-W15-95, north of the 216-Z-9 Trench. Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1970, 1973, 1977) and density (1976) logs also were collected for well 299-W15-95 (WHC-SD-EN-DP-020).
299-W15-101 (50 ft) (1967, 1973)	Well 299-W15-101, northeast of the 216-Z-9 Trench. Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1967, 1970, 1973) logs also were collected for well 299-W15-101 (WHC-SD-EN-DP-020).
299-W15-216 (210 ft) (1992)	Well 299-W15-216, southeast of the 26-Z-9 Trench. (PNNL-16103)

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299-W15-217 (123.4 ft) (1992)	Well 299-W15-216, southeast of the 26-Z-9 Trench. (PNNL-16103)
299-W15-219 (212 ft) (1993)	Well 299-W15-216, southeast of the 26-Z-9 Trench. (PNNL-16103)
299-W15-220 (201 ft) (1993)	Well 299-W15-216, southeast of the 26-Z-9 Trench. (PNNL-16103)
Radionuclide Logging System (RLS) Logs (1992, 1998)	Radioactive contamination was identified in two borings during spectral gamma logging of wells proximal to the 216-Z-9 Trench, well 299-W15-8 in 1992 and well 299-W15-95 in 1998. Geophysical logging of well 299-W15-8 revealed cesium-137 from 15.2 to 59.4 m (50 to 195 ft) bgs (never exceeding 1 pCi/g), protactinium-233 between 15.5 and 37 m (51 and 121 ft) bgs (maximum activity was 20 pCi/g at 35 m [115 ft]) bgs, and plutonium-239 from 15.1 to 32.3 m (50 to 106 ft) bgs (maximum activity of 300,000 pCi/g was detected 15.5 m [51 ft] bgs) (WHC-SD-EN-TI-021). Geophysical logging of well 299-W15-95 detected cesium-137 near the ground surface at an activity of <1 pCi/g (PNNL-11978). However, it appears that americium was misinterpreted as cesium-137 in the geophysical logs. Low levels of plutonium and americium were detected in groundwater from well 299-W15-8 on May 7, 1990, and November 13, 1991, before the groundwater table declined below the elevation of the bottom of the well and the well went dry. (WHC-SD-EN-TI-021; PNNL-11978; DOE/RL-2006-51, Section 3.2.1.1)
299-W15-8 (206 ft) (1992)	Well 299-W15-8, 15 m (49 ft) south of the 216-Z-9 Trench. Cesium-137 was detected from 15.2 to 59.4 m (50 to 195 ft) bgs (never exceeding 1 pCi/g); protactinium-233 was detected between 15.5 and 37 m (51 and 121 ft) bgs, with a maximum activity of 20 pCi/g at 35 m (115 ft) bgs; and plutonium-239 was detected from 15.1 to 32.3 m (50 to 106 ft) bgs, with a maximum activity of 300,000 pCi/g at 15.5 m (51 ft) bgs. (WHC-SD-EN-TI-021)
299-W15-82 (101 ft) (1998)	Well 299-W15-82, east of the 216-Z-9 Trench. No artificial radionuclides were detected. (PNNL-11978)
299-W15-84 (110 ft before being deepened in 2001) (1998)	Well 299-W15-84, west of the 216-Z-9 Trench. No artificial radionuclides were detected (PNNL-11978)
299-W15-85 (102 ft) (1998)	Well 299-W15-85, north of the 216-Z-9 Trench. No artificial radionuclides were detected (PNNL-11978)
299-W15-95 (101 ft before being deepened in 2001) (1998)	Well 299-W15-95, north of the 216-Z-9 Trench. Cesium-137 was detected near the ground surface at an activity of <1 pCi/g. (PNNL-11978).
Spectral Gamma Logging System (SGLS) Logs (2004 – 2006)	The data source for the SGLS Logs is Stoller Log Data Reports. The SGLS results are summarized in DOE/RL-2006-51, Section 3.2.1.2, for the two wells (299-W15-46 and 299-W15-48) drilled as part of the remedial investigation and in DOE/RL-2006-51, Section 3.2.4.1, for the existing wells (299-W15-82, 299-W15-85, 299-W15-218) logged in 2005 and 2006 as part of the remedial investigation.. Three existing wells (299-W15-6, 299-W15-8, and 299-W15-9) were logged in 2005 when these wells were made available for use in the cross-well seismic reflection investigation at the 216-Z-9 Trench (DOE/RL-2006-58).
299-W15-06 (410 ft) (2005)	299-W15-06, northeast of the 216-Z-9 Trench. Cesium-137 was detected near the surface at 0.6 and 0.9 m (2 and 3 ft) at a minimum concentration of approximately 1 pCi/g. The remainder of the logged interval to 175 ft showed no gamma-emitting contaminants. The passive neutron detector indicated no significant neutron flux in the survey depth interval of 0.9 to 45.7 m (3 to 150 ft). Slight elevation in count rate (0.3 cps) was observed between 0.9 and 1.5 m (3 and 5 ft) but was not believed to be related to any influence from alpha-emitting contaminants. The relatively low potassium-40 and thorium-232 values at approximately 33.8 m (111 ft) as well as the relatively high uranium-238 values are characteristic of the carbonate paleosols of the Cold Creek unit. Elevated uranium-238 and thorium-232 indicated at 48.8 m (160 ft) may be related to borehole construction. Spectral gamma data acquired in 1992 using the RLS indicated that there were no man-made radionuclides detected in survey data acquired to 56.7 m (186 ft). Additional stationary measurements acquired for 300 seconds at depth intervals of 55.5, 61.0, 76.2, and 91.4 m (182, 200, 250, and 300 ft) also indicated no contamination. The historical total count log data acquired in 1963, 1968, and 1976 are consistent with the 2005 SGLS total count data such that no contamination appears to have existed in the vicinity of this borehole.
299-W15-8 (206 ft) (2005)	299-W15-08, south of the 216-Z-9 Trench. Protactinium-233, americium-241 and plutonium-239 were the man-made radionuclides detected in this borehole. Protactinium-233, which reflects the concentration of its parent neptunium-237, was detected between 15.8 and 37.8 m (52 and 124 ft) with a maximum concentration of approximately 23 pCi/g at 36.0 m (118 ft). Americium-241 was detected almost continuously from 15.8 to 39.1 m (52 to 127 ft) at concentrations ranging from just above the minimum detectable level of approximately 20,000 pCi/g to 235,000 pCi/g. The maximum concentration was at 16.2 m (53 ft). Plutonium-239 was detected between 15.8 and 21.3 m (52 and 70 ft) and may exist at levels below its minimum detectable level (approximately 35,000 pCi/g) to a similar depth as americium-241 and protactinium-233. The maximum concentration was measured at approximately 350,000 pCi/g at 16.2 m (53 ft). It also was detected at sporadic depth locations between 21.3 and 33.5 m (70 and 110 ft). Passive neutron logging was performed in the borehole from 14.9 to 45.7 m (49 to 150 ft). The passive neutron detector indicated elevated count rates between 15.2 and 38.1 m (50 and 125 ft). The highest count rates were detected at approximately 16.2, 19.8, and 32.9 m (53, 65, and 108 ft). Plutonium-239 was the dominant radionuclide detected at

Table E-10. Data Summary – 216-Z-9 Trench (200-PW-1 Operable Unit). (8 Pages)

	these depths. Americium-241 and protactinium-233 were also detected at each of these depths, except at approximately 19.8 m (65 ft), where no americium-241 was detected. Spectral gamma data acquired in 1992 using the RLS indicated the presence of cesium-137. Based on the 2005 evaluation, it is believed that the relatively low concentration of cesium-137 reported in the 1992 data actually represents a significantly higher concentration of americium-241. Historical total gamma data acquired in 1968, 1970, and 1972 have been re-digitized from ARH-ST-156. This data indicates a profile consistent with the current SGLS total gamma profile, suggesting no significant changes since 1968.
299-W15-9 (194 ft) (2005)	299-W15-09, north of the 216-Z-9 Trench. Cesium-137 was detected at ground surface at maximum concentrations of less than 1 pCi/g. The passive neutron detector indicated no significant neutron flux in the survey depth interval. Spectral gamma data acquired in 1995 in this borehole using the RLS detected no man-made radionuclides. Comparison of the plots of RLS and SGLS total gamma suggests no significant changes in the intervening 10 years. The historical total count log data acquired in 1963, 1968, and 1976 are consistent with the current SGLS total count data such that no contamination appears to have existed in the vicinity of this borehole.
299-W15-46 (525 ft) (2004)	299-W15-46, south of the 216-Z-9 Trench. Protactinium-233, americium-241, and plutonium-239 were the man-made radionuclides detected in well 299-W15-46. No man-made radionuclides were detected below 36.6 m (120 ft). Protactinium-233, a decay product of neptunium-237, was detected between 14.3 and 36.6 m (47 and 120 ft) with a maximum concentration of approximately 100 pCi/g at 36 m (118 ft). Americium-241 was detected from 14 to 18.6 m (46 to 61 ft), at concentrations ranging from 56,000 to 145,000 pCi/g. It also was detected almost continuously from 19.2 to 36 m (63 to 118 ft) at concentrations ranging from just above the minimum detectable level of approximately 20,000 to 400,000 pCi/g; the maximum concentration is measured at 35.4 m (116 ft). Plutonium-239 was detected between 14.3 and 15.5 m (47 and 51 ft), with a maximum concentration of approximately 284,000 pCi/g at 14.6 m (48 ft). It also was detected almost continuously between 16.8 and 26.2 m (55 and 86 ft) at concentrations ranging from approximately 27,000 to 221,000 pCi/g; the maximum concentration was measured at 19.8 m (65 ft). Plutonium-239 also was detected at 33.5 and 35.4 m (110 and 116 ft) at concentrations of 41,000 and 58,000 pCi/g, respectively. The passive neutron detector indicated elevated count rates between 14 and 36 m (46 and 118 ft). The highest count rates (4 to 5 counts per second) were detected at approximately 14.6, 33.5, and 35.4 m (48, 110, and 116 ft). At these depths americium-241, plutonium-239, and protactinium-233 also were detected. It is possible that these radionuclides and perhaps other isotopes of plutonium exist continuously throughout the relatively high-neutron count-rate interval (14 to 36 m [46 to 118 ft]) even where no isotope was identified at levels above the respective minimum detectable level. (DOE/RL-2006-51, Section 3.2.1.2)
299-W15-48 (slant well drilled 32 degrees from vertical) (141 ft downhole length; 123 vertical feet) (2006)	299-W15-48, slant well extending from the surface east of the 216-Z-9 Trench to beneath the Cold Creek unit on the west side of the floor of the 216-Z-9 Trench. Protactinium-233, americium-241, plutonium-239, and plutonium-241 were the man-made radionuclides detected in well 299-W15-48; plutonium-240 also was inferred to exist. Protactinium-233, a decay product of neptunium-237, was detected between 15.2 and 38.7 m (50 and 127 ft) downhole (12.9 to 32.8 m or 42.4 to 107.7 ft vertical depth) with a maximum concentration of approximately 29 pCi/g at 40 m (118 ft) downhole (30.5 m or 100.1 ft vertical). Americium-241 was detected from 15.5 to 37.2 m (51 to 122 ft) downhole (13.2 to 31.5 m or 43.3 to 103.5 ft vertical) at concentrations ranging from 40,000 to 245,000 pCi/g; the maximum concentration is measured at 36.9 m (121 ft) downhole (31.3 m or 102.6 ft vertical). Low-energy gamma rays attributed to americium-241 were detected that normally would be severely attenuated by the 17/32-in.-thick steel and 1/4-in.-thick polyvinyl chloride casings in the borehole during the logging and by the borehole geophysical-tool housing itself. The fact that these gamma rays consistently were detected indicated that the source most likely originates inside the steel casing as a result of internal contamination from the drilling/sampling process. The internal contamination extends at least from approximately 9.8 m (32 ft) downhole to the bottom of the borehole at 43.9 m (144 ft) downhole (8.3 to 37.2 m or 27.1 to 122.1 ft vertical). Plutonium-239 generally was detected between 15.5 and 37.2 m (51 and 122 ft) downhole (13.2 to 31.5 m or 43.3 to 103.5 ft vertical). The dominant interval is between 18.9 and 26.5 m (62 and 87 ft) downhole (16 to 22.5 m or 52.6 to 73.8 ft vertical) with a maximum concentration of approximately 657,000 pCi/g at 22 m (72 ft) downhole (18.6 m or 61.1 ft vertical). The maximum plutonium-240 activity in this borehole was estimated near 40,000 pCi/g. Because of the absence of a relatively high-yielding gamma ray from plutonium-240, no direct measurement with the SGLS could be made. Plutonium-241 concentrations were estimated to range between 2 and 10 pCi/g. This concentration is not determined directly, so the uncertainty is greater than for other radionuclides. Because this borehole is known to be internally contaminated, probably on the inside of the steel casing, and the activity of this contamination cannot be quantified, it should be presumed that all the identified radionuclides could exist to some degree inside the casing. The effect of this internal contamination is to cause a slight overestimation of radionuclide concentrations. The passive neutron detector indicated elevated count rates between 14.3 and 37.5 m (47 and 123 ft) downhole (12.2 to 31.8 m or 39.9 to 104.3 ft vertical). The highest count rates (4 counts per second) are detected where the highest plutonium-239 concentrations are measured at approximately 19.2 m (63 ft) downhole (16.3 m or 53.4 ft vertical) and 21.3 m (70 ft) downhole (18.1 m or 59.4 ft vertical); at these depths, Am-241 and Pa-233 also are detected. This count rate is considerably lower (4 vs 2,600 counts per second) than observed in other PFP waste-disposal sites such as the 216-Z-1A Tile Field and the 216-Z-12 Crib. This suggests that the compounds in the 216-Z-9 Trench are in the form of nitrates or oxides rather than fluorides, as postulated for the other PFP waste-disposal sites. Fluorine has a cross section for capturing alpha particles that is 100 times greater than that for the other light elements. (DOE/RL-2006-51, Section 3.2.1.2)
299-W15-82 (101 ft) (2006)	Well 299-W15-82, east of the 216-Z-9 Trench: The only man-made radionuclide detected was Cs-137 near the ground surface at less than 1 pCi/g. The moisture data indicate some variability. (DOE/RL-2006-51, Section 3.2.1.2)

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299-W15-85 (102 ft) (2005)	Well 299-W15-85, north of the 216-Z-9 Trench: No man-made radionuclides were detected in this borehole. The moisture log indicates considerable variability; the maximum volume percent moisture was approximately 15 percent. Log data was acquired in this borehole in 1998 using the RLS. No contamination was detected, which is consistent with the 2005 findings. (DOE/RL-2006-51, Section 3.2.1.2)
299-W15-218 (200 ft) (2006)	Well 299-W15-218, north of the 216-Z-9 Trench: No evidence of man-made radionuclides was detected in this borehole. (DOE/RL-2006-51, Section 3.2.1.2)

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ARH-ST-156
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DOE/RL-2007-22
HNF-31792
HW-44784
HW-48518
HW-53336
HW-55176
HW-55593
HW-57649
HW-59359
HW-63646
HW-64375
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HW-61787

Table E-11. Data Summary – 216-Z-10 Injection/Reverse Well (200-PW-6 Operable Unit). (2 Pages)

Background	
Site Identification	216-Z-10 Injection/Reverse Well
Site Location	200 West Area, Plutonium Finishing Plant (PFP) Zone, east of the 231-Z Building, south of the 216-Z-5 Crib and the 216-Z-4 Crib, north of the 216-Z-6 Crib, and west of the 216-Z-17 Crib
Type of Site	Injection/Reverse Well
Site Construction	The 216-Z-10 Injection/Reverse Well (well 299-W15-51) is a reverse well constructed of 15 cm (6-in.) diameter steel pipe extending 46 m (150 ft) below grade. The pipe also extends approximately 0.3 meters (1 ft) above grade and is capped with a flange. The site was interim stabilized in 1990. Structures associated with this reverse well include a manometer, three inlet lines, the 231-Z-151 Sump, and three monitoring wells (wells 299-W15-59, 299-W15-60 and 299-W15-61). The well construction summary report for well 299-W15-51 states that it was drilled in September 1944 and was originally known as 231-W-150. Construction information is available in the following historical references: WIDS, HW-55176, RHO-LD-114.
Operating History	This site received process and laboratory waste from the 231-Z Building via the 231-W-151 Sump. The transuranic contaminated process waste was discharged at a rate of 76 L (20 gal) per minute, directly to the well through a 7.6 cm (3-in.) diameter pipe from the 231-Z Building, entered the well about 1.5 m (5 ft) below grade, and was released to the soil through perforations in the well. The reverse well plugged in June 1945, after 4 months of use. The discharge line to the reverse well was capped and waste was diverted to the 216-Z-5 Crib (WIDS).
Effluent Volume Discharged	1,000,000 L (260,000 gal) (HW-12468, RHO-LD-114)
Period of Operation	February 1945 to June 1945
Inventory Information	Inventory information is available in the following historical references: HW-9671; HW-12468; ARH-2806; DOE/RL-2001-01; RPP-26744; DOE/RL-96-81; RHO-CD-673; ARH-CD-745; DOE/RL-91-58; RHO-RE-EV-46 P; HNF-1744; WHC-SC-DD-TI-057; RHO-LD-114; HW-38562; HW-33591; HW-28121 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-Z-10 Injection/Reverse Well: Constituent — Inventory — Reference Plutonium — 1 to 50 g — HW-12468 Based on review in 1949 of assays of the waste in the sump tank, it was concluded that the plutonium inventory discharged to the reverse well may have been as low as 1 g and certainly did not exceed 50 g (HW-12468). No significant organics are expected.
Vicinity Waste Sites	216-Z-5 Crib, 216-Z-4 Crib, 216-Z-6 Crib, and 216-Z-17 Crib
Characterization Summary	Three wells were installed in 1947 around the 216-Z-10 Injection/Reverse Well (wells 299-W15-59, 299-W15-60, and 299-W15-61). Analytical soil samples were taken every 1.5 m (5 ft) in depth from these three characterization wells, which surround the 216-Z-10 Reverse Well in an approximate 4.6-m (15-ft) radius and extending about 7.6 m (25 ft) deeper than the 216-Z-10 well. Soil samples did not identify plutonium contamination above a detection limit of approximately 0.15 pCi/g (HW-23769), indicating that waste spread laterally less than 4.6 m (15 ft) (HW-9671). Geophysical logging of these wells was conducted in 2005. These three characterization wells were decommissioned in 2005.
Data	
Spectral Gamma Logging System (SGLS) Logging (2005)	Cesium-137, cobalt-60, and europium-154 appear to be the only man-made radionuclides detected in the boreholes. All concentrations were below or near the respective minimum detectable levels (all less than 1 pCi/g). Detections of naturally occurring thorium-232 and uranium-238 were found in the 37 to 43 m (120 to 140 ft) range, and are believed to be associated with the carbonates within the Cold Creek unit. The three wells were logged using the spectral gamma and passive neutron logging systems. The data source for the SGLS logs (SGLS) is Stoller Log Data Reports.
299-W15-59 (175 ft) (2005)	Well 299-W15-59, located 4 m (13 ft) northeast of reverse well.
299-W15-60 (175 ft) (2005)	Well 299-W15-60, located 4 m (13 ft) south of reverse well.
299-W15-61 (175 ft) (2005)	Well 299-W15-61, located 5 m (16 ft) northwest of reverse well.
Soil Sampling and Analysis (1947)	Three wells (299-W15-59, 299-W15-60, and 299-W15-61) were drilled and sampled at the 216-Z-10 Injection/Reverse Well. The wells were drilled approximately 4.6 m (15 ft) from the reverse well to depths of approximately 7.6 m (25 ft) below the reverse well perforations (the reverse well was perforated from 36 to 45.7 m [118 to 150 ft]). A total of 210 soil samples and quality assurance samples were collected. All samples were screened for radioactivity in the field using standard alpha detectors and Geiger-Mueller tubes for beta-gamma radiation. Samples were also sent to a laboratory for a more sensitive and accurate analysis using a mica-window tube on the beta-gamma counter. No plutonium was identified in any of the samples collected at the reverse well. (HW-9671)

Table E-11. Data Summary – 216-Z-10 Injection/Reverse Well (200-PW-6 Operable Unit). (2 Pages)

References	
ARH-2806 ARH-CD-745 DOE/RL-91-58 DOE/RL-96-81 DOE/RL-2001-01 HNF-1744 HNF-EP-0924 HW-9671 HW-12468 HW-23769 HW-28121	HW-33591 HW-38562 HW-55176 RHO-CD-673 RHO-LD-114 RHO-RE-EV-46 P RPP-26744 Stoller Log Data Reports (http://www.hanford.gov/cp/gpp/data/vzcp/vzcp.cfm) WHC-SC-DD-TI-057 WIDS
Bibliography	
HW-33305 HW-83718	

Table E-12. Data Summary – 216-Z-12 Crib (200-PW-1 Operable Unit). (5 Pages)

Background	
Site Identification	216-Z-12 Crib
Site Location	200 West Area; Plutonium Finishing Plant (PFP) Zone; southwest of the 234-5Z Building, west of the 216-Z-1A Tile Field, northwest of the 216-Z-18 Crib.
Type of Site	Crib
Site Construction	The 216-Z-12 Crib is rectangular, 91 by 6 m (300 by 20 ft) at the bottom, and 5.8 m (19 ft) deep. Waste entered at 4.6 m (15 ft) bgs through a 30 cm (12-in.) diameter, perforated, vitrified clay pipe that ran the length of the crib and rested on a 1.5 m (5 ft) bed of gravel. The pipe was covered with a polyethylene barrier and backfilled to grade. In 1968, a 15 cm (6-in.) diameter steel bypass line was installed 9 m (30 ft) west of and parallel to the original distribution line to bypass 30.5 m (100 ft) of the original line that was plugged. When the crib was deactivated, the pipeline was blanked in the 241-Z sump facility. Construction information is available in the following historical references: WIDS, HW-55176, RHO-LD-114.
Operating History	The 216-Z-12 Crib is a subsurface liquid waste site that was used from 1959 to 1973 to dispose of Plutonium Finishing Plant liquid process waste, and analytical and development laboratory waste, from the 234-5Z Building via the 241-Z-361 Settling Tank. The waste was low-salt and neutral-basic (pH 8 to 10) when discharged. The crib was partially vitrified as part of an in-situ vitrification test project conducted in June 1987. After 295 hours of operation at 460 MW/h per hour of electrical current, the soil became molten. This resulted in a 450-ton block of vitrified soil, extending to a depth of 7.3 m (24 ft). The downward progression of the melt reached about 5 m (16 ft) bgs. Soil-vapor extraction has been in operation at the 216-Z-18 Crib since 1995 as an interim action to remove carbon tetrachloride from the vadose-zone soils. Between 1991 (when the soil-vapor-extraction system pilot test was conducted at the 216-Z-1A Tile Field) and 2006, the carbon tetrachloride mass removed from the combined 216-Z-1A/216-Z-18/216-Z-12 well field was 24,604 kg (SGW-33746).
Effluent Volume Discharged	281,000,000 L (74,240,000 gal) (RHO-LD-114)
Period of Operation	1959 to 1973
Estimated Discharged Inventory	Inventory information is available in the following historical references: WIDS, RHO-ST-44, RHO-CD-673, ARH-CD-745, DOE/RL-88-30, DOE/RL-91-58, RHO-LD-114, ARH-2806, ARH-2757, ARH-2353, ARH-2015, ARH-1608, ARH-1159, ARH-486, ISO-698, ISO-98, BNWC-91, HW-80877, HW-76638, HW-72956, HW-71971, HW-69072, HW-69071, HW-64375, HW-63646 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-Z-12 Crib: Constituent — Inventory — Reference Plutonium — 25.1 kg — RHO-LD-114 Americium-241 — Unknown — Carbon tetrachloride — Unknown, but limited — RHO-ST-44 Nitrate — 900,000 kg — DOE/RL-91-58 Fluoride — 300,000 kg — DOE/RL-91-58
Vicinity Waste Sites	216-Z-1A Tile Field, 216-Z-1 Crib, 216-Z-2 Crib, 216-Z-3 Crib, 216-Z-18 Crib.
Characterization Summary	Data collection activities have been ongoing at the 216-Z-12 Crib since early operations. RHO-ST-44 summarizes these early data collection activities (surveys and sampling of shallow wells) and documents characterization activities associated with installation and sampling of additional wells starting in 1979 to better define the plutonium and americium distribution. A soil-vapor survey in 1991 indicated the presence of carbon tetrachloride near the crib, and soil-vapor-extraction operations were initiated in 1995. As part of the remedial investigation, additional soil-vapor samples were collected to evaluate the concentration of carbon tetrachloride in the vadose zone at this site.
Data	
Scintillation Logs (1959 – 1987)	There is an elevated gamma response in the northern and central sections of the crib approximately 10 m (33 ft) bgs. This zone is approximately 3 m (9.1 ft) thick and reads up to 8,000 counts/second in well 299-W18-75. Wells around the perimeter of the crib show lower or natural gamma response (Wells 299-W18-152 and 299-W18-153). No evidence of migration to groundwater can be seen. (DOE/RL-91-58, Section A.1.4.5.2) Information on scintillation logs can be found in ARH-ST-156, WHC-SD-EN-TI-021, DOE/RL-91-58, WHC-SD-EN-DP-020
299-W18-2 (280 ft) (1959, 1963, 1968, 1973, 1976, 1987)	Well 299-W18-2, east of the southern part of the 216-Z-12 Crib. Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1965, 1973, 1977) and density (1976) logs also were collected for well 299-W18-2 (WHC-SD-EN-DP-020).

Table E-12. Data Summary – 216-Z-12 Crib (200-PW-1 Operable Unit). (5 Pages)

299-W18-5 (280 ft) (1959, 1963, 1967, 1968, 1970, 1973)	Well 299-W18-5, west of the northern part of the 216-Z-12 Crib. Scintillation logs showed an elevated gamma response between depths of 5 and 10 m (16 and 33 ft). (DOE/RL-91-58, Table A-9) Neutron (1965, 1967 [2], 1969, 1973) and temperature (1962 [2], 1963) logs also were collected for well 299-W18-5 (WHC-SD-EN-DP-020).
299-W18-8 (212 ft) (1967, 1970, 1973, 1976)	Well 299-W18-8, west of the northern part of the 216-Z-12 Crib. Scintillation logs showed an elevated gamma response between depths of 5 and 10 m (16 and 33 ft). (DOE/RL-91-58, Table A-9) Neutron (1967, 1973, 1977) and density (1976) logs also were collected for well 299-W18-8 (WHC-SD-EN-DP-020).
299-W18-69 (50 ft) (1967, 1968)	Well 299-W18-69, west of the northern part of the 216-Z-12 Crib. Scintillation logs showed an elevated gamma response between depths of 5 and 10 m (16 and 33 ft). (DOE/RL-91-58, Table A-9) Neutron (1967) log also was collected for well 299-W18-69 (WHC-SD-EN-DP-020).
299-W18-71 (20 ft) (1970, 1973, 1987)	Well 299-W18-71, north-central part of the 216-Z-12 Crib. Scintillation logs showed an elevated gamma response between depths of 5 and 10 m (16 and 33 ft). (DOE/RL-91-58, Table A-9) Neutron (1973) log also was collected for well 299-W18-71 (WHC-SD-EN-DP-020).
299-W18-72 (26 ft) (1986, 1987)	Well 299-W18-72, north-central part of the 216-Z-12 Crib. Scintillation logs showed an elevated gamma response at depth of 6 m (20 ft). (DOE/RL-91-58, Table A-9)
299-W18-73 (25 ft) (1973, 1987)	Well 299-W18-73, south-central part of the 216-Z-12 Crib. Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1973) log also was collected for well 299-W18-73 (WHC-SD-EN-DP-020).
299-W18-74 (25 ft) (1973, 1987)	Well 299-W18-74, south-central part of the 216-Z-12 Crib at end of original distribution line. Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1973) log also was collected for well 299-W18-74 (WHC-SD-EN-DP-020).
299-W18-75 (26 ft) (1986)	Well 299-W18-75, north-central part of the 216-Z-12 Crib. Scintillation logs showed an elevated gamma response between depths of 5 and 9 m (16 and 30 ft). (DOE/RL-91-58, Table A-9)
299-W18-151 (17 ft) (1986)	Well 299-W18-151, north of the 216-Z-12 Crib, by distribution pipe. Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9)
299-W18-152 (118 ft) (1986)	Well 299-W18-152, north-central part of the 216-Z-12 Crib. Scintillation logs showed an elevated gamma response between depths of 6 and 9 m (20 and 30 ft). (DOE/RL-91-58, Table A-9)
299-W18-153 (109 ft) (1986)	Well 299-W18-153, east of northern part of the 216-Z-12 Crib. Scintillation logs showed an elevated gamma response between depths of 6 and 8 m (20 and 26 ft). (DOE/RL-91-58, Table A-9)
299-W18-155 17 ft) (1986)	Well 299-W18-155, north of the 216-Z-12 Crib. Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9)
299-W18-157 (110 ft) (1986)	Well 299-W18-157, southwest of the 216-Z-12 Crib. Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9)
Radionuclide Logging System (RLS) Logs (1992 – 1998)	The data source for the RLS logs from 1993 to 1998 is PNNL-11978. The data source for the RLS log from 1992 is WHC-SD-EN-TI-021.
299-W18-5 (280 ft) (1992)	Well 299-W18-5, west of the northern part of the 216-Z-12 Crib. Protactinium-233, a decay product of neptunium-237, was observed between depths of 7.0 and 78.7 m (23 and 258 ft). The maximum activity was 60 pCi/g at 7.3 m (24 ft). Only one interval, from 7.0 to 10.0 m (23 to 33 ft), of continuous gamma-ray activity was encountered. Other depth locations where protactinium-233 was detected had no continuous depth measurements, and all computed activities were less than 1.5 pCi/g. No other radionuclides were detected. (WHC-SD-EN-TI-021)
299-W18-8 (48.5 ft) (1993, 1998)	Well 299-W18-8 is approximately 33 m (108 ft) south of the head end of the crib, adjacent to the 1968 distribution pipe. The borehole was drilled in 1966 too a depth of 64.6 m (212 ft) but in 1998 was only open to 14.8 m (48.5 ft). Protactinium-233 was detected between 7.3 and 11.0 m (24 and 36 ft), with a maximum activity of 57 pCi/g at 7.5 m (24.5 ft). Plutonium-239 was detected between 7.3 and 8.5 m (24 and 28 ft), with a maximum activity of 58 nCi/g at 7.5 m (24.5 ft). Well 299-W18-8 also was logged in 1993. Only protactinium-233 was reported at that time. Reprocessing of the raw spectral data from 1993 showed that plutonium-239 was present but not reported. The activity of protactinium-233 did not change between 1993 and 1998; comparisons for plutonium-239 activities in 1993 and 1998 could not be made. An increase in gross gamma-ray intensity over what is normally found in Hanford Site soils at 7.3 m (24 ft) was noted in both the 1993 and 1998 logs. The increase is attributed to thallium-208, a decay product of natural thorium-232. The thallium-208 is not in secular equilibrium with the other radionuclides in the thorium-232 decay chain. (PNNL-11978)

Table E-12. Data Summary – 216-Z-12 Crib (200-PW-1 Operable Unit). (5 Pages)

299-W18-152 (118 ft) (1993, 1998)	Well 299-W18-152 is west of the 216-Z-12 Crib, at approximately the center of the northern half of the crib. Protactinium-233 was detected between 6.7 and 8.2 m (22 and 27 ft), with a maximum activity of 16 pCi/g at 7.2 m (23.75 ft). No other man-made radionuclide was identified. The borehole previously was logged in 1993, at which time protactinium-233 was identified at the same depth interval (6.9 to 8.1 m [22.5 to 26.5 ft]) and with the same maximum activity (17 pCi/g at 7.2 m [23.5 ft]). The protactinium-233 occurs in a medium- to coarse-grained sand that the driller's log noted in 1976 was moist from 6.9 to 8.8 m (22.5 to 29 ft). (PNNL-11978)
299-W18-153 (109 ft) (1993, 1998)	Well 299-W18-153 is east of the 216-Z-12 Crib, at approximately the center of the northern half of the crib. Protactinium-233 was detected between 6.7 and 8.2 m (22 and 27 ft), with a maximum activity of 27 pCi/g at 7.2 m (23.5 ft). No other man-made radionuclide was identified. The borehole previously was logged in 1993, at which time protactinium-233 was identified from 6.9 to 8.5 m (22.5 to 28 ft) and with the same maximum activity (27 pCi/g at 7.2 m [23.5 ft]). The protactinium-233 occurs in a medium- to coarse-grained sand that the driller's log noted in 1976 was moist from 6.9 to 8.8 m (22.5 to 29 ft). (PNNL-11978)
299-W18-179 (38.9 ft) (1993, 1998)	Well 299-W18-179 is located at the head end of the 216-Z-12 Crib adjacent to the original distribution line but north of the perforations in the distribution line. Because detector dead time was exceeded between 5.6 and 5.9 m (18.5 and 19.5 ft), activities in this interval are higher than reported. Cesium-137 was detected between 4.4 and 5.8 m (14.5 and 19 ft), with a maximum activity of 900 pCi/g at 5.0 m (16.5 ft). Protactinium-233 and plutonium-239 were detected at 5.0 and 6.6 m (16.5 and 21.5 ft), with maximum activities of 36 pCi/g and 700 nCi/g, respectively, at 5.0 m (16.5 ft). Americium-241 was identified but could not be quantified because of interference from cesium-137. Thallium-208 was observed to be elevated over normal Hanford Site soil activities from 5.2 to 6.4 m (17 to 21 ft). The thallium-208 is not in secular equilibrium with the other radionuclides in the thorium-232 decay chain. When this well was logged in 1993, the detector dead time also was exceeded between 4.9 and 5.5 m (16 and 18 ft). However, because the activities of protactinium-233 and plutonium-239 increased from 1993 to 1998, in opposition to the dead time effects, it was concluded that a significant increase in the activities of these radionuclides had occurred during the intervening 5 years. (PNNL-11978)
299-W18-181 (135 ft) (1993, 1998)	Well 299-W18-181 is adjacent to the original distribution line, near the center of the northern half of the 216-Z-12 Crib. Cesium-137 was detected between 4.9 and 10.4 m (16 and 34 ft), with a maximum activity of 125 pCi/g at 5.8 m (19 ft). Protactinium-233 was identified between 5.6 and 10.1 m (18.5 and 33 ft), with a maximum activity of 85 pCi/g at 6.1 m (20 ft). Plutonium-239 was detected between 5.6 and 10.2 m (18.5 and 33.5 ft), with a maximum activity of 3,000 nCi/g at 6.1 m (20 ft). Americium-241 was identified between 5.8 and 9.8 m (19 and 32 ft), with a maximum activity of 470 nCi/g at 6.1 m (20 ft), but interference from other radionuclides makes quantification questionable. Thallium-208 was observed to be elevated over normal Hanford Site soil activities between 5.5 and 7.0 m (18 and 23 ft). The thallium-208 is not in secular equilibrium with the other radionuclides in the thorium-232 decay chain. This well also was logged in 1993. The 1998 logging results agree with the 1993 logging results, indicating no changes in the distributions of cesium-137, protactinium-233, plutonium-239, or americium-241 in the intervening 5 years. In 1993, cesium-137 was present between 4.9 and 10.2 m (16 and 33.5 ft), with a maximum activity of 168 pCi/g at 5.6 m (18.5 ft); protactinium-233 was present between 5.6 and 8.5 m (18.5 and 28 ft), with a maximum activity of 84 pCi/g at 6.1 m (20 ft); plutonium-239 was present between 5.8 and 7.9 m (19 and 26 ft), with a maximum activity of 3,121 nCi/g at 6.1 m (20 ft); and americium-241 was present between 5.6 and 9.9 m (18.5 and 32.5 ft), with a maximum activity of 377 nCi/g at 6.1 m (20 ft). (PNNL-11978)
299-W18-182 (39.95 ft) (1993, 1998)	Well 299-W18-182 is adjacent to the original distribution line, near the junction with the 1968 distribution line. Cesium-137 was detected between 4.9 and 8.2 m (16 and 27 ft), with a maximum activity of 250 pCi/g at 7.2 m (23.5 ft). Protactinium-233 was present between 5.8 and 9.3 m (19 and 30.5 ft), with a maximum activity of 30 pCi/g at 6.1 m (20 ft). Plutonium-239 was present between 5.6 and 9.0 m (18.5 and 29.5 ft), with a maximum activity of 1,100 nCi/g at 5.8 m (19 ft). Americium-241 was present between 5.8 and 6.9 m (19 and 22.5 ft), with a maximum activity of 2,100 nCi/g at 6.3 m (20.5 ft). The maximum activity for all radionuclides was within 1.5 m (5 ft) below the crib bottom. (PNNL-11978)
299-W18-183 (38 ft) (1993, 1998)	Well 299-W18-183 is adjacent to the central distribution pipe near the center of the southern half of the 216-Z-12 Crib. Cesium-137 was found from the surface to 0.5 m (1.5 ft) and from 1.8 to 2.3 m (6 to 9.5 ft) at less than 1 pCi/g. During logging in 1993, cesium-137 was identified at 1.8 to 2.4 m (6 to 8 ft) with an activity of approximately 0.2 pCi/g. The cesium-137 is located well above the distributor pipe (at 4.6 m [15 ft]) and probably resulted from a surface source. Protactinium-233 was identified from 7.3 to 8.5 m (24 to 28 ft), with a maximum activity of 2 pCi/g at 8.4 m (27.5 ft). (PNNL-11978)
299-W18-185 (40 ft) (1993, 1998)	Well 299-W18-185 is adjacent to the original distribution line, near the center of the northern half of the 216-Z-12 Crib. Cesium-137 was detected between 5.3 and 7.2 m (17.5 and 23.5 ft), with a maximum activity of 216 pCi/g at 5.9 m (19.5 ft). Protactinium-233 was detected between 5.6 and 7.9 m (18.5 and 26 ft), with a maximum activity of 61 pCi/g at 5.9 m (19.5 ft). Plutonium-239 was found between 5.6 and 7.3 m (18.5 and 24 ft), with a maximum activity of 1,047 nCi/g at 6.1 m (20 ft). Americium-241 was found between 5.8 and 6.9 m (19 and 22.5 ft), with a maximum activity of 386 nCi/g at 6.6 m (21.5 ft) (interference from cesium-137 made this value semi-quantitative). Thallium-208 was found at 6.6 m (21.5 ft) that was not in secular equilibrium with the parent radionuclide thorium-232. Based on comparison of the 1998 logging results with the 1993 logging results, no changes are indicated in the distributions of cesium-137, protactinium-233, plutonium-239, or americium-241 in the intervening 5 years. In 1993, cesium-137 was present between 5.3 and 7.2 m (17.5 and 23.5 ft), with a maximum activity of 240 pCi/g at 5.8 m (19 ft); protactinium-233 was present between 5.6 and 7.6 m (18.5 and 25 ft), with a maximum activity of 61 pCi/g at 5.9 m (19.5 ft); plutonium-239 was identified between 5.6 and 7.2 m (18.5 and 23.5 ft), with a maximum activity of 1,012 nCi/g at 6.4 m (21 ft); and americium-241 was identified between 5.8 and 6.9 m (19 and 22.5 ft), with a maximum activity of 298 nCi/g at 5.9 m (19.5 ft). (PNNL-11978)
Spectral Gamma Logging System (SGLS) Logs (2003 – 2006)	The data source for the SGLS logs is Stoller Log Data Reports.

Table E-12. Data Summary – 216-Z-12 Crib (200-PW-1 Operable Unit). (5 Pages)

299-W18-05 (280 ft) (2003)	Neptunium-237 was detected between 7.3 and 11 m (24 and 36 ft) bgs with a maximum concentration of 69 pCi/g at 26 ft. The data collected do not indicate the presence of plutonium at significant concentrations.
299-W18-08 (212 ft) (2005)	Log data for this borehole indicate the presence of the radionuclides uranium-233, uranium-232, and neptunium-237. Based on interpretation of the spectral data, the uranium-233 concentration was estimated to be on the order of 1,000 pCi/g after 40 years. A maximum concentration of approximately 3.5 pCi/g of uranium-232 was detected in this borehole. Neptunium-237 was estimated to have a maximum concentration of approximately 60 pCi/g, The passive neutron detector indicated no significant neutron flux in the survey depth interval.
299-W18-69 (280 ft) (2006)	Cesium-137 was detected at sporadic locations between 4.3 and 6.7 m (14 and 22 ft) at concentrations near the minimum detectable level of approximately 0.15 pCi/g. Protactinium-233, indicative on neptunium-237, was detected between 7.0 and 13.4 m (23 and 44 ft), with a maximum concentration of 22 pCi/g at 8.1 m (26.5 ft). The maximum concentration of uranium-232 was approximately 0.3 pCi/g. It is inferred based on the uranium-232 concentration that approximately 30 to 300 pCi/g of uranium-233 may exist in this waste stream.
299-W18-71 (20 ft) (2006)	Elevated gamma activity is observed from 6.1 to 6.4 m (20 to 21 ft) near the bottom of the borehole. Cesium-137 (also observed at 5.8 m [19 ft]), neptunium-237, americium-241, plutonium-239, and uranium-237 were identified, and plutonium-240 and plutonium-241 were inferred. Evidence of internal americium-241 was detected at 1.2 to 3.7 m (4 to 12 ft). Americium-241 was also detected at 6.1 and 6.4 m (20 and 21 ft). The maximum concentration was measured at approximately 630,000 pCi/g at 6.4 m (21 ft). Neptunium-237 was identified at 6.1 and 6.4 m (20 and 21 ft) at concentrations of approximately 22 pCi/g and 59 pCi/g respectively.
299-W18-72 (26 ft.) (2005)	Elevated gamma activity was observed at 6.4 and 6.7 m (21 and 22 ft) near the bottom of the borehole. Neptunium-237, plutonium-239, americium-241, and plutonium-241 were identified. The concentrations for americium-241 were determined to be 1,367,266 pCi/g and 207,123 pCi/g at 6.4 and 6.7 m (21 and 22 ft), respectively.
299-W18-73 (25 ft) (2005)	No manmade radionuclides were detected in this borehole except for cesium-137 at the ground surface and 3.5 m (11.5 ft). The concentrations are near the minimum detectable level of approximately 0.1 pCi/g. A spectrum acquired for 1000 seconds at the bottom of the borehole also indicated no evidence of contamination.
299-W18-74 (25 ft) (2005)	No man-made radionuclides were detected in this borehole except for cesium-137 at the ground surface. The concentration is near the minimum detectable level of approximately 0.1 pCi/g. A spectrum acquired for 1000 seconds at the bottom of the borehole also indicated no evidence of contamination.
299-W15-151 (17 ft) (2006)	Cesium-137 was detected at 1.5 and 1.8 m (5 and 6 ft) with a maximum concentration of approximately 0.5 pCi/g
299-W18-155 (17 ft) (2005)	Cesium-137 was detected at 0.2 m (0.5 ft) in this borehole at a concentration of approximately 1 pCi/g. Cesium-137 was also detected at 2.3 m (7.5 ft), but inspection of the spectrum at that depth suggests it is a spurious detection. Neptunium-237 was inferred at 5.5 and 7.0 m (18 and 23 ft) and at 0.3 and 0.6 m (1 and 2 ft). The maximum concentration was 11 pCi/g at 7.0 m (23 ft). A slightly elevated thorium-232 concentration was indicated at 5.5 m (18 ft). The maximum concentration of uranium-232 was approximately 0.5 pCi/g. Less than 200 pCi/g of uranium-233 may also exist. The SGLS analysis did not identify plutonium-239.
299-W18-180 (40 ft) (2006)	Neptunium-237 was inferred between 7.0 and 10.0 m (23 and 33 ft) at a maximum concentration of 11 pCi/g at 7.6 m (25 ft). Uranium-232 was detected at a maximum concentration of approximately 0.2 pCi/g. Less than 200 pCi/g of uranium-233 was inferred. The passive neutron log data indicated no significant neutron flux that would suggest the existence of high concentrations of transuranics. Soil samples were acquired in this borehole during an investigation of the 216-Z-12 Crib in 1982. At approximately 7.6 m (25 ft), laboratory analyses indicated plutonium-239 and americium-241 at concentrations of approximately 12 pCi/g and 2 pCi/g, respectively. The limits of detection using the SGLS in steel casing was 3 orders of magnitude more than the laboratory results, and these radionuclides were not detected.
299-W18-183 (38 ft) (2006)	Neptunium-237 was inferred from 7.9 to 9.1 m (26 to 30 ft) at concentrations ranging from 0.5 to 3.2 pCi/g.
299-W18-184 (32 ft) (2006)	Americium-241 was detected at 6.4, 7.3, and 7.6 m (21, 24, and 25 ft). Repeat data acquired at 400 second counting times indicated americium-241 almost continuously from 5.8 to 7.9 m (19 to 26 ft). The maximum concentration was measured at approximately 159,000 pCi/g at 7.6 m (25 ft). Neptunium-237 was inferred between 6.7 and 9.8 m (22 and 32 ft) with a maximum concentration of 43 pCi/g at 7.8 m (25.5 ft). Plutonium-239 was detected between 6.9 and 8.1 m (22.5 and 26.5 ft). The maximum concentration was measured at approximately 182,000 pCi/g at 7.5 m (24.5 ft). Plutonium-240 could be expected to be on the order of 11,000 pCi/g, and plutonium-241 at 900 pCi/g. No direct assay of plutonium-240 and plutonium-241 was possible with the SGLS in this borehole. It is inferred based on the uranium-232 concentration that less than 100 pCi/g of uranium-233 may exist.
Prompt Fission Neutron System Logs (1993)	In 1993, the U.S. Department of Energy Grand Junction Projects Office logging team produced a prompt fission neutron log of one borehole at the 216-Z-12 Crib. (PNNL-11978)
299-W18-182 (39.95 ft) (1993)	Well 299-W18-182 is adjacent to the original distribution line, near the junction with the 1968 distribution line. In 1993, the U.S. Department of Energy Grand Junction Projects Office logging team produced prompt fission neutron log for well 299-W18-182. The log showed plutonium-239 to be present between approximately 5.2 and 7.0 m (17 and 23 ft), with a maximum activity near 1,230 nCi/g at approximately 6.1 m (20 ft) or less. (PNNL-11978)
Analyses of Core Samples from the 216-Z-12 Crib (1969)	Core samples collected from the 216-Z-12 Crib in 1968 were analyzed to determine the depth of penetration of plutonium and americium in the soil. Ten samples were collected from well 299-W18-70, adjacent to the original distribution line near the head end of the crib. The samples were collected every 0.6 m (2 ft) from 0.6 m (2 ft) to 4.9 m (16 ft) depth. Plutonium was detected in the shallowest sample at a concentration of 5E-08 gram of plutonium per gram of soil and at a gamma radiation reading of 2,000 counts per minute. Plutonium was not detected in any of the deeper samples, and the gamma radiation readings were at background levels (200 counts per minute). These results were considered to confirm that plutonium discharged to the 216-Z-12 Crib in a neutral-basic waste stream should be retained in the soil. (ARH-1278)

Table E-12. Data Summary – 216-Z-12 Crib (200-PW-1 Operable Unit). (5 Pages)

Soil Sampling Data at 216-Z-12 Crib (1980)	Sampling was conducted at the 216-Z-12 Crib in 1980 to collect data to evaluate the distribution of plutonium and americium. Data indicated that (1) the highest concentration of plutonium (on the order of 1 to 5 million pCi/g of sediment) were found in the sediments immediately below the crib bottom; (2) activity decreases rapidly with distance from the crib bottom; (3) the distributions of plutonium and americium activity are similar; and (4) a low level of plutonium and americium activity that occurs from 30 to 36 m below the 216-Z-12 Crib bottom (the maximum depth sampled) is associated with a massive silt unit that probably concentrated most of the plutonium remaining in solution. (RHO-ST-44)
Soil Sampling of the 216-Z-12 Crib Surface (1993)	Fifteen randomly generated sample point locations were sampled in 1993. Each soil sample consisted of a mix of surface and subsurface soils down to a depth of 15.2 cm (6 in.). The samples were analyzed for beta-gamma and total alpha contamination. Based on the sample results, the surface of the crib was determined to be free of contamination. (WIDS, Internal Memo 85100-93-DLS-002)
In Situ Vitrification (1987)	A large-scale in situ vitrification test was completed at the 216-Z-12 Crib in June 1987. After 295 hours of operation at 460 MW/h of electrical current, the soil became molten. This resulted in a 450-ton block of vitrified soil, extending to a depth of 7.3 m (24 ft). The test demonstrated that transuranic contaminants and 26,000 ppm of fluorides were retained in the vitrified product. (WIDS, PNL-SA-15277)
Remedial Investigation (2005-2007)	The 216-Z-12 Crib was investigated as part of the carbon tetrachloride dispersed vadose-zone plume investigation and the dense, nonaqueous-phase liquid investigation. Depth-discrete soil-vapor samples were collected at locations P47 and P48 next to the 216-Z-12 Crib. A cone penetrometer was used for subsurface access. The highest carbon tetrachloride soil-vapor concentrations measured at these locations was 18 ppmv from location P48 at a depth of 22 m (72.11 ft).

References

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ARH-1278
ARH-1608
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WHC-SD-EN-TI-021
WIDS

Table E-13. Data Summary – 216-Z-18 Crib (200-PW-1 Operable Unit). (4 Pages)

Background	
Site Identification	216-Z-18 Crib
Site Location	200 West Area; Plutonium Finishing Plant (PFP) Zone; southwest of the 216-Z-1A Tile Field
Type of Site	Crib
Site Construction	The 216-Z-18 Crib is a below grade inactive management unit. The 95 by 79 m (311 by 259 ft) site consists of five separate, parallel, north-south running trenches each 63 m by 3 m (207 ft by 10 ft), and 5.5 m (18 ft) deep. Each crib structure has two 8 cm (3-in.) diameter distribution pipes placed on a 0.3-m (1-ft) thick bed of gravel at 5.2 m (17 ft) bgs, buried under an additional 0.3 m (1 ft) of gravel, covered with a membrane and sand, and then backfilled to grade. Crib piping was fed by the primary steel distribution pipe that bisected each crib. The crib was designed and operated as a specific-retention facility. The 216-Z-18 Crib was retired in 1973 and deactivated by blanking pipelines in the 236-Z and 242-Z Buildings. Construction information is available in the following historical references: WIDS, HW-55176, RHO-LD-114.
Operating History	The 216-Z-18 Crib was used, as a replacement for the 216-Z-1A Tile Field, to receive high salt, acidic (pH 1 to 2.5) aqueous liquid waste and organic liquid waste from the Plutonium Finishing Plant. The waste streams included plutonium recovery waste from the 236-Z Building and americium recovery waste from the 242-Z Building. Carbon tetrachloride was received in the aqueous phase liquid and, mixed with other organics, as a dense, non-aqueous phase liquid (DNAPL). The individual trenches were operated for approximately 1 year each beginning with trench 3, followed by trenches 2, 1, and 4, in that order. If the trenches are numbered east to west, trenches were active during the following periods: Trench 1 (1971 to 1972), Trench 2 (1970 to 1971), Trench 3 (1969 to 1970), Trench 4 (1972 to 1973), and Trench 5 (was never used). Trench 1. north section 4/28/72 to 9/29/72; south section 11/30/71 to 4/28/72 Trench 2. north section 7/31/70 to 3/31/71; south section 3/31/71 to 11/30/71 Trench 3. north section 12/5/69 to 7/31/70; south section 4/4/69 to 12/5/69 Trench 4. north section 9/29/72 to 2/28/73; south section 2/28/73 to 5/15/73 Soil-vapor extraction has been in operation at the 216-Z-18 Crib since 1992 as an interim action to remove carbon tetrachloride from the vadose-zone soils. Between 1991 (when the soil-vapor-extraction system pilot test was conducted at the 216-Z-1A Tile Field) and 2006, the carbon tetrachloride mass removed from the combined 216-Z-1A/216-Z-18/216-Z-12 well field was 24,604 kg (SGW-33746).
Effluent Volume Discharged	3,860,000 L (1,020,000 gal) (RHO-LD-114)
Period of Operation	1969 - 1973
Estimated Discharged Inventory	Inventory information is available in the following historical references: WIDS, DOE/RL-91-32, RHO-CD-673, ARH-CD-745, DOE/RL-88-30, DOE/RL-91-58, RHO-LD-114, ARH-2806, ARH-2757, ARH-2353, ARH-2015, ARH-1608 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 216-Z-18 Crib: Constituent / Inventory / Reference Plutonium / 23 kg / RHO-LD-114 Americium-241 / 0.4 kg / DOE/RL-91-32 Carbon tetrachloride / 175,000 kg / WHC-SD-EN-TI-248 Tributyl phosphate / 16,400 L / WHC-SD-EN-TI-248 Dibutylbutyl phosphonate / 19,100 L / WHC-SD-EN-TI-248 Nitrate / 500,000 kg / DOE/RL-91-58
Vicinity Waste Sites	216-Z-1A Tile Field, 216-Z-12 Crib

Table E-13. Data Summary – 216-Z-18 Crib (200-PW-1 Operable Unit). (4 Pages)

Characterization Summary	Characterization activities have been conducted at the 216-Z-18 Crib since the 1960s. Scintillation logging of site monitoring wells was conducted in 1968, 1973 and 1976. Wells 299-W18-9 and 299-W18-10 were the only wells that showed contamination above background levels; contamination was identified at about 8 to 17 m (26 to 55 ft) bgs (ARH-ST-156). Characterization also was conducted in 1992 and 1993 in support of soil-vapor-extraction activities. Spectral gamma logging and neutron moisture logging were conducted in 2006 at wells 299-W18-9, 299-W18-12, and 299-W18-95. Well 299-W18-9 identified plutonium and americium-241 from 7.6 to 18 m (25 to 60 ft) bgs with a maximum concentration of 400,000 pCi/g at 8.2 m (27 ft) bgs. Concentrations decreased with depth to 18 m (60 ft) bgs, where they increased to 250,000 pCi/g. Concentrations decreased to the tool detection limits below about 21 m (70 ft) bgs. Analytical soil data obtained from wells 299-W18-96, 299-W18-247, and 299-W18-249 in 1992 and 1993 did not identify significant organic chemical contamination (e.g., carbon tetrachloride was < 2 ppm). Nitrate was identified in well 299-W18-96 at 4,400 mg/kg at 25.6 m (84 ft) bgs decreasing to < 10 mg/kg at 38.1 m (125 ft) bgs. No significant concentrations of carbon tetrachloride or other volatile organic compounds were identified during soil-vapor sampling conducted for the remedial investigation or soil-vapor-extraction operations in 2005 or 2006.
Data	
Scintillation Logs (1968 – 1993)	Review of the gamma scintillation logs suggests that radionuclide migration to the top of the Cold Creek unit and possibly deeper has occurred in the northeastern portion of the 216-Z-18 Crib. (DOE/RL-91-58, Section A.1.4.1.2) Gross gamma logging was conducted during deepening of one well in the 216-Z-18 Crib and drilling of two nearby wells in 1992 and 1993. Gross gamma logging also was conducted in 2 existing wells between 1992 and 1993. Information on scintillation logs can be found in ARH-ST-156, WHC-SD-EN-TI-021, DOE/RL-91-58, WHC-SD-EN-DP-020; information on gross gamma logging can be found in PNNL-16103.
299-W18-9 (1968, 1970, 1973, 1976, 1986, 1987, 1992)	Well 299-W18-9, on the west side of trench 1: Scintillation logs showed an elevated gamma response between depths of 6 and 18 m (20 and 59 ft). (DOE/RL-91-58, Table A-9) Neutron (1968, 1972, 1973, 1977) and density (1976) logs also were collected for well 299-W18-9 (WHC-SD-EN-DP-020)
299-W18-10 (218 ft) (1968, 1970, 1973, 1976)	Well 299-W18-10, east of trench 1: Scintillation logs showed an elevated gamma response between depths of 8 and 17 m (26 and 56 ft). (DOE/RL-91-58, Table A-9) Neutron (1968, 1972, 1973, 1977), density (1976 [2]), and temperature (1974) logs also were collected for well 299-W18-10 (WHC-SD-EN-DP-020)
299-W18-11 (220 ft) (1970, 1973, 1976, 1986, 1987)	Well 299-W18-11, on the west side of trench 3: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1972, 1973, 1977) and density (1976) logs also were collected for well 299-W18-11 (WHC-SD-EN-DP-020)
299-W18-12 (ft) (1970, 1973, 1976)	Well 299-W18-12, on the west side of trench 3: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1972, 1973, 1977) and density (1976) logs also were collected for well 299-W18-11 (WHC-SD-EN-DP-020)
299-W18-93 (140 ft) (1976, 1986, 1987)	Well 299-W18-93, between trenches 2 and 3: Scintillation logs showed an elevated gamma response between depths of 7 and 17 m (23 and 56 ft). (DOE/RL-91-58, Table A-9) Neutron (1977) and density (1976) logs also were collected for well 299-W18-93 (WHC-SD-EN-DP-020)
299-W18-94 (80 ft) (1973, 1976, 1986, 1987)	Well 299-W18-94, south of trench 2: Scintillation logs showed an elevated gamma response between depths of 9 and 12 m (30 and 39 ft). (DOE/RL-91-58, Table A-9) Neutron (1973, 1977) and density (1976) logs also were collected for well 299-W18-94 (WHC-SD-EN-DP-020)
299-W18-95 (80 ft) (1973, 1976, 1986, 1987)	Well 299-W18-95, southeast of trench 4: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1973, 1977) and density (1976) logs also were collected for well 299-W18-95 (WHC-SD-EN-DP-020)
299-W18-96 (83 ft before deepening in 1993; 149 ft after deepening in 1993) (1973, 1976, 1986, 1987, 1993)	Well 299-W18-96, east of trench 4: Scintillation logs showed an elevated gamma response between depths of 8 and 11 m (26 and 36 ft). (DOE/RL-91-58, Table A-9) Neutron (1973, 1977) and density (1976) logs also were collected for well 299-W18-96 (WHC-SD-EN-DP-020)
299-W18-97 (85 ft) (1973, 1976, 1986, 1987)	Well 299-W18-97, east of trench 1: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1973, 1977) and density (1976) logs also were collected for well 299-W18-97 (WHC-SD-EN-DP-020)
299-W18-98 (80 ft) (1973, 1976, 1986, 1987, 1992)	Well 299-W18-98, north of trench 2: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1973, 1977) and density (1976) logs also were collected for well 299-W18-98 (WHC-SD-EN-DP-020)
299-W18-99 (135 ft) (1973, 1976, 1987)	Well 299-W18-99, northeast of the 216-Z-18 Crib: Scintillation logs showed a natural gamma response. (DOE/RL-91-58, Table A-9) Neutron (1973, 1977) and density (1976) logs also were collected for well 299-W18-99 (WHC-SD-EN-DP-020)
299-W18-247 (169.5 ft) (1992)	Well 299-W18-247, southeast of the 216-Z-18 Crib (PNNL-16103)
299-W18-249 (1992)	Well 299-W18-249, north of the 216-Z-18 Crib (PNNL-16103)

Table E-13. Data Summary – 216-Z-18 Crib (200-PW-1 Operable Unit). (4 Pages)

Radionuclide Logging System (RLS) Log (1992)	The data source for the RLS log is WHC-SD-EN-TI-021.
299-W18-10 (218 ft) (1992)	Well 299-W18-10, east of trench 1: The RLS spectral gamma-ray log showed cesium-137, protactinium-233, and americium-241 from approximately 7.3 to 15.2 m (24 to 50 ft). All three radionuclides are only found in the same zone in the borehole. Cesium-137 was detected from 7.3 to 14.6 m (24 to 48 ft); the maximum activity was 10 pCi/g at 14.0 m (46 ft). Protactinium-233 was observed from 7.3 to 16.5 m (24 to 54 ft); the maximum activity was 10 pCi/g at 14.0 m (46 ft). Americium-241 was detected from 7.3 to 14.6 m (24 to 48 ft); the maximum activity was 320 nCi/g at 14.3 m (47 ft).
Spectral Gamma Logging System (SGLS) Logs (2003 – 2006)	The data source for the SGLS logs is Stoller Log Data Reports.
299-W18-9 (217 ft) (2006)	Well 299-W18-9, on the west side of trench 1: Americium-241 was detected between 6.4 and 17.7 m (21 and 58 ft) bgs and between 19.8 and 20.7 m (65 and 68 ft) bgs. The maximum concentration was approximately 400,000 pCi/g at 7.3 m (24 ft) bgs. A minor amount of Cs-137 (approximately 0.1 pCi/g) also appears to be present. Plutonium-239 was detected between 6.7 and 15.2 m (22 and 50 ft) bgs and between 16.8 and 17.7 m (55 and 58 ft) bgs. The maximum concentration was measured at approximately 400,000 pCi/g at 7.5 m (24.5 ft) bgs. The maximum concentration of plutonium-241 was estimated as 16 pCi/g. Neptunium-237 was detected by measuring a daughter product (protactinium-233). Protactinium-233 was detected between 6.7 and 18.0 m (22 and 59 ft) bgs and between 19.7 and 20.9 m (64.5 and 68.5 ft) bgs. The maximum concentration was approximately 19 pCi/g at 7.3 m (24 ft) bgs. A slightly elevated thorium-232 concentration is indicated between 6.7 and 7.3 m (22 and 24 ft) bgs; other less prominent indications are at approximately 9.1 m (30 ft) bgs and from 12.2 to 13.1 m (40 to 43 ft) bgs. Uranium-232 is present at a maximum concentration of approximately 1 pCi/g. It was inferred, on the basis of the uranium-232 concentration, that less than 300 pCi/g of uranium-233 may be present in this waste stream. Passive-neutron logging was performed in the borehole from the ground surface to 22.9 m (75 ft). The passive-neutron log indicated a maximum count rate of 8 counts per second at 7.3 m (24 ft) bgs. The moisture data indicate some variability. (Stoller Log Data Report) (Note: The depth measurements, which are referenced to the top of the well casing in the log data report, have been corrected to reference ground surface by subtracting the length of the casing stickup.)
299-W18-12 (214 ft) (2006)	Well 299-W18-12, located on the west side of trench 3: No evidence of man-made radionuclides was detected in this borehole. The increase in natural uranium at 57.3 to 58.5 m (188 to 192 ft) bgs, and the associated decrease in natural potassium and thorium, are indicative of a caliche layer. The moisture data indicate some variability. (Stoller Log Data Report) (Note: The depth measurements, which are referenced to the top of the well casing in the log data report, have been corrected to reference ground surface by subtracting the length of the casing stickup.)
299-W18-95 (80 ft) (2003)	Well 299-W18-95, located southeast of trench 4: Cesium-137 was detected at 10.4, 11.3, and 11.6 m (34, 37 and 38 ft) with a maximum concentration near the minimum detectable level of 0.2 pCi/g. (Stoller Log Data Report)
Soil Sampling Data at 216-Z-1A Tile Field (1973-1977)	Sampling was conducted at the 216-Z-1A Tile Field from 1973 to 1977 to collect data to evaluate the distribution of plutonium and americium. The 216-Z-18 Crib received the same waste stream from 1969 to 1973 that the 216-Z-1A Tile Field received from 1964 to 1969. Because similar wastes were discharged, the data from the 216-Z-11A Tile Field provide analogous information for the 216-Z-18 Crib. Sixteen boreholes were drilled and sampled from 1973 through 1977 to determine the distribution of plutonium and americium (i.e., actinides) in sediments beneath the tile field. Soil samples were collected approximately every 1.5 m (5 ft) where contamination was not detected, every 0.3 m (1 ft) in zones of contamination, and wherever there was a change in sediment type. Screening of sediments was performed with portable radiation survey instruments. Selected samples were analyzed by granulometric and actinide analytical techniques. Data indicate that (1) the highest concentration of plutonium-239/240 (40,000,000 pCi/g) and americium-241 (2,500,000 pCi/g) occurs in sediments located immediately beneath the crib, below the distribution pipe; (2) the concentration of actinides in sediments generally decreases with depth beneath the waste-distribution system, with the exception of silt-enriched horizons and boundary areas between major sedimentary units; (3) the maximum vertical extent of actinide contamination (defined by the 10 pCi/g isopleth) is located approximately 30 m (100 ft) below the bottom of the crib and 30 m (100 ft) above the 1978 water table; (4) the estimated lateral extent of contamination is within a 10 m (33-ft) wide zone encompassing the perimeter of the crib. (RHO-ST-17)
Soil sampling Data at the 216-Z-18 Crib (1992-1993)	Two wells (299-W18-247 and 299-W18-249) were drilled, and one well was deepened (299-W18-96) at the 216-Z-18 Crib in support of soil-vapor-extraction operations in 1992-1993. The highest carbon tetrachloride concentration from these wells at the 216-Z-18 Crib was 1,957 µg/kg in well 299-W18-249 from a depth of 44.6 m (146.2 ft). The maximum carbon tetrachloride concentrations in the other two wells were: 861 µg/kg in well 299-W18-96 from a depth of 43.8 m (143.8 ft); and 717 µg/kg in well 299-W18-247 from a depth of 41.3 m (135.4 ft) (DOE/RL-2006-51, Section 3.2.4.8)
Soil-Vapor Sampling during Drilling of Characterization Boreholes Near the 216-Z-18 Crib (1992 – 1993)	Soil-vapor samples were collected during deepening of well 299-W18-96 within the 216-Z-18 Crib and during drilling of nearby wells 299-W18-247 and 299-W18-249. The samples were analyzed for volatile organic compounds (VOC) (carbon tetrachloride and associated breakdown products). The highest carbon tetrachloride vapor concentrations detected within these boreholes were 98 ppmv from a depth of 37.1 m (121.8 ft) in well 299-W18-96; 62 ppmv from a depth of 50.9 m (167 ft) in well 299-W18-247; and 85 ppmv from a depth of 12.8 m (42 ft) in well 299-W18-249. (WHC-SD-EN-TI-063, WHC-SD-EN-TI-248, BHI-01631, DOE/RL-2006-51, Section 3.2.4.8)
Remedial Investigation (2005-2007)	Active and passive soil-vapor samples were collected in the vicinity of the 216-Z-18 Crib, and along the effluent pipeline, during the remedial investigation as part of the carbon tetrachloride dispersed vadose zone plume investigation. Carbon tetrachloride concentrations in soil-vapor samples from the vicinity of the 216-Z-18 Crib were relatively low. (DOE/RL-2006-51, Section 3.2.4.1)

Table E-13. Data Summary – 216-Z-18 Crib (200-PW-1 Operable Unit). (4 Pages)

Soil-Vapor Extraction in the 216-Z-18 Crib (1992-2007)	A soil-vapor-extraction system installed in 1992 continues to extract from well within and near the 216-Z-1A Tile Field, the 216-Z-18 Crib, and the 216-Z-12 Crib. Between April 1991 (when the pilot test was conducted) and July 2006, approximately 24,604 kg of carbon tetrachloride were removed from the 216-Z-1A/Z-18/Z-12 well field by the soil-vapor-extraction system (SGW-33746). Soil-vapor samples have been collected from numerous existing wells and soil gas probes between 1991 and 2007 to evaluate carbon tetrachloride concentrations and to monitor concentration trends in support of soil-vapor-extraction operations. Soil-vapor samples collected during operation of the soil-vapor extraction demonstrate that soil-vapor concentrations in the vicinity of the 216-Z-1A Tile Field have been decreasing over time. (DOE/RL-91-32, BHI-00720 [Rev. 6], WMP-17869, WMP-21327, WMP-26178, SGW-33746)

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HW-55176

Table E-14. Data Summary – 241-Z-8 Settling Tank (200-PW-6 Operable Unit). (2 Pages)

Background	
Site Identification	241-Z-8 Settling Tank
Site Location	200 West Area; 200 West Area; Plutonium Finishing Plant (PFP) Zone; east of the 234-5Z Building; approximately 11 m (36 ft) west of the 216-Z-8 French drain.
Type of Site	Settling Tank
Site Construction	The 241-Z-8 Settling Tank is a horizontal cylindrical vessel, 12.2 m (40 ft) long and 2.4 m (8 ft) in diameter, and located 1.8 m (6 ft) below grade. It is constructed of 0.8 cm (5/16 in) thick steel or wrought iron plate. The tank was fed by two 3.8 cm (1.5 in) diameter stainless steel pipes that enter the tank 15 cm (6 in) below the tank top. The area above the tank is surrounded by a lightweight chain barricade and is marked with "Caution Underground Radioactive Material" and inactive miscellaneous underground storage tank signs. Inside the barricade on the north end are two capped 10 cm (4 in.) steel vent pipes.
Operating History	The 241-Z-8 Settling Tank was used as a solids settling tank for back flushes of the recovery of uranium and plutonium by extraction (RECUPLEX) feed filters. Silica gel was used as a settling agent. The solids and silica gel were flushed to the 241-Z-8 tank with nitric acid. Overflow from the tank went to the 216-Z-8 French Drain, which is located approximately 11 m (36 ft) east of the settling tank. From May 1974 to October 1974, 28,800 L (7,600 gal) of waste and 19,000 L (5,000 gal) of flush solution were pumped from the tank and trucked to 241-TX-109 tank. This left 18 cm (7 in) of sludge (approximately 1890 L [500 gal] of waste) in the tank. Sampling of the sludge identified 0.02 g/L of plutonium, about 38 g total (WHC-SD-DD-TI-057).
Effluent Volume Discharged	58,500 L tank; up to 1,890 L are estimated to remain in the tank (RHO-RE-EV-46 P)
Period of Operation	1955 to 1962
Inventory Information	Inventory information is available in the following historical references: DOE/RL-2001-01; RPP-26744; DOE/RL-96-81; RHO-CD-673; ARH-CD-745; DOE/RL-91-58; RHO-RE-EV-46 P; HNF-1744; WHC-SC-DD-TI-057; RHO-LD-114; HW-59359; HW-63646; HW-64375; HW-69071; HW-69072; HW-71971; HW-72956; HW-76638; HW-80877 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents discharged to the 241-Z-8 Settling Tank: Constituent — Inventory — Reference Plutonium — 38 g (remaining) — WHC-SD-DD-TI-057 Plutonium — 1.5 kg (remaining) — RHO-RE-EV-46 P
Vicinity Waste Sites	216-Z-8 French drain
Characterization Summary	The 241-Z-8 Settling Tank was characterized in 1984 (RHO-RE-EV-46 P) by installation of four wells south of the tank to a depth of 7.6 m (25 ft) bgs (wells 299-W15-198, 299-W15-199, 299-W15-200, 299-W15-201). Two sediment samples were collected from each well at 4.6 and 6.1 m (15 and 20 ft) bgs. In addition, four core samples were collected south of the tank from 0 to 30 cm (0 to 12 in) bgs (core locations A, B, C, D). The maximum plutonium concentration detected was 44 pCi/g in the sample from 0 to 15 cm (0 to 6 in) bgs at core location D. The data do not show that this tank leaked. The tank could contain up to 1.5 kg of plutonium. The four wells south of the tank were geophysically logged in 2005 using a spectral gamma system. No contamination was noted in the logs.
Data	
Internal sludge samples (1974)	Tank contents: sampling was conducted in 1974, as indicated in RHO-RE-EV-46 P and WHC-SD-DD-TI-057, followed by tank pumping of a significant amount of the remaining residuals. Four sludge samples were taken; plutonium concentrations in the solution ranged from 1 to 24 mg/L. Plutonium concentrations in the sludge ranged from 4 to 755 mg/L. After pumping, 18 cm (7 in.) of sludge waste 1,890 L (~ 500 gal) remained in the tank. Sampling conducted following this retrieval indicates a residual plutonium inventory of 38 g with a pH of 6.1 (WHC-SD-DD-TI-057). Tank and surrounding soil: DOE/RL-91-58 states that "No releases are associated with this tank." Data collected in 1974 do not indicate that leaks had occurred (RHO-RE-EV-46 P) at the tank. Uncertainties in the volume removed from the tank are attributable to systematic error in the original volume estimate. (RHO-RE-EV-46 P, WHC-SD-DD-TI-057)
Soil Sampling and Analysis (1984)	Four shallow wells were installed south of the 241-Z-8 Settling Tank to a depth of 7.6 m (25 ft) bgs to evaluate the possibility that the tank leaked. RHO-RE-EV-46 P presents the data from this sampling, including transuranic activity results and geologic information with depth. The locations of the wells (wells 299-W15-198, 299-W15-199, 299-W15-200, and 299-W15-201) were selected based on evaluation of the size and distribution of a potential waste plume from the tank. Two sediment samples were collected from each well at 4.6 and 6.1 m (15 and 20 ft) bgs and analyzed for plutonium and americium. The 4.6 m (15 ft) samples were in the unexcavated sediments just below the backfill-unexcavated sediment interface at 4.3 m (14 ft) depth. The maximum plutonium-239 concentration in the soil samples was 5.31 pCi/g at 6.1 m (20 ft) (well 299-W15-201). As part of a separate study of the surface environment at the 216-Z-8 waste site, also reported in RHO-RE-EV-46 P, four core samples were collected south of the tank from 0 to 30 cm (0 to 12 in.) bgs (core locations A, B, C, D). The cores were subdivided into samples from 0 to 15 cm (0 to 6 in.) deep and 15 to 30 cm (6 in. to 12 in.) deep. The maximum plutonium concentration detected was 44 pCi/g in the sample from 0 to 15 cm (0 to 6 in.) bgs at core location D. The conclusion of the study was that the 241-Z-8 Settling Tank likely did not leak. Samples also were collected at the nearby 216-Z-8 French Drain; these data also are presented in RHO-RE-EV-46 P. (RHO-RE-EV-46 P)
Spectral Gamma Logging System (SGLS) Logs (2005)	The data source for the SGLS logs is Stoller Log Data Reports.

Table E-14. Data Summary – 241-Z-8 Settling Tank (200-PW-6 Operable Unit). (2 Pages)

299-W15-198 (26.3 ft) (2005)	Well 299-W15-198, located 2 m (6 ft) from the southwest corner of the tank. Only cesium-137 was detected in this well at depths of 15 and 20 ft bgs; concentrations were approximately 0.2 pCi/g. The report mentions another logging event in 1995 where no contamination was detected.
299-W15-199 (27.2 ft) (2005)	Well 299-W15-199, located 1 m (3 ft) south of the tank. Cesium-137 was detected at ground surface at a concentration of approximately 0.2 pCi/g.
299-W15-200 (27.1 ft) (2005)	Well 299-W15-200, located 1 m (3 ft) south of the tank. Cesium-137 was detected at ground surface at a concentration of approximately 0.1 pCi/g. The report mentions another logging event in 1995 where no contamination was detected.
299-W15-201 (26.2 ft) (2005)	Well 299-W15-201, located 1 m (3 ft) from the southeast corner of the tank; no man-made radionuclides were detected in this borehole.

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RHO-CD-673
RHO-LD-114
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HW-55176
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Table E-15. Data Summary – 241-Z-361 Settling Tank (200-PW-1 Operable Unit). (2 Pages)

Background	
Site Identification	241-Z-361 Settling Tank
Site Location	200 West Area; Plutonium Finishing Plant (PFP) Zone; south of the 236-Z Building.
Type of Site	Settling Tank
Site Construction	The 241-Z-361 settling tank is an underground reinforced concrete structure. The tank has inside dimensions of 7.9 by 4.0 m (26 by 13 ft) with 0.3 m (1 ft) thick walls. The bottom slopes, resulting in an internal height varying between 5.2 and 5.5 m (17 and 18 ft). The top is 0.6 m (2 ft) below grade. The interior of the tank was lined with 0.95 cm (0.38 in.) thick carbon steel on the bottom and up the sides to within 15 cm (6 in.) of the roof. A protective coating was placed between the steel liner and the concrete as a corrosion barrier. Two 15 cm (6 in.) diameter stainless steel inlet pipes, one from the 241-Z Sump Tanks and one from the 207-Z Retention Basin, enter the tank from the north. A single 20 cm (8 in.) diameter stainless steel pipe exits the tank from the south. Two manhole covers and frames and several risers are visible above grade.
Operating History	The tank served as a settling tank for liquid waste from the 234-5Z, 242-Z, and 236-Z buildings from 1949 to 1973. The waste streams were routed through the 241-Z sump tanks for neutralization and then to the 241-Z-361 tank to settle out any solids. The 241-Z-361 Settling Tank also received an unquantified (but large) volume of process water from retention basins (HNF--8735). Settling tank supernatant was routed to various cribs, including the 216-Z-1, 216-Z-2, 216-Z-3, and 216-Z-12 Cribs. Records indicate the tank was isolated in 1973. In May 1975, 79,800 L (21,000 gal) of supernate liquid was pumped out of the tank. Approximately 800 L (210 gal) of liquid remain in the tank. Approximately 2.39 m (94 in.) of sludge remain in the tank, with an estimated volume of 76,000 L (20,000 gal). Sludge samples were analyzed between 1975 and 1985. Based on that evaluation, it was believed the tank contained between 26 and 75 kg (57 to 165 lb) of plutonium. The sludge remaining in the tank shows different layers of waste as a result of different Z Plant (PFP) operation effluents being sent to the settling tank (WHC-SD-DD-TI-057). Early Z Plant waste was treated with soda ash and is evident in the white streaks in the lower layers of the tank sludge. The early waste and the latest waste sent to the tank contained the least amount of plutonium. Therefore, the greatest amount of plutonium is contained in the middle layers of sludge. Because of the heterogeneous nature of the sludge, it is difficult to collect samples that are representative of the entire tank. The tank was evaluated in 1997 as part of a chemical hazard risk assessment. The characterization and analysis of the tank contents were completed in 2001; the results were documented in HNF-8735. The investigation concluded that there were no imminent threats posed by the tank or its contents in their present condition and that the conditions are not likely to change in the near future. The new data indicate that there are approximately 29 kg (64 lb) of plutonium in the tank.
Effluent Volume Discharged	The tank was not intended as a disposal site. Effluent discharge to the tank was routed to disposal to a number of waste sites. A large volume of effluent passed through the tank. A total of 800 L of liquid and 75 m^3 of sludge are estimated to remain in the tank (HNF-8735).
Period of Operation	1949 to 1973
Estimated Discharged Inventory	Inventory information is available in the following historical references: WIDS, RHO-CD-673, ARH-CD-745, HNF-1989, DOE/RL-91-58, RHO-LD-114, WHC-SD-DD-TI-057, HNF-8735 While discrepancies among the different references may exist, the following inventory information represents a reasonable estimate of amounts of significant constituents remaining in the 241-Z-361 Settling Tank: Constituent — Inventory — Reference Plutonium — 29 kg — HNF-8735
Vicinity Waste Sites	216-Z-1 Crib, 216-Z-2 Crib, 216-Z-3 Crib, 216-Z-1A Tile Field, and 216-Z-12 Crib.
Characterization Summary	The 241-Z-361 Settling Tank and its contents were characterized from 1999 to 2001 in two phases. Phase I focused on opening the tank, characterizing the headspace vapor, and conducting a video camera survey of the tank interior (HNF-2867). Phase I identified volatile and semivolatile organics (HNF-8735). Phase II focused on characterizing the sludge (HNF-4371). Phase II identified approximately 75 m^3 (82 yd^3) of sludge with 29 kg of plutonium at concentrations of plutonium-239 ranging from 428 ppm to 69 ppm and plutonium-240 from 61 ppm to less than detectable. Metals (e.g., cadmium, chromium) and polychlorinated biphenyls (PCB) were detected in the sludge (HNF-8735). Helical piers installed to support tank sampling were surveyed when removed; no radiological contamination was detected (FH-0002791). Comparison of the 1999 camera survey to the 1975 photographs indicates the depth of the contents has not changed, signifying the tank has not leaked.
Data	
Sludge and vapor sampling in the 241-Z-361 Settling Tank (1999-2001)	The 241-Z-361 Settling Tank was opened in 1999 as part of 200-PW-1 Operable Unit RI/FS Phase I activities. The concentrations of volatile and semivolatile organics present in the tank during vapor monitoring included the following: 0.24 to 0.83 ppmv of Freon[a] 11, 0.32 to 1.10 ppmv of chloroform, 0.32 to 2.00 ppmv of tetrachloroethylene, 0.22 to 0.50 ppmv of isobutane, 0.05 to 0.20 ppmv of methylcyclopentane, 0.35 to 0.88 ppmv of trichloroethylene, and 0.05 to 0.15 ppmv of carbon tetrachloride. The results of the Phase II tank characterization investigation are reported in HNF-8735 and summarized in the Work Plan (DOE/RL-2001-01, Section 3.3.1.3). The 241-Z-361 Settling Tank currently contains approximately 75 m^3 (82 yd^3) of sludge. The principal radionuclide contaminant in the sludge is plutonium (25 kg [55.22 lb] of plutonium-239 and 4 kg (8.82 lb) of other transuranic isotopes, primarily plutonium-240, are present). Concentrations of plutonium-239 in the 13 samples analyzed range from 69 to 428 mg/kg. Plutonium-240 concentrations ranged from less than detectable to 60.97 mg/kg in the 13 samples analyzed (DOE/RL-2001-01, Section 3.3.1.3). HNF-8735 reported that the sludge was believed to contain between 26 and 75 kg (57.32 and 165.35 lb) of plutonium (WHC-SD-EN-ES-040) with a probable inventory of 26.8 kg (59.08 lb). A previous assessment of material unaccounted for estimated the tank contents as 31.2 kg (68.78 lb) plutonium (HNF-2012). This 1997 criticality study concluded that, although the plutonium inventory is potentially sufficient to generate a criticality, plutonium distribution within the sludge makes an inadvertent criticality extremely unlikely (HNF-2012). The americium-241 concentration in the sludge ranged from nondetectable to <1 mg/kg in the samples analyzed. The concentrations of uranium-235 and uranium-238 were at trace levels. Analysis of the core samples showed that the plutonium is well distributed within the tank, and significant quantities of neutron-absorbing materials in the sludge further reduce any potential for criticality. Videos of the tank interior show a small amount of free liquid visible on the surface, indicating that the sludge is saturated and the contents are over-moderated. The 1999 data indicate that the sludge ranges from 52.2 to 84.4 percent water. The average moisture content is approximately 70 percent. The pH of the sludge is between 8 and 9.2. Particle-size analysis was conducted on 14 composite sludge samples using a laser diffraction analyzer. The particle sizes

Table E-15. Data Summary – 241-Z-361 Settling Tank (200-PW-1 Operable Unit). (2 Pages)

for these samples ranged from 0.2 to 450 μm, and the average mean particle size was 139 μm (HNF-8735).

The total metals analysis of the sludge samples indicated an average of 112 mg/kg of cadmium, 10,000 mg/kg of chromium, 446 mg/kg of lead, 177 mg/kg of mercury, and 182 mg/kg of silver within the sludge. These analyses also indicated that arsenic, barium, nickel, and zinc had maximum concentration results of 23.4 mg/kg, 197 mg/kg, 3,360 mg/kg, and 622 mg/kg, respectively. Beryllium was not detected in any of the samples analyzed.

The tank-characterization samples were analyzed for volatile and semivolatile organic compounds. The five volatile organic compounds detected and their maximum concentrations were 1-butanol (5,470 μg/kg), acetone (5,620 μg/kg), benzene (3,930 μg/kg), methylene chloride (1,250 μg/kg), and toluene (1,590 μg/kg). However, these results can be taken only as lower concentration estimates because of multiple quality control issues with these samples (e.g., sample vial caps were removed twice before analysis for alpha contamination control; potential hot-cell and laboratory contaminants in samples and blanks; and samples were not refrigerated prior to analysis; HNF-8735).

The results for the semivolatile organic compounds all were below reporting limits and calibration levels. Concentrations ranged from not detected to 2 μg/kg for tributyl phosphate and DBP (estimated values), and all DBBP results were not detected (HNF-8735).

The tank characterization samples show that the sludge contains an inventory of PCBs at a calculated average concentration of approximately 28 ppm. The peak Aroclor[b] concentration detected was 160 mg/kg.

Still photographs of the interior of the tank were taken in 1975, and a video camera inspection was conducted in 1999. The level of the sludge surface, and consequently the apparent depth of the sludge in the tank, is very similar in the two sets of photographs. The level is estimated by comparing the relative distance from the sludge surface to the roof of the tank in both photographs. This observation suggests that the level of waste in the tank has not changed substantially over the years between 1975 and 1999.

The lack of detected radiological contamination on the piers installed beneath the depth of the tank bottom, and the apparent stability in the tank sludge level since 1975, suggests that there has been no leak of tank contents to the soil column (FH-0002791, "Submittal of Documentation in Fulfillment of TPA Milestone M-15-37B"). (NOTE: In HNF-EP-0924, reference is made to the 241-Z-361 Settling Tank as "leaking." However, during further evaluation of pertinent records conducted during the preparation of the engineering evaluation, no documentation of any leaks was discovered for the 241-Z-361 Settling Tank. In addition, the liquid level was found to have remained constant during all of the liquid-level measurements for many years before the tank was isolated in 1973, indicating that the tank did not leak. The author of HNF-EP-0924 concurred that the statement regarding leaks from this tank appeared to be in error [verified by personal communication between the author of HNF-EP-0924 and Environmental Quality Management, Inc., who subsequently communicated the corrected information to the Work Plan author] [taken from DOE/RL-2001-01, Section 3.3.1.3]).

[a] Freon is a trademark of E. I. du Pont de Nemours and Company, Wilmington, Delaware.

[b] Aroclor is an expired trademark.

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Table E-16. Data Summary – UPR-200-E-56 (200-PW-3 Operable Unit). (2 Pages)

Background	
Site Identification	UPR-200-E-56
Site Location	200 East Area, 200-E Ponds Zone, north of the 216-A-24 Crib
Type of Site	Unplanned Release
Site Construction	The pit was a sloping excavation dug 1.5 to 6.1 m (5 to 20 ft) deep (estimated), 131 m (430 ft) long, and an average of 33.5 (110 ft) ft wide (approximately 0.4 ha [1 ac] overall).
Operating History	The UPR-200-E-56 unplanned release site was initially a borrow pit that was used to provide clean soil to backfill around the new, below-grade 241-AN tanks. The pit was historically 1.5 to 6.1 m (5 to 20 ft) deep; however, no official depth measurement is documented. During radiation monitoring performed in June 1979, the excavation was found to be moist and radioactively contaminated. The source of the moisture and contamination was most likely effluent waste from the adjacent 216-A-24 Crib that had seeped laterally over the surface of a 10 cm (4-in.) thick hardpan crust approximately 4.6 m (15 ft) bgs. The pit was refilled with contaminated soil retrieved from the 241-AN tanks location and unplanned releases associated with the 241-C Tank Farm and the 200 East Area (UPR-200-E-91, UPR-200-E-92, and UPR-200-E-93). The site then was covered with 15 to 20 cm (6 to 8 in.) of clean soil. In 1985, contaminated soil from the 244-A Lift Station (UPR-200-E-100) was disposed at this site and the site was restabilized with 0.6 m (2 ft) of clean soil. (SD-RE-PRS-001)
Effluent Volume Discharged	Unknown
Duration	1979 (occurrence date)
Inventory Information	Unknown, but bounded by the inventory information for the 216-A-24 Crib
Vicinity Waste Sites	216-A-8 Crib, 216-A-24 Crib
Characterization Summary	Monitoring in 1979 identified moisture and radioactive contamination of 8,000 counts per minute in the excavated borrow pit next to the 216-A-24 Crib. Radionuclide logging at the backfilled site performed in 1994 identified 21.7 pCi/g of cesium-137 at 2.3 m (7.5 ft) bgs in well 299-E26-68 and 5.0 pCi/g of cesium-137 at 2.3 m (7.5 ft) bgs in well 299-E26-75. Spectral gamma geophysical logging during 2005 identified maximum cesium-137 concentrations of 217,000 pCi/g at 6.6 m (21.5 ft) in well 299-W26-71, 110 pCi/g at 7.3 m (24 ft) bgs in well 299-E26-53, 80 pCi/g at 3.8 m (12.5 ft) bgs in well 299-E26-66, and 46 Ci/g at 2.7 m (9 ft) bgs in well 299-E26-69, decreasing with depth to the bottom of the excavation (approximately 6 m [20 ft] bgs), where it was generally no longer detected.
Data	
Spectral Gamma Logging System (SGLS) Logs (2005)	The data source for the SGLS logs is Stoller Log Data Reports.
299-E26-52 (53 ft) (2005)	Well 299-E26-52, located on the southwest side of the unplanned release. Cesium-137 was detected from the ground surface to 2.7 m (9 ft) bgs and from 5.2 to 6.4 m (17 to 21 ft) bgs. The maximum concentration was approximately 1 pCi/g at 5.5 m (18 ft). Comparison of the data acquired in 1995 using the Radionuclide Logging System (RLS) to the 2005 data acquired using the SGLS indicates no significant changes in the cesium-137 profile in the intervening 10 years.
299-E26-53 (54 ft) (2005)	Well 299-E26-53, located on the south side of the unplanned release. Cesium-137 was detected from the ground surface to 4.0 m (13 ft), from 6.7 to 12.2 m (22 to 40 ft), and from 15.2 to 16.5 m (50 to 54 ft). The maximum concentration was approximately 110 pCi/g at 7.3 m (24 ft). Comparison of the data acquired in 1992 using the RLS to the 2005 data acquired using the SGLS indicates no significant changes in the cesium-137 profile in the intervening 13 years.
299-E26-54 (42 ft) (2005)	Well 299-E26-54, located on the southeast side of the unplanned release. Cesium-137 was detected from the ground surface to 5.9 m (19.5 ft), from 6.9 to 7.5 m (22.5 to 24.5 ft) and at 8.7 m (28.5 ft) with a maximum concentration of approximately 2 pCi/g at 7.2 m (23.5 ft). Comparison of the data acquired in 1994 using the RLS to the 2005 data acquired using the SGLS indicates no significant changes in the cesium-137 profile in the intervening 11 years.
299-E26-66 (38 ft) (2005)	Well 299-E26-66, located on the south side of the unplanned release. Cesium-137 was detected continuously from 0.2 to 5.6 m (0.5 to 18.5 ft) and discontinuously to the bottom of the borehole. The maximum concentration was measured at approximately 80 pCi/g at 3.8 m (12.5 ft) bgs.
299-E26-68 (38.5 ft) (2005)	Well 299-E26-68, located on the north side of the unplanned release. Cesium-137 was detected from 1.1 to 3.5 m (3.5 to 11.5 ft) with a maximum concentration at approximately 3 pCi/g at 2.9 m (9.5 ft). Comparison of the data acquired in 1994 using the RLS to the 2005 data acquired using the SGLS indicates no significant changes in the cesium-137 profile in the intervening 11 years.
299-E26-69 (33 ft) 2005)	Well 299-E26-69, located on the northwest side of the unplanned release. Cesium-137 was detected continuously throughout this borehole with the exceptions of 0.9, 1.2, and 8.5 m (3.0, 4.0, and 28.0 ft) below the top of the casing. The maximum concentration was approximately 46 pCi/g at 2.7 m (9.0 ft) bgs. Comparison of the data acquired in 1994 using the RLS to the 2005 data acquired using the SGLS indicates no significant changes in the cesium-137 profile in the intervening 11 years.
299-E26-71 (43 ft) (2005)	Well 299-E26-71, located south of the unplanned release. Cesium-137 was detected between the ground surface and the bottom of the borehole at 13.0 m (42.5 ft). The maximum concentration was approximately 217,000 pCi/g at 6.6 m (21.5 ft). Comparison of the data acquired in 1995 using the RLS to the 2005 data acquired using the SGLS indicates no significant changes in the cesium-137 profile in the intervening 10 years in most of the borehole. Comparisons could not be made for the highest activity zones because the RLS could not quantify concentrations in excess of approximately 3,000 pCi/g.
299-E26-75 (22 ft) (2005)	Well 299-E26-75, located on the north side of the unplanned release. Cesium-137 was detected continuously from 1.7 to 4.4 m (5.5 to 14.5 ft) and discontinuously throughout the rest of the borehole. The maximum concentration was measured at approximately 11 pCi/g at 2.6 m (8.5 ft).
299-E26-76 (43 ft) (2005)	Well 299-E26-76, located on the southwest side of the unplanned release. Cesium-137 was detected from the ground surface to the total depth of the borehole at concentrations ranging from the minimum detectable level (0.1 pCi/g) to 53 pCi/g. The maximum concentration was at 6.2 m (20.5 ft). Comparison of the data acquired in 1995 using the RLS to the 2005 data acquired using the SGLS indicates no significant changes in the cesium-137 profile in the intervening 10 years.

Table E-16. Data Summary – UPR-200-E-56 (200-PW-3 Operable Unit). (2 Pages)

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