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SECTION:	3 of 8
DOCUMENT #:	DOE/RL-92-67, DRAFT A
TITLE:	Final RI/FS Report for 1100-EM-1 OU, Hanford

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DOE/RL-92-67
DRAFT A

Final Remedial Investigation/ Feasibility Study Report for the 1100-EM-1 Operable Unit, Hanford

Date Published
November 16, 1992

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Prepared for the U.S. Department of Energy
Office of Environmental Restoration and
Waste Management

United States
Department of Energy
P.O. Box 550
Richland, Washington

Not Approved for Public Release

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APPENDIX A

1100-EM-1 PHASE II RI
MONITORING WELL BORING LOGS AND
HORN RAPIDS LANDFILL TRENCHING LOGS

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APPENDIX A CONTENTS

Monitoring Well Boring Logs A-1
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1100-EM-1 PHASE II RI
MONITORING WELL BORING LOGS

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TEST BORING FIELD LOG

Site 1100-EM-1 | Page 1 of 3 Pages

Boring No. MW-7A | Desig. MW-7A | Diam.(Casing) 8 inch"

Co-ordinates N 378386.4 E 1944622.6

Elevation Top of Boring	388.0	M.S.L	Hammer Wt.		Boring Started MAY 2 91
Total Overburden Drilled	58.3	Feet	Hammer Drop		
Elevation Top of Rock		M.S.L	Casing Left		Boring Completed MAY 6 91
Total Rock Drilled	0.0	Feet	Subsurface Water Data	▽ 40.5 ▼	Page
Elev. Bottom of Boring	329.7	M.S.L	Obs. Well		
Total Depth of Boring	58.3	Feet	Drilled By:	R. Jones	
Core Recovered %	Boxes	No.	Mfg. Des. Drill:		
Core Recovered Ft:	Diam.	In.	Inspected By:	K. Singleton (WHC)	
Soil Samples In. Diam.		No.	Classification By:	K. Singleton (WHC)	
Soil Samples In. Diam.		No.	Classification By:	J. McBane (CENPW)	

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
						0.0 - 20.0 Portland cement			0 - 2.0 SAND; 10YR5/3 olive; moderately sorted;no reaction to acid; 96% sand (35% VCS, 25% CS, 20% MS); 70% quartz, 30% basalt; subrounded to angular; <3% silt, <2% gravel.
385									2.0 - 3.5 SANDY GRAVEL; 10YR5/3 olive; moist; no to very slight reaction to acid; poorly sorted; gravels have calcium coating having a strong reaction to acid; 65% sand (35% MS, 20% CS, 20% others, 65% quartz, 35% basalt, subrounded to subangular); 35% gravel (15% VCP, 15% others, 95% ba salt, 5% quartz and others); <5% silt.
	5	W50	8.0	5.0 5.5	100				3.5 - 15.0 SANDY GRAVEL; 10YR7/1 light gray; moist; strong reaction to acid; poorly sorted; 60% gravel (30% CP-VCP, 10% small pebbles, 14% others; 85% basalt, 15 % others; subrounded to rounded); 37% sand (30% MS-CS, 70% others; 90% basalt, 10% others; subrounded to subangular); 3% silt. Color @ 7.5 ft 10YR6/2 light grayish brown; basalt content increase to 90-95%.
380									
	10	W51	8.0	10.0 11.3	100				
375									

GENERAL REMARKS:

Depths provided as feet below the existing ground surface; elevations in feet above mean sea level. All sample numbers prefaced by B00-. All samples collected for soil moisture content analysis and archiving.

BORING No. MW-7A

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Site 1100-EM-1 Boring No. MW-7A Desig. MW-7A

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
		W52	8.0	15.0 16.5	100				15.0 - 19.0 SANDY GRAVEL; 10YR4/4 dark yellowish brown;moist; poorly sorted;strong reaction to acid; 65% gravel (35% CP-VCP, 10% small pebbles, 20% others; 95% basalt, 5% quartz; rounded); 30% sand (20% CS, 10% others; 95% basalt mostly subrounded, 5% quartz and others mostly angular to subangular); 5% silt.
370									
		W53	8.0	19.0 20.0	100				19.0 - 24.5 SANDY GRAVEL; 10YR4/3 dark brown; moist; poorly sorted; strong reaction to acid; 50% gravel (25% MP, 15% CP, 10% others; 90-95% basalt, rounded to subrounded; 5% quartz); 45% sand (30% CS, 10% VCS, 5% others; 95% basalt, 5% others; subrounded to rounded); <5% silt.
	20					20.05 - 28.4 (8-20)Bentonite crumbles			
365									
	25	W54	8.0	25.0 26.0	100				24.5 - 28.5 SANDY GRAVEL; 10YR4/3 dark brown; moist; reaction to acid slight in soil matrix, strong from particle coatings; poorly sorted; 50-55% sand (15% CS, 15% VCS, 15% FS, 10% VFS; 95% basalt, 5% quartz; subrounded); 40-45% gravel (20% CP, 10% VCP, 10% MP-VFP; rounded; 90% basalt, 10% others); <5% silt.
360									From 27.5 - 27.9 ft silt content increases mostly as a coating around gravels.
						28.4 - 31.8 (1/2 inch)Bentonite pellets			28.5 - 33.2 SANDY GRAVEL; 10YR6/2 light grayish brown; poorly sorted; moderate to slight reaction to acid; moist; 57% sand (20% MS, 20% VFS, 17% others; 60% quartz, 40% basalt; angular); 37% gravel (20% CP & MP, 10% FP, 6% others; 80-85% basalt, 15-20% quartz and others); 6% silt. Reaction to acid strong @ 30.0 ft.
	30	W55	8.0	29.6 30.3	100				
355									Hanford/Ringold fm contact based on gravel mineralogy. 33.2 - 42.0 SANDY GRAVEL; 10YR5/3 brown; poorly sorted; moist; moderately strong reaction to acid; 50% sand (15% MS, 15% CS, 10% VCS, 10% others; 80% quartz and feldspar, 20% others; angular to subangular); 46% gravel (25% CP, 10% MP, 11% others; 70% quartzite, 30% granites, basalt, and mudstone; rounded); <4% silt; <2% mica. 0.2 ft thick silt-rich (6-7%) layer @ 35.8 ft.
	35		8.0	35.5 36.0	100	35.0 - 55.0 0.010 slot, continuous wrap stainless steel screen			
350									
	40		8.0	40.5 41.0	50				

BORING No. MW-7A

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TEST BORING FIELD LOG

Site 1100-EM-1 Page 1 of 3 Pages

Boring No. MW-8A Desig. MW-8A Diam.(Casing 8 inches"

Co-ordinates N 377299.6 E 1947303.7

Elevation Top of Boring 386.2 M.S.L Hammer Wt. _____ Boring Started MAY 2 91

Total Overburden Drilled 58.4 Feet Hammer Drop _____

Elevation Top of Rock _____ M.S.L Casing Left _____ Boring Completed MAY 9 91

Total Rock Drilled 0.0 Feet Subsurface Water Data ▽ 40.5 ▼ _____ Page _____

Elev. Bottom of Boring 326.2 M.S.L Obs. Well _____

Total Depth of Boring 60.0 Feet Drilled By: D. Rossman

Core Recovered _____ % Boxes _____ No. Mfg. Des. Drill: _____

Core Recovered _____ Ft: _____ Diam. _____ In. Inspected By: K. Singleton (WHC)

Soil Samples _____ In. Diam. _____ No. Classification By: E. Freeman (WHC)

Soil Samples _____ In. Diam. _____ No. Classification By: _____

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
385						0.0 - 3.3 Neat cement			0.0 - 4.0 SILTY SAND; medium brown; moderately well sorted; slightly calcarious (reacts slightly to acid); rounded to subrounded; 60% quartz, 40% basalt; 90% sand (60% VFS, 30% FS, 10% MS), 10% silt; dry.
						3.3 - 18.65 Cement grout			
	5	VQ8	5.0	4.8 6.8	100	4.8 - 6.8 Sample W57			4.0 - 9.0 SANDY GRAVEL; 35% gravel, 60% sand, 5% other; poorly sorted; 2.5Y6/2 light brownish gray; strong reaction to acid; dry; sand subrounded to rounded, 60% MS, 30% FS, 10% VFS; gravel rounded to subrounded, 10%VFP-FP, 70% MP-CP, 20% VCP, 95% basalt.
380									
	10	VQ9	5.0	9.8 12.9	100	9.8 - 12.9 Sample W58			9.0 - 11.0 GRAVELLY SAND; 2.5Y4/2 dark grayish brown; strong reaction with acid; slightly moist; 30% gravel, 70% sand; sand subrounded to subangular, 60% CS, 20% FS, 10% VFS, 70% basalt, 20% quartz, 10% other felsics; gravel 50% VCP, 40% CP, 5% MP, 5% FP, 70% basalt, 30% felsics; poorly sorted.
375									11.0 - 12.0 SILTY CLAY CONGLOMERATE"; not calcareous; held together by fines.
									12.0 - 20.0 GRAVELLY SAND; 10YR5/1 gray, slightly moist; slightly reactive with acid; 85% sand, 15% gravel; sands - 30% VCS, 15% CS, 50% MS, 5% FS, subrounded to subangular, 90% basalt, 10% others; gravels - subrounded, 30% VCP, 40% CP, 20% FP, 20% VFP, 80% basalt, 20% others;

GENERAL REMARKS:

Depths provided in feet beneath the existing ground surface; elevations in feet above mean sea level. All sample numbers prefixed by B00-. V** samples were collected for chemical analysis, W** samples for physical analysis.

9 3 1 2 8 0 2 0 6 2 1

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
									poorly sorted.
370		VR0	5.0	15.4 17.7	50	15.4 - 17.7 Sample W59			
						18.65 - 27.9 Bentonite crumbles			
	20								
365		VR1	8.0	20.2 22.3	60	20.2 - 22.3 Sample W60			20.0 - 49.0 SANDY GRAVEL; 10YR4/1 dark gray; moist; no reaction with acid; 80% gravel (85% basalt, 15% quartzite; subrounded; 5% large cobbles, 5% small cobbles, 50% VCP, 20% CP, 10% MP, 10% FP), 20% sand (95% basalt, 5% others; subrounded to subangular; 35% VCS, 35% CS, 20% MS, 10% FS); poorly sorted.
	25								
360		VR3	5.0	25.0 27.5	60	25.0 - 27.5 Sample W61			Soil reacts strongly with acid @ 25 ft.
						27.9 - 31.5 (1/4 inch)Bentonite pellets			
	30	VR4	5.0	29.8 32.3	75	29.8 - 32.2 Sample W62			
355						31.5 - 60.0 (20-40)Colorado sand			
	35	VR5	5.0	34.9 37.6	50	34.9 - 37.6 Sample W63 35.3 - 55.6 0.010 inch, continuous wound stainless steel screen			
350									
	40								
345		VR7	5.0	40.8 43.6	70	40.8 - 43.6 Sample W64			

9 3 1 2 3 5 6 2 0 6 2 2

Site 1100-EM-1 Boring No. MW-8A Desig. MW-8A

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
	45	VR9	5.0	45.3 48.0	80	45.3 - 48.0 Sample W65			
340									
	50	W66	8.0	49.5 50.8					49.0 - 52.0 SAND; 10YR7/1 light gray; wet; weak reaction to acid; 90% quartz, 5% basalt, 5% granitics; 90% CS, 10% MS; well sorted; subrounded to subangular.
335		W67	8.0	51.5 53.0					52.0 - 53.5 SANDY GRAVEL; 10YR6/1 light gray; strong reaction with acid; slightly cemented; saturated; 70% gravels (subrounded; 5% small cobbles, 10% VCP, 20% MP, 50% FP, 15% VFP; 95% granitics, 5% basalt), 30% sand (subrounded to subangular; 90% granitics, 10% basalt; 20% VCS, 20% CS, 40% MS, 10% FS, 10% VFS); poorly sorted.
	55								53.5 - 57.0 SAND; 10YR7/1 light gray; wet; weak reaction to acid; 90% quartz, 5% basalt, 5% granitics; 90% CS, 10% MS; well sorted; subrounded to subangular.
330		VS0	5.0	58.0 60.0	100	58.0 - 60.0 Sample W68			57.0 - 60.0 GRAVELLY SILTY SAND; 5Y5/2 olive gray; no reaction with acid; 20% gravel (40% andesitic, 60% granitic; subrounded; 1% VCP, 20% CP, 50% MP, 20% FP, 9% VFP), 50% sand (10% MS, 40% FS, 50% VFS), 30% silt; poorly sorted.
	60								Bottom of Boring MW-8A @ 60.0 ft.

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TEST BORING FIELD LOG

Site 1100-EM-1

Boring No. MW-18 Desig. MW-18 Diam.(Casing) 8 inch"

Co-ordinates N 367795.9 E 1947500.9

Elevation Top of Boring 399.7 M.S.L
Total Overburden Drilled 69.1 Feet
Elevation Top of Rock ____ M.S.L
Total Rock Drilled 0.0 Feet
Elev. Bottom of Boring 330.6 M.S.L
Total Depth of Boring 69.1 Feet
Core Recovered ____ % Boxes ____ No.
Core Recovered ____ Ft: ____ Diam. ____ In.
Soil Samples ____ In. Diam. ____ No.
Soil Samples ____ In. Diam. ____ No.

Hammer Wt. ____
Hammer Drop ____
Casing Left ____
Subsurface Water Data ▽ 48.4 ▼ ____ Page ____
Obs. Well ____
Drilled By: G. Thomas
Mfg. Des. Drill: ____
Inspected By: K. Singleton (WHC)
Classification By: K. Singleton (WHC)
Classification By: ____

Boring Started JAN 17 91
Boring Completed JAN 22 91

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
		1	10.0	0.0 1.0	100	0.0 - 2.8 Neat cement			0 - 2.0 SAND; 2.5Y3/3 dark olive brown; angular; well sorted; moist; no reaction to acid; 98% sand (80% CS & MS, 20% others; 80% quartz, 15% feldspar; 5% others); 2% silt.
						2.8 - 20.8 Portland cement			2.0 - 7.5 SILTY SANDY GRAVEL; 10YR4/2 dark grayish brown; poorly sorted; well graded; slightly moist to moist; strong reaction to acid; 40% gravel (50% VCP, 15% CP, 15% large cobbles, 10% MP & FP, 10% others; 90% basalt, 10% others; rounded; some calcite coating); 53% sand (70% MS & CS, 20% VCS, 10% others; subangular to subrounded; 90% basalt, 10% others); 7% silt, non-plastic.
395	5	2	10.0	5.0 6.0	100				
390	10								7.5 - 15.0 SANDY GRAVEL; 10YR4/2 dark grayish brown; poorly sorted; moist to slightly moist; strong reaction to acid; 50% gravel (65% VCP, 20% CP, 15% others; 90% basalt, 10% others; rounded); 47% sand (70% CS & MS, 20% VCS, 10% others; subangular to subrounded; 90% basalt, 10% others); 3% silt.
		3	10.0	10.5 11.5	100				
385									@ 13.1 ft - no reaction to acid

GENERAL REMARKS:

Depths provided as feet below the existing ground surface; elevations in feet above mean sea level. All sample numbers prefixed by MW-18-. All samples collected for soil moisture content determination.

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SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
		4	10.0	15.1 16.1	100				15.0 - 16.5 SANDY GRAVEL; 10YR4/1 dark gray; poorly sorted; no reaction to acid; slightly moist to moist; 55% sand (30% CS, 30% VCS, 25% MS, 15% other; 90% basalt, subangular to subrounded, 10% other, angular); 42% gravel (60% VCP, 20% CP, 10% VFP, 10% others; 95% basalt, 5% others); 3% silt.
		5	10.0	17.0 18.0	100				16.5 - 21.5 GRAVELLY SAND; 10YR4/1 dark gray; slightly moist to moist; poorly sorted; no reaction to acid; 73% sand (30% CS, 30% MS, 20% VCS, 20% others; 95% subrounded to subangular basalt, 5% angular to subangular others); 25 % gravel (50% VCP, 20% CP, 10% small cobbles, 20% FP & VFP; 90% basalt, 10% others; rounded to subrounded); 2% silt.
380	20					20.8 - 35.5 Bentonite crumbles			
		6	8.0	22.0 23.0	100				21.5 - 29.8 SANDY GRAVEL; 10YR3/2 very dark grayish brown; poorly sorted; slightly moist to moist; slight to no reaction with acid; 55% sand (60% CS & MS, 25% VCS, 15% others; 90% basalt, 10% others; subrounded to angular); 42% gravel (50% VCP, 20% CP, 20% MP, 10% others; 90% basalt, 10% others); 4% silt.
375	25								@ 24.5 ft color change to 10YR4/2 dark grayish brown.
		7	8.0	28.0 29.0	100				
370	30								29.8 - 30.2 SAND; 10YR2/1 black;slightly moist to moist; well sorted; no reaction to acid; 96% sand (30% CS, 30% MS, 20% VCS, 20% other; 85% basalt, 15% other; subrounded to subangular; <2% gravel; <2% silt.
									30.2 - 35.3 SANDY GRAVEL; 10YR4/2 dark grayish brown; slightly moist to moist; slight to no reaction with acid; poorly sorted; 50% sand (60% CS & MS, 25% VCS, 15% others; 90% basalt, 10% others; subangular to subrounded); 46% gravel (70% CP & MP, 30% others; 95% basalt, 5% others; rounded); 4% slit.
365	35								
		8	8.0	35.5 36.5	100	35.5 - 39.3 Bentonite pellets			35.3 - 36.7 SLIGHTLY GRAVELLY SAND; 10YR4/2 dark grayish brown; strong reaction to acid; moist to slightly moist; well sorted; 85% sand (30% MS, 30% CS, 30 % VCS, 10% other; 80% basalt, 20% quartz and feldspar; subrounded to angular); 10% gravel (MP & FP); 5% silt, non-plastic.
									36.7 - 49.5 SANDY GRAVEL; 10YR4/2 dark grayish brown; slightly moist to moist; slight to no reaction with acid; poorly sorted; 51% gravel (70% CP & VCP, 20% MP, 10% others; rounded); 45% sand (60% CS & MS, 25% VCS, 15% others; 90% basalt, 10 % others; subrounded to angular); 4-8% silt, non-plastic.
360	40					39.3 - 66.3 20-40 Colorado sand			
		9	8.0	41.0 42.0	100				

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SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	CORE/SAMPLE SIZE	CORE/SAMPLE DEPTH RANGE	BLOWS PER FT CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
						42.0 - 64.0 .010" slot, continuous wound stainless steel screen			
355	45								
		10	8.0	46.0 47.0	100				
350	50								Hanford/Ringold formation contact @ 49.5 ft. 49.5 - 63.5 SILTY SANDY GRAVEL; 10YR5/3 grayish brown to brown; very poorly sorted; no reaction to acid; 60% gravel (30% VCP, 20% CP, 20% small cobbles, 20% MP, 10% others; 55% quartz,. 35% basalt, 10% others; rounded to subrounded); 34% sand (65% MS & CS, 20% VCS, 15% others; 85% quartz, 15% others); 6% silt, non-plastic.
345	55								
340	60	11	8.0	60.0 61.0	100				
335	65					66.3 - 69.1 borehole caved			63.5 - 69.1 SANDY GRAVEL; 10YR7/4 very pale brown; poorly sorted; no to very weak reaction to acid; 60% sand (60% MS, 20% CS, 20% others; 90% quartz, 10% basalt; angular to subangular); 38% gravel (30% VCP, 20% small cobbles, 20% CP, 20% MP, 10% others); <2% silt.

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Site 1100-EM-1 Boring No. MW-18 Desig. MW-18

SCALES		CORE/SAMPLE				BLOWS PER FT CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
ELEV.	DEPTH	NO. SYMBOL	SIZE	DEPTH RANGE						
										Bottom of Boring MW-18 @ 69.1 ft.

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Site 1100-EM-1 Page 1 of 3 Pages

Boring No. MW-19 Desig. MW-19 Diam.(Casing) 8 inch"

Co-ordinates N 373112.6 E 1946073.6

TEST BORING FIELD LOG

Elevation Top of Boring	384.6 M.S.L	Hammer Wt.		Boring Started	JUN 8 91
Total Overburden Drilled	54.0 Feet	Hammer Drop		Boring Completed	JUN 19 91
Elevation Top of Rock	M.S.L	Casing Left			
Total Rock Drilled	0.0 Feet	Subsurface Water Data	▽ 34.8 ▼	Page	
Elev. Bottom of Boring	330.3 M.S.L	Obs. Well			
Total Depth of Boring	54.3 Feet	Drilled By:	Gary Lydin		
Core Recovered ___ %	Boxes ___ No.	Mfg. Des. Drill:			
Core Recovered ___ Ft: ___	Diam. ___ In.	Inspected By:	K. Singleton (WHC)		
Soil Samples ___ In. Diam.	___ No.	Classification By:	K. Reynolds (WHC)		
Soil Samples ___ In. Diam.	___ No.	Classification By:	R.S. Edrington (WHC)		

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
									0.0 - 15.0 SLIGHTLY GRAVELLY SAND; 2.5YR7/1 light gray; dry; 5-10% gravel, predominantly subangular to subrounded; 70% medium to coarse sand, subangular to subrounded, moderately sorted, unconsolidated, 70% felsic, 30% mafic; ~10% fine to very fine sand; trace to 10% silt/clay. Interbedded SLIGHTLY GRAVELLY SAND and GRAVELLY SAND to a depth of 15.0 feet.
380	5	Z25	8.0	5.0 7.0	100				
375	10	Z26	8.0	10.0 12.0	100				
370									

GENERAL REMARKS:

Depths provided in feet below the existing ground surface; elevations in feet above mean sea level. All sample numbers prefixed by B00-. All samples collected for soil moisture content determination.

BORING No. MW-19

9 3 1 2 8) 2 0 6 2 8

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
		Z27	8.0	15.0 17.5	100	15.0 Radiation sample			15.0 - 28.0 SANDY GRAVEL; 45% gravel, 50% sand, 5% silt; 15% VCS, 15% CS, 10% MS, 5% FS, 5% VFS; 5YR6/1 gray; dry; very poorly sorted; larger particle sizes subrounded, smaller sizes subangular; 95% basalt, 5% felsic; smaller particles reactive to HCl, larger sizes slightly reactive.
365	20	Z28	8.0	20.0 23.0	100	20.0 Radiation sample			
360	25	Z29	8.0	25.0 28.0	100	25.0 Radiation sample			
355	30	Z30	8.0	30.0 32.0	100	30.0 Radiation sample			28.0 - 40.0 GRAVELLY SAND; 25% gravel, 70% sand, 5% silt; 10% VCS, 10% CS, 40% MS, 5% FS, 5% VFS; 5Y8/3 pale yellow; slightly moist; moderately to poorly sorted; larger particle sizes subrounded, smaller subangular; 80% felsic, 20% basalt, <2% mica; strong reaction to HCl. Hanford/Ringold formation contact @ 28.0 ft depth.
350 ▽	35	Z31	8.0	35.0 37.0	100	Static Water Level on 6/11/91, 1600 hrs. 35.0 Radiation sample			GRAVELLY SAND; 35% gravel, 60% sand, 5% silt; slightly higher moisture than above, but otherwise consistant.
345	40					40.0 Radiation sample			40.0 - 45.0 SANDY GRAVEL; 50% gravel (<2% cobbles), 45% sand, 5% silt; 10% VCS, 10% CS, 10% MS, 10% FS, 5% VFS; 5Y6/2 light olive gray; wet; very poorly sorted; subrounded to subangular; 80% felsic, 20% mafic, <2% mica; moderate reaction to HCl.

9 3 1 2 8 6 2 0 6 2 9

Site 1100-EM-1 Boring No. MW-19 Desig. MW-19

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	CORE/SAMPLE SIZE	CORE/SAMPLE DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
340	45					45.0 Radiation sample			45.0 - 50.0 GRAVELLY SAND; 25% gravel, 70% sand, 5% silt; 5Y6/2 light olive gray; wet; moderately sorted; subrounded; 50% mafic, 50% felsic, <2% mica; slightly reactive to HCl.
335	50					50.0 Radiation sample			50.0 - 52.0 SLIGHTLY GRAVELLY SILTY SAND; 10% gravel, 75% sand, 15% silt; 10% VCS, 20% CS, 30% MS, 10% FS, 5% VFS; 5Y6/2 light olive gray; wet; moderately sorted; subangular; 60% felsic, 40% mafic, <2% mica; moderate reaction to HCl in fine grain sizes only.
									52.0 - 54.3 SILT; 5% VFS, 95% silt; 10YR8/3 very pale brown; moist; moderately plastic; very well sorted; >98% felsic, 2% mica, <2% mafic; non-reactive to HCl; some small sand pockets from 52.0 to 53.0 ft.
									Bottom of Boring MW-19 @ 54.0 ft.

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TEST BORING FIELD LOG

Site 1100-EM-1 — Page 1 of 3 Pages

Boring No. MW-20 Desig. MW-20 Diam.(Casing) 8 inch"

Co-ordinates N 375956.3 E 1946115.4

Elevation Top of Boring 383.5 M.S.L — Hammer Wt. ____ — Boring Started JUN 4 91

Total Overburden Drilled 67.7 Feet — Hammer Drop ____

Elevation Top of Rock ____ M.S.L — Casing Left ____ — Boring Completed JUN 7 91

Total Rock Drilled 0.0 Feet — Subsurface Water Data ▽ 35.8 ▼ ____ Page ____

Elev. Bottom of Boring 315.8 M.S.L — Obs. Well ____

Total Depth of Boring 67.7 Feet — Drilled By: Tim Gifford

Core Recovered ____ % Boxes ____ No. — Mfg. Des. Drill: Walker Neer

Core Recovered ____ Ft: ____ Diam. ____ In. — Inspected By: ____

Soil Samples ____ In. Diam. ____ No. — Classification By: G.B. Gould (WHC)

Soil Samples ____ In. Diam. ____ No. — Classification By: ____

SCALES ELEV.	DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
						0.0 - 2.5 Neat cement			0.0 - 5.5 SAND; 10YR5/4; moist; no reaction w/10% HCl; 60% quartz and others, 40% basalt; very fine to medium grained; angular to rounded; no apparent sorting.
						2.5 - 17.4 Cement slurry			
380									
	5								
		Z15	8.0	5.5					5.5 - 6.0 GRAVELLY SILT; 10YR4/4 yellowish brown; moist; lenses of calcareous material in soil; silt 50%, gravel 30%, sand 20%; rounded to well rounded; strong reaction to 10% HCl; quartz and others 50%, basalt 50%; sand very fine to medium, angular to subrounded; non-plastic.
		Z16	8.0	5.8					
				5.8 6.1					
		Z17	8.0	7.0					
				7.3					
375									6.0 - 43.0 SILTY SANDY GRAVEL; 10YR6/3 pale brown; dry; 40% gravel, angular to well rounded, basalt 40%, quartz and others 60%; 50% sand, angular to subrounded, basalt 45%, quartz and others 55%, very fine to very coarse; 10% silt; strong reaction with HCl. Soil in sample B00Z18 @ 9.75 ft was pulverized from the drive barrelling process. Moisture retention may be skewed as a result. Formation is believed to be continuous with above. Basalt boulder at 11.0 ft.
	10	Z18	8.0	9.8					
				10.1					
370									Basalt boulder at 14.0 ft.

GENERAL REMARKS:

Depths provided in feet beneath existing ground surface; elevations in feet above mean sea level. All sample numbers prefixed by B00-. All samples collected for soil moisture content determination.

Site 1100-EM-1 Boring No. MW-20 Desig. MW-20

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
		Z19	8.0	15.0 / 15.3					
365						17.4 - 20.8 Bentonite crumbles			Color change at 17.0 ft. to 10YR4/2; moist; gravel size decreasing; oxidation stains apparent; basalt 70%, quartz and others 30%.
	20	Z20	8.0	20.0 / 20.3					
						20.8 - 20.9 3/8" Bentonite pellets 20.9 - 64.6 20-40 & 8-12 Colorado Sand			
360									
						24.1 - 45.1 .010 in. slot continuous wound stainless steel screen			
	25	Z21	8.0	25.0 / 25.3					
355									Color change to 10YR5/2; dry; increased amounts of quartz and others; moderate reaction to HCl; poorly sorted; Hanford/Ringold formation contact at 28.0 feet based on gravel mineralogy.
	30	Z22	8.0	30.0 / 30.3					
350									
	35	Z23	8.0	35.0 / 35.3					
						35.8 ft. Static Water Level on 5 JUN 91			
345									
	40								

BORING No. MW-20

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Site 1100-EM-1 Boring No. MW-20 Desig. MW-20

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	CORE/SAMPLE SIZE	CORE/SAMPLE DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
340									43.0 - 44.5 SAND; 5Y5/2 olive gray; fine to coarse; some fine cobbles noted; moderately sorted; wet; angular to rounded; basalt 25%, quartz and others 75%; moderate reaction to 10% HCl.
	45								44.5 - 53.0 SANDY GRAVEL; 5Y6/2 light olive gray; wet; 55% gravel, subrounded to well rounded, very fine to very coarse pebbles, basalt 45%, quartz and others 55%; 45% sand, angular to subrounded, basalt 40%, quartz and others 60%; soil poorly sorted; no reaction to 10% HCl. Possible lense of sand from 46.5 to 47.0 ft; same lithology as 43.0 to 44.5 ft; very well rounded larger gravels; very micaceous soil.
335									
	50								
330									53.0 - 55.0 SAND; 5Y5/2 olive gray; saturated; very fine to medium sand; angular to subrounded; basalt 25%, quartz and others 75%; well sorted; weak reaction to 10% HCl.
	55								55.0 - 60.0 SANDY GRAVEL; 50% sand, very fine to very coarse, basalt 40%, quartz and others 60%, angular to subrounded; 50% gravel, very fine to coarse pebbles and small cobbles, basalt 45%, quartz and others 55%, subrounded to well rounded; poorly sorted; saturated; weak reaction to 10% HCl. Sand lense observed at 58.4 ft; very fine to medium grained. Sand lense observed at 59.0 ft; very fine to medium grained.
325									
	60								60.0 - 64.8 GRAVEL; 10YR5/4; saturated; well sorted; very fine to very coarse pebbles; less than 5% sand; some small cobbles noted; larger grains of gravel are very well rounded; basalt 25%, quartz and others 75%. Thin sand lenses noted at ~62.0 ft.
320									Silty lenses observed at 64.7 ft.
	65					Boring caved below 64.6 ft. depth			64.8 - 66.0 SILTY SANDY GRAVEL; 5Y5/2 olive gray; moist; 10YR6/8 discoloration noted as clasts; 50% sand, very fine to medium grained, angular to subrounded, basalt 50%, quartz and others 50%; 35% gravel, very fine to coarse pebbles, subrounded to well rounded, 15% silt, slightly cohesive; poorly sorted; no reaction to 10% HCl.
		Z24	8.0	66.5 67.7					66.0 - 67.7 SILT; 10YR7/1 with lenses of 10YR7/4; moist; low plasticity; no reaction to 10% HCl.
									Bottom of MW-20 @ 67.7 ft.

BORING No. MW-20

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TEST BORING FIELD LOG

Site 1100-EM-1

Boring No. MW-21 Desig. MW-21 Diam.(Casing 10 inch"

Co-ordinates N 374482.6 E 1945427.5

Elevation Top of Boring 379.5 M.S.L
Total Overburden Drilled 98.5 Feet
Elevation Top of Rock ____ M.S.L
Total Rock Drilled 0.0 Feet
Elev. Bottom of Boring 281.0 M.S.L
Total Depth of Boring 98.5 Feet
Core Recovered ____ % Boxes ____ No.
Core Recovered ____ Ft: ____ Diam. ____ In.
Soil Samples ____ In. Diam. ____ No.
Soil Samples ____ In. Diam. ____ No.

Hammer Wt. ____
Hammer Drop ____
Casing Left ____
Subsurface Water Data ____
Obs. Well ____
Drilled By: Dave Rossman
Mfg. Des. Drill: Wellmaster
Inspected By: K. Singleton (WHC)
Classification By: J.A. McBane (CENPW)
Classification By: ____

Boring Started MAY 30 91
Boring Completed JUL 1 91
▽ 30.5
Page ____

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
						0.0 - 2.0 Neat cement 2.0 - 20.0 Portland cement			0.0 - 3.0 SAND; 100% medium sand; 10YR5/2 grayish brown; moist; well sorted; subangular; 75% basalt, 25% quartzite, feldspars, and others; reaction to acid strong.
375									3.0 - 5.0 SANDY GRAVEL; 60% medium sand, 40% gravel; 10YR5/3 brown; poorly sorted; sand subangular, gravels subrounded; 80% basalt, 20% others; reaction to acid strong; moist.
	5	YZ7	8.0	5.0 6.3	100				5.0 - 12.0 GRAVELLY SAND; 75% medium sand, 23% gravel, <2% silt (coating gravels); 10YR5/3 brown; poorly sorted; sand subangular, gravels subrounded to rounded; 80% basalt, 20% others; reaction to acid strong; moist. Sand % increase @ 6.5 ft to 85%, minor calcite coating on gravels.
370									
	10	YZ8	8.0	10.0 11.0	100				
									12.0 - 18.0 SANDY GRAVEL; 80% gravel, 18% fine to coarse sand, <2% silt; 10YR3/1 very dark gray; moist very poorly sorted; gravels subangular to subrounded, sands angular to subangular; 85% basalt, 15% quartzite, feldspar and others; reaction to acid strong. 50% gravel, 50% fine to coarse sand; 10YR4/1 dark gray; moist poorly sorted;
365		YZ9	8.0	14.5	50				

GENERAL REMARKS:

Depths provided in feet beneath the existing ground surface; elevations in feet above mean sea level. All sample numbers prefixed with B00-. All samples were collected for soil moisture content determination.

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SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
				17.8					angularity as above; 85% basalt, 15% others; strong reaction to acid.
									18.0 - 37.5 SILTY SANDY GRAVEL; 50% gravel, 45% fine to medium sand, 5% silt; 10YR5/3 brown; moist; poorly sorted; grasvels subangular to rounded, sands subangular to angular; 70% basalt, 30% quartzite, feldspar and others; reaction to acid strong.
360		Z00	8.0	18.8 21.1	75				Reaction to acid @ 20.0 ft slight.
	20					20.0 - 30.5 (8-20)Bentonite crumbles			40% gravel, 35% sand, 25% silt; moderately sorted; non-plastic.
355		Z01	8.0	24.0 26.5	75				40% gravel, 55% sand, 5% silt; 10YR5/2 grayish brown; poorly sorted.
	25								
350		Z02	8.0	29.5 30.2	100				60% gravel, 35% medium sand, 5% silt; 10YR5/2 grayish brown; wet; moderately sorted; 40% basalt, 60% quartzite and others; reaction to acid slight.
	30					30.5 - 80.5 Pure Gold Bentonite grout			75% quartzite and others, 25% basalt.
									Hanford fm/Ringold fm contact based on mineralogy change in gravels.
345	35								
									37.5 - 54.0 SANDY GRAVEL; 50% gravel, 50% fine to coarse sand; 10YR5/3 brown; wet; poorly sorted; gravels rounded to subangular, sands angular to subangular; 80% quartzite and others, 20% basalt; reaction to acid slight.
340	40								30% gravel, 70% sand; 10YR5/3 brown.

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SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	CORE/SAMPLE SIZE	CORE/SAMPLE DEPTH RANGE	BLOWS PER FT CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
335	45								45% gravel, 55% sand.
									55% gravel, 43% sand, <2% silt.
330	50								70% gravel, 28% sand, <2% silt.
325	55								54.0 - 77.1 ASH; 100% minus #200 sieve; 5YR8/1 white; moist; very well sorted; angularity indeterminate; 95% silica assumed; no reaction to acid.
									Isolated stringers of fine sand and very isolated, rounded fine gravels @ 56.0-57.0 ft. Stringers 1/8 inch maximum thickness with no preferred orientation. Minor fine sand and silt stringers to 1/32 inch thickness @ 57.0-58.0 ft, isolated 1/32 inch diameter pebbles within stringers.
320	60								Medium to fine sand and silt stringers to 1/16 inch thickness @ 61.0-61.5 ft.
315	65					Bottom of 10-inch diameter casing. 8-inch casing beyond.			10YR7/2 light gray; color has been very gradually darkening from the top of the ash deposit. 10YR6/2 light brownish gray. Ash appears to be saturated although no free water noted. When squeeezed,

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SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	CORE/SAMPLE SIZE	CORE/SAMPLE DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
310	70								color noticably lightens then darkens again when pressure is released.
									Color change in material becoming more dramatic with increasing depth.
305	75								Moisture content appears to be increasing; core consistancy is decreasing. Ash has a jello-like consistancy when it is removed from the core barrel.
									77.1 - 77.5 SILT; 90% silt and ash, 10% fine sand; 2.5Y7/4 pale yellow; wet; well sorted; sands angular; no reaction to acid.
									77.5 - 80.5 SILT; 100% silt; 2.5Y5/3 light olive brown; moist; no reaction to acid; hard consistancy; non-plastic.
300	80					80.5 - 81.2 40-100 Colorado sand 81.2 - 98.5 20-40 Colorado sand			2.5Y7/3 pale yellow; moderately sorted; beginning to see isolated rounded gravels. 80.5 - 84.5 SILTY GRAVEL; 55% gravel, 10% sand, 35% silt; color - jade green (not on Munsell color chart); moist;very poorly sorted; gravels rounded to subrounded, sands subangular; gravels 95% quartzite feldspars and others, 5% basalt; sands micaceous; no reaction to acid; material has an oily appearance; core has small inclusions of charcoal appearing substance. 60% gravel, 20% sand, 20% silt; very poorly sorted; jade green; wet; gravels rounded to subangular.
295	85								84.5 - 85.5 SILTY SANDY GRAVEL; 60% gravel, 30% sand, 10% silt; jade green; wet; very poorly sorted; gravels rounded to subangular, sands subangular; 95% quartzite and others, 5% basalt; no reaction to acid; color intensity varying irregularly. 85.2 ft silt is occurring in pockets; color remaining jade green; sand color now 5Y4/2 olive gray. 85.5 - 86.0 SAND; <2% gravel, 98% medium sand; 5Y4/2 olive gray; well sorted; subangular; no reaction to acid.
290	90					88.5 - 98.5 .010" slot, stainless steel continuous wound screen			86.0 - 98.5 SILTY SANDY GRAVEL; 70% gravel, 20% sand, 10% silt; color dark green (not in Munsell charts); wet; poorly sorted; gravels rounded to subangular, sands subangular to angular; no reaction to acid; very similar to 84.5-85.5 except darker in color. 5Y4/2 olive gray, green tint less intense. Green tint returning. 55% gravel, 33% sand, 10% silt; dark green with pockets of jade green; wet; poorly sorted;greener color seems concentrated in wetter zones having less sand and more gravel. 50% gravel, 45% sand, 5% silt. 5Y4/2 olive gray; estimate green color is from Fe reduction within the confined aquifer.
285	95								

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Site 1100-EM-1 Boring No. MW-21 Desig. MW-21

SCALES		CORE/SAMPLE				SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
ELEV.	DEPTH	NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT CORE REC'VY				
									Bottom of Boring MW-21 @ 98.5 ft.

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TEST BORING FIELD LOG

Site 1100-EM-1

Boring No. MW-22 Desig. MW-22 Diam.(Casing 8 inches"

Co-ordinates N 374531.8 E 1946933.4

Elevation Top of Boring	385.1	M.S.L	Hammer Wt.		Boring Started MAY 31 91
Total Overburden Drilled	63.0	Feet	Hammer Drop		
Elevation Top of Rock		M.S.L	Casing Left		Boring Completed JUN 6 91
Total Rock Drilled	0.0	Feet	Subsurface Water Data	∇ 37.4 ▼	Page
Elev. Bottom of Boring	322.1	M.S.L	Obs. Well		
Total Depth of Boring	63.0	Feet	Drilled By:	Gary Lydin	
Core Recovered ___ %	Boxes ___	No.	Mfg. Des. Drill:		
Core Recovered ___ Ft: ___	Diam. ___	In.	Inspected By:	K. Singleton (WHC)	
Soil Samples ___ In. Diam.		No.	Classification By:	K. Singleton (WHC)	
Soil Samples ___ In. Diam.		No.	Classification By:	R.S. Edrington (WHC)	

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
385						0.0 - 1.0 Neat cement 1.0 - 19.0 Portland cement			0.0 - 2.0 GRAVELLY SAND; 2.5Y4/4 olive brown; 82% sand, 15% gravel, 3% silt; dry at the surface, moist with depth; poorly sorted; sands - 60% MS, 20% CS, 20% others, angular to subangular; gravels - 80% MP, 20% others, rounded; reaction to acid none at surface, weak with increasing depth; 85% quartz, 15% basalt.
		Z04	8.0	4.5 5.0	100				2.0 - 7.0 SANDY GRAVEL; 2.5Y5/2 grayish brown; 54% gravel, 43% sand, <3% silt; poorly sorted;moist; moderate to strong reaction to acid; sands - 80% MS & CS, 20% others, subrounded to subangular; gravels - 70% VCP & CP, 10% MP, 20% others, rounded; 75-85% basalt, 15-25% others; occasional small cobbles; increase in VFS and silt at 7 ft.
380	5								
		Z05	8.0	9.0 10.0	100				7.0 - 13.5 SANDY GRAVEL; 2.5Y5/2 grayish brown; 54% sand, 40% gravel, 6% silt; poorly sorted; slightly moist; moderate to strong reaction to acid; sands - 70% MS & CS, 10% VFS, 20% others, subangular to subrounded; gravels - 60% MP, 20% FP, 20% others, rounded; 85% basalt, 15% others.
375	10								13.5 - 20.0 SANDY GRAVEL; 2.5Y4/2 dark grayish brown; poorly sorted; slightly moist to moist; moderate to strong reaction to acid; 66% sand, 25% gravel, 7% silt; sands - 20% VCS, 15%

GENERAL REMARKS:

All depths are in feet below the existing land surface; elevations are in feet above mean sea level. All sample numbers prefixed with B00-. All samples collected for soil moisture content determination.

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SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
370		Z06	8.0	15.0 16.0	100				CS, 15% MS, 10% VFS, subrounded; gravels - 20% CP & VCP, 5% others, rounded; 95% basalt, 5% others; occasional small cobble. 16.5 - 16.9 ft highly cemented layer; strong reaction to acid; lithified; some iron oxide staining.
		Z07	8.0	19.0 20.0	100	19.0 - 24.4 (8-20)Bentonite crumbles			
365	20	Z08	8.0	20.0 21.0	100				20.0 - 21.2 SANDY GRAVEL; 2.5Y3/2 very dark grayish brown; poorly sorted; very moist; strong reaction to acid; 60% gravel, 37% sand; <3% silt; gravels - 20% VFP, 20% FP & MP, 15% CP, 5% others, subrounded to rounded; sands - 20% VCS, 10% CS, 7% others, subrounded; 95% basalt, 5% others. 21.2 - 26.5 SANDY GRAVEL; 2.5Y4/2 dark grayish brown; poorly sorted; moist; moderate reaction to acid; 55% sand, 40% gravel, <5% silt; sands - 20% VCS, 15% CS, 15% MS, 10% VFS, subrounded; gravels - 20% VCP & CP, 10% MP-VFP, 10% others; rounded; 95% basalt, 5% others.
						24.4 - 27.0 (1/2 inch)Bentonite pellets			
360	25	Z09	8.0	25.0 26.0	100				
						27.0 - 60.0 (10-40)Colorado sand			26.6 - 33.0 SANDY GRAVEL; 2.5Y5/2 grayish brown; poorly sorted; moist; moderate to strong reaction to acid; 45% sand, 50% gravel, <5% silt; sands - 15% VCS, 15% CS, 15% others, subrounded to subangular; gravels - 20% CP, 15% others, rounded; 80% basalt, 20% quartz and feldspars.
355	30					30.0 - 50.4 0.010 slot, continuous wound stainless steel screen			
		Z10	8.0	31.0 32.5	100				
									33.0 - 36.5 SILTY SANDY GRAVEL; 2.5Y4/3 olive brown; poorly sorted; moist; 55% sand, 36% gravel, 9% silt; sands - 20%CS, 15% MS-FS, 10% VCS, 10% VFS, subangular to angular; gravels - 20% MP-CP, 11% FP, 5% others, rounded; 9% non-plastic silt; 60-70% basalt, 30-40% quartz and feldspar.
350	35	Z11	8.0	35.0 36.0	100				
									36.5 - 39.0 SILTY SANDY GRAVEL; 2.5Y4/3 olive brown; poorly sorted; moist; strong to moderater reaction to acid; 40% sand, 50% gravel, 10% silt; sands - 20% MS to CS, 10% VCS, 10% others, angular to subrounded; gravels - 30% VCP to CP, 10% MP to VFP, 10% others, rounded; 70% quartz and feldspar, 30% others, 10% non-plastic silt, <2% mica.
345	40								39.0 - 42.5 SANDY GRAVEL; 2.5YR6/2-2.5Y5/3 light brownish gray to light olive brown; wet; poorly sorted; well graded; no reaction to acid; 50% sand, 47% gravel, 3% silt; sands - 30% MS-CS, 10% VCS, 8% others, <2% mica, angular to subangular; gravels - 30% MP, 10% VFP-FP, 7% others, rounded;

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Site 1100-EM-1 Boring No. MW-22 Desig. MW-22

SCALES ELEV.	SCALES DEPTH	CORE/SAMPLE NO. SYMBOL	CORE/SAMPLE SIZE	CORE/SAMPLE DEPTH RANGE	BLOWS PER FT CORE REC'VY	SAMPLING & CORING OPERATIONS	WELL	MATL	CLASSIFICATION OF MATERIALS
									90% quartz, 10% others;
340	45								42.5 - 48.0 SILTY SANDY GRAVEL; 50% gravel, 40% sand, 10% silt; sands - 5% VCS, 15% CS, 15% MS, 5% FS-VFS, 15% mafic, 30% felsic; gravels - 30% mafic, 70% felsic, 5% mica; 2.5Y5/2 grayish brown; wet; well rounded to subrounded; moderately sorted; slight reaction to acid.
335	50								48.0 - 51.5 SANDY GRAVEL; 30% gravel, 65% sand, 5% silt; 10% VCS, 25% CS, 15% MS, 10% FS, 5% VFS; 85% felsic, 15% mafic; 2.5Y5/2 grayish brown; wet; well rounded to subrounded; moderately sorted; slight reaction to acid.
330	55								51.5 - 58.0 SANDY GRAVEL; 45% gravel, 50% sand, 5% silt; 5% FP, 40% VFP, 5% VCS, 25% CS, 10% MS, 5% FS, 5% VFS; 2.5Y5/3 light olive brown; wet; 85% felsic, 15% mafic; gravels subrounded, sands subangular; poorly sorted; slight reaction to acid.
325	60					60.0 - 63.0 Hole caved			58.0 - 61.1 SILT; ash-like; 95% silt, 5% VFS to MS; <2% mica; 2.5Y7/3 dark pale yellow; very well sorted; tuffaceous 85%, 15% mafics; no reaction to acid.
		Z12	8.0	62.0 63.0	100				61.1 - 63.0 ASH; 90% silt, <10% VFS; 7.5YR8/1 white; wet; very well sorted; non-reactive with acid.
									Bottom of Boring MW-22 @ 63.0 ft.

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1100-EM-1 PHASE II RI
HORN RAPIDS LANDFILL TRENCHING LOGS

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HTW DRILLING LOG

HOLE NO. TRENCH #1

1. COMPANY NAME	CENPW
2. DRILLING SUBCONTRACTOR	WESTINGHOUSE–HANFORD CO.
SHEET	1 OF 2
3. PROJECT	1100–EM–1 OPERABLE UNIT
4. LOCATION	HORN RAPIDS LANDFILL
5. NAME OF DRILLER	C. LARSON / M. FOSS
6. MANUFACTURER'S DESIGNATION OF DRILL	CASE #780 BACKHOE / FMC BACKHOE
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	SAMPLED WITH SPOON FROM BACKHOE BUCKET
8. HOLE LOCATION	N374,282.98, E1,944,459.57
9. SURFACE ELEVATION	N/A
10. DATE STARTED	SEPT 1991
11. DATE COMPLETED	22 OCT 1991
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER/ELAPSED TIME AFTER DRILLING	N/A
14. TOTAL DEPTH OF HOLE	11.0 FEET
17. OTHER WATER LEVEL MEASUREMENTS	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
	0	0	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER SCREENING	OTHER	OTHER	21. TOTAL CORE RECOVERY
	2	0	4			N/A %

22. DISPOSITION OF HOLE	BACKFILLED	MONITOR. WELL	OTHER	23. INSPECTOR
	22 OCT 1991			V. M. JOHNSON, WHC / J. A. MCBANE, CENPW

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYITCAL SAMPLE NUMBER f	REMARKS g
		0–11 FEET				
		SANDY GRAVEL: sand 43%, gravel 52%, silt 5%; 10YR 6/2, light brownish gray; poorly sorted; sands subangular, gravels rounded to subrounded; 55% felsic, 45% mafic; no reaction to acid.				
	1					
		0.5–11 feet: Abundant stainless steel lathe shavings, piping, cable, tires, and coke bottles.				
	2	2 feet: paint can and paint residue.				Paint can and paint residue drummed.
	3		HRL0101			Screening – negative
	4				B00T0	Chemical sample
	5					
	6		HRL0102			Screening – negative

FORM MRK JUN 89 55

PROJECT 1100–EM–1 HORN RAPIDS LANDFILL

HOLE NO. TRENCH #1

9312820644

HTW DRILLING LOG

HOLE NO. TRENCH #1

PROJECT: 1100–EM–1 O.U. – HORN RAPIDS LANDFILL

INSPECTOR: V. M. JOHNSON / J. A. MCBANE

SHEET 2 OF 2

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYTICAL SAMPLE NUMBER f	REMARKS g
	6	SOIL, as above.	HRL0102			Screening – negative
		6–10 feet: Tires, one rusted drum with no visible contents; labelled "certified".				
	7	7 feet: Cloth, rags, coffee can, fiberglas insulation.				
	8					
		8.5 feet: Solidified paint residue, OVM reading of 262ppm, suspect asbestos, scrap metal.				Paint residue drummed.
	9		HRL0103			Screening – negative
					B00T1	Chemical sample
	10					
	11		HRL0104			Screening – negative
		Approx. 320 cubic yards excavated.				
		Approx. Landfill Composition:				
		soil – 90%				
		debris – 10%				

FORM MRK JUN 89 55–2

PROJECT: 1100–EM–1 HORN RAPIDS LANDFILL

HOLE NUMBER: TRENCH #1

9312862045

HTW DRILLING LOG

HOLE NO. TRENCH #3A

1. COMPANY NAME	CENPW
2. DRILLING SUBCONTRACTOR	WESTINGHOUSE–HANFORD CO.
SHEET	1 OF 3
3. PROJECT	1100–EM–1 OPERABLE UNIT
4. LOCATION	HORN RAPIDS LANDFILL
5. NAME OF DRILLER	M. FOSS
6. MANUFACTURER'S DESIGNATION OF DRILL	FMC BACKHOE #HO–17–5669
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	SAMPLED WITH SPOON FROM BACKHOE BUCKET
8. HOLE LOCATION	N374,095.74, E1,944,557.45
9. SURFACE ELEVATION	N/A
10. DATE STARTED	23 OCT 1991
11. DATE COMPLETED	24 OCT 1991
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER/ELAPSED TIME AFTER DRILLING	N/A
14. TOTAL DEPTH OF HOLE	21.0 FEET
17. OTHER WATER LEVEL MEASUREMENTS	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
	0	0	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER SCREENING	OTHER ASBESTOS	OTHER UNKNOWNS	21. TOTAL CORE RECOVERY
	4	0	5	2	2	N/A %

22. DISPOSITION OF HOLE	BACKFILLED	MONITOR. WELL	OTHER	23. INSPECTOR
	23 OCT 1991			J. A. MCBANE, CENPW

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYITCAL SAMPLE NUMBER f	REMARKS g
		0–13 FEET SANDY GRAVEL: sand 40%, gravel 55%, silt <5%; 10YR 4/2, light gray; dry; poorly sorted; sands subangular to angular, gravels rounded to subangular; 60% basalt, 40% quartzite, feldspars and others; reaction to acid – slight to none. 1.5 feet: layer of stainless steel lathe shavings, slopes downward approx. 5 degrees toward the west.				
	1					
	2					
	3	3–5 feet: accumulation of tires, inner tubes, and misc. automotive debris including mufflers and lengths of tail pipe.	HRL3A01			Screening – negative Mufflers/tailpipe possible GPR targets.
	4					
	5		HRL3A02			Screening – negative
		5.5 feet: Empty 5–gallon paint can; 0.0 ppm with OVM screening			B00ZT7	Chemical sample
	6					

FORM MRK JUN 89 55

PROJECT 1100–EM–1 HORN RAPIDS LANDFILL

HOLE NO. TRENCH #3A

9312820646

HTW DRILLING LOG

HOLE NO. TRENCH #3A

PROJECT: 1100-EM-1 O.U. - HORN RAPIDS LANDFILL

INSPECTOR: J. A. MCBANE

SHEET 2 OF 3

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYTICAL SAMPLE NUMBER f	REMARKS g
	6	6 feet: Encountered white crystaline material partially wrapped in plastic bag, sample obtained.				
	7	7 feet: Flat lying fragment of sheet metal, approx. 1/16 inch thick and 4 feet long by 3 feet wide.				Sheet metal possible GPR target.
	8	8-10 feet: Abundant tires and inner tubes.	HRL3A03 HRL3A04			White crystaline material Screening - negative
	9					
	10	10 feet: Another bag of white crystaline material. Substance enclosed in a plastic lined paper bag. Pocket of bright purple stained soil. Suspect asbestos.	HRL3A05 HRL3A06		 B00ZT8	Purple stained soil Asbestos sample Chemical sample
	11	11-13 feet: very scattered stainless steel lathe shavings.				
	12					
	13	13 - 21 FEET SAND; 100% med to coarse sand; 10YR 7/1 light gray; moist; very well sorted; angular to subangular; 90% quartzite and feldspar, 10% mica; no reaction to acid.	HRL3A07			Screening - negative
	14	No debris below 13 feet depth.				
	15					
	16		HRL3A08			Screening - negative

FORM MRK JUN 89 55-2

PROJECT: 1100-EM-1 HORN RAPIDS LANDFILL

HOLE NUMBER: TRENCH #3A

9312352064 7

HTW DRILLING LOG

HOLE NO. TRENCH #3A

PROJECT: 1100-EM-1 O.U. - HORN RAPIDS LANDFILL

INSPECTOR: J. A. MCBANE

SHEET 3 OF 3

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYTICAL SAMPLE NUMBER f	REMARKS g
	16	SOIL, as above - no debris.	HRL3A08			Screening - negative
	17					
	18					
	19		HRL3A09			Asbestos sample
					B00ZT9	Chemical sample
	20					
					B00ZV0	Chemical sample
	21					
		Approx. 108 cubic yards excavated.				
		Approx. Landfill Composition:				
		soil - 97%				
		debris - 3%				

FORM MRK JUN 89 55-2

PROJECT: 1100-EM-1 HORN RAPIDS LANDFILL

HOLE NUMBER: TRENCH #3A

9312320648

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HTW DRILLING LOG

HOLE NO. TRENCH #3B

1. COMPANY NAME	CENPW
2. DRILLING SUBCONTRACTOR	WESTINGHOUSE–HANFORD CO.
SHEET	1 OF 2
3. PROJECT	1100–EM–1 OPERABLE UNIT
4. LOCATION	HORN RAPIDS LANDFILL
5. NAME OF DRILLER	C. LARSON / M. FOSS
6. MANUFACTURER'S DESIGNATION OF DRILL	CASE 780/FMC BACKHOE #HO–17–5669
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	SAMPLED WITH SPOON FROM BACKHOE BUCKET
8. HOLE LOCATION	N374,095.74, E1,944,546.81
9. SURFACE ELEVATION	N/A
10. DATE STARTED	18 SEPT 1991
11. DATE COMPLETED	23 OCT 1991
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER/ELAPSED TIME AFTER DRILLING	N/A
14. TOTAL DEPTH OF HOLE	8.0 FEET
17. OTHER WATER LEVEL MEASUREMENTS	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
	0	0	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER SCREENING	OTHER ASBESTOS	OTHER	21. TOTAL CORE RECOVERY
	3	0	2	1		N/A %

22. DISPOSITION OF HOLE	BACKFILLED	MONITOR. WELL	OTHER	23. INSPECTOR
	23 OCT 1991			V. M. JOHNSON, WHC / J. A. MCBANE, CENPW

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYITCAL SAMPLE NUMBER f	REMARKS g
		0–8 FEET				
		SANDY GRAVEL: sand 52%, gravel 44%, silt 4%; 10YR 4/2, light gray; dry; poorly to very poorly sorted; sands subangular, gravels rounded to subrounded; 60% mafic, 40% felsic; no reaction to acid. Scattered boulders 3 feet max. diameter.				
	1					
	2	2–3 feet: Accumulation of tires and inner tubes.				
	3	3–4 feet: Accumulation of stainless steel lathe shavings and building flashing. Sheetrock still attached to flashing in places.	HRL3B01			Screening – negative
	4					
		4.5 feet: Unlabeled, rusted 5 gallon paint can. No contents observed. 0.0 ppm with OVM.				
	5	5–6 feet: Accumulation of tires and inner tubes.				
			HRL3B02			Screening – negative
	6		HRL3B03			Asbestos sample

FORM MRK JUN 89 55

PROJECT 1100–EM–1 HORN RAPIDS LANDFILL

HOLE NO. TRENCH #3B

9312820649

HTW DRILLING LOG

HOLE NO. TRENCH #3B

PROJECT: 1100-EM-1 O.U. - HORN RAPIDS LANDFILL

INSPECTOR: V. M. JOHNSON / J. A. MCBANE

SHEET 2 OF 2

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYITCAL SAMPLE NUMBER f	REMARKS g
	6	SOIL as above; debris amount and character as above.	HRL3B02 HRL3B03			Screening - negative Asbestos sample
						Appears that GPR returns caused by metal flashing and ss shavings.
	7				B00ZT3 B00ZT4 B00ZT5	Chemical sample Duplicate Split
	8					
		Approx. 19 cubic yards excavated. Approx. Landfill Composition: soil - 97% debris - 3%				ss - stainless steel

FORM MRK JUN 89 55-2

PROJECT: 1100-EM-1 HORN RAPIDS LANDFILL

HOLE NUMBER: TRENCH #3B

9312862065 0

HTW DRILLING LOG

HOLE NO. TRENCH #4/5

1. COMPANY NAME CENPW	2. DRILLING SUBCONTRACTOR WESTINGHOUSE–HANFORD CO.	SHEET 1 OF 2
3. PROJECT 1100–EM–1 OPERABLE UNIT	4. LOCATION HORN RAPIDS LANDFILL	
5. NAME OF DRILLER C. LARSON	6. MANUFACTURER'S DESIGNATION OF DRILL FMC BACKHOE #HO–17–5669	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT SAMPLED WITH SPOON FROM BACKHOE BUCKET	8. HOLE LOCATION N374,068.09, E1,944,459.57	
	9. SURFACE ELEVATION N/A	
	10. DATE STARTED 25 OCT 1991	11. DATE COMPLETED 25 OCT 1991
12. OVERBURDEN THICKNESS N/A	15. DEPTH GROUNDWATER ENCOUNTERED N/A	
13. DEPTH DRILLED INTO ROCK N/A	16. DEPTH TO WATER/ELAPSED TIME AFTER DRILLING N/A	
14. TOTAL DEPTH OF HOLE 12.0 FEET	17. OTHER WATER LEVEL MEASUREMENTS N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
	0	0	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER	OTHER	OTHER	21. TOTAL CORE RECOVERY
			SCREENING			
	2	0	2			N/A %

22. DISPOSITION OF HOLE	BACKFILLED	MONITOR. WELL	OTHER	23. INSPECTOR
	25 OCT 1991			J. A. MCBANE, CENPW

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYTICAL SAMPLE NUMBER f	REMARKS g
		0–0.5 FEET				
		SILTY SANDY GRAVEL; 60% gravel, 35% sand (fine to med), 5% silt; 10YR 7/3 very pale brown; dry; very poorly sorted; gravels rounded to subrounded, sands angular; 65% basalt, 35% others; no reaction to acid.				
	1					
		0.5–12 FEET				
		SANDY GRAVEL; 55% gravel, 45% sand (med to coarse), <3% silt; 10YR 6/1 gray; dry; poorly sorted; gravels rounded to subrounded, sands angular to subangular; 70% basalt, 30% others; no reaction to acid; rare cobbles and boulders to 14 inch max. diameter.				
	2					
	3		HRL4/501			Screening – negative
	4	No debris observed above 5 feet depth.				
					B00ZV1	Chemical sample
	5	5 feet: 3–1/2 foot long wooden 4x4 embedded in a concrete mass.				
	6	6 feet: Tires, tail pipe, 12 in. dia. gear wheel.				Possible GPR targets.

FORM MRK JUN 89 55

PROJECT 1100–EM–1 HORN RAPIDS LANDFILL

HOLE NO. TRENCH #4/5

HTW DRILLING LOG

HOLE NO. TRENCH #4/5

PROJECT: 1100-EM-1 O.U. – HORN RAPIDS LANDFILL

INSPECTOR: J. A. MCBANE

SHEET 2 OF 2

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYTICAL SAMPLE NUMBER f	REMARKS g
	6	6 feet: Tires, tail pipe, 12 in. dia. gear wheel.				Possible GPR targets.
		SOIL as above.				
	7		HRL4/502			Screening – negative
	8	8 feet: Tires (5 or 6), long pieces (5–6 feet) of flat lying metal building flashing.				Possible GPR targets.
	9	9 feet: Large piece of sheet metal (4x4 feet) exposed in eastern wall. Approx. 1/32 in. thick. Flat lying relative to ground surface.				Possible GPR target.
	10	10 feet: Rotted timbers in trench sidewalls. Little observed in trench floor.				
	11	11 feet: Rotted timbers, metal flashing strips, fiberglas insulation, street drain grate, copper wire pieces.			B00ZV2	Chemical sample
	12					
		Approx. 90 cubic yards excavated.				
		Approx. Landfill Composition:				
		soil – 99.5%				
		debris – 0.5%				

FORM MRK JUN 89 55-2

PROJECT: 1100-EM-1 HORN RAPIDS LANDFILL

HOLE NUMBER: TRENCH #4/5

9312362065 2

HTW DRILLING LOG

HOLE NO. TRENCH #6

1. COMPANY NAME	CENPW
2. DRILLING SUBCONTRACTOR	WESTINGHOUSE–HANFORD CO.
SHEET	1 OF 2
3. PROJECT	1100–EM–1 OPERABLE UNIT
4. LOCATION	HORN RAPIDS LANDFILL
5. NAME OF DRILLER	M. FOSS
6. MANUFACTURER'S DESIGNATION OF DRILL	FMC BACKHOE #HO–17–5669
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	SAMPLED WITH SPOON FROM BACKHOE BUCKET
8. HOLE LOCATION	N374,006.38, E1,944,448.94
9. SURFACE ELEVATION	N/A
10. DATE STARTED	28 OCT 1991
11. DATE COMPLETED	30 OCT 1991
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER/ELAPSED TIME AFTER DRILLING	N/A
14. TOTAL DEPTH OF HOLE	6.5 FEET
17. OTHER WATER LEVEL MEASUREMENTS	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
	0	0	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER SCREENING	OTHER	OTHER	21. TOTAL CORE RECOVERY
	0	0	0			N/A %

22. DISPOSITION OF HOLE	BACKFILLED	MONITOR. WELL	OTHER	23. INSPECTOR
	30 OCT 1991			J. A. MCBANE, CENPW

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYTICAL SAMPLE NUMBER f	REMARKS g
		0–6.5 FEET				
		SANDY GRAVEL; gravel 65%, sand (med to coarse) 35%, silt <2%; 10YR 6/1 gray; dry; poorly sorted; gravels rounded to				
	1	subrounded, sands angular to subangular; 70% basalt, 30% others; no reaction to acid.				
		1.5 feet: Sheet of 1/8 in. rubber approx. 3x4 ft., misc. #8 rebar lengths, fragments of 1/4–1/2 in. dia. steel cable, metal flashing,				
	2	plasterboard, and wood.	HRL0601			Screening sample
		2 feet: Flat lying piece of approx. 1/16 in. thick by 2 foot square sheet metal. Flat lying relative to the ground surface.				Possible GPR target.
	3					
	4	4–6.5 feet: Wood debris mixed with rufuse previously described.				
			HRL0602			Screening sample
	5		HRL0603			Asbestos sample
					B00ZB3*	Chemical sample
	6	6 feet: Scattered tires.				

9312820653

HTW DRILLING LOG

HOLE NO. TRENCH #6

PROJECT: 1100-EM-1 O.U. - HORN RAPIDS LANDFILL

INSPECTOR: J. A. MCBANE

SHEET 2 OF 2

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYTICAL SAMPLE NUMBER f	REMARKS g
	6	SOIL as above, debris as above.				
		6.5 feet: Suspect asbestos, medical waste.	HRL0604			Asbestos sample
		Trench terminated at 6.5 feet due to unknown hazards associated with medical debris. Approx. 30-40 medical vials containing a milky-white liquid plus one plastic IV bag were uncovered. All samples collected were placed within an ice chest and reburied in the trench.				
	7					
		HRL0000 - Sample obtained and subsequently reburied.				
		B00ZB3* - Chemical sample was reburied and sample number was reused for next trench.				
		Approx. 20 cubic yards excavated.				
		Approx. Landfill Composition:				
		soil - 95%				
		debris - 5%				

FORM MRK JUN 89 55-2

PROJECT: 1100-EM-1 HORN RAPIDS LANDFILL

HOLE NUMBER: TRENCH #6

9312362065 4

HTW DRILLING LOG

HOLE NO. TRENCH #7

1. COMPANY NAME	CENPW
2. DRILLING SUBCONTRACTOR	WESTINGHOUSE–HANFORD CO.
SHEET	1 OF 1
3. PROJECT	1100–EM–1 OPERABLE UNIT
4. LOCATION	HORN RAPIDS LANDFILL
5. NAME OF DRILLER	C. LARSON / M. FOSS
6. MANUFACTURER'S DESIGNATION OF DRILL	CASE #780 BACKHOE / FMC BACKHOE
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	SAMPLED WITH SPOON FROM BACKHOE BUCKET
8. HOLE LOCATION	N373,863.83, E1,944,461.70
9. SURFACE ELEVATION	N/A
10. DATE STARTED	17 SEPT 1991
11. DATE COMPLETED	17 OCT 1991
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER/ELAPSED TIME AFTER DRILLING	N/A
14. TOTAL DEPTH OF HOLE	6.0 FEET
17. OTHER WATER LEVEL MEASUREMENTS	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
	0	0	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER	OTHER	OTHER	21. TOTAL CORE RECOVERY
	1	0	SCREENING 3			N/A %

22. DISPOSITION OF HOLE	BACKFILLED	MONITOR. WELL	OTHER	23. INSPECTOR
	17 OCT 1991			V. M. JOHNSON, WHC / J. A. MCBANE, CENPW

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYITCAL SAMPLE NUMBER f	REMARKS g
		0–6 FEET				
		SANDY GRAVEL: sand 52%, gravel 43%, silt 5%; 10YR 6/2 light brownish gray; dry; poorly to very poorly sorted; sand subangular, gravel subrounded to rounded; 60% mafics, 40% felsics (gravel); no reaction to acid.				
	1					
		Debris consists of intermixed glass bottles, black tile, metal flashing strips, plasterboard fragments, roofing paper, crushed culverts, rebar, and rotten building timbers.	HRL0701			Screening – negative Crushed culverts and flashing strips likely GPR targets.
	2					
		SOIL and debris uniform throughout excavation.	HRL0702			Screening – negative
	3					
	4					
					B00ZT2	Chemical sample
			HRL0703			Screening – negative
	5					
		Approx. 50 cubic yards excavated.				
		Approx. Landfill Composition: soil – 85% debris – 15%				
	6					

FORM MRK JUN 89 55

PROJECT 1100–EM–1 HORN RAPIDS LANDFILL

HOLE NO. TRENCH #7

9312820655

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HTW DRILLING LOG

HOLE NO. TRENCH #8

1. COMPANY NAME	CENPW
2. DRILLING SUBCONTRACTOR	WESTINGHOUSE–HANFORD CO.
SHEET	1 OF 1
3. PROJECT	1100–EM–1 OPERABLE UNIT
4. LOCATION	HORN RAPIDS LANDFILL
5. NAME OF DRILLER	M. FOSS
6. MANUFACTURER'S DESIGNATION OF DRILL	FMC BACKHOE #HO–17–5669
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	SAMPLED WITH SPOON FROM BACKHOE BUCKET
8. HOLE LOCATION	N374,127.66, E1,944,223.40
9. SURFACE ELEVATION	N/A
10. DATE STARTED	30 OCT 1991
11. DATE COMPLETED	30 OCT 1991
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER/ELAPSED TIME AFTER DRILLING	N/A
14. TOTAL DEPTH OF HOLE	5.0 FEET
17. OTHER WATER LEVEL MEASUREMENTS	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
	0	0	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER SCREENING	OTHER ASBESTOS	OTHER	21. TOTAL CORE RECOVERY
	1	0	1	1		N/A %

22. DISPOSITION OF HOLE	BACKFILLED	MONITOR. WELL	OTHER	23. INSPECTOR
	30 OCT 1991			J. A. MCBANE, CENPW

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYTICAL SAMPLE NUMBER f	REMARKS g
		0–5 FEET				
		SANDY GRAVEL: sand 30%, gravel 65%, silt <5%; 10YR 7/1 light gray; dry; poorly sorted; sand angular to subangular, gravel subrounded to rounded; 60% basalt, 40% others; no reaction to acid.				
	1					
	2	No debris above 3 feet depth.				
	3	3 feet: A single tire and misc. rotten wood debris.				
			HRL0801 HRL0802			Screening –negative Asbestos sample
	4	4–5 feet: pieces of electrical wire, short lengths of 1/4 in. dia. steel cable.				
		5 feet: Sheet metal (1/16"x2'x3'), suspect asbestos, sponge fragments, copper rod.			B00ZV3	Chemical sample Sheet metal possible GPR target.
	5					
		Approx. 5 cubic yards excavated. Approx. Landfill Composition: soil – 98% debris – 2%				
	6					

FORM MRK JUN 89 55

PROJECT 1100–EM–1 HORN RAPIDS LANDFILL

HOLE NO. TRENCH #8

9312820656

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HTW DRILLING LOG

HOLE NO. TRENCH #11

1. COMPANY NAME	CENPW
2. DRILLING SUBCONTRACTOR	WESTINGHOUSE–HANFORD CO.
SHEET	1
OF	1
3. PROJECT	1100–EM–1 OPERABLE UNIT
4. LOCATION	HORN RAPIDS LANDFILL
5. NAME OF DRILLER	C. LARSON
6. MANUFACTURER'S DESIGNATION OF DRILL	CASE 780 BACKHOE #HO–62–5531
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	SAMPLED WITH SPOON FROM BACKHOE BUCKET
8. HOLE LOCATION	N374,985.11, E1,944,689.36
9. SURFACE ELEVATION	N/A
10. DATE STARTED	20 SEPT 1991
11. DATE COMPLETED	20 SEPT 1991
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER/ELAPSED TIME AFTER DRILLING	N/A
14. TOTAL DEPTH OF HOLE	5.0 FEET
17. OTHER WATER LEVEL MEASUREMENTS	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
	0	0	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER	OTHER	OTHER	21. TOTAL CORE RECOVERY
	1					N/A %

22. DISPOSITION OF HOLE	BACKFILLED	MONITOR. WELL	OTHER	23. INSPECTOR
	20 SEPT '91			V. M. JOHNSON, WHC

ELEV. (ft) a	DEPTH (ft) b	DESCRIPTION OF MATERIALS c	FIELD SCREENING NUMBER d	GEOTECH SAMPLE NUMBER e	ANALYTICAL SAMPLE NUMBER f	REMARKS g
	1	0–5 FEET SANDY GRAVEL: sand 54%, gravel 40%, silt 6%; 10YR 6/2 light brownish gray; dry; moderately to poorly sorted; gravel subrounded to rounded; 70% mafics, 30% felsics; no reaction to acid.				
	2	0–2.5 feet: debris consists of coke bottles, large amount of wood, cigarette butts, 3–ft. pocket of light gray to black ash, wire, plastic bags, and minor amounts of metal.				
	3	2.5–5 feet: Large amount of metal, wood, rebar, and fragments of asphalt.				
	4				B00ZS9	Chemical sample
	5					
	6	Approx. 30 cubic yards excavated.				

FORM MRK JUN 89 55

PROJECT 1100–EM–1 HORN RAPIDS LANDFILL

HOLE NO. TRENCH #11

9312320657

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APPENDIX B

GROUNDWATER SURFACE MAPS AND AQUIFER PROPERTIES

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9 3 1 2 8 3 5 2 0 6 5 9

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9 3 1 2 3 6 2 0 6 6 1

TABLE B-1: LITERATURE SURVEY COMPILATION (1 of 2)

Vadose Zone

Reference Document	Ave. Annual Precip (cm/yr)	Precipitation Range (cm/yr) max	Precipitation Range (cm/yr) min	Water % Retained by Capilarity max	Water % Retained by Capilarity min	Annual Infiltration (inches/yr) max	Annual Infiltration (inches/yr) min	Annual Evapotranspiration (inches) Pan	Annual Evapotranspiration (inches) Lake	Annual Evapotranspiration (inches) Potential	Annual Evapotranspiration (inches) Actual	Kv (cm/sec) Bulk Sample high	Kv (cm/sec) Bulk Sample low	Kv (cm/sec) <2mm size high	Kv (cm/sec) <2mm size low
1	16	8	28	4	5										
2	16	8	28			1.97	3.94								
3															
4															
5												1.10E-02	3.40E-04	1.40E-02	4.20E-05
6															
7						0	4	55	40	29	7				
8						0	4.33								
9															
10						0	4.5								
11															
12															
Average	16.00	8.00	28.00	4.00	5.00	0.49	4.19	55.00	40.00	29.00	7.00	1.10E-02	3.40E-04	1.40E-02	4.20E-05
Max	16.00	8.00	28.00	4.00	5.00	1.97	4.50	55.00	40.00	29.00	7.00	1.10E-02	3.40E-04	1.40E-02	4.20E-05
Min	16.00	8.00	28.00	4.00	5.00	0.00	3.94	55.00	40.00	29.00	7.00	1.10E-02	3.40E-04	1.40E-02	4.20E-05
Std Dev	0.00	0.00	0.00	0.00	0.00	0.85	0.23	0.00	0.00	0.00	0.00	2.71E-11	ERR	1.12E-10	3.17E-13

1. Soil Moisture Transport in Arid Site Vadose Zones
ARH-2983
Oct 1974

2. Arid Site Water Balance: Evapotranspiration Modeling and Measurements
PNL-5177
September 1984

3. A Study of Soil-Water Potential and Temperature in Hanford Soils
BNWL-1712
1973

4. Natural Groundwater Recharge and Water Balance at the Hanford Site
PNL-7215
January 1990

5. Moisture and Textural Variations in Unsaturated Soils/Sediments Near the Hanford Wye Barricade
PNL-5377
March 1985

6. RI/FS Work PLan for the 300-FF-5 Operable Unit, Hanford Site, Richland Washington
DOE/RL 89-14
June 1990

TABLE B-1: LITERATURE SURVEY COMPILATION (2 of 2)

7. RI/FS Work PLan for the 300-FF-1 Operable Unit, Hanford Site, Richland Washington
   DOE/RL 88-31
   June 1990

8. Phase I RI Report for the Hanford Site 1100-EM-1 Operable Unit
   DOE/RL 90-18
   August 1990

9. Geology and Ground Water Characteristics of the Hanford Reservation of the US Atomic Energy Commission, Washington
   USGS Professional Paper 717
   1972

10. Geology and Hydrology of the Hanford Site: A Standardized Text for use in WHC Documents and Reports
    15 February 1991

11. Groundwater Quality and Flow Characteristics in the Vicinity of Exxon Nuclear Company, Inc. Fuel Fabrication Facility, Richland Washington
    JUB-82-86
    October 1982

12. Geology and Hydrology of the 300 Area and Vicinity, Hanford Site, South-Central Washington
    WHC-EP-0500
    October 1991

TABLE B-2: LITERATURE SURVEY COMPILATION (1 of 2)

Unconfined Aquifer

Reference Document	Seepage Discharge To Columbia River (cf/sec)	Transmissivity (sq ft/day) Hanford fm. low	Hanford fm. high	Ringold fm. low	Ringold fm. high	(g/d/ft) Average	flow velocity (ft/yr) max	min	Hanford Effective Porosity	Ringold Effective Porosity	K (g/day/sq ft) Along Flow Path	Perpendicular To Flow Path	Average	Hydraulic Conductivity (ft/d) Hanford fm. low	Hanford fm. high	Ringold fm. low	Ringold fm. high
1																	
2																	
3																	
4																	
5																	
6	3.00	40,000.00	200,000.00	10,000.00	1,000,000.00									11,000.000	50,000.000	1.900	10,000.000
7		40,000.00	200,000.00	10,000.00	1,000,000.00					0.11				11,000.000	50,000.000	1.900	10,000.000
8														100.000	1,000.000	0.003	5.000
																10.000	1,000.000
9									0.22	0.11							
10														2,000.000	10,000.000	610.000	3,050.000
11						77,567.00	170	56			4728	3029	3900				
12																	
Average	3.00E+00	4.00E+04	2.00E+05	1.00E+04	1.00E+06	7.76E+04	1.70E+02	5.60E+01	2.20E-01	1.10E-01	4.73E+03	3.03E+03	3.90E+03	6.03E+03	2.78E+04	1.25E+02	4.81E+03
Min	3.00E+00	4.00E+04	2.00E+05	1.00E+04	1.00E+06	7.76E+04	1.70E+02	5.60E+01	2.20E-01	1.10E-01	4.73E+03	3.03E+03	3.90E+03	1.00E+02	1.00E+03	3.00E-03	5.00E+00
Max	3.00E+00	4.00E+04	2.00E+05	1.00E+04	1.00E+06	7.76E+04	1.70E+02	5.60E+01	2.20E-01	1.10E-01	4.73E+03	3.03E+03	3.90E+03	1.10E+04	5.00E+04	6.10E+02	1.00E+04
Std Dev	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ERR	ERR	0.00E+00	0.00E+00	0.00E+00	5.02E+03	2.25E+04	2.43E+02	4.35E+03

Reference Document	Storage Coefficient Hanford fm. low	Hanford fm. high	Slug Test Hydraulic Conductivity (ft/d) Hanford fm. low	Hanford fm. high	Ringold fm. low	Ringold fm. high	Pump Test Hydraulic Conductivity (ft/d) Richland Well Field
1							
2							
3							
4							
5							
6							
7	0.03	0.20					
8			3.00	140.00	0.20	113.00	1500.00
9							
10							
11							
12							
Average	3.00E-02	2.00E-01	3.00E+00	1.40E+02	2.00E-01	1.13E+02	1.50E+03
Min	3.00E-02	2.00E-01	3.00E+00	1.40E+02	2.00E-01	1.13E+02	1.50E+03
Max	3.00E-02	2.00E-01	3.00E+00	1.40E+02	2.00E-01	1.13E+02	1.50E+03
Std Dev	2.05E-10	1.82E-09	0.00E+00	0.00E+00	1.82E-09	0.00E+00	0.00E+00

TABLE B-2: LITERATURE SURVEY COMPILATION (2 of 2)

1. Soil Moisture Transport in Arid Site Vadose Zones
   ARH-2983
   Oct 1974

2. Arid Site Water Balance: Evapotranspiration Modeling and Measurements
   PNL-5177
   September 1984

3. A Study of Soil-Water Potential and Temperature in Hanford Soils
   BNWL-1712
   1973

4. Natural Groundwater Recharge and Water Balance at the Hanford Site
   PNL-7215
   January 1990

5. Moisture and Textural Variations in Unsaturated Soils/Sediments Near the Hanford Wye Barricade
   PNL-5377
   March 1985

6. RI/FS Work PLan for the 300-FF-5 Operable Unit, Hanford Site, Richland Washington
   DOE/RL 89-14
   June 1990

7. RI/FS Work PLan for the 300-FF-1 Operable Unit, Hanford Site, Richland Washington
   DOE/RL 88-31
   June 1990

8. Phase I RI Report for the Hanford Site 1100-EM-1 Operable Unit
   DOE/RL 90-18
   August 1990

9. Geology and Ground Water Characteristics of the Hanford Reservation of the US Atomic Energy Commission, Washington
   USGS Professional Paper 717
   1972

10. Geology and Hydrology of the Hanford Site: A Standardized Text for use in WHC Documents and Reports
    15 February 1991

11. Groundwater Quality and Flow Characteristics in the Vicinity of Exxon Nuclear Company, Inc. Fuel Fabrication Facility, Richland Washington
    JUB-82-86
    October 1982

12. Geology and Hydrology of the 300 Area and Vicinity, Hanford Site, South-Central Washington
    WHC-EP-0500
    October 1991

TABLE B-3: LITERATURE SURVEY COMPILATION (1 of 2)

M1 Silt Aquitard

Reference Document	Vertical Hydraulic Conductivity ft/day high	low
1		
2		
3		
4		
5		
6		
7		
8		
9		
10	1.00E-01	8.00E-04
11		
12		
Average	1.00E-01	8.00E-04
Min	1.00E-01	8.00E-04
Max	1.00E-01	8.00E-04
Std Dev	9.12E-10	9.12E-10

1. Soil Moisture Transport in Arid Site Vadose Zones
   ARH-2983
   Oct 1974

2. Arid Site Water Balance: Evapotranspiration Modeling and Measurements
   PNL-5177
   September 1984

3. A Study of Soil-Water Potential and Temperature in Hanford Soils
   BNWL-1712
   1973

4. Natural Groundwater Recharge and Water Balance at the Hanford Site
   PNL-7215
   January 1990

TABLE B-3: LITERATURE SURVEY COMPILATION (2 of 2)

5. Moisture and Textural Variations in Unsaturated Soils/Sediments Near the Hanford Wye Barricade
   PNL-5377
   March 1985

6. RI/FS Work PLan for the 300-FF-5 Operable Unit, Hanford Site, Richland Washington
   DOE/RL 89-14
   June 1990

7. RI/FS Work PLan for the 300-FF-1 Operable Unit, Hanford Site, Richland Washington
   DOE/RL 88-31
   June 1990

8. Phase I RI Report for the Hanford Site 1100-EM-1 Operable Unit
   DOE/RL 90-18
   August 1990

9. Geology and Ground Water Characteristics of the Hanford Reservation of the US Atomic Energy Commission, Washington
   USGS Professional Paper 717
   1972

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    15 February 1991

11. Groundwater Quality and Flow Characteristics in the Vicinity of Exxon Nuclear Company, Inc. Fuel Fabrication Facility, Richland Washington
    JUB-82-86
    October 1982

12. Geology and Hydrology of the 300 Area and Vicinity, Hanford Site, South-Central Washington
    WHC-EP-0500
    October 1991

TABLE B-4: LITERATURE SURVEY COMPILATION (1 of 2)

Confined Aquifer

Reference Document	Transmissivity Ringold fm. (sq ft/day) low	high	Hydraulic Conductivity (ft/day) low	high	average	Storage Coefficient low	high	average
1								
2								
3								
4								
5								
6								8.00E-03
7	8.00E+00	2.00E+02				2.00E-04	5.00E-02	
8					5.00E+00	1.00E+00	1.00E+02	
					3.00E-01	1.00E-01	1.00E+00	
9								3.00E-02
								2.00E-01
								2.00E-04
10			3.00E-03	5.00E+00				
11								
12								
Average	8.00E+00	2.00E+02	3.00E-03	5.00E+00	2.65E+00	3.67E-01	3.37E+01	5.96E-02
Min	8.00E+00	2.00E+02	3.00E-03	5.00E+00	3.00E-01	2.00E-04	5.00E-02	2.00E-04
Max	8.00E+00	2.00E+02	3.00E-03	5.00E+00	5.00E+00	1.00E+00	1.00E+02	2.00E-01
Std Dev	0.00E+00	0.00E+00	ERR	0.00E+00	2.35E+00	4.50E-01	4.69E+01	8.18E-02

1. Soil Moisture Transport in Arid Site Vadose Zones
ARH-2983
Oct 1974

2. Arid Site Water Balance: Evapotranspiration Modeling and Measurements
PNL-5177
September 1984

3. A Study of Soil-Water Potential and Temperature in Hanford Soils
BNWL-1712
1973

TABLE B–4: LITERATURE SURVEY COMPILATION (2 of 2)

4. Natural Groundwater Recharge and Water Balance at the Hanford Site
PNL–7215
January 1990

5. Moisture and Textural Variations in Unsaturated Soils/Sediments Near the Hanford Wye Barricade
PNL–5377
March 1985

6. RI/FS Work PLan for the 300–FF–5 Operable Unit, Hanford Site, Richland Washington
DOE/RL 89–14
June 1990

7. RI/FS Work PLan for the 300–FF–1 Operable Unit, Hanford Site, Richland Washington
DOE/RL 88–31
June 1990

8. Phase I RI Report for the Hanford Site 1100–EM–1 Operable Unit
DOE/RL 90–18
August 1990

9. Geology and Ground Water Characteristics of the Hanford Reservation of the US Atomic Energy Commission, Washington
USGS Professional Paper 717
1972

10. Geology and Hydrology of the Hanford Site: A Standardized Text for use in WHC Documents and Reports
15 February 1991

11. Groundwater Quality and Flow Characteristics in the Vicinity of Exxon Nuclear Company, Inc. Fuel Fabrication Facility, Richland Washington
JUB–82–86
October 1982

12. Geology and Hydrology of the 300 Area and Vicinity, Hanford Site, South–Central Washington
WHC–EP–0500
October 1991

TABLE B-5: LITERATURE SURVEY COMPILATION (1 of 2)

M3 Silt

Reference Document	Hydraulic Head Difference Basalt vs. Soil Aquifers (feet) low	high	Hydraulic Conductivity (cm/sec)	Specific Yield
1				
2				
3				
4				
5				
6	20.00	35.00		
7				
8			1.00E-06	
9				
10			3.53E-07	
11				
12				2.51E-01
				2.08E-01
				2.45E-01
Average	20.00	35.00	6.77E-07	2.35E-01
Min	20.00	35.00	3.53E-07	2.08E-01
Max	20.00	35.00	1.00E-06	2.51E-01
Std Dev	0.00E+00	0.00E+00	3.24E-07	1.90E-02

1. Soil Moisture Transport in Arid Site Vadose Zones
ARH-2983
Oct 1974

2. Arid Site Water Balance: Evapotranspiration Modeling and Measurements
PNL-5177
September 1984

3. A Study of Soil-Water Potential and Temperature in Hanford Soils
BNWL-1712
1973

4. Natural Groundwater Recharge and Water Balance at the Hanford Site
PNL-7215
January 1990

TABLE B–5: LITERATURE SURVEY COMPILATION (2 of 2)

5. Moisture and Textural Variations in Unsaturated Soils/Sediments Near the Hanford Wye Barricade
PNL–5377
March 1985

6. RI/FS Work PLan for the 300–FF–5 Operable Unit, Hanford Site, Richland Washington
DOE/RL 89–14
June 1990

7. RI/FS Work PLan for the 300–FF–1 Operable Unit, Hanford Site, Richland Washington
DOE/RL 88–31
June 1990

8. Phase I RI Report for the Hanford Site 1100–EM–1 Operable Unit
DOE/RL 90–18
August 1990

9. Geology and Ground Water Characteristics of the Hanford Reservation of the US Atomic Energy Commission, Washington
USGS Professional Paper 717
1972

10. Geology and Hydrology of the Hanford Site: A Standardized Text for use in WHC Documents and Reports
15 February 1991

11. Groundwater Quality and Flow Characteristics in the Vicinity of Exxon Nuclear Company, Inc. Fuel Fabrication Facility, Richland Washington
JUB–82–86
October 1982

12. Geology and Hydrology of the 300 Area and Vicinity, Hanford Site, South–Central Washington
WHC–EP–0500
October 1991

TABLE B-6: LITERATURE SURVEY COMPILATION (1 of 2)

Upper Basalt Aquifer

Reference Document	Transmissivity (sq ft/day) Low	Transmissivity (sq ft/day) High	Hydraulic Conductivities (ft/day) Low	Hydraulic Conductivities (ft/day) High	Specific Storage (ft) Low	Specific Storage (ft) High
1						
2						
3						
4						
5						
6	125.00	1300.00	6.00	260.00	1.00E-06	1.00E-08
	0.01	1000.00			1.60E+00	2.00E+02
7						
8						
9						
10						
11						
12						
Average	62.51	1150.00	6.00	260.00	8.00E-01	1.00E+02
Min	0.01	1000.00	6.00	260.00	1.00E-06	1.00E-08
Max	125.00	1300.00	6.00	260.00	1.60E+00	2.00E+02
Std Dev	62.50	150.00	0.00	0.00	8.00E-01	1.00E+02

1. Soil Moisture Transport in Arid Site Vadose Zones
ARH-2983
Oct 1974

2. Arid Site Water Balance: Evapotranspiration Modeling and Measurements
PNL-5177
September 1984

3. A Study of Soil-Water Potential and Temperature in Hanford Soils
BNWL-1712
1973

4. Natural Groundwater Recharge and Water Balance at the Hanford Site
PNL-7215
January 1990

TABLE B–6: LITERATURE SURVEY COMPILATION (2 of 2)

5. Moisture and Textural Variations in Unsaturated Soils/Sediments Near the Hanford Wye Barricade
PNL–5377
March 1985

6. RI/FS Work PLan for the 300–FF–5 Operable Unit, Hanford Site, Richland Washington
DOE/RL 89–14
June 1990

7. RI/FS Work PLan for the 300–FF–1 Operable Unit, Hanford Site, Richland Washington
DOE/RL 88–31
June 1990

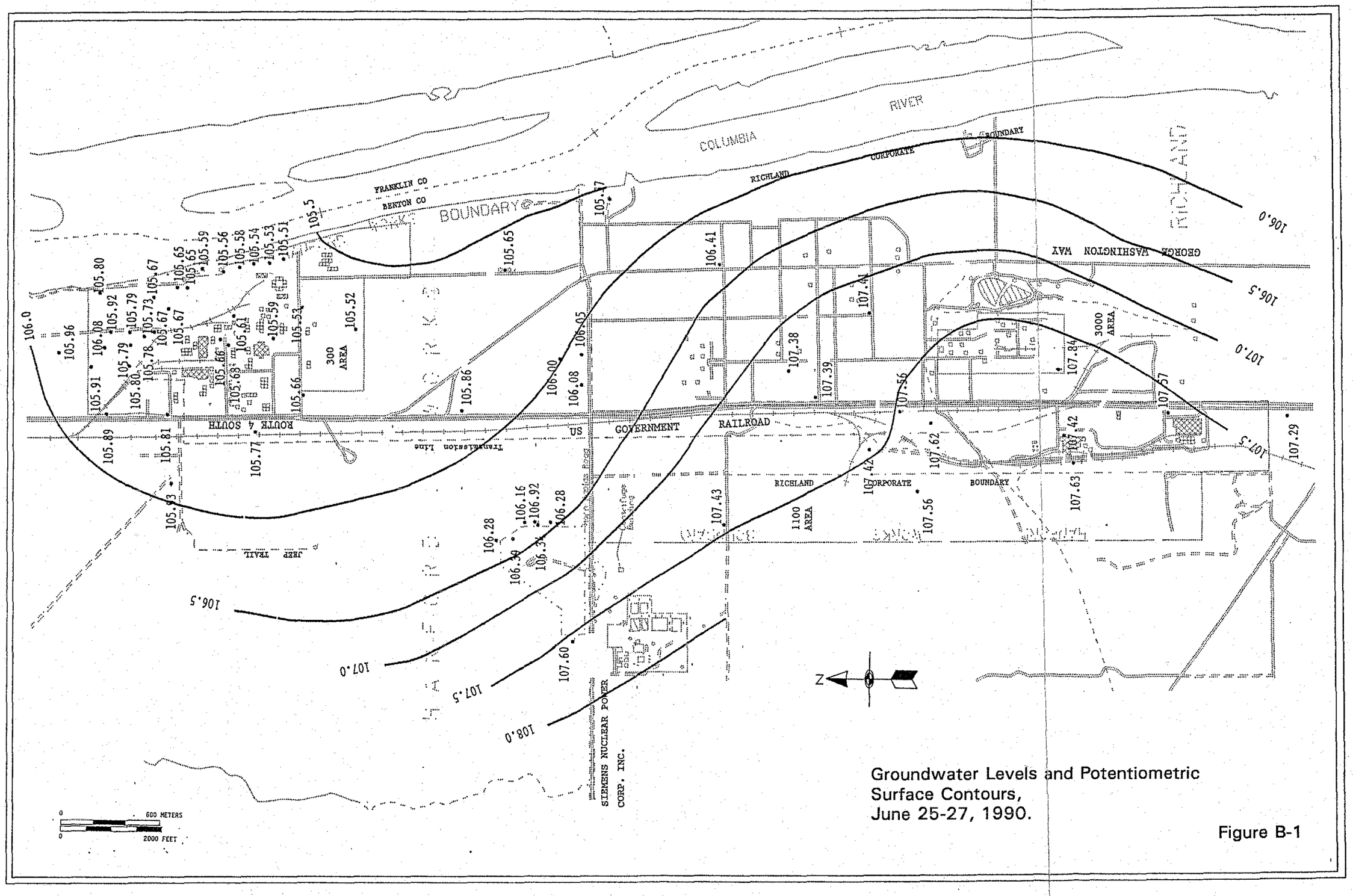
8. Phase I RI Report for the Hanford Site 1100–EM–1 Operable Unit
DOE/RL 90–18
August 1990

9. Geology and Ground Water Characteristics of the Hanford Reservation of the US Atomic Energy Commission, Washington
USGS Professional Paper 717
1972

10. Geology and Hydrology of the Hanford Site: A Standardized Text for use in WHC Documents and Reports
15 February 1991

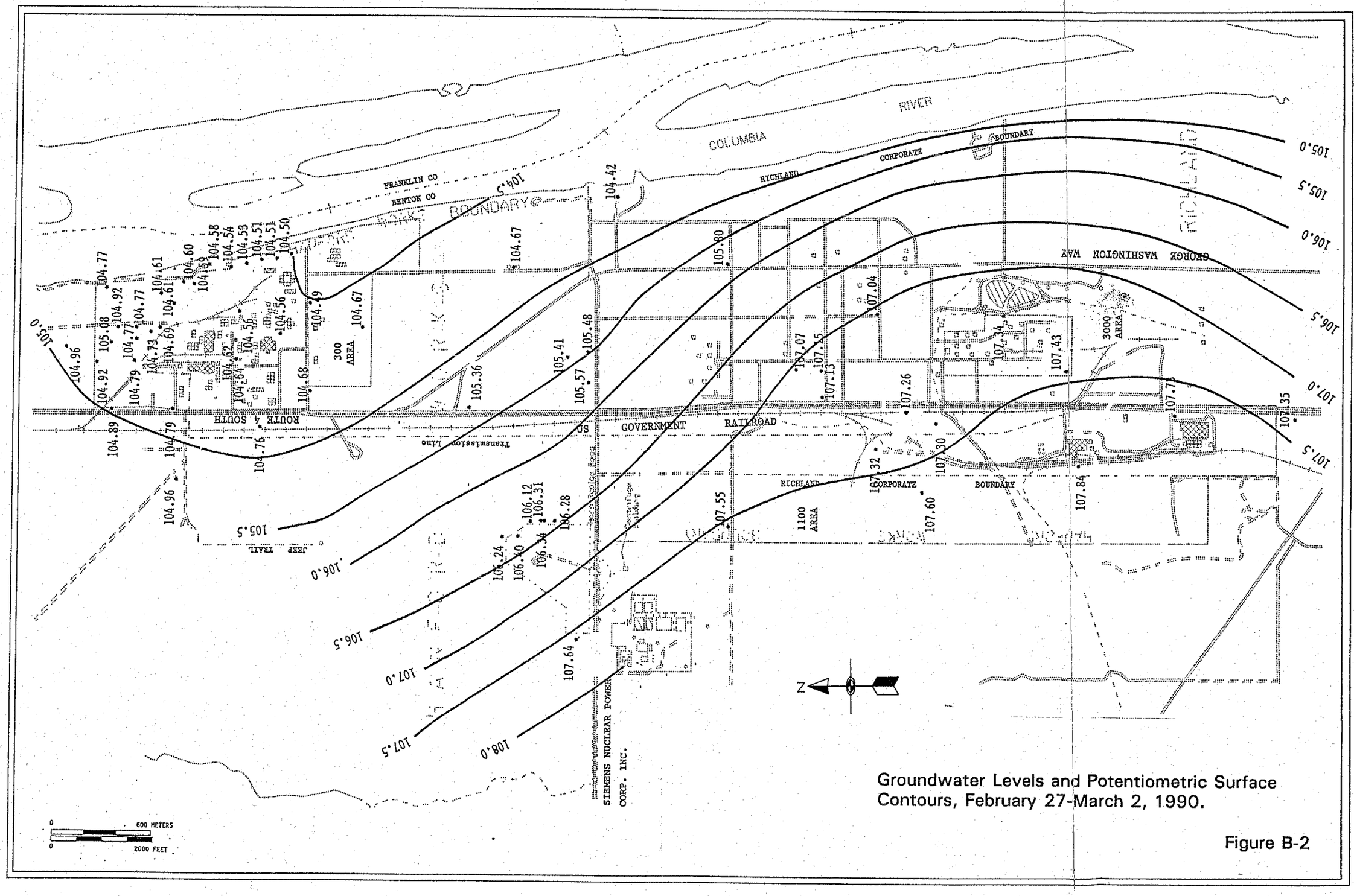
11. Groundwater Quality and Flow Characteristics in the Vicinity of Exxon Nuclear Company, Inc. Fuel Fabrication Facility, Richland Washington
JUB–82–86
October 1982

12. Geology and Hydrology of the 300 Area and Vicinity, Hanford Site, South–Central Washington
WHC–EP–0500
October 1991



Groundwater Levels and Potentiometric Surface Contours, June 25-27, 1990.

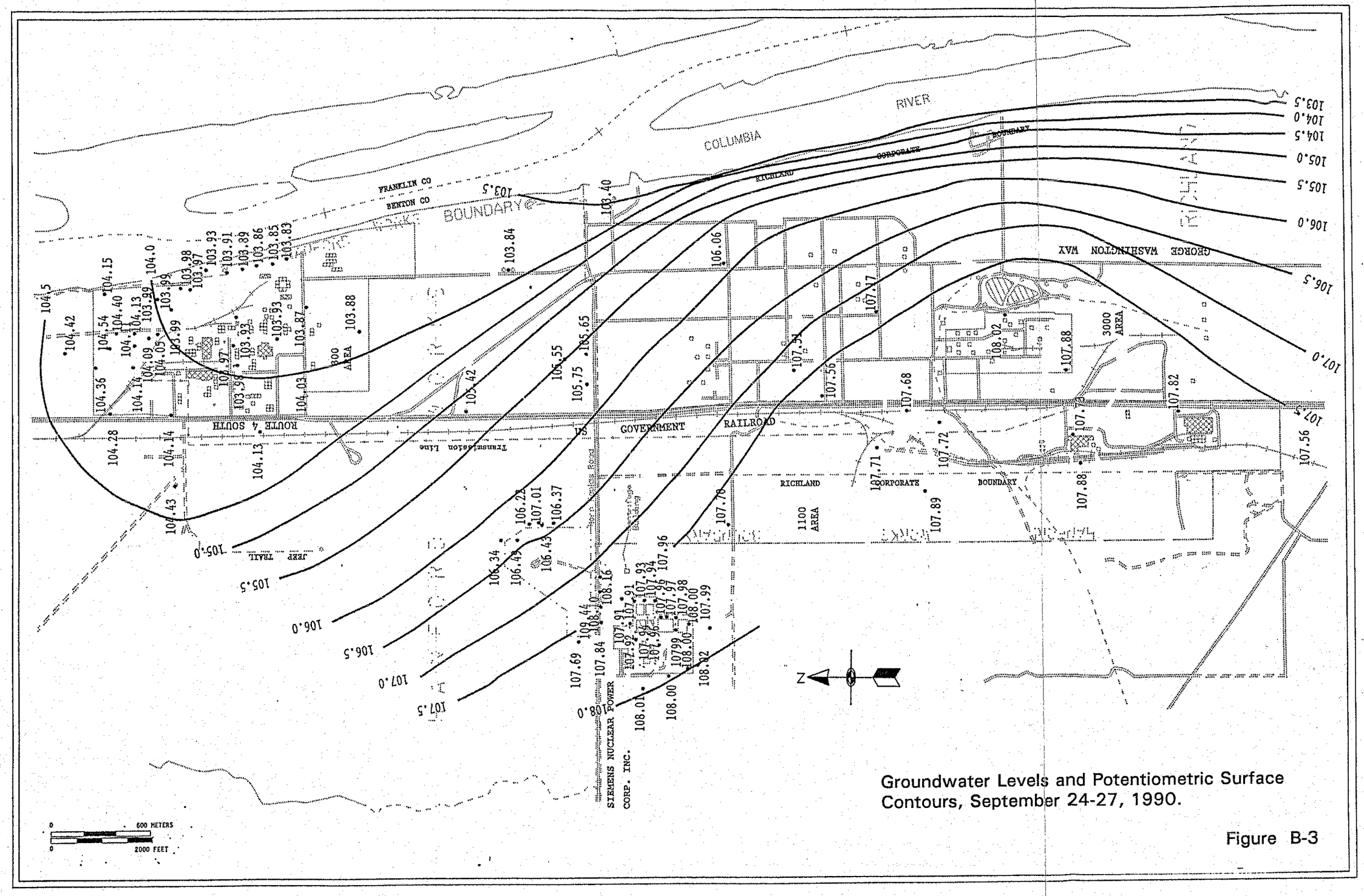
Figure B-1



Groundwater Levels and Potentiometric Surface Contours, February 27-March 2, 1990.

Figure B-2

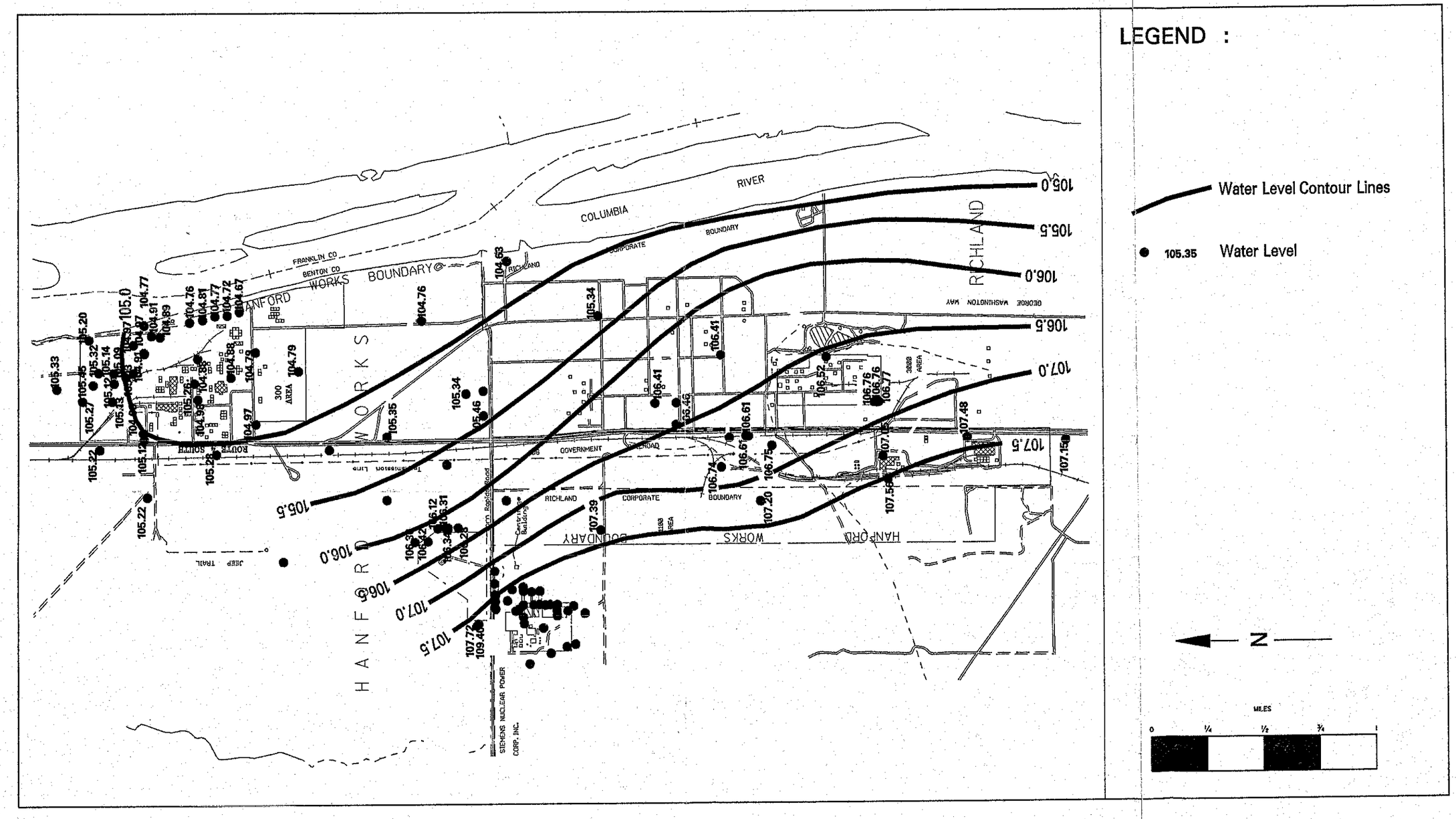
9 3 1 2 8 2 0 6 7 5



Groundwater Levels and Potentiometric Surface Contours, September 24-27, 1990.

Figure B-3

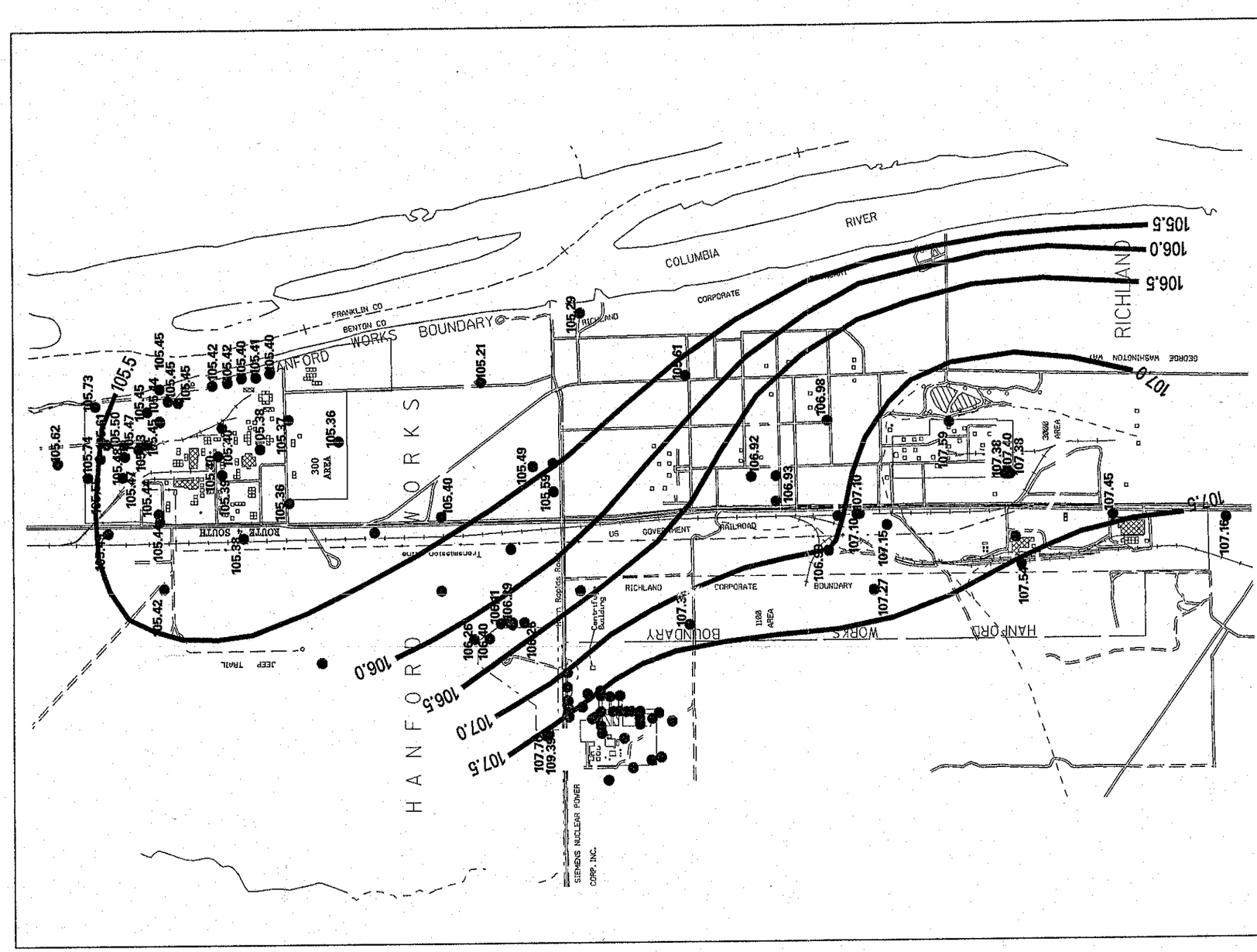
9 3 1 2 8 2 0 6 7 6



Groundwater Potentiometric Surface
for the Unconfined Aquifer– March 91

Fig. B–4

9 3 1 2 8 1 2 0 0 7 7



LEGEND :

Water Level Contour Lines

● 105.35 Water Level

N

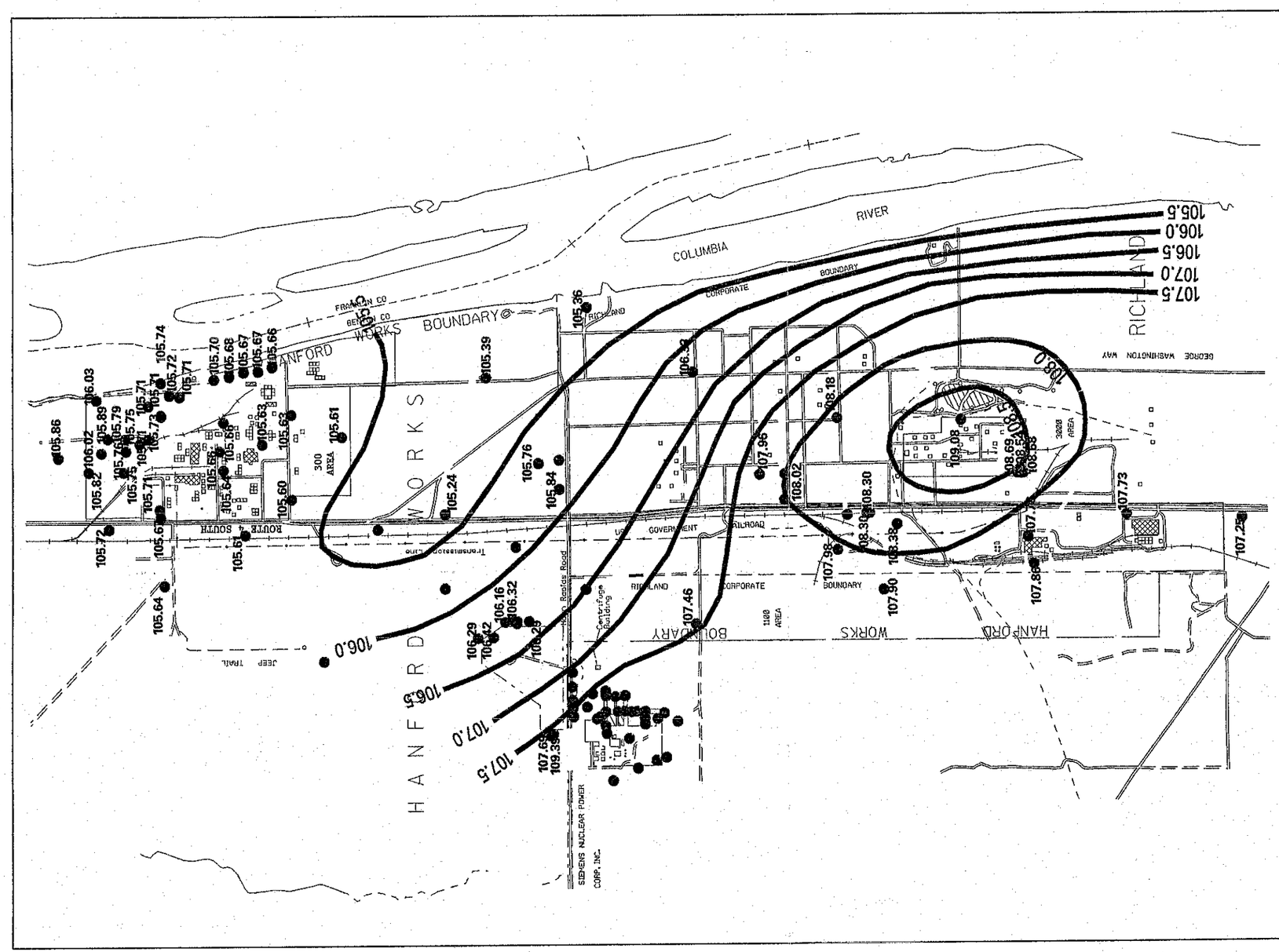
MILES

0 ¼ ½ ¾ 1

Groundwater Potentiometric Surface
for the Unconfined Aquifer– April 91

Fig. B-5

9 3 1 2 8 8 2 0 6 7 8



LEGEND :

Water Level Contour Lines

105.35 Water Level

N

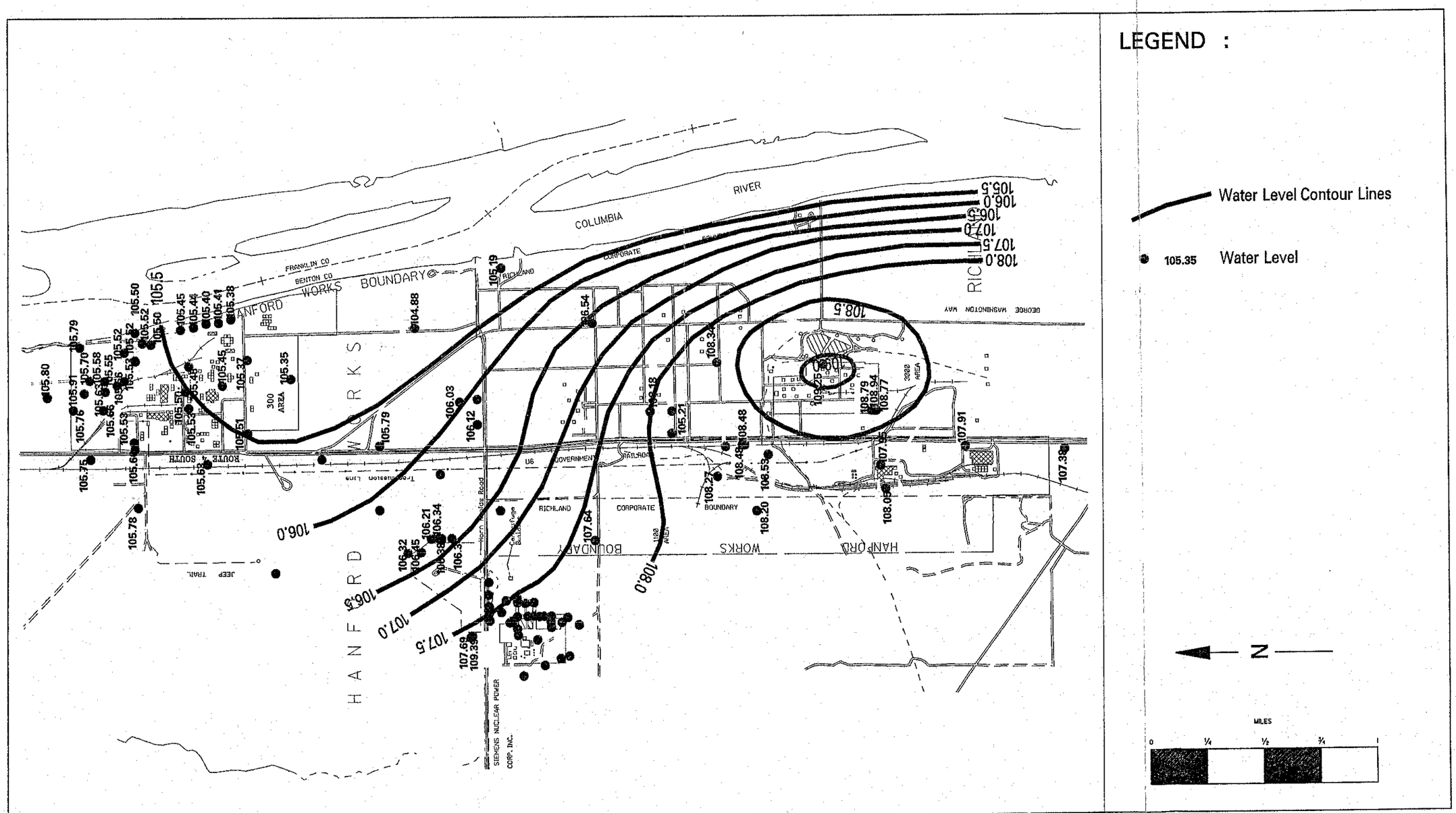
MILES

0 ¼ ½ ¾ 1

Groundwater Potentiometric Surface
for the Unconfined Aquifer– May 91

Fig. B–6

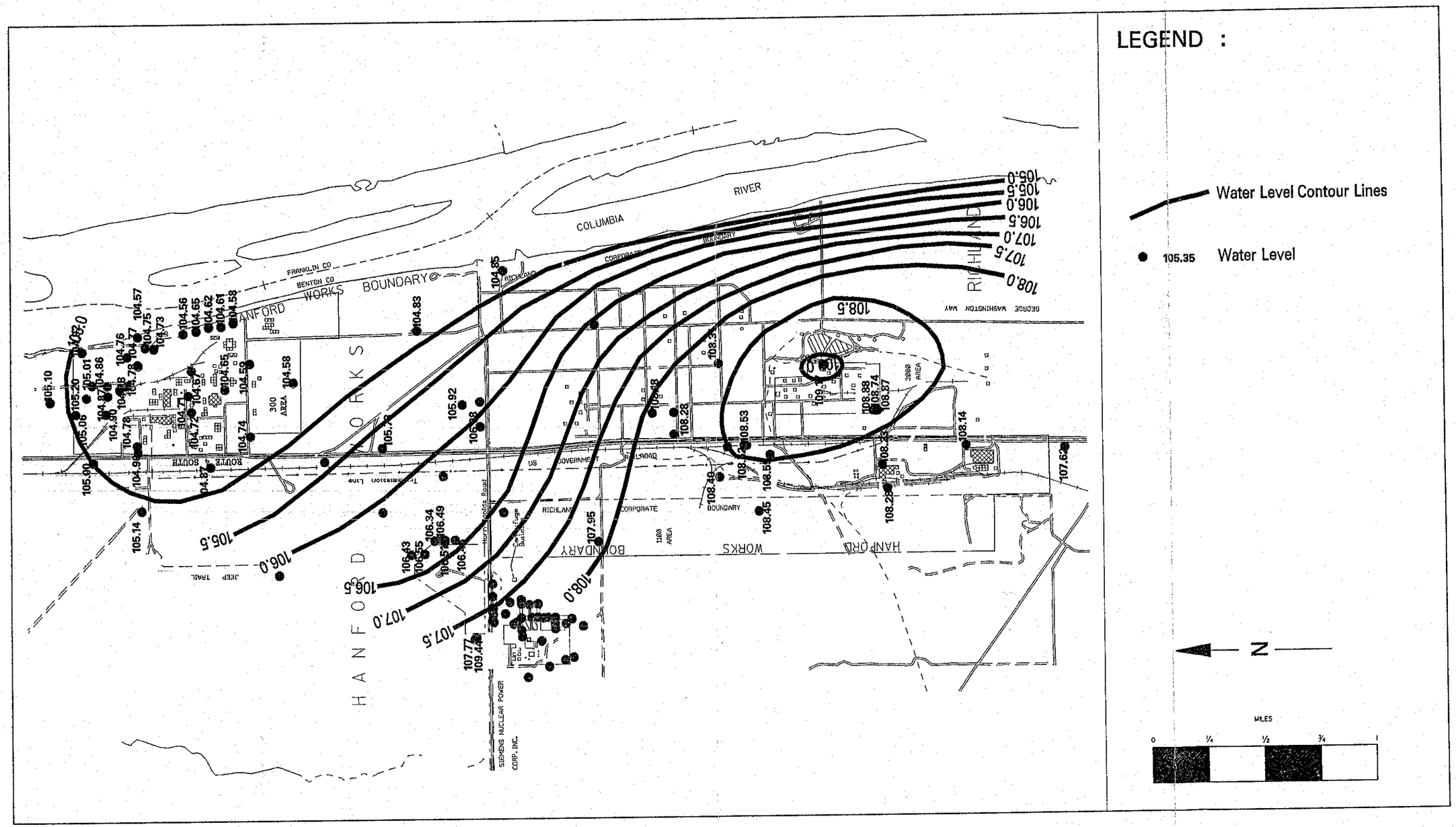
9 3 1 2 8 2 0 6 7 9



Groundwater Potentiometric Surface
for the Unconfined Aquifer–June 91

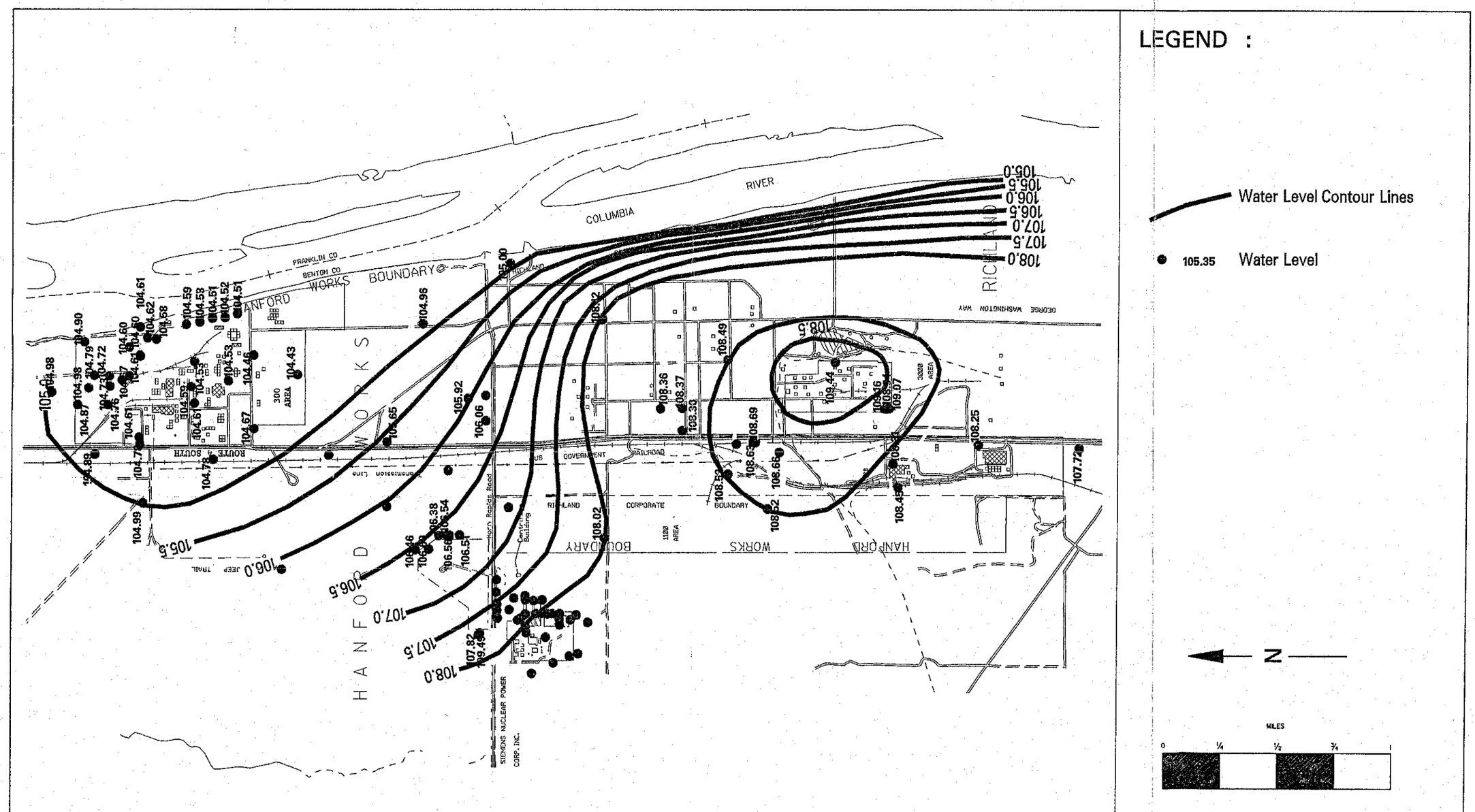
Fig. B-7

9 3 1 2 8 0 2 0 6 8 0



Groundwater Potentiometric Surface
for the Unconfined Aquifer–July 91

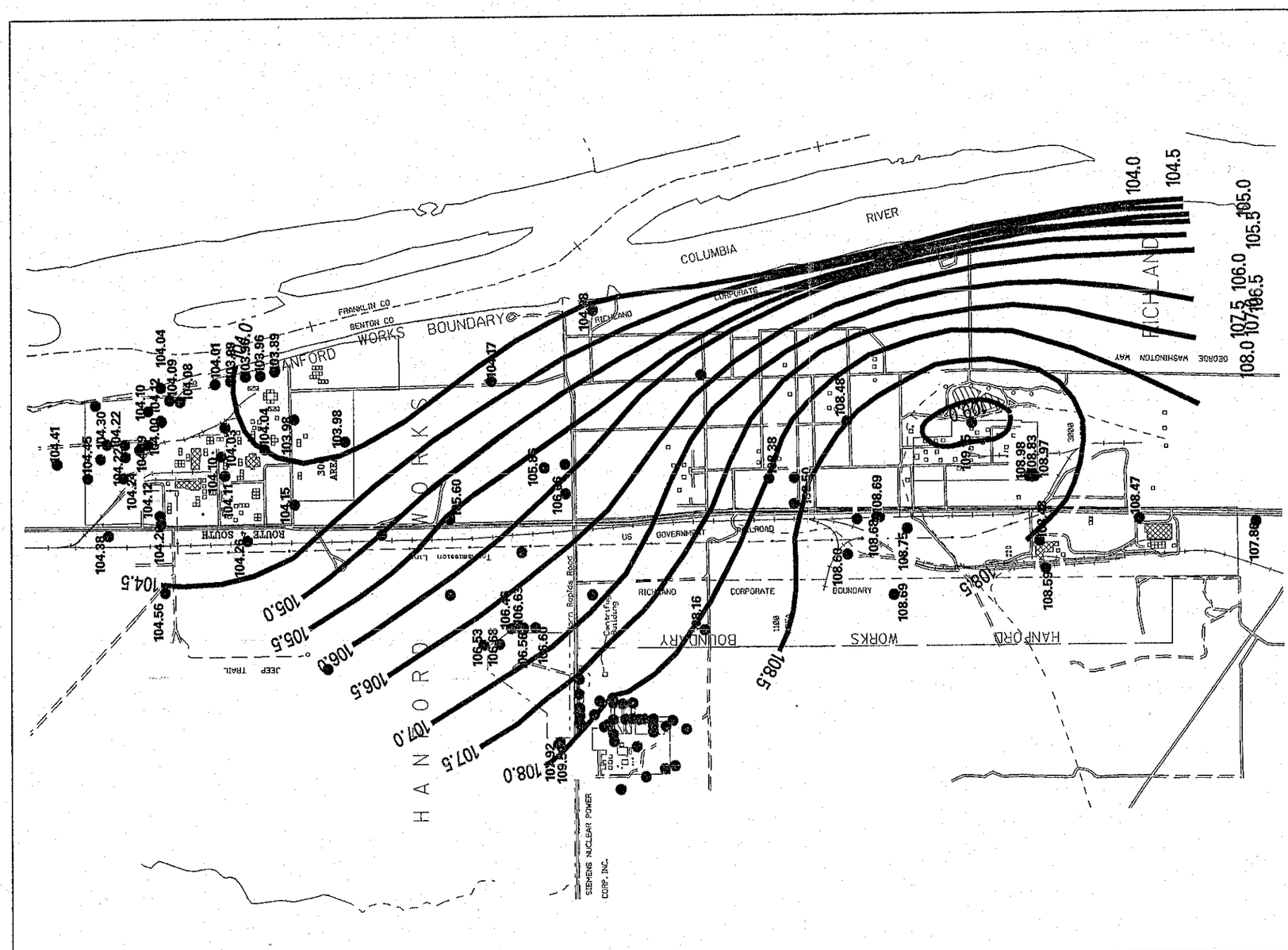
Fig. B–8



Groundwater Potentiometric Surface
for the Unconfined Aquifer–August 91

Fig. B–9

9 3 1 2 8 1 2 0 6 8 2



LEGEND :

Water Level Contour Lines

105.35 Water Level

N

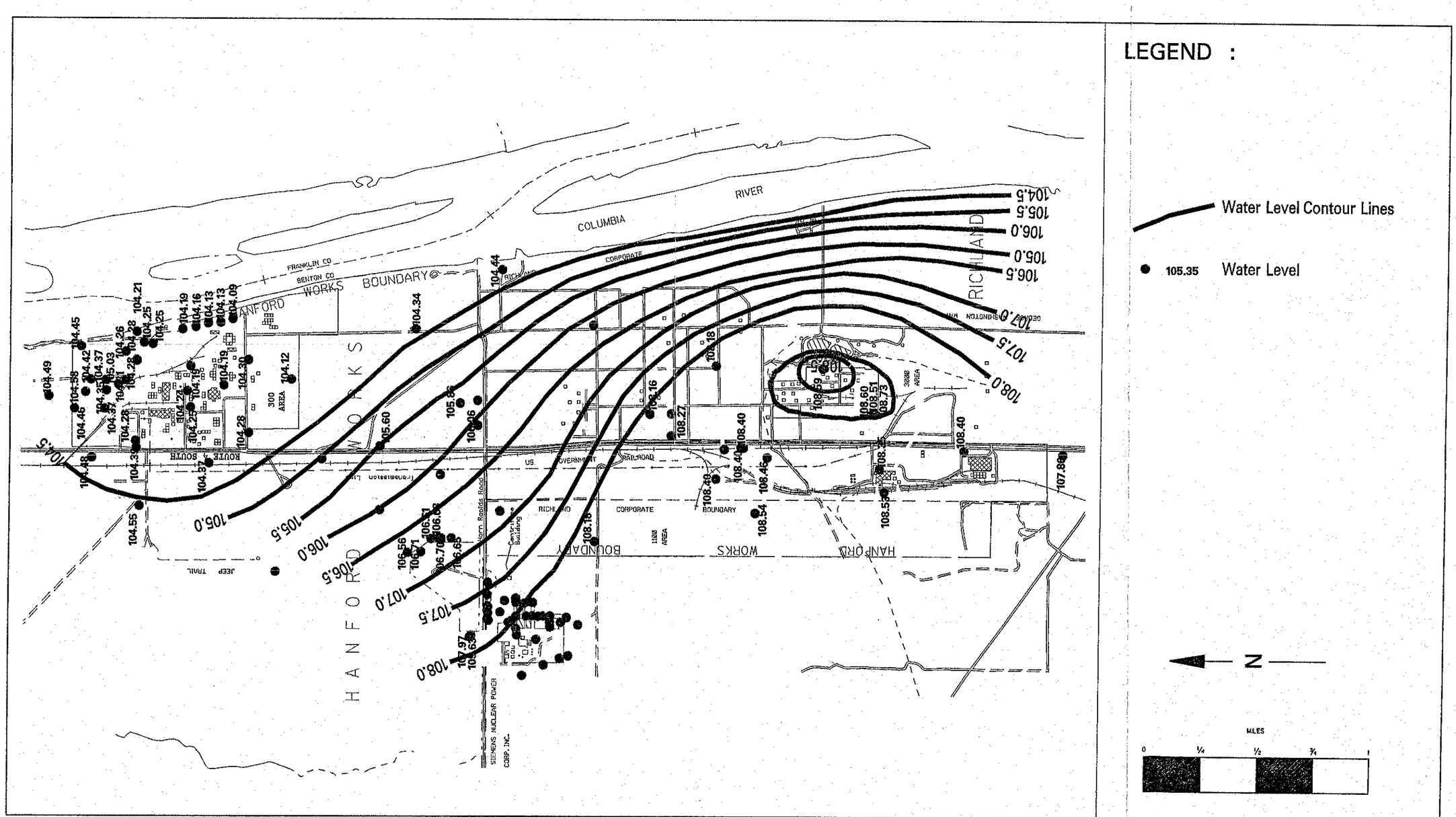
MILES

0 ¼ ½ ¾ 1

Groundwater Potentiometric Surface
for the Unconfined Aquifer– September 91

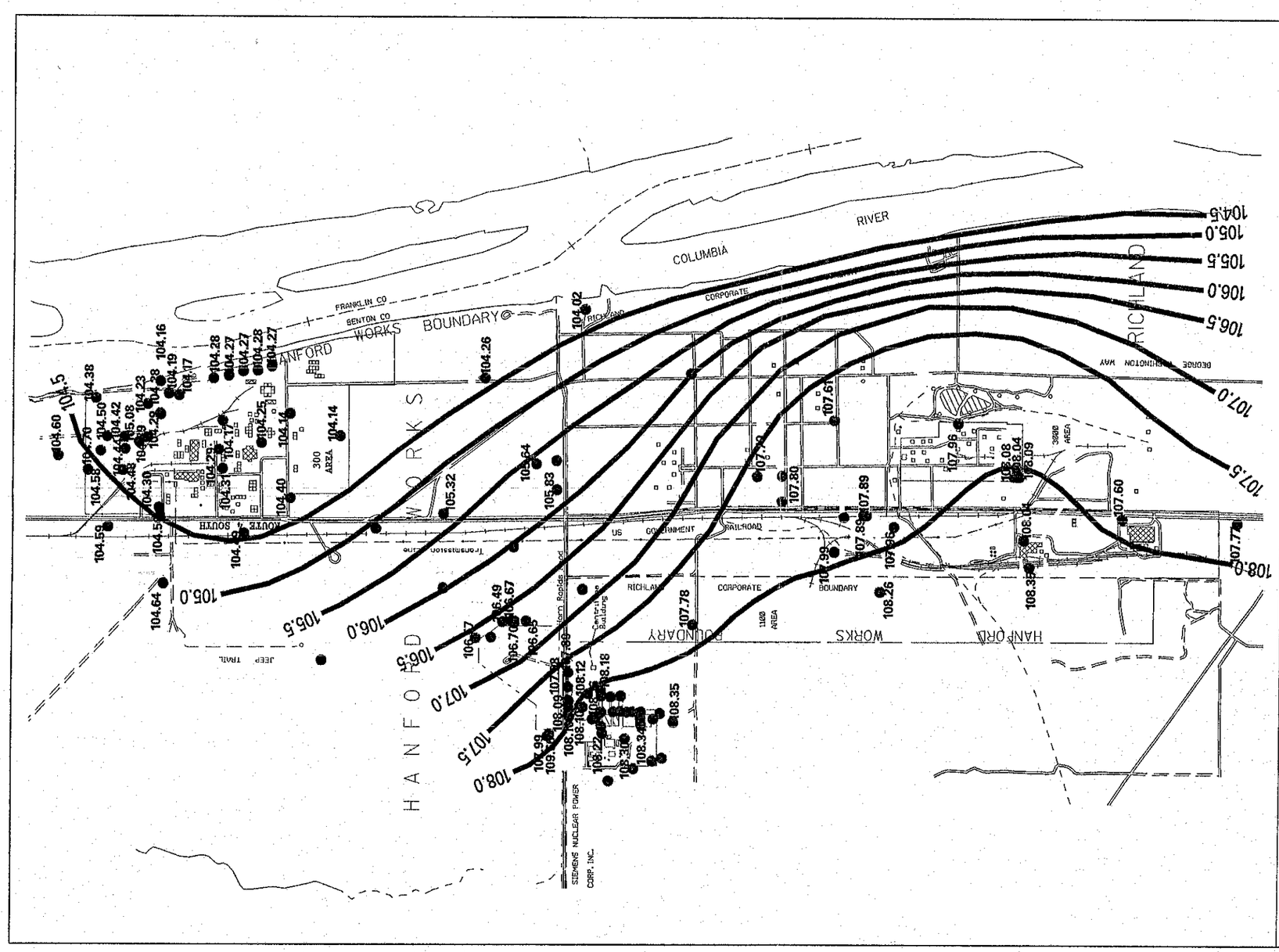
Fig. B–10

9 3 1 2 8 2 0 6 8 3



Groundwater Potentiometric Surface
for the Unconfined Aquifer–October 91

Fig. B–11



LEGEND :

Water Level Contour Lines

105.35 Water Level

N

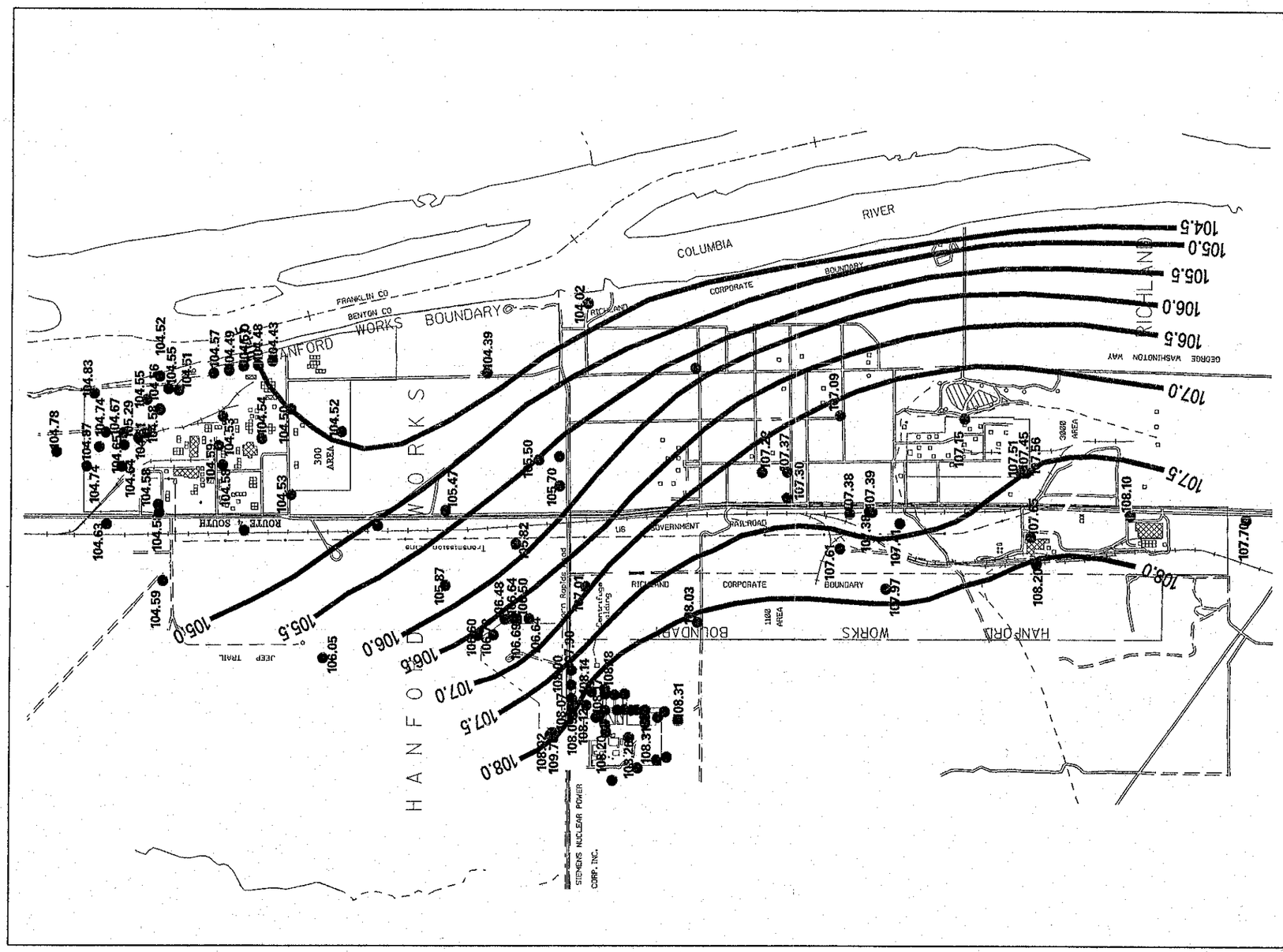
MILES

0 ¼ ½ ¾ 1

Groundwater Potentiometric Surface
for the Unconfined Aquifer–November 91

Fig. B–12

9 3 1 2 8 2 0 6 8 5



LEGEND :

Water Level Contour Lines

105.35 Water Level

N

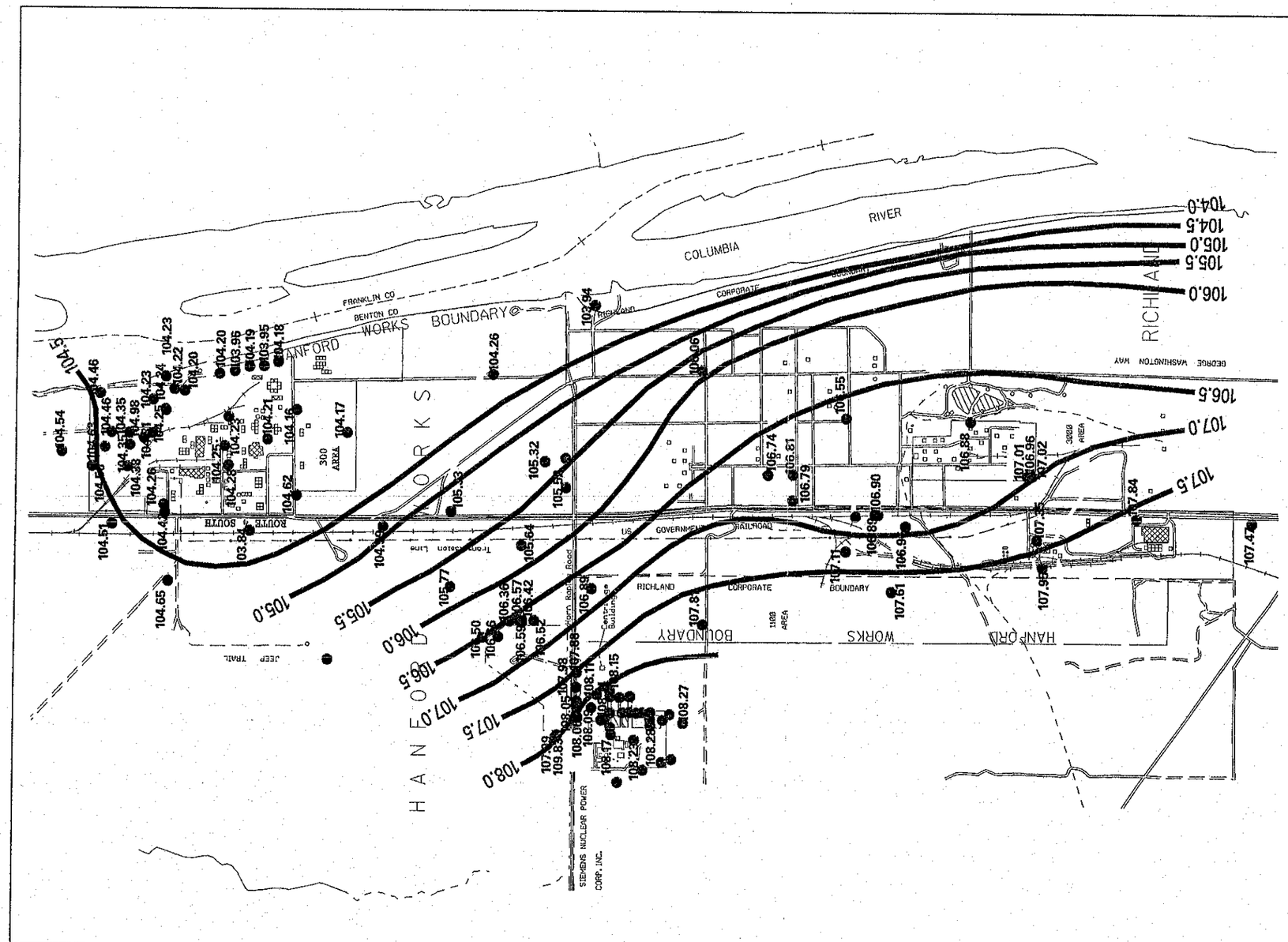
MILES

0 ¼ ½ ¾ 1

Groundwater Potentiometric Surface
for the Unconfined Aquifer–December 91

Fig. B–13

9 3 1 2 8 _ 2 0 6 8 6



LEGEND :

Water Level Contour Lines

● 105.35 Water Level

N

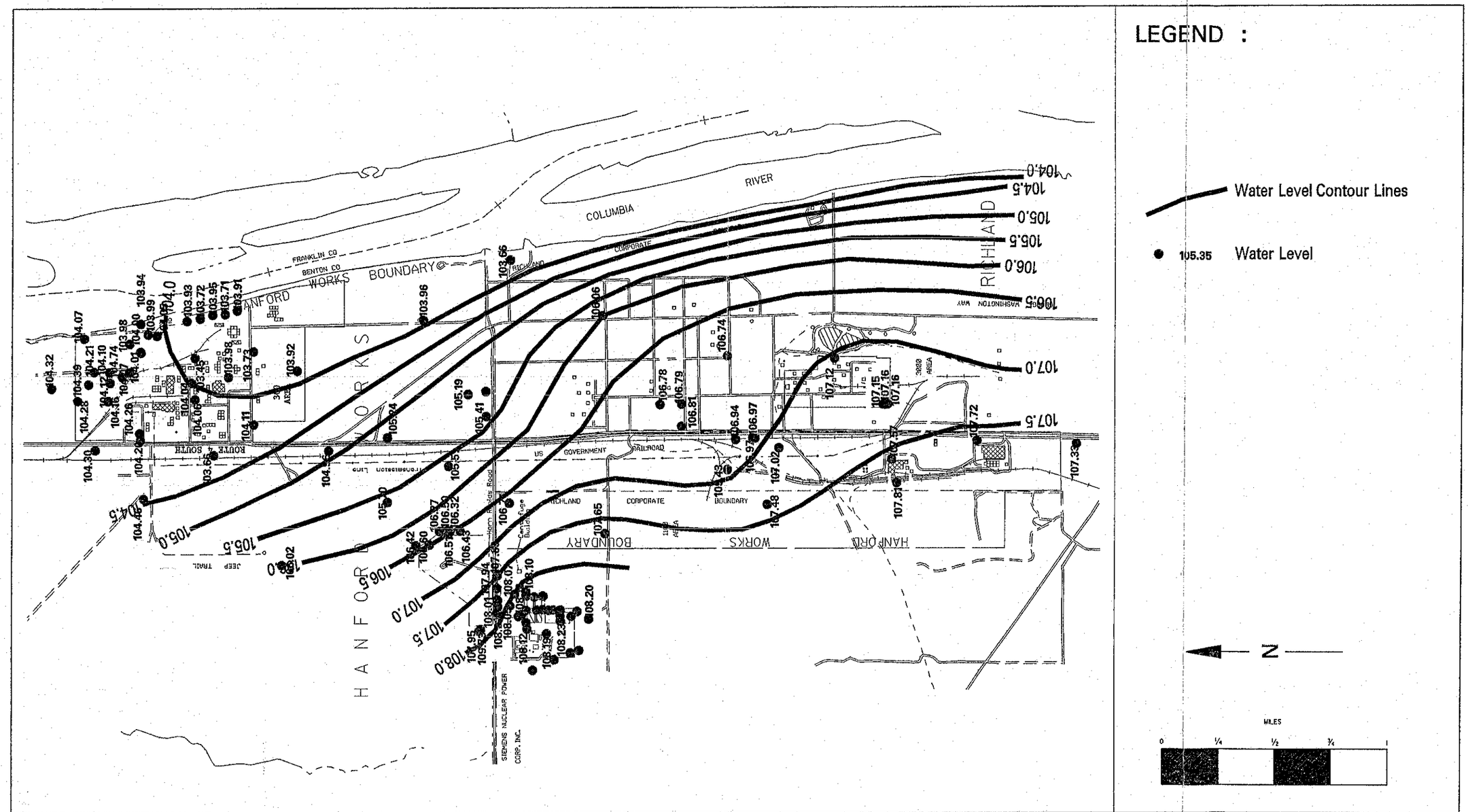
MILES

0 ¼ ½ ¾ 1

Groundwater Potentiometric Surface
for the Unconfined Aquifer–January 92

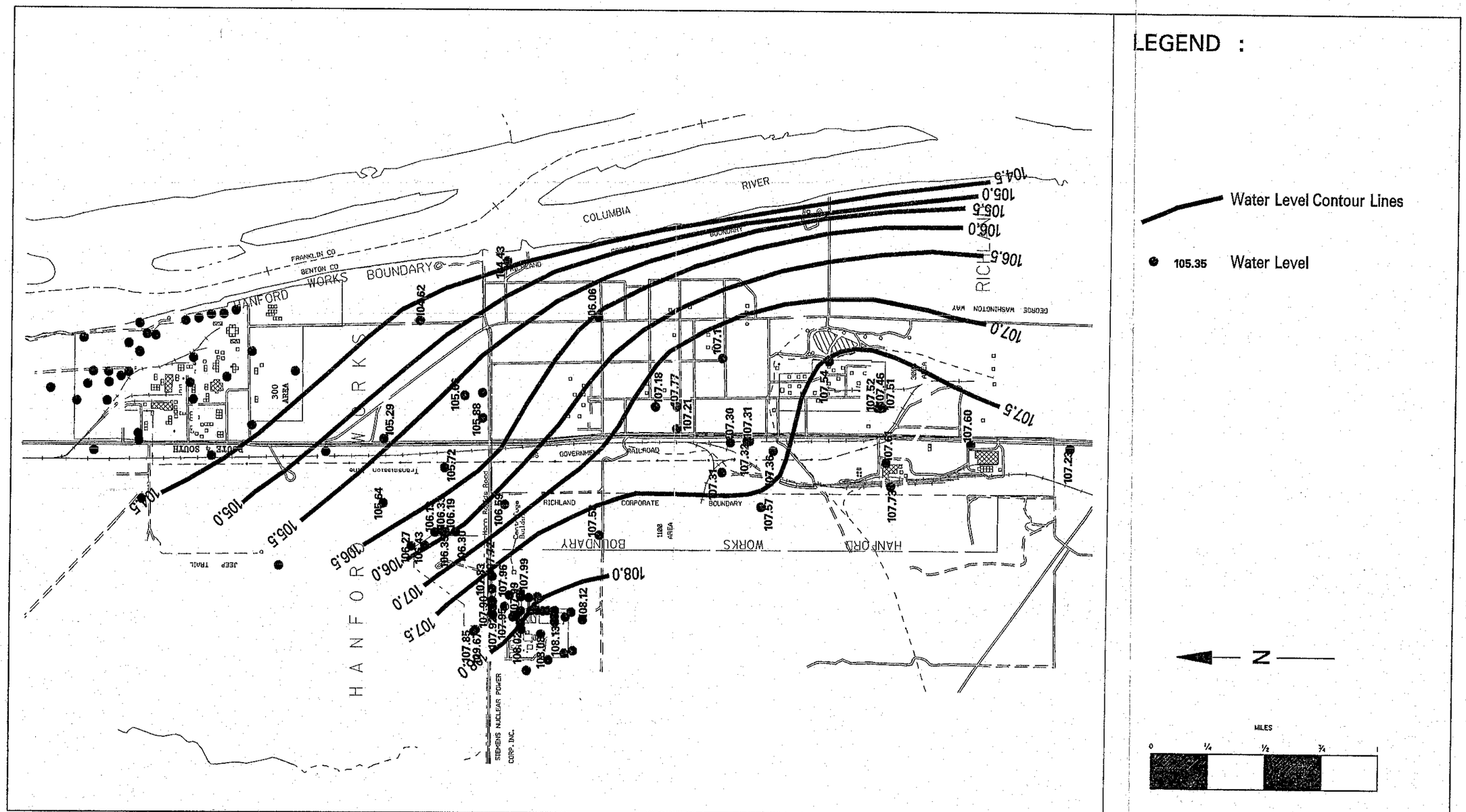
Fig. B–14

9 3 1 2 8 0 2 0 6 8 7



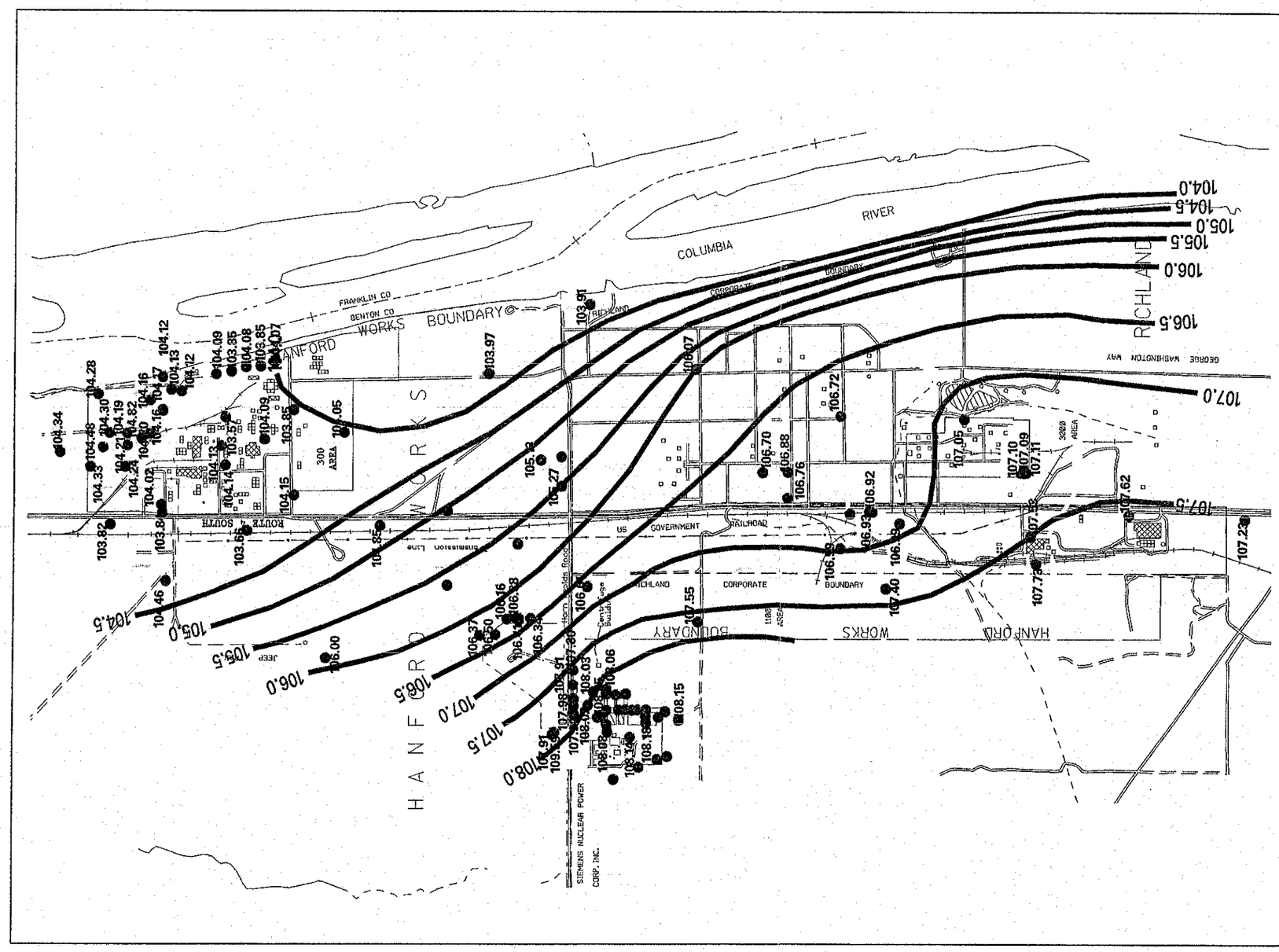
Groundwater Potentiometric Surface
for the Unconfined Aquifer–February 92

Fig. B–15



Groundwater Potentiometric Surface
for the Unconfined Aquifer–May 92

Fig. B–18



LEGEND :

Water Level Contour Lines

105.35 Water Level

N

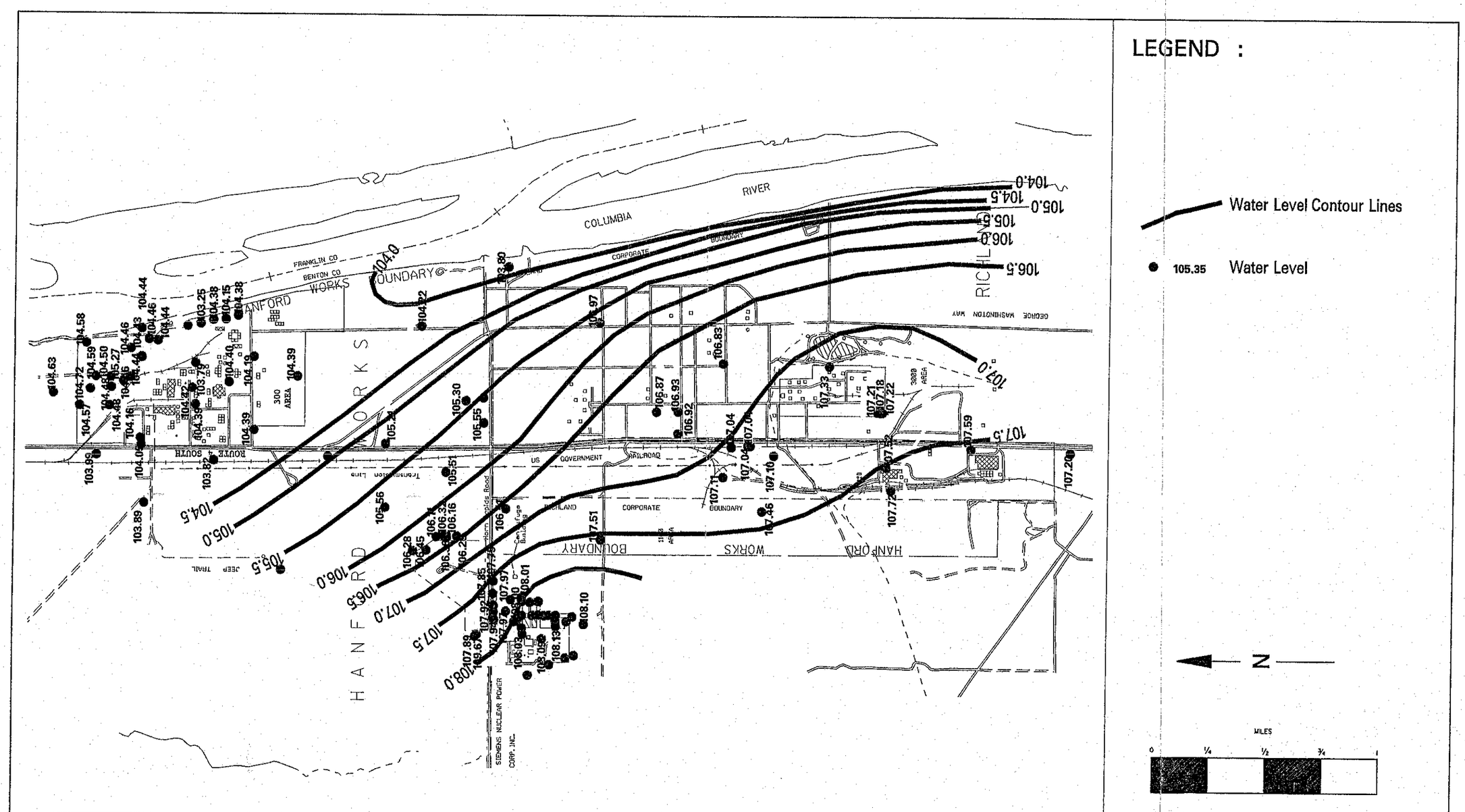
MILES

0 1/4 1/2 3/4 1

Groundwater Potentiometric Surface
for the Unconfined Aquifer– March 92

Fig B–16

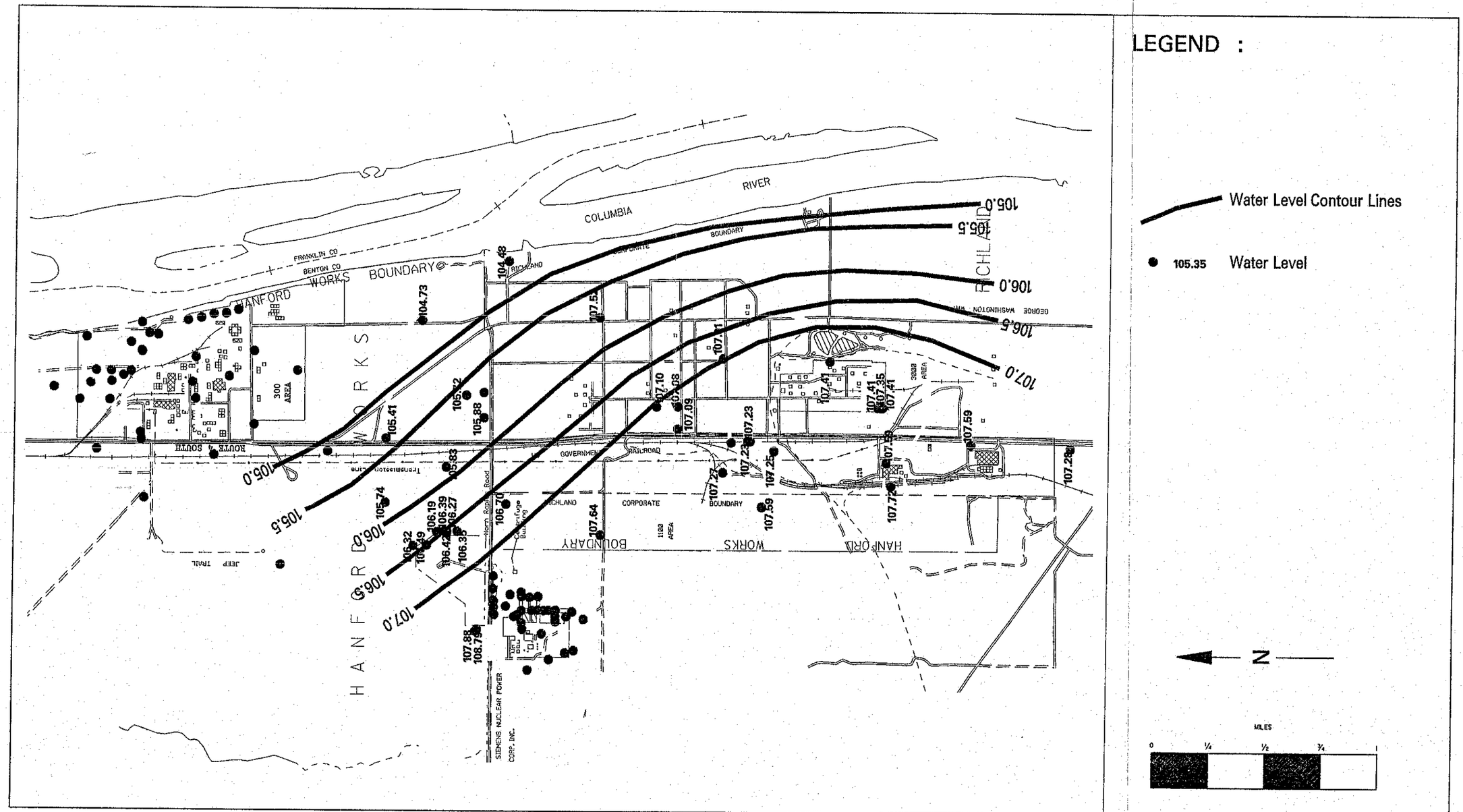
9 3 1 2 8 0 6 8 9



Groundwater Potentiometric Surface
for the Unconfined Aquifer–April 92

Fig B–17

9 3 1 2 8 2 0 6 9 0



Groundwater Potentiometric Surface
for the Unconfined Aquifer–June 92

Fig. B–19

9 3 1 2 8 2 0 6 9 2

APPENDIX C

STRATIGRAPHIC MAPS FOR USE IN GROUNDWATER MODEL DEVELOPMENT

9 3 1 2 8 2 0 6 9 3

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9 3 1 2 9 5 2 0 6 9 4

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9 3 1 2 8 2 0 6 9 5

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9 3 1 2 8 5 2 0 6 9 6

Stratigraphic Maps for Use in Groundwater Model Development

INTRODUCTION

This appendix contains seven maps presenting an interpretation of the subsurface geology beneath and near the 1100-EM-1 Operable Unit and a summary of the stratigraphic data for the groundwater model (table C-1). All maps were developed from exploratory borings advanced within the 1100 Area, the 300-FF-5 Operable Unit, on property owned by Siemens Power Corporation, and miscellaneous water well borings on private property south and east of the study area. Documents regarding past geologic studies within and adjacent to the 1100 Area were also consulted.

All following geologic maps should be used with the realization that they were compiled from very scattered and often unreliable data points. Approximately 70 percent of the borings were logged by drillers untrained in the geologic classification of soil and rock materials. In some cases, these classifications were changed during data interpretation to more closely match nearby borings classified by trained geologists. Often, even in borings logged by geologists, significant changes in material were reported only to the nearest 5 feet. Also, due to the highly complex depositional history of this area, soil horizons were very difficult to reliably project from one boring to the next. Very few laterally continuous soil units were recognizable. Borings are generally clustered throughout the study area into widely separated groups. Between the clusters exist a few isolated borings, at best. Distances separating the boring clusters, and between isolated wells, range from many hundreds to many thousands of feet. The wider the gaps, the greater the uncertainties in the geologic interpretation.

9 3 1 2 8 2 0 6 9 7

TABLE C-1. STRATIGRAPHIC DATA COMPILATION FOR 1100 AREA GROUNDWATER MODEL

Well Number	Well Location Northing	Well Location Easting	Top of Well Elevation	Hanford/Ringold fm Contact Depth	Hanford/Ringold fm Contact Elevation	Top of Ash Layer Depth	Top of Ash Layer Elevation	Top of Ringold Upper Silt Layer (M1) Depth	Top of Ringold Upper Silt Layer (M1) Elevation	Bottom of M1 Layer Depth	Bottom of M1 Layer Elevation	M1 Layer Thickness	Top of Ringold Lower Silt Layer (M3) Depth	Top of Ringold Lower Silt Layer (M3) Elevation	M3 Layer Thickness	Depth to Bedrock
MW-1	364,086.15	1,946,554.37	398.00	54.00	344.00	**********	**********	88.50	309.50	**********	**********	**********	**********	**********	**********	**********
MW-2	370,878.50	1,945,364.80	379.36	35.00	344.36	**********	**********	46.50	332.86	**********	**********	**********	**********	**********	**********	**********
MW-3	364,301.11	1,947,081.08	402.63	60.50	342.13	**********	**********	78.80	323.83	**********	**********	**********	**********	**********	**********	**********
MW-4	367,412.22	1,947,590.40	401.10	56.00	345.10	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
MW-5	367,389.36	1,947,590.40	401.30	52.00	349.30	**********	**********	87.00	314.30	**********	**********	**********	**********	**********	**********	**********
MW-6	358,019.00	1,946,848.30	396.00	57.50	338.50	**********	**********	85.00	311.00	**********	**********	**********	**********	**********	**********	**********
MW-7	367,097.70	1,946,037.40	395.20	49.40	345.80	**********	**********	85.50	309.70	**********	**********	**********	**********	**********	**********	**********
MW-7A	378,386.40	1,944,522.63	388.00	45.00	343.00	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
MW-8	373,797.00	1,943,078.70	371.62	26.00	345.62	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
MW-8A	377,299.59	1,947,303.74	386.19	45.00	341.19	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
MW-9	373,760.30	1,943,118.40	371.86	28.40	343.46	**********	**********	35.30	336.56	68.40	303.46	33.10	**********	**********	**********	**********
MW-10	375,260.60	1,945,079.30	389.09	35.00	354.09	64.00	325.09	**********	**********	**********	**********	**********	**********	**********	**********	**********
MW-11	374,949.10	1,945,105.10	388.69	43.00	345.69	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
MW-12	374,720.60	1,945,415.80	381.14	25.00	356.14	57.00	324.14	**********	**********	**********	**********	**********	**********	**********	**********	**********
MW-13	374,504.60	1,945,399.90	379.85	25.00	354.85	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
MW-14	374,522.80	1,945,423.90	380.01	22.00	358.01	53.60	326.41	**********	**********	**********	**********	**********	**********	**********	**********	**********
MW-15	374,230.80	1,945,425.40	377.43	22.00	355.43	51.90	325.53	**********	**********	**********	**********	**********	**********	**********	**********	**********
**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
MW-17	364,291.50	1,948,390.79	407.10	54.00	353.10	**********	**********	90.50	316.60	108.50	298.60	18.00	**********	**********	**********	**********
MW-18	367,795.92	1,947,500.90	399.74	49.50	350.24	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
MW-19	373,112.58	1,946,073.62	384.56	28.00	356.56	**********	**********	52.00	332.56	**********	**********	**********	**********	**********	**********	**********
MW-20	375,956.34	1,946,115.38	383.45	28.00	355.45	66.00	317.45	**********	**********	**********	**********	**********	**********	**********	**********	**********
MW-21	374,482.62	1,945,427.52	379.45	33.50	345.95	54.00	325.45	77.50	301.95	80.50	298.95	3.00	**********	**********	**********	**********
MW-22	374,531.84	1,946,933.36	385.07	36.50	348.57	61.10	323.97	**********	**********	**********	**********	**********	**********	**********	**********	**********
ANF-1					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-2					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-3					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-4					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-5					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-6					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-7					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-8					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-9					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-10					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-11					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-12					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-13					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-14	373,393.80	1,943,512.60			0.00		0.00		0.00		0.00	0.00		0.00		
ANF-15	373,389.70	1,943,652.10			0.00		0.00		0.00		0.00	0.00		0.00		
ANF-16	373,393.20	1,943,816.80			0.00		0.00		0.00		0.00	0.00		0.00		
ANF-17					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-18					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-23					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-24					0.00		0.00		0.00		0.00	0.00		0.00		
ANF-25					0.00		0.00		0.00		0.00	0.00		0.00		
GM-1			374.04	35.00	339.04	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
GM-2			368.49	25.00	343.49	**********	**********	32.50	335.99	35.00	333.49	2.50	**********	**********	**********	**********
GM-3			371.15	33.00	338.15	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
GM-4			368.36	24.00	344.36	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
GM-5			365.80	20.00	345.80	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
GM-6			379.47	23.00	356.47	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
GM-7			379.61	30.00	349.61	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********

TABLE C-1. STRATIGRAPHIC DATA COMPILATION FOR 1100 AREA GROUNDWATER MODEL

Well Number	Well Location Northing	Well Location Easting	Top of Well Elevation	Hanford/Ringold fm Contact Depth	Hanford/Ringold fm Contact Elevation	Top of Ash Layer Depth	Top of Ash Layer Elevation	Top of Ringold Upper Silt Layer (M1) Depth	Top of Ringold Upper Silt Layer (M1) Elevation	Bottom of M1 Layer Depth	Bottom of M1 Layer Elevation	M1 Layer Thickness	Top of Ringold Lower Silt Layer (M3) Depth	Top of Ringold Lower Silt Layer (M3) Elevation	M3 Layer Thickness	Depth to Bedrock
GM-12			387.23	30.00	357.23											
GM-8			370.92	25.00	345.92											
GM-9			369.34	25.00	344.34											
GM-10			374.82	30.00	344.82											
GM-11			380.19	30.00	350.19			43.00	337.19							
6-S27-E14	377,994.34	1,949,190.09	372.00					65.00	307.00	75.00	297.00	10.00	92.00	280.00		
								81.00	291.00	92.00	280.00	11.00	125.00	247.00		
6-S29-E12	375,884.02	1,947,588.48	387.97					50.00	337.97	75.00	312.97	25.00				
6-S30-E14	3540 ft. deep		401.00					120.00	281.00	130.00	271.00	10.00	160.00	241.00	45.00	205.00
6-S30-E15A	375,027.66	1,950,360.62	398.00													
6-S30-E15B	No log															
6-S30-E15C	3540 ft. deep		401.74	60.00	341.74			125.00	276.74	140.00	261.74	15.00	165.00	236.74	35.00	210.00
6-S31-E13			393.00					70.00	323.00	82.00	311.00	12.00				
6-S31-E13A	No drill log is available.															
6-S32-E13A			389.00					75.00	314.00	86.00	303.00	11.00				
6-S32-E13B			394.00					68.00	326.00	76.00	318.00	8.00				
6-S36-E12A	102 ft. deep		402.00					80.00	322.00	94.00	308.00	14.00				
6-S36-E12B	375,027.66	1,950,360.62	398.00					82.00	316.00	99.00	299.00	17.00				
6-S36-E13A	100 ft. deep – Poor drill log		398.00													
6-S36-E13B	100 ft. deep		398.73			(tan clay ------>)		75.00	323.73	90.00	308.73	15.00				
6-S37-E14	368,061.40	2,309,401.00	405.38	49.00	356.38											
6-S41-E13B	364,364.30	2,308,243.70	407.25	65.00	342.25											
6-S43-E12	362,273.00	2,307,422.00	402.83													
6-S40-E14	365,592.80	2,309,354.00	399.84	52.00	347.84											
11-37-19					0.00		0.00		0.00		0.00	0.00		0.00		
11-38-16	59 ft. deep		365.40			(brown silt ------>)		50.00	315.40							
11-38-16B					0.00		0.00		0.00		0.00	0.00		0.00		
11-39-10A	100 ft. deep		367.00						367.00		367.00	0.00	84.00	283.00	(<-- blue slate)	
11-39-10B	54 ft. deep		362.00			(yellow clay --->)		44.00	318.00							
11-39-15	71 ft. deep		392.00	(no silt or clay included in drillers log)												
11-39-16A	61.8 ft. deep		367.80			(clay ------->)		56.80	311.00							
11-39-16B	110 ft. deep		369.00			(yellow clay --->)		63.00	306.00							
11-39-16C	75.3 ft. deep		384.77	(no silt or clay included in drillers log)												
11-39-16D	64 ft. deep		371.77					60.27	311.50							
11-39-16E	83 ft. deep		397.10					68.00	329.10							
11-40-15	88 ft. deep		393.00					64.93	328.07	78.93	314.07	14.00				
11-40-16B	87 ft. deep		390.00			(M1 or M3 ?? --->)		82.00	308.00							
11-40-16C	56 ft. deep		380.00	(no silt or clay included in drillers log)												
11-41-15	76.5 ft. deep		397.00					74.00	323.00							
30-41-14	65 ft. deep		398.00	55.00	343.00			60.00	338.00							
30-41-14B	63 ft. deep		403.00					none								
30-42-16	134 ft. deep		407.50										128.00	279.50	(blue shale)	
3000-F	373,046.90	1,951,757.53	373.00	No drill log is available.												
F-2	371,015.96	1,950,488.19	405.20	No drill log is available.												

TABLE C-1. STRATIGRAPHIC DATA COMPILATION FOR 1100 AREA GROUNDWATER MODEL

Well Number	Well Location Northing	Well Location Easting	Top of Well Elevation	Hanford/Ringold fm Contact Depth	Hanford/Ringold fm Contact Elevation	Top of Ash Layer Depth	Top of Ash Layer Elevation	Top of Ringold Upper Silt Layer (M1) Depth	Top of Ringold Upper Silt Layer (M1) Elevation	Bottom of M1 Layer Depth	Bottom of M1 Layer Elevation	M1 Layer Thickness	Top of Ringold Lower Silt Layer (M3) Depth	Top of Ringold Lower Silt Layer (M3) Elevation	M3 Layer Thickness	Depth to Bedrock
10/28-10G1	462,157.00	1,191,733.00	389.00	**********		**********		69.00	320.00	86.00	303.00	17.00	176.00	213.00	26.00	202.00
(399-5-2)								122.00	267.00	132.00	257.00	10.00				
Allied Nuclear					0.00		0.00		0.00		0.00	0.00		0.00		
J. Felton					0.00		0.00		0.00		0.00	0.00		0.00		
D. Scheilke	60 ft. deep		375.00	(no silt or clay included in drillers log)				**********		**********		**********	**********		**********	
Wiser Co. Inc.	Well #1 – 85 ft. deep		358.00	**********		**********		34.00	324.00	59.00	299.00	25.00	59.00	299.00	46.00	**********
													(59–105', blue clay)			
Wiser Co. Inc.	Well #2 – 43 ft. deep		358.00	**********		**********		32.00	326.00	**********		**********	**********		**********	
H. Pederson					0.00		0.00		0.00		0.00	0.00		0.00		
GTE	201.8 ft. deep		405.00	**********		**********		89.00	316.00	103.00	302.00	14.00	**********		**********	
1C			375.00	55.00	320.00	**********		**********		**********		**********	115.00	260.00	50.00	207.00
399-4-7			372.00	**********		**********		**********		**********		**********	112.00	260.00	**********	
399-4-8			380.00	**********		**********		52.00	328.00	**********		**********	**********		**********	
7C			390.00		390.00			77.00	313.00	102.00	288.00	25.00	175.00	215.00	26.00	189.00
399-6-1			385.48	**********		**********		**********		**********		**********	**********		**********	
399-8-2			394.87	**********		**********		**********		**********		**********	**********		**********	
11-41-13C			404.30	**********		**********		84.00	320.30	**********		**********	**********		**********	
11-34-13			389.00	**********		**********		75.00	314.00	85.00	304.00	10.00	**********		**********	
11-41-13A			403.00	No silt or clay to 338 ft. elevation.		**********		**********		**********		**********	**********		**********	
11-41-13B			402.00	**********		**********		63.00	339.00	**********		**********	**********		**********	
11-34-13			389.00	**********		**********		75.00	314.00	**********		**********	**********		**********	

Figure C-1. Hanford fm./Ringold fm. Contact Elevations

Contours along the Hanford fm./Ringold fm. contact were based on data from subsurface borings advanced in the 1100-EM-1 Operable Unit, the 300-FF-5 Operable Unit, and during the summer of 1991 on property owned by Siemens Power Corporation. Elevation data is lacking to the west of the 345-foot contour interval due to a complete absence of subsurface explorations. Uncertainties exist in the eastern portion of the map area in the region bounded by Stevens Drive extending to just west of the western bank of the Columbia River because of poor quality drilling logs.

Data points used for developing the contour plot were obtained from the following borings:

1100-EM-1	300-FF-5	SIEMENS POWER CORPORATION
MW-2	1C	GM-1
MW-6	7C	GM-2
MW-7	399-4-5	GM-3
MW-7A	399-4-7	GM-4
MW-8	399-4-8	GM-5
MW-8A	399-5-1	GM-6
MW-8A	399-5-2	GM-7
MW-9		GM-8
MW-10		GM-9
MW-11		GM-11
MW-12		GM-12
MW-13		
MW-14		
MW-15		
MW-17		
MW-18		
MW-19		
MW-20		
MW-21		
MW-22		
699-S27-E14		
699-S30-15C		

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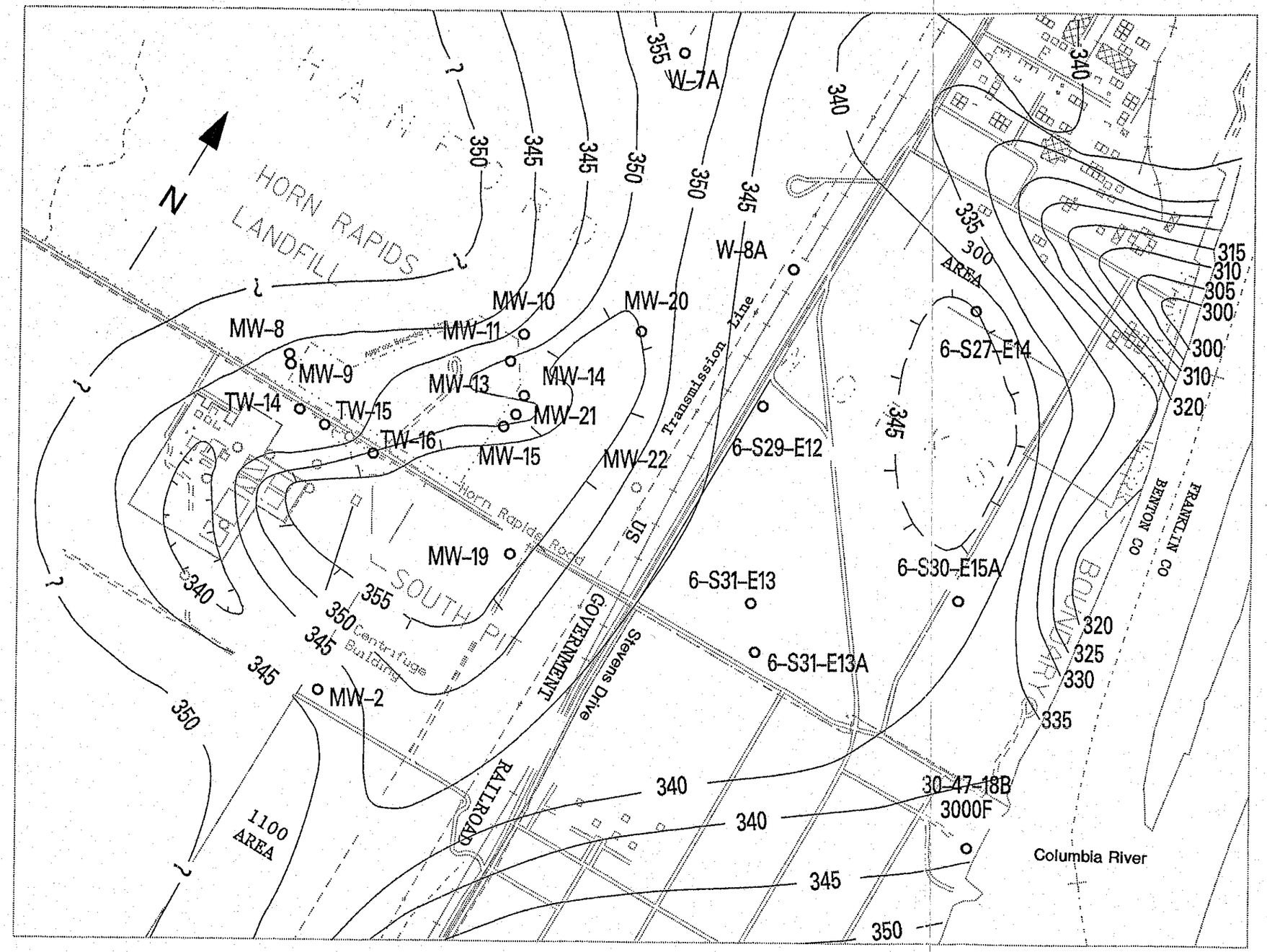

HANFORD fm. / RINGOLD fm.
CONTACT ELEVATIONS

Fig. C-1

Figure C-2. Top of Silt Elevations

Contours along the top of silt beneath the groundwater modeling area were based on data from subsurface borings advanced in the 1100-EM-1 Operable Unit, the 300-FF-5 Operable Unit, and during the summer of 1991 on property owned by Siemens Power Corporation. Elevation data is lacking to the west of the final solid 335-foot contour interval due to a complete absence of subsurface explorations. The final western 335-foot contour line is based on the assumption that the top of silt decreased in elevation from a high in the vicinity of the Siemens Power Corporation complex, to a broad low, and will thereafter continue a gradual rise westward. The eastern portion of the map area, adjacent to the Columbia River, has areas lacking the silt horizon.

The contoured silt horizon is fairly continuous in a north-south orientation throughout the 1100-EM-1 Operable Unit. Discontinuities become conspicuous toward the eastern boundary of the area; adjacent to the Columbia River. This horizon corresponds to the "B" silt as mapped in the 300-FF-5 Operable Unit project. The "A" silt horizon of the 300-FF-5 project is the first silt unit encountered by borings along the Columbia in areas devoid of the "B" unit.

Data points used for developing the contour plot of the top of silt were obtained from the following borings:

1100-EM-1	300-FF-5	SIEMENS POWER CORPORATION
MW-2	7C	GM-2
MW-6	399-4-5	GM-11
MW-7	399-4-7	
MW-9	399-4-8	
MW-19	399-5-2	
MW-21		
699-S27-E14		
699-S29-E12		
699-S30-E15C		
699-S30-E14		
699-S31-E13		
699-S36-E12A		
699-S36-E12B		
699-S36-E13B		

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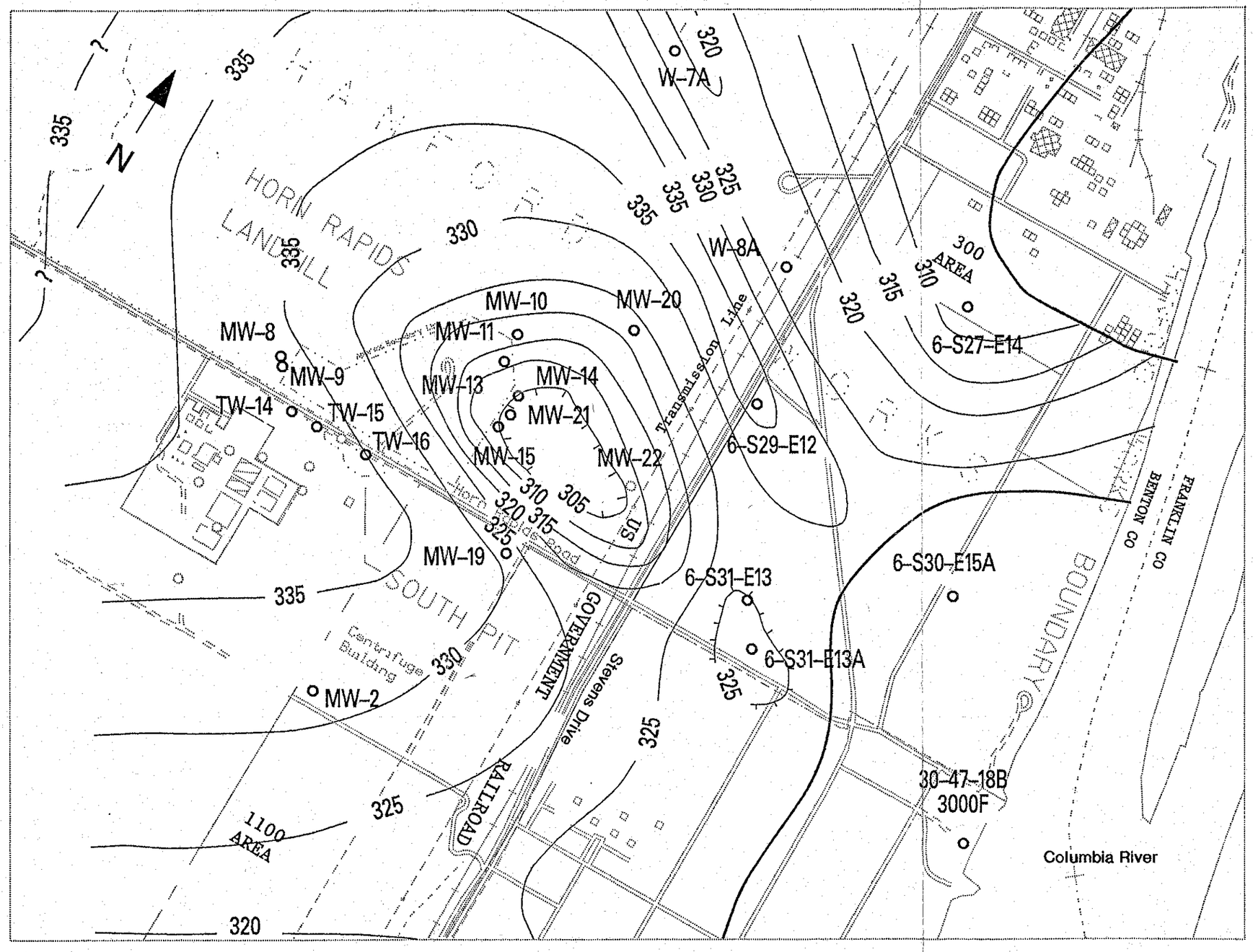

TOP of SILT ELEVATIONS

Fig. C-2

Figure C-3. Contours on Top of Volcanic Ash
Figure C-4. Isopach Map of Volcanic Ash

Contours on the top and mapped thicknesses of the volcanic ash deposit noted in the Horn Rapids Landfill area were based on data from subsurface borings advanced in the 1100-EM-1 Operable Unit. The ash is theorized to be a water lain deposit within an eroded low on the top of the upper silt unit of the middle Ringold Formation (see paragraph 2.2.2.2). Contours on the top of the deposit are fairly certain, based on the number of subsurface borings that intercepted the ash surface. The thickness of the deposit is less certain, based on data from only a single boring that fully penetrated the unit.

Data points used for developing the contour plot and isopach map were obtained from the following borings:

<u>1100-EM-1</u>
MW-10
MW-12
MW-14
MW-15
MW-20
MW-21*
MW-22

* Boring fully penetrated the ash deposit.

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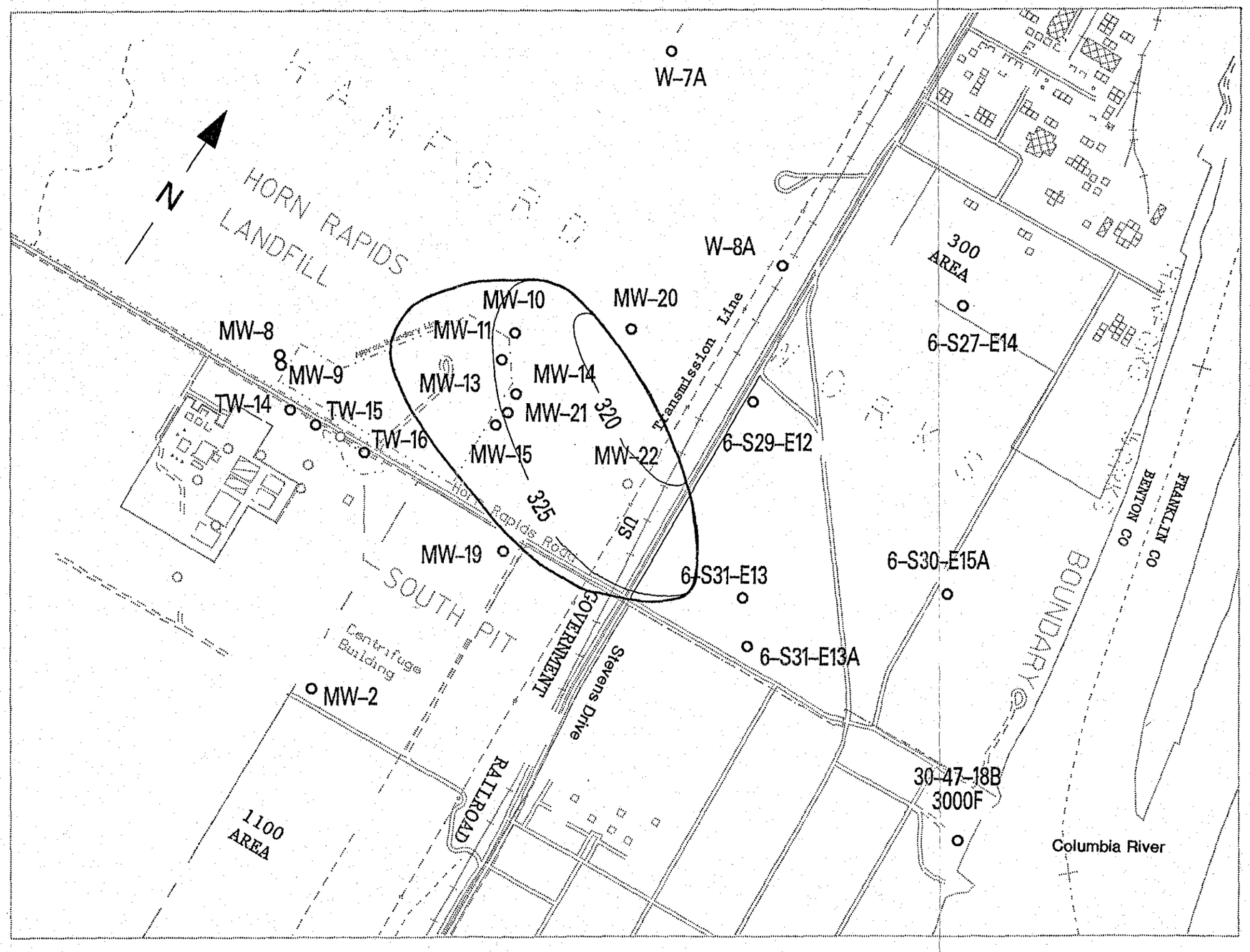

CONTOURS on top of VOLCANIC ASH

Fig. C-3

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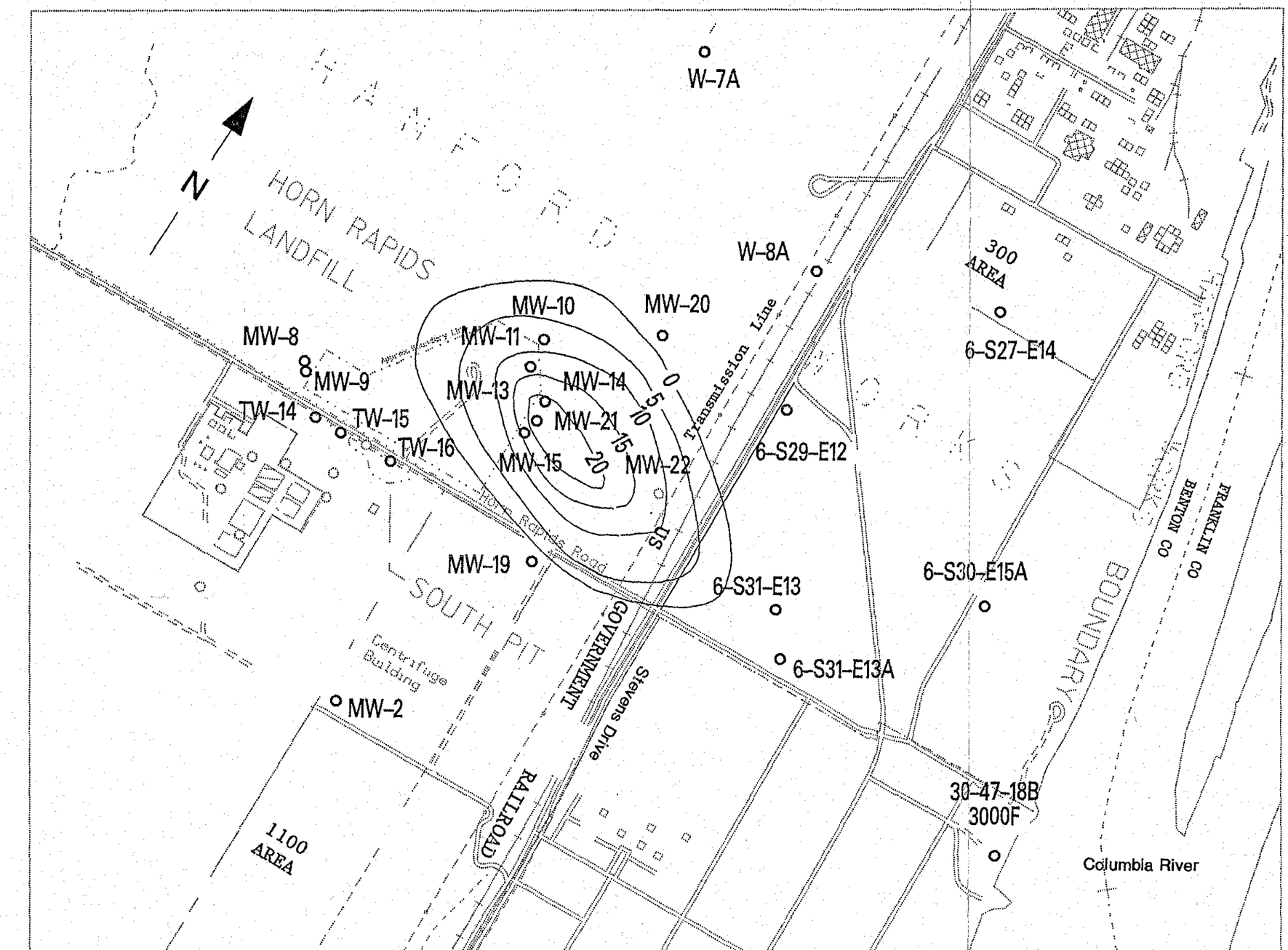

ISOPACH MAP of VOLCANIC ASH

Fig. C-4

9 3 1 2 8 2 0 7 1 0

Figure C-5. Bottom of Silt Elevations

Contours on the bottom of the silt unit were based on data from subsurface borings advanced in the 1100-EM-1 Operable Unit and the 300-FF-5 Operable Unit. Elevation data is lacking to the west of the 300-foot contour due to an absence of subsurface explorations. Uncertainties exist throughout the map area because of sparse data. Few borings penetrated the entire thickness of this silt deposit.

Data points used for developing the contour plot were obtained from the following borings:

1100-EM-1	300-FF-5
MW-9	7C
MW-21	399-4-8
699-S27-E14	399-5-2
699-S29-E12	
699-S31-E13	
699-S32-E13B	
699-S36-E12A	
699-S36-E12B	
699-S36-E13B	

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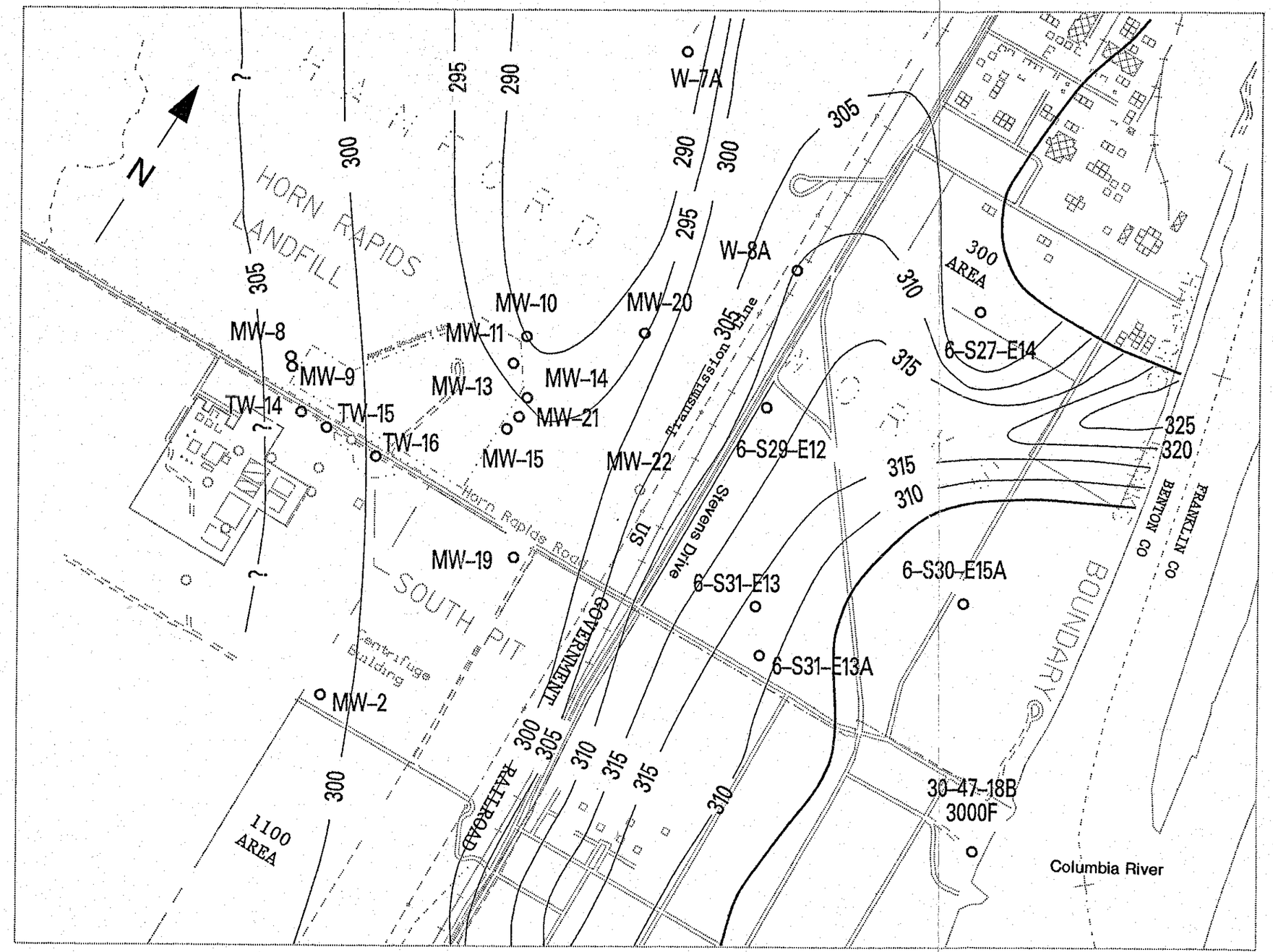

BOTTOM of SILT ELEVATIONS

Fig. C-5

Figure C-6. Isopach Map of Silt Horizon

The isopach map delineating the thickness of the silt unit was developed directly from the contour maps containing the top and bottom elevations of the silt unit. The zero thickness isopleth along the eastern edge of the map area indicates the silt does not occur east of the line. Silt unit "A," using nomenclature from the 300-FF-5 project, is the first silt layer encountered by subsurface borings advanced east of the zero line. The area south and west of the Siemens Power Corporation complex is lacking reliable subsurface data with which to infer the thickness of the silt unit. Contour lines drawn in this vicinity on both the top of silt and bottom of silt maps are too unreliable, again due to the lack of data, to develop isopleths for the silt.

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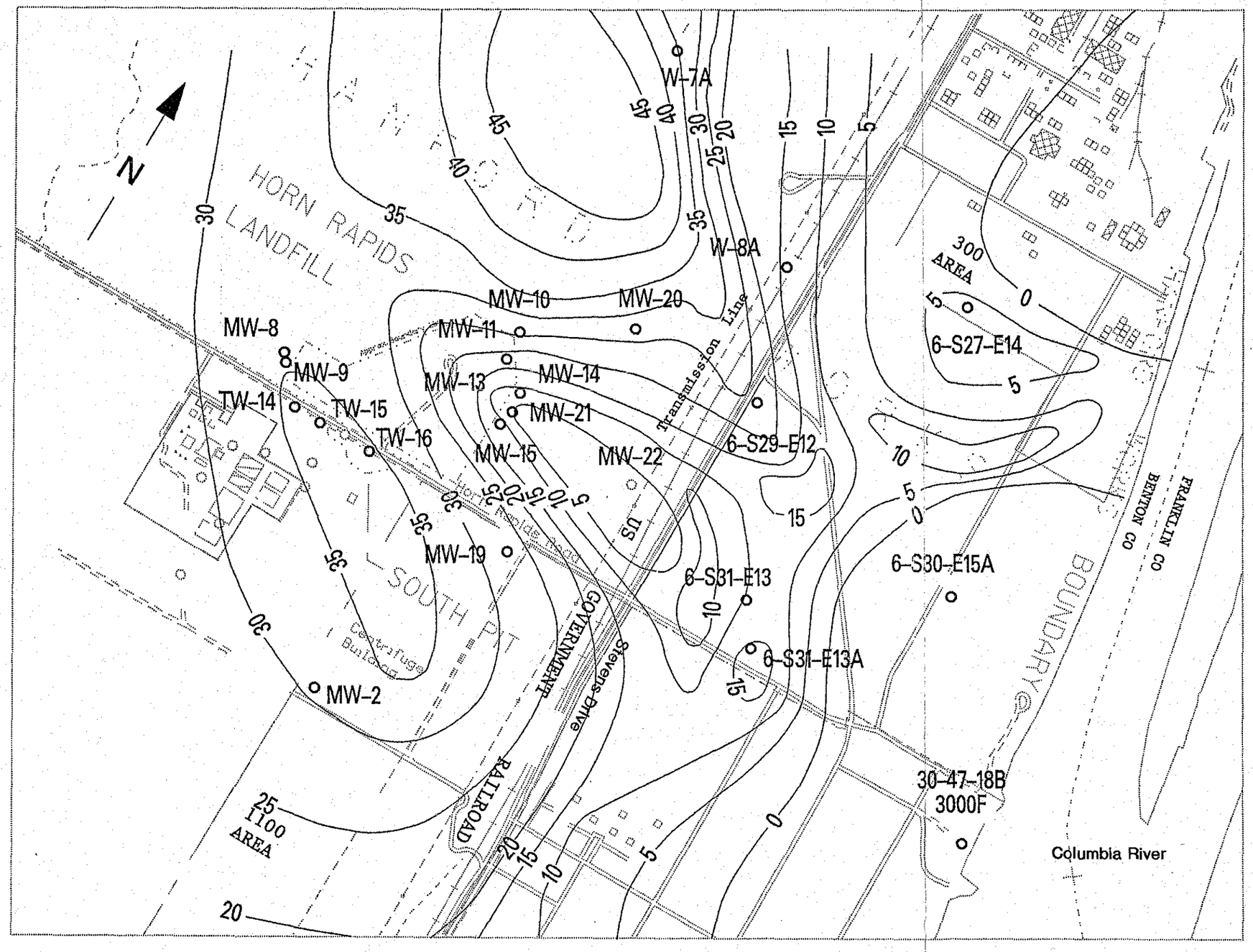

ISOPACH MAP of SILT HORIZON

Fig. C-6

Figure C-7. Top of Basal Ringold Silt

Contours on the top of the basal Ringold silt deposit were derived exclusively from the Westinghouse-Hanford Company document "Geologic Summary of the 300 Area - Hanford Site, South-Central Washington" (K.A. Lindsey and S. Consort, authors). Elevations away from the data points is highly speculative due to the lack of deep, subsurface borings within this area. Deep borings located to the south are too far removed to be reliably projected. No data is available for the western portion of the groundwater modeling area. It is not reasonable to assume that the surface elevation of the lower silt unit continues to drop in this direction. Because of the high probability of some sort of undetermined structure in the silt surface toward the west, no attempt was made to extend the surface contours in this direction.

Data points used for developing the contour plot were obtained from the following borings:

1100-EM-1	300-FF-5
699-S27-E14	399-3-3
699-S30-E14	399-4-5
699-S30-E15C	399-4-7
	399-4-2
	1C
	7C

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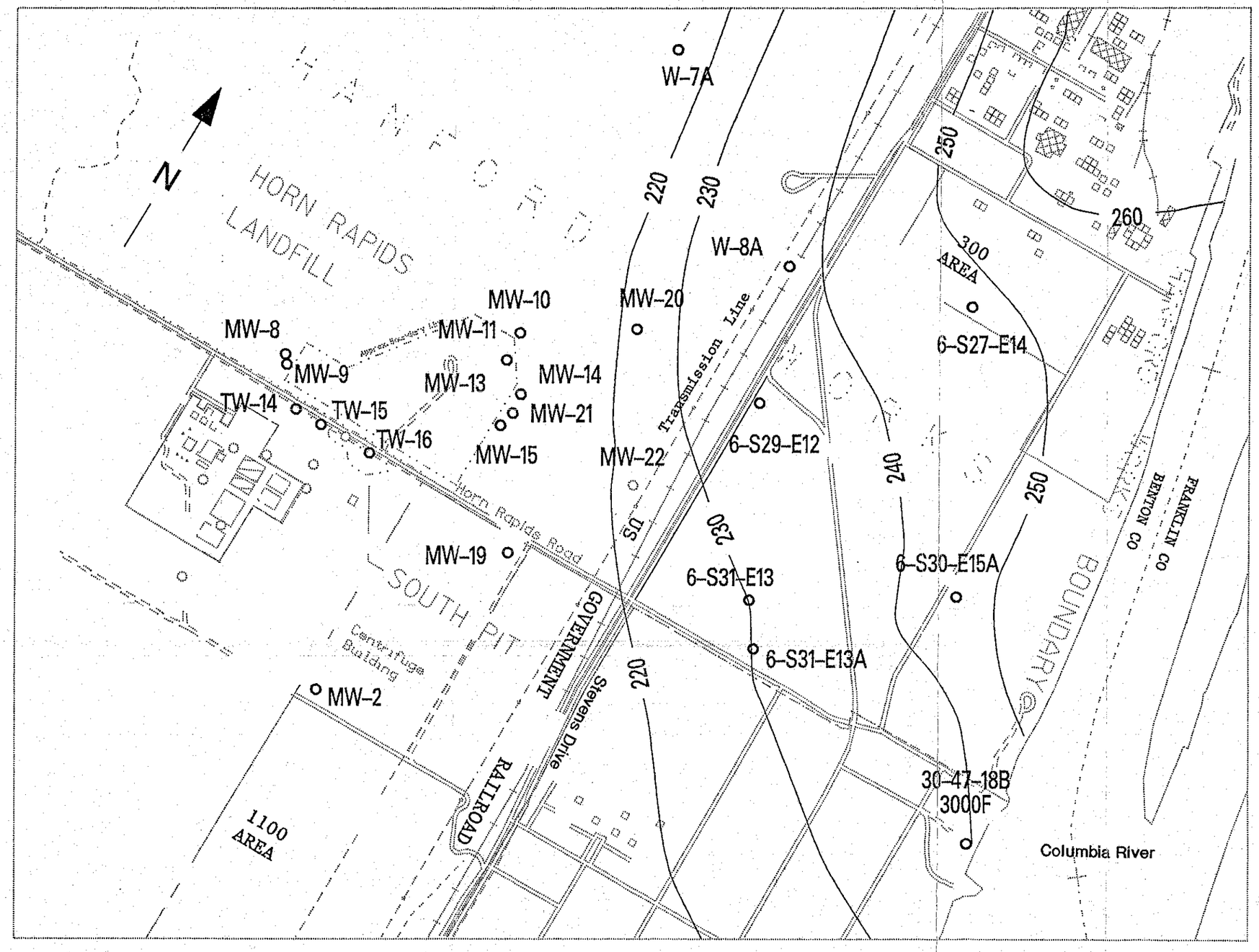

TOP of BASAL RINGOLD SILT

Fig. C-7

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APPENDIX D

SUMMARY OF PHASE II SOIL SAMPLING ANALYTICAL RESULTS

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APPENDIX D CONTENTS

1.0 DISCUSSION OF PHASE II SOIL SAMPLING ANALYTICAL RESULTS . . D-1

2.0 LABORATORY AND VALIDATION QUALIFIER DEFINITIONS (FOR REFERENCE TO TABLE D-1) D-2

3.0 REFERENCES D-3

TABLE

Table D-1 Summary of Phase II Soil Sampling Analytical Results D-4

ATTACHMENT

Attachment D-1 ARDL Report D-21

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1.0 DISCUSSION OF PHASE II SOIL SAMPLING ANALYTICAL RESULTS

Analytical results of the Phase II Remedial Investigation soil sampling performed at Horn Rapids Landfill (HRL) and the Ephemeral Pool are shown in table D-1. Analytical methods from the Environmental Protection Agency (EPA) Contract Laboratory Program (CLP) Statement of Work for Inorganic Analysis EPA ILM02.0 (EPA, 1991a) were used to detect inorganic contaminants from the CLP target analyte list (TAL). Methods from EPA CLP Statement of Work for Organic Analysis EPA OLM01.1 (EPA, 1991b) were used to detect organic, pesticide, and polychlorinated biphenyl (PCB) contaminants from the CLP target compound list (TCL). Inorganic analyses for sample delivery groups (SDG) Westinghouse Hanford Company (WHC) 27 and WHC 28, and all of SDG WHC 29 were validated by the Office of Sample Management using Westinghouse Sample Management Administration Manual WHC-CM-5-3 (WHC, 1990). The remaining analyses were validated by the U.S. Army Corps of Engineers using EPA Functional Guidelines for Evaluating Inorganic and Organic Analyses.

During the trenching activities at HRL, 26 samples (all at depths greater than or equal to 4 feet) were taken from seven locations. Soil samples shown in table D-1, taken from the trenches, are TP-1, TP-3A, TP-3B, TP-4/5, TP-7, TP-8, and TP-11. All samples from the trenches except TP-1 were analyzed for TAL inorganic contaminants, TCL organic contaminants, and TCL pesticides and PCB's. The two samples from TP-1 were analyzed for TCL organics and TCL pesticides and PCB's.

Two samples of material taken from the HRL trenches were sent to U.S. Army Corps of Engineers, North Pacific Division Laboratory in Troutdale, Oregon. The nature of these samples, including field screening methods are presented in paragraph 3.7.4.2.6.

For sample locations B4-1 and B5-1 to B5-3, soil samples that were taken from 0 to 1 foot were analyzed for TAL and TCL contaminants. Samples from these locations that were taken from 1 to 2 feet were analyzed for all TAL and TCL contaminants except pesticides and PCB's. Samples were validated by U.S. Army Corps of Engineers using EPA Functional Guidelines.

Nineteen soil samples were taken at various depths (from 0 to 2 feet) from locations PCB-1 to PCB-4 and PCB-1A to PCB-4A. These samples were analyzed for TCL pesticides and PCB's. Samples were validated by U.S. Army Corps of Engineers using EPA Functional Guidelines.

At the Ephemeral Pool, seven surface samples were taken from the locations E1 to E6. Analysis was performed for TCL pesticides and PCB's at this site.

2.0 LABORATORY AND VALIDATION QUALIFIER DEFINITIONS (FOR REFERENCE TO TABLE D-1)

B - The reported value is < the contract required quantitation limit, but > the instrument detection limit for inorganic chemical analysis, or the analyte was found in the associated blank as well as the sample for organic analysis.

D - The compound was identified in an analysis at a secondary dilution factor.

E - Concentration exceeds calibration range of gas chromatography/mass spectroscopy instrument.

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The associated numerical value is an estimated quantity.

A subscript may be appended to J indicating which of the following quality control (QC) criteria were not met:

1 - Blank contamination: indicates possible high bias and/or false positives.

2 - Calibration range exceeded: indicates possible low bias.

3 - Holding times not met: indicates low bias for most analytes with the exception of common laboratory contaminants and chlorinated ethenes.

4 - Other QC outside control limits: bias not readily determined.

N - The analysis indicates that an analyte is present and there are strong indications that the identity is correct.

NJ - The analysis indicates that the analyte is tentatively identified and the associated numerical value may not be consistent with the amount actually present in the sample.

A subscript may be appended to NJ indicating which of the following situations apply:

1 - DDT/Endrin breakdown evident.

2 - Interference from other sample components.

3 - Non-TCL compounds.

4 - A confirmation analysis was missing or QC criteria were not met for the confirmation analysis.

R - The data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified.

9 3 1 2 8 6 2 0 7 2 5

U - The analyte was analyzed for, and is not present above, the level of the associated sample quantitation limit.

UJ - The analyte was analyzed for, and was not present above, the level of the associated value. The associated numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in this sample.

W - Post digestion spike for furnace Atomic Absorption analysis is out of control limits, while sample absorbance is < 50 percent of spike absorbance.

X - Additional flags defined separately, consult case narrative.

* - The duplicate analysis was not within control limits

+ - The correlation coefficient for the Method of Standard Additions was <0.995.

3.0 REFERENCES

EPA, 1991a, *Contract Laboratory Program Statement of Work for Inorganic Analysis*, EPA ILMO2.0.

EPA, 1991b, *Contract Laboratory Program Statement of Work for Organic Analysis*, EPA OLMO1.1.

Westinghouse Hanford Company, 1990, *Westinghouse Sample Management Administration Manual WHC-CM-5-3*.

9 3 1 2 8 2 0 7 2 6

Table D-1 Summary of Phase II Soil Sampling Analytical Results

SDG (WHC)	23	28					
Sample No	B00Z59	B00ZT3	B00ZT4	B00ZT7	B00ZT8	B00ZT9	B00ZV0
Sample Location	TP-11	TP-3B	TP-3B	TP-3A	TP-3A	TP-3A	TP-3A
Sample Depth, ft	4	7-7.5	7-7.5	5	10	19	21-22
INORGANICS, ug/kg							
Aluminum	17800 J	5760 J	4900	5460 J	4770 J	7060 J	3820 J
Antimony	10.5 UJ	5.2 R	5.1 R	5.2 R	5.2 R	7.9 R	5.1 R
Arsenic	4.1 U	0.21 R	0.2 R	0.21 R	0.21 R	0.21 R	1 R
Barium	511 *	72.5	57.9	70.6	65.6	72.1	29.2 R
Beryllium	0.23 U	0.21 R	0.2 R	0.21 R	0.21 R	0.21 R	0.2 R
Cadmium	2.4 J	0.62 R	0.61 R	0.63 R	0.62 R	0.76 R	0.61 R
Calcium	44800	6270	5770	6170	5960	5340	13900
Chromium	85.7 J	4.9 J	4.3 J	3.7 J	9.9 J	102 J	8 J
Cobalt	18.9 J	16.2	16.2	14.8	11.5	13.3	2.9 R
Copper	1280 J	17.1	14.5	16.9	39.4	57.2	6.2
Cyanide	2.8 U	2.6 U	2.5 U	2.6 U	2.6 U	2.7 U	2.5 U
Iron	31900 *	29300 J	29700 J	25500 J	23700 J	23400 J	7390 J
Lead	854 J	2.1	2.2 S	2.2 S	9.8	13	2.4
Magnesium	7640	5050	4700	4100	3760	4040	3130
Manganese	501	414 J	337 J	317 J	262 J	287 J	97.1 J
Mercury	0.11 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.11 U	0.1 R
Molybdenum	NA	NR	NR	NR	NR	NR	NR
Nickel	31.6 J	15.4	8.5	7 R	9.2	81.8	8.2
Potassium	3820 J	706 R	501 R	630 R	659 R	959 R	901 R
Selenium	0.23 UJ	0.21 R	0.2 R	0.21 R	0.21 R	0.21 R	0.2 R
Silver	1.1 U	0.62 R	0.61 R	0.63 R	0.62 R	0.64 R	0.61 R
Sodium	2360	494 R	413 R	511 R	402 R	433 R	125 R
Thallium	0.24 U	0.21 R	0.2 R	0.21 R	0.21 R	0.21 R	0.2 R
Titanium	NA	2870 J	3180 J	2860 J	1950 J	1930 J	244 J
Vanadium	49.7	77.1	84.9	69.8	53.2	52.2	9.8 R
Zinc	3160 *	50.1	49.9	50	52.6	115	14.1
Zirconium	NA	28	28.6	27.9	26.1	22	2.2 R

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	23	28					
Sample No	B00Z59	B00ZT3	B00ZT4	B00ZT7	B00ZT8	B00ZT9	B00ZV0
Sample Location	TP-11	TP-3B	TP-3B	TP-3A	TP-3A	TP-3A	TP-3A
Sample Depth, ft	4	7-7.5	7-7.5	5	10	19	21-22
VOLATILE ORGANICS,ug/kg							
Methylene Chloride	6 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	26 J1	10 U	10 U	11 U	7 J	11 U	10 U
2-Butanone	11 U	10 U	10 U	11 U	11 U	11 U	10 U
Benzene	6 U	0.3 J	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	4 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	6 U	5 U	5 U	5 U	5 U	5 U	5 U
SEMI VOLATILE ORG, ug/kg							
Benzoic Acid	160 J1	NA	NA	NA	NA	NA	NA
BEHP	100 J1	1400 U	1400 U	1400 U	1400 U	1400 U	1300 U
Pyrene	750 U	270 J	1400 U	1400 U	1400 U	220 J	1300 U
1,2,4-Trichlorobenzene	750 U	230 J	1400 U	1400 U	1400 U	1400 U	1300 U
Acenaphthene	750 U	180 J	1400 U	1400 U	1400 U	320 J	1300 U
Phenol	750 U	1400 U	1400 U	1400 U	1400 U	330 J	1300 U
2-Chlorophenol	750 U	1400 U	1400 U	1400 U	1400 U	240 J	1300 U
Di-n-Octylphthlalate	750 U	1400 U	1400 U	1400 U	1400 U	1400 U	1300 U
2-Methylnaphthalene	750 U	1400 U	1400 U	1400 U	1400 U	1400 U	1300 U
Naphthalene	750 U	1400 U	1400 U	1400 U	1400 U	1400 U	1300 U
Pentachlorophenol	3600 U	6700 U	6700 U	6700 U	6800 U	6800 U	6500 U
Di-n-Butyl	750 U	1400 U	1400 U	1400 U	1400 U	1400 U	1300 U
Fluoranthrene	750 U	1400 U	1400 U	1400 U	1400 U	1400 U	1300 U
Phenanthrene	750 U	1400 U	1400 U	1400 U	1400 U	1400 U	1300 U
Anthracene	750 U	1400 U	1400 U	1400 U	1400 U	1400 U	1300 U
Benzo(a)anthracene	750 U	1400 U	1400 U	1400 U	1400 U	1400 U	1300 U
Chrysene	750 U	1400 U	1400 U	1400 U	1400 U	1400 U	1300 U
2,6-Dinitrotoluene	750 U	1400 U	1400 U	1400 U	1400 U	1400 U	1300 U

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	23	28					
Sample No	B00Z59	B00ZT3	B00ZT4	B00ZT7	B00ZT8	B00ZT9	B00ZV0
Sample Location	TP-11	TP-3B	TP-3B	TP-3A	TP-3A	TP-3A	TP-3A
Sample Depth, ft	4	7-7.5	7-7.5	5	10	19	21-22
PEST/PCB's, ug/kg							
Dieldrin	3.9 NJ2	17 U	16 U	17 U	17 U	17 U	16 U
Aroclor 1248	90 U	83 U	82 U	84 U	85 U	85 U	85 U
Aroclor 1254	94 NJ2	170 U	160 U	170 U	17 R	48 R	160 U
Aroclor 1260	180 U	170 U	160 U	170 U	170 U	170 U	160 U
Endrin	6.7 NJ2	17 U	16 U	17 U	17 U	7.2 R	16 U
Aldrin	1 J	8.3 U	8.2 U	8.4 U	8.5 U	0.96 R	8.2 U
4,4'-DDD	18 U	17 U	16 U	17 U	17 U	17 U	16 U
Alpha Chlordane	90 U	83 U	82 U	84 U	1.3 R	85 U	82 U
Beta-BHC	9 U	8.3 U	8.2 U	8.4 U	8.5 U	8.5 U	8.2 U
Gamma Chlordane	90 U	83 U	82 U	84 U	85 U	85 U	82 U
4,4'-DDE	18 U	17 U	16 U	17 U	17 U	17 U	16 U
Endosulfan Sulfate	18 U	17 U	16 U	17 U	17 U	17 U	16 U
Endrin Ketone	18 U	17 U	16 U	17 U	17 U	17 U	16 U
Methoxychlor	90 U	83 U	82 U	84 U	85 U	85 U	82 U
4,4'-DDT	18 U	17 U	16 U	17 U	17 U	17 U	16 U
Endosulfan II	18 U	17 U	16 U	17 U	17 U	17 U	16 U

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	28		29	27	23		30
Sample No	B00ZV1	B00ZV2	B00ZV3	B00ZT2	B00ZT0	B00ZT1	B00ZX4
Sample Location	TP-4/5	TP-4/5	TP-8	TP-7	TP-1	TP-1	B5-1
Sample Depth, ft	5	12	5	5	5	9	S
INORGANICS, ug/kg							
Aluminum	4700 J	5750 J	12600	8390	5620	9470	NA
Antimony	5.2 R	5.2 R	7.3 UN*	11.3 J	5.1 U	5.3 UJ	NA
Arsenic	0.21 R	0.21 R	0.74 BN	2.9 J	0.96 U	25	NA
Barium	68.4	72.2	144	90.7	66.2	70.4	NA
Beryllium	0.21 R	0.21 R	0.55 B	0.23 U	0.2 U	0.31 U	NA
Cadmium	0.62 R	1 R	0.88 U	0.64 U	0.61 U	1 U	NA
Calcium	5540	5610	11600	11000	6290	5470	NA
Chromium	3.2 J	133 J	19.8 *	9.8	6.2 U	96 J1	NA
Cobalt	12.7	14.2	15.8	4.5 B	14.6 U	17.4 U	NA
Copper	13.5	25.3	523	9.9	22.9	1720 UJ	NA
Cyanide	2.6 U	2.6 U	3.7 U	2.7 U	2.6 U	2.6 U	NA
Iron	23400 J	22500 J	32700	7950	27000	47500	NA
Lead	2.5	43.4	18.1 +	19.4 J	2.9	293	NA
Magnesium	3790	3120	6390	1730	4590 U	4070 U	NA
Manganese	264 J	266 J	485	125	313	446	NA
Mercury	0.1 U	0.1 U	1.15 U	0.11 U	0.1 U	0.11 U	NA
Molybdenum	NR	NR	NR	0.42 U	NR	NR	NA
Nickel	5.9 R	71.6	14	57.3	8.2 UJ	145 UJ	NA
Potassium	613 R	567 R	1970	1270	704 U	698 U	NA
Selenium	0.21 R	0.21 R	0.29 U	0.21 UJ	0.2 U	0.21 U	NA
Silver	0.62 R	0.63 R	1.3 B	0.64 U	0.61 U	0.63 U	NA
Sodium	386 R	340 R	811 B	1240	313 U	252 U	NA
Thallium	0.21 R	0.21 R	0.31 B	0.21 U	0.2 U	0.21 U	NA
Titanium	2350 J	2180 J	NA	244 J	NR	NR	NA
Vanadium	63.6	59	85	45.1	71.8	68.9	NA
Zinc	41.6	239	103	34.4	55.2	1110 J1	NA
Zirconium	26.4	20.8	NA	11.7	NR	NR	NA

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	28		29	27	23		30
Sample No	B00ZV1	B00ZV2	B00ZV3	B00ZT2	B00ZT0	B00ZT1	B00ZX4
Sample Location	TP-4/5	TP-4/5	TP-8	TP-7	TP-1	TP-1	B5-1
Sample Depth, ft	5	12	5	5	5	9	S
VOLATILE ORGANICS,ug/kg							
Methylene Chloride	5 U	6 U	5 U	5 U	5 U	5 U	NA
Acetone	11 U	12 U	10 U	11 U	11 J1	11 U	NA
2-Butanone	11 U	12 U	10 U	11 U	10 U	11 U	NA
Benzene	5 U	6 U	5 U	5 U	5 U	5 U	NA
Tetrachloroethene	5 U	6 U	5 U	5 U	5 U	5 U	NA
Toluene	5 U	6 U	5 U	5 U	5 U	5 U	NA
SEMI VOLATILE ORG, ug/kg							
Benzoic Acid	NA	NA	6500 U	1800 U	3300 U	NA	NA
BEHP	92 J	76 J	110 J	360 U	670 U	220 J	NA
Pyrene	210 J	1600 U	240 J	130 J4	670 U	79 J	NA
1,2,4-Trichlorobenzene	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA
Acenaphthene	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA
Phenol	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA
2-Chlorophenol	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA
Di-n-Octylphthlalate	270 J1	1600 U	1300 U	360 U	670 U	710 U	NA
2-Methylnaphthalene	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA
Naphthalene	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA
Pentachlorophenol	6900 U	8000 U	6500 U	1800 U	3300 U	3400 U	NA
Di-n-Butyl	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA
Fluoranthrene	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA
Phenanthrene	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA
Anthracene	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA
Benzo(a)anthracene	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA
Chrysene	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA
2,6-Dinitrotoluene	1400 U	1600 U	1300 U	360 U	670 U	710 U	NA

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	28		29	27	23		30
Sample No	B00ZV1	B00ZV2	B00ZV3	B00ZT2	B00ZT0	B00ZT1	B00ZX4
Sample Location	TP-4/5	TP-4/5	TP-8	TP-7	TP-1	TP-1	B5-1
Sample Depth, ft	5	12	5	5	5	9	S
PEST/PCB's, ug/kg							
Dieldrin	8.5 U	1.5 R	21 X	17 U	16 U	90 NJ2	4.3 U
Aroclor 1248	43 U	50 U	82 U	87 U	82 U	86 U	9.6 U
Aroclor 1254	85 U	30 R	330	170 U	180 U	2000 NJ2	43 U
Aroclor 1260	85 U	100 U	160 U	170 U	160 U	170 U	43 U
Endrin	8.5 U	2.4 R	33 X	17 U	16 U	120 NJ2	4.3 U
Aldrin	4.3 U	0.22 R	8.2 U	8.7 U	8.2 U	5.5 NJ2	0.3 U
4,4'-DDD	8.5 U	0.64 R	16 U	17 U	16 U	6 NJ2	4.3 U
Alpha Chlordane	43 U	50 U	13 JX	87 U	82 U	86 U	21 U
Beta-BHC	4.3 U	5 U	1.2 J	8.7 U	8.2 U	8.6 U	2.1 U
Gamma Chlordane	43 U	50 U	82 U	87 U	82 U	86 U	21 U
4,4'-DDE	8.5 U	10 U	16 U	17 U	16 U	17 U	4.3 U
Endosulfan Sulfate	8.5 U	10 U	16 U	17 U	16 U	17 U	4.3 U
Endrin Ketone	8.5 U	10 U	16 U	17 U	16 U	17 U	4.3 U
Methoxychlor	43 U	50 U	82 U	87 U	82 U	86 U	21 U
4,4'-DDT	8.5 U	6.1 R	16 U	17 U	16 U	17 U	4.3 U
Endosulfan II	8.5 U	10 U	16 U	17 U	16 U	17 U	4.3 U

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	30	31		30		31	6
Sample No	B00ZX5	B00ZX7	B00ZY0	B00ZW6	B00ZW7	B00ZX9	B00GB0
Sample Location	B5-2	B5-3	B5-3	B4-1	B4-1	B5-3	B5-3
Sample Depth, ft	1	S	1'	S	1	S	0-1
INORGANICS, ug/kg							
Aluminum	NA	NA	NA	NA	NA	NA	5430
Antimony	NA	NA	NA	NA	NA	NA	5.9 NJ
Arsenic	NA	NA	NA	NA	NA	NA	1.2 NWJ
Barium	NA	NA	NA	NA	NA	NA	73.6
Beryllium	NA	NA	NA	NA	NA	NA	0.55 B
Cadmium	NA	NA	NA	NA	NA	NA	0.62 UN
Calcium	NA	NA	NA	NA	NA	NA	5200
Chromium	NA	NA	NA	NA	NA	NA	8.7
Cobalt	NA	NA	NA	NA	NA	NA	14.4
Copper	NA	NA	NA	NA	NA	NA	16.7
Cyanide	NA	NA	NA	NA	NA	NA	2.6 U
Iron	NA	NA	NA	NA	NA	NA	25400
Lead	NA	NA	NA	NA	NA	NA	5.7
Magnesium	NA	NA	NA	NA	NA	NA	4290
Manganese	NA	NA	NA	NA	NA	NA	303 JEN
Mercury	NA	NA	NA	NA	NA	NA	0.1 U
Molybdenum	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	7.6 B
Potassium	NA	NA	NA	NA	NA	NA	1050
Selenium	NA	NA	NA	NA	NA	NA	0.21 U
Silver	NA	NA	NA	NA	NA	NA	0.83 U
Sodium	NA	NA	NA	NA	NA	NA	241 B
Thallium	NA	NA	NA	NA	NA	NA	NR
Titanium	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	70.3 J
Zinc	NA	NA	NA	NA	NA	NA	49.9
Zirconium	NA	NA	NA	NA	NA	NA	NA

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	30	31		30		31	6
Sample No	B00ZX5	B00ZX7	B00ZY0	B00ZW6	B00ZW7	B00ZX9	B00GB0
Sample Location	B5-2	B5-3	B5-3	B4-1	B4-1	B5-3	B5-3
Sample Depth, ft	1	S	1'	S	1	S	0-1
VOLATILE ORGANICS,ug/kg							
Methylene Chloride	NA	NA	NA	NA	NA	NA	5 U
Acetone	NA	NA	NA	NA	NA	NA	10 U
2-Butanone	NA	NA	NA	NA	NA	NA	10 U
Benzene	NA	NA	NA	NA	NA	NA	5 U
Tetrachloroethene	NA	NA	NA	NA	NA	NA	5 U
Toluene	NA	NA	NA	NA	NA	NA	3 J
SEMI VOLATILE ORG, ug/kg							
Benzoic Acid	NA	NA	NA	NA	NA	NA	3300 U
BEHP	NA	NA	NA	NA	NA	NA	680 U
Pyrene	NA	NA	NA	NA	NA	NA	680 U
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	680 U
Acenaphthene	NA	NA	NA	NA	NA	NA	680 UJ
Phenol	NA	NA	NA	NA	NA	NA	680 U
2-Chlorophenol	NA	NA	NA	NA	NA	NA	680 U
Di-n-Octylphthlalate	NA	NA	NA	NA	NA	NA	680 UJ
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	680 U
Naphthalene	NA	NA	NA	NA	NA	NA	680 U
Pentachlorophenol	NA	NA	NA	NA	NA	NA	3300 U
Di-n-Butyl	NA	NA	NA	NA	NA	NA	680 U
Fluoranthrene	NA	NA	NA	NA	NA	NA	680 U
Phenanthrene	NA	NA	NA	NA	NA	NA	680 U
Anthracene	NA	NA	NA	NA	NA	NA	680 U
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	680 U
Chrysene	NA	NA	NA	NA	NA	NA	680 UJ
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	680 UJ

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	30	31		30		31	6
Sample No	B00ZX5	B00ZX7	B00ZY0	B00ZW6	B00ZW7	B00ZX9	B00GB0
Sample Location	B5-2	B5-3	B5-3	B4-1	B4-1	B5-3	B5-3
Sample Depth, ft	1	S	1'	S	1	S	0-1
PEST/PCB's, ug/kg							
Dieldrin	4.2 U	4.3 U	4.3 U	5.3 U	72 J4	4.2 U	NA
Aroclor 1248	14 U	22 U	21 U	26 U	23 U	21 U	NA
Aroclor 1254	42 U	43 U	42 U	53 U	45 U	42 U	NA
Aroclor 1260	42 U	43 U	42 U	53 U	45 U	42 U	NA
Endrin	4.2 U	4.3 U	4.3 U	5.3 U	4.5 U	4.2 U	NA
Aldrin	2.1 U	2.2 U	2.1 U	8.6 U	11 U	2.1 U	NA
4,4'-DDD	4.2 U	4.3 U	4.3 U	5.3 U	4.5 U	4.2 U	NA
Alpha Chlordane	0.75 U	22 U	21 U	4.3 U	5.8 U	21 U	NA
Beta-BHC	2.1 U	2.2 U	2.1 U	2.6 U	2.3 U	2.1 U	NA
Gamma Chlordane	2.5 J	22 U	21 U	13 U	21 U	21 U	NA
4,4'-DDE	4.2 U	4.3 U	4.3 U	75 J4	98 J4	0.32 U	NA
Endosulfan Sulfate	4.2 U	4.3 U	4.3 U	19 J4	4.5 U	4.2 U	NA
Endrin Ketone	4.2 U	4.3 U	4.3 U	13 U	4.5 U	4.2 U	NA
Methoxychlor	21 U	22 U	21 U	26 U	23 U	21 U	NA
4,4'-DDT	3.8 U	4.3 U	4.3 U	130 J4	240 J4	1 U	NA
Endosulfan II	4.2 U	4.3 U	4.3 U	5.3 U	4.5 U	4.2 U	NA

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	6						
Sample No	B00GB1	B00GB2	B00GB3	B00GB4	B00GB5	B00GB7	B00G92
Sample Location	B5-3	B5-2	B5-2	B4-1	B4-1	B4-1	PCB-1
Sample Depth, ft	1-2	0-1	1-2	0-1	0-1	1-2	0-1
INORGANICS, ug/kg							
Aluminum	5900	5750	4260	14200	15800	8170	NA
Antimony	5 UJN	5 UJN	5 UJN	6.5 UJN	15.6 NJ	6.8 NJ	NA
Arsenic	1.2 NWJ	0.86 NWJ	0.76 NWJ	1.8 NWJ	1.8 NWJ	1.2 NWJ	NA
Barium	65	93.7	68.7	426	427	206	NA
Beryllium	0.48 B	0.42 B	0.42 B	1 B	1.1 B	0.77 B	NA
Cadmium	0.62 UN	0.62 UN	0.62 UN	0.81 UN	0.82 UN	0.65 UN	NA
Calcium	5050	6820	5880	46600	42900	18100	NA
Chromium	5.4 U	7.3	4.2 U	12.5	12.9	6.9	NA
Cobalt	14.8	15.9	15.4	5.9 B	6.7 B	11.3	NA
Copper	16.7	15.4	15.6	31.5	25.3	17.8	NA
Cyanide	2.6 U	2.6 U	2.6 U	3.4 U	3.4 U	2.7 U	NA
Iron	28900	27100	28700	16400	18000	23200	NA
Lead	5.3	9.1	5	41	36.3	10.3	NA
Magnesium	4770	4770	4180	6380	6340	5430	NA
Manganese	343 JEN	336 JEN	324 JEN	131 JEN	153 JEN	246 JEN	NA
Mercury	0.1 U	0.1 U	0.1 U	0.15	0.14 U	0.11 U	NA
Molybdenum	NA	NA	NA	NA	NA	NA	NA
Nickel	6.3 B	10.5	8 B	6.4 B	7.4 B	4.6 B	NA
Potassium	791 B	1380	1140	954 B	1010 B	661 B	NA
Selenium	0.21 U	0.21 U	0.21 U	0.97 WJ	0.79 WJ	0.35 WJ	NA
Silver	0.83 U	0.83 U	0.83 U	1.1 U	1.1 U	0.87 U	NA
Sodium	277 B	378 B	258 B	4240	4450	1790	NA
Thallium	NR	NR	NR	NR	NR	NR	NA
Titanium	NA	NA	NA	NA	NA	NA	NA
Vanadium	75.7 J	76.8 J	79.1 J	27.5 J	30.5 J	59.1 J	NA
Zinc	54.7	63.2	52	47.4	44.2	45.3	NA
Zirconium	NA	NA	NA	NA	NA	NA	NA

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	6						
Sample No	B00GB1	B00GB2	B00GB3	B00GB4	B00GB5	B00GB7	B00G92
Sample Location	B5-3	B5-2	B5-2	B4-1	B4-1	B4-1	PCB-1
Sample Depth, ft	1-2	0-1	1-2	0-1	0-1	1-2	0-1
VOLATILE ORGANICS,ug/kg							
Methylene Chloride	5 U	5 U	5 U	2 J	7 U	6 U	NA
Acetone	10 U	10 U	10 U	14 U	14 U	12 U	NA
2-Butanone	10 U	10 U	10 U	35	20	18	NA
Benzene	5 U	5 U	5 U	7 U	7 U	6 U	NA
Tetrachloroethene	5 U	5 U	5 U	7 U	7 U	6 U	NA
Toluene	5 U	5 U	1 J	8	5 J	9	NA
SEMI VOLATILE ORG, ug/kg							
Benzoic Acid	3300 U	3300 U	3300 U	4400 U	4400 U	3800 U	NA
BEHP	690 UJ	680 UJ	680 UJ	1100 UJ	1100 UJ	790 UJ	NA
Pyrene	690 U	680 U	680 U	83 J	100 J	88 J	NA
1,2,4-Trichlorobenzene	690 U	680 U	680 U	900 UJ	900 UJ	790 U	NA
Acenaphthene	690 U	680 U	680 U	900 U	900 U	790 U	NA
Phenol	690 UJ	680 UJ	680 UJ	900 UJ	900 UJ	790 UJ	NA
2-Chlorophenol	690 U	680 U	680 U	680 U	900 U	790 UJ	NA
Di-n-Octylphthlalate	690 UJ	680 UJ	680 UJ	900 UJ	900 UJ	790 UJ	NA
2-Methylnaphthalene	690 U	680 U	680 U	400 J	390 J	180 J	NA
Naphthalene	690 U	680 U	680 U	150 J	150 J	790 U	NA
Pentachlorophenol	3300 U	3300 U	3300 U	980 J	620 J	380 U	NA
Di-n-Butyl	690 U	680 U	680 U	65 J	900 UJ	790 UJ	NA
Fluoranthrene	690 U	680 U	680 U	93 J	120 J	62 J	NA
Phenanthrene	690 U	680 U	680 U	900 UJ	250 J	380 J	NA
Anthracene	690 U	680 U	680 U	900 UJ	70 J	790 UJ	NA
Benzo(a)anthracene	690 U	680 U	680 U	900 UJ	93 J	790 UJ	NA
Chrysene	690 UJ	680 UJ	680 UJ	900 UJ	110 J	790 UJ	NA
2,6-Dinitrotoluene	690 UJ	680 UJ	680 UJ	900 UJ	900 UJ	210 J	NA

Table D-1 Summary of Phase II Soil Sampling Analytical Results(Continued)

SDG (WHC)	6						
Sample No	B00GB1	B00GB2	B00GB3	B00GB4	B00GB5	B00GB7	B00G92
Sample Location	B5-3	B5-2	B5-2	B4-1	B4-1	B4-1	PCB-1
Sample Depth, ft	1-2	0-1	1-2	0-1	0-1	1-2	0-1
PEST/PCB's, ug/kg							
Dieldrin	NA	NA	NA	NA	NA	NA	33 U
Aroclor 1248	NA	NA	NA	NA	NA	NA	49000 DJ
Aroclor 1254	NA	NA	NA	NA	NA	NA	330 UJ
Aroclor 1260	NA	NA	NA	NA	NA	NA	330 UJ
Endrin	NA	NA	NA	NA	NA	NA	33 U
Aldrin	NA	NA	NA	NA	NA	NA	16 U
4,4'-DDD	NA	NA	NA	NA	NA	NA	33 U
Alpha Chlordane	NA	NA	NA	NA	NA	NA	160 U
Beta-BHC	NA	NA	NA	NA	NA	NA	16 U
Gamma Chlordane	NA	NA	NA	NA	NA	NA	160 U
4,4'-DDE	NA	NA	NA	NA	NA	NA	33 U
Endosulfan Sulfate	NA	NA	NA	NA	NA	NA	33 U
Endrin Ketone	NA	NA	NA	NA	NA	NA	33 U
Methoxychlor	NA	NA	NA	NA	NA	NA	160 U
4,4'-DDT	NA	NA	NA	NA	NA	NA	33 U
Endosulfan II	NA	NA	NA	NA	NA	NA	33 U

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	6						
Sample No	B00G93	B00G94	B00G95	B00G96	B00G97	B00G98	B00G99
Sample Location	PCB-1	PCB-2	PCB-2	PCB-3	PCB-3	PCB-4	PCB-4
Sample Depth, ft	1-2	0-1	1-2	0-1	1-2	0-1	1-2
PEST/PCB's, ug/kg							
Dieldrin	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Aroclor 1248	41000 DJ	80000 DJ	100000 DJ	6100 J	15000 DJ	21000 DJ	1500 J
Aroclor 1254	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ
Aroclor 1260	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ
Endrin	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Aldrin	16 UJ	16 UJ	16 UJ	16 UJ	16 UJ	16 UJ	16 UJ
4,4'-DDD	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Alpha Chlordane	160 U	160 U	160 U	160 U	160 U	160 U	160 U
Beta-BHC	16 U	16 U	16 U	16 U	16 U	16 U	16 U
Gamma Chlordane	160 U	160 U	160 U	160 U	160 U	160 U	160 U
4,4'-DDE	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Endosulfan Sulfate	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Endrin Ketone	33 U	33 U	33 U	33 U	33 U	33 U	33 UJ
Methoxychlor	160 U	160 U	160 U	160 U	160 U	160 U	18 J
4,4'-DDT	33 U	33 U	33 U	33 U	33 U	33 U	33 U
Endosulfan II	33 U	33 U	33 U	33 U	33 U	33 U	33 UJ

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	30						
Sample No	B00ZV4	B00ZV5	B00ZV6	B00ZV7	B00ZV8	B00ZV9	B00ZX6
Sample Location	PCB-2A	PCB-2A	PCB-3A	PCB-3A	PCB-3A	PCB-4A	PCB-2A
Sample Depth, ft	1	1.5	S	1	20"	S	1.5
PEST/PCB's, ug/kg							
Dieldrin	240 NJ2	410 NJ2	100 NJ2	770 NJ2	250 NJ2	4.1 U	4.2 U
Aroclor 1248	8500 J4	12000 J4	3500 J4	23000 J4	9700 J4	16000 J4	2300 J4
Aroclor 1254	42 U	42 U	41 U	42 U	42 U	41 U	42 U
Aroclor 1260	42 U	42 U	41 U	42 U	42 U	41 U	42 U
Endrin	61 NJ2	100 NJ2	28 NJ2	200 NJ2	61 NJ2	110 NJ2	39 NJ2
Aldrin	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 NJ2
4,4'-DDD	4.2 U	4.2 U	4.1 U	4.2 U	4.2 U	4.1 U	4.2 U
Alpha Chlordane	170 NJ2	280 NJ2	74 NJ2	520 NJ2	180 NJ2	290 NJ2	96 NJ2
Beta-BHC	13 NJ2	22 NJ2	2.1 U	2.1 U	2.1 U	2.1 U	5.5 NJ2
Gamma Chlordane	21 U	21 U	21 U	21 U	21 U	21 U	21 U
4,4'-DDE	4.2 U	4.2 U	4.1 U	4.2 U	4.2 U	4.1 U	4.2 U
Endosulfan Sulfate	4.2 U	4.2 U	4.1 U	4.2 U	4.2 U	4.1 U	4.2 U
Endrin Ketone	28 NJ2	45 NJ2	4.1 U	93 NJ2	23 NJ2	48 NJ2	14 U
Methoxychlor	28 NJ2	46 J4	9.7 J4	95 J4	21 U	48 NJ2	15 U
4,4'-DDT	120 NJ2	200 NJ2	4.1 U	4.2 U	120 NJ2	210 NJ2	4.2 U
Endosulfan II	20 NJ2	36 NJ2	9.6 NJ2	4.2 U	4.2 U	4.1 U	4.2 U

Table D-1 Summary of Phase II Soil Sampling Analytical Results (Continued)

SDG (WHC)	30				
Sample No	B00ZW1	B00ZW2	B00ZW3	B00ZW4	B00ZW5
Sample Location	PCB-4A	PCB-4A	PCB-1A	PCB-1A	PCB-1A
Sample Depth, ft	S	1	S	1	1.5
PEST/PCB's, ug/kg					
Dieldrin	1100 NJ2	1200 NJ2	620 NJ2	820 NJ2	1200 NJ2
Aroclor 1248	36000 J4	39000 J4	20000 J4	29000 J4	43000 J4
Aroclor 1254	42 U	41 U	41 U	41 U	41 U
Aroclor 1260	42 U	41 U	41 U	41 U	41 U
Endrin	240 NJ2	270 NJ2	150 NJ2	180 NJ2	280 NJ2
Aldrin	2.1 U	2.1 U	2 U	2 U	2 NJ2
4,4'-DDD	4.2 U	4.1 U	4.1 U	4.1 U	4.1 U
Alpha Chlordane	680 NJ2	770 NJ2	410 NJ2	540 NJ2	780 NJ2
Beta-BHC	2.1 U	75 NJ2	24 NJ2	50 NJ2	94 NJ2
Gamma Chlordane	21 U	21 U	20 U	20 U	20 U
4,4'-DDE	4.2 U	4.1 U	4.1 U	4.1 U	4.1 U
Endosulfan Sulfate	4.2 U	4.1 U	4.1 U	4.1 U	4.1 U
Endrin Ketone	120 NJ2	140 NJ2	67 NJ2	82 NJ2	140 NJ2
Methoxychlor	120 NJ2	140 NJ2	66 NJ2	81 NJ2	140 NJ2
4,4'-DDT	520 NJ2	4.1 U	4.1 U	4.1 U	4.1 U
Endosulfan II	98 NJ2	110 NJ2	55 NJ2	66 NJ2	110 NJ2

Table D-1 Summary of Phase II Soil Sampling Analytical Results(Continued)

SDG (WHC)	B00G51						
Sample No	B00G76	B00G51	B00G52	B00G53	B00G54	B00G77	B00G56
Sample Location	E1	E2	E3	E4	E4	E5	E6
Sample Depth, ft	S	S	S	S	S	S	S
PEST/PCB's, ug/kg							
Dieldrin	34 U	34 U	35 U	33 U	34 U	35 U	38 U
Aroclor 1248	170 U	170 U	180 U	170 U	170 U	180 U	190 U
Aroclor 1254	340 U	340 U	350 U	330 U	340 U	350 U	190 U
Aroclor 1260	340 U	42000	11000 XJ	330 U	340 U	350 U	380 U
Endrin	34 U	34 U	35 U	33 U	34 U	35 U	38 U
Aldrin	17 U	17 U	18 U	17 U	17 U	18 U	19 U
4,4'-DDD	34 U	34 U	35 U	33 U	34 U	35 U	38 U
Alpha Chlordane	1100	340	280	210	290	960 XJ	710
Beta-BHC	17 U	17 U	18 U	17 U	17 U	18 U	19 U
Gamma Chlordane	1700	610 XJ	420	330	440	1600 XJ	1000
4,4'-DDE	34 U	34 U	35 U	33 U	34 U	35 U	38 U
Endosulfan Sulfate	34 U	34 U	35 U	33 U	34 U	35 U	38 U
Endrin Ketone	34 U	34 U	35 U	33 U	34 U	35 U	38 U
Methoxychlor	170 U	170 U	180 U	170 U	170 U	180 U	190 U
4,4'-DDT	34 U	34 U	35 U	33 U	34 U	35 U	38 U
Endosulfan II	34 U	34 U	35 U	33 U	34 U	35 U	38 U

Values associated with U qualifier are the SQL
NA indicates analysis not performed or not available
SDG = Sample Delivery Group
WHC = Westinghouse Hanford Company

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DEPARTMENT OF THE ARMY
NORTH PACIFIC DIVISION MATERIALS LABORATORY
CORPS OF ENGINEERS
1491 N.W. GRAHAM AVENUE
TROUTDALE, OREGON 97060-9503

CENPD-PE-GT-L (1110-1-8100c) 5 Aug 92

MEMORANDUM FOR: Commander, Walla Walla District, ATTN: CENPW-PL-ER (McBane)

SUBJECT: W.O. 92-M-239, Results of Chemical Analyses

Project: HORN RAPIDS LANDFILL
Intended Use: Evaluate site
Source of Material: Reference Chain of Custody Records
Submitted by: CENPW-PL-ER
Date Sampled: 23 Oct 91 Date Received: 9 Jul 92
Methods of Test: Reference Enclosure 1
Reference: DD Form 448 currently being processed

1. Enclosed are results of two solids samples which were submitted to evaluate and confirm their suspected identity. Included are:

a. Enclosure 1, Report number 9158 from ARDL, Inc.

b. Enclosure 2, Chain of Custody and Cooler Receipt forms.

2. If you have any questions or comments regarding this report, please contact Dr. Ajmal Ilias at (503) 665-4166.

3. This completes all work requested to date.

Enclosures

TIMOTHY J. SEEMAN
Director

TJS
seeman

ilias

Copy Furnished: CENPD-PE-GT
W.O. 92-M-239
Review File
Reading File

MFR: Self explanatory. Complete copy in office files.

ARDL REPORT 9158
CORPS OF ENGINEERS - PORTLAND DISTRICT
HORN RAPIDS SITE

DATE SUBMITTED: 7/09/92

ARDL, Inc.
CHEMISTRY -- BIOLOGY -- PHYSIOLOGY -- ENGINEERING
ENVIRONMENTAL ANALYSIS

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TELEPHONE (618) 244-3236

ARDL inc. applied research & development laboratory

CHEMISTRY • BIOLOGY • PHYSIOLOGY
ENGINEERING • ENVIRONMENTAL ANALYSIS

TO: Pam Swan, CENPD

FROM: R. L. Curtin, ARDL

DATE: 7/15/92

SUBJECT: Analytical Results
COE Samples HRL3A03 and HRL3A05
Horn Rapids Site

INTRODUCTION

Two solid samples identified as noted above were received from CENPD. This laboratory was requested to evaluate the materials and confirm their suspected identity.

METHODS AND RESULTS

Sample HRL3A03 (ARDL 9158-1)

CENPD suspected that this sample was sodium bisulfate ($NaHSO_4$). Sodium bisulfate is water soluble (28.6 g/100 ml) and its solutions are acidic (pH 1.4 at 0.1 molar).

A quantity of the sample (25.8 g, as is) was dissolved in 100 ml of reagent water. The sample was incompletely soluble and the pH of the preparation was 0.3.

The preparation was filtered and the filtrate evaluated for sodium and sulfate concentration using Methods 7770 and 6010 for sodium and Method 9038 for sulfate. Based on sodium content, the sample contains 32% (w/w) sodium bisulfate. Based on sulfate content, the sample contains 42% sodium bisulfate.

The results observed suggest the following:

1) the sample contains approximately one-third sodium bisulfate; and

2) some free acid (probably sulfuric acid) is present.

P.O. Box 1566 • 1801 W. Forest Street • Mt. Vernon, Illinois 62864 • (618) 244-3235
"Test Everything - Keep The Good" 1 Thes. 5:21

2312 0207 46

Sample HRL3A05 (ARDL 9158-2)

CENPD suspected that the sample was potassium permanganate.

Potassium permanganate is a strong oxidant which is water soluble (6.4 g/100 ml). Its aqueous solutions are neutral and are characteristically purple in color.

Aqueous solutions of the sample were neutral and were the expected color. The material was incompletely soluble, however, and the depth of color observed suggested that permanganate was not a major constituent of the sample.

The solutions were evaluated for potassium and manganese concentration using Methods 7610 and 6010 for potassium and Methods 7460 and 6010 for manganese. The results obtained indicated that the permanganate concentration in the sample was considerably lower than expected.

Confirmation of these initial values was attempted by standardizing an aqueous solution of the sample against a sodium oxalate standard as described in Method 3500-Ca E (Standard Methods, 17th Edition). The results obtained indicated that, calculated as potassium permanganate, the oxidants present in the sample exceeded sample weight by a factor of approximately 4.

To resolve the contradictory results obtained, a weighed quantity of sample (100 g) was suspended in a known volume of water. After prolonged stirring, the preparation was filtered. The insolubles were recovered quantitatively (98.15%). The insolubles in the sample taken consisted of a considerable quantity of small pebbles and other soil constituents.

The filtrate was scanned over the visible range using a spectrophotometer. The scan obtained was compared with an aqueous solution of ACS grade potassium permanganate after diluting aliquots of the preparations so that their color intensities were approximately equivalent. Photocopies of the spectra obtained are attached. Similarities in the spectra conclusively show that the sample contains potassium permanganate. The spectra also show that another component (not identified) is also present in the sample.

A standard curve was prepared using aqueous solutions of reagent grade potassium permanganate of known concentration. A straight line with a correlation coefficient of 1.000 was obtained. The concentration of potassium permanganate in the sample extract described above was determined using this curve at 544.2 nm where it appeared that interference from other constituents would be minimal.

The results obtained indicate that the water soluble fraction of the sample contains 8.2% potassium permanganate.

U.S. Army Corps of Engineers 93128 20748 Chain of Custody Record
(ER 1110-1-263)

Proj. No. | Project Name: 1100-EM-1 Horn Rapids Landfill Trenching

Sampler: (Signature) James A McBane

Date	Time	Pres.	Grab	Comp	Site Code/Sample Number	Number of Containers	Confirm compound Sodium Bisulphate	Confirm Compound Potassium Permanganate						Remarks:
10/23/91	1415		X		HRL3AØ3	1 baggie	X							See notes
10/23/91	1445		X		HRL 3AØ5	1 baggie		X						See notes

① Original chain-of-custody broken months ago.
② Samples kept at room temperature over period of 8 months; no special preservation techniques taken.
③ Should either sample fail the confirmation for the listed compound, please perform whatever testing is required to identify the substance.
④ 7-day turnaround time requested

Sampler Relinquished by:	Date/Time	Received by: (Sig.)	Date/Time	Hazards Associated with Samples
J McBane	6/29/92 1300	Lisa Snyder	6/30/92 1000	Unknown - cleared for radiation @ Hanford Site.
Relinquished by: (Sig.) Lisa Snyder	6/30/92 1500	Received by: (Sig.)	Date/Time	
Relinquished by: (Sig)	Date/Time	Received for Laboratory by: (Sig.) Donna Cochran	Date/Time 07/06/92 0945	Remarks at time of receipt:
Custody Seal No.		Lab case No.: 9158		

ENG Form 5021-R, Oct 90 Proponent: CEMP-RT

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APPENDIX E

SUMMARY OF PHASE II GROUNDWATER ANALYTICAL RESULTS

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1.0 INTRODUCTION

This report summarizes six 1100-EM-1 operable unit groundwater monitoring events as follows:

Round 5 - 3/91	Round 7 - 8/91	Round 8 - 11/91
Round 6 - 6/91	Round 7.5 - 9/91	Round 9 - 3/92

The report summarizes all available groundwater chemical analytical results for the 1100-EM-1 area for rounds 5 through 9. The complete chemical analytical results are presented in tables E-1 through E-6 of this appendix following the written summary.

Groundwater samples were analyzed for primary and relevant secondary drinking water, Washington Administrative Code (WAC) 173-304, RCRA groundwater monitoring parameters, general chemistry parameters, Contract Laboratory Program (CLP) Target Compound List (TCL) parameters, CLP Target Analyte List (TAL) parameters, coliform bacteria, and radiochemical parameters. The results have been broken down into the categories of volatile organics, semivolatile organics, pesticides, metals, wet chemistry, radioactive isotopes, and coliform bacteria for ease of comparison. WHC Office of Sample Management provided validated results for Round 5 and partially validated results for sampling Round 6. The remaining analytical data was validated by the USACE using current EPA CLP guidelines.

Groundwater samples were obtained according to the Operable Unit Groundwater Sampling Schedule, table 4-1, from the Remedial Investigation (RI) Phase II Supplemental Work Plan for the Hanford Site 1100-EM-1 Operable Unit (DOE/RL-90-37).

2.0 GROUNDWATER CONTAMINATION

Groundwater data is tabulated according to monitoring well number, well identification tag, round number, and sample identifier. Upper tolerance limits (UTL's) are presented for ease of comparison.

2.1 VOLATILE ORGANICS

All data units for volatile organics are given in micrograms per liter(μg/l) unless specified otherwise. Monitoring well numbers 1, 3, 4, 9, 19, and S30-15A show no analyte compounds detected above the sample quantitation limit in Rounds 5 through 9.

Monitoring well numbers 6, 8, 10, 11, 13, 14, 15, 20, 21, S29-E12, and S32-E13A were found to contain the following positively identified and quantified analytes pertinent to quantitative risk assessment. Only values that exceeded site UTL's are noted in this summary, for complete information consult the attached tables. Compounds with the qualifier "D" were identified in an analysis at a secondary dilution factor.

Positively Identified and Quantified Analytes

Monitoring Well	Analytes
6	acetone and chloroform
8	1,1,1-trichloroethane
10(Sample B06196)	1,1,1-trichloroethane
11	acetone, trichloroethene, and 1,1,1-trichloroethane
12	trichloroethene(D)
13	methylene chloride and trichloroethane
14	trichloroethene
15	trichloroethene(D)
20	acetone, trichloroethene, and 1,1,1-trichloroethane
21	acetone
S29-E12	acetone
S32-E13A	acetone

Monitoring well numbers 5, 6, 7, 8/8A, 10, 11, 13, 14, 15, 17, 18, 20, 21, 22, and S30-15A were found to contain the following compounds. It should be noted that these compounds are listed with a "J" qualifier indicating that they are estimated values. They meet identification criteria but their concentration falls below the lowest concentration used in the calibration curve, yet is greater than zero. While their identity is known their concentration should be considered uncertain. A "B" qualifier(organics only) is associated with some listed compounds indicating that the analyte was also found in the blank, which should be interpreted as meaning that the concentration of the compound is suspect.

Identified Analytes

Monitoring Well	Analytes
5	1,1,1-trichloroethane
6	tetrachloroethane and acetone
7	acetone and C12 hydrocarbons
8/8A	acetone
10	1,1,1-trichloroethane and trichloroethene
11	trichloroethene
13	1,1,1-trichloroethane and
14	1,1,1-trichloroethane and trichloroethene
15	acetone(B)
17	tetrachloroethane and C12 hydrocarbons
18	acetone(B), chloroform, and tetrachloroethane
20	trichloroethene
21	acetone(B)
22	1,1,1-trichloroethane
S30-15A	chloroform

2.2 SEMIVOLATILE ORGANICS

All data units for semivolatile organics are given in micrograms per liter(μg/l) unless specified otherwise. Monitoring well numbers 1, 2, 3, 4, 6, 7, 8/8A, 9, 10, 11, 12, 14, 15, 17, 18, 19, 20, 21, 22, S30-15A, and S32-E13A show no analyte compounds detected above the sample quantitation limit in Rounds 5 through 9.

Monitoring well numbers 5, 13, and S29-E12 were found to contain the following positively identified and quantified analytes pertinent to quantitative risk assessment.

Positively Identified and Quantified Analytes

Monitoring Well	Analytes
5	diethylphathalate
13	diethylphathalate
S29-E12	diethylphathalate

2.3 PESTICIDE ORGANICS

All data units for pesticide organics are given in micrograms per liter(μg/l) unless specified otherwise. Monitoring well numbers 1, 2, 3, 4, 5, 6, 7, 8/8A, 9, 10, 11, 12, 13, 14, 15, 17, 22, S29-E12, S30-15A, and S32-E13A show no analyte compounds detected above the sample quantitation limit in Rounds 5 through 9.

In monitoring well numbers 18, 19, 20, and 21, the following analytes were identified. It should be noted that these compounds are listed with a "J" qualifier indicating that they are estimated values. They meet the identification criteria but their concentration falls below the lowest concentration used in the calibration curve, yet is greater than zero. While their identity is known their concentration may be uncertain.

Identified Analytes

Monitoring Well	Analytes
18	Aroclor-1260
19	Aroclor-1260
20	Aroclor-1260
21	Aroclor-1260

2.4 METALS AND CYANIDE

All data units for metals/cyanide are given in micrograms per liter(μg/l) unless specified otherwise. Only analytes that were positively identified and quantified that are above site UTL's are listed. In monitoring well numbers 1 through 15, 17 through 22, S29-E12, S30-15A, and S32-E13A, the following analytes were positively identified and quantified.

Positively Identified and Quantified Analytes

Monitoring Well	Compounds
1	Cu, Cr, Ni, K, Ca, Mg
2	Cr
3	Cr, Ni, K, Ca, Cu, Cr, Fe, Mg, Na
4	Cr
5	Ca, K, Zn
6	Cr, Cu
7	Cr, Zn
8	Cr, Cu, Zn
9	Cr, Zn
10	Ba, Ca, Cr, K, Na, Zn
11	Ba, Ca, Cr, Mg, K, Na, Zn
12	Ba, Ca, Mg, K, Na
13	Ca, Cr, Mg, K, Na
14	Ba, Ca, Mg, K, Na
15	Ba, Ca, Cr, K
17	Al, Cr, Ni
18	Al, Cr, Cu, Fe, Zn
19	Cr, Cu, Zn
20	Al, Ba, Ca, Cr, Cu, Fe, K, Na, Zn
21	Cr, Cu, Zn
22	Cr, Cu, K
S29-E12	Zn
S30-15A	Ca, Zn
S32-E13A	Ca, Mg, K, Zn

In monitoring well numbers 1 through 15, 17 through 22, S29-E12, S30-15A, and S32-E13A, the following analytes were identified. The qualifiers for inorganic data are defined differently, thus the definitions for the qualifiers presented below have been included here for ease of interpretation. A "B" qualifier (inorganic compounds only) means that the reported value is less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL).

An "*" qualifier means that duplicate analysis was not within control limits. The identity of the analyte is certain but the concentration is uncertain.

A "U" qualifier means that the compound was analyzed for but not detected.

A "W" qualifier means the post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is < 50 percent of spike absorbance. Therefore, the concentration is uncertain.

An "N" qualifier means that the spiked sample recovery was not within control limits making the analytes concentration uncertain.

Identified Analytes

Monitoring Well	Analytes
1	Ba(B), Cu(B), Tl(UW),Zn(B)
2	Sb(B), Be(B), Ni(B),
3	Sb(B), Ba(B), Ca(*), Mg(*), Ni(B), Na(*), Tl(UW), Zn(B), Cu(B)
4	Ba(B), Cr(B)
5	Al(B), Sb(B), Ba(B), Be(B), Cd(B), Cr(B & *), Cu(B), Ni(B), Zn(B)
6	As(BW), Cu(B), Cr(B & B*), Sb(B)
7	Be(B), Zn(B), Cr(B*), Cu(B)
8	Al(B), Ba(B), Be(B), Cr(*), Cu(B)
9	Ba(B), Cd(B), Cu(B)
10	Ba(B), Sb(B), Ni(B)
11	Al(B), Sb(B), Ba(B)
12	Sb(B), Ba(B), Cr(B), Cu(B)
13	Sb(B), Ba(B), Zn(B)
14	Sb(B), Ba(B)
15	Sb(B), Ba(B), Ca(B), Cr(B), Cu(B), Mg(B), Na(B), Zn(B)
17	Cu(B)
18	Al(B), Cr(B), Cu(B), Mg(B), Ni(B), Zn(B)
19	Al(B), Cu(B), Zn(B)
20	Ba(B), Be(B), Cr(B), Cu(B), Ni(B), Zn(B)
21	Be(B), Cd(B), Cu(B), Ni(B), Zn(B)
22	Cu(B), Zn(B)
S29-E12	Sb(B)
S30-15A	Ba(B)
S32-E13A	Sb(B)

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2.5 WET CHEMISTRY

Data units vary more for wet chemistry, but is milligrams per liter(mg/l) unless specified otherwise, see tables data for details. In monitoring well numbers 1 through 3, 7 through 15, 17 through 22, S29-E12, S30-E15A, and S32-E13A, the following analytes were positively identified and quantified and found to be above site UTL's, except for nitrates, which have no site UTL.

Positively Identified and Quantified Analytes

Monitoring Well	Analytes
1	nitrates(no UTL) and alkalinity
2	nitrates(no UTL), fluoride, and sulfate
3	alkalinity, chloride, and sulfate
7	fluoride and chloride
8	TDS, sulfate, and fluoride
10	nitrates(no UTL), sulfate, fluoride, TDS, and chloride
11	nitrates(no UTL), fluoride, nitrite, sulfate, and TDS
12	nitrates(no UTL), sulfate, and TDS
13	nitrates(no UTL), sulfates, TDS, and fluoride
14	nitrates(no UTL), fluoride, sulfate, and TDS
15	nitrates(no UTL), fluoride, sulfate, and TDS
17	nitrate, fluoride
18	nitrates(no UTL), sulfate, TDS, and pH
19	fluoride
20	fluoride, sulfate, and TDS
21	fluoride and phosphate
22	fluoride and ammonia
S29-E12	fluoride
S30-E15A	alkalinity
S32-E13A	alkalinity

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2.6 RADIOACTIVE ISOTOPES

All data units are picoCurie per liter(pCi/l). In monitoring well numbers 2, 4 through 9, 17 through 19, 21 through 22, S29-E12, S30-15A, and S3213A, no α or β radiation was detected above the UTL's. The remaining wells, shown below, have α and β levels above the UTL's.

Wells with Radiation Levels Above UTL's

Well Number	Radiation
1	α and β
3	β
10	β
11	α and β
12	β
13	β
14	α and β
15	β
20	β

2.7 COLIFORM BACTERIA

Analytical tests for coliform bacteria were negative.

3.0 DATA QUALIFIER KEY FOR GROUNDWATER LABORATORY DATA[1]

3.1 ORGANICS

U - The analyte was analyzed for and is not detected above the given value.

J - The analyte was analyzed for and was positively identified, but the given numerical value may not be consistent with the amount actually present in the environmental sample.

R - Quality control indicates that the data are unusable. Re-sampling and/or re-analysis is necessary for verification.

Q - No analytical result.

N - Presumptive evidence of presence of material(tentative identification).

C - Pesticide results were confirmed by GC/MS.

[1] Source: Risk Assessment Guidance for Superfund, EPA, 540/1-89/0002

9 3 1 2 8 6 2 0 7 6 0

B - Analyte found in associated blank as well as in sample.

E - Concentration exceeds calibration range of GC/MS instrument.

D - Compound identified in and analysis at a secondary dilution factor.

A - The TIC is a suspected aldol condensation product.

X - Additional flags defined separately.

3.2 INORGANICS

U - The analyte was analyzed for and is not detected above the given value.

J - The analyte was analyzed for and was positively identified, but the given numerical value may not be consistent with the amount actually present in the environmental sample.

R - Quality control indicates that the data are unusable. Re-sampling and/or re-analysis is necessary for verification.

Z - No analytical result.

B - Reported value is less than the contract required detection limit(CRDL), but greater than the instrument detection limit(IDL).

E - Value is estimated due to matrix interferences.

M - Duplicate infection precision criteria not met.

N - Spiked sample recovery not within control limits.

S - Reported value was determined by the Method of Standard Additions(MSA).

W - Post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is <50% of spike absorbance.

* - Duplicate analysis was not within control limits.

+ - Correlation coefficient for MSA was <0.995.

3.3 RADIOACTIVE ISOTOPES

- - = Sample not taken or data not requested
* = Below error limit (for round 5)
LT = Less Than

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TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3
Well ID	SITE UTL'S	S41-E11	S41-E11	S41-E11	S41-E11	S41-E11	S41-E11	S34-E10	S34-E10	S34-E10	S34-E10	S34-E10	S34-E10	S41-E12	S41-E12	S41-E12	S41-E12	S41-E12	S41-E12
ROUND	ug/L	5	6	7	7.5	8	9	5	6	7	7.5	8	9	5	6	7	7.5	8	9
SAMPLE ID#			B00ZC6			B01BT3			B00ZC8	B010X3			B06194		B00ZD0			B01BT4	
PARAMETERS (units ug/l)																			
VOLATILE ORGANICS																			
Chloromethane	2	--	10 U	--	--	--	--	--	10 U	10 U	--	--	1 U	--	10 U	--	--	10 U	--
Trichlorofluoromethane	NA	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
Bromomethane	2	--	10 U	--	--	--	--	--	10 U	10 U	--	--	1 U	--	10 U	--	--	10 U	--
Vinyl Chloride	2	--	10 U	--	--	--	--	--	10 U	10 U	--	--	1 U	--	10 U	--	--	10 U	--
Chloroethane	2	--	10 U	--	--	--	--	--	10 U	10 U	--	--	1 U	--	10 U	--	--	10 U	--
Methylene Chloride	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	5 U	--	5 U	--	--	5 U	--
Acetone	10	--	10 U	--	--	--	--	--	6 J	10 U	--	--	10 U	--	10 U	--	--	10 U	--
Carbon Disulfide	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
1,1-Dichloroethene	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
1,1-Dichloroethane	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
cis-1,2-Dichloroethene	1	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
Trans-1,2-Dichloroethene	NA	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
1,2-Dichloroethene (total)	1	--	5 U	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	5 U	--
Chloroform	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
1,2-Dichloroethane	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
2-Butanone	2	--	10 U	--	--	--	--	--	10 U	10 U	--	--	1 U	--	10 U	--	--	10 U	--
Tetrahydrofuran	NA	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
1,1,1-Trichloroethane	1.2	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
Carbon Tetrachloride	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
Vinyl Acetate	2	--	10 U	--	--	--	--	--	10 U	--	--	--	0.5 U	--	10 U	--	--	10 U	--
Bromodichloromethane	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
1,2-Dichloropropane	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
cis-1,3-Dichloropropene	1	--	5 U	--	--	--	--	--	5 U	--	--	--	0.5 U	--	5 U	--	--	5 U	--
Trans-1,3-Dichloropropene	1	--	5 U	--	--	--	--	--	5 U	--	--	--	0.5 U	--	5 U	--	--	5 U	--
Trichloroethene	1	--	5 U	--	--	--	--	--	5 U	3 J	--	--	0.5 U	--	5 U	--	--	5 U	--
Dibromochloromethane	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
1,1,2-Trichloroethane	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
Benzene	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
Bromoform	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
4-Methyl-2-Pentanone	10	--	10 U	--	--	--	--	--	10 U	2 J	--	--	1 U	--	10 U	--	--	10 U	--
2-Hexanone	10	--	10 U	--	--	--	--	--	10 U	4 J	--	--	1 U	--	10 U	--	--	10 U	--
Tetrachloroethene	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
1,1,2,2-Tetrachloroethane	1	--	5 U	--	--	--	--	--	5 U	0.9 J	--	--	0.5 U	--	5 U	--	--	10 U	--
Toluene	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
Chlorobenzene	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
Ethylbenzene	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
Styrene	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	0.5 U	--	5 U	--	--	5 U	--
m,p-xylene	NA	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
o-xylene	NA	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
Total Xylenes	1	--	5 U	--	--	--	--	--	5 U	5 U	--	--	--	--	5 U	--	--	5 U	--
C12 HYDROCARBON	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
1,4-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
1,2-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
SEMI-VOLATILE ORGANICS																			
Phenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
bis(2-Chloroethyl)Ether	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
2-chlorophenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
1,3-Dichlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
1,4-Dichlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Benzyl Alcohol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
1,2-Dichlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
2-Methylphenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
bis(2-Chloroisopropyl)Ether	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
4-Methylphenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
N-Nitroso-Di-n-Propylamine	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Hexachloroethane	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Nitrobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Isophorone	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
2-Nitrophenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
2,4-Dimethylphenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Benzoic Acid	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	50 U	--	--	200 U	--
bis(2-Chloroethoxy)Methane	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
2,4-Dichlorophenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
1,2,4-Trichlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Naphthalene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
4-Chloroaniline	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Hexachlorobutadiene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
4-Chloro-3-Methylphenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
2-Methylnaphthalene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Hexachlorocyclopentadiene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
2,4,6-Trichlorophenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
2,4,5-Trichlorophenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	50 U	--	--	200 U	--
2-Chloronaphthalene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
2-Nitroaniline	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	50 U	--	--	200 U	--
Dimethyl Phthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	--	--
Acenaphthylene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3
Well ID	SITE UTL'S	S41-E11	S41-E11	S41-E11	S41-E11	S41-E11	S41-E11	S34-E10	S34-E10	S34-E10	S34-E10	S34-E10	S34-E10	S41-E12	S41-E12	S41-E12	S41-E12	S41-E12	S41-E12
ROUND	ug/L	5	6	7	7.5	4	9	5	6	7	7.5	8	9	5	6	7	7.5	8	9
SAMPLE ID #			B00ZC6			B01BT3			B00Z86	B010K3			B06194		B00ZD0			B01BT6	
SEMI-VOLATILE ORGANICS																			
2,6-Dinitrotoluene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
3-Nitroaniline	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	50 U	--	--	200 U	--
Acenaphthene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
2,4-Dinitrophenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	50 U	--	--	200 U	--
4-Nitrophenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	50 U	--	--	40 U	--
Dibenzofuran	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
2,4-Dinitrotoluene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Diethylphthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
4-Chlorophenyl-phenylether	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Fluorene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
4-Nitroaniline	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	50 U	--	--	200 U	--
4,6-Dinitro-2-Methylphenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	50 U	--	--	200 U	--
N-Nitrosodiphenylamine (1)	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
4-Bromophenyl-phenylether	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Hexachlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Pentachlorophenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	50 U	--	--	200 U	--
Phenanthrene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Anthracene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Di-n-Butylphthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Fluoranthene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Pyrene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Butylbenzylphthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
3,3'-Dichlorobenzidine	20	--	20 U	--	--	--	--	--	20 U	20 U	--	--	--	--	20 U	--	--	80 U	--
Benzo(a)anthracene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Chrysene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
bis(2-Ethylhexyl)Phthalate	23	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Di-n-Octyl Phthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Benzo(b)Fluoranthene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Benzo(k)Fluoranthene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Benzo(a)Pyrene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Indeno(1,2,3-cd)Pyrene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Dibenz(a,h)Anthracene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
Benzo(g,h,i)Perylene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	10 U	--	--	40 U	--
PESTICIDE ORGANICS																			
alpha-BHC	0.05	--	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	0.05 U	--	--	--	--
beta-BHC	0.05	--	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	0.05 U	--	--	--	--
delta-BHC	0.05	--	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	0.05 U	--	--	--	--
gamma-BHC	0.05	--	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	0.05 U	--	--	--	--
Heptachlor	0.05	--	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	0.05 U	--	--	--	--
Aldrin	0.05	--	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	0.05 U	--	--	--	--
Heptachlor epoxide	0.05	--	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	0.05 U	--	--	--	--
Endosulfan I	0.05	--	0.05 U	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	0.05 U	--	--	--	--
Dieldrin	0.1	--	0.1 U	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	0.1 U	--	--	--	--
4,4'-DDE	0.1	--	0.1 U	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	0.1 U	--	--	--	--
Endrin	0.1	--	0.1 U	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	0.1 U	--	--	--	--
Endosulfan II	0.1	--	0.1 U	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	0.1 U	--	--	--	--
4,4'-DDD	0.1	--	0.1 U	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	0.1 U	--	--	--	--
Endosulfan sulfate	0.1	--	0.1 U	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	0.1 U	--	--	--	--
4,4'-DDT	0.1	--	0.1 U	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	0.1 U	--	--	--	--
Methoxychlor	0.5	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	0.5 U	--	--	--	--
Endrin ketone	0.1	--	0.1 U	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	0.1 U	--	--	--	--
alpha-Chlordane	0.5	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	0.5 U	--	--	--	--
gamma-Chlordane	0.5	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	0.5 U	--	--	--	--
Toxaphene	1	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	--	1 U	--	--	--	--
Aroclor-1016	0.5	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	0.5 U	--	--	--	--
Aroclor-1221	0.5	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	0.5 U	--	--	--	--
Aroclor-1232	0.5	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	0.5 U	--	--	--	--
Aroclor-1242	0.5	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	0.5 U	--	--	--	--
Aroclor-1248	0.5	--	0.5 U	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	0.5 U	--	--	--	--
Aroclor-1254	1	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	--	1 U	--	--	--	--
Aroclor-1260	1	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	--	1 U	--	--	--	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		4	4	4	4	4	4	5	5	5	5	5	5	5	6	6	6	6	6
Well ID	SITE UTL'S	S36-E12A	S36-E12A	S36-E12A	S36-E12A	S36-E12A	S36-E12A	S36-E12B	S36-E12B	S36-E12B	S36-E12B	S36-E12B	S36-E12B	S36-E12B	S37-E11	S37-E11	S37-E11	S37-E11	S37-E11
ROUND	ug/L	5	6	7	7.5	8	9	5	6	6	7	7.5	8	9	5	6	7	7.5	8
SAMPLE ID#			B00252			B01BT9			B00256	B00260			B01BV0			B00264			B01BV2
PARAMETERS (units ug/l)																			
VOLATILE ORGANICS																			
Chloromethane	2	--	10 U	--	--	10 U	--	--	10 U	10 U	--	--	10 U	--	--	10 U	--	--	10 U
Trichlorofluoromethane	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	2	--	10 U	--	--	10 U	--	--	10 U	10 U	--	--	10 U	--	--	10 U	--	--	10 U
Vinyl Chloride	2	--	10 U	--	--	10 U	--	--	10 U	10 U	--	--	10 U	--	--	10 U	--	--	10 U
Chloroethane	2	--	10 U	--	--	10 U	--	--	10 U	10 U	--	--	10 U	--	--	10 U	--	--	10 U
Methylene Chloride	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Acetone	10	--	10 U	--	--	10 U	--	--	10 U	10 U	--	--	10 U	--	--	10 U	--	--	5 J
Carbon Disulfide	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
1,1-Dichloroethene	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
1,1-Dichloroethane	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
cis-1,2-Dichloroethene	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trans-1,2-Dichloroethene	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene (total)	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Chloroform	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
1,2-Dichloroethane	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
2-Butanone	2	--	10 U	--	--	10 U	--	--	10 U	10 U	--	--	10 U	--	--	10 U	--	--	10 U
Tetrahydrofuran	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	1.2	--	5 U	--	--	5 U	--	--	3 J	3 J	--	--	5 J	--	--	5 U	--	--	5 U
Carbon Tetrachloride	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Vinyl Acetate	2	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Bromodichloromethane	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
1,2-Dichloropropane	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
cis-1,3-Dichloropropene	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Trans-1,3-Dichloropropene	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Trichloroethene	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Dibromochloromethane	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
1,1,2-Trichloroethane	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Benzene	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Bromoform	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
4-Methyl-2-Pentanone	10	--	10 U	--	--	10 U	--	--	10 U	10 U	--	--	10 U	--	--	10 U	--	--	10 U
2-Hexanone	10	--	10 U	--	--	10 U	--	--	10 U	10 U	--	--	10 U	--	--	10 U	--	--	10 U
Tetrachloroethene	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	2 J	--	--	5 U
1,1,2,2-Tetrachloroethane	1	--	5 U	--	--	10 U	--	--	5 U	5 U	--	--	10 U	--	--	5 U	--	--	10 U
Toluene	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Chlorobenzene	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Ethylbenzene	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Styrene	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
m,p-xylene	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-xylene	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Xylenes	1	--	5 U	--	--	5 U	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	--	5 U
C12 HYDROCARBON	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SEMI-VOLATILE ORGANICS																			
Phenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
bis(2-Chloroethyl)Ether	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
2-chlorophenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
1,3-Dichlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
1,4-Dichlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Benzyl Alcohol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
1,2-Dichlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
2-Methylphenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
bis(2-Chloroisopropyl)Ether	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
4-Methylphenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
N-Nitroso-Di-n-Propylamine	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Hexachloroethane	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Nitrobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Isophorone	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
2-Nitrophenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
2,4-Dimethylphenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Benzoic Acid	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	50 U	--	--	--
bis(2-Chloroethoxy)Methane	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
2,4-Dichlorophenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
1,2,4-Trichlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Naphthalene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
4-Chloroaniline	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Hexachlorobutadiene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
4-Chloro-3-Methylphenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
2-Methylnaphthalene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Hexachlorocyclopentadiene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
2,4,6-Trichlorophenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
2,4,5-Tricholorophenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	50 U	--	--	--
2-Chloronaphthalene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
2-Nitroaniline	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	50 U	--	--	--
Dimethyl Phthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Acenaphthylene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		4	4	4	4	4	4	5	5	5	5	5	5	5	6	6	6	6	6
Well ID	SITE UTL'S	S36-E12A	S36-E12A	S36-E12A	S36-E12A	S36-E12A	S36-E12A	S36-E12B	S36-E12B	S36-E12B	S36-E12B	S36-E12B	S36-E12B	S36-E12B	S37-E11	S37-E11	S37-E11	S37-E11	S37-E11
ROUND	ug/L	5	6	7	7.5	8	9	5	6	6	7	7.5	8	9	5	6	7	7.5	8
SAMPLE ID #			S00Z52			B01BT9			S00Z56	S00Z60			B01BV0			S00Z64			B01BV2
SEMI-VOLATILE ORGANICS																			
2,6-Dinitrotoluene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
3-Nitroaniline	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	50 U	--	--	--
Acenaphthene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
2,4-Dinitrophenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	50 U	--	--	--
4-Nitrophenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	50 U	--	--	--
Dibenzofuran	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
2,4-Dinitrotoluene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Diethylphthalate	10	--	10 U	--	--	--	--	--	19	10 U	--	--	--	--	--	10 U	--	--	--
4-Chlorophenyl-phenylether	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Fluorene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
4-Nitroaniline	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	50 U	--	--	--
4,6-Dinitro-2-Methylphenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	50 U	--	--	--
N-Nitrosodiphenylamine (1)	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
4-Bromophenyl-phenylether	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Hexachlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Pentachlorophenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	50 U	--	--	--
Phenanthrene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Anthracene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Di-n-Butylphthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Fluoranthene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Pyrene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Butylbenzylphthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
3,3'-Dichlorobenzidine	20	--	20 U	--	--	--	--	--	20 U	20 U	--	--	--	--	--	20 U	--	--	--
Benzo(a)anthracene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Chrysene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
bis(2-Ethylhexyl)Phthalate	23	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Di-n-Octyl Phthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Benzo(b)Fluoranthene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Benzo(k)Fluoranthene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Benzo(a)Pyrene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Indeno(1,2,3-cd)Pyrene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Dibenz(a,h)Anthracene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
Benzo(g,h,i)Perylene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	10 U	--	--	--
PESTICIDE ORGANICS																			
alpha-BHC	0.05	--	0.05 U	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
beta-BHC	0.05	--	0.05 U	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
delta-BHC	0.05	--	0.05 U	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
gamma-BHC	0.05	--	0.05 U	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
Heptachlor	0.05	--	0.05 U	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
Aldrin	0.05	--	0.05 U	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
Heptachlor epoxide	0.05	--	0.05 U	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
Endosulfan I	0.05	--	0.05 U	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
Dieldrin	0.1	--	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
4,4'-DDE	0.1	--	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
Endrin	0.1	--	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
Endosulfan II	0.1	--	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
4,4'-DDD	0.1	--	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
Endosulfan sulfate	0.1	--	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
4,4'-DDT	0.1	--	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
Methoxychlor	0.5	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Endrin ketone	0.1	--	0.1 U	--	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
alpha-Chlordane	0.5	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
gamma-Chlordane	0.5	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Toxaphene	1	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--
Aroclor-1016	0.5	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Aroclor-1221	0.5	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Aroclor-1232	0.5	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Aroclor-1242	0.5	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Aroclor-1248	0.5	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Aroclor-1254	1	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--
Aroclor-1260	1	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		6	6	7	7	7A	7A	7A	7	7	8	8A	8	8A	8	8A	8	8
Well ID	SITE UTL'S	S37-E11	S37-E11	S36-E11	S36-E11	S36-E11	S36-E11	S36-E11	S36-E11	S36-E11	S31-E06	S31-E06	S31-E06	S31-E06	S31-E06	S31-E06	S31-E06	S31-E06
ROUND	ug/L	6	9	5	6	6	7	7.5	8	9	5	6	6	7	7.5	7.5	8	9
SAMPLE ID#		B01BX7			B00Z76	B00Z95	B010Z3	B01543				B00Z09	B00Y36	B010Z7	B01537	B01546		B06196
PARAMETERS (units ug/l)																		
VOLATILE ORGANICS																		
Chloromethane	2	10 U	--	--	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	--	10 U	--	1 U
Trichlorofluoromethane	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U
Bromomethane	2	10 U	--	--	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	--	10 U	--	1 U
Vinyl Chloride	2	10 U	--	--	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	--	10 U	--	1 U
Chloroethane	2	10 U	--	--	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	--	10 U	--	1 U
Methylene Chloride	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	3 U
Acetone	10	14	--	--	5 J	10 U	10 U	10 U	--	--	--	6 BJ	23	10 U	--	10 U	--	10 U
Carbon Disulfide	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
1,1-Dichloroethene	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
1,1-Dichloroethane	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
cis-1,2-Dichloroethene	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U
Trans-1,2-Dichloroethene	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U
1,2-Dichloroethene (total)	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	--	--	5 U	--	--
Chloroform	1	5	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
1,2-Dichloroethane	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
2-Butanone	2	10 U	--	--	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	--	10 U	--	1 U
Tetrahydrofuran	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U
1,1,1-Trichloroethane	1.2	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	2
Carbon Tetrachloride	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
Vinyl Acetate	2	--	--	--	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	--	--	10 U	--	0.5 U
Bromodichloromethane	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
1,2-Dichloropropane	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
cis-1,3-Dichloropropene	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	--	--	5 U	--	0.5 U
Trans-1,3-Dichloropropene	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	--	--	5 U	--	0.5 U
Trichloroethene	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
Dibromochloromethane	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
1,1,2-Trichloroethane	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
Benzene	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
Bromoform	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
4-Methyl-2-Pentanone	10	10 U	--	--	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	--	10 U	--	1 U
2-Hexanone	10	10 U	--	--	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	--	10 U	--	1 U
Tetrachloroethene	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
1,1,2,2-Tetrachloroethane	1	10 U	--	--	5 U	5 U	5 U	10 U	--	--	--	5 U	5 U	10 U	--	10 U	--	0.5 U
Toluene	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
Chlorobenzene	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
Ethylbenzene	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
Styrene	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	0.5 U
m,p-xylene	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U
o-xylene	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U
Total Xylenes	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	5 U	--	5 U	--	--
C12 HYDROCARBON	NA	--	--	--	63 J	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U
1,4-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U
1,2-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U
SEMI-VOLATILE ORGANICS																		
Phenol	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
bis(2-Chloroethyl)Ether	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
2-chlorophenol	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
1,3-Dichlorobenzene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
1,4-Dichlorobenzene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Benzyl Alcohol	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
1,2-Dichlorobenzene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
2-Methylphenol	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
bis(2-Chloroisopropyl)Ether	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
4-Methylphenol	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
N-Nitroso-Di-n-Propylamine	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Hexachloroethane	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Nitrobenzene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Isophorone	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
2-Nitrophenol	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
2,4-Dimethylphenol	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Benzoic Acid	50	200 U	--	--	50 U	--	50 U	--	--	--	--	50 U	50 U	50 U	--	--	--	--
bis(2-Chloroethoxy)Methane	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
2,4-Dichlorophenol	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
1,2,4-Trichlorobenzene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Naphthalene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
4-Chloroaniline	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Hexachlorobutadiene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
4-Chloro-3-Methylphenol	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
2-Methylnaphthalene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Hexachlorocyclopentadiene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
2,4,6-Trichlorophenol	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
2,4,5-Trichlorophenol	50	200 U	--	--	50 U	--	50 U	--	--	--	--	50 U	50 U	50 U	--	--	--	--
2-Chloronaphthalene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
2-Nitroaniline	50	200 U	--	--	50 U	--	50 U	--	--	--	--	50 U	50 U	50 U	--	--	--	--
Dimethyl Phthalate	10	--	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Acenaphthylene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		6	6	7	7	7A	7A	7A	7	7	6	5A	5	5A	6	6A	5	5
Well ID	SITE UTL'S	S37-E11	S37-E11	S36-E11	S36-E11	S36-E11	S36-E11	S36-E11	S36-E11	S36-E11	S31-E06	S31-E06	S31-E06	S31-E06	S31-E06	S31-E06	S31-E06	S31-E06
ROUND	ug/L	6	9	6	6	6	7	7.5	5	9	5	6	6	7	7.5	7.5	6	9
SAMPLE ID#		B01BX7			B00Z76	B00Z36	B01023	B01843				B00ZG9	B00V36	B01027	B01837	B01846		B06195
SEMI-VOLATILE ORGANICS																		
2,6-Dinitrotoluene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
3-Nitroaniline	50	200 U	--	--	50 U	--	50 U	--	--	--	--	50 U	50 U	50 U	--	--	--	--
Acenaphthene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
2,4-Dinitrophenol	50	200 U	--	--	50 U	--	50 U	--	--	--	--	50 U	50 U	50 U	--	--	--	--
4-Nitrophenol	50	40 U	--	--	50 U	--	50 U	--	--	--	--	50 U	50 U	50 U	--	--	--	--
Dibenzofuran	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
2,4-Dinitrotoluene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Diethylphthalate	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
4-Chlorophenyl-phenylether	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Fluorene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
4-Nitroaniline	50	200 U	--	--	50 U	--	50 U	--	--	--	--	50 U	50 U	50 U	--	--	--	--
4,6-Dinitro-2-Methylphenol	50	200 U	--	--	50 U	--	50 U	--	--	--	--	50 U	50 U	50 U	--	--	--	--
N-Nitrosodiphenylamine (1)	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
4-Bromophenyl-phenylether	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Hexachlorobenzene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Pentachlorophenol	50	200 U	--	--	50 U	--	50 U	--	--	--	--	50 U	50 U	50 U	--	--	--	--
Phenanthrene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Anthracene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Di-n-Butylphthalate	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Fluoranthene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Pyrene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Butylbenzylphthalate	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
3,3'-Dichlorobenzidine	20	80 U	--	--	20 U	--	20 U	--	--	--	--	20 U	20 U	20 U	--	--	--	--
Benzo(a)anthracene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Chrysene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
bis(2-Ethylhexyl)Phthalate	23	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Di-n-Octyl Phthalate	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Benzo(b)Fluoranthene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Benzo(k)Fluoranthene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Benzo(a)Pyrene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Indeno(1,2,3-cd)Pyrene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Dibenz(a,h)Anthracene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
Benzo(g,h,i)Perylene	10	40 U	--	--	10 U	--	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--
PESTICIDE ORGANICS																		
alpha-BHC	0.05	0.05 U	--	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U	0.05 UJ	0.05 U	--	--	--	--
beta-BHC	0.05	0.05 U	--	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U	0.05 UJ	0.05 U	--	--	--	--
delta-BHC	0.05	0.05 U	--	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U	0.05 UJ	0.05 U	--	--	--	--
gamma-BHC	0.05	0.05 U	--	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U	0.05 UJ	0.05 U	--	--	--	--
Heptachlor	0.05	0.05 U	--	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U	0.05 UJ	0.05 U	--	--	--	--
Aldrin	0.05	0.05 U	--	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U	0.05 UJ	0.05 U	--	--	--	--
Heptachlor epoxide	0.05	0.05 U	--	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U	0.05 UJ	0.05 U	--	--	--	--
Endosulfan I	0.05	0.05 U	--	--	0.05 U	--	0.05 U	--	--	--	--	0.05 U	0.05 UJ	0.05 U	--	--	--	--
Dieldrin	0.1	0.1 U	--	--	0.1 U	--	0.1 U	--	--	--	--	0.1 U	0.1 UJ	0.1 U	--	--	--	--
4,4'-DDE	0.1	0.1 U	--	--	0.1 U	--	0.1 U	--	--	--	--	0.1 U	0.1 UJ	0.1 U	--	--	--	--
Endrin	0.1	0.1 U	--	--	0.1 U	--	0.1 U	--	--	--	--	0.1 U	0.1 UJ	0.1 U	--	--	--	--
Endosulfan II	0.1	0.1 U	--	--	0.1 U	--	0.1 U	--	--	--	--	0.1 U	0.1 UJ	0.1 U	--	--	--	--
4,4'-DDD	0.1	0.1 U	--	--	0.1 U	--	0.1 U	--	--	--	--	0.1 U	0.1 UJ	0.1 U	--	--	--	--
Endosulfan sulfate	0.1	0.1 U	--	--	0.1 U	--	0.1 U	--	--	--	--	0.1 U	0.1 UJ	0.1 U	--	--	--	--
4,4'-DDT	0.1	0.1 U	--	--	0.1 U	--	0.1 U	--	--	--	--	0.1 U	0.1 UJ	0.1 U	--	--	--	--
Methoxychlor	0.5	0.5 U	--	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U	0.5 UJ	0.5 U	--	--	--	--
Endrin ketone	0.1	0.1 U	--	--	0.1 U	--	0.1 U	--	--	--	--	0.1 U	0.1 UJ	0.1 U	--	--	--	--
alpha-Chlordane	0.5	0.5 U	--	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U	0.5 UJ	0.5 U	--	--	--	--
gamma-Chlordane	0.5	0.5 U	--	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U	0.5 UJ	0.5 U	--	--	--	--
Toxaphene	1	1 U	--	--	1 U	--	1 U	--	--	--	--	1 U	1 UJ	1 U	--	--	--	--
Aroclor-1016	0.5	0.5 U	--	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U	0.5 UJ	0.5 U	--	--	--	--
Aroclor-1221	0.5	0.5 U	--	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U	0.5 UJ	0.5 U	--	--	--	--
Aroclor-1232	0.5	0.5 U	--	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U	0.5 UJ	0.5 U	--	--	--	--
Aroclor-1242	0.5	0.5 U	--	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U	0.5 UJ	0.5 U	--	--	--	--
Aroclor-1248	0.5	0.5 U	--	--	0.5 U	--	0.5 U	--	--	--	--	0.5 U	0.5 UJ	0.5 U	--	--	--	--
Aroclor-1254	1	1 U	--	--	1 U	--	1 U	--	--	--	--	1 U	1 UJ	1 U	--	--	--	--
Aroclor-1260	1	1 U	--	--	1 U	--	1 U	--	--	--	--	1 U	1 UJ	1 U	--	--	--	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		9	9	9	9	9	9	10	10	10	10	10	10	10	11	11	11
Well ID	SITE UTL'S	S32-E06	S32-E06	S32-E06	S32-E06	S32-E06	S32-E06	S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10B	S30-E10B	S30-E10B
ROUND	ug/L	6	6	7	7.5	8	9	5	6	6	7	7.5	8	9	5	5	6
SAMPLE ID #			B00V40		B01540	B01546		B00HW2	B00Y44	B00Y45		B01531	B01BV4	B06196	B00HW4	B00HW6	B00Y92
PARAMETERS (units ug/l)																	
VOLATILE ORGANICS																	
Chloromethane	2	--	10 U	--	10 U	--	--	10 U	10 U	10 U	--	10 U	10 U	1 U	10 U	10 U	10 U
Trichlorofluoromethane	NA	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--
Bromomethane	2	--	10 U	--	10 U	--	--	10 U	10 U	10 U	--	10 U	10 U	1 U	10 U	10 U	10 U
Vinyl Chloride	2	--	10 U	--	10 U	--	--	10 U	10 U	10 U	--	10 U	10 U	1 U	10 U	10 U	10 U
Chloroethane	2	--	10 U	--	10 U	--	--	10 U	10 U	10 U	--	10 U	10 U	1 U	10 U	10 U	10 U
Methylene Chloride	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	10	--	10 U	--	10 U	--	--	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
1,1-Dichloroethene	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
1,1-Dichloroethane	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	1	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
Trans-1,2-Dichloroethene	NA	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
1,2-Dichloroethene (total)	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	--	5 U	5 U	5 U
Chloroform	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
1,2-Dichloroethane	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
2-Butanone	2	--	10 U	--	10 U	--	--	10 U	10 U	10 U	--	10 U	10 U	1 U	10 U	10 U	10 U
Tetrahydrofuran	NA	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--
1,1,1-Trichloroethane	1.2	--	5 U	--	5 U	--	--	5 U	2 J	2 J	--	1 J	5 U	0.5	5 U	5 U	5 U
Carbon Tetrachloride	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
Vinyl Acetate	2	--	10 U	--	10 U	--	--	10 U	10 U	10 U	--	10 U	--	0.5 U	10 U	10 U	10 U
Bromodichloromethane	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
1,2-Dichloropropane	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
Trans-1,3-Dichloropropene	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
Trichloroethene	1	--	5 U	--	5 U	--	--	5 U	2 J	2 J	--	3 J	3 J	2	5 U	5 U	3 J
Dibromochloromethane	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
Benzene	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
Bromoform	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	10	--	10 U	--	10 U	--	--	10 U	10 U	10 U	--	10 U	10 U	1 U	10 U	10 U	10 U
2-Hexanone	10	--	10 U	--	10 U	--	--	10 U	10 U	10 U	--	10 U	10 U	1 U	10 U	10 U	10 U
Tetrachloroethene	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	1	--	5 U	--	10 U	--	--	5 U	5 U	5 U	--	10 U	10 U	0.5 U	5 U	5 U	5 U
Toluene	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
Chlorobenzene	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
Ethylbenzene	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
Styrene	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	0.5 U	5 U	5 U	5 U
m,p-xylene	NA	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
o-xylene	NA	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
Total Xylenes	1	--	5 U	--	5 U	--	--	5 U	5 U	5 U	--	5 U	5 U	--	5 U	5 U	5 U
C12 HYDROCARBON	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
1,4-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
1,2-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
SEMI-VOLATILE ORGANICS																	
Phenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
bis(2-Chloroethyl)Ether	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
2-chlorophenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
1,3-Dichlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
1,4-Dichlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Benzyl Alcohol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
1,2-Dichlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
2-Methylphenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
bis(2-Chloroisopropyl)Ether	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
4-Methylphenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
N-Nitroso-Di-n-Propylamine	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Hexachloroethane	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Nitrobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Isophorone	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
2-Nitrophenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
2,4-Dimethylphenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Benzoic Acid	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	--	50 U
bis(2-Chloroethoxy)Methane	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
2,4-Dichlorophenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
1,2,4-Trichlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Naphthalene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
4-Chloroaniline	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Hexachlorobutadiene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
4-Chloro-3-Methylphenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
2-Methylnaphthalene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Hexachlorocyclopentadiene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
2,4,6-Trichlorophenol	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
2,4,5-Trichlorophenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	--	50 U
2-Chloronaphthalene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
2-Nitroaniline	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	--	50 U
Dimethyl Phthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Acenaphthylene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		8	9	9	9	9	9	10	10	10	10	10	10	10	11	11	11
Well ID	SITE UTL'S	S32-E06	S32-E06	S32-E06	S32-E06	S32-E06	S32-E06	S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10B	S30-E10B	S30-E10B
ROUND	UGL	5	6	7	7.5	8	9	5	6	6	7	7.5	8	9	5	5	6
SAMPLE ID#			B00Y40		B01540	B01540		B00HW2	B00Y44	B00Y48		B01531	B01BV4	B06196	B00HW4	B00HW6	B00Y52
SEMI-VOLATILE ORGANICS																	
2,6-Dinitrotoluene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
3-Nitroaniline	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	--	50 U
Acenaphthene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
2,4-Dinitrophenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	--	50 U
4-Nitrophenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	--	50 U
Dibenzofuran	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
2,4-Dinitrotoluene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Diethylphthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
4-Chlorophenyl-phenylether	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Fluorene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
4-Nitroaniline	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	--	50 U
4,6-Dinitro-2-Methylphenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	--	50 U
N-Nitrosodiphenylamine (1)	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
4-Bromophenyl-phenylether	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Hexachlorobenzene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Pentachlorophenol	50	--	50 U	--	--	--	--	--	50 U	50 U	--	--	--	--	--	--	50 U
Phenanthrene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Anthracene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Di-n-Butylphthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Fluoranthene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Pyrene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Butylbenzylphthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
3,3'-Dichlorobenzidine	20	--	20 U	--	--	--	--	--	20 U	20 U	--	--	--	--	--	--	20 U
Benzo(a)anthracene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Chrysene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
bis(2-Ethylhexyl)Phthalate	23	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Di-n-Octyl Phthalate	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Benzo(b)Fluoranthene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Benzo(k)Fluoranthene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Benzo(a)Pyrene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Indeno(1,2,3-cd)Pyrene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Dibenz(a,h)Anthracene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
Benzo(g,h,i)Perylene	10	--	10 U	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U
PESTICIDE ORGANICS																	
alpha-BHC	0.05	--	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	0.05 U
beta-BHC	0.05	--	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	0.05 U
delta-BHC	0.05	--	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	0.05 U
gamma-BHC	0.05	--	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	0.05 U
Heptachlor	0.05	--	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	0.05 U
Aldrin	0.05	--	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	0.05 U
Heptachlor epoxide	0.05	--	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	0.05 U
Endosulfan I	0.05	--	0.05 UJ	--	--	--	--	--	0.05 U	0.05 U	--	--	--	--	--	--	0.05 U
Dieldrin	0.1	--	0.1 UJ	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	--	--	0.1 U
4,4'-DDE	0.1	--	0.1 UJ	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	--	--	0.1 U
Endrin	0.1	--	0.1 UJ	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	--	--	0.1 U
Endosulfan II	0.1	--	0.1 UJ	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	--	--	0.1 U
4,4'-DDD	0.1	--	0.1 UJ	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	--	--	0.1 U
Endosulfan sulfate	0.1	--	0.1 UJ	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	--	--	0.1 U
4,4'-DDT	0.1	--	0.1 UJ	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	--	--	0.1 U
Methoxychlor	0.5	--	0.5 UJ	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U
Endrin ketone	0.1	--	0.1 UJ	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	--	--	0.1 U
alpha-Chlordane	0.5	--	0.5 UJ	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U
gamma-Chlordane	0.5	--	0.5 UJ	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U
Toxaphene	1	--	1 UJ	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	1 U
Aroclor-1016	0.5	--	0.5 UJ	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U
Aroclor-1221	0.5	--	0.5 UJ	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U
Aroclor-1232	0.5	--	0.5 UJ	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U
Aroclor-1242	0.5	--	0.5 UJ	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U
Aroclor-1248	0.5	--	0.5 UJ	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--	0.5 U
Aroclor-1254	1	--	1 UJ	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	1 U
Aroclor-1260	1	--	1 UJ	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	1 U

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		11	11	11	11	11	12	12	12	12	12	12	13	13	13
Well ID	SITE U.T.L.'S	830-E10B	830-E10B	830-E10B	830-E10B	830-E10B	831-E10A	831-E10A	831-E10A	831-E10A	831-E10A	831-E10A	831-E10B	831-E10B	831-E10B
ROUND	ug/L	6	7	7.5	8	9	5	6	7	7.5	8	9	5	6	7
SAMPLE ID#		B00Y56	B010K9	B01B34	B01BV7	B06197	B00HX0	B00Y20	B010T6	B01426	B01BW0	B06198	B00HX2	B00Y24	B010T7
PARAMETERS (units ug/l)															
VOLATILE ORGANICS															
Chloromethane	2	10 U	10 U	10 U	10 U	1 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	NA	--	--	--	--	1 U	--	--	--	--	--	10 U	--	--	--
Bromomethane	2	10 U	10 U	10 U	10 U	1 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	2	10 U	10 U	10 U	10 U	1 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	2	10 U	10 U	10 U	10 U	1 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	1	5 U	5 U	5 U	5 U	3 U	5 U	5 U	5 U	5 U	5 U	30 U	5 U	5 U	5 U
Acetone	10	10 U	31	10 U	10 U	10 U	10 U	10 U	10 B	10 U	10 U	100 U	10 U	10 U	8 BJ
Carbon Disulfide	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	1	--	--	--	--	0.5 U	--	--	--	--	--	5 U	--	--	--
Trans-1,2-Dichloroethene	NA	--	--	--	--	0.5 U	--	--	--	--	--	5 U	--	--	--
1,2-Dichloroethene (total)	1	5 U	--	5 U	5 U	--	5 U	5 U	--	5 U	5 U	--	5 U	5 U	--
Chloroform	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	2	10 U	10 U	10 U	10 U	1 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	NA	--	--	--	--	10 U	--	--	--	--	--	100 U	--	--	--
1,1,1-Trichloroethane	1.2	5 U	1 J	1 J	5 U	1	5 U	3 J	2 J	2 J	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Acetate	2	10 U	--	10 U	--	0.5 U	10 U	10 U	--	10 U	--	5 U	10 U	10 U	--
Bromodichloromethane	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	1	5 U	--	5 U	5 U	0.5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	--
Trans-1,3-Dichloropropene	1	5 U	--	5 U	5 U	0.5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	--
Trichloroethene	1	4 J	3 J	4 J	4 J	5	79	76	99	67	99	56 D	66	70	99
Dibromochloromethane	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	10	10 U	10 U	10 U	10 U	1 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	4 J	10 U	10 U	1 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.9 BJ	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	1	5 U	10 U	10 U	10 U	0.5 U	5 U	5 U	10 U	10 U	10 U	5 U	5 U	5 U	10 U
Toluene	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
m,p-xylene	NA	--	--	--	--	0.5 U	--	--	--	--	--	5 U	--	--	--
o-xylene	NA	--	--	--	--	0.5 U	--	--	--	--	--	5 U	--	--	--
Total Xylenes	1	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U
C12 HYDROCARBON	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NA	--	--	--	--	0.5 U	--	--	--	--	--	5 U	--	--	--
1,4-Dichlorobenzene	NA	--	--	--	--	0.5 U	--	--	--	--	--	5 U	--	--	--
1,2-Dichlorobenzene	NA	--	--	--	--	0.5 U	--	--	--	--	--	5 U	--	--	--
SEMI-VOLATILE ORGANICS															
Phenol	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
bis(2-Chloroethyl)Ether	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
2-chlorophenol	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
1,3-Dichlorobenzene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
1,4-Dichlorobenzene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Benzyl Alcohol	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
1,2-Dichlorobenzene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
2-Methylphenol	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
bis(2-Chloroisopropyl)Ether	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
4-Methylphenol	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
N-Nitroso-Di-n-Propylamine	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Hexachloroethane	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Nitrobenzene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Isophorone	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
2-Nitrophenol	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
2,4-Dimethylphenol	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Benzoic Acid	50	50 U	--	--	--	--	--	50 U	--	--	--	--	--	50 U	--
bis(2-Chloroethoxy)Methane	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
2,4-Dichlorophenol	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
1,2,4-Trichlorobenzene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Naphthalene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
4-Chloroaniline	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Hexachlorobutadiene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
4-Chloro-3-Methylphenol	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
2-Methylnaphthalene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Hexachlorocyclopentadiene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
2,4,6-Trichlorophenol	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
2,4,5-Trichlorophenol	50	50 U	--	--	--	--	--	50 U	--	--	--	--	--	50 U	--
2-Chloronaphthalene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
2-Nitroaniline	50	50 U	--	--	--	--	--	50 U	--	--	--	--	--	50 U	--
Dimethyl Phthalate	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Acenaphthylene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		11	11	11	11	11	12	12	12	12	12	12	13	13	13
Well ID	SITE UTL'S	S30-E10B	S30-E10B	S30-E10B	S30-E10B	S30-E10B	S31-E10A	S31-E10A	S31-E10A	S31-E10A	S31-E10A	S31-E10A	S31-E10B	S31-E10B	S31-E10B
ROUND	ug/L	6	7	7.5	8	9	5	6	7	7.5	8	9	5	6	7
SAMPLE ID#		B00V56	B010X9	B01834	B01BV7	B06197	B00HX0	B00Y20	B010T5	B01429	B01BW0	B06196	B00HX2	B00Y24	B010T7
SEMI-VOLATILE ORGANICS															
2,4-Dinitrotoluene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
3-Nitroaniline	50	50 U	--	--	--	--	--	50 U	--	--	--	--	--	50 U	--
Acenaphthene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
2,4-Dinitrophenol	50	50 U	--	--	--	--	--	50 U	--	--	--	--	--	50 U	--
4-Nitrophenol	50	50 U	--	--	--	--	--	50 U	--	--	--	--	--	50 U	--
Dibenzofuran	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
2,6-Dinitrotoluene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Diethylphthalate	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10	--
4-Chlorophenyl-phenylether	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Fluorene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
4-Nitroaniline	50	50 U	--	--	--	--	--	50 U	--	--	--	--	--	50 U	--
4,6-Dinitro-2-Methylphenol	50	50 U	--	--	--	--	--	50 U	--	--	--	--	--	50 U	--
N-Nitrosodiphenylamine (1)	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
4-Bromophenyl-phenylether	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Hexachlorobenzene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Pentachlorophenol	50	50 U	--	--	--	--	--	50 U	--	--	--	--	--	50 U	--
Phenanthrene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Anthracene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Di-n-Butylphthalate	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Fluoranthene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Pyrene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Butylbenzylphthalate	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
3,3'-Dichlorobenzidine	20	20 U	--	--	--	--	--	20 U	--	--	--	--	--	20 U	--
Benzo(a)anthracene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Chrysene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
bis(2-Ethylhexyl)Phthalate	23	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Di-n-Octyl Phthalate	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Benzo(b)Fluoranthene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Benzo(k)Fluoranthene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Benzo(a)Pyrene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Indeno(1,2,3-cd)Pyrene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Dibenz(a,h)Anthracene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
Benzo(g,h,i)Perylene	10	10 U	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--
PESTICIDE ORGANICS															
alpha-BHC	0.05	0.05 UJ	--	--	--	--	--	0.05 U	--	--	--	--	--	0.05 U	--
beta-BHC	0.05	0.05 UJ	--	--	--	--	--	0.05 U	--	--	--	--	--	0.05 U	--
delta-BHC	0.05	0.05 UJ	--	--	--	--	--	0.05 U	--	--	--	--	--	0.05 U	--
gamma-BHC	0.05	0.05 UJ	--	--	--	--	--	0.05 U	--	--	--	--	--	0.05 U	--
Heptachlor	0.05	0.05 UJ	--	--	--	--	--	0.05 U	--	--	--	--	--	0.05 U	--
Aldrin	0.05	0.05 UJ	--	--	--	--	--	0.05 U	--	--	--	--	--	0.05 U	--
Heptachlor epoxide	0.05	0.05 UJ	--	--	--	--	--	0.05 U	--	--	--	--	--	0.05 U	--
Endosulfan I	0.05	0.05 UJ	--	--	--	--	--	0.05 U	--	--	--	--	--	0.05 U	--
Dieldrin	0.1	0.1 UJ	--	--	--	--	--	0.1 U	--	--	--	--	--	0.1 U	--
4,4'-DDE	0.1	0.1 UJ	--	--	--	--	--	0.1 U	--	--	--	--	--	0.1 U	--
Endrin	0.1	0.1 UJ	--	--	--	--	--	0.1 U	--	--	--	--	--	0.1 U	--
Endosulfan II	0.1	0.1 UJ	--	--	--	--	--	0.1 U	--	--	--	--	--	0.1 U	--
4,4'-DDD	0.1	0.1 UJ	--	--	--	--	--	0.1 U	--	--	--	--	--	0.1 U	--
Endosulfan sulfate	0.1	0.1 UJ	--	--	--	--	--	0.1 U	--	--	--	--	--	0.1 U	--
4,4'-DDT	0.1	0.1 UJ	--	--	--	--	--	0.1 U	--	--	--	--	--	0.1 U	--
Methoxychlor	0.5	0.5 UJ	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--
Endrin ketone	0.1	0.1 UJ	--	--	--	--	--	0.1 U	--	--	--	--	--	0.1 U	--
alpha-Chlordane	0.5	0.5 UJ	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--
gamma-Chlordane	0.5	0.5 UJ	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--
Toxaphene	1	1 UJ	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--
Aroclor-1016	0.5	0.5 UJ	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--
Aroclor-1221	0.5	0.5 UJ	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--
Aroclor-1232	0.5	0.5 UJ	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--
Aroclor-1242	0.5	0.5 UJ	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--
Aroclor-1248	0.5	0.5 UJ	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--
Aroclor-1254	1	1 UJ	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--
Aroclor-1260	1	1 UJ	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		13	13	13	14	14	14	14	14	14	15	15	15	15	15	15
Well ID	SITE UTL'S	S31-E10B	S31-E10B	S31-E10B	S31-E10C	S31-E10C	S31-E10C	S31-E10C	S31-E10C	S31-E10C	S31-E10D	S31-E10D	S31-E10D	S31-E10D	S31-E10D	S31-E10D
ROUND	ug/L	7.5	6	9	5	6	7	7.5	8	9	5	6	6	7	7.5	8
SAMPLE ID#		B01601	B01BW3		B00HX4	B00Y26	B010T9	B01604	B01BW6	B08202	B00HX6	B00Y33	B00ZF7	B010V1	B01607	B01BW9
PARAMETERS (units ug/l)																
VOLATILE ORGANICS																
Chloromethane	2	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	1 U	10 U	--	10 U	10 U	10 U	10 U
Trichlorofluoromethane	NA	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
Bromomethane	2	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	1 U	10 U	--	10 U	10 U	10 U	10 U
Vinyl Chloride	2	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	1 U	10 U	--	10 U	10 U	10 U	10 U
Chloroethane	2	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	1 U	10 U	--	10 U	10 U	10 U	10 U
Methylene Chloride	1	13	5 U	--	5 U	5 U	5 U	5 U	5 U	3 U	5 U	--	5 U	5 U	5 U	5 U
Acetone	10	10 U	10 U	--	10 U	10 U	6 BJ	10 U	4 J	10 U	10 U	--	10 U	24 B	10 U	10 U
Carbon Disulfide	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
1,1-Dichloroethene	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
1,1-Dichloroethane	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	1	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
Trans-1,2-Dichloroethene	NA	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
1,2-Dichloroethene (total)	1	5 U	5 U	--	5 U	5 U	--	5 U	5 U	--	5 U	--	5 U	--	5 U	5 U
Chloroform	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
1,2-Dichloroethane	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
2-Butanone	2	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	1 U	10 U	--	10 U	10 U	10 U	10 U
Tetrahydrofuran	NA	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
1,1,1-Trichloroethane	1.2	2 J	5 U	--	5 U	5 U	5 U	2 J	5 U	1	5 U	--	5 U	5 U	1 J	5 U
Carbon Tetrachloride	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
Vinyl Acetate	2	10 U	--	--	10 U	10 U	--	10 U	--	0.5 U	10 U	--	10 U	--	10 U	--
Bromodichloromethane	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
1,2-Dichloropropane	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	1	5 U	5 U	--	5 U	5 U	--	5 U	5 U	0.5 U	5 U	--	5 U	--	5 U	5 U
Trans-1,3-Dichloropropene	1	5 U	5 U	--	5 U	5 U	--	5 U	5 U	0.5 U	5 U	--	5 U	--	5 U	5 U
Trichloroethene	1	66	63	--	52	75	75	76	67	58 D	60	--	62	70	66	64
Dibromochloromethane	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
Benzene	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
Bromoform	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	10	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	1 U	10 U	--	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	1 U	10 U	--	10 U	10 U	10 U	10 U
Tetrachloroethene	1	0.6 BJ	5 U	--	5 U	5 U	5 U	0.5 BJ	5 U	0.6	5 U	--	5 U	5 U	0.5 BJ	5 U
1,1,2,2-Tetrachloroethane	1	10 U	10 U	--	5 U	5 U	10 U	10 U	10 U	0.5 U	5 U	--	5 U	10 U	10 U	10 U
Toluene	1	2 J	5 U	--	5 U	5 U	5 U	2 J	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
Chlorobenzene	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
Ethylbenzene	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
Styrene	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	0.5 U	5 U	--	5 U	5 U	5 U	5 U
m,p-xylene	NA	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
o-xylene	NA	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
Total Xylenes	1	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	--	5 U	--	5 U	5 U	5 U	5 U
C12 HYDROCARBON	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
1,4-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
1,2-Dichlorobenzene	NA	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
SEMI-VOLATILE ORGANICS																
Phenol	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
bis(2-Chloroethyl)Ether	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
2-chlorophenol	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
1,3-Dichlorobenzene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
1,4-Dichlorobenzene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Benzyl Alcohol	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
1,2-Dichlorobenzene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
2-Methylphenol	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
bis(2-Chloroisopropyl)Ether	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
4-Methylphenol	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
N-Nitroso-Di-n-Propylamine	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Hexachloroethane	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Nitrobenzene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Isophorone	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
2-Nitrophenol	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
2,4-Dimethylphenol	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Benzoic Acid	50	--	--	--	--	50 U	--	--	--	--	--	--	67 U	--	--	--
bis(2-Chloroethoxy)Methane	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
2,4-Dichlorophenol	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
1,2,4-Trichlorobenzene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Naphthalene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
4-Chloroaniline	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Hexachlorobutadiene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
4-Chloro-3-Methylphenol	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
2-Methylnaphthalene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Hexachlorocyclopentadiene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
2,4,6-Trichlorophenol	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
2,4,5-Trichlorophenol	50	--	--	--	--	50 U	--	--	--	--	--	--	67 U	--	--	--
2-Chloronaphthalene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
2-Nitroaniline	50	--	--	--	--	50 U	--	--	--	--	--	--	67 U	--	--	--
Dimethyl Phthalate	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Acenaphthylene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		13	13	13	14	14	14	14	14	14	15	15	15	15	15	15
Well ID	SCS UTL'S	S31-E10B	S31-E10B	S31-E10B	S31-E10C	S31-E10C	S31-E10C	S31-E10C	S31-E10C	S31-E10C	S31-E10D	S31-E10D	S31-E10D	S31-E10D	S31-E10D	S31-E10D
ROUND	ug/L	7.5	8	9	5	6	7	7.5	8	9	5	6	6	7	7.5	8
SAMPLE ID #		B01501	B01BW3		B00HX4	B00Y26	B01GT9	B01504	B01BW6	B08202	B00HX6	B00Y33	B00ZF7	B01GV1	B01507	B01BW9
SEMI-VOLATILE ORGANICS																
2,6-Dinitrotoluene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
3-Nitroaniline	50	--	--	--	--	50 U	--	--	--	--	--	--	67 U	--	--	--
Acenaphthene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
2,4-Dinitrophenol	50	--	--	--	--	50 U	--	--	--	--	--	--	67 U	--	--	--
4-Nitrophenol	50	--	--	--	--	50 U	--	--	--	--	--	--	67 U	--	--	--
Dibenzofuran	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
2,4-Dinitrotoluene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Diethylphthalate	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
4-Chlorophenyl-phenylether	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Fluorene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
4-Nitroaniline	50	--	--	--	--	50 U	--	--	--	--	--	--	67 U	--	--	--
4,6-Dinitro-2-Methylphenol	50	--	--	--	--	50 U	--	--	--	--	--	--	67 U	--	--	--
N-Nitrosodiphenylamine (1)	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
4-Bromophenyl-phenylether	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Hexachlorobenzene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Pentachlorophenol	50	--	--	--	--	50 U	--	--	--	--	--	--	67 U	--	--	--
Phenanthrene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Anthracene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Di-n-Butylphthalate	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Fluoranthene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Pyrene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Butylbenzylphthalate	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
3,3'-Dichlorobenzidine	20	--	--	--	--	20 U	--	--	--	--	--	--	27 U	--	--	--
Benzo(a)anthracene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Chrysene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
bis(2-Ethylhexyl)Phthalate	23	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Di-n-Octyl Phthalate	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Benzo(b)Fluoranthene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Benzo(k)Fluoranthene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Benzo(a)Pyrene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Indeno(1,2,3-cd)Pyrene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Dibenz(a,h)Anthracene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
Benzo(g,h,i)Perylene	10	--	--	--	--	10 U	--	--	--	--	--	--	13 U	--	--	--
PESTICIDE ORGANICS																
alpha-BHC	0.05	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
beta-BHC	0.05	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
delta-BHC	0.05	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
gamma-BHC	0.05	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
Heptachlor	0.05	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
Aldrin	0.05	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
Heptachlor epoxide	0.05	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
Endosulfan I	0.05	--	--	--	--	0.05 U	--	--	--	--	--	--	0.05 U	--	--	--
Dieldrin	0.1	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
4,4'-DDE	0.1	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
Endrin	0.1	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
Endosulfan II	0.1	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
4,4'-DDD	0.1	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
Endosulfan sulfate	0.1	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
4,4'-DDT	0.1	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
Methoxychlor	0.5	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Endrin Ketone	0.1	--	--	--	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--
alpha-Chlordane	0.5	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
gamma-Chlordane	0.5	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Toxaphene	1	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--
Aroclor-1016	0.5	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Aroclor-1221	0.5	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Aroclor-1232	0.5	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Aroclor-1242	0.5	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Aroclor-1248	0.5	--	--	--	--	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Aroclor-1254	1	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--
Aroclor-1260	1	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		18	17	17	17	17	17	17	18	18	18	18	18	18	19	19	19	19
Well ID	SITE UTL'S	S31-E10D	S41-E13C	S41-E13C	S41-E13C	S41-E13C	S41-E13C	S41-E13C	S37-E21	S37-E12	S37-E12	S37-E12	S37-E12	S37-E12	S32-E11	S32-E11	S32-E11	S32-E11
ROUND	UGL	5	5	6	7	7.5	8	9	5	6	7	7.5	8	9	5	6	7	7.5
SAMPLE ID#		B00206		B00ZC2					B00HV6	B00ZG1	B010V9		B01BX2			B00ZH3	B010V3	B01B10
PARAMETERS (units ug/l)																		
VOLATILE ORGANICS																		
Chloromethane	2	1 U	10 UJ	10 U	--	--	--	--	10 UJ	10 U	10 U	--	10 U	--	--	10 U	10 U	10 U
Trichlorofluoromethane	NA	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	2	1 U	10 UJ	10 U	--	--	--	--	10 UJ	10 U	10 U	--	10 U	--	--	10 U	10 U	10 U
Vinyl Chloride	2	1 U	10 UJ	10 U	--	--	--	--	10 UJ	10 U	10 U	--	10 U	--	--	10 U	10 U	10 U
Chloroethane	2	1 U	10 UJ	10 U	--	--	--	--	10 UJ	10 U	10 U	--	10 U	--	--	10 U	10 U	10 U
Methylene Chloride	1	3 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
Acetone	10	10 U	35 U	10 U	--	--	--	--	10 UJ	13 B	10 U	--	10 U	--	--	10 U	10 U	18
Carbon Disulfide	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
1,1-Dichloroethene	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
1,1-Dichloroethane	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
cis-1,2-Dichloroethene	1	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trans-1,2-Dichloroethene	NA	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene (total)	1	--	5 UJ	5 U	--	--	--	--	5 UJ	5 U	--	--	5 U	--	--	5 U	--	5 U
Chloroform	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	1 J	--	5 U	--	--	5 U	5 U	5 U
1,2-Dichloroethane	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
2-Butanone	2	1 U	10 UJ	10 U	--	--	--	--	10 UJ	10 U	10 U	--	10 U	--	--	10 U	10 U	10 U
Tetrahydrofuran	NA	10 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	1.2	0.7	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
Carbon Tetrachloride	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
Vinyl Acetate	2	0.5 U	10 UJ	10 U	--	--	--	--	10 UJ	10 U	--	--	--	--	--	10 U	--	10 U
Bromodichloromethane	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
1,2-Dichloropropane	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
cis-1,3-Dichloropropene	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	--	--	5 U	--	--	5 U	--	5 U
Trans-1,3-Dichloropropene	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	--	--	5 U	--	--	5 U	--	5 U
Trichloroethene	1	34 D	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
Dibromochloromethane	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
1,1,2-Trichloroethane	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
Benzene	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
Bromoform	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
4-Methyl-2-Pentanone	10	1 U	10 UJ	10 U	--	--	--	--	10 UJ	10 U	10 U	--	10 U	--	--	10 U	10 U	10 U
2-Hexanone	10	1 U	10 UJ	10 U	--	--	--	--	10 UJ	10 U	10 U	--	10 U	--	--	10 U	10 U	10 U
Tetrachloroethene	1	0.5 U	2 J	5 U	--	--	--	--	2 J	5 U	5 U	--	4 J	--	--	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	10 U	--	10 U	--	--	5 U	10 U	10 U
Toluene	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
Chlorobenzene	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
Ethylbenzene	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
Styrene	1	0.5 U	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
m,p-xylene	NA	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-xylene	NA	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Xylenes	1	--	5 UJ	5 U	--	--	--	--	5 UJ	5 U	5 U	--	5 U	--	--	5 U	5 U	5 U
C12 HYDROCARBON	NA	--	--	100 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NA	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	NA	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	NA	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SEMI-VOLATILE ORGANICS																		
Phenol	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
bis(2-Chloroethyl)Ether	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
2-chlorophenol	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	6 J	--	--	--	10 U	--
1,3-Dichlorobenzene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
1,4-Dichlorobenzene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Benzyl Alcohol	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
1,2-Dichlorobenzene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
2-Methylphenol	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
bis(2-Chloroisopropyl)Ether	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
4-Methylphenol	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
N-Nitroso-Di-n-Propylamine	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Hexachloroethane	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Nitrobenzene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Isophorone	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
2-Nitrophenol	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
2,4-Dimethylphenol	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Benzoic Acid	50	--	50 U	50 U	--	--	--	--	50 U	50 U	50 U	--	200 U	--	--	--	50 U	--
bis(2-Chloroethoxy)Methane	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
2,4-Dichlorophenol	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
1,2,4-Trichlorobenzene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Naphthalene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
4-Chloroaniline	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Hexachlorobutadiene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
4-Chloro-3-Methylphenol	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
2-Methylnaphthalene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Hexachlorocyclopentadiene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
2,4,6-Trichlorophenol	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
2,4,5-Trichlorophenol	50	--	50 U	50 U	--	--	--	--	50 U	50 U	50 U	--	200 U	--	--	--	50 U	--
2-Chloronaphthalene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
2-Nitroaniline	50	--	50 U	50 U	--	--	--	--	50 U	50 U	50 U	--	200 U	--	--	--	50 U	--
Dimethyl Phthalate	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	--	--	--	--	10 U	--
Acenaphthylene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		15	17	17	17	17	17	17	18	18	18	18	18	18	19	19	19	19
Well ID	SITE UTL'S	831-E10D	841-E13C	841-E13C	841-E13C	841-E13C	841-E13C	841-E13C	837-E21	837-E12	837-E12	837-E12	837-E12	837-E12	832-E11	832-E11	832-E11	832-E11
ROUND	ug/L	9	5	6	7	7.5	8	9	5	6	7	7.5	8	9	5	6	7	7.5
SAMPLE ID#		B06206		B00ZC2					B00HV6	B00ZG1	B010V9		B01BX2			B00ZH3	B010V3	B01B10
SEMI-VOLATILE ORGANICS																		
2,6-Dinitrotoluene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
3-Nitroaniline	50	--	50 U	50 U	--	--	--	--	50 U	50 U	50 U	--	200 U	--	--	--	50 U	--
Acenaphthene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
2,4-Dinitrophenol	50	--	50 U	50 U	--	--	--	--	50 U	50 U	50 U	--	200 U	--	--	--	50 U	--
4-Nitrophenol	50	--	50 U	50 U	--	--	--	--	50 U	50 U	50 U	--	200 U	--	--	--	50 U	--
Dibenzofuran	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
2,4-Dinitrotoluene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Diethylphthalate	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
4-Chlorophenyl-phenylether	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Fluorene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
4-Nitroaniline	50	--	50 U	50 U	--	--	--	--	50 U	50 U	50 U	--	200 U	--	--	--	50 U	--
4,6-Dinitro-2-Methylphenol	50	--	50 U	50 U	--	--	--	--	50 U	50 U	50 U	--	200 U	--	--	--	50 U	--
N-Nitrosodiphenylamine (1)	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
4-Bromophenyl-phenylether	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Hexachlorobenzene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Pentachlorophenol	50	--	50 U	50 U	--	--	--	--	50 U	50 U	50 U	--	200 U	--	--	--	50 U	--
Phenanthrene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Anthracene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Di-n-Butylphthalate	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Fluoranthene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Pyrene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Butylbenzylphthalate	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
3,3'-Dichlorobenzidine	20	--	20 U	20 U	--	--	--	--	20 U	20 U	20 U	--	80 U	--	--	--	20 U	--
Benzo(a)anthracene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Chrysene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
bis(2-Ethylhexyl)Phthalate	23	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Di-n-Octyl Phthalate	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Benzo(b)Fluoranthene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Benzo(k)Fluoranthene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Benzo(a)Pyrene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Indeno(1,2,3-cd)Pyrene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Dibenz(a,h)Anthracene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
Benzo(g,h,i)Perylene	10	--	10 U	10 U	--	--	--	--	10 U	10 U	10 U	--	40 U	--	--	--	10 U	--
PESTICIDE ORGANICS																		
alpha-BHC	0.05	--	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	--
beta-BHC	0.05	--	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	--
delta-BHC	0.05	--	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	--
gamma-BHC	0.05	--	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	--
Heptachlor	0.05	--	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	--
Aldrin	0.05	--	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	--
Heptachlor epoxide	0.05	--	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	--
Endosulfan I	0.05	--	0.05 U	0.05 U	--	--	--	--	0.05 U	0.05 U	0.05 U	--	0.05 U	--	--	--	0.05 U	--
Dieldrin	0.1	--	0.1 U	0.1 U	--	--	--	--	0.1 U	0.1 U	0.1 U	--	0.1 U	--	--	--	0.1 U	--
4,4'-DDE	0.1	--	0.1 U	0.1 U	--	--	--	--	0.1 U	0.1 U	0.1 U	--	0.1 U	--	--	--	0.1 U	--
Endrin	0.1	--	0.1 U	0.1 U	--	--	--	--	0.1 U	0.1 U	0.1 U	--	0.1 U	--	--	--	0.1 U	--
Endosulfan II	0.1	--	0.1 U	0.1 U	--	--	--	--	0.1 U	0.1 U	0.1 U	--	0.1 U	--	--	--	0.1 U	--
4,4'-DDD	0.1	--	0.1 U	0.1 U	--	--	--	--	0.1 U	0.1 U	0.1 U	--	0.1 U	--	--	--	0.1 U	--
Endosulfan sulfate	0.1	--	0.1 U	0.1 U	--	--	--	--	0.1 U	0.1 U	0.1 U	--	0.1 U	--	--	--	0.1 U	--
4,4'-DDT	0.1	--	0.1 U	0.1 U	--	--	--	--	0.1 U	0.1 U	0.1 U	--	0.1 U	--	--	--	0.1 U	--
Methoxychlor	0.5	--	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	--
Endrin ketone	0.1	--	0.1 U	0.1 U	--	--	--	--	0.1 U	0.1 U	0.1 U	--	0.1 U	--	--	--	0.1 U	--
alpha-Chlordane	0.5	--	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	--
gamma-Chlordane	0.5	--	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	--
Toxaphene	1	--	1 U	1 U	--	--	--	--	1 U	1 U	1 U	--	1 U	--	--	--	1 U	--
Aroclor-1016	0.5	--	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	--
Aroclor-1221	0.5	--	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	--
Aroclor-1232	0.5	--	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	--
Aroclor-1242	0.5	--	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	--
Aroclor-1248	0.5	--	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	--	0.5 U	--
Aroclor-1254	1	--	1 U	1 U	--	--	--	--	1 U	1 U	1 U	--	1 U	--	--	--	1 U	--
Aroclor-1260	1	--	1 U	1 U	--	--	--	--	1 U	1 U	0.047 J	--	1 U	--	--	--	1 U	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		19	19	20	20	20	20	20	20	21	21	21	21	21	21	22	22
Well ID	SITE UNITS	S32-E11	S32-E11	S29-E11	S29-E11	S29-E11	S29-E11	S29-E11	S29-E11	S31-E10E	S31-E10E	S31-E10E	S31-E10E	S31-E10E	S31-E10E	S31-E11	S31-E11
ROUND	UG/L	5	5	5	6	7	7.5	8	9	5	6	7	7.5	8	9	5	6
SAMPLE ID#		B01C07	B08207		B00Z44	B010V7	B01813	B01C12	B08206		B00Z45	B010W1	B01816	B01C17			B00Z46
PARAMETERS (units ug/l)																	
VOLATILE ORGANICS																	
Chloromethane	2	10 U	1 U	--	10 U	10 U	10 U	10 U	1 U	--	10 U	10 U	10 U	10 U	--	--	10 U
Trichlorofluoromethane	NA	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--
Bromomethane	2	10 U	1 U	--	10 U	10 U	10 U	10 U	1 U	--	10 U	10 U	10 U	10 U	--	--	10 U
Vinyl Chloride	2	10 U	1 U	--	10 U	10 U	10 U	10 U	1 U	--	10 U	10 U	10 U	10 U	--	--	10 U
Chloroethane	2	10 U	1 U	--	10 U	10 U	10 U	10 U	1 U	--	10 U	10 U	10 U	10 U	--	--	10 U
Methylene Chloride	1	5 U	3 U	--	5 U	5 U	5 U	5 U	3 U	--	5 U	5 U	5 U	5 U	--	--	5 U
Acetone	10	10 U	10 U	--	10 U	10 U	21	10 U	10 U	--	10 B	10 U	12	10 U	--	--	10 U
Carbon Disulfide	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
1,1-Dichloroethene	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
1,1-Dichloroethane	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
cis-1,2-Dichloroethene	1	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--
Trans-1,2-Dichloroethene	NA	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--
1,2-Dichloroethene (total)	1	5 U	--	--	5 U	--	5 U	5 U	--	--	--	--	5 U	5 U	--	--	5 U
Chloroform	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
1,2-Dichloroethane	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
2-Butanone	2	10 U	1 U	--	10 U	10 U	10 U	10 U	1 U	--	10 U	10 U	10 U	10 U	--	--	10 U
Tetrahydrofuran	NA	--	10 U	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	1.2	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5	--	5 U	5 U	5 U	5 U	--	--	5 U
Carbon Tetrachloride	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
Vinyl Acetate	2	--	0.5 U	--	10 U	--	10 U	10 U	0.5 U	--	--	--	10 U	10 U	--	--	10 U
Bromodichloromethane	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
1,2-Dichloropropane	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
cis-1,3-Dichloropropene	1	5 U	0.5 U	--	5 U	--	5 U	5 U	0.5 U	--	--	--	5 U	5 U	--	--	5 U
Trans-1,3-Dichloropropene	1	5 U	0.5 U	--	5 U	--	5 U	5 U	0.5 U	--	--	--	5 U	5 U	--	--	5 U
Trichloroethene	1	5 U	0.5 U	--	3 J	2 J	3 J	4 J	4	--	5 U	5 U	5 U	5 U	--	--	5 U
Dibromochloromethane	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
1,1,2-Trichloroethane	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
Benzene	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
Bromoform	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
4-Methyl-2-Pentanone	10	10 U	1 U	--	10 U	10 U	10 U	10 U	1 U	--	10 U	10 U	10 U	10 U	--	--	10 U
2-Hexanone	10	10 U	1 U	--	10 U	10 U	10 U	10 U	1 U	--	10 U	10 U	10 U	10 U	--	--	10 U
Tetrachloroethene	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
1,1,2,2-Tetrachloroethane	1	10 U	0.5 U	--	5 U	10 U	10 U	10 U	0.5 U	--	10 U	10 U	10 U	10 U	--	--	5 U
Toluene	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
Chlorobenzene	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
Ethylbenzene	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
Styrene	1	5 U	0.5 U	--	5 U	5 U	5 U	5 U	0.5 U	--	5 U	5 U	5 U	5 U	--	--	5 U
m,p-xylene	NA	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--
o-xylene	NA	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--
Total Xylenes	1	5 U	--	--	5 U	5 U	5 U	5 U	--	--	5 U	5 U	5 U	5 U	--	--	5 U
C12 HYDROCARBON	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NA	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	NA	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	NA	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--
SEMI-VOLATILE ORGANICS																	
Phenol	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
bis(2-Chloroethyl)Ether	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
2-chlorophenol	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
1,3-Dichlorobenzene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
1,4-Dichlorobenzene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Benzyl Alcohol	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
1,2-Dichlorobenzene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
2-Methylphenol	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
bis(2-Chloroisopropyl)Ether	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
4-Methylphenol	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
N-Nitroso-Di-n-Propylamine	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Hexachloroethane	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Nitrobenzene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Isophorone	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
2-Nitrophenol	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
2,4-Dimethylphenol	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Benzoic Acid	50	200 U	--	--	--	50 U	--	200 U	--	--	--	50 U	--	200 U	--	--	--
bis(2-Chloroethoxy)Methane	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
2,4-Dichlorophenol	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
1,2,4-Trichlorobenzene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Naphthalene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
4-Chloroaniline	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Hexachlorobutadiene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
4-Chloro-3-Methylphenol	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
2-Methylnaphthalene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Hexachlorocyclopentadiene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
2,4,6-Trichlorophenol	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
2,4,5-Trichlorophenol	50	200 U	--	--	--	50 U	--	200 U	--	--	--	50 U	--	200 U	--	--	--
2-Chloronaphthalene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
2-Nitroaniline	50	200 U	--	--	--	50 U	--	200 U	--	--	--	50 U	--	200 U	--	--	--
Dimethyl Phthalate	10	--	--	--	--	10 U	--	--	--	--	--	10 U	--	--	--	--	--
Acenaphthylene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL	SITE UTL'S	19	19	20	20	20	20	20	20	21	21	21	21	21	21	22	22
Well ID		S32-E11	S32-E11	S29-E11	S29-E11	S29-E11	S29-E11	S29-E11	S29-E11	S31-E10E	S31-E10E	S31-E10E	S31-E10E	S31-E10E	S31-E10E	S31-E11	S31-E11
ROUND	ug/L	8	9	5	6	7	7.5	8	9	5	6	7	7.5	8	9	5	6
SAMPLE ID #		B01C07	B06207		B002H4	B010V7	B01513	B01C12	B06206		B002H6	B010W1	B01516	B01C17			B002H8
SEMI-VOLATILE ORGANICS																	
2,6-Dinitrotoluene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
3-Nitroaniline	50	200 U	--	--	--	50 U	--	200 U	--	--	--	50 U	--	200 U	--	--	--
Acenaphthene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
2,4-Dinitrophenol	50	200 U	--	--	--	50 U	--	200 U	--	--	--	50 U	--	200 U	--	--	--
4-Nitrophenol	50	40 U	--	--	--	50 U	--	40 U	--	--	--	50 U	--	40 U	--	--	--
Dibenzofuran	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
2,4-Dinitrotoluene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Diethylphthalate	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
4-Chlorophenyl-phenylether	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Fluorene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
4-Nitroaniline	50	200 U	--	--	--	50 U	--	200 U	--	--	--	50 U	--	200 U	--	--	--
4,6-Dinitro-2-Methylphenol	50	200 U	--	--	--	50 U	--	200 U	--	--	--	50 U	--	200 U	--	--	--
N-Nitrosodiphenylamine (1)	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
4-Bromophenyl-phenylether	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Hexachlorobenzene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Pentachlorophenol	50	200 U	--	--	--	50 U	--	200 U	--	--	--	50 U	--	200 U	--	--	--
Phenanthrene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Anthracene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Di-n-Butylphthalate	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Fluoranthene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Pyrene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Butylbenzylphthalate	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
3,3'-Dichlorobenzidine	20	80 U	--	--	--	20 U	--	80 U	--	--	--	20 U	--	80 U	--	--	--
Benzo(a)anthracene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Chrysene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
bis(2-Ethylhexyl)Phthalate	23	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Di-n-Octyl Phthalate	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Benzo(b)Fluoranthene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Benzo(k)Fluoranthene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Benzo(a)Pyrene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Indeno(1,2,3-cd)Pyrene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Dibenz(a,h)Anthracene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
Benzo(g,h,i)Perylene	10	40 U	--	--	--	10 U	--	40 U	--	--	--	10 U	--	40 U	--	--	--
PESTICIDE ORGANICS																	
alpha-BHC	0.05	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--
beta-BHC	0.05	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--
delta-BHC	0.05	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--
gamma-BHC	0.05	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--
Heptachlor	0.05	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--
Aldrin	0.05	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--
Heptachlor epoxide	0.05	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--
Endosulfan I	0.05	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--	0.05 U	--	0.05 U	--	--	--
Dieldrin	0.1	0.015 JX	--	--	--	0.1 U	--	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--
4,4'-DDE	0.1	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--
Endrin	0.1	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--
Endosulfan II	0.1	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--
4,4'-DDD	0.1	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--
Endosulfan sulfate	0.1	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--
4,4'-DDT	0.1	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--
Methoxychlor	0.5	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--
Endrin ketone	0.1	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--	0.1 U	--	0.1 U	--	--	--
alpha-Chlordane	0.5	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--
gamma-Chlordane	0.5	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--
Toxaphene	1	1 U	--	--	--	1 U	--	1 U	--	--	--	1 U	--	1 U	--	--	--
Aroclor-1016	0.5	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--
Aroclor-1221	0.5	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--
Aroclor-1232	0.5	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--
Aroclor-1242	0.5	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--
Aroclor-1248	0.5	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--	0.5 U	--	0.5 U	--	--	--
Aroclor-1254	1	1 U	--	--	--	1 U	--	1 U	--	--	--	1 U	--	1 U	--	--	--
Aroclor-1260	1	0.86 J	--	--	--	1 U	--	1 J	--	--	--	1 U	--	1 J	--	--	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		22	22	22	22
Well ID	SITE UTL'S	831-E11	831-E11	831-E11	831-E11
ROUND	ug/L	7	7.5	8	9
SAMPLE ID#		B01GW5	B01B19	B01C22	B06209
PARAMETERS (units ug/l)					
VOLATILE ORGANICS					
Chloromethane	2	10 U	10 U	10 U	1 U
Trichlorofluoromethane	NA	--	--	--	1 U
Bromomethane	2	10 U	10 U	10 U	1 U
Vinyl Chloride	2	10 U	10 U	10 U	1 U
Chloroethane	2	10 U	10 U	10 U	1 U
Methylene Chloride	1	5 U	5 U	5	3 U
Acetone	10	10 U	10 U	10 U	10 U
Carbon Disulfide	1	5 U	5 U	5 U	0.5 U
1,1-Dichloroethene	1	5 U	5 U	5 U	0.5 U
1,1-Dichloroethane	1	5 U	5 U	5 U	0.5 U
cis-1,2-Dichloroethene	1	--	--	--	0.5 U
Trans-1,2-Dichloroethene	NA	--	--	--	0.5 U
1,2-Dichloroethane (total)	1	--	5 U	5 U	--
Chloroform	1	5 U	5 U	5 U	0.5 U
1,2-Dichloroethane	1	5 U	5 U	5 U	0.5 U
2-Butanone	2	10 U	10 U	10 U	1 U
Tetrahydrofuran	NA	--	--	--	10 U
1,1,1-Trichloroethane	1.2	1 J	5 U	5 U	0.5 U
Carbon Tetrachloride	1	5 U	5 U	5 U	0.5 U
Vinyl Acetate	2	--	10 U	--	0.5 U
Bromodichloromethane	1	5 U	5 U	5 U	0.5 U
1,2-Dichloropropane	1	5 U	5 U	5 U	0.5 U
cis-1,3-Dichloropropene	1	--	5 U	5 U	0.5 U
Trans-1,3-Dichloropropene	1	--	5 U	5 U	0.5 U
Trichloroethene	1	5 U	5 U	5 U	0.5 U
Dibromochloromethane	1	5 U	5 U	5 U	0.5 U
1,1,2-Trichloroethane	1	5 U	5 U	5 U	0.5 U
Benzene	1	5 U	5 U	5 U	0.5 U
Bromoform	1	5 U	5 U	5 U	0.5 U
4-Methyl-2-Pentanone	10	10 U	10 U	10 U	1 U
2-Hexanone	10	10 U	10 U	10 U	1 U
Tetrachloroethene	1	5 U	5 U	5 U	0.5 U
1,1,2,2-Tetrachloroethane	1	10 U	10 U	10 U	0.5 U
Toluene	1	5 U	5 U	5 U	0.5 U
Chlorobenzene	1	5 U	5 U	5 U	0.5 U
Ethylbenzene	1	5 U	5 U	5 U	0.5 U
Styrene	1	5 U	5 U	5 U	0.5 U
m,p-xylene	NA	--	--	--	0.5 U
o-xylene	NA	--	--	--	0.5 U
Total Xylenes	1	5 U	5 U	5 U	--
C12 HYDROCARBON	NA	--	--	--	--
1,3-Dichlorobenzene	NA	--	--	--	0.5 U
1,4-Dichlorobenzene	NA	--	--	--	0.5 U
1,2-Dichlorobenzene	NA	--	--	--	0.5 U
SEMI-VOLATILE ORGANICS					
Phenol	10	10 U	--	40 U	--
bis(2-Chloroethyl)Ether	10	10 U	--	40 U	--
2-chlorophenol	10	10 U	--	40 U	--
1,3-Dichlorobenzene	10	10 U	--	40 U	--
1,4-Dichlorobenzene	10	10 U	--	40 U	--
Benzyl Alcohol	10	10 U	--	40 U	--
1,2-Dichlorobenzene	10	10 U	--	40 U	--
2-Methylphenol	10	10 U	--	40 U	--
bis(2-Chloroisopropyl)Ether	10	10 U	--	40 U	--
4-Methylphenol	10	10 U	--	40 U	--
N-Nitroso-Di-n-Propylamine	10	10 U	--	40 U	--
Hexachloroethane	10	10 U	--	40 U	--
Nitrobenzene	10	10 U	--	40 U	--
Isophorone	10	10 U	--	40 U	--
2-Nitrophenol	10	10 U	--	40 U	--
2,4-Dimethylphenol	10	10 U	--	40 U	--
Benzoic Acid	50	50 U	--	200 U	--
bis(2-Chloroethoxy)Methane	10	10 U	--	40 U	--
2,4-Dichlorophenol	10	10 U	--	40 U	--
1,2,4-Trichlorobenzene	10	10 U	--	40 U	--
Naphthalene	10	10 U	--	40 U	--
4-Chloroaniline	10	10 U	--	40 U	--
Hexachlorobutadiene	10	10 U	--	40 U	--
4-Chloro-3-Methylphenol	10	10 U	--	40 U	--
2-Methylnaphthalene	10	10 U	--	40 U	--
Hexachlorocyclopentadiene	10	10 U	--	40 U	--
2,4,6-Trichlorophenol	10	10 U	--	40 U	--
2,4,5-Trichlorophenol	50	50 U	--	200 U	--
2-Chloronaphthalene	10	10 U	--	40 U	--
2-Nitroaniline	50	50 U	--	200 U	--
Dimethyl Phthalate	10	10 U	--	--	--
Acenaphthylene	10	10 U	--	40 U	--

TABLE E-1. Volatile, Semivolatile, and Pesticide Organics Analytical Data

MONITORING WELL		22	22	22	22
Well ID	SITE UTL'S	631-E11	631-E11	631-E11	631-E11
ROUND	ug/L	7	7.5	8	9
SAMPLE ID#		B010W6	B01519	B01C22	B06209
SEMI-VOLATILE ORGANICS					
2,6-Dinitrotoluene	10	10 U	--	40 U	--
3-Nitroaniline	50	50 U	--	200 U	--
Acenaphthene	10	10 U	--	40 U	--
2,4-Dinitrophenol	50	50 U	--	200 U	--
4-Nitrophenol	50	50 U	--	200 U	--
Dibenzofuran	10	10 U	--	40 U	--
2,4-Dinitrotoluene	10	10 U	--	40 U	--
Diethylphthalate	10	10 U	--	40 U	--
4-Chlorophenyl-phenylether	10	10 U	--	40 U	--
Fluorene	10	10 U	--	40 U	--
4-Nitroaniline	50	50 U	--	200 U	--
4,6-Dinitro-2-Methylphenol	50	50 U	--	200 U	--
N-Nitrosodiphenylamine (1)	10	10 U	--	40 U	--
4-Bromophenyl-phenylether	10	10 U	--	40 U	--
Hexachlorobenzene	10	10 U	--	40 U	--
Pentachlorophenol	50	50 U	--	200 U	--
Phenanthrene	10	10 U	--	40 U	--
Anthracene	10	10 U	--	40 U	--
Di-n-Butylphthalate	10	10 U	--	40 U	--
Fluoranthene	10	10 U	--	40 U	--
Pyrene	10	10 U	--	40 U	--
Butylbenzylphthalate	10	10 U	--	40 U	--
3,3'-Dichlorobenzidine	20	20 U	--	80 U	--
Benzo(a)anthracene	10	10 U	--	40 U	--
Chrysene	10	10 U	--	40 U	--
bis(2-Ethylhexyl)Phthalate	23	10 U	--	40 U	--
Di-n-Octyl Phthalate	10	10 U	--	40 U	--
Benzo(b)Fluoranthene	10	10 U	--	40 U	--
Benzo(k)Fluoranthene	10	10 U	--	40 U	--
Benzo(a)Pyrene	10	10 U	--	40 U	--
Indeno(1,2,3-cd)Pyrene	10	10 U	--	40 U	--
Dibenz(a,h)Anthracene	10	10 U	--	40 U	--
Benzo(g,h,i) Perylene	10	10 U	--	40 U	--
PESTICIDE ORGANICS					
alpha-BHC	0.05	0.05 U	--	0.05 U	--
beta-BHC	0.05	0.05 U	--	0.05 U	--
delta-BHC	0.05	0.05 U	--	0.05 U	--
gamma-BHC	0.05	0.05 U	--	0.05 U	--
Heptachlor	0.05	0.05 U	--	0.05 U	--
Aldrin	0.05	0.05 U	--	0.05 U	--
Heptachlor epoxide	0.05	0.05 U	--	0.05 U	--
Endosulfan I	0.05	0.05 U	--	0.05 U	--
Dieldrin	0.1	0.1 U	--	0.1 U	--
4,4'-DDE	0.1	0.1 U	--	0.1 U	--
Endrin	0.1	0.1 U	--	0.1 U	--
Endosulfan II	0.1	0.1 U	--	0.1 U	--
4,4'-DDD	0.1	0.1 U	--	0.1 U	--
Endosulfan sulfate	0.1	0.1 U	--	0.1 U	--
4,4'-DDT	0.1	0.1 U	--	0.1 U	--
Methoxychlor	0.5	0.5 U	--	0.5 U	--
Endrin ketone	0.1	0.1 U	--	0.1 U	--
alpha-Chlordane	0.5	0.5 U	--	0.5 U	--
gamma-Chlordane	0.5	0.5 U	--	0.5 U	--
Toxaphene	1	1 U	--	1 U	--
Aroclor-1016	0.5	0.5 U	--	0.5 U	--
Aroclor-1221	0.5	0.5 U	--	0.5 U	--
Aroclor-1232	0.5	0.5 U	--	0.5 U	--
Aroclor-1242	0.5	0.5 U	--	0.5 U	--
Aroclor-1248	0.5	0.5 U	--	0.5 U	--
Aroclor-1254	1	1 U	--	1 U	--
Aroclor-1260	1	1 U	--	1 U	--

TABLE E-2. Metals and Cyanide Analytical Data

MONITORING WELL	SITE UTL'S	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3
ROUND	ug/L	S41-B11	S41-B11	S41-B11	S41-B11	S41-B11	S41-B11	S41-B11	S41-B11	S34-B10	S34-B10	S34-B10	S34-B10	S34-B10	S34-B10	S34-B10	S41-B12	S41-B12	S41-B12	S41-B12	S41-B12
SAMPLE ID#		5	6	6	7	7.5	8	8	9	5	6	6	7	7.5	8	9	5	6	6	7	7.5
METALS			B0ZZC6	B0ZZC7			B0ZB79	B0ZB74			B0ZZ68	B0ZZ69	B0ZB83			B0ZB94		B0ZZD0	B0ZZD1		
			unfiltered	filtered							unfiltered	filtered						unfiltered	filtered		
Aluminum	132	--	56 U	56 U	--	--	75 B	129 B	--	--	41.6 B	56 U	--	--	--	--	--	135 B	56 U	--	--
Antimony	21	--	24 U	24 U	--	--	44 U	44 U	--	--	24 U	24.4 B	--	--	--	--	--	43.4 B	25.6 B	--	--
Arsenic	14.9	--	3.6 BW	4 BW	--	--	4 B	3.3 B	--	--	4.7 B	3.6 B	--	--	--	--	--	1.7 BW	1.4 B	--	--
Barium	60.5	--	38.9 B	35.3 B	--	--	65 B	64.4 B	--	--	56 B	57 B	--	--	--	31.1	--	174 B	101 B	--	--
Beryllium	1	--	1 U	1 U	--	--	1 U	1 U	--	--	1.4 B	1.4 B	--	--	--	--	--	1 U	1 U	--	--
Cadmium	5	--	5 U	5 U	--	--	4 U	4 U	--	--	3 U	3 U	--	--	--	--	--	3 U	3 U	--	--
Calcium	74600	--	56400 *	54400 *	--	--	67900	68700	--	--	53500	54600	--	--	--	59600	--	197000 *	110000 *	--	--
Chromium	7.4	--	48.4	6.7 B	--	--	13.4	7 U	--	--	48.1	6 U	--	--	--	--	--	38.7	6 U	--	--
Cobalt	3	--	5 U	5 U	--	--	4 U	4 U	--	--	5 U	5 U	--	--	--	--	--	5 U	5 U	--	--
Copper	5.22	--	6.3 B	7.4 B	--	--	15.2 B	28.3	--	--	5 U	5 U	--	--	--	--	--	5 U	5 U	--	--
Iron	826	--	402	38.5 B	--	--	272	40.5 B	--	--	234	29.4 B	--	--	--	129	--	719	44.7 B	--	--
Lead	13.7	--	1 UW	1.3 B	--	--	2.4 B	1 U	--	--	1.5 B	1 U	--	--	--	--	--	1.7 B	1.1 B	--	--
Magnesium	20200	--	21300 *	20100 *	--	--	18500	18600	--	--	10900	11100	--	--	--	10600	--	42100 *	20900 *	--	--
Manganese	300	--	6.3 B	1.3 B	--	--	11.7 B	12.5 B	--	--	9.1 B	5 B	--	--	--	15 U	--	62.5	38.5	--	--
Mercury	0.2	--	0.2 U	0.2 U	--	--	0.2 U	0.2 U	--	--	0.2 U	0.2 U	--	--	--	--	--	0.2 U	0.2 U	--	--
Nickel	15	--	79.9	66.8	--	--	134	96.9	--	--	31.1 B	12 U	--	--	--	--	--	51.6	21.7 B	--	--
Potassium	7140	--	6070	6600	--	--	8150	8160	--	--	6420	6330	--	--	--	5790	--	13900	8950	--	--
Selenium	5.29	--	3.1 B	1 U	--	--	2 UW	20 U	--	--	1.6 BW	1 U	--	--	--	--	--	1 U	1 U	--	--
Silver	4.0	--	4 U	4 U	--	--	4 U	4 U	--	--	4 U	4 U	--	--	--	--	--	4 U	4 U	--	--
Sodium	29500	--	21400 *	20400 *	--	--	26900	26900	--	--	21100	21500	--	--	--	20600	--	36900 *	33900 *	--	--
Thallium	4	--	1 U	1 U	--	--	4 UW	1 UW	--	--	1 UNW	1 UNW	--	--	--	--	--	1 UW	1 UW	--	--
Vanadium	10.1	--	18.5 B	9.6 B	--	--	16.7 B	16.6 B	--	--	9.8 B	4.5 B	--	--	--	--	--	11.5 B	4.8 B	--	--
Zinc	8.3	--	4.4 B	13.1 B	--	--	8.3 B	12.9 B	--	--	4 U	4 U	--	--	--	--	--	5.7 B	6.2 B	--	--
Cyanide	10	--	10 U	-- NR	--	--	10 U	-- NR	--	--	10 U	-- NR	--	--	--	--	--	10 U	--	--	--

TABLE E-2. Metals and Cyanide Analytical Data

MONITORING WELL	SITE UTL'S	5	5	5	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5
		S41-B12	S41-B12	S41-B12	S34-E12A	S34-E12A	S34-E12A	S34-E12A	S34-E12A	S34-E12A	S34-E12A	S34-E12A	S34-E12B	S34-E12B	S34-E12B	S34-E12B	S34-E12B	S34-E12B	S34-E12B	S34-E12B	S34-E12B
ROUND	ug/L	4	4	9	5	6	6	7	7.5	8	9		5	6	6	6	6	7	7.5	8	8
SAMPLE ID#		B41B76	B41B77			B40Z52	B40Z53			B41B79				B40Z56	B40Z57	B40Z60	B40Z61			B01BV0	B01BV1
METALS																					
						unfiltered	filtered							unfiltered	filtered	unfiltered	filtered				
Aluminum	152	159 B	86.4 B	--	--	58 U	58 U	--	--	--	--	--	--	58 U	58 U	58 U	58 U	--	--	110 B	152 B
Antimony	21	49.6 B	47.8 B	--	--	24 U	24 U	--	--	--	--	--	--	24 U	24 U	24 U	37.3 B	--	--	25 U	25 U
Arsenic	14.9	5.2 B	1.5 B	--	--	4.2 B	4.2 B	--	--	--	--	--	--	4.9 B	5.5 B	4.9 B	2.3 B	--	--	6.2 B	4.3 BW
Barium	69.5	146 B	138 B	--	--	41.5 B	61 B	--	--	--	--	--	--	64.7 B	68.4 B	68.4 B	97.7 B	--	--	47.4 B	51.5 B
Beryllium	1	1 U	1 U	--	--	1 U	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	1 U	2.1 B
Cadmium	3	4 U	4 U	--	--	3 U	3 U	--	--	--	--	--	--	3 U	4 U	3 U	3 U	--	--	3 U	4.7 B
Calcium	74400	144000	142000	--	--	4200	62200	--	--	--	--	--	--	42600	49200	45900	103000	--	--	37100	56300
Chromium	7.1	170	7 U	--	--	10.4	8 B	--	--	--	--	--	--	21.5	9.2 B	20.2	6 U	--	--	19.7 *	6 U*
Cobalt	5	4 U	4 U	--	--	5 U	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U	--	--	6 U	6 U
Copper	5.22	34.4	13.6 B	--	--	5 U	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5.5 B	--	--	21.6 B	21.2 B
Iron	829	2030	49.1 B	--	--	38.9 B	31.1 B	--	--	--	--	--	--	152	42.6 B	125	62.3 B	--	--	78.4 B	40.5 B
Lead	13.7	2.6 BNW	1.5 BNW	--	--	4	2.1 B	--	--	--	--	--	--	1 B	1 U	1.2 B	2.3 B	--	--	1.6 B	1.1 B
Magnesium	20200	32200	31400	--	--	5700	12900	--	--	--	--	--	--	8440	9710	9140	19000	--	--	7210	7360
Manganese	339	25.6	9.5 B	--	--	1 U	1.4 B	--	--	--	--	--	--	15.8	1.6 B	16.3	1 U	--	--	2.7 B	4.6 B
Mercury	0.2	0.2 U	0.2 U	--	--	0.2 U	0.2 U	--	--	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	0.2 U	0.2 U
Nickel	15	140	186	--	--	12 U	12 U	--	--	--	--	--	--	20.7 B	16.6 B	12 U	12 U	--	--	31.5 B	21.4 B
Potassium	7140	10500	10900	--	--	4540 B	6100	--	--	--	--	--	--	5440	5710	5920	8070	--	--	4478 B	4584 B
Selenium	5.29	10 UNW	1 UNW	--	--	1 UNW	1 UNW	--	--	--	--	--	--	1 UNW	1 UNW	1 UNW	1 UNW	--	--	1.4 B	1 U
Silver	4.6	4 U	4 U	--	--	4 U	4 U	--	--	--	--	--	--	4 U	4 U	4 U	4 U	--	--	3 U	3 U
Sodium	29500	49400	48400	--	--	13500	18900	--	--	--	--	--	--	20700	24400	22200	17200	--	--	18500	18500
Thallium	4	16 UNW	16 UNW	--	--	1 UNW	1 UN	--	--	--	--	--	--	1 UN	1 UN	1 UNW	1 UNW	--	--	1 BW	1 UW
Vanadium	14.1	12.4 B	12.7 B	--	--	5.9 B	14.7 B	--	--	--	--	--	--	11.7 B	4.3 B	6.6 B	9.6 B	--	--	9.3 B	12.5 B
Zinc	4.3	10.6 B	3 U	--	--	4 U	34	--	--	--	--	--	--	4 U	4 U	4 U	14.9 B	--	--	22.6	16.3 B
Cyanide	10	10 U	-- NR	--	--	10 U	-- NR	--	--	--	--	--	--	10 U	-- NR	10 U	-- NR	--	--	20 U	-- NR

TABLE E-2. Metals and Cyanide Analytical Data

MONITORING WELL	SITE UTL'S	S30-B12B	S37-B11	S37-B11	S37-B11	S37-B11	S37-B11	S37-B11	S37-B11	S37-B11	S37-B11	S37-B11	S34-B11	S34-B11	S34-B11	S34-B11	S34-B11	S34-B11	S34-B11	S34-B11	S31-B60
ROUND	ug/L	9	5	6	6	7	7.5	8	8	8	8	9	5	6	6	7	7.5	8	9	5
SAMPLE ID#				B40Z64	B40Z65			B41BV2	B41BV3	B41BX7	B41BX8			B40Z72	B40Z73	B41BZ3	B41BZ5			
METALS																				
			unfiltered		filtered								unfiltered		filtered					
Aluminum	152	--	--	58 U	58 U	--	--	97.5 B	131 B	125 B	117 B	--	--	125 B	58 U	--	76.4 B	--	--	--
Antimony	21	--	--	24 U	33.2 B	--	--	44 U	44 U	35 U	35 U	--	--	24 U	24 U	--	46 U	--	--	--
Arsenic	16.9	--	--	5.2 BW	4.8 B	--	--	5.4 B	5.7 B	1 U	15 BW	--	--	7.4 B	7.2 B	--	5.7 BW	--	--	--
Barium	69.5	--	--	42.1 B	40.3 B	--	--	36.3 B	34 B	11.7 B	10.9 B	--	--	36.6 B	32.0 B	--	34.4 B	--	--	--
Beryllium	1	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1.3 B	--	--	1.4 B	1.6 B	--	2.3 B	--	--	--
Cadmium	5	--	--	3 U	3 U	--	--	4 U	4 U	3 U	3.1 B	--	--	3 U	3 U	--	3 U	--	--	--
Calcium	74600	--	--	45400	41900	--	--	41000	42300	25300	24100	--	--	55200	53400	--	52700	--	--	--
Chromium	7.4	--	--	11.4	6 U	--	--	9.4 B	7 U	9 B*	9.1 B*	--	--	24	6 U	--	9 B*	--	--	--
Cobalt	5	--	--	5 U	5 U	--	--	4 U	4 U	6 U	6 U	--	--	5 U	5 U	--	6 U	--	--	--
Copper	5.22	--	--	5 U	5 U	--	--	26.6	44.4	20.3 B	15.2 B	--	--	5 U	5 U	--	6.4 B	--	--	--
Iron	826	--	--	119	19 U	--	--	34.1 B	6.7 B	69.6 B	76.1 B	--	--	236	28.5 B	--	13 U	--	--	--
Lead	13.7	--	--	1 U	1 U	--	--	3.4	2.5 B	2 B	1.3 B	--	--	1 U	2.4 B	--	2.1 B	--	--	--
Magnesium	20200	--	--	8960	8760	--	--	9600	8040	4300 B	4240 B	--	--	9870	9430	--	11300	--	--	--
Manganese	390	--	--	3.2 B	1 U	--	--	2.3 B	1 U	3.2 B	2.5 B	--	--	11.5 B	2.2 N	--	4 U	--	--	--
Mercury	0.2	--	--	0.2 U	0.2 U	--	--	0.2 U	0.2 U	NR	0.2 U	--	--	0.2 U	0.2 U	--	0.2 U	--	--	--
Nickel	15	--	--	12 U	12 U	--	--	17 U	17 U	14 U	21.4 B	--	--	17.4 B	12 U	--	18 U	--	--	--
Potassium	7140	--	--	5740	3120	--	--	4970 B	5420	2160 B	2600 B	--	--	6740	6920	--	6250	--	--	--
Selenium	5.25	--	--	1 UBW	1 UNW	--	--	2 UW	2 U	1 U	1 U	--	--	2 U	1 U	--	1.9 B	--	--	--
Silver	4.8	--	--	4 U	4 U	--	--	4 U	4 U	3 U	3 U	--	--	4 U	4 U	--	5 U	--	--	--
Sodium	29500	--	--	20400	20000	--	--	18000	19400	3140 B	3000 B	--	--	25600	22500	--	23200	--	--	--
Thallium	4	--	--	1 UN	1 UN	--	--	1 U	1 UW	1.5 B	1 U	--	--	1 UNW	1 UNW	--	1 UNW	--	--	--
Vanadium	18.1	--	--	12.7 B	5.9 B	--	--	14 B	14 B	7.5 B	5 B	--	--	13.4 B	12.5 B	--	7 U	--	--	--
Zinc	8.5	--	--	4 U	4 U	--	--	19.6 B	6.6 B	16.6 B	21	--	--	19.4 B	4 U	--	21.2	--	--	--
Cyanide	10	--	--	10 U	-- NR	--	--	10 U	-- NR	20 U	-- NR	--	--	10 U	-- NR	--	-- NR	--	--	--

TABLE E-2. Metals and Cyanide Analytical Data

MONITORING WELL	SITE UTL'S	8A	8A	8	8	8A	8A	8	8A	8	8	9	9	9	9	9	9	9	10
		S31-E04	S31-E04	S31-E04	S31-E04	S31-E04	S31-E04	S31-E04	S31-E04	S31-E04	S31-E04	S32-E04	S32-E04	S32-E04	S32-E04	S32-E04	S32-E04	S32-E04	S34-E16A
ROUND	µg/L	6	6	6	6	7	7	7.5	7.5	8	9	5	6	6	7	7.5	8	9	5
SAMPLE ID#		B4ZG9	B4ZJ40	B4W36	B4W37	B41WZ7	B41WZ8	B41537	B41546		B46195		B4W40	B4W41		B41540			
METALS		unfiltered	filtered	unfiltered	filtered	unfiltered	filtered						unfiltered	filtered					
Aluminum	152	158 B	58 U	58 U	58 U	40 U	40 U	86.2 B	99.6 B	--	--	--	73.9 B	58 U	--	86.4 B	--	--	--
Antimony	21	24 U	24 U	24 U	24 U	46 U	46 U	46 U	46 U	--	--	--	24 U	24 U	--	46 U	--	--	--
Arsenic	10.9	3.4 BW	3.4 BW	7.2 B	7.4 B	5 BW	4.5 BW	7.9 B	4 BW	--	--	--	1.6 B	1.7 B	--	2.6 BW	--	--	--
Barium	60.5	64.4 B	21.9 B	48.5 B	48.5 B	69.4 B	61.9 B	49.1 B	65.8 B	--	50.3	--	64.6 B	64 B	--	69.6 B	--	--	--
Beryllium	1	1 U	1 U	1 U	1 U	1.1 B	1 U	2.3 B	2.3 B	--	--	--	1 U	1 U	--	1 U	--	--	--
Cadmium	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U	5 U	--	5.5 B	--	--	--
Calcium	76440	71100 *	24100 *	55300	54900	74100	67000	54700	68200	--	54700	--	20200	20200	--	20400	--	--	--
Chromium	7.4	19.4	6 U	13.1	10.6	13	7 U	14 *	7 U*	--	--	--	22.5	4.5 B	--	7 U*	--	--	--
Cobalt	5	5 U	5 U	5 U	5 U	6 U	6 U	6 U	6 U	--	--	--	5 U	5 U	--	6 U	--	--	--
Copper	5.22	5 U	5 U	5 U	5 U	5 U	5 U	16.6 B	7.7 B	--	--	--	5 U	5 U	--	6.4 B	--	--	--
Iron	420	254	19 U	39.7 B	34.2 B	76.6 B	51 B	53.2 B	24 B	--	100 U	--	81.8 B	35.2 B	--	24 B	--	--	--
Lead	13.7	2.1 B	2.1 B	1 B	21	3.1 W*	2.9 B*	2.1 B	1 U	--	--	--	1 U	1.2 B	--	2.6 B	--	--	--
Magnesium	20200	13800	4630 B*	12900	12700	14400	13700	13200	14300	--	13100	--	4750 B	4690 B	--	4960 B	--	--	--
Manganese	590	9.7 B	1.9 B	1.5 U	1.6 U	4 U	4 U	4 U	4 U	--	15 U	--	87 B	84.1 B	--	96.2	--	--	--
Mercury	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	0.2 U	0.2 U	--	0.2 U	--	--	--
Nickel	15	13.5 B	12 U	12 U	12 U	14 U	14 U	14 U	14 U	--	--	--	12 U	12 U	--	18 U	--	--	--
Potassium	7140	7000	3160 B	5190	5060	6890	6300	3460	7060	--	5160	--	5010	4430 B	--	4550 B	--	--	--
Selenium	5.29	1.2 BW	1.2 BW	1 U	1 U	1.8 B	1 U	1.2 B	1 BW	--	--	--	1 UW	1 U	--	1 U	--	--	--
Silver	4.0	4 U	4 U	4 U	4 U	5 U	5 U	5 U	5 U	--	--	--	4 U	4 U	--	5 U	--	--	--
Sodium	29560	24100 *	5650 *	16900	16900	26100	24500	19600	26300	--	21700	--	14500	15000	--	15000	--	--	--
Thallium	4	1 U	1 U	1 UW	1 UW	1 U	1 U	1 UNW	1 UNW	--	--	--	1 UW	1 UW	--	1 UN	--	--	--
Vanadium	10.1	8.6 B	4 U	13.9 U	14.9 U	8.8 B	7 U	11.3 B	7 U	--	--	--	6 U	5 U	--	7 U	--	--	--
Zinc	8.3	22.3	4 U	4 U	4 U	6.1 B	4.6 B	21.1	21.1	--	--	--	4 U	4 U	--	21.4	--	--	--
Cyanide	10	10 U	-- NR	10 U	-- NR	10 U	-- NR	-- NR	-- NR	--	--	--	10 U	-- NR		-- NR	--	--	--

TABLE E-2. Metals and Cyanide Analytical Data

MONITORING WELL	SITE UTL'S	10	10	10	10	10	10	10	10	11	11	11	11	11	11	11	11	11	12
		S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10A	S30-E10B	S30-E10B	S30-E10B	S30-E10B	S30-E10B	S30-E10B	S30-E10B	S30-E10B	S30-E10B	S31-E10A
ROUND	ug/L	6	6	6	6	7	7.5	8	9	3	4	6	6	6	7	7.5	8	9	3
SAMPLE ID#		B00Y44	B00Y45	B00Y48	B00Y49	B01BC3	B01531	B01BW2	B01196		B00Y52	B00Y53	B00Y56	B00Y57	B01BC9	B01534	B01BW7	B01197	
METALS		unfiltered	filtered	unfiltered	filtered						unfiltered	filtered	unfiltered	filtered					
Aluminum	152	103 B	54 U	186 B	54 U	--	48 U	--	--	--	33 B	54 U	165 B	55 U	--	48 U	--	--	--
Antimony	21	24 U	24 U	33.3 B	31 B	--	46 U	--	--	--	27.4 B	49.2 B	24 U	31.4 B	--	46 U	--	--	--
Arsenic	18.9	2.4 B	3.3 BW	3.1 B	3 B	--	2.4 B	--	--	--	2.1 B	2.1 BW	2.2 BW	1.9 B	--	1.5 B	--	--	--
Barium	69.5	44.8 B	47 B	47.6 B	48.8 B	--	44.4 B	--	90.3	--	44.2 B	44.4 B	47 B	47 B	--	37.4 B	--	84.2	--
Beryllium	1	1 U	1 U	1 U	1 U	--	1 U	--	--	--	1 U	1 U	1 U	1 U	--	1 U	--	--	--
Cadmium	3	3 U	3 U	3 U	3 U	--	3 U	--	--	--	3 U	3 U	3 U	3 U	--	3 U	--	--	--
Calcium	74600	97500	97500	97600	98500	--	97700	--	95400	--	105000	107000	10500	10500	--	111000	--	105000	--
Chromium	7.6	24.4	6 U	27.3	6.9 B	--	7 U	--	--	--	29	6 U	17.5	6 U	--	7 U	--	--	--
Cobalt	5	5 U	5 U	5 U	534 U	--	6 U	--	--	--	5 U	5 U	5 U	5 U	--	6 U	--	--	--
Copper	5.22	5 U	5 U	5 U	5 U	--	5 U	--	--	--	3 U	3 U	5 U	5 U	--	5 U	--	--	--
Iron	426	159	20.3 B	161	19 U	--	16.7 U	--	100 U	--	159	37.3 B	202	25.6 B	--	15 U	--	100 U	--
Lead	15.7	1 U	1 U	1 U	1 U	--	5.3	--	--	--	1 U	1 U	1.4 BW	1 U	--	1 U	--	--	--
Magnesium	20200	19900	19600	19700	19900	--	19900	--	19600	--	22000	22200	21900	21900	--	23400	--	22600	--
Manganese	590	5.2 U	1 UB	6 U	1 UB	--	4 U	--	15 U	--	64.5 B	57.9 B	57.9 B	57.9 B	--	16.7 U	--	20.1	--
Mercury	0.2	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	--	--	--
Nickel	15	12 U	12 U	16.9 B	12 U	--	16 U	--	--	--	12 U	12 U	12 U	12 U	--	16 U	--	--	--
Potassium	7140	4460	8390	8040	4716	--	8560	--	7550	--	9250	9350	9150	9460	--	9030	--	8350	--
Selenium	5.29	1 UW	1 UW	1 UW	1 UW	--	1 U	--	--	--	1 UW	1 UW	1 UW	1 UW	--	1 U	--	--	--
Silver	4.0	4 U	4 U	4 U	4 U	--	5 U	--	--	--	4 U	4 U	4 U	4 U	--	5 U	--	--	--
Sodium	29500	29500	29600	29200	29900	--	29700	--	30500	--	31900	32500	31600	31900	--	32700	--	35600	--
Thallium	4	1 UW	1 UW	1 UW	1 UW	--	1 UJ	--	--	--	1 UW	1 UW	1 UW	1 UW	--	1 UJ	--	--	--
Vanadium	16.1	8.9 U	6 U	5.9 U	5 U	--	7 B	--	--	--	6.9 U	5 U	5.9 U	7 U	--	7 U	--	--	--
Zinc	8.3	10.3 B	4 U	25.3	4.3 B	--	4.9 B	--	--	--	49.1	4.3 B	6.5 B	61 B	--	4 U	--	--	--
Cyanide	10	10 U	-- NR	10 U	-- NR	--	-- NR	--	--	--	10 U	-- NR	10 U	-- NR	--	-- NR	--	--	--

TABLE E-2. Metals and Cyanide Analytical Data

MONITORING WELL	SITE UTL'S	12	12	12	12	12	12	13	13	13	13	13	13	13
		S31-E10A	S31-E10A	S31-E10A	S31-E10A	S31-E10A	S31-E10A	S31-E10B	S31-E10B	S31-E10B	S31-E10B	S31-E10B	S31-E10B	S31-E10B
ROUND	ug/L	6	6	7	7.5	8	9	5	6	6	7	7.5	8	9
SAMPLE ID#		B00Y20	B00Y21	B01G75	B01G26	B01BW6	B06196		B00Y24	B00Y25	B01G27	B01G61	B01BW5	
METALS														
		unfiltered	filtered						unfiltered	filtered				
Aluminum	132	71.5 B	58 U	--	40 U	--	--	--	139 B	58.7 B	--	40 U	--	--
Antimony	21	39.5 B	24 U	--	46 U	--	--	--	24 U	40.8 B	--	46 U	--	--
Arsenic	10.9	3.8 B	3.5 B	--	6.6 U	--	--	--	3.5 B	3.6 B	--	2.6	--	--
Barium	60.5	111 B	112 B	--	112 B	--	105	--	96.3 B	96.3 B	--	49.2 B	--	--
Beryllium	1	1 U	1 U	--	1 U	--	--	--	1 U	1 U	--	1 U	--	--
Cadmium	5	5 U	5 U	--	5 U	--	--	--	5 U	5 U	--	5 U	--	--
Calcium	74600	111000	112000	--	115000	--	102000	--	105000	104000	--	102000	--	--
Chromium	7.8	9.4 B	8.1 B	--	7 U	--	--	--	10.7	6 U	--	7 U	--	--
Cobalt	3	5 U	5 U	--	6 U	--	--	--	5 U	5 U	--	6 U	--	--
Copper	5.22	6.2 B	5.1 B	--	5 U	--	--	--	5 U	5 U	--	10.9 B	--	--
Iron	526	36.5 B	24.5 B	--	41.4 U	--	100 U	--	216	46.1 B	--	22.4 U	--	--
Lead	15.7	1 U	1 U	--	1.2 B	--	--	--	1 B	1 U	--	1.5 J	--	--
Magnesium	20200	22400	21600	--	23300	--	20400	--	21500	22200	--	20400	--	--
Manganese	390	2.7 U	2.7 U	--	4 U	--	15 U	--	10 U	2.8 U	--	4 U	--	--
Mercury	0.2	0.2 U	0.2 U	--	0.2 U	--	--	--	0.3 U	0.2 U	--	0.2 U	--	--
Nickel	15	12 U	12 U	--	18 U	--	--	--	12 U	12 U	--	18 U	--	--
Potassium	7140	9190	4610	--	9170	--	7790	--	8460	8500	--	8200	--	--
Selenium	5.29	1.5 BW	1 UW	--	1 U	--	--	--	1 UW	1 UW	--	1 U	--	--
Silver	4.8	4 U	4 U	--	5 U	--	--	--	4 U	4 U	--	5 U	--	--
Sodium	29500	31000	31500	--	31600	--	30900	--	29500	29700	--	29200	--	--
Thallium	4	1 UW	1 UW	--	1 UJ	--	--	--	1 UW	1 UW	--	1 UJ	--	--
Vanadium	18.1	10.9 U	9 U	--	7 B	--	--	--	9.5 U	8 U	--	7.7 B	--	--
Zinc	8.5	3 B	4.2 B	--	4 U	--	--	--	4 U	9.4 B	--	5.2 B	--	--
Cyanide	10	10 U	-- NR	--	-- --	--	--	--	10 U	-- NR	--	-- NR	--	--

TABLE E-2. Metals and Cyanide Analytical Data

MONITORING WELL	14	14	14	14	14	14	14	15	15	15	15	15	15	15	15	17	17	17	17	17
WELL ID	S31-B16C	S31-B16C	S31-B16C	S31-B16C	S31-B16C	S31-B16C	S31-B16C	S31-B16D	S31-B16D	S31-B16D	S31-B16D	S31-B16D	S31-B16D	S31-B16D	S31-B16D	S31-B13C	S31-B13C	S31-B13C	S31-B13C	S31-B13C
ROUND	5	6	6	7	7.5	8	9	5	6	6	6	7	7.5	8	9	5	5	6	6	7
SAMPLE ID#		B4YZ4	B4YZ9	B61979	B61584	B61BW6	B46202		B4ZZ7	B4ZZ8	B4YZ3	B61971	B61587	B61BW9	B46206	B46159	B46179	B4ZZC1	B4ZZC3	
PARAMETERS																				
METALS																				
		unfiltered	filtered						unfiltered	filtered						unfiltered	filtered	unfiltered	filtered	
Aluminum	--	62.8 B	56 U	--	56.5 B	--	--	--	56 U	114 B	56 U	--	40 U	--	--	38.4 B	26 U	467	56 U	--
Antimony	--	24 U	26.9 B	--	46 U	--	--	--	24 U	29.6 B	24 U	--	46 U	--	--	37 U	37 U	24 U	24 U	--
Arsenic	--	1.8 B	1.7 B	--	2.2 B	--	--	--	3.6 BW	3.9 BW	4.8 B	--	3.5 B	--	--	4.6 B	3.9 B	4.4 B	4.9 B	--
Barium	--	54.5 B	50.4 B	--	61.4 B	--	83.2	--	71.7 B	129 B	78.3 B	--	82.3 B	--	65.5	39.6 B	39.6 B	26.7 B	19.4 B	--
Beryllium	--	1 U	1 U	--	1 U	--	--	--	1 U	1 U	1 U	--	1 U	--	--	2 U	2 U	1 U	1 U	--
Cadmium	--	3 U	3 U	--	3 U	--	--	--	3 U	3 U	3 U	--	3 U	--	--	4 U	4 U	3 U	3 U	--
Calcium	--	107000	108000	--	108000	--	102000	--	87000 *	158000 *	86400	--	93300	--	70300	50300	51500	26900	26800	--
Chromium	--	15	6.2 B	--	7 U	--	--	--	10.9	6 U	6.7 B	--	7 U	--	--	4.7 B	4 U	67.5	6 U	--
Cobalt	--	5 U	5 U	--	6 U	--	--	--	5 U	5 U	5 U	--	6 U	--	--	2 U	5 U	5 U	5 U	--
Copper	--	5 U	5 U	--	5 U	--	--	--	5 U	16.9 B	5 U	--	5 U	--	--	4 U	4 U	7.4 B	5 U	--
Iron	--	70.4 B	26.3 B	--	15 U	--	100 U	--	49.6 B	20.9 B	24.3 B	--	23.9 U	--	100 U	58.3 B	38.3 B	729	26.2 B	--
Lead	--	1 U	1 U	--	1.2 J	--	--	--	2.9 B	1 U	1.1 B	--	1 U	--	--	3 U	3 U	4.9	1.1 B	--
Magnesium	--	221000	22400	--	22100	--	21200	--	17100 *	31000 *	17800	--	19000	--	14800	10300	10600	5430	5460	--
Manganese	--	7 U	5.1 U	--	4.5 B	--	15 U	--	1 U	1 U	1.4 U	--	4 U	--	15 U	2 U	2 U	114	92.5	--
Mercury	--	0.2 U	0.2 U	--	0.2 U	--	--	--	0.2 U	0.2 U	0.2 U	--	0.2 U	--	--	0.2 U	0.2 U	0.2 U	0.2 U	--
Nickel	--	12 U	12 U	--	18 U	--	--	--	12 U	12 U	12 U	--	16 U	--	--	20 U	20 U	60.3	13.9 B	--
Potassium	--	9010	8930	--	8960	--	7920	--	7700	12000	7910	--	8420	--	6190	5020	4670 B	4020 B	3800 B	--
Selenium	--	1 U	1 UW	--	1 U	--	--	--	1 U	1 U	1 UW	--	1 U	--	--	4 UJ NI	4 UJ NI	1 U	1 U	--
Silver	--	4 U	4 U	--	5 U	--	--	--	4 U	4 U	4 U	--	5 U	--	--	5 U	5 U	4 U	4 U	--
Sodium	--	30800	31100	--	30400	--	30800	--	24400 *	40800 *	26200	--	27400	--	25400	8080	8360	16200	16700	--
Thallium	--	1 UW	1 UW	--	1 UJ	--	--	--	1 U	1 U	1 UW	--	1 UJ	--	--	6 U	6 U	1 UNW	1 UNW	--
Vanadium	--	7 U	4 U	--	7 U	--	--	--	7.7 B	17.3 B	9 U	--	9.6 B	--	--	8.3 B	7.8 B	4 U	4 U	--
Zinc	--	4.7 B	4 U	--	5.1 B	--	--	--	4 U	14.8 B	4.4 B	--	4 U	--	--	4 U	4 U	4 U	5.2 B	--
Cyanide	--	10 U	--NR	--	--NR	--	--	--	10 U	--NR	--NR	--	--NR	--	--	10 U	--NR	10 U	--NR	--

TABLE E-2. Metals and Cyanide Analytical Data

MONITORING WELL	17	17	17	18	18	18	18	18	18	18	18	18	18	19	19	19	19	19	19
WELL ID	531-B13C	531-B13C	531-B13C	537-B12	537-B12	537-B12	537-B12	537-B12	537-B12	537-B12	537-B12	537-B12	537-B12	532-B11	532-B11	532-B11	532-B11	532-B11	532-B11
ROUND	7.5	8	9	5	5	6	6	7	7	7.5	8	8	9	5	6	7	7	7.5	8
SAMPLE ID #				B41HV8	B41HV9	B41ZG1	B41ZG2	B41W9	B41Z8		B41BK2	B41BK3			B41ZH3	B41W3	B41W4	B41J19	B41C87
PARAMETERS																			
METALS																			
				unfiltered	filtered	unfiltered	filtered	unfiltered	filtered							unfiltered	filtered		
Aluminum	--	--	--	629	229	211	72.9 B	141 B	40 U	--	184 B	78.5 B	--	--	--	67.1 B	40 U	40 U	131 B
Antimony	--	--	--	37 U	37 U	24 U	24 U	46 U	46 U	--	44 U	44 U	--	--	--	46 U	46 U	46 U	35 U
Arsenic	--	--	--	5.3 B	4.9 B	4.3 BW	4.2 BW	5.6 B	4.9 B	--	4.5 BW	4.5 B	--	--	--	2.6 B	2.2 B	4.2 B	4.4 BW
Barium	--	--	--	52.3 B	46.2 B	29.6 B	29.2 B	32.6 B	28.1 B	--	38.7 B	35.7 B	--	--	--	50.2 B	48.5 B	48.5 B	41.9 B
Beryllium	--	--	--	2 U	2 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
Cadmium	--	--	--	4 U	4 U	3 U	3 U	3 U	3 U	--	4 U	4 U	--	--	--	3 U	3 U	3 U	3 U
Calcium	--	--	--	47900	47900	39600 *	40400 *	36900	35600	--	48100	47900	--	--	--	47700	47300	47300	47700
Chromium	--	--	--	7.5 B	7.5 B	43.8	6 U	29.1	7 U	--	41.8	9.4 B	--	--	--	10.3	7 U	7 U	5 U*
Cobalt	--	--	--	6 U	5 U	5 U	5 U	6 U	6 U	--	4 U	4 U	--	--	--	6 U	6 U	6 U	6 U
Copper	--	--	--	4 U	4 U	5.3 B	22.1 B	6.5 B	5 U	--	42.6	27.7	--	--	--	9.2 B	5 U	5 U	13 B
Iron	--	--	--	901	390	499	19 U	444	78.1 B	--	365	41.1 B	--	--	--	70.8 B	20.7 B	16.4 U	97.5 B
Lead	--	--	--	3 U	3 U	1.8 B	3.7	6.5 *	3 W*	--	2.6 BW	2.3 B	--	--	--	1 U	1 U	1 J	2.5 B
Magnesium	--	--	--	10100	10000	7910 *	7910 *	7670	7340	--	9690	9440	--	--	--	9500	9370	9470	9180
Manganese	--	--	--	80.3	72.1	13.6 B	4.8 B	14.1 B	4 U	--	11.4 B	1 U	--	--	--	53.6	52.1	28.5	16.7
Mercury	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	--	--	--	20 U	20 U	19.5 B	12 U	20.8 B	18 U	--	17 U	17 U	--	--	--	18 U	18 U	18 U	16 U
Potassium	--	--	--	4620 B	4500 B	4810 B	4400 B	3660 B	3660 B	--	4600 B	5030	--	--	--	5340 UN	5620	6000 U	5560
Selenium	--	--	--	4 JNW	4 UJNW	1 U	1 U	1 U	1 U	--	2 U	2 UW	--	--	--	1 U	1 UN	1 U	1 BW
Silver	--	--	--	5 U	5 U	4 U	4 U	5 U	5 U	--	4 U	4 U	--	--	--	5 U	5 U	5 U	3 U
Sodium	--	--	--	15600	15400	11100 *	11100 *	11300	10800	--	13600	13600	--	--	--	20600	20600	20600	20600
Thallium	--	--	--	6 U	6 U	1 U	1 U	1 UW	1 U	--	1 U	1 U	--	--	--	1 U	1 U	1 UJ	1 U
Vanadium	--	--	--	10.7 B	9.1 B	8.6 B	6.7 B	7 U	7 U	--	13 B	14.6 B	--	--	--	7 U	7 U	11.2 B	6.1 B
Zinc	--	--	--	4 U	79.6	27.5	18.4 B	19.8 B	7.5 B	--	17.7 B	10.6 B	--	--	--	13.2 B	10.3 B	4 U	11.4 B
Cyanide	--	--	--	10 U	--	10 U	-- NR	10 U	-- NR	--	10 U	-- NR	--	--	--	10 U	-- NR	-- NR	20 U

TABLE E-2. Metals and Cyanide Analytical Data

MONITORING WELL	19	19	20	20	20	20	20	20	20	20	21	21	21	21	21	21	21
WELL ID	S32-E11	S32-E11	S29-E11	S29-E11	S29-E11	S29-E11	S29-E11	S29-E11	S29-E11	S29-E11	S31-E10E	S31-E10E	S31-E10E	S31-E10E	S31-E10E	S31-E10E	S31-E10E
ROUND	8	9	5	6	7	7	7.5	8	8	9	5	6	7	7	7.5	8	8
SAMPLE ID#	B41C94	B46297		B46ZH4	B41W7	B41W4	B41S13	B41C12	B41C13	B46294		B46ZH5	B41W1	B41W2	B41S14	B41C17	B41C18
PARAMETERS																	
METALS																	
					Unfiltered	Filtered							Unfiltered	Filtered			
Aluminum	172 B	--	--	--	222	40 U	40 U	748	38 B	--	--	--	73.3 B	84.8 B	40 U	621	147 B
Antimony	26 U	--	--	--	46 U	46 U	46 U	44 U	44 U	--	--	--	46 U	46 U	46 U	44 U	44 U
Arsenic	4.8 BW	--	--	--	1 U	1 U	2.1 B	2.7 B	3.6 BW	--	--	--	1 U	1 U	1 U	1 U	1 U
Barium	42.5 B	50 U	--	--	99.7 B	98.5 B	93.7 B	99.5 B	99.9 B	93.1	--	--	37.2 B	33.3 B	36.2 B	30.1 B	36 B
Beryllium	1 U	--	--	--	1 U	1 U	1 U	1.1 B	1 U	--	--	--	3.4 B	1 U	1 U	1.1 B	1 U
Cadmium	3.6 B	--	--	--	3 U	3 U	3 U	4 U	4 U	--	--	--	3.6 B	3 U	3 U	4 U	4 U
Calcium	46800	44100	--	--	95500	90600	92900	94500	92400	91000	--	--	22000	22800	23300	22300	23400
Chromium	8 U*	--	--	--	11.4	8.8 B	7 U	83.3	7 U	--	--	--	30.7	7 U	7 U	85.7	7 U
Cobalt	6 U	--	--	--	6 U	6 U	6 U	4 U	4 U	--	--	--	6 U	6 U	6 U	4 U	4 U
Copper	32.4	--	--	--	12.8 B	8 U	8 U	31.9	11 B	--	--	--	9 B	6.1 B	8 U	92.6	61.7
Iron	16.4 B	100 U	--	--	199	46.7 B	26 U	1010	36.1 B	172	--	--	377	179	283 J	586	84.6 B
Lead	1.6 B	--	--	--	1 U	1 U	4.6	1.6 BN	2.3 BN	--	--	--	1 U	1 U	1 U	1.9 BN	2.2 BN
Magnesium	9290	8740	--	--	18400	18300	18300	18600	18300	18200	--	--	5660	5660	6000	5670	5690
Manganese	12.1 B	15 U	--	--	104	99.1	80.6	67.5	40.1	26	--	--	163	157	156	162	161
Mercury	0.2 U	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	16 U	--	--	--	16 U	16 U	15 U	24.6 B	17 U	--	--	--	33.6 B	15 U	15 U	34.6 B	17 U
Potassium	5560	5730	--	--	9410	8900	8900	8550	8630	7700	--	--	5500	5100	5500	5000	5160
Selenium	1 U	--	--	--	1 UN	1 UN	1 U	1 UNW	1 UNW	--	--	--	1 UN	1 UN	1 U	1 UNW	1 UNW
Silver	3 U	--	--	--	5 U	5 U	5 U	4 U	4 U	--	--	--	5 U	5 U	5 U	4 U	4 U
Sodium	21000	19600	--	--	30900	30900	30100	30700	30100	30600	--	--	27600	24600	22700	22700	22300
Thallium	1 UW	--	--	--	1 U	1.1 B	1 UJ	1 UNW	1 UNW	--	--	--	1 U	1 U	1 UJ	1 UNW	1 UNW
Vanadium	7.5 B	--	--	--	7 U	7 U	7 U	14.4 B	10.9 B	--	--	--	7 U	7 U	7 U	8 U	7.1 B
Zinc	31.8	--	--	--	21.6	10 B	4 U	9 B	8 U	--	--	--	26.2	17.9 B	4 U	28.1	5.8 B
Cyanide	-- NR	--	--	--	11.6 U	-- NR	-- NR	10 U	-- NR	--	--	--	10 U	-- NR	-- NR	10 U	-- NR

TABLE E-2. Metals and Cyanide Analytical Data

MONITORING WELL	21	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
WELL ID	S31-B10E	S31-B11	S31-B11	S31-B11	S31-B11	S31-B11	S31-B11	S31-B11	S31-B11	S29-B12	S29-B12	S29-B12	S29-B12	S29-B12	S29-B12	S29-B12	S34-15A	S34-15A	S34-15A	S34-15A	S34-15A
ROUND	9	5	6	7	7	7.5	8	8	9	5	6	7	7.5	8	9	5	6	7	7.5	8
SAMPLE ID #			B42ZH6	B418W5	B418W6	B61319	B61C22	B61C23	B46299		B49Y72		B61C29		B46210		B49Y63			
PARAMETERS																				
METALS																				
				unfiltered	filtered															
Aluminum	--	--	--	50.5 B	40 U	40 U	117 B	127 B	--	--	56 U	--	--	--	--	--	56 U	--	--	--
Antimony	--	--	--	46 U	46 U	46 U	44 U	44 U	--	--	32 B	--	--	--	--	--	24 U	--	--	--
Arsenic	--	--	--	2.2 BW	2.6 BW	1.9 B	3.2 B	3.2 B	--	--	4.4 BW	--	--	--	--	--	1.8 B	--	--	--
Barium	--	--	--	59.4 N	58.2 B	57.3 B	51.7 B	52.3 B	50 U	--	46.2 B	--	--	--	50 U	--	70.2 B	--	--	--
Beryllium	--	--	--	1 U	1 U	4 U	1 U	1 U	--	--	1 U	--	--	--	--	--	1 U	--	--	--
Cadmium	--	--	--	3 U	3 U	3 U	4 U	4 U	--	--	3 U	--	--	--	--	--	3 U	--	--	--
Calcium	--	--	--	42400	42700	48400	46800	46900	44600	--	50300	--	--	--	47800	--	50800	--	--	--
Chromium	--	--	--	10.8	7 U	7 U	19.9	10.4	--	--	6 U	--	--	--	--	--	6 U	--	--	--
Cobalt	--	--	--	6 U	6 U	6 U	4 U	4 U	--	--	5 U	--	--	--	--	--	5 U	--	--	--
Copper	--	--	--	10.9 N	5 U	5 U	19.6 B	54.4	--	--	5 U	--	--	--	--	--	5 U	--	--	--
Iron	--	--	--	56.7 N	27.8 B	27.8 U	110	36.6 B	100 U	--	53.2 B	--	--	--	100 U	--	251	--	--	--
Lead	--	--	--	1.1 N	1 U	1 U	2 B	2.6 B	--	--	1 U	--	--	--	--	--	6.2	--	--	--
Magnesium	--	--	--	9010	91100	9560	9610	9560	9000	--	9630	--	--	--	9410	--	14600	--	--	--
Manganese	--	--	--	113	101	96.6	44.4	41.3	15 U	--	1 U	--	--	--	15 U	--	1.8 B	--	--	--
Mercury	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--
Nickel	--	--	--	16 U	16 U	16 U	17 U	17 U	--	--	12 U	--	--	--	--	--	12 U	--	--	--
Potassium	--	--	--	7420	7770	6750	6600	6630	6460	--	6220	--	--	--	6970	--	6860	--	--	--
Selenium	--	--	--	1.4 BN	2.2 BNW	1.3 B	2 UW	2 UW	--	--	1 UN	--	--	--	--	--	1 UNW	--	--	--
Silver	--	--	--	5 U	5 U	5 U	4 U	4 U	--	--	4 U	--	--	--	--	--	4 U	--	--	--
Sodium	--	--	--	21000	21100	20900	21200	21400	20300	--	22900	--	--	--	20800	--	14600	--	--	--
Thallium	--	--	--	1 U	1 U	1 UJ	41 UW	1 U	--	--	1 UNW	--	--	--	--	--	1 UNW	--	--	--
Vanadium	--	--	--	7 U	7 U	7 U	11.6 B	7.2 B	--	--	9.8 B	--	--	--	--	--	6.6 B	--	--	--
Zinc	--	--	--	12.2 B	12.2 B	4.1 B	8.8 B	17.7 B	--	--	91.4	--	--	--	--	--	56.2	--	--	--
Cyanide	--	--	--	10 U	--	-- NR	10 U	-- NR	--	--	10 U	--	--	--	--	--	10 U	--	--	--

TABLE E-2. Metals and Cyanide Analytical Data

MONITORING WELL	S34-15A	S32-E13A	S32-E13A	S32-E13A	S32-E13A	S32-E13A	S32-E13A
WELL ID	S34-15A	S32-E13A	S32-E13A	S32-E13A	S32-E13A	S32-E13A	S32-E13A
ROUND	3	5	6	7	7.5	8	9
SAMPLE ID#			BHY 44				
PARAMETERS							
METALS							
Aluminum	--	--	56 U	--	--	--	--
Antimony	--	--	48.7 B	--	--	--	--
Arsenic	--	--	2.5 B	--	--	--	--
Barium	--	--	117 B	--	--	--	--
Beryllium	--	--	1 U	--	--	--	--
Cadmium	--	--	3 U	--	--	--	--
Calcium	--	--	123000	--	--	--	--
Chromium	--	--	8 U	--	--	--	--
Cobalt	--	--	8 U	--	--	--	--
Copper	--	--	6 U	--	--	--	--
Iron	--	--	975	--	--	--	--
Lead	--	--	2.6 B	--	--	--	--
Magnesium	--	--	23100	--	--	--	--
Manganese	--	--	3.6 B	--	--	--	--
Mercury	--	--	0.2 U	--	--	--	--
Nickel	--	--	12 U	--	--	--	--
Potassium	--	--	9130	--	--	--	--
Selenium	--	--	1.5 BNW	--	--	--	--
Silver	--	--	4 U	--	--	--	--
Sodium	--	--	19600	--	--	--	--
Thallium	--	--	1 UNW	--	--	--	--
Vanadium	--	--	11.7 B	--	--	--	--
Zinc	--	--	22.8	--	--	--	--
Cyanide	--	--	10 U	--	--	--	--

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TABLE E-3 Wet Chemistry Analytical Data

MONITORING WELL	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3
WELL I.D.	S41-E11	S41-E11	S41-E11	S34-E10	S41-E11	S41-E11	S34-E10	S34-E10	S34-E10	S34-E10	S34-E10	S34-E10	S41-E12	S41-E12	S41-E12	S41-E12	S41-E12	S41-E12
ROUND	5	6	7	7.5	8	9	5	6	7	7.5	8	9	5	6	7	7.5	8	9
SAMPLE ID#	B00ZC6				B01BT3		B00Z68					B06194	B00ZD0				B01BT6	
PARAMETERS																		
PARAMETERS																		
WET CHEMISTRY (units = mg/L)																		
TOX (ug/L)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	--	0.02	--	--	--	--	--	0.06	--	--	--	0.05 U	--	0.1	--	--	--	--
Nitrates	--	4.4	--	--	--	--	--	6.5	--	--	--	--	--	2.2	--	--	--	--
COD	--	10 ND	--	--	--	--	--	10 ND	--	--	--	--	--	10 ND	--	--	--	--
Turbidity (units = NTU)	--	0.3	--	--	--	--	--	0.6	--	--	--	--	--	0.9	--	--	--	--
Alkalinity (CaCO3)	--	170	--	--	240	--	--	140	--	--	--	154	--	310	--	--	--	--
Fluoride (F)	--	0.5	--	--	--	--	--	0.7	--	--	--	0.3	--	0.8	--	--	--	--
Chloride (Cl)	--	14	--	--	--	--	--	13	--	--	--	13.8	--	110	--	--	--	--
Bromide (Br)	--	0.2 ND	--	--	--	--	--	0.2 ND	--	--	--	--	--	0.2	--	--	--	--
Phosphate (PO4-P)	--	0.2 ND	--	--	--	--	--	0.1 ND	--	--	--	0.03 B	--	0.2 ND	--	--	--	--
Nitrate (NO3-N)	--	18	--	--	--	--	--	6	--	--	--	5.01	--	10.6	--	--	--	--
Nitrite (NO2-N)	--	0.07 ND	--	--	--	--	--	0.06 ND	--	--	--	0.1 U	--	0.07 ND	--	--	--	--
Sulfate (SO4)	--	31	--	--	--	--	--	41	--	--	--	45.5	--	23	--	--	--	--
TDS	--	310	--	--	--	--	--	300	--	--	--	--	--	590	--	--	--	--
pH	--	7.8	--	--	--	--	--	7.7	--	--	--	7.88	--	7.5	--	--	--	--
Conductivity (units = umhos/cm)	--	480	--	--	720	--	--	470	--	--	--	--	--	940	--	--	--	--

TABLE E-3 Wet Chemistry Analytical Data

MONITORING WELL	4	4	4	4	4	4	5	5	5	5	5	5	5	6	6	6	6	6
WELL I.D.	S38-E12A	S38-E12A	S38-E12A	S38-E12A	S38-E12A	S38-E12A	S38-E12B	S38-E12B	S38-E12B/DUPL	S38-E12B	S38-E12B	S38-E12B	S38-E12	S37-E11	S37-E11	S37-E11	S37-E11	S37-E11
ROUND	5	6	7	7.5	8	9	5	6	6	7	7.5	8	9	5	6	7	7.5	8
SAMPLE ID#	B00Z52				B01BT9		B00Z56		B00Z60			B01BV0		B00Z64				B01BV2
PARAMETERS																		
PARAMETERS																		
WET CHEMISTRY (units = mg/L)																		
TOX (ug/L)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	--	0.02 ND	--	--	--	--	--	0.02 ND	0.02	--	--	--	--	--	0.02 ND	--	--	--
Nitrates	--	2	--	--	--	--	--	1.7	1.7	--	--	--	--	--	2.4	--	--	--
COD	--	10 ND	--	--	--	--	--	10 ND	10 ND	--	--	--	--	--	10 ND	--	--	--
Turbidity (units = NTU)	--	0.2	--	--	--	--	--	0.4	0.4	--	--	--	--	--	0.4	--	--	--
Alkalinity (CaCO3)	--	130	--	--	--	--	--	120	120	--	--	--	--	--	140	--	--	--
Fluoride (F)	--	0.6	--	--	--	--	--	0.6	0.6	--	--	--	--	--	0.6	--	--	--
Chloride (Cl)	--	8.5	--	--	--	--	--	6.5	6.5	--	--	--	--	--	9.2	--	--	--
Bromide (Br)	--	0.2 ND	--	--	--	--	--	0.2 ND	0.2 ND	--	--	--	--	--	0.2 ND	--	--	--
Phosphate (PO4-P)	--	0.1 ND	--	--	--	--	--	0.1 ND	0.1 ND	--	--	--	--	--	0.1 ND	--	--	--
Nitrate (NO3-N)	--	1.8	--	--	--	--	--	1.5	1.8	--	--	--	--	--	2.4	--	--	--
Nitrite (NO2-N)	--	0.06 ND	--	--	--	--	--	0.06 ND	0.06 ND	--	--	--	--	--	0.06 ND	--	--	--
Sulfate (SO4)	--	17	--	--	--	--	--	17	17	--	--	--	--	--	23	--	--	--
TDS	--	220	--	--	--	--	--	210	220	--	--	--	--	--	250	--	--	--
pH	--	7.8	--	--	--	--	--	7.9	7.9	--	--	--	--	--	7.9	--	--	--
Conductivity (units = umhos/cm)	--	350	--	--	--	--	--	330	330	--	--	--	--	--	360	--	--	--

TABLE E-3 Wet Chemistry Analytical Data

MONITORING WELL	6	7	7	7	7A	7A	7A	7	7	8	8A	8A	8A	8	8A
WELL I.D.	S37-E11	S38-E11	S38-E11	S38-E11/SPLIT	S38-E11	S38-E11	S38-E11	S38-E11	S38-E11	S31-E8	S31-E8	S31-E8	S38-E11	S31-E8	S31-E8
ROUND	9	5	6	6	6	7	7.5	8	9	5	6	6	7	7.5	7.5
SAMPLE ID#			B00Z72	B00Z76	B00XY0	B010Z3	B01543				B00ZG9	B00Y36	B010Z7	B01537	B01546
PARAMETERS															
PARAMETERS															
WET CHEMISTRY (units = mg/L)															
TOX (ug/L)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	--	--	0.04	0.02 ND	120	0.02 ND	0.03	--	--	--	0.05	0.54	0.05 ND	0.05	0.29
Nitrates	--	--	3.8	3.6	7.5	6.9	7.8	--	--	--	17	7.3	17	7.1	17
COD	--	--	10 ND	10 ND	10 ND	10 ND	10 ND	--	--	--	10 ND	10 ND	10 ND	10 ND	10 ND
Turbidity (units = NTU)	--	--	0.7	0.6	0.7	1.7	--	--	--	--	2.3	0.2 ND	0.4	--	--
Alkalinity (CaCO3)	--	--	160	150	110	130	--	--	--	--	140	160	150	--	--
Fluoride (F)	--	--	0.7	0.6	0.9	0.6	0.5	--	--	--	0.8	0.4	0.8	0.5	0.6
Chloride (Cl)	--	--	13	13	24	23	25	--	--	--	12	15	13	17	14
Bromide (Br)	--	--	0.2 ND	0.2 ND	0.2	0.2	0.3	--	--	--	0.2 ND	0.2 ND	0.2 ND	0.2 ND	0.2 ND
Phosphate (PO4-P)	--	--	0.1 ND	0.1 ND	0.2 ND	0.2 ND	0.2 ND	--	--	--	0.2 ND	0.7 ND	0.2 ND	0.2 ND	0.2 ND
Nitrate (NO3-N)	--	--	3.5	3.6	8	7.6	7.6	--	--	--	18	6.7	17	6.8	17
Nitrite (NO2-N)	--	--	0.06 ND	0.06 ND	0.06 ND	0.07 ND	0.07 ND	--	--	--	0.07 ND	0.06 ND	0.07	0.07 ND	0.07 ND
Sulfate (SO4)	--	--	38	39	49	47	47	--	--	--	68	31	61	30	61
TDS	--	--	280	280	340	350	--	--	--	--	400	330	500	--	--
pH	--	--	7.7	7.8	7.7	7.7	7.9	--	--	--	7.8	7.8	7.8	7.8	7.8
Conductivity (units = umhos/cm)	--	--	470	460	520	440	510	--	--	--	670	460	590	490	610

TABLE E-3 Wet Chemistry Analytical Data

MONITORING WELL	8	8	9	MW-9	9	9	9	9	10	10	10	10	10	10	10
WELL I.D.	S31-E08	S31-E08	S32-E8	S32-E8	S32-E08	S32-E8	S32-E08	S32-E08	S30-E10A	S30-E10A	S30-E10A/DUPL.	S30-E10A	S30-E10A	S30-E10A	S30E10A
ROUND	8	9	5	6	7	7.5	8	9	5	6	6	7	7.5	8	9
SAMPLE ID#		B06195		B00Y40		B01540			B00HW2	B00Y44	B00Y48	B010X3	B01531	B01BV4	B06196
PARAMETERS															
PARAMETERS															
WET CHEMISTRY (units = mg/L)															
TOX (ug/L)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	--	0.05 U	--	0.17	--	0.03	--	--	0.03 U	0.11	0.06	0.08	0.03	--	0.05 U
Nitrates	--	--	--	0.17	--	10 ND	--	--	36	41	43	46	41	--	--
COD	--	--	--	10 ND	--	10 ND	--	--	10 U	10	10 ND	10 ND	10 ND	--	--
Turbidity (units = NTU)	--	--	--	0.2 ND	--	--	--	--	0.4	0.3	0.6	0.6	--	--	--
Alkalinity (CaCO3)	--	161	--	90	--	--	--	--	150	150	150	150	--	--	159
Fluoride (F)	--	0.3	--	0.4	--	0.4	--	--	1 U	0.8	0.8	0.9	0.9	--	0.3
Chloride (Cl)	--	16.2	--	2	--	2.1	--	--	23	22	22	22	23	--	26
Bromide (Br)	--	--	--	0.2 ND	--	0.2 ND	--	--	0.2 U	0.2 ND	0.2 ND	0.2 ND	0.2 ND	--	--
Phosphate (PO4--P)	--	0.04 B	--	0.7 ND	--	0.2 ND	--	--	0.7 U	0.7 ND	0.7 ND	0.2 ND	0.4 ND	--	0.03 U
Nitrate (NO3-N)	--	6.5	--	0.05 ND	--	0.05 ND	--	--	39	38	38	47	38	--	43
Nitrite (NO2-N)	--	0.1 U	--	0.06 ND	--	0.07 ND	--	--	0.06 U	0.06 ND	0.06 ND	0.07 ND	0.07 ND	--	0.1 U
Sulfate (SO4)	--	29.8	--	11	--	11	--	--	75	69	69	75	63	--	68.7
TDS	--	--	--	160	--	--	--	--	540	590	590	780	--	--	--
pH	--	7.8	--	7.8	--	8	--	--	7.8	7.7	7.8	7.8	7.8	--	7.67
Conductivity (units = umhos/cm)	--	--	--	220	--	220	--	--	940	820	800	930	850	--	--

TABLE E-3 Wet Chemistry Analytical Data

MONITORING WELL	11	11	11	11	11	11	11	11	11	11	12	12	12	12
WELL I.D.	S30-E10B	S30-E10B	S30-E10B	S30-E10B	S30-E10B/DUPL	S30-E10B/SPLIT	S30-E10B	S30-E10B	S30-E10B	S30-E10B	S31-E10A	S31-E10A	S31-E10A	S31-E10A
ROUND	5	5	6	6	7	7	7	7.5	8	9	5	6	7	7.5
SAMPLE ID#	B00HW4	B00HW6	B00Y52	B00Y56	B010X5	B010X7	B010X9	B01534	B01BV7	B06197	B00HX0	B00Y20	B010T5	B014Z8
PARAMETERS														
PARAMETERS														
WET CHEMISTRY (units = mg/L)														
TOX (ug/L)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	0.2 U	0.2 U	0.16	0.21	0.05	0.05	0.05 ND	0.12	--	0.05 U	0.2 U	0.04	0.87	0.03
Nitrates	42	42	49	51	45	45	38	53	--	--	49	55	49	58
COD	10 U	10 U	10 ND	10 ND	10 ND	10 ND	10 ND	10 ND	--	--	10 U	10 ND	10 ND	10 ND
Turbidity (units = NTU)	0.5	0.5	0.7	0.4	2.7	0.9	1	--	--	--	0.2	0.2 ND	0.2 ND	--
Alkalinity (CaCO3)	150	150	150	150	150	150	160	--	--	161	160	170	170	--
Fluoride (F)	1 U	1 U	0.8	0.8	1.5	0.9	0.9	0.9	--	0.3	1.1 U	0.8	0.9	1
Chloride (Cl)	22	22	23	23	23	23	21	24	--	26.2	21	17	18	18
Bromide (Br)	0.2 U	0.2 U	0.2 ND	0.2 ND	0.2 ND	0.2 ND	0.2 ND	0.2 ND	--	--	0.2 U	0.2 ND	0.2 ND	0.2 ND
Phosphate (PO4-P)	0.7 U	0.7 U	0.7 ND	0.7 ND	0.2 ND	0.2 ND	0.2 ND	0.4 ND	--	0.03 U	0.7 U	0.7 ND	0.2 ND	0.4 ND
Nitrate (NO3-N)	40	42	46	46	46	47	39	48	--	48.8	50	49	51	52
Nitrite (NO2-N)	1.8	1.5	0.71	0.75	0.07 ND	0.07 ND	0.07 ND	0.07 ND	--	0.1 U	0.06 U	0.06 ND	0.07 ND	0.07 ND
Sulfate (SO4)	79	81	76	75	74	75	65	70	--	75.4	78	71	71	67
TDS	580	580	640	650	690	700	650	--	--	--	610	700	720	--
pH	7.8	7.8	7.6	7.8	7.7	7.8	7.8	7.8	--	7.65	7.8	7.7	7.6	7.7
Conductivity (units = umhos/cm)	820	940	910	920	950	930	850	920	--	--	940	940	880	970

TABLE E-3 Wet Chemistry Analytical Data

MONITORING WELL	12	12	13	13	13	13	13	13	14	14	14	14	14	14	15
WELL I.D.	S31-E10A	S31-E10A	S31-E10B	S31-E10B	S31-E10B	S31-E10B	S31-E10B	S31-E10B	S31-E10C	S31-E10C	S31-E10C	S31-E10C	S31-E10C	S31-E10C	S31-E10D
ROUND	8	9	5	6	7	7.5	8	9	5	6	7	7.5	8	9	5
SAMPLE ID#	B01BW0	B06198	B00HX2	B00Y24	B010T7	B01501	B01BW3		B00HX4	B00Y28	B010T9	B01504	B01BW6	B06202	B00HX6
PARAMETERS															
PARAMETERS															
WET CHEMISTRY (units = mg/L)															
TOX (ug/L)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	--	0.05 U	0.2 U	0.32	0.1	0.04	--	--	0.2 U	1	0.07	0.05	--	0.05 U	0.2 U
Nitrates	--	--	45	53	44	52	--	--	49	52	46	54	--	--	30
COD	--	--	10 U	10 ND	10 ND	10 ND	--	--	10 U	10 ND	10 ND	10 ND	--	--	10 U
Turbidity (units = NTU)	--	--	0.2 U	0.6	0.2 ND	--	--	--	0.2 U	0.2	0.2 ND	--	--	--	0.2 U
Alkalinity (CaCO3)	--	171	160	160	170	--	--	--	170	170	170	--	--	172	150
Fluoride (F)	--	0.4	1.3 U	1	1.1	1	--	--	1.1 U	0.9	1	0.9	--	0.4	1.1 U
Chloride (Cl)	--	17.7	20	16	15	17	--	--	21	17	16	16	--	17.4	19
Bromide (Br)	--	--	0.2 U	0.2 ND	0.2 ND	0.2 ND	--	--	0.2 U	0.2 ND	0.2 ND	0.2 ND	--	--	0.2 U
Phosphate (PO4-P)	--	0.03 B	0.7 U	0.7	0.2 ND	0.4 ND	--	--	0.7 U	0.7 ND	0.2 ND	0.4 ND	--	0.03 B	0.7 U
Nitrate (NO3-N)	--	51.6	45	46	45	43	--	--	47	47	47	48	--	50.7	30
Nitrite (NO2-N)	--	0.1 U	0.06 U	0.6 ND	0.07 ND	0.07 ND	--	--	0.06 U	0.06 ND	0.07 ND	0.07 ND	--	0.1 U	0.06 U
Sulfate (SO4)	--	70.7	68	65	63	59	--	--	76	72	69	65	--	70.3	55
TDS	--	--	600	650	640	--	--	--	640	630	660	--	--	--	450
pH	--	7.57	7.8	7.6	7.8	7.7	--	--	7.8	7.6	7.8	7.8	--	7.64	7.9
Conductivity (units = umhos/cm)	--	--	820	820	800	870	--	--	940	940	820	920	--	--	690

TABLE E-3 Wet Chemistry Analytical Data

MONITORING WELL	15	15	15	15	15	17	17	17	17	17	17	18	18	18	18	18
WELL I.D.	S31-E10D	S31-E10D	S31-E10D	S31-E10D	S31-E10A	S41-E13A	S41-E13C	S41-E13C	S41-E13C	S31-E13A	S41-E13A	S37-E12	S37-E12	S37-E12	S37-E12	S37-E12
ROUND	6	7	7.5	8	9	5	6	7	7	8	9	5	6	7	7	8
SAMPLE ID#	B00ZF7	B010V1	B01507	B01BW9	B06206	B00HS9	B00ZC2					B00HV8	B00ZG1	B010Y9		B01BX2
PARAMETERS																
PARAMETERS																
WET CHEMISTRY (units = mg/L)																
TOX (ug/L)	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	--	--	--
TOC	--	--	--	--	--	0.5	--	--	--	--	--	0.5	--	--	--	--
Ammonia	0.22	0.05	0.02 ND	--	0.05 U	0.2 U	0.02 ND	--	--	--	--	0.3	0.1	0.05 ND	--	--
Nitrates	33	36	40	--	--	0.73	0.05	--	--	--	--	2.3	1.9	1.6	--	--
COD	10 ND	10 ND	10 ND	--	--	10 U	10 ND	--	--	--	--	10 U	10 ND	10 ND	--	--
Turbidity (units = NTU)	0.3	0.2 ND	--	--	--	0.6	2.9	--	--	--	--	1.2	2	2	--	--
Alkalinity (CaCO3)	160	170	--	--	159	160	110	--	--	--	--	10 U	120	120	--	--
Fluoride (F)	1	1	1	--	0.6	0.8 U	0.4	--	--	--	--	0.9 U	0.3	0.7	--	--
Chloride (Cl)	14	14	15	--	14.3	4.8	2.7	--	--	--	--	7.1	11	7	--	--
Bromide (Br)	0.2 ND	0.2 ND	0.2 ND	--	--	0.2 U	0.2 ND	--	--	--	--	0.2 U	0.2 ND	0.2 ND	--	--
Phosphate (PO4-P)	0.2 ND	0.2 ND	0.4 ND	--	0.04 B	0.07 U	0.2 ND	--	--	--	--	0.07 U	0.2 ND	0.2 ND	--	--
Nitrate (NO3-N)	33	30	36	--	23.6	0.96	0.05 ND	--	--	--	--	2.2	1.9	1.6	--	--
Nitrite (NO2-N)	0.07 ND	0.07 ND	0.07 ND	--	0.1 U	0.06 U	0.07 ND	--	--	--	--	0.06 U	0.07 ND	0.07 ND	--	--
Sulfate (SO4)	57	58	55	--	46.3	9.9	14	--	--	--	--	3300	16	14	--	--
TDS	500	570	--	--	--	220	160	--	--	--	--	570	190	280	--	--
pH	7.7	7.9	7.8	--	7.73	8	8	--	--	--	--	1.6	7.8	7.7	--	--
Conductivity (units = umhos/cm)	770	730	780	--	--	350	260	--	--	--	--	--	360	310	--	--

TABLE E-3 Wet Chemistry Analytical Data

MONITORING WELL	18	19	19	19	19	19	19	20	20	20	20	20	20	21	21	21
WELL I.D.	S37-E12	S32-E11	S32-E11	S32-E11	S32-E11	S32-E11	S32-E11	S29-E11	S29-E11	S29-E11	S29-E11	S29-E11	S29-E11	S31-E10E	S31-E10E	S31-E10E
ROUND	9	5	6	7	7	8	9	5	6	7	7.5	8	9	5	6	7
SAMPLE ID#			B00ZH3	B010V3	B01510	B01C07	B06207		B00ZH4	B010V7	B01513	B01C12	B06208		B00ZH5	B010W1
PARAMETERS																
PARAMETERS																
WET CHEMISTRY (units = mg/L)																
TOX (ug/L)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	--	--	--	0.05 ND	0.02 ND	--	0.05 U	--	--	0.23	0.2	0.07	0.05 U	--	--	0.07
Nitrates	--	--	--	3.2	3.8	--	--	--	--	31	32	31	--	--	--	10 ND
COD	--	--	--	10 ND	10 ND	--	--	--	--	10	10 ND	10 ND	--	--	--	10 ND
Turbidity (units = NTU)	--	--	--	0.5	--	--	--	--	--	2.2	--	9.9	--	--	--	0.9
Alkalinity (CaCO3)	--	--	--	140	--	--	142	--	--	160	--	160	162	--	--	120
Fluoride (F)	--	--	--	0.8	0.8	--	0.3	--	--	1	0.9	0.8	0.3	--	--	0.9
Chloride (Cl)	--	--	--	11	12	--	12.1	--	--	13	13	14	14.5	--	--	2.9
Bromide (Br)	--	--	--	0.2 ND	0.2 ND	--	--	--	--	0.2	0.2 ND	0.2 ND	--	--	--	0.2 ND
Phosphate (PO4-P)	--	--	--	0.2 ND	0.4 ND	--	0.04 B	--	--	0.2	0.4 ND	ND	0.03 B	--	--	1.9
Nitrate (NO3-N)	--	--	--	3.4	3.4	--	3.6	--	--	31	31	28	35	--	--	0.05 ND
Nitrite (NO2-N)	--	--	--	0.07 ND	0.07 ND	--	0.1 U	--	--	0.07	0.07 ND	0.07 ND	0.1 U	--	--	0.07 ND
Sulfate (SO4)	--	--	--	35	34	--	35.3	--	--	85	80	73	89.6	--	--	12
TDS	--	--	--	350	--	--	--	--	--	600	--	510	--	--	--	250
pH	--	--	--	7.8	8	--	7.87	--	--	7.8	7.8	8	7.86	--	--	8
Conductivity (units = umhos/cm)	--	--	--	420	440	--	--	--	--	770	730	730	--	--	--	280

TABLE E-3 Wet Chemistry Analytical Data

MONITORING WELL	21	21	21	22	22	22	22	22	22	22	22	S29-E12	S29-E12	S29-E12	S29-E12	S29-E12
WELL I.D.	S31-E10E	S31-E10E	S31-E10E	S31-E11	S31-E11	S31-E11	S31-E11	S31-E11/DUP.	S31-E11/SPLIT	S31-E11	S31-E11	S29-E12	S29-E12	S29-E12	S29-E12	S29-E12
ROUND	7.5	8	9	5	6	7	7.5	7.5	7.5	8	9	5	6	7	7.5	8
SAMPLE ID#	B01516	B01CI7			B007J6	B010W5	B01519	B01522	B01525	B01C22	B06209		B00Y72		B01C29	
PARAMETERS																
PARAMETERS																
WET CHEMISTRY (units = mg/L)																
TOX (ug/L)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia	0.14	0.07	--	--	--	0.05	0.16	0.09	0.1	--	0.05 U	--	--	--	--	--
Nitrates	0.1	0.01 ND	--	--	--	3.2	4	0.03	0.18	--	--	--	5	--	--	--
COD	10 ND	10 ND	--	--	--	80	10 ND	10 ND	10 ND	--	--	--	--	--	--	--
Turbidity (units = NTU)	--	1.2	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--
Alkalinity (CaCO3)	--	120	--	--	--	140	--	--	--	--	142	--	140	--	--	--
Fluoride (F)	1.1	1	--	--	--	0.8	0.8	1	1.1	--	0.3	--	0.7	--	--	--
Chloride (Cl)	2.9	3	--	--	--	12	11	2.9	2.9	--	13.2	--	13	--	--	--
Bromide (Br)	0.2 ND	0.2 ND	--	--	--	0.2 ND	0.2 ND	0.2 ND	0.2 ND	--	--	--	--	--	--	--
Phosphate (PO4-P)	1	1.1	--	--	--	0.05	0.4 ND	1	1.1	--	0.04 B	--	--	--	--	--
Nitrate (NO3-N)	0.05 ND	0.05 ND	--	--	--	3.3 ND	3.7	0.05 ND	0.05 ND	--	4.2	--	4.5	--	--	--
Nitrite (NO2-N)	0.07 ND	0.07 ND	--	--	--	0.07	0.07 ND	0.07 ND	0.07 ND	--	0.1 U	--	--	--	--	--
Sulfate (SO4)	13	12	--	--	--	31	32	13	13	--	35.1	--	33	--	--	--
TDS	--	180	--	--	--	320	--	--	--	--	--	--	300	--	--	--
pH	8	8	--	--	--	8	7.9	8	8	--	7.9	--	7.6	--	--	--
Conductivity (units = umhos/cm)	280	270	--	--	--	400	410	270	280	--	--	--	530	--	--	--

TABLE E-3 Wet Chemistry Analytical Data

MONITORING WELL	S29-E12	S30-15A	S30-15A	S30-E15A	S30-15A	S30-15A	S30-15A	S32-E13A	S32-E13A	S32-E13A	S32-E13A	S32-E13A	S32-E13A
WELL I.D.	S29-E12	S30-15A	S30-E15A	S30-E15A	S30-15A	S30-15A	S30-15A	S32-E13A	S32-E13A	S32-E13A	S32-E13A	S32-E13A	S32-E13A
ROUND	9	5	6	7	7.5	8	9	5	6	7	7.5	8	9
SAMPLE ID#	B06210	B00Y68						B00Y60					
PARAMETERS													
PARAMETERS													
WET CHEMISTRY (units = mg/L)													
TOX (ug/L)	--	--	10	--	--	--	--	--	--	--	--	--	--
TOC	--	--	--	--	--	--	--	--	1.1	--	--	--	--
Ammonia	0.05 U	--	0.35	--	--	--	--	--	--	--	--	--	--
Nitrates	--	--	2.7	--	--	--	--	--	3.7	--	--	--	--
COD	--	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity (units = NTU)	--	--	0.4	--	--	--	--	--	0.4	--	--	--	--
Alkalinity (CaCO3)	144	--	220	--	--	--	--	--	250	--	--	--	--
Fluoride (F)	0.3	--	0.5	--	--	--	--	--	0.6	--	--	--	--
Chloride (Cl)	13.2	--	7.3	--	--	--	--	--	8.5	--	--	--	--
Bromide (Br)	--	--	--	--	--	--	--	--	--	--	--	--	--
Phosphate (PO4-P)	0.03 B	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate (NO3-N)	6.2	--	2.8	--	--	--	--	--	3.4	--	--	--	--
Nitrite (NO2-N)	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate (SO4)	37.2	--	18	--	--	--	--	--	19	--	--	--	--
TDS	--	--	330	--	--	--	--	--	350	--	--	--	--
pH	7.67	--	7.6	--	--	--	--	--	7.4	--	--	--	--
Conductivity (units = umhos/cm)	--	--	510	--	--	--	--	--	540	--	--	--	--

Table E-4. Gross Alpha Analytical Data

UTL: 8.2 pCi/L	Gross Alpha, pCi/L				
Round:	5th	6th	7th	7-1/2	8th
Date:	3/91	6/91	8/91	9/91	11/91
Well Number					
MW-1	--	LT 3	--	--	11±5
MW-2	--	LT 4	--	--	--
MW-3	--	LT 4	--	--	LT 2
MW-4	--	LT 3	--	--	--
MW-5	--	LT 3	--	--	--
MW-6	--	LT 3	--	--	LT 1
MW-7	--	LT 3	--	LT 2	--
MW-8	--	LT 2	--	LT 1	--
MW-9	--	LT 2	--	2.9±2.	--
MW-10	*	LT 3	LT 2	0	LT 2
MW-11	*	LT 3	LT 1	LT 2	9.6±7.1
MW-12	*	5.5±4.1	LT 3	3.6±2.	LT 2
MW-13	6.4	LT 5	LT 2	5	2.9±2.4
MW-14	*	8.4±4.4	2.2±1.9	3.5±2.	5.3±2.9
MW-15	*	LT 4	2.1±2.0	4	3.5±1.9
MW-17	--	LT 3	--	LT 2	--
MW-18	6.6	LT 3	LT 1	2.2±1.	LT 2
MW-19	--	--	LT 2	9	2.2±1.7
MW-20	--	--	LT 2	--	6.3±3.2
MW-21	--	--	LT 2	--	LT 1
MW-22	--	--	LT 2	LT 1	*
S29-E12	--	LT 3	--	LT 2	LT 2
S30-E15A	--	LT 4	--	LT 1	--
S32-E13A	--	LT 3	--	LT 1	--

-- = Sample not taken or data not requested
* = Below error limit (for round 5)
LT = Less Than

Radionuclide Maximum Contaminant Levels (MCL),
40 CFR 141, EPA 1986a:
Gross Alpha . . . . 15 pCi/l

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9 3 1 2 5 6 2 0 8 0 4

Table E-5. Gross Beta Analytical Data

UTL: 18 pCi/L	Gross Beta, pCi/L				
Round:	5th	6th	7th	7-1/2	8
Date:	3/91	6/91	8/91	9/91	11/91
Well Number					
MW-1	--	8.6±2.9	--	--	24±2.0
MW-2	--	13±3	--	--	--
MW-3	--	11±3.0	--	--	18±2.0
MW-4	--	6.9±2.7	--	--	--
MW-5	--	7.4±2.7	--	--	--
MW-6	--	8.1±2.9	--	--	2.9±1.0
MW-7	--	9.5±3.0	--	--	--
MW-8	--	--	--	7.6±1.4	--
MW-9	--	5±2.6	--	6.9±1.2	--
MW-10	63.0	62±6	18±2.0	43±3.0	48±3.0
MW-11	60.0	61±6	20±2.0	49±3.0	60±3.0
MW-12	61.0	66±6	20±3.0	53±3.0	58±3.0
MW-13	61.0	60±5	23±2.0	48±3.0	51±3.0
MW-14	70.0	61±5	38±3.0	46±3.0	56±3.0
MW-15	46.0	50±5	21±2.0	41±3.0	43±4.0
MW-17	--	6.2±2.7	--	--	--
MW-18	13.0	9.7±2.9	5.5±1.2	--	6.3±1.3
MW-19	--	--	9.2±1.5	9.5±1.5	9.6±1.5
MW-20	--	--	71±4.0	53±3.0	87±6.0
MW-21	--	--	7.3±1.3	8.6±1.4	6.3±1.3
MW-22	--	--	10±2.0	9.3±1.5	5.1
S29-E12	--	12±3	--	--	8.0±1.4
S30-E15A	--	9.8±3.1	--	--	--
S32-E13A	--	5.3±2.9	--	--	--

-- Sample not taken or data not requested
LT = Less Than

Radionuclide Maximum Contaminant Levels (MCL),
40 CFR 141, EPA 1986a:
Gross Beta . . . . 50 pCi/l

9 3 1 2 9 0 2 0 8 0 5

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