

Appendix A

Boring Logs and Well Construction Details

Well Construction Details

Well ID	Northing (feet)	Easting (feet)	Latitude	Longitude	Borehole Size (inches)	Well Diameter (inches)	Well Material (blank casing)	Well Vault	Filter Pack Material	Screen Material	Screen Interval (feet bgs)	Screen Top (feet bgs)	Screen Bottom (feet bgs)	Screen Interval (feet btoc)	Screen Top (feet btoc)	Screen Bottom (feet btoc)	Screen Length (feet)	Total Depth of Borehole (feet bgs)	TOC Elevation (feet amsl)	Ground Surface Elevation (feet amsl)
UFIW-01S	26719540.562	827314.237	36.04782° N	115.00433° W	8	2	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	2-in PVC 0.020"	23 - 28	23	28	22.7 - 27.7	22.70	27.70	5	28.1	1,755.11	1,755.41
UFIW-01I	26719541.816	827319.017	36.04782° N	115.00431° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	33 - 38	33	38	32.6 - 37.6	32.6	37.6	5	38.1	1,755.08	1,755.51
UFIW-01D	26719542.292	827324.566	36.04781° N	115.00432° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	43 - 48	43	48	42.7 - 47.7	42.7	47.7	5	61.5	1,755.21	1,755.55
UFIW-02S	26719536.782	827342.924	36.04782° N	115.00426° W	8	2	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	2-in PVC 0.020"	23 - 28	23	28	22.6 - 27.6	22.6	27.6	5	28.1	1,754.97	1,755.41
UFIW-02I	26719537.024	827346.383	36.04782° N	115.00425° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	31 - 41	31	41	30.5 - 40.5	30.5	40.5	10	41.1	1,754.85	1,755.39
UFIW-02D	26719533.321	827344.214	36.04781° N	115.00426° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	43 - 48	43	48	42.6 - 47.6	42.6	47.6	5	61.5	1,755.01	1,755.45
UFIW-03S	26719537.055	827360.668	36.04782° N	115.00420° W	8	2	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	2-in PVC 0.020"	25 - 30	25	30	24.7 - 29.7	24.7	29.7	5	35.0	1,755.22	1,755.55
UFIW-03I	26719537.079	827364.669	36.04782° N	115.00419° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	35 - 40	35	40	34.2 - 39.2	34.2	39.2	5	40.0	1,754.89	1,755.67
UFIW-03D	26719533.833	827362.838	36.04781° N	115.00420° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	45 - 50	45	50	44.7 - 49.7	44.7	49.7	5	61.5	1,755.38	1,755.71
UFIW-04S	26719537.499	827378.974	36.04782° N	115.00414° W	8	2	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	2-in PVC 0.020"	23 - 28	23	28	22.5 - 27.5	22.5	27.5	5	28.0	1,755.28	1,755.80
UFIW-04I	26719536.893	827382.838	36.04782° N	115.00413° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	33 - 38	33	38	32.5 - 37.5	32.5	37.5	5	38.0	1,755.33	1,755.83
UFIW-04D	26719533.460	827380.800	36.04781° N	115.00414° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	43 - 48	43	48	42.5 - 47.5	42.5	47.5	5	61.5	1,755.39	1,755.90
UFIW-05S	26719356.906	827324.545	36.04733° N	115.00433° W	8	2	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	2-in PVC 0.020"	24.5 - 29.5	24.5	29.5	24.0 - 29.0	24.0	29.0	5	30.0	1,759.63	1,760.11
UFIW-05I	26719358.197	827328.233	36.04733° N	115.00432° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	34.5 - 39.5	34.5	39.5	34.1 - 39.1	34.1	39.1	5	40.0	1,759.71	1,760.11
UFIW-05D	26719353.491	827326.739	36.04732° N	115.00432° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	44.5 - 49.5	44.5	49.5	44.1 - 49.1	44.1	49.1	5	61.5	1,759.78	1,760.18
UFIW-06S	26719356.818	827342.877	36.04733° N	115.00427° W	8	2	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	2-in PVC 0.020"	27 - 32	27	32	26.7 - 31.7	26.7	31.7	5	32.0	1,759.76	1,760.10
UFIW-06I	26719356.987	827346.786	36.04733° N	115.00425° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	35 - 45	35	45	34.6 - 44.6	34.6	44.6	10	45.0	1,759.71	1,760.10
UFIW-06D	26719353.775	827344.375	36.04732° N	115.00426° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	47 - 52	47	52	46.6 - 51.6	46.6	51.6	5	61.5	1,759.85	1,760.24
UFIW-07S	26719357.178	827360.466	36.04733° N	115.00421° W	8	2	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	2-in PVC 0.020"	26 - 31	26	31	25.6 - 30.6	25.6	30.6	5	31.0	1,759.76	1,760.14
UFIW-07I	26719357.283	827364.425	36.04733° N	115.00419° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	36 - 41	36	41	35.6 - 40.6	35.6	40.6	5	41.4	1,759.63	1,760.05
UFIW-07D	26719353.909	827362.364	36.04732° N	115.00420° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	46 - 51	46	51	45.7 - 50.7	45.7	50.7	5	61.5	1,759.79	1,760.10
UFIW-08S	26719357.073	827378.270	36.04733° N	115.00415° W	8	2	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	2-in PVC 0.020"	25 - 30	25	30	24.6 - 29.6	24.6	29.6	5	30.0	1,759.60	1,759.99
UFIW-08I	26719357.398	827382.269	36.04733° N	115.00413° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	35 - 40	35	40	34.6 - 39.6	34.6	39.6	5	40.1	1,759.61	1,760.03
UFIW-08D	26719353.422	827380.664	36.04732° N	115.00414° W	8	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	45 - 50	45	50	44.6 - 49.6	44.6	49.6	5	61.5	1,759.77	1,760.19
UFMW-01S	26719557.741	827322.226	36.04788° N	115.00432° W	12	2	Sch. 40 PVC	2 ft x 2 ft Square	#3 Monterey Sand	2-in PVC 0.020"	24 - 29	24	29	23.6 - 28.6	23.6	28.6	5	61.5	1,755.07	1,755.49
UFMW-01I	26719557.863	827322.690	36.04788° N	115.00432° W	12	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	34 - 39	34	39	33.5 - 38.5	33.5	38.5	5		1,755.03	1,755.49
UFMW-01D	26719558.151	827322.333	36.04788° N	115.00432° W	12	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	44 - 49	44	49	43.6 - 48.6	43.6	48.6	5		1,755.12	1,755.49
UFMW-02S	26719562.049	827348.779	36.04788° N	115.00424° W	12	2	Sch. 40 PVC	2 ft x 2 ft Square	#3 Monterey Sand	2-in PVC 0.020"	24 - 29	24	29	23.6 - 28.6	23.6	28.6	5	61.5	1,755.02	1,755.42
UFMW-02I	26719562.257	827348.705	36.04788° N	115.00424° W	12	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	34 - 39	34	39	33.6 - 38.6	33.6	38.6	5		1,755.05	1,755.42
UFMW-02D	26719562.018	827348.509	36.04788° N	115.00424° W	12	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	44 - 49	44	49	43.6 - 48.6	43.6	48.6	5		1,755.02	1,755.42
UFMW-03S	26719554.177	827375.383	36.04788° N	115.00417° W	12	2	Sch. 40 PVC	2 ft x 2 ft Square	#3 Monterey Sand	2-in PVC 0.020"	21 - 26	21	26	20.3 - 25.3	20.3	25.3	5	61.5	1,754.68	1,755.37
UFMW-03I	26719554.071	827375.068	36.04788° N	115.00417° W	12	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	30 - 40	30	40	29.3 - 39.3	29.3	39.3	10		1,754.70	1,755.37
UFMW-03D	26719554.600	827375.336	36.04788° N	115.00417° W	12	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	45 - 50	45	50	44.4 - 49.4	44.4	49.4	5		1,754.77	1,755.37
UFMW-04S	26719383.022	827323.589	36.04740° N	115.00433° W	12	2	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	2-in PVC 0.020"	24 - 29	24	29	23.8 - 28.8	23.8	28.8	5	61.5	1,758.79	1,759.03
UFMW-04I	26719383.413	827323.445	36.04740° N	115.00433° W	12	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	34 - 39	34	39	33.8 - 38.8	33.8	38.8	5		1,758.84	1,759.03
UFMW-04D	26719383.319	827323.878	36.04740° N	115.00433° W	12	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	44 - 49	44	49	43.8 - 48.8	43.8	48.8	5		1,758.83	1,759.03
UFMW-05S	26719382.716	827353.392	36.04740° N	115.00423° W	12	2	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	2-in PVC 0.020"	25 - 30	25	30	24.7 - 29.7	24.7	29.7	5	61.5	1,758.94	1,759.26
UFMW-05I	26719382.708	827353.377	36.04740° N	115.00423° W	12	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	35 - 40	35	40	34.7 - 39.7	34.7	39.7	5		1,758.92	1,759.26
UFMW-05D	26719382.960	827353.791	36.04740° N	115.00423° W	12	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	45 - 50	45	50	44.6 - 49.6	44.6	49.6	5		1,758.91	1,759.26
UFMW-06S	26719383.527	827382.753	36.04740° N	115.00413° W	12	2	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	2-in PVC 0.020"	25 - 30	25	30	24.5 - 29.5	24.5	29.5	5	61.5	1,758.74	1,759.25
UFMW-06I	26719383.348	827383.091	36.04740° N	115.00413° W	12	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	35 - 40	35	40	34.5 - 39.5	34.5	39.5	5		1,758.71	1,759.25
UFMW-06D	26719383.109	827382.807	36.04740° N	115.00413° W	12	2	Sch. 40 PVC		#3 Monterey Sand	2-in PVC 0.020"	45 - 50	45	50	44.5 - 49.5	44.5	49.5	5		1,758.76	1,759.25
E1-1	26719578.165	827324.813	36.047944° N	-115.004340° W	12	6	Sch. 40 PVC	2 ft x 2 ft Square	#3 Monterey Sand	6-in PVC 0.020"	22 - 47	22	47	22 - 47	22	47	25	61.5	1,754.98	1,754.98
E1-2	26719578.555	827353.970	36.047944° N	-115.004240° W	12	6	Sch. 40 PVC	2 ft x 2 ft Square	#3 Monterey Sand	6-in PVC 0.020"	22.5 - 47.5	22.5	47.5	22.5 - 47.5	22.5	47.5	25	61.5	1,755.03	1,755.03
E1-3	26719578.226	827379.639	36.047944° N	-115.004154° W	12	6	Sch. 40 PVC	2 ft x 2 ft Square	#3 Monterey Sand	6-in PVC 0.020"	22 - 47	22	47	22 - 47	22	47	25	61.5	1,755.00	1,755.00
E2-1	26719410.294	827303.144	36.04747° N	-115.00440° W	12	6	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	6-in PVC 0.020"	26 - 51	26	51	26 - 51	26	51	25	61.5	1,757.93	1,757.93
E2-2	26719407.988	827328.514	36.04747° N	-115.00431° W	12	6	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	6-in PVC 0.020"	28 - 53	28	53	28 - 53	28	53	25	61.5	1,758.12	1,758.12
E2-3	26719408.435	827353.659	36.04747° N	-115.00423° W	12	6	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	6-in PVC 0.020"	27 - 52	27	52	27 - 52	27	52	25	61.5	1,758.35	1,758.35
E2-4	26719408.069	827378.712	36.04747° N	-115.00415° W	12	6	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	6-in PVC 0.020"	24 - 49	24	49	24 - 49	24	49	25	61.5	1,758.48	1,758.48
E2-5	26719408.534	827403.418	36.04746° N	-115.00406° W	12	6	Sch. 40 PVC	18-in Diameter Round	#3 Monterey Sand	6-in PVC 0.020"	29 - 54	29	54	29 - 54	29	54	25	61.5	1,758.55	1,758.55

Notes:

amsl

Above mean sea level

bgs

Below ground surface

btoc

Below top of casing

ft

Feet

in

Inches

PVC

Polyvinyl Chloride

Sch.

Schedule

TOC

Top of Casing



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/12/16

COMPLETED 7/20/16

GROUND ELEVATION 1755.11 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING ---

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.63 ft / Elev 1727.48 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \ITTS\318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5					(SM) Silty SAND, very pale brown (10YR 8/3), 15/70/15/0, fine to coarse sand, loose, dry, well graded, little fine to coarse gravel.	
				6.0	Moderate to strong cementation 6' to 10'.	1749.1
10				10.0	(SM) Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, medium dense to very dense, moist, well graded, little fine gravel.	1745.1
15					Silty SAND, brown (7.5YR 5/4), 0/80/20/0, fine to medium sand, medium dense, moist, well graded.	2" Schedule 40 PVC blank casing.
20					Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, loose to medium dense, moist, well graded,	Hydrated bentonite chip seal.

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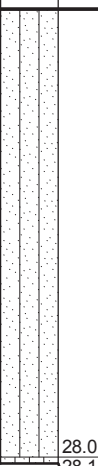
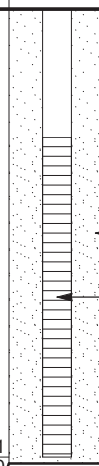
CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					little fine gravel. (SM) (continued) Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, medium dense, moist, well graded, little fine gravel.	 #3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.
				28.0 28.1	(ML) Sandy SILT, brown (7.5YR 5/4), 0/25/75/0, no to low plasticity, fine sand, moist. Bottom of borehole at 28.1 feet.	1727.1 1727.0



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/13/16

COMPLETED 7/21/16

GROUND ELEVATION 1755.08 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 32.00 ft / Elev 1723.08 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.54 ft / Elev 1727.54 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5					(SM) Silty SAND, very pale brown (10YR 8/4), 15/70/15/0, fine to coarse sand, loose, dry, well graded, little fine to coarse gravel, concrete and asphalt debris present.	
5.5					Moderate to strong cementation 5.5' to 10'.	
10					(SM) Silty SAND with gravel, light brown (7.5YR 6/3), 20/65/15/0, fine to coarse sand, fine to coarse gravel, moist, well graded.	
15					Silty SAND with gravel, light brown (7.5YR 6/3), 20/65/15/0, fine to coarse sand, fine to coarse gravel, moist, well graded.	Bentonite grout. 2" Schedule 40 PVC blank casing.
20					Silty SAND with gravel, light brown (7.5YR 6/3), 20/65/15/0, fine to coarse sand, fine to coarse gravel,	

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					moist, well graded. (SM) (continued)	
					Silty SAND with gravel, light brown (7.5YR 6/3), 20/65/15/0, fine to coarse sand, fine to coarse gravel, moist, well graded.	
					▼	
				28.0		1727.1
30					(ML) Sandy SILT, brown (7.5YR 4/4), 0/20/80/0, no to low plasticity, fine to medium sand, hard, moist.	Hydrated bentonite chip seal.
					Sandy SILT, brown (7.5YR 4/4), 0/20/80/0, no to low plasticity, fine to medium sand, hard, moist.	
					▼	
35					Sandy SILT, brown (7.5YR 4/4), 0/20/80/0, no to low plasticity, fine to medium sand, hard, wet.	#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.
				38.1		1717.0

Bottom of borehole at 38.1 feet.



TETRA TECH, INC.

BORING NUMBER UFIW-01D

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/13/16

COMPLETED 7/20/16

GROUND ELEVATION 1755.21 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 32.00 ft / Elev 1723.21 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 20.37 ft / Elev 1734.84 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5					(SM) Silty SAND with Gravel, light yellowish brown (10YR 6/4), 20/65/15/0, fine to coarse sand, fine to coarse gravel, loose, dry, well graded.	
					Silty SAND with Gravel, light yellowish brown (10YR 6/4), 20/65/15/0, fine to coarse sand, fine to coarse gravel, loose, dry, well graded, few cemented fragments.	
				6.5	Moderate to strong cementation 6.5' to 10'.	1748.7
10						1745.2
	MC	15-25-30 (55)			(SM) Silty SAND with Gravel, light brown (7.5YR 6/3), 20/65/15/0, fine to coarse sand, fine to coarse gravel, medium dense, moist, well graded.	
	CC					
15	MC	6-6-8 (14)			Silty SAND with Gravel, light brown (7.5YR 6/3), 20/65/15/0, fine to coarse sand, fine to coarse gravel, medium dense, moist, well graded.	
	CC				Silty SAND, light brown (7.5YR 6/3), 0/85/15/0, fine to coarse sand, moist, well graded.	2" Schedule 40 PVC blank casing. Bentonite grout.
20	MC	18-28-40			▼ Silty SAND with Gravel, light brown (7.5YR 6/3), 20/65/15/0, fine to coarse sand, fine to coarse gravel,	

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	CC	(68)			medium dense, moist, well graded. (SM) (continued)	
25	MC	33-50-36 (86)			Silty SAND with Gravel, light brown (7.5YR 6/3), 20/65/15/0, fine to coarse sand, fine to coarse gravel, medium dense, moist, well graded.	
	CC			28.0	(ML)	1727.2
30	MC	25-70			Sandy SILT, brown (7.5YR 4/4), 0/20/80/0, no to low plasticity, fine to medium sand, hard, moist.	
	CC					
35	MC	2-4-6 (10)			Sandy SILT, brown (7.5YR 4/4), 0/20/80/0, no to low plasticity, fine to medium sand, hard, wet.	
	CC					
40	MC	6-6-8 (14)			Sandy SILT, brown (7.5YR 4/4), 0/20/80/0, no to low plasticity, fine to medium sand, hard, moist.	Hydrated bentonite chip seal.
	NR					
45						#3 Monterey Sand.

(Continued Next Page)




CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	14-18-19 (37)			(ML) (continued) Sandy SILT, brown (7.5YR 5/4), 5/20/75/0, no plasticity, fine sand, wet, cemented nodules.	 <p>2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
50	CC					
55	MC	5-7-7 (14)			Sandy SILT, brown (7.5YR 4/3), 0/20/80/0, low to no plasticity, fine sand, medium stiff, wet.	
60	CC					
	MC	7-10-12 (22)			Sandy SILT, brown (7.5YR 4/3), 0/20/80/0, low to no plasticity, fine sand, medium stiff to stiff, wet, little fine gravel.	
	CC					
	MC	7-7-13 (20)			Sandy SILT, light brown (7.5YR 6/4), 15/20/60/0, low to no plasticity, fine sand, medium stiff to stiff, wet.	
61.5					Bottom of borehole at 61.5 feet.	1693.7

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/8/16

COMPLETED 7/20/16

GROUND ELEVATION 1754.97 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING ---

DRILLING METHOD Hollow Stem Auger

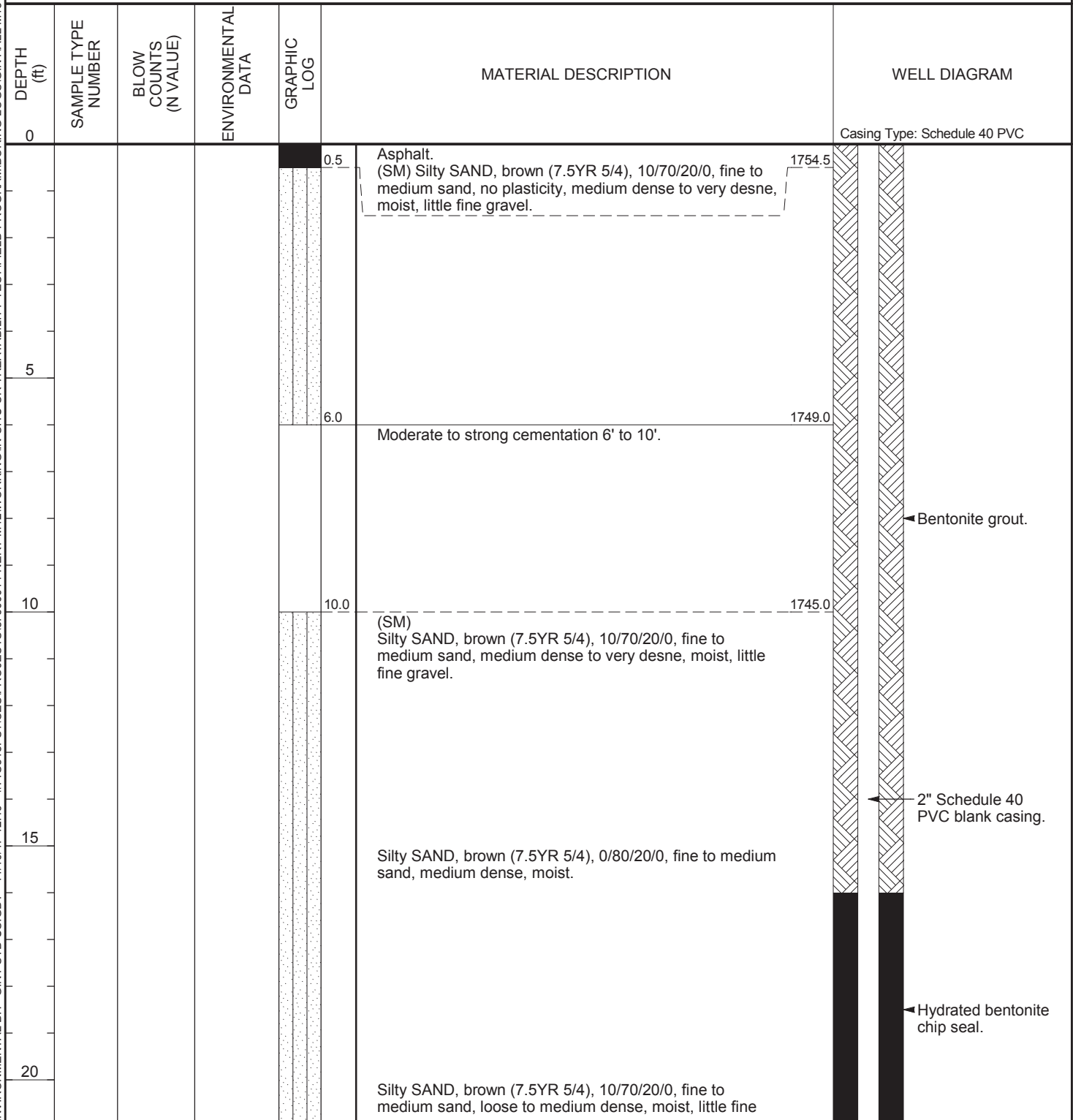
WATER LEVEL AFTER DRILLING 27.20 ft / Elev 1727.77 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



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PROJECT NAME NERT - AP Area Treatability Study

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					gravel. (SM) <i>(continued)</i> Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, medium dense, moist, little fine gravel.	
				28.0 28.1	(ML) Sandy SILT, brown (7.5YR 5/4), 0/25/75/0, no to low plasticity, fine sand, moist. Bottom of borehole at 28.1 feet.	1727.0 1726.9

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\N-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/11/16

COMPLETED 7/21/16

GROUND ELEVATION 1754.85 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 32.00 ft / Elev 1722.85 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.06 ft / Elev 1727.79 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.5	Asphalt. (SM) Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, no plasticity, medium dense to very dense, dry, little fine gravel.	
5				5.5	Moderate to strong cementation 5.5' to 10'.	
10				10.0	(SM) Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, medium dense to very dense, moist, little fine gravel.	
15					Silty SAND, brown (7.5YR 5/4), 0/80/20/0, fine to medium sand, medium dense, moist.	Bentonite grout. 2" Schedule 40 PVC blank casing.
20					Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, loose to medium dense, moist, little fine	

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					gravel. (SM) (continued)	
					Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, medium dense, moist, little fine gravel.	
					▼	Hydrated bentonite chip seal.
				28.0	(ML)	1726.9
30					Sandy SILT, brown (7.5YR 5/4), 0/25/75/0, no to low plasticity, fine sand, medium stiff to stiff, moist.	
					▼	
35					Sandy SILT, brown (7.5YR 5/4), 0/25/75/0, no to low plasticity, fine sand, medium stiff to stiff, wet, small silt lenses.	#3 Monterey Sand.
						2" Schedule 40 PVC 0.020" slotted screen.
40					Sandy SILT, brown (7.5YR 5/4), 0/25/75/0, no to low plasticity, fine sand, medium stiff to stiff, wet.	
				41.1		1713.8
Bottom of borehole at 41.1 feet.						

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/12/16

COMPLETED 7/20/16

GROUND ELEVATION 1755.01 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 32.00 ft / Elev 1723.01 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.15 ft / Elev 1727.86 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.5					Asphalt.	1754.5
					(SM) Silty SAND with gravel, yellowish red (5YR 4/6), 15/70/15/0, fine to medium sand, fine gravel, loose to medium dense, moist.	
5						
6.0					Moderate to strong cementation 6' to 10'.	1749.0
10						
10.0						1745.0
	MC	15-25-30 (55)			(SM) Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, medium dense to very dense, moist, little fine gravel.	
	CC					
15						
	MC	6-6-8 (14)			Silty SAND, brown (7.5YR 5/4), 0/80/20/0, fine to medium sand, medium dense, moist.	
	CC					
20						
	MC	18-28-40			Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, loose to medium dense, moist, little fine	

2" Schedule 40
PVC blank casing.

Bentonite grout.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV





DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	CC	(68)			gravel. (SM) (continued)	
25	MC	33-50-36 (86)			Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, medium dense, moist, little fine gravel.	
	CC				28.0	1727.0
30	MC	25-70			Sandy SILT, brown (7.5YR 5/4), 0/25/75/0, no to low plasticity, fine sand, medium stiff to stiff, moist.	
	CC					
35	MC	2-4-6 (10)			Sandy SILT, brown (7.5YR 5/4), 0/25/75/0, no to low plasticity, fine sand, medium stiff to stiff, wet, little silt lenses.	
	CC					
40	MC	6-6-8 (14)			Sandy SILT, brown (7.5YR 5/4), 0/25/75/0, no to low plasticity, fine sand, medium stiff, wet, little silt lenses.	Hydrated bentonite chip seal.
	CC					
45						#3 Monterey Sand.

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PROJECT NAME NERT - AP Area Treatability Study

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45						
	MC	14-18-19 (37)			(ML) (continued) Sandy SILT, brown (7.5YR 5/4), 0/25/75/0, no to low plasticity, fine sand, medium stiff, wet.	 <p>2" Schedule 40 PVC 0.020" slotted screen.</p>
	CC					
50						
	MC	5-7-7 (14)			Sandy SILT, brown (7.5YR 5/4), 0/25/75/0, no to low plasticity, fine sand, medium stiff to stiff, wet.	 <p>Hydrated bentonite chips.</p>
	CC					
55						
	MC	7-10-12 (22)			Sandy SILT, brown (7.5YR 5/4), 0/25/75/0, no to low plasticity, fine sand, medium stiff to stiff, wet.	 <p>Hydrated bentonite chips.</p>
	CC					
60						
	MC	7-7-13 (20)			Sandy SILT, brown (7.5YR 5/4), 0/25/75/0, no to low plasticity, fine sand, medium stiff, wet.	 <p>Hydrated bentonite chips.</p>
					61.5	1693.5

Bottom of borehole at 61.5 feet.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014\NERI-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/11/16

COMPLETED 7/14/16

GROUND ELEVATION 1755.22 ft HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 32.00 ft / Elev 1723.22 ft

DRILLING METHOD Hollow Stem Auger

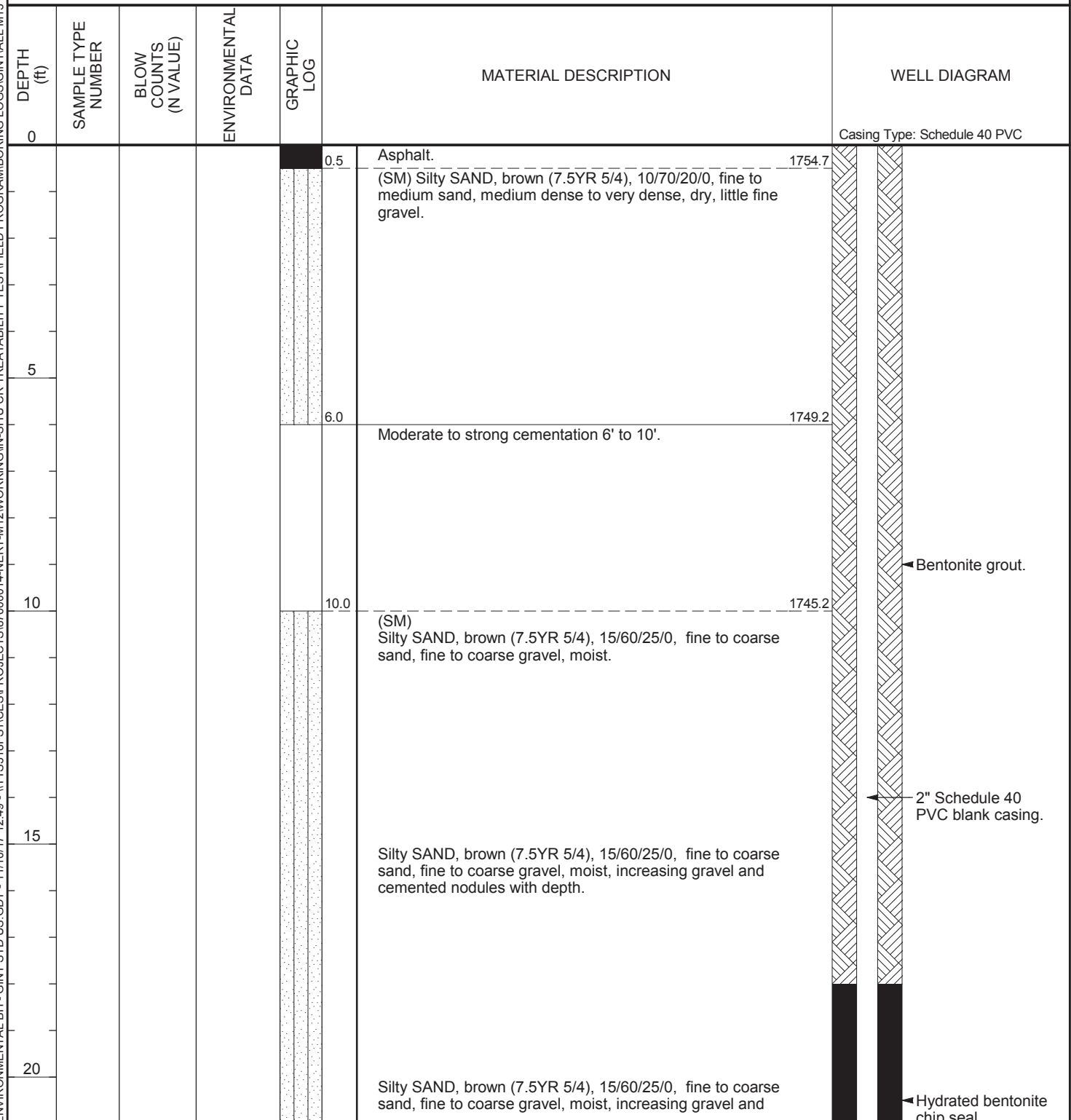
WATER LEVEL AFTER DRILLING 27.35 ft / Elev 1727.87 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					cemented nodules with depth. (SM) (continued)	
30					Silty SAND, brown (7.5YR 5/4), 15/60/25/0, fine to coarse sand, fine to coarse gravel, moist, increasing gravel and cemented nodules with depth.	#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.
35					(ML) Sandy SILT, dark yellowish brown (10YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, moist.	Hydrated bentonite chips.

Bottom of borehole at 35.0 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/11/16

COMPLETED 7/15/16

GROUND ELEVATION 1754.89 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 32.00 ft / Elev 1722.89 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.02 ft / Elev 1727.87 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.5	Asphalt. (SM) Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, medium dense to very desne, dry, little fine gravel.	
5				6.0	Moderate to strong cementation 6' to 10'.	
10				10.0	(SM) Silty SAND, brown (7.5YR 5/4), 15/60/25/0, fine to coarse sand, moist, little fine gravel.	
15					Silty SAND, brown (7.5YR 5/4), 15/60/25/0, fine to coarse sand, moist, little fine gravel. Silty SAND, brown (7.5YR 5/4), 15/60/25/0, fine to coarse sand, moist. Cemented nodules.	Bentonite grout. 2" Schedule 40 PVC blank casing.
20					Silty SAND, brown (7.5YR 5/4), 15/70/15/0, fine to coarse sand, fine to coarse gravel, dense to very dense, moist.	

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					(SM) (continued) Silty SAND, brown (7.5YR 5/4), 15/70/15/0, fine to coarse sand, fine to coarse gravel, dense to very dense, moist, little small cobbles present. Silty SAND, brownish yellow (10YR 6/6), 5/75/20/0, fine to medium sand, low plasticity (silt), fine to medium gravel, very dense, moist, little cemented nodules.	
30				30.0	1724.9 (ML) Sandy SILT, dark yellowish brown (10YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, moist.	Hydrated bentonite chip seal.
35					Sandy SILT, yellowish red (5YR 5/6), 0/25/75/0, low plasticity, fine to medium sand, medium stiff to stiff, wet.	#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.
40				40.0	1714.9 Bottom of borehole at 40.0 feet.	



TETRA TECH, INC.

BORING NUMBER UFIW-03D

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/11/16

COMPLETED 7/15/16

GROUND ELEVATION 1755.38 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 32.00 ft / Elev 1723.38 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.43 ft / Elev 1727.95 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.5	Asphalt. (SM) Silty SAND, brown (7.5YR 5/4), 15/70/15/0, fine to medium sand, no plasticity, loose to medium dense, dry.	1754.9
5				6.0	Moderate to strong cementation 6' to 10'.	1749.4
10	MC	21-24-25 (49)		10.0	(SM) Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, fine gravel, medium dense, dry.	1745.4
	CC					
15	MC	15-15-13 (28)			Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, fine gravel, medium dense, moist.	
	CC				Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, medium dense, dry.	
					Cemented nodules.	
20	MC	32-48-57			Silty SAND, brown (7.5YR 5/4), 15/70/15/0, fine to coarse sand, fine to coarse gravel, dense to very dense, moist.	

2" Schedule 40
PVC blank casing.

Bentonite grout.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	✖	(105)			(SM) (continued)	
	CC					
25	✖	MC	60-110		Silty SAND, brownish yellow (10YR 6/6), 5/75/20/0, fine to medium sand, fine to medium gravel, very dense, moist, little cemented nodules.	
	CC					
30	✖	MC	3-8-10 (18)			
	CC					
35	✖	MC	7-6-9 (15)		Sandy SILT, yellowish red (5YR 5/6), 0/25/75/0, low plasticity, fine to medium sand, medium stiff to stiff, wet.	
	CC					
40	✖	MC	5-6-8 (14)		Sandy SILT, reddish brown (5YR 5/4), 0/15/85/0, low plasticity, fine sand, medium stiff, wet.	Hydrated bentonite chip seal.
	CC					
45						

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-4-7 (11)			(ML) (continued) Sandy SILT, reddish brown (5YR 5/4), 0/15/85/0, low plasticity, fine sand, medium stiff, wet.	 <p>#3 Monterey Sand.</p> <p>2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	4-9-12 (21)			Sandy SILT, reddish brown (5YR 5/4), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, wet, little cemented nodules.	
	CC					
55	MC	4-8-9 (17)			Sandy SILT, reddish brown (5YR 5/4), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, wet, little cemented nodules.	
	CC					
60	MC	4-9-10 (19)			Sandy SILT, reddish brown (5YR 5/4), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, wet, little cemented nodules.	
				61.5		1693.9

Bottom of borehole at 61.5 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/11/16

COMPLETED 7/18/16

GROUND ELEVATION 1755.28 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING ---

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.31 ft / Elev 1727.97 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.5	Asphalt. (SM) Silty SAND, brown (7.5YR 5/3), 15/60/25/0, fine to medium sand, fine gravel, loose to medium dense, dry.	1754.8
5				6.0	Moderate to strong cementation 6' to 10'.	1749.3
10				10.0	(SM) Silty SAND with Gravel, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, fine to coarse gravel, dry, cemented nodules.	1745.3
15					Silty SAND with Gravel, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, fine to coarse gravel, moist, cemented nodules.	
20					Silty SAND, brown (7.5YR 5/4), 0/65/35/0, fine to coarse sand, moist, cemented nodules.	

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					(SM) (continued) Silty SAND with Gravel, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, fine to coarse gravel, moist, cemented nodules. Silty SAND with Gravel, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, fine to coarse gravel, moist, cemented nodules.	

28.0

1727.3

Bottom of borehole at 28.0 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/11/16

COMPLETED 7/21/16

GROUND ELEVATION 1755.33 ft HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 32.00 ft / Elev 1723.33 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.42 ft / Elev 1727.91 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.5	Asphalt. (SM) Silty SAND, brown (7.5YR 5/3), 15/60/25/0, fine to medium sand, fine gravel, loose to medium dense, dry.	1754.8
5				6.0	Moderate to strong cementation 6' to 10'.	1749.3
10				10.0	(SM) Silty SAND with Gravel, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, fine to coarse gravel, dry, cemented nodules.	1745.3
15					Silty SAND with Gravel, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, fine to coarse gravel, moist, cemented nodules.	
20					Silty SAND, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, no plasticity, moist, cemented nodules.	

Bentonite grout.

2" Schedule 40
PVC blank casing.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					(SM) (continued) Silty SAND with Gravel, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, fine to coarse gravel, moist, cemented nodules. Silty SAND with Gravel, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, fine to coarse gravel, moist, cemented nodules.	
30					▼ 28.0	1727.3 Hydrated bentonite chip seal.
35					(ML) Sandy SILT, brown (7.5YR 5/4), 0/15/85/0, no to low plasticity, fine sand, soft to stiff, moist. ▼	#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.
38.0					38.0	1717.3

Bottom of borehole at 38.0 feet.



TETRA TECH, INC.

BORING NUMBER UFIW-04D

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/11/16

COMPLETED 7/18/16

GROUND ELEVATION 1755.39 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 32.00 ft / Elev 1723.39 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.43 ft / Elev 1727.96 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.5	Asphalt. (SM) Silty SAND, brown (7.5YR 5/3), 15/60/25/0, fine to medium sand, fine gravel, loose to medium dense, dry.	1754.9
5				6.5	Moderate to strong cementation 6.5' to 10'.	1748.9
10				10.0	(SM) Silty SAND with Gravel, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, fine to coarse gravel, dry, cemented nodules.	1745.4
	MC	20-28-40 (68)				
	CC					
15					Silty SAND with Gravel, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, fine to coarse gravel, moist, cemented nodules.	
	MC	24-21-31 (52)				
	CC					
20					Silty SAND, brown (7.5YR 5/4), 0/65/35/0, fine to coarse sand, moist, cemented nodules.	
	MC	13-23-43				

2" Schedule 40
PVC blank casing.

Bentonite grout.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	✖	(66)			(SM) (continued)	
25	CC				Silty SAND with Gravel, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, fine to coarse gravel, moist, cemented nodules.	
	✖	30-31-30 (61)			Silty SAND with Gravel, brown (7.5YR 5/4), 20/55/25/0, fine to coarse sand, fine to coarse gravel, moist, cemented nodules.	
	CC			28.0	(ML)	1727.4
30	✖	3-5-11 (16)			Sandy SILT, brown (7.5YR 5/4), 0/15/85/0, no to low plasticity, fine sand, soft to stiff, moist.	
	CC					
35	✖	4-5-7 (12)			Sandy SILT, brown (7.5YR 5/4), 0/15/85/0, no to low plasticity, fine sand, soft to stiff, wet.	
	CC					
40	✖	17-14-18 (32)		40.0	(SM) Silty SAND with Gravel, pink (7.5YR 8/3), 25/60/15/0, fine to coarse sand, low to no plasticity (silt), fine to coarse gravel, medium dense to dense, wet.	1715.4
	CC			42.0	(ML) Sandy SILT, pink (7.5YR 8/3), 0/20/80/0, no to low plasticity, fine sand, wet.	1713.4
45						← Hydrated bentonite chip seal. ← #3 Monterey Sand.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	5-15-10 (25)			(ML) (continued) Sandy SILT, brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff to stiff, wet.	 <p>2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	5-15-22 (37)			Sandy SILT, brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff to very stiff, wet.	
	CC					
55	MC	9-20-25 (45)			Sandy SILT, brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff to very stiff, wet.	
	CC					
60	MC	6-7-13 (20)			Sandy SILT, brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff to stiff, wet.	
					61.5	1693.9

Bottom of borehole at 61.5 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/15/16

COMPLETED 7/27/16

GROUND ELEVATION 1759.63 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING ---

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 28.00 ft / Elev 1731.63 ft

LOGGED BY Joel Lagade

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5					Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel, cemented nodules.	
10					Silty SAND, brown (7.5YR 4/4), 10/70/20/0, fine to medium sand, fine to medium gravel, loose, moist.	Bentonite grout.
15					Silty SAND, brown (7.5YR 4/4), 10/70/20/0, fine to medium sand, loose, moist, some fine to medium gravel, cemented nodules.	2" Schedule 40 PVC blank casing.
20					Silty SAND, brown (7.5YR 4/4), 10/70/20/0, fine to medium sand, loose, moist, trace fine to medium gravel,	Hydrated bentonite chip seal.

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PROJECT NAME NERT - AP Area Treatability Study

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINT\TALL M13 LOGS.GPJ

Bottom of borehole at 30.0 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/15/16

COMPLETED 8/2/16

GROUND ELEVATION 1759.71 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 33.50 ft / Elev 1726.21 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 28.10 ft / Elev 1731.61 ft

LOGGED BY Jon Coen

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5					Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel, cemented nodules.	
10					Silty SAND, brown (7.5YR 4/4), 10/70/20/0, fine to medium sand, fine to medium gravel, loose, moist.	
15						Bentonite grout. 2" Schedule 40 PVC blank casing.
20					Silty SAND, brown (7.5YR 4/4), 10/70/20/0, fine to medium sand, fine to medium gravel, loose, moist.	

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					(SM) (continued)	
29.5					Silty SAND, brown (7.5YR 4/4), 10/70/20/0, fine to medium sand, loose, moist, trace fine to medium gravel, increasing silt content.	
30					(ML)	
35					Trace cemented nodules.	
40					Sandy SILT, strong brown (7.5YR 4/6), 0/20/80/0, low plasticity, fine sand, very stiff, wet, trace clay.	
40.0					Sandy SILT, strong brown (7.5YR 4/4), 0/20/80/0, low plasticity, fine sand, medium stiff, wet, trace clay. Bottom of borehole at 40.0 feet.	

1730.2

1719.7

Hydrated bentonite chip seal.

#3 Monterey Sand.

2" Schedule 40
PVC 0.020" slotted
screen.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/15/16

COMPLETED 7/26/16

GROUND ELEVATION 1759.78 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 33.50 ft / Elev 1726.28 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 28.20 ft / Elev 1731.58 ft

LOGGED BY Joel Lagade

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.4					Asphalt (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5					Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel, cemented nodules.	
10	MC	8-16-23 (39)			Silty SAND, brown (7.5YR 4/4), 10/70/20/0, fine to medium sand, fine to medium gravel, loose, moist.	
15	CC					2" Schedule 40 PVC blank casing.
15	MC	15-30-40 (70)			Silty SAND, brown (7.5YR 4/4), 10/70/20/0, fine to medium sand, loose, moist, some fine to medium gravel, cemented nodules.	
20	CC					Bentonite grout.
20	MC	18-27-33			Silty SAND, brown (7.5YR 4/4), 10/70/20/0, fine to medium sand, loose, moist, trace fine to medium gravel,	

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	✖	(60)			increasing silt content. (SM) (continued)	
25	CC				No Recovery	
	○ NR	50				
	○ NR					
30	✖	8-12-22 (34)			(ML) Sandy SILT, strong brown (7.5YR 4/6), 0/20/80/0, low plasticity, fine sand, very stiff, moist, trace clay.	
	CC					
35	✖	23-27-30 (57)			Sandy SILT, strong brown (7.5YR 4/6), 0/20/80/0, low plasticity, fine sand, very stiff, wet, trace clay. Trace cemented nodules.	
	CC					
40	✖	4-6-8 (14)			Sandy SILT, strong brown (7.5YR 4/4), 0/20/80/0, low plasticity, fine sand, medium stiff, wet, trace clay.	◀ Hydrated bentonite chip seal.
	CC					
45						

(Continued Next Page)




CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	2-4-6 (10)			(ML) (continued) SILT with clay, strong brown (7.5YR 4/6), 0/15/70/15, medium plasticity, medium stiff, wet, some fine sand, increasing clay content.	 <p>← #3 Monterey Sand.</p> <p>← 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>← Hydrated bentonite chips.</p>
	CC					
50	MC	3-5-6 (11)			SILT, brown (7.5YR 5/4), 1/5/91/3, medium plasticity, wet, trace fine sand and clay, cemented nodules.	
	CC					
55	MC	4-3-6 (9)			SILT, strong brown (7.5YR 4/6), 0/15/70/15, low plasticity, medium stiff, wet, some fine sand and clay.	
	CC					
60	MC	4-6-8 (14)			SILT, strong brown (7.5YR 4/6), 0/15/70/15, low plasticity, medium stiff, wet, some fine sand and clay, trace cemented nodules.	
					61.5	1698.3
Bottom of borehole at 61.5 feet.						

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/15/16

COMPLETED 7/29/16

GROUND ELEVATION 1759.76 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING ---

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 28.20 ft / Elev 1731.56 ft

LOGGED BY Joel Lagade

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt. (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0	Little cemented fragments. Moderate to strong cementation 6' to 10'.	
10				10.0	(SM) Silty SAND with Gravel, brown (7.5YR 5/4), 17/63/20/<1, fine to coarse sand, fine gravel, hard, moist.	Bentonite grout.
15					Silty SAND with Gravel, brown (7.5YR 5/4), 15/63/22/0, fine to coarse sand, fine gravel, hard, moist.	2" Schedule 40 PVC blank casing.
20					Silty SAND with Gravel, white (7.5YR 8/1), 15/63/22/0, fine to coarse sand, fine gravel, hard, moist.	
					SAND with Silt, strong brown (7.5YR 5/6), 10/80/10/0, fine sand, low plasticity, moist.	

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					(SM) (continued)	
30					(SW-SM) SAND with Silt, brown (7.5YR 4/4), 10/80/10/<1, fine to medium sand, low plasticity (silt), well graded, moist.	
					SAND with Gravel and Silt, brown (7.5YR 5/3), 20/70/10/0, medium to coarse sand, very dense, hard (silt), wet, trace cemented nodules, increasing gravel and coarse sand with depth.	

Bottom of borehole at 32.0 feet.

Hydrated bentonite
chip seal.#3 Monterey Sand.
2" Schedule 40
PVC 0.020" slotted
screen.



TETRA TECH

BORING NUMBER UFIW-061

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/15/16

COMPLETED 8/1/16

GROUND ELEVATION 1759.71 ft HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1729.71 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 28.17 ft / Elev 1731.54 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0	Moderate to strong cementation 6' to 10'.	
10				10.0	(SM) Silty SAND, light reddish brown (5YR 6/4), 10/70/20/0, fine to coarse sand, dense, moist, few fine to coarse gravel.	
15					Silty SAND with Gravel, reddish brown (5YR 4/3), 25/60/15/0, fine to coarse sand, fine to large gravel, medium dense, moist.	2" Schedule 40 PVC blank casing. Bentonite grout.
					Silty SAND, reddish brown (5YR 4/3), 5/80/15/0, fine to medium sand, medium dense, moist, little fine gravel.	
20					Silty SAND, reddish brown (5YR 4/3), 10/75/15/0, fine to medium sand, medium dense, moist, little fine gravel.	

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TETRA TECH

BORING NUMBER UFIW-061

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 14:33 - P:\87600012-NERT-M13\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					(SM) (continued) Silty SAND with Gravel, reddish brown (5YR 5/3), 20/60/20/0, fine to coarse sand, fine to large gravel, dense, moist. Silty SAND with Gravel, reddish brown (5YR 5/3), 20/60/20/0, fine to coarse sand, fine to large gravel, dense, moist, trace large gravel. Gravelly SAND with Silt, reddish brown (5YR 5/3), 25/65/10/0, fine to coarse sand, fine to large gravel, medium dense to very dense, moist.	
				27.0	1732.7	
				28.0	1731.7	
30				30.5	1729.2	
					(ML) Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low to no plasticity, fine sand, wet. Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low to no plasticity, fine sand, wet. Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low to no plasticity, fine sand, wet.	Hydrated bentonite chip seal. #3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.
45				45.0	1714.7	
					Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low to no plasticity, fine sand, wet.	
Bottom of borehole at 45.0 feet						



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/15/16

COMPLETED 7/29/16

GROUND ELEVATION 1759.85 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1729.85 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 28.38 ft / Elev 1731.47 ft

LOGGED BY Joel Lagade

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.4					Asphalt. (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/<1, fine to medium sand, loose, moist, few fine gravel.	
5					Little cemented fragments.	
6.0					Moderate to strong cementation 6' to 10'.	
10						
10.0						
	MC	30-50			(SM) Silty SAND with Gravel, brown (7.5YR 5/4), 17/63/20/0, fine to coarse sand, fine gravel, hard, moist.	
	CC					
15						
	MC	18-20-25 (45)			Silty SAND with Gravel, brown (7.5YR 5/4), 15/63/22/0, fine to coarse sand, fine gravel, hard, moist.	
	CC				Silty SAND with Gravel, white (7.5YR 8/1), 15/63/22/0, fine to coarse sand, fine gravel, hard, moist.	
20						
	MC	12-18-24			SAND with Silt, strong brown (7.5YR 5/6), 10/80/10/0, fine sand, moist.	

2" Schedule 40
PVC blank casing.

Bentonite grout.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	✖	(42)			(SM) (continued)	
25	CC					
25	✖	10-50			(SW-SM) SAND with Silt, brown (7.5YR 4/4), 10/80/10/<1, fine to medium sand, low plasticity (silt), well graded, moist.	
	CC					
30	✖	49-50-10 (60)			SAND with Gravel and Silt, brown (7.5YR 5/3), 20/70/10/0, medium to coarse sand, no plasticity (silt), very dense, hard (silt), wet, trace cemented nodules, increasing gravel and coarse sand with depth.	
	CC					
35	✖	4-8-16 (24)			Sandy SILT, reddish brown (7.5YR 6/6), 0/40/58/2, low plasticity, very fine sand, stiff, wet.	
	CC					
40	✖	9-8-18 (26)			SILT with Sand, strong brown (7.5YR 5/6), 0/20/70/10, low plasticity, very fine sand, stiff, wet.	
	CC					
45						Hydrated bentonite chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	3-5-7 (12)			(ML) (continued) SILT with Sand, strong brown (7.5YR 5/6), 0/15/73/12, low plasticity, very fine sand, medium stiff, wet, little clay.	 <p>#3 Monterey Sand.</p> <p>2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	3-5-7 (12)			SILT with Sand, strong brown (7.5YR 5/6), 0/15/70/15, low plasticity, very fine sand, medium stiff, wet, little clay.	
	CC					
55	MC	5-7-11 (18)			SILT with Sand, strong brown (7.5YR 5/6), 0/15/70/15, low plasticity, very fine sand, medium stiff, wet, little clay, trace cemented nodules.	
	CC					
60	MC	20-7-9 (16)			SILT with Sand, strong brown (7.5YR 5/6), 0/10/70/20, low plasticity, very fine sand, medium stiff, wet, little clay, trace cemented nodules.	
					61.5	1698.4

Bottom of borehole at 61.5 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/14/16

COMPLETED 8/1/16

GROUND ELEVATION 1759.76 ft HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING ---

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 28.20 ft / Elev 1731.56 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0	Little cemented fragments. Moderate to strong cementation 6' to 8'.	
10				8.0	(SM) Silty SAND with Gravel, reddish brown (5YR 5/3), 15/70/15/0, fine to coarse sand, fine gravel, dense, moist, little coarse gravel.	Bentonite grout.
15						2" Schedule 40 PVC blank casing.
20					Silty SAND, brown (7.5YR 5/4), 5/75/20/0, fine to medium sand, dense, moist.	

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					(SM) (continued)	
30					▼ Silty SAND with Gravel, reddish brown (5YR 5/3), 15/65/20/0, fine to medium sand, fine gravel, dense, moist, little coarse gravel.	
31.0						
						1728.8

Bottom of borehole at 31.0 feet.

Hydrated bentonite
chip seal.

#3 Monterey Sand.

2" Schedule 40
PVC 0.020" slotted
screen.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/14/16

COMPLETED 8/5/16

GROUND ELEVATION 1759.63 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1729.63 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 28.10 ft / Elev 1731.53 ft

LOGGED BY Hao Zhang

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0	Little cemented fragments. Moderate to strong cementation 6' to 10'.	
10				10.0	(SM) Silty SAND with Gravel, reddish brown (5YR 5/3), 15/70/15/0, fine to medium sand, few coarse gravel, dense, moist.	
15						2" Schedule 40 PVC blank casing. Bentonite grout.
20					Silty SAND with Gravel, reddish brown (5YR 5/3), 6/84/10/0, fine to coarse sand, fine gravel, moist.	

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PROJECT NAME NERT - AP Area Treatability Study

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					(SM) (continued)	
30					Silty SAND with Gravel, reddish brown (5YR 5/3), 6/84/10/0, fine to coarse sand, fine gravel, moist.	
35					(ML) Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, soft to stiff, wet.	Hydrated bentonite chip seal.
40					SILT with Sand, strong brown (7.5YR 5/6), 0/10/90/0, low plasticity, fine sand, soft to stiff, wet.	#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.
					Bottom of borehole at 41.4 feet.	



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/15/16

COMPLETED 7/27/16

GROUND ELEVATION 1759.79 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1729.79 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 28.35 ft / Elev 1731.44 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.4					Asphalt	1759.4
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5					Little cemented fragments.	
6.0					Moderate to strong cementation 6' to 10'.	1753.8
10						1749.8
	MC	8-30-50 (80)			(SM) Silty SAND with Gravel, reddish brown (5YR 5/3), 15/70/15/0, fine to medium sand, few coarse gravel, dense, moist.	
	CC					
15	MC	8-35-50 (85)			Silty SAND with Gravel, white (5YR 8/1), 15/70/15/0, fine to medium sand, dense, moist.	
	CC					
20	MC	27-30-33			Silty SAND, brown (7.5YR 5/4), 5/70/25/0, very fine sand, dense, moist.	

2" Schedule 40
PVC blank casing.

Bentonite grout.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	✖	(63)			(SM) (continued)	
	CC				Silty SAND, brown (7.5YR 4/4), 5/70/25/0, fine sand, dense, moist.	
25	○ NR				Silty SAND, brown (7.5YR 4/4), 5/75/20/0, fine sand, dense, moist.	
	CC					
30	✖ MC	12-14-16 (30)				
	CC					
35	✖ MC	4-7-9 (16)				
	CC					
40	✖ MC	3-12-27 (39)				
	CC					
45						

Hydrated bentonite
chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	3-9-12 (21)			(ML) (continued) SILT with Sand, strong brown (7.5YR 5/6), 0/15/83/2, low to medium plasticity, fine sand, stiff, wet.	
	CC					
50	MC	4-5-7 (12)			SILT with Sand, strong brown (7.5YR 5/6), 0/20/70/10, low plasticity, fine sand, medium stiff, moist to wet, trace cemented nodules.	
	CC					
55	MC	3-4-7 (11)			SILT with Sand, strong brown (7.5YR 5/6), 0/20/70/10, very low plasticity, fine sand, medium stiff to stiff, moist.	
	CC					
60	MC	5-5-7 (12)			SILT with Sand, brown (7.5YR 5/4), 0/20/70/10, very low plasticity, fine sand, medium stiff to stiff, moist, trace cemented nodules.	
					61.5	1698.3

Bottom of borehole at 61.5 feet.

#3 Monterey Sand.
2" Schedule 40
PVC 0.020" slotted
screen.Hydrated bentonite
chips.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/14/16

COMPLETED 7/28/16

GROUND ELEVATION 1759.6 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING ---

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 28.02 ft / Elev 1731.58 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0	Moderate to strong cementation 6' to 10'.	
10				10.0	(SM) Silty SAND with Gravel, brown (7.5YR 5/4), 15/70/15/0, fine to medium sand, loose, fine to coarse gravel, moist, decreasing gravel content.	Bentonite grout.
15					Silty SAND, brown (7.5YR 4/3), 10/70/20/0, fine to medium sand, loose, moist, few fine gravel, trace cobbles.	2" Schedule 40 PVC blank casing.
20					Silty SAND, brown (7.5YR 4/3), 10/70/20/0, fine to medium sand, loose, moist, few fine gravel, trace cobbles.	

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					(SM) (continued)	
30					(SW-SM) SAND with Silt, brown (7.5YR 5/3), 10/77/10/3, fine to coarse sand, well graded, very dense, moist, some cemented nodules.	

Bottom of borehole at 30.0 feet.

Hydrated bentonite
chip seal.#3 Monterey Sand.
2" Schedule 40
PVC 0.020" slotted
screen.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/14/16

COMPLETED 8/3/16

GROUND ELEVATION 1759.61 ft HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 34.00 ft / Elev 1725.61 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.96 ft / Elev 1731.65 ft

LOGGED BY Jon Coen

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.5	Moderate to strong cementation 6.5' to 10'.	
10				10.0	(SM) Silty SAND with Gravel, brown (7.5YR 5/4), fine to medium sand, loose, moist, some cobbles.	
15						Bentonite grout. 2" Schedule 40 PVC blank casing.
20					Silty SAND with Gravel, brown (7.5YR 5/4), fine to medium sand, loose, moist, some cobbles.	

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					(SM) (continued)	
30				30.0	1729.6	Hydrated bentonite chip seal.
35					(ML) SILT with Sand, strong brown (10YR 5/4), 0/20/75/5, low to medium plasticity, fine to medium sand, soft to medium stiff, moist.	
40				40.1	1719.5	#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.
					SILT with Sand, strong brown (7.5YR 5/6), 0/20/75/5, low to medium plasticity, fine sand, soft to medium stiff, wet.	
					Bottom of borehole at 40.1 feet.	



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/14/16

COMPLETED 7/28/16

GROUND ELEVATION 1759.77 ft HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 34.00 ft / Elev 1725.77 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 28.14 ft / Elev 1731.63 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \ITTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.4					Asphalt (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5					Cemented fragments.	
6.5					Moderate to strong cementation 6.5' to 10'.	
10						
10.0	MC	14-22-27 (49)			(SM) Silty SAND with Gravel, brown (7.5YR 5/4), 15/70/15/0, fine to medium sand, loose, fine to coarse gravel, moist, decreasing gravel content.	
15	CC					
15	MC	10-45-50 (95)			Silty SAND, brown (7.5YR 4/3), 10/70/20/0, fine to medium sand, loose, moist, few fine gravel, trace cobbles.	2" Schedule 40 PVC blank casing.
18.0	CC					
18.5					(SP) SAND, pink (5YR 8/3), 10/80/10/0, fine to medium sand, loose, moist, few fine gravel. (SM)	
20	MC	10-17-35			Silty SAND, brown (7.5YR 4/3), 10/70/20/0, fine to medium sand, loose, moist, few fine gravel, trace cobbles.	Bentonite grout.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	✖	(52)			(SM) (continued)	
	CC					
25	✖	48-50			Silty SAND, brown (7.5YR 4/3), 10/70/20/0, fine to medium sand, loose, moist, few fine gravel, trace cobbles.	
	CC					
30	✖	13-16-19 (35)				
	CC					
35	✖	4-2-7 (9)			(ML) SILT with Sand, strong brown (7.5YR 5/6), 0/20/75/5, low to medium plasticity, fine sand, soft to medium stiff, moist.	
	CC					
40	✖	4-8-12 (20)			SILT with Sand, strong brown (7.5YR 5/6), 0/20/75/5, low to medium plasticity, fine sand, soft to very stiff, wet.	
	CC					
45						Hydrated bentonite chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	3-3-12 (15)			(ML) (continued) SILT with Sand, strong brown (7.5YR 5/6), 0/20/75/5, low to medium plasticity, fine sand, soft to very stiff, wet, cemented nodules.	 <p>← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>← Hydrated bentonite chips.</p>
	CC					
50	MC	4-4-8 (12)			SILT, brown (7.5YR 5/4), 1/5/86/8, low to medium plasticity, medium stiff to stiff, wet, trace fine sand and gravel, cemented nodules.	
	CC					
55	MC	5-7-9 (16)			SILT, brown (7.5YR 5/4), 1/3/86/10, low to medium plasticity, medium stiff to stiff, wet, trace fine sand and gravel, trace cemented nodules.	
	CC					
60	MC	3-4-5 (9)			SILT, brown (7.5YR 5/4), 1/3/86/10, low to medium plasticity, medium stiff to stiff, wet, trace fine sand and gravel, trace cemented nodules.	
					61.5	1698.3

Bottom of borehole at 61.5 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/14/16

COMPLETED 7/22/16

GROUND ELEVATION 1755.07 ft HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 33.00 ft / Elev 1722.07 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.90 ft / Elev 1727.17 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with a 24" x 24" traffic-rated well vault. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt 1754.7	
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.5	1748.6	
					Moderate to strong cementation 6.5' to 10'.	
10				10.0	1745.1	
	MC	14-30-50 (80)			(SM) Silty SAND, reddish brown (5YR 6/4), 10/60/30/0, fine to coarse sand, fine gravel, dense, moist, cemented nodules.	
	CC					
15						
	MC	10-11-12 (23)			Silty SAND, reddish brown (5YR 5/4), 10/60/30/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	
	CC					
20						
	MC	20-20-30			Silty SAND, reddish brown (5YR 5/4), 10/60/30/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	CC	(50)			(SM) (continued) Silty SAND, white (10YR 8/1), 0/80/20/0, fine sand, no plasticity, medium dense, moist.	
25	MC	50-50-50 (100)			Silty SAND, reddish brown (5YR 5/4), 10/70/20/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.
	CC			29.0	(ML)	1726.1
30	MC	3-5-4 (9)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	← Hydrated bentonite pellets seal.
	CC					
35	MC	4-7-9 (16)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.
	CC					
40	MC	4-5-7 (12)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	← Hydrated bentonite pellets seal.
	CC					
45						

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-7-8 (15)			(ML) (continued) Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	4-6-8 (14)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
	CC					
55	MC	5-5-7 (12)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
	CC					
60	MC	6-6-6 (12)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
				61.5	Bottom of borehole at 61.5 feet.	1693.6

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/14/16

COMPLETED 7/22/16

GROUND ELEVATION 1755.03 ft

HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 33.00 ft / Elev 1722.03 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.79 ft / Elev 1727.24 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with a 24" x 24" traffic-rated well vault. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.4					Asphalt	1754.6
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5						
6.5					Moderate to strong cementation 6.5' to 10'.	1748.5
10						
10.0						1745.0
	MC	14-30-50 (80)			(SM) Silty SAND, reddish brown (5YR 6/4), 10/60/30/0, fine to coarse sand, fine gravel, dense, moist, cemented nodules.	
	CC					
15						
	MC	10-11-12 (23)			Silty SAND, reddish brown (5YR 5/4), 10/60/30/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	
	CC					
20						
	MC	20-20-30			Silty SAND, reddish brown (5YR 5/4), 10/60/30/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	

Bentonite grout.

2" Schedule 40 PVC blank casing.

Hydrated bentonite chip seal.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	CC	(50)			(SM) (continued) Silty SAND, white (10YR 8/1), 0/80/20/0, fine sand, no plasticity, medium dense, moist.	
25	MC	50-50-50 (100)			Silty SAND, reddish brown (5YR 5/4), 10/70/20/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	
	CC					← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.
30	MC	3-5-4 (9)			(ML) Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
	CC					← Hydrated bentonite pellets seal.
35	MC	4-7-9 (16)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
	CC					← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.
40	MC	4-5-7 (12)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
	CC					← Hydrated bentonite pellets seal.
45						

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-7-8 (15)			(ML) (continued) Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	4-6-8 (14)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
	CC					
55	MC	5-5-7 (12)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
	CC					
60	MC	6-6-6 (12)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
				61.5	Bottom of borehole at 61.5 feet.	1693.5

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/14/16

COMPLETED 7/22/16

GROUND ELEVATION 1755.12 ft

HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 33.00 ft / Elev 1722.12 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.89 ft / Elev 1727.23 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with a 24" x 24" traffic-rated well vault. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt	1754.7
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.5	Moderate to strong cementation 6.5' to 10'.	1748.6
10				10.0	(SM) Silty SAND, reddish brown (5YR 6/4), 10/60/30/0, fine to coarse sand, fine gravel, dense, moist, cemented nodules.	1745.1
	MC	14-30-50 (80)				
	CC					
15					Silty SAND, reddish brown (5YR 5/4), 10/60/30/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	
	MC	10-11-12 (23)				
	CC					
20					Silty SAND, reddish brown (5YR 5/4), 10/60/30/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	
	MC	20-20-30				

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	CC	(50)			(SM) (continued) Silty SAND, white (10YR 8/1), 0/80/20/0, fine sand, no plasticity, medium dense, moist.	
25	MC	50-50-50 (100)			Silty SAND, reddish brown (5YR 5/4), 10/70/20/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	
	CC					← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.
30	MC	3-5-4 (9)			(ML) Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
	CC					← Hydrated bentonite pellets seal.
35	MC	4-7-9 (16)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
	CC					← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.
40	MC	4-5-7 (12)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
	CC					← Hydrated bentonite pellets seal.
45						

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-7-8 (15)			(ML) (continued) Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	4-6-8 (14)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
	CC					
55	MC	5-5-7 (12)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
	CC					
60	MC	6-6-6 (12)			Sandy SILT, strong brown (7.5YR 5/4), 0/20/80/0, no to low plasticity, fine sand, medium stiff, moist.	
				61.5	Bottom of borehole at 61.5 feet.	1693.6

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/14/16

COMPLETED 7/25/16

GROUND ELEVATION 1755.02 ft

HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 33.00 ft / Elev 1722.02 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.59 ft / Elev 1727.43 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with a 24" x 24" traffic-rated well vault. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.4					Asphalt. (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	1754.6
5					Cemented fragments.	
7.0					Moderate to strong cementation 7' to 10'.	1748.0
10.0					(SM) Silty SAND, yellowish red (5YR 5/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	1745.0
10-15-16 (31)	MC					
	CC					
15					Silty SAND, yellowish red (5YR 5/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
13-27-30 (57)	MC					
	CC					
20					Silty SAND, yellowish red (5YR 5/6), 0/80/20/0, fine to medium sand, loose, moist.	
20-50-50	MC					

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	✖	(100)			(SM) (continued)	
25	CC					
	✖	50-50			Silty SAND, yellowish red (5YR 5/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.
	CC					
30	✖	4-7-9 (16)			(ML)	
	CC					← Hydrated bentonite pellets seal.
35	✖	10-10-12 (22)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, moist.	
	CC					← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.
40	✖	3-5-6 (11)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/<1, no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay, cemented nodules.	← Hydrated bentonite pellets seal.
	CC					
45						

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-6-8 (14)			(ML) (continued) Sandy SILT, brown (7.5YR 5/4), 0/15/85/<1 no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay.	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	2-5-7 (12)			Sandy SILT, brown (7.5YR 5/4), 0/15/85/<1, no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay, cemented nodules.	
	CC					
55	MC				Sandy SILT, brown (7.5YR 5/4), 0/15/85/<1, no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay, cemented nodules.	
	CC					
60	MC	4-4-8 (12)			Sandy SILT, brown (7.5YR 5/4), 0/15/85/<1, no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay, cemented nodules.	
					61.5	1693.5

Bottom of borehole at 61.5 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/14/16

COMPLETED 7/25/16

GROUND ELEVATION 1755.05 ft

HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 33.00 ft / Elev 1722.05 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.68 ft / Elev 1727.37 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with a 24" x 24" traffic-rated well vault. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.4					Asphalt.	1754.7
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5					Cemented fragments.	
7.0					Moderate to strong cementation 7' to 10'.	1748.1
10.0					(SM) Silty SAND, yellowish red (5YR 5/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	1745.1
	MC	10-15-16 (31)				
	CC					
15					Silty SAND, yellowish red (5YR 5/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
	MC	13-27-30 (57)				
	CC					
20					Silty SAND, yellowish red (5YR 5/6), 0/80/20/0, fine to medium sand, loose, moist.	
	MC	20-50-50				

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	✖	(100)			(SM) (continued)	
	CC					
25	✖	MC	50-50		Silty SAND, yellowish red (5YR 5/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
	CC					← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.
				29.0		1726.1
30	✖	MC	4-7-9 (16)		(ML) Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, moist.	
	CC					← Hydrated bentonite pellets seal.
35	✖	MC	10-10-12 (22)		Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/<1, no to low plasticity, fine sand, stiff, wet, trace clay.	
	CC					← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.
40	✖	MC	3-5-6 (11)		Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/<1, no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay, cemented nodules.	
	CC					← Hydrated bentonite pellets seal.
45						

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-6-8 (14)			(ML) (continued) Sandy SILT, brown (7.5YR 5/4), 0/15/85/<1 no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay.	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	2-5-7 (12)			Sandy SILT, brown (7.5YR 5/4), 0/15/85/<1, no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay, cemented nodules.	
	CC					
55	MC				Sandy SILT, brown (7.5YR 5/4), 0/15/85/<1, no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay, cemented nodules.	
	CC					
60	MC	4-4-8 (12)			Sandy SILT, brown (7.5YR 5/4), 0/15/85/<1, no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay, cemented nodules.	
					61.5	1693.6
Bottom of borehole at 61.5 feet.						

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/14/16

COMPLETED 7/25/16

GROUND ELEVATION 1755.02 ft

HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 33.00 ft / Elev 1722.02 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.74 ft / Elev 1727.28 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with a 24" x 24" traffic-rated well vault. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.4					Asphalt. (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	1754.6
5					Cemented fragments.	
7.0					Moderate to strong cementation 7' to 10'.	1748.0
10.0					(SM) Silty SAND, yellowish red (5YR 5/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	1745.0
10-15-16 (31)	MC					
	CC					
15					Silty SAND, yellowish red (5YR 5/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
13-27-30 (57)	MC					
	CC					
20					Silty SAND, yellowish red (5YR 5/6), 0/80/20/0, fine to medium sand, loose, moist.	
20-50-50	MC					

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	✖	(100)			(SM) (continued)	
25	CC					
	✖	50-50			Silty SAND, yellowish red (5YR 5/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.
	CC					
30	✖	4-7-9 (16)			(ML)	
	CC					← Hydrated bentonite pellets seal.
35	✖	10-10-12 (22)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, moist.	
	CC					← #3 Monterey Sand. ← 2" Schedule 40 PVC 0.020" slotted screen.
40	✖	3-5-6 (11)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/<1, no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay, cemented nodules.	← Hydrated bentonite pellets seal.
	CC					
45						

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-6-8 (14)			(ML) (continued) Sandy SILT, brown (7.5YR 5/4), 0/15/85/<1 no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay.	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	2-5-7 (12)			Sandy SILT, brown (7.5YR 5/4), 0/15/85/<1, no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay, cemented nodules.	
	CC					
55	MC				Sandy SILT, brown (7.5YR 5/4), 0/15/85/<1, no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay, cemented nodules.	
	CC					
60	MC	4-4-8 (12)			Sandy SILT, brown (7.5YR 5/4), 0/15/85/<1, no to low plasticity, fine sand, medium stiff to stiff, wet, trace clay, cemented nodules.	
					61.5	1693.5
Bottom of borehole at 61.5 feet.						

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/13/16

COMPLETED 7/19/13

GROUND ELEVATION 1754.68 ft

HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1724.68 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING --- Dry

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with a 24" x 24" traffic-rated well vault. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt	1754.3
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0	Moderate to strong cementation 6' to 10'.	1748.7
10				10.0	(SM) Silty SAND, reddish brown (5YR 5/4), 10/70/20/0, fine to coarse sand, fine gravel, dense, moist, cemented nodules.	1744.7
	MC	40-38-30 (68)				
	CC					
15					Silty SAND, brown (7.5YR 5/3), 15/70/15/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	
	MC	17-20-25 (45)				
	CC					
20					Silty SAND, brown (7.5YR 5/3), 15/70/15/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	
	MC	18-17-19				

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	✖	(36)			(SM) (continued)	
25	CC					
	✖	13-14-24 (38)			Silty SAND, brown (7.5YR 5/3), 15/70/15/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	← #3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.
	MC			26.0	(ML) Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, very stiff, moist.	1728.7
	CC					← Bentonite grout.
30	✖	3-7-14 (21)			▽ Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, medium stiff to stiff, wet.	← Hydrated bentonite pellets seal.
	CC					
35	✖	5-5-7 (12)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff, wet to saturated.	← #3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.
	MC					
	CC					
40	✖	5-60			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, hard, wet to saturated.	← Bentonite grout.
	MC					
	CC					← Hydrated bentonite pellets seal.
45						

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-6-8 (14)			(ML) (continued) Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, wet to saturated.	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	5-8-4 (12)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, wet to saturated.	
	CC					
55	MC	8-10-13 (23)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, stiff, wet to saturated.	
	CC					
60	MC	6-7-10 (17)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, wet to saturated.	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
					(SM) Silty SAND, white (10YR 8/1), 0/80/20/0, fine sand, medium dense, wet.	
					61.0 1693.7	
					61.5 1693.2	
Bottom of borehole at 61.5 feet.						

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/13/16

COMPLETED 7/19/13

GROUND ELEVATION 1754.7 ft

HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1724.70 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.04 ft / Elev 1727.66 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with a 24" x 24" traffic-rated well vault. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.4					Asphalt	1754.3
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5						
6.0					Moderate to strong cementation 6' to 10'.	1748.7
10						
10.0	MC	40-38-30 (68)			(SM) Silty SAND, reddish brown (5YR 5/4), 10/70/20/0, fine to coarse sand, fine gravel, dense, moist, cemented nodules.	1744.7
	CC					
15						
	MC	17-20-25 (45)			Silty SAND, brown (7.5YR 5/3), 15/70/15/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	
	CC					
20						
	MC	18-17-19			Silty SAND, brown (7.5YR 5/3), 15/70/15/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
		(36)			(SM) (continued)	
25	CC					
	MC	13-14-24 (38)		26.0	Silty SAND, brown (7.5YR 5/3), 15/70/15/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	1728.7
	CC				(ML) Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, very stiff, moist.	
30	MC	3-7-14 (21)			Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, medium stiff to stiff, wet.	
	CC					
35	MC	5-5-7 (12)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff, wet to saturated.	
	CC					
40	MC	5-60			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, hard, wet to saturated.	
	CC					
45						

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PROJECT NAME NERT - AP Area Treatability Study

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-6-8 (14)			(ML) (continued) Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, wet to saturated.	
	CC					
50	MC	5-8-4 (12)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, wet to saturated.	
	CC					
55	MC	8-10-13 (23)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, stiff, wet to saturated.	
	CC					
60	MC	6-7-10 (17)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, wet to saturated.	
					(SM) Silty SAND, white (10YR 8/1), 0/80/20/0, fine sand,	

Bottom of borehole at 61.5 feet.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TT318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINT\TALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/13/16

COMPLETED 7/19/13

GROUND ELEVATION 1754.77 ft

HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1724.77 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.09 ft / Elev 1727.68 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with a 24" x 24" traffic-rated well vault. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt 1754.4	
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0	1748.8	
					Moderate to strong cementation 6' to 10'.	
10				10.0	1744.8	
	MC	40-38-30 (68)			(SM) Silty SAND, reddish brown (5YR 5/4), 10/70/20/0, fine to coarse sand, fine gravel, dense, moist, cemented nodules.	
	CC					
15						
	MC	17-20-25 (45)			Silty SAND, brown (7.5YR 5/3), 15/70/15/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	
	CC					
20						
	MC	18-17-19			Silty SAND, brown (7.5YR 5/3), 15/70/15/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	CC	(36)			(SM) (continued)	
25	MC	13-14-24 (38)		26.0	Silty SAND, brown (7.5YR 5/3), 15/70/15/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	1728.8
	CC				(ML) Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, very stiff, moist.	
30	MC	3-7-14 (21)			Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, medium stiff to stiff, wet.	
	CC					
35	MC	5-5-7 (12)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff, wet to saturated.	
	CC					
40	MC	5-60			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, hard, wet to saturated.	
	CC					
45						

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TETRA TECH, INC.

BORING NUMBER UFMW-03D

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-6-8 (14)			(ML) (continued) Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, wet to saturated.	
	CC					
50	MC	5-8-4 (12)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, wet to saturated.	
	CC					
55	MC	8-10-13 (23)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, stiff, wet to saturated.	
	CC					
60	MC	6-7-10 (17)			Sandy SILT, strong brown (7.5YR 4/6), 0/15/85/0, low plasticity, fine sand, medium stiff to stiff, wet to saturated.	
					(SM) Silty SAND, white (10YR 8/1), 0/80/20/0, fine sand, medium dense, wet.	
					Bottom of borehole at 61.5 feet.	



TETRA TECH, INC.

BORING NUMBER UFMW-04S

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/25/16

COMPLETED 8/4/16

GROUND ELEVATION 1758.79 ft HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 31.00 ft / Elev 1727.79 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.75 ft / Elev 1731.04 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic rated well box. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	1758.4
5				5.5	Moderate to strong cementation 5.5' to 10'.	1753.3
10	MC	4-18-20 (38)		10.0	(SM) Silty Sand, reddish brown (5YR 5/3), 10/70/20/0, fine to medium sand, medium dense, moist, little fine gravel.	1748.8
	MC	18-27-39 (66)			Silty Sand, reddish brown (5YR 5/3), 10/70/20/0, fine to coarse sand, medium dense to dense, moist, little fine gravel.	
	MC	23-25-30 (55)		13.0	(SW) Gravelly SAND, reddish brown (5YR 5/3), 30/60/10/0, fine to coarse sand, fine gravel, medium dense, moist.	1745.8
15	MC	15-20-25 (45)		15.0	(SM) Silty SAND with Gravel, reddish brown (5YR 5/3), 15/65/20/0, fine to coarse sand, fine gravel, medium dense, moist.	1743.8
	MC	10-12-14 (26)		15.5 15.7	3" gypsum lense with moderate to strong cementation, white (5YR 8/1), trace small gravel.	1743.3 1743.1
	MC	11-15-17 (32)			(SM) Silty SAND, reddish brown, (5YR 5/3), 5/70/25/0, fine sand, medium dense, moist, trace fine gravel.	
20	MC	12-16-18 (34)			Silty SAND, reddish brown, (5YR 5/3), 5/75/20/0, fine sand, medium dense, moist, trace fine gravel.	

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25	MC	7-14-35 (49)			(SM) (continued)	
	MC	8-18-35 (53)			Silty SAND with Gravel, reddish brown (5YR 4/3), 15/60/25/0, fine to coarse sand, fine gravel, dense, moist.	
	MC	34-50				
	MC	25-50			Silty SAND with Gravel, reddish brown (5YR 4/3), 20/60/20/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	← #3 Monterey Sand.
	MC	7-14-28 (42)				← 2" Schedule 40 PVC 0.020" slotted screen.
	MC	7-9-11 (20)		29.0		1729.8
30	MC	40-10-10 (20)			(ML) Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, medium stiff to stiff, moist.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, medium stiff to stiff, moist. Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, medium stiff to stiff, wet. Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	← Hydrated bentonite pellets seal.
35	MC	4-5-10 (15)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, soft to medium dense, wet, trace cemented nodules.	← #3 Monterey Sand.
	CC					← 2" Schedule 40 PVC 0.020" slotted screen.
40	MC	3-8-6 (14)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, soft to medium dense, wet.	
	CC					← Hydrated bentonite pellets seal.
45					Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, soft to medium dense, wet, trace	

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	5-7-9 (16)			cemented nodules. (ML) (continued)	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	6-7-12 (19)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, soft to medium dense, wet, trace cemented nodules.	
	CC					
55	MC	3-4-6 (10)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, soft to medium dense, wet, trace cemented nodules.	
	CC					
60	MC	4-4-6 (10)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, soft to medium dense, wet, trace cemented nodules.	
					61.5	1697.3

Bottom of borehole at 61.5 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/25/16

COMPLETED 8/4/16

GROUND ELEVATION 1758.84 ft HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 31.00 ft / Elev 1727.84 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.76 ft / Elev 1731.08 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic rated well box. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	1758.4
5				5.5	Moderate to strong cementation 5.5' to 10'.	1753.3
10	MC	4-18-20 (38)		10.0	(SM) Silty Sand, reddish brown (5YR 5/3), 10/70/20/0, fine to medium sand, medium dense, moist, little fine gravel.	1748.8
	MC	18-27-39 (66)			Silty Sand, reddish brown (5YR 5/3), 10/70/20/0, fine to coarse sand, medium dense to dense, moist, little fine gravel.	
	MC	23-25-30 (55)		13.0	(SW) Gravelly SAND, reddish brown (5YR 5/3), 30/60/10/0, fine to coarse sand, fine gravel, medium dense, moist.	1745.8
15	MC	15-20-25 (45)		15.0	(SM) Silty SAND with Gravel, reddish brown (5YR 5/3), 15/65/20/0, fine to coarse sand, fine gravel, medium dense, moist.	1743.8
	MC	10-12-14 (26)		15.5	3" gypsum lense with moderate to strong cementation, white (5YR 8/1), trace small gravel.	1743.3
	MC	11-15-17 (32)		15.7	(SM) Silty SAND, reddish brown, (5YR 5/3), 5/70/25/0, fine sand, medium dense, moist, trace fine gravel.	1743.1
20	MC	12-16-18 (34)			Silty SAND, reddish brown, (5YR 5/3), 5/75/20/0, fine sand, medium dense, moist, trace fine gravel.	

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25	MC	7-14-35 (49)			(SM) (continued)	
	MC	8-18-35 (53)			Silty SAND with Gravel, reddish brown (5YR 4/3), 15/60/25/0, fine to coarse sand, fine gravel, dense, moist.	
	MC	34-50				
	MC	25-50			Silty SAND with Gravel, reddish brown (5YR 4/3), 20/60/20/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	← #3 Monterey Sand.
	MC	7-14-28 (42)				← 2" Schedule 40 PVC 0.020" slotted screen.
	MC	7-9-11 (20)		29.0		1729.8
30	MC	40-10-10 (20)			(ML) Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, medium stiff to stiff, moist.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, medium stiff to stiff, moist. Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, medium stiff to stiff, wet. Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	← Hydrated bentonite pellets seal.
35	MC	4-5-10 (15)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, soft to medium dense, wet, trace cemented nodules.	← #3 Monterey Sand.
	CC					← 2" Schedule 40 PVC 0.020" slotted screen.
40	MC	3-8-6 (14)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, soft to medium dense, wet.	
	CC					← Hydrated bentonite pellets seal.
45					Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, soft to medium dense, wet, trace	

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	5-7-9 (16)			cemented nodules. (ML) (continued)	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	6-7-12 (19)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, soft to medium dense, wet, trace cemented nodules.	
	CC					
55	MC	3-4-6 (10)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, soft to medium dense, wet, trace cemented nodules.	
	CC					
60	MC	4-4-6 (10)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, soft to medium dense, wet, trace cemented nodules.	
					61.5	1697.3
Bottom of borehole at 61.5 feet.						

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/25/16

COMPLETED 8/4/16

GROUND ELEVATION 1758.83 ft HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 31.00 ft / Elev 1727.83 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.73 ft / Elev 1731.10 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic rated well box. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.4	Asphalt (SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	1758.4
5				5.5	Moderate to strong cementation 5.5' to 10'.	1753.3
10	MC	4-18-20 (38)		10.0	(SM) Silty Sand, reddish brown (5YR 5/3), 10/70/20/0, fine to medium sand, medium dense, moist, little fine gravel.	1748.8
	MC	18-27-39 (66)			Silty Sand, reddish brown (5YR 5/3), 10/70/20/0, fine to coarse sand, medium dense to dense, moist, little fine gravel.	
	MC	23-25-30 (55)		13.0	(SW) Gravelly SAND, reddish brown (5YR 5/3), 30/60/10/0, fine to coarse sand, fine gravel, medium dense, moist.	1745.8
15	MC	15-20-25 (45)		15.0	(SM) Silty SAND with Gravel, reddish brown (5YR 5/3), 15/65/20/0, fine to coarse sand, fine gravel, medium dense, moist.	1743.8
	MC	10-12-14 (26)		15.5	3" gypsum lense with moderate to strong cementation, white (5YR 8/1), trace small gravel.	1743.3
	MC	11-15-17 (32)		15.7	(SM) Silty SAND, reddish brown, (5YR 5/3), 5/70/25/0, fine sand, medium dense, moist, trace fine gravel.	1743.1
20	MC	12-16-18 (34)			Silty SAND, reddish brown, (5YR 5/3), 5/75/20/0, fine sand, medium dense, moist, trace fine gravel.	

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25	MC	7-14-35 (49)			(SM) (continued)	
	MC	8-18-35 (53)			Silty SAND with Gravel, reddish brown (5YR 4/3), 15/60/25/0, fine to coarse sand, fine gravel, dense, moist.	
	MC	34-50				
	MC	25-50			Silty SAND with Gravel, reddish brown (5YR 4/3), 20/60/20/0, fine to coarse sand, fine gravel, medium dense to dense, moist.	← #3 Monterey Sand.
	MC	7-14-28 (42)				← 2" Schedule 40 PVC 0.020" slotted screen.
	MC	7-9-11 (20)		29.0		1729.8
30	MC	40-10-10 (20)			(ML) Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, medium stiff to stiff, moist.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, medium stiff to stiff, moist. Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, medium stiff to stiff, wet. Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	← Hydrated bentonite pellets seal.
35	MC	4-5-10 (15)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, soft to medium dense, wet, trace cemented nodules.	← #3 Monterey Sand.
	CC					← 2" Schedule 40 PVC 0.020" slotted screen.
40	MC	3-8-6 (14)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, soft to medium dense, wet.	
	CC					← Hydrated bentonite pellets seal.
45					Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, soft to medium dense, wet, trace	

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	5-7-9 (16)			cemented nodules. (ML) (continued)	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	6-7-12 (19)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no plasticity, fine sand, soft to medium dense, wet, trace cemented nodules.	
	CC					
55	MC	3-4-6 (10)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, soft to medium dense, wet, trace cemented nodules.	
	CC					
60	MC	4-4-6 (10)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, soft to medium dense, wet, trace cemented nodules.	
					61.5	1697.3

Bottom of borehole at 61.5 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/22/16

COMPLETED 8/3/16

GROUND ELEVATION 1758.94 ft HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1728.94 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.90 ft / Elev 1731.04 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic rated well box. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.8	Compacted base material.	
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0		
					Moderate to strong cementation 6' to 10'.	
10				10.0		
	MC	20-20-25 (45)			(SM) Silty SAND, light reddish brown (5YR 6/3), 5/75/20/0, fine to coarse sand, medium dense, moist.	
	CC					
15					Silty SAND with Gravel, reddish brown (5YR 4/4), 20/55/25/0, fine to coarse sand, fine gravel, medium dense, moist.	
	MC	20-27-27 (54)				
	CC					
20					Silty SAND, reddish brown (5YR 4/4), 5/70/25/0, fine sand, moist, trace fine gravel.	
	MC	12-18-27			Silty SAND with Gravel, reddish brown (5YR 4/4), 20/55/25/0, fine to coarse sand, no plasticity, fine gravel,	

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	CC	(45)			medium dense, moist. (SM) (continued)	
25	MC	40-50			Silty SAND, reddish brown (5YR 5/3), 10/70/20/0, fine to coarse sand, dense, moist, little fine gravel, layer with moderate to strong cementation.	
	CC					← #3 Monterey Sand.
						← 2" Schedule 40 PVC 0.020" slotted screen.
30	MC	5-10-14 (24)		30.0	Silty SAND, pinkish gray (5YR 6/2), 10/75/15/0, fine to coarse sand, no to low plasticity (silt), moist, little fine gravel. (ML) Sandy SILT, yellowish red (5YR 4/6), 0/25/75/0, no to low plasticity, fine sand, medium stiff to stiff, wet, cemented nodules.	1728.9
	CC				Sandy SILT with Gravel, yellowish red (5YR 5/6), 25/25/50/0, no plasticity, fine sand, fine gravel, wet. Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low plasticity, fine sand, stiff to very stiff, wet, little cemented nodules.	← Hydrated bentonite pellets seal.
35	MC	14-17-17 (34)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low plasticity, fine sand, stiff to very stiff, wet, little cemented nodules.	
	CC					← #3 Monterey Sand.
						← 2" Schedule 40 PVC 0.020" slotted screen.
40	MC	3-6-9 (15)		40.0	(ML) SILT, yellowish red (5YR 4/6), 0/5/95/0, no plasticity, soft to medium stiff, wet, trace fine sand.	1718.9
	CC			42.0	(ML) Sandy SILT, yellowish red (5YR 4/6), 0/20/80/0, no plasticity, fine sand, wet.	1716.9
						← Hydrated bentonite pellets seal.
45						

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-10-12 (22)			(ML) (continued) Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	<p>#3 Monterey Sand.</p> <p>2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC				Large cemented nodules, pink (5YR 7/3).	
50	MC	5-7-11 (18)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet.	
	CC					
55	MC	5-7-11 (18)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	
60	MC	3-5-7 (12)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	
				61.5	Bottom of borehole at 61.5 feet.	1697.4



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/22/16

COMPLETED 8/3/16

GROUND ELEVATION 1758.92 ft HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1728.92 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.82 ft / Elev 1731.10 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic rated well box. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.8	Compacted base material.	
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0		
					Moderate to strong cementation 6' to 10'.	
10				10.0		
	MC	20-20-25 (45)			(SM) Silty SAND, light reddish brown (5YR 6/3), 5/75/20/0, fine to coarse sand, medium dense, moist.	
	CC					
15					Silty SAND with Gravel, reddish brown (5YR 4/4), 20/55/25/0, fine to coarse sand, fine gravel, medium dense, moist.	
	MC	20-27-27 (54)				
	CC					
20					Silty SAND, reddish brown (5YR 4/4), 5/70/25/0, fine sand, moist, trace fine gravel.	
	MC	12-18-27			Silty SAND with Gravel, reddish brown (5YR 4/4), 20/55/25/0, fine to coarse sand, no plasticity, fine gravel,	

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	CC	(45)			medium dense, moist. (SM) (continued)	
25	MC	40-50			Silty SAND, reddish brown (5YR 5/3), 10/70/20/0, fine to coarse sand, dense, moist, little fine gravel, layer with moderate to strong cementation.	
	CC					← #3 Monterey Sand.
						← 2" Schedule 40 PVC 0.020" slotted screen.
30	MC	5-10-14 (24)		30.0	Silty SAND, pinkish gray (5YR 6/2), 10/75/15/0, fine to coarse sand, no to low plasticity (silt), moist, little fine gravel. (ML) Sandy SILT, yellowish red (5YR 4/6), 0/25/75/0, no to low plasticity, fine sand, medium stiff to stiff, wet, cemented nodules.	1728.9
	CC				Sandy SILT with Gravel, yellowish red (5YR 5/6), 25/25/50/0, no plasticity, fine sand, fine gravel, wet. Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low plasticity, fine sand, stiff to very stiff, wet, little cemented nodules.	← Hydrated bentonite pellets seal.
35	MC	14-17-17 (34)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low plasticity, fine sand, stiff to very stiff, wet, little cemented nodules.	
	CC					← #3 Monterey Sand.
						← 2" Schedule 40 PVC 0.020" slotted screen.
40	MC	3-6-9 (15)		40.0	(ML) SILT, yellowish red (5YR 4/6), 0/5/95/0, no plasticity, soft to medium stiff, wet, trace fine sand.	1718.9
	CC			42.0	(ML) Sandy SILT, yellowish red (5YR 4/6), 0/20/80/0, no plasticity, fine sand, wet.	1716.9
						← Hydrated bentonite pellets seal.
45						

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-10-12 (22)			(ML) (continued) Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	
	CC				Large cemented nodules, pink (5YR 7/3).	
50	MC	5-7-11 (18)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet.	
	CC					
55	MC	5-7-11 (18)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	
60	MC	3-5-7 (12)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	
					61.5	1697.4

Bottom of borehole at 61.5 feet.

#3 Monterey Sand.
2" Schedule 40
PVC 0.020" slotted
screen.Hydrated bentonite
chips.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/22/16

COMPLETED 8/3/16

GROUND ELEVATION 1758.91 ft HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1728.91 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.72 ft / Elev 1731.19 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic rated well box. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.8	Compacted base material.	
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0		
					Moderate to strong cementation 6' to 10'.	
10				10.0		
	MC	20-20-25 (45)			(SM) Silty SAND, light reddish brown (5YR 6/3), 5/75/20/0, fine to coarse sand, medium dense, moist.	
	CC					
15					Silty SAND with Gravel, reddish brown (5YR 4/4), 20/55/25/0, fine to coarse sand, fine gravel, medium dense, moist.	
	MC	20-27-27 (54)				
	CC					
20					Silty SAND, reddish brown (5YR 4/4), 5/70/25/0, fine sand, moist, trace fine gravel.	
	MC	12-18-27			Silty SAND with Gravel, reddish brown (5YR 4/4), 20/55/25/0, fine to coarse sand, no plasticity, fine gravel,	

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	CC	(45)			medium dense, moist. (SM) (continued)	
25	MC	40-50			Silty SAND, reddish brown (5YR 5/3), 10/70/20/0, fine to coarse sand, dense, moist, little fine gravel, layer with moderate to strong cementation.	
	CC					← #3 Monterey Sand.
						← 2" Schedule 40 PVC 0.020" slotted screen.
30	MC	5-10-14 (24)		30.0	Silty SAND, pinkish gray (5YR 6/2), 10/75/15/0, fine to coarse sand, no to low plasticity (silt), moist, little fine gravel. (ML) Sandy SILT, yellowish red (5YR 4/6), 0/25/75/0, no to low plasticity, fine sand, medium stiff to stiff, wet, cemented nodules.	1728.9
	CC				Sandy SILT with Gravel, yellowish red (5YR 5/6), 25/25/50/0, no plasticity, fine sand, fine gravel, wet. Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low plasticity, fine sand, stiff to very stiff, wet, little cemented nodules.	← Hydrated bentonite pellets seal.
35	MC	14-17-17 (34)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low plasticity, fine sand, stiff to very stiff, wet, little cemented nodules.	
	CC					← #3 Monterey Sand.
						← 2" Schedule 40 PVC 0.020" slotted screen.
40	MC	3-6-9 (15)		40.0	(ML) SILT, yellowish red (5YR 4/6), 0/5/95/0, no plasticity, soft to medium stiff, wet, trace fine sand.	1718.9
	CC			42.0	(ML) Sandy SILT, yellowish red (5YR 4/6), 0/20/80/0, no plasticity, fine sand, wet.	1716.9
						← Hydrated bentonite pellets seal.
45						

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-10-12 (22)			(ML) (continued) Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	<p>#3 Monterey Sand.</p> <p>2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC				Large cemented nodules, pink (5YR 7/3).	
50	MC	5-7-11 (18)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet.	
55	MC	5-7-11 (18)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	
60	MC	3-5-7 (12)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, no to low plasticity, fine sand, medium stiff to stiff, wet, trace cemented nodules.	
61.5					Bottom of borehole at 61.5 feet.	1697.4



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/22/16

COMPLETED 8/2/16

GROUND ELEVATION 1758.74 ft

HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 34.00 ft / Elev 1724.74 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.56 ft / Elev 1731.18 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic rated well box. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \ITTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.8	Compacted base material.	
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0		
					Moderate to strong cementation 6' to 10'.	
10				10.0		
	MC	23-50			(SM) Silty SAND with Gravel, reddish brown (5YR 5/3), 25/55/20/0, fine to coarse sand, fine to medium gravel, moist.	
	CC					
15					Silty SAND with Gravel, reddish brown (5YR 5/3), 25/55/20/0, fine to coarse sand, fine to medium gravel, moist.	
	MC	25-25-30 (55)				
	CC				Silty SAND, reddish brown (5YR 5/3), 0/85/15/0, fine to medium sand, moist.	
20					Silty SAND with Gravel, reddish brown (5YR 5/3), 15/70/15/0, fine to medium sand, no plasticity, fine gravel,	
	MC	5				

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	CC				moist. (SM) (continued)	
25	MC	14-28-50 (78)			Silty SAND, dark reddish brown (5YR 3/3), 10/75/15/0, fine to medium sand, fine gravel, moist, poorly graded.	
	CC				(SW) SAND, dark reddish brown (5YR 3/3), 10/85/5/0, fine to coarse sand, fine gravel, moist, well graded.	
	CC				(SM) Silty SAND, dark reddish brown (5YR 3/3), 10/75/15/0, fine to coarse sand, moist, little fine gravel.	
30	MC	5-5-5 (10)			(ML) Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, moist.	
	CC					
35	MC	7-11-12 (23)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, wet.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, wet, some coarse gravel.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, wet.	
40	MC	7-10-13 (23)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low plasticity, fine sand, wet.	
	CC					
45						

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	3-7-15 (22)			(ML) (continued) Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low plasticity, fine sand, wet, few cemented nodules.	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	3-5-7 (12)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low plasticity, fine to coarse sand, wet, few cemented nodules.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/25/75/0, low plasticity, fine sand, wet, few cemented nodules.	
55	MC	7-9-12 (21)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low plasticity, fine to coarse sand, wet, few cemented nodules.	
	CC					
60	MC	3-7-10 (17)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low plasticity, fine to coarse sand, wet, few cemented nodules.	
61.5					Bottom of borehole at 61.5 feet.	1697.2



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/22/16

COMPLETED 8/2/16

GROUND ELEVATION 1758.71 ft HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 34.00 ft / Elev 1724.71 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.49 ft / Elev 1731.22 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic rated well box. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \ITTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.8	Compacted base material.	
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0		
					Moderate to strong cementation 6' to 10'.	
10				10.0		
	MC	23-50			(SM) Silty SAND with Gravel, reddish brown (5YR 5/3), 25/55/20/0, fine to coarse sand, fine to medium gravel, moist.	
	CC					
15					Silty SAND with Gravel, reddish brown (5YR 5/3), 25/55/20/0, fine to coarse sand, fine to medium gravel, moist.	
	MC	25-25-30 (55)				
	CC				Silty SAND, reddish brown (5YR 5/3), 0/85/15/0, fine to medium sand, moist.	
20					Silty SAND with Gravel, reddish brown (5YR 5/3), 15/70/15/0, fine to medium sand, no plasticity, fine gravel,	
	MC	5				

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	CC				moist. (SM) (continued)	
25	MC	14-28-50 (78)			Silty SAND, dark reddish brown (5YR 3/3), 10/75/15/0, fine to medium sand, fine gravel, moist, poorly graded.	
	CC				(SW) SAND, dark reddish brown (5YR 3/3), 10/85/5/0, fine to coarse sand, fine gravel, moist, well graded.	
	CC				(SM) Silty SAND, dark reddish brown (5YR 3/3), 10/75/15/0, fine to coarse sand, moist, little fine gravel.	
30	MC	5-5-5 (10)			(ML) Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, moist.	
	CC					
35	MC	7-11-12 (23)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, wet.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, wet, some coarse gravel.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, wet.	
40	MC	7-10-13 (23)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low plasticity, fine sand, wet.	
	CC					
45						

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	3-7-15 (22)			(ML) (continued) Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low plasticity, fine sand, wet, few cemented nodules.	
	CC					
50	MC	3-5-7 (12)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low plasticity, fine to coarse sand, wet, few cemented nodules.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/25/75/0, low plasticity, fine sand, wet, few cemented nodules.	
55	MC	7-9-12 (21)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low plasticity, fine to coarse sand, wet, few cemented nodules.	
	CC					
60	MC	3-7-10 (17)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low plasticity, fine to coarse sand, wet, few cemented nodules.	
				61.5	Bottom of borehole at 61.5 feet.	1697.2



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 7/22/16

COMPLETED 8/2/16

GROUND ELEVATION 1758.76 ft

HOLE SIZE 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 34.00 ft / Elev 1724.76 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.56 ft / Elev 1731.20 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic rated well box. Well is co-located as part of a nested well construction.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \ITTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
				0.8	Compacted base material.	
					(SM) Silty SAND, yellowish red (5YR 4/6), 10/75/15/0, fine to medium sand, loose, moist, few fine gravel.	
5				6.0		
					Moderate to strong cementation 6' to 10'.	
10				10.0		
	MC	23-50			(SM) Silty SAND with Gravel, reddish brown (5YR 5/3), 25/55/20/0, fine to coarse sand, fine to medium gravel, moist.	
	CC					
15					Silty SAND with Gravel, reddish brown (5YR 5/3), 25/55/20/0, fine to coarse sand, fine to medium gravel, moist.	
	MC	25-25-30 (55)				
	CC				Silty SAND, reddish brown (5YR 5/3), 0/85/15/0, fine to medium sand, moist.	
20					Silty SAND with Gravel, reddish brown (5YR 5/3), 15/70/15/0, fine to medium sand, no plasticity, fine gravel,	
	MC	5				

Bentonite grout.

2" Schedule 40
PVC blank casing.Hydrated bentonite
chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	CC				moist. (SM) (continued)	
25	MC	14-28-50 (78)			Silty SAND, dark reddish brown (5YR 3/3), 10/75/15/0, fine to medium sand, fine gravel, moist, poorly graded.	
	CC				(SW) SAND, dark reddish brown (5YR 3/3), 10/85/5/0, fine to coarse sand, fine gravel, moist, well graded.	
	CC				(SM) Silty SAND, dark reddish brown (5YR 3/3), 10/75/15/0, fine to coarse sand, moist, little fine gravel.	
30	MC	5-5-5 (10)			(ML) Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, moist.	
	CC					
35	MC	7-11-12 (23)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, wet.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, wet, some coarse gravel.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low to no plasticity, fine sand, wet.	
40	MC	7-10-13 (23)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low plasticity, fine sand, wet.	
	CC					
45						

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:49 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTALL M13 LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	3-7-15 (22)			(ML) (continued) Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low plasticity, fine sand, wet, few cemented nodules.	<p>#3 Monterey Sand. 2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	3-5-7 (12)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low plasticity, fine to coarse sand, wet, few cemented nodules.	
	CC				Sandy SILT, yellowish red (5YR 5/6), 0/25/75/0, low plasticity, fine sand, wet, few cemented nodules.	
55	MC	7-9-12 (21)			Sandy SILT, yellowish red (5YR 5/6), 0/15/85/0, low plasticity, fine to coarse sand, wet, few cemented nodules.	
	CC					
60	MC	3-7-10 (17)			Sandy SILT, yellowish red (5YR 5/6), 0/20/80/0, low plasticity, fine to coarse sand, wet, few cemented nodules.	

61.5

1697.3

Bottom of borehole at 61.5 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/6/16

COMPLETED 7/8/16

GROUND ELEVATION 1755.79 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING DRILLING 31.00 ft / Elev 1724.79 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
	GB DFSB-01-0.5'			0.8	Surface to about 8 inches: Concrete 1755.0	
				2.0	(SM) 8 inches to 2 feet bgs: SILTY SAND, 7.5YR5/4 brown, dry, loose to medium dense, about 70% fine- to coarse-grained, subrounded to subangular sand with 20% nonplastic fines and 10% fine to coarse, hard gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, trace coarse 1753.8	
				2.8	At about 2 feet bgs: Concrete subslab, about 8" thick 1753.0	
5	GB DFSB-01-5'			6.0	(SM) 2.75 to 6 feet bgs: SILTY SAND, 7.5YR5/4 brown, dry, loose to medium dense, about 70% fine- to coarse-grained, subrounded to subangular sand with 20% nonplastic fines and 10% fine, hard gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium to coarse 1749.8	
				6.5	Moderate to strong cementation 6' to 6.5'. Refusal with vacuum equipment. Continue drilling with HSA on 7/8/2016 1749.3	
10	MC DFSB-01-10'	10-28-45 (73)			(SM) 6.5 to 15 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/4 light brown, dry, medium dense to dense, about 70% fine- to coarse-grained, subrounded to subangular sand with 15% hard, fine to coarse gravel and 15% nonplastic fines, poorly graded, no staining. Sand fraction = mostly fine, few medium to coarse	
15	MC DFSB-01-15'	7-8-10 (18)		15.0	(SP-SM) 15 to 19 feet bgs: POORLY GRADED SAND, 7.5YR5/2 brown, dry, loose, about 90% fine- to medium-grained, subrounded sand with 10% nonplastic fines, poorly graded, no staining. Sand fraction - mostly fine, few medium 1740.8	
20	MC DFSB-01-20'	13-27-33 (60)		19.0	(SM) 19 to 27.5 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/4 light brown, dry, medium dense to dense, about 70% fine- to coarse-grained, subrounded to subangular sand with 15% hard, fine to coarse gravel and 15% nonplastic fines, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse 1736.8	
	UD					Bentonite Grout
25	MC	100				

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PROJECT NAME NERT - Soil Flushing IRM

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \TTS31851\LOCAL\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING\RMFIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNE\USHINGBORINGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/5/16 COMPLETED 7/7/16

GROUND ELEVATION 1755.15 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 34.00 ft / Elev 1721.15 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
0.5	GB DFSB-02-0.5'				Surface to about 6 inches: Concrete 1754.7 (SM) 0.5 to 6.5 feet bgs: SILTY SAND, 7.5YR4/3 brown, dry, loose to medium dense, about 60% fine- to medium-grained, subrounded to subangular sand with 30% non-plastic fines, 10% hard, fine to coarse gravel, and trace coarse-grained sand, poorly graded, no staining. Sand fraction = mostly fine, some medium, trace coarse	
5	GB DFSB-02-5'					
6.5					6.5 to 9 feet bgs: moderate to strong cementation. Refusal with vacuum at about 9 feet. Continue with HSA on 7/7/2016 1748.7	
9.0	MC DFSB-02-10'	17-30-32 (62)			(SM) 9 to 20 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/4 brown, dry, medium dense, about 60% subrounded to subangular fine- to coarse-grained sand with 25% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse. Increasing sand at about 15 feet bgs 1746.2	
15	MC DFSB-02-15'	20-18-13 (31)				
20	MC DFSB-02-20'	25-29-64 (93)			(SM) 20 to 25.5 feet bgs: SILTY SAND, 7.5YR5/4 brown, dry, medium dense, about 80% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 5% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse 1735.2	
25		28-70-90				Bentonite Grout

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT.LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25	MC DFSB-02-25'	(160)			25.5 1729.7 25.5 to 26.5 feet bgs: moderate to strong cementation 26.5 1728.7 (SM) 26.5 to 29 feet bgs: SILTY SAND, 7.5YR5/3 brown, dry, medium dense, about 80% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 5% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, trace coarse 29.0 1726.2 (ML) 29 to 32.5 feet bgs: SANDY SILT (Muddy Creek fm), 7.5YR5/6 strong brown, moist, stiff to medium stiff, about 50% non-plastic fines, low to moderate dry strength, slow to rapid dilatancy, low toughness, 45% subrounded, fine-grained sand, and 5% hard, fine to coarse gravel, no staining. 32.5 1722.7 (ML) 32.5 TO 40 FEET BGS: SILT (Muddy Creek fm), 7.5YR4/6 strong brown, wet, stiff, about 60% non-plastic fines, no to low dry strength, slow to rapid dilatancy, low toughness, 40% subrounded, fine-grained sand, no staining, some cemented nodules and calcium carbonate deposits 1st water at about 34 feet bgs	
30	MC DFSB-02-30'	6-10-13 (23)				
35	MC DFSB-02-35'	4-6-7 (13)				
40	MC DFSB-02-40'	4-8-6 (14)			40.0 1715.2 Borehole backfilled with hydrated bentonite Quickgrout. Bottom of borehole at 40.0 feet.	



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/5/16 COMPLETED 7/6/16

GROUND ELEVATION 1755.82 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1725.82 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
	GB DFSB-03-0.5'				0.5 Gravel/dirt at surface above about 6 inches of asphalt 1755.3 (SM) 0.5 to 4.5 feet bgs: SILTY SAND, 7.5YR4/4 brown, dry, loose to medium dense, about 70% subrounded to subangular, fine- to medium-grained sand with 25% non-plastic fines and 5% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium	
5	GB DFSB-03-5'				4.5 (SM) 4.5 to 7 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/4 brown, dry, loose to medium dense, about 60% subrounded to subangular fine- to medium-grained sand with 15% non-plastic fines, 15% hard, fine to coarse gravel, and trace coarse-grained sand, poorly graded, no staining. Sand fraction = mostly fine, some medium, trace coarse 1751.3	
					7.0 7 to 8.5 feet bgs: moderate to strong cementation, continue drilling with HSA 1748.8	
					8.5 (SM) 8.5 to 9.5 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/4 brown, dry, loose to medium dense, about 60% subrounded to subangular fine- to medium-grained sand with 15% non-plastic fines, 15% hard, fine to coarse gravel, and trace coarse-grained sand, poorly graded, no staining. Sand fraction = mostly fine, some medium, trace coarse 1747.3	
10	MC DFSB-03-10'	150			9.5 (SM) 10 to 19 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/4 brown, dry, loose to medium dense, about 60% subrounded to subangular fine- to medium-grained sand with 15% non-plastic fines, 15% hard, fine to coarse gravel, and trace coarse-grained sand, poorly graded, no staining. Sand fraction = mostly fine, some medium, trace coarse 1746.3	
		31-50			10.0 9.5 to 10 feet bgs: moderate to strong cementation 1745.8	
15	MC DFSB-03-15'	15-36-29 (65)			(SM) 10 to 19 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/4 brown, dry, loose to medium dense, about 60% subrounded to subangular fine- to medium-grained sand with 15% non-plastic fines, 15% hard, fine to coarse gravel, and trace coarse-grained sand, poorly graded, no staining. Sand fraction = mostly fine, some medium, trace coarse	
20	MC DFSB-03-20'	11-14-19 (33)			19.0 (SM) 19 to 24 feet bgs: SILTY SAND, 7.5YR4/4 brown, dry, loose to medium dense, about 75% subrounded to subangular, fine-grained sand with 20% non-plastic fines and 5% hard, fine gravel, poorly graded, no staining 1736.8	
25	MC	50			24.0 Increasing cemented fragments at about 24 feet bgs 1731.8	
		89-100-			24.5 1731.3	Bentonite Grout

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT.LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25	MC DFSB- 03- 25'	112 (212)			(SM) 24.5 to 29 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/4 brown, dry, loose to medium dense, about 65% subrounded to subangular fine- to coarse-grained sand with 20% non-plastic fines, 15% hard, fine to coarse gravel, and trace coarse-grained sand, poorly graded, no staining. Sand fraction = mostly fine, some medium, trace coarse (continued)	
30	MC DFSB- 03- 30' +DUP	22-35-40 (75)			(ML) 29 to 34 feet bgs: SILT (Muddy Creek fm), 7.5YR5/6 strong brown, moist, stiff, about 60% non-plastic fines, no to low dry strength, slow to rapid dilatancy, low toughness, 40% subrounded, fine-grained sand, no staining. 1st water at about 30 feet bgs	
35	MC DFSB- 03- 35'	5-7-12 (19)			(ML) 34 to 40 feet bgs: SILT (Muddy Creek fm), 7.5YR5/6 strong brown, wet, stiff, about 55% non-plastic fines, no to low dry strength, slow to rapid dilatancy, low toughness, 40% subrounded, fine-grained sand, 5% hard, fine to coarse gravel, no staining	
40	MC DFSB- 03- 40'	5-7-12 (19)			Borehole backfilled with hydrated bentonite Quickgrout Bottom of borehole at 40.0 feet.	



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/6/16

COMPLETED 7/8/16

GROUND ELEVATION 1755.71 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 31.50 ft / Elev 1724.21 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
0.5	GB DFSB-04-0.5'				Asphalt to about 6 inches (SM) 0.5 to 9.5 feet bgs: SILTY SAND, 10YR5/3 brown, dry, loose to medium dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse	
5	GB DFSB-04-5'					
9.5						
10	MC DFSB-04-10'	80-120-129 (249)			9.5 to 10 feet bgs: moderate to strong cementation (SM) 10 to 19 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/3 brown, dry, very dense, about 60% subrounded to subangular, fine- to coarse-grained sand with 25% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction - mostly fine, some medium to coarse	
15	MC DFSB-04-15'	8-9-12 (21)				
19.0	MC DFSB-04-20'	13-16-19 (35)			(SM) 19 to 24 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/4 brown, dry, medium dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse	
24.0						
25		11-19-75				Bentonite Grout

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PROJECT NAME NERT - Soil Flushing IRM

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US GDT - 11/22/16 16:01 - \TTS318FS1 IT LOCALCESPROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRMFIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNE\LUSHINGBORINGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/6/16

COMPLETED 7/7/16

GROUND ELEVATION 1755.7 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING DRILLING 39.00 ft / Elev 1716.70 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT.LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
	GB DF5B-05-0.5'				(SM) 0 to 6 feet bgs: SILTY SAND, 7.5YR4/3 brown, dry, loose to medium dense, about 70% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 10% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse	
5	GB DF5B-05-5'					
				6.0	6 to 10 feet bgs: moderate to strong cementation	1749.7
10	MC DF5B-05-10'	90-88-50 (138)		10.0		1745.7
					(SM) 10 to 28 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/3 brown, dry, loose to medium dense, about 60% subrounded to subangular, fine- to coarse-grained sand with 25% non-plastic fines and 15% hard, fine- to coarse-grained sand, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse. Abundant cemented nodules throughout	
15	MC DF5B-05-15'	80-33-35 (68)				
20	MC DF5B-05-20'	80-86-36 (122)				
25						Bentonite Grout

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PROJECT NAME NERT - Soil Flushing IRM

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25	MC No Recovery	200				
	MC DFSB 05-25'				28.0	1727.7
	UD					
30	MC DFSB 05-30'	12-18-25 (43)			(ML) 28 to 40 feet bgs: SANDY SILT (Muddy Creek fm), 7.5YR4/4 brown, moist, medium stiff to stiff, about 60% non-plastic fines, no to low dry strength, slow to rapid dilatancy, low toughness, 40% subrounded to subangular fine-grained sand, and trace hard, coarse gravel, no staining. Wet at about 39 feet bgs	
	UD					
35	MC DFSB 05-35'	3-6-10 (16)				
	UD					
40	MC DFSB 05-40'	4-6-12 (18)			40.0	1715.7
					44.0	1711.7
45					45.0	1710.7
					(ML) 40 to 44 feet bgs: SILT (Muddy Creek fm), 7.5YR4/4 brown, moist to wet, medium stiff, about 90% non-plastic fines, no to low dry strength, slow to rapid dilatancy, low toughness, with 10% fine-grained sand. Increasing gravel/cemented nodules at about 44 feet bgs a (ML) 44 to 45 feet bgs: SILT (Muddy Creek fm), 7.5YR4/4 brown, wet, soft to medium stiff, about 100% non-plastic fines, no to low dry strength, slow to rapid dilatancy, low toughness, with trace fine-grained sand and trace gravel/cemented nodules Borehole backfilled with hydrated bentonite Quickgrout Bottom of borehole at 45.0 feet.	



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/7/16

COMPLETED 7/7/16

GROUND ELEVATION 1755.9 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1725.90 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
0.5	GB DFBS- 06- 0.5'				Gravel/dirt at surface and asphalt to about 6 inches (SM) 0.5 to 5.5 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/3 brown, dry, loose to medium dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium, trace coarse	
5	GB DFBS- 06- 5'					
5.5					5.5 to 7 feet bgs: moderate to strong cementation, refusal with vacuum at about 6.5 feet bgs, continue with HSA	
7.0					(SM) 7 to 28 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/4 brown, dr, dense to very dense, about 70% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 15% hard, angular, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium to coarse	
10	MC DFBS- 06- 10'	25-81-90 (171)				
15	MC DFBS- 06- 15'	91-80-80 (160)				
20	MC DFBS- 06- 20'	35-66-50 (116)				
25		60-120				Bentonite Grout

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PROJECT NAME NERT - Soil Flushing IRM

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \TTS31851\LOCAL\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING\RMFIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNE\USHINGBORINGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/6/16

COMPLETED 7/11/16

GROUND ELEVATION 1755.54 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 33.00 ft / Elev 1722.54 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
	GB DFSB- 07- 0.5'				(SM) 0 to 4.5 feet bgs: SILTY SAND WITH GRAVEL, 10YR5/3 brown, dry, dense, about 60% subrounded to subangular, fine- to coarse-grained sand with 25% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse	
5	GB DFSB- 07- 5'				4.5 1751.0 4.5 to 6 feet bgs: moderate to strong cementation, refusal with vacuum at about 6.5 feet bgs, continue drilling with HSA on 7/11/2016 6.0 1749.5	
10	MC DFSB- 07- 10'	20-28-32 (60)			(SM) 6 to 19 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR6/2 pinkish gray, dry, medium dense to dense, about 45% subrounded to subangular, fine- to medium-grained sand with 35% non-plastic fines and 20% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium	
15	MC DFSB- 07- 15'	8-21-16 (37)				
20	MC DFSB- 07- 20'	9-14-29 (43)			19.0 1736.5 (SM) 19 to 25.5 feet bgs: SILTY SAND WITH GRAVEL AND COBBLES, 7.5YR5/4 brown, loose to medium dense, dry to slightly damp, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse. Increasing cobbles at about 25 feet bgs	Bentonite Grout
25		25-61-41				

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/6/16

COMPLETED 7/6/16

GROUND ELEVATION 1756.47 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 28.00 ft / Elev 1728.47 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
	GB DFSB- 08- 0.5'				(SM) 0 to 5 feet bgs: SILTY SAND WITH GRAVEL, 10YR6/3 pale brown, dry, medium dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium to coarse. Gravel = mostly fine	
5	GB DFSB- 08- 5'			5.0	1751.5	
					5 to 7 feet bgs: moderate to strong cementation. Refusal with vacuum at 6.5 feet bgs, continue drilling with HSA	
				7.0	1749.5	
10	MC DFSB- 08- 10'	8-23-43 (66)			(SM) 7 to 25 feet bgs: SILTY SAND WITH GRAVEL, 10YR5/3 brown, dry, dense to very dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium to coarse	
15	MC DFSB- 08- 15'	12-70-81 (151)				
20	MC DFSB- 08- 20'	28-46-47 (93)			Increasing gravel, granitic mineralogy at 20.5 feet bgs	Bentonite Grout
25		14-36-38		25.0	1731.5	

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT.LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25	MC DFSB-08-25'	(74)			(SM) 25 to 28 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR6/3, dry, dense to very dense, about 70% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium to coarse	
	UD			28.0	28 to 29 feet bgs: No recovery, sandstone boulder encountered, 1st water at 28 feet bgs	
	MC DFSB-08-31'	100/1"		29.0	(SP-SM) 29 to 31 feet bgs: POORLY GRADED SAND WITH SILT AND GRAVEL, 7.5YR4/2 brown, wet, very dense, about 75% subrounded to subangular, fine- to coarse-grained sand with 15% hard, fine to coarse gravel and 10% non-plastic fines, poorly graded, no staining. Sand fraction = mostly coarse, some medium, few fine	
30	MC DFSB-08-31'	12-11-7 (18)		31.0	(ML) 31 to 40 feet bgs: SILT (Muddy Creek fm), 7.5YR4/4 brown, wet, medium stiff, about 90% non-plastic fines, no to low dry strength, slow to rapid dilatancy, low toughness, with 10% subrounded fine-grained sand, no staining. Cobbles encountered at about 31 to 32 feet bgs	
	UD					
35	MC DFSB-08-35'	5-9-11 (20)				
	UD					
40	DFSB-08-40'			40.0		

Borehole backfilled with hydrated bentonite Quickgrout
Bottom of borehole at 40.0 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/6/16

COMPLETED 7/8/16

GROUND ELEVATION 1756.73 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 29.00 ft / Elev 1727.73 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
0.5	GB DFSB-09-0.5'				(SM) 0 to 5 feet bgs: SILTY SAND WITH GRAVEL, 10YR6/3 pale brown, dry, medium dense to dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse	
5	GB DFSB-09-5'			5.0	1751.7	
				6.0	5 to 5 feet bgs: moderate to strong cementation, refusal with vacuum at 5.5 feet bgs, continue drilling with HSA on 7/8/2016	1750.7
10	MC DFSB-09-10'	9-17-23 (40)			(SM) 6 to 19 feet bgs: SILTY SAND WITH GRAVEL, 10YR6/3 pale brown, dry, loose to medium dense, about 55% subrounded to subangular, fine- to coarse-grained sand with 30% non-plastic fines and 15% hard, fine gravel, poorly graded, no staining. Sand fraction = mostly fine, trace to few medium to coarse. Abundant cemented nodules	
15	MC DFSB-09-15'	25-55-81 (136)				
19.0					1737.7	
20	MC DFSB-09-20'	7-25-39 (64)			(SM) 19 to 24 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/4 brown, dry, loose to dense, about 70% subrounded to subangular, fine- to medium-grained sand with 15% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, trace medium. Abundant cemented nodules	
24.0					1732.7	
25		10-34-71				

Bentonite Grout

(Continued Next Page)



PROJECT NAME NERT - Soil Flushing IRM

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US GDT - 11/22/16 16:01 - \TTS318FS1 IT LOCALCESPROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRMFIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNE\LUSHINGBORINGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/7/16

COMPLETED 7/14/16

GROUND ELEVATION 1760.59 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 29.00 ft / Elev 1731.59 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
0.5	GB DFSB-10-0.5'				Surface to about 6": Asphalt (SM) 0.5 to 5 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/4 brown, dry, loose, about 70% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 15% hard, fine gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium to coarse	1760.1
5	GB DFSB-10-5'					1755.6
6.0					5 to 6 feet bgs: moderate to strong cementation, refusal with vacuum equipment at about 6 feet bgs, continue drilling with HSA on 7/14/2016 (SM) 6 to 14 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/3 brown to 7.5YR6/3 light brown, dry, dense, about 70% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining, Sand fraction = mostly fine, some medium, few coarse	1754.6
10	MC DFSB-10-10'	27-34-38 (72)				
15	MC DFSB-10-15'	25-27-33 (60)				1746.6
20	MC DFSB-10-20'	23-24-30 (54)			(SM) 14 to 24 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/3 brown, dry, dense, about 70% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine to medium, some coarse, abundant cemented nodules fragments up to 3"	
24.0						1736.6
25		6-6-15				

Bentonite Grout

(Continued Next Page)



PROJECT NAME NERT - Soil Flushing IRM

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT.LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING\IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT DOWN\FLUSHING\BORINGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/7/16

COMPLETED 7/14/16

GROUND ELEVATION 1760.48 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 29.00 ft / Elev 1731.48 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US, GDT - 11/22/16 16:01 - \\TTTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
0.5	GB DFSB-11-0.5'				Surface to about 6": Asphalt (SM) 0 to 6 feet bgs: SILTY SAND WITH GRAVEL, 10YR6/3 pale brown, dry, loose, about 60% subrounded to subangular, fine- to coarse-grained sand with 25% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, trace to few medium to coarse	
5	GB DFSB-11-5'					
6.0					6 to 7 feet bgs: moderate to strong cementation, refusal with vacuum equipment at about 6.5 feet bgs, continue with HSA on 7/14/2016	
7.0					(SM) 7 to 24 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/3 brown, dry, dense to very dense, about 70% subrounded to subangular, fine- to medium-grained sand with 15% non-plastic fines and 15% hard, fine gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium	
10	MC DFSB-11-10'	40-116-45 (161)				
15	MC DFSB-11-15'	23-32-31 (63)				
20	MC DFSB-11-20'	9-12-20 (32)			Increasing sand grain size at about 20 feet bgs, mostly fine to medium, increasing fines at about 20.5 feet bgs	Bentonite Grout
24.0						
25		13-113-90				

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT.LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25	MC DFSB- 11- 25'	(203)			(SM) 24 to 32.5 feet bgs: SILTY SAND WITH GRAVEL, 10YR4/4 dark yellowish brown, moist, dense to very dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% hard, fine to coarse gravel and 15% non-plastic fines, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse (continued)	
30	MC DFSB- 11- 30'	150			1st water encountered at about 29 feet bgs	
	NR No recovery	100			Very hard drilling with increasing cemented nodules and gravel at 30 feet bgs. Wet, gravelly, highly cemented lenses at about 30.5 to 31.5 feet bgs and platy cemented layering to about 32.5 feet bgs	
	UD			32.5	1728.0	
35	MC DFSB- 11- 35'	4-7-9 (16)			(ML) 32.5 to 40 feet bgs: SILT (Muddy Creek fm), 7.5YR4/6 strong brown, moist to wet, medium stiff, about 90% non-plastic fines, no to low dry strength, slow to rapid dilatancy, low toughness, with 10% subrounded, fine-grained sand, no staining	
	UD				Cemented layering at about 37 feet bgs	
40	MC DFSB- 11- 40'	5-8-11 (19)		40.0	1720.5	
					Very wet gravelly lens at about 38.5 feet bgs. Intermittent cemented nodules and cemented zones to about 40 feet bgs	
					Borehole backfilled with hydrated bentonite Quickgrout Bottom of borehole at 40.0 feet.	



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/7/16

COMPLETED 7/13/16

GROUND ELEVATION 1760.45 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 29.00 ft / Elev 1731.45 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
0.5	GB DFSB- 12- 0.5'				Surface to about 6": Asphalt 1760.0 (SM) 0.5 to 5.5 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/4 brown, dry, loose to medium dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse	
5	GB DFSB- 12- 5'				5.5 1755.0 5.5 to 7 feet bgs: moderate to strong cementation, refusal with vacuum equipment at about 7 feet bgs, continue drilling with HSA on 7/14/2016	
7.0					7.0 1753.5 (SM) 7 to 19 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR6/3 light brown to 7.5YR5/4 brown, dry, dense to very dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium to coarse. Abundant cemented nodules	
10	MC DFSB- 12- 10'	25-60-45 (105)				
15	MC DFSB- 12- 15'	80-29-30 (59)				
19.0	MC DFSB- 12- 20'	11-22-23 (45)			19.0 1741.5 (SP-SM) 19 to 29 feet bgs: POORLY GRADED SAND WITH SILT AND GRAVEL, 7.5YR5/4 brown to 7.5YR4/2 brown, dry to slightly damp, medium dense, about 75% subrounded to subangular, fine- to medium-grained sand with 15% hard, fine to coarse gravel, 10% non-plastic fines, trace coarse-grained sand, no staining. Sand fraction = mostly fine, some medium, trace coarse	
25		60-100-90				Bentonite Grout

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT.LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25	MC DFSB 12- 25'	(190)			(SP-SM) 19 to 29 feet bgs: POORLY GRADED SAND WITH SILT AND GRAVEL, 7.5YR5/4 brown to 7.5YR4/2 brown, dry to slightly damp, medium dense, about 75% subrounded to subangular, fine- to medium-grained sand with 15% hard, fine to coarse gravel, 10% non-plastic fines, trace coarse-grained sand, no staining. Sand fraction = mostly fine, some medium, trace coarse (continued)	
30	MC DFSB 12- 30'	30-37-45 (82)			(SM) 29 to 32 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/4 brown, moist to wet, dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, trace to few coarse. 1st water at about 29 feet bgs	
35	MC DFSB 12- 35'	6-6-8 (14)			(ML) 32 to 40 feet bgs: SILT (Muddy Creek fm), 7.5YR4/6 strong brown, wet, soft to medium stiff, about 90-95% non-plastic fines, no to low dry strength, slow to rapid dilatancy, low toughness, 5-10% fine-grained sand, trace coarse gravel (cemented nodules), no staining	
40	MC DFSB 12- 40'	7-7-15 (22)			Borehole backfilled with hydrated bentonite Quickgrout Bottom of borehole at 40.0 feet.	



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/7/16

COMPLETED 7/12/16

GROUND ELEVATION 1761.36 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING DRILLING 29.00 ft / Elev 1732.36 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWN\FLUSHING\BORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
	GB DFSB- 13- 0.5'				(SM) 0 to 9 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/3 brown, dry, loose to medium dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction	
5	GB DFSB- 13- 5'					
				9.0	1752.4	
10	NR	88-130/0"			No recovery at about 9-11 feet bgs	
				11.0	1750.4	
	MC DFSB- 13- 12.5'	7-21-32 (53)			(SM) 11 to 33 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/3 brown to 7.5YR6/3 light brown, dry, medium dense to very dense, about 70% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium to coarse. Very abundant cemented nodules	
15	MC DFSB- 13- 15'	20-30-30 (60)				
20	MC DFSB- 13- 20'	24-32-36 (68)			Dry to slightly damp at about 20 feet bgs	Bentonite Grout
	MC	150/2"				
25						

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT.LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25						
	MC DFSB- 13- 27.5' MC	100/3"			(SM) 11 to 33 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/3 brown to 7.5YR6/3 light brown, dry, medium dense to very dense, about 70% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium to coarse. Very abundant cemented nodules (continued) 1st water encountered at about 29 feet bgs	
30						
	MC DFSB- 13- 33.5' MC					
35		3-7-11 (18)				
	MC DFSB- 13- 35'					
40		6-9-15 (24)				
	MC DFSB- 13- 40'					
					Increasing cemented nodules, increasing fines and decreasing sand Borehole backfilled with hydrated bentonite Quickgrout Bottom of borehole at 40.0 feet.	



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/7/16

COMPLETED 7/12/16

GROUND ELEVATION 1760.87 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 29.00 ft / Elev 1731.87 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWN\FLUSHING\BORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
	GB DFSB- 14- 0.5'				(SM) 0 to 8 feet bgs: SILTY SAND, 7.5YR4/3 brown, dry, loose, about 70% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 10% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse	
5	GB DFSB- 14- 5'					
				8.0	1752.9	
				9.0	1751.9	
10	MC DFSB- 14- 10'	17-15-15 (30)			8 to 9 feet bgs: moderate to strong cementation, refusal with vacuum equipment at about 8.5 feet bgs, continue with HSA on 7/12/2016	
					(SM) 9 to 19 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR6/3, dry, medium dense, about 50% subrounded to subangular, fine- to medium-grained sand with 35% non-plastic fines and 15% hard, fine gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium	
15	MC DFSB- 14- 15'	16-36-47 (83)				
				19.0	1741.9	
20	MC DFSB- 14- 20'	20-29-40 (69)			(SM) 19 to 24 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/4 brown, dry, medium dense to dense, about 70% subrounded, fine-grained sand with 15% non-plastic fines and 15% hard, fine gravel, poorly graded, no staining. Abundant cemented nodules	Bentonite Grout
				24.0	1736.9	
25	MC	59-140				

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PROJECT NAME NERT - Soil Flushing IRM

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \TTS31851\LOCAL\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING\RMFIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNE\USHINGBORINGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/7/16

COMPLETED 7/7/16

GROUND ELEVATION 1760.88 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 29.00 ft / Elev 1731.88 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
	GB DFSB- 15- 0.5'				(SM) 0 to 8 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR4/3 brown, dry, loose to medium dense, about 60% subrounded to subangular, fine- to medium-grained sand with 25% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium	
5	GB DFSB- 15- 5'					
				8.0	1752.9	
10	MC DFSB- 15- 10'	12-43-35 (78)		10.0	1750.9	
					8 to 10 feet bgs: moderate to strong cementation, refusal with vacuum equipment at 10 feet bgs, continue drilling with HSA	
15	MC DFSB- 15- 15'	7-16-33 (49)			(SM) 10 to 29 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR6/3 light brown to 7.5YR5/4 brown, dry, medium dense to dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse	
20	MC DFSB- 15- 20'	10-33-70 (103)				Bentonite Grout
25	MC	80-100			Increasing gravel at about 24 feet bgs	

(Continued Next Page)



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT.LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25	MC DFSB- 15- 25'				(SM) 10 to 29 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR6/3 light brown to 7.5YR5/4 brown, dry, medium dense to dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse (continued)	
30	MC DFSB- 15- 30'	21-35-33 (68)		29.0	(ML) 29 to 39 feet bgs: SILT WITH SAND (Muddy Creek fm), 7.5YR4/6 strong brown, wet, medium stiff to stiff, about 85% non-plastic fines, no to low dry strength, slow to rapid dilatancy, low toughness, with 15% subrounded to subangular, fine-grained sand and trace coarse gravel, no staining	
35	MC DFSB- 15- 35'	11-18-19 (37)				
	UD DFSB- 15- 39'					
40	MC No recovery			39.0 40.0	(ML) 39 to 40 feet bgs: SILT (Muddy Creek fm), highly cemented at about 39 to 40 feet bgs	

Borehole backfilled with hydrated bentonite Quickgrout
Bottom of borehole at 40.0 feet.



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/7/16

COMPLETED 7/12/16

GROUND ELEVATION 1761.96 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING DRILLING 30.00 ft / Elev 1731.96 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US, GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
0	GB DFSB- 16- 0.5'				(SM) 0 to 5 feet bgs: SILTY SAND WITH GRAVEL, 10YR6/3 pale brown, dry, loose to medium dense, about 60% subrounded to subangular, fine- to coarse-grained sand with 25% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining, Sand fraction = mostly fine, few medium to coarse	
5	GB DFSB- 16- 5'			5.0	1757.0	
5					(SM) 5 to 29.5 feet bgs: SILTY SAND WITH GRAVEL: 7.5YR5/3 brown to 7.5YR6/3 light brown, dry, medium dense to very dense, about 70% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium to coarse	
10	MC DFSB- 16- 10'	42-72-23 (95)				
15	MC DFSB- 16- 15'	23-25-47 (72)				
20	MC DFSB- 16- 20'	63-51-28 (79)				
25		150				40

(Continued Next Page)



PROJECT NAME NERT - Soil Flushing IRM

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US GDT - 11/22/16 16:01 - \\TTS18FS1\\TLOCALICESPROJECTS\\87600008-NERT-K01\\WORKING\\SOIL FLUSHING IRM\\FIELD PROGRAM\\BORING LOGS\\GINT\\NERT DOWNFLUSHINGBORINGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/7/16

COMPLETED 7/13/16

GROUND ELEVATION 1762.06 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 29.00 ft / Elev 1733.06 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
0	GB DFSB-17-0.5'				(SM) 0 to 5 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR6/3 light brown, dry, loose to medium dense, about 70% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, few coarse	
5	GB DFSB-17-5'			5.0	5 to 6 feet bgs: moderate to strong cementation, refusal with vacuum equipment at about 6 feet bgs, continue drilling with HSA on 7/13/2016	1757.1
				6.0	(SM) 6 to 19 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR6/3 light brown, dry, very dense, about 55% subrounded to subangular, fine- to coarse-grained sand with 30% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium to coarse	1756.1
10	MC DFSB-17-10'	24-66-103 (169)				
15	MC DFSB-17-15'	70-49-53 (102)			Increasing gravel and decreasing fines (about 60% sand with 20% fines and 20% gravel) at about 14 feet bgs	
				19.0	Increasing sand at about 19 feet bgs	1743.1
20	MC DFSB-17-20'	12-18-35 (53)			(SM) 19 to 24 feet bgs: SILTY SAND, 7.5YR5/4 brown, slightly damp, medium dense to dense, about 75% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 10% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium, trace coarse	
				24.0		1738.1
25		5-7-13				

Bentonite Grout

(Continued Next Page)



PROJECT NAME NERT - Soil Flushing IRM

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \TTS31851\LOCAL\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING\RMFIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNE\USHINGBORINGS.GPJ



CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/8/16

COMPLETED 7/8/16

GROUND ELEVATION 1761.95 ft HOLE SIZE 8"

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 29.00 ft / Elev 1732.95 ft

DRILLING METHOD Hollow-stem auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY David Bertolacci

CHECKED BY Mark Feldman

NOTES

ENVIRONMENTAL BH - GINT STD US, GDT - 11/22/16 16:01 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNFLUSHINGBORINGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
	GB DFSB- 18- 0.5'				(SM) 0 to 9 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/3 brown, dry, loose to medium dense, about 70% subrounded to subangular, fine- to coarse-grained sand with 15% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, some medium to coarse	
5	GB DFSB- 18- 5'					
				9.0	1753.0	
10					9 to 12 feet bgs: moderate to strong cementation, continue drilling at 12 feet bgs with HSA	
				12.0	1750.0	
	MC DFSB- 18- 12'	34-57-40 (97)			(SM) 12 to 32 feet bgs: SILTY SAND WITH GRAVEL, 7.5YR5/3 brown, dry, medium dense to dense, about 65% subrounded to subangular, fine- to coarse-grained sand with 20% non-plastic fines and 15% hard, fine to coarse gravel, poorly graded, no staining. Sand fraction = mostly fine, few medium to coarse	
15	MC DFSB- 18- 15'	9-17-21 (38)				
20	MC DFSB- 18- 20'	5-31-47 (78)				Bentonite Grout
25		35-150				

(Continued Next Page)



PROJECT NAME NERT - Soil Flushing IRM

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 16:01 - \TTS31851\LOCAL\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING\RMFIELD PROGRAM\BORING LOGS\GINT\NERT_DOWNE\LUSHINGBORINGS.GPJ



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BORING NUMBER E1-1

PAGE 1 OF 2

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/27/16 **COMPLETED** 8/4/16

GROUND ELEVATION 1754.98 ft **HOLE SIZE** 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1724.98 ft

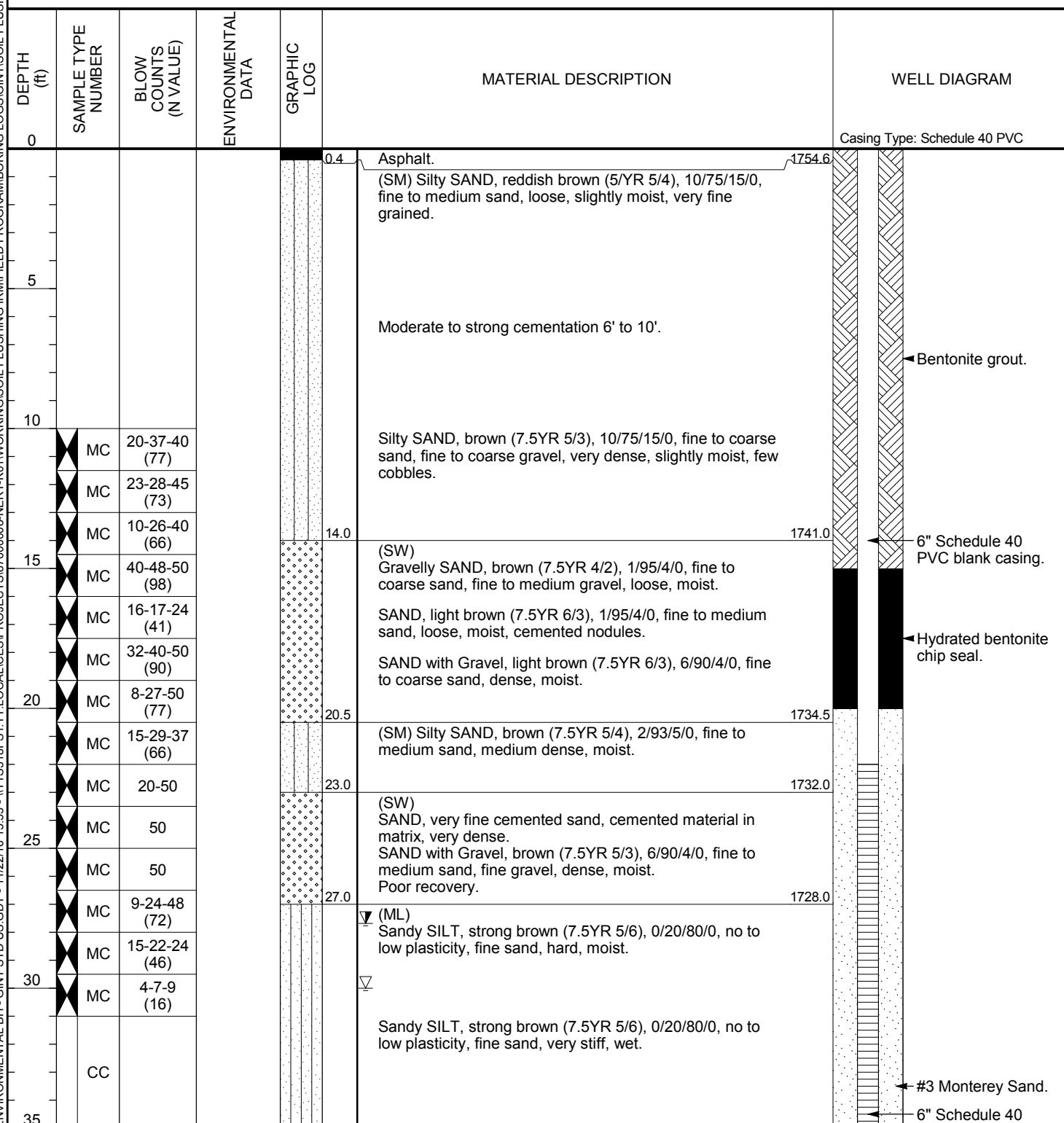
DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.68 ft / Elev 1727.30 ft

LOGGED BY Jon Coen **CHECKED BY** M. Crews

NOTES Well completed with a 24" x 24" traffic-rated well vault.

ENVIRONMENTAL BH - GINT STD US GDT - 11/22/16 15:55 - \\TTS318FS1.TT\LOCAL\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS CES.GPJ



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BORING NUMBER E1-1

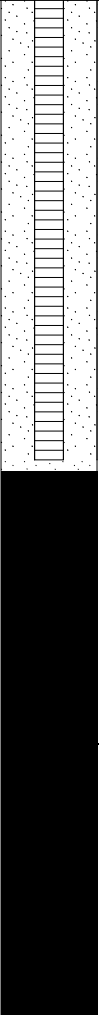
PAGE 2 OF 2

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
35	MC	6-8-10 (18)			(ML) (continued) Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, very stiff, wet.	 <p>PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
40	MC	3-5-6 (11)			Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, stiff, wet.	
	CC					
45	MC	6-8-14 (22)			Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, very stiff, wet.	
	CC				Cemented nodules, pink (7.5YR 7/3)	
50	MC	5-5-10 (15)			Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, stiff, wet.	
	CC					
55	MC	6-8-13 (21)				
	CC				Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, stiff, wet, cemented nodules.	
60	MC	4-8-9 (17)			Sandy SILT, strong brown (7.5YR 5/6), 0/20/80/0, no to low plasticity, fine sand, stiff, wet.	
					61.5	1693.5
Bottom of borehole at 61.5 feet.						

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 15:55 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS CES.GPJ



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BORING NUMBER E1-2

PAGE 1 OF 2

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/27/16 **COMPLETED** 8/8/16

GROUND ELEVATION 1755.03 ft **HOLE SIZE** 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 29.50 ft / Elev 1725.53 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.53 ft / Elev 1727.50 ft

LOGGED BY Jon Coen **CHECKED BY** M. Crews

NOTES Well completed with a 24" x 24" traffic-rated well vault.

ENVIRONMENTAL BH - GINT STD US GDT - 11/22/16 15:55 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS CES.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.4					Asphalt.	1754.6
5					(SM) Silty SAND, brown (7.5YR 5/6), 5/80/15/0, fine to coarse sand, fine to coarse gravel, medium dense to very dense, moist, little cobbles.	
					Moderate to strong cementation 6' to 10'.	
10						
	MC	13-17-21 (38)				
	MC	27-27-33 (60)				
	MC	33-35-35 (70)				
15						
	MC	15-13-10 (23)				
	MC	17-14-17 (31)				
	MC	14-22-25 (47)				
20						
	MC	25-25-33 (58)				
	MC	33-50				
	MC	40-50				
25						
	MC	44-50				
	MC	12-20-15 (35)				
	MC	14-16-14 (30)				
30						
	MC	12-13-18 (31)				
	MC	2-2-3 (5)				
35						
	CC					
					(ML) Sandy SILT, dark brown (7.5YR 5/6), 1/25/74/0, stiff to very stiff. Sandy SILT, dark brown (7.5YR 5/6), 1/25/74/0, stiff to very stiff, moist. Sandy SILT, dark brown (7.5YR 5/6), 1/25/74/0, stiff to very stiff, wet.	1727.5
						#3 Monterey Sand.

(Continued Next Page)



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BORING NUMBER E1-2

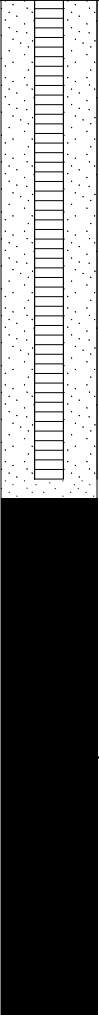
PAGE 2 OF 2

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
35	MC	3-3-3 (6)			(ML) (continued) Sandy SILT, dark brown (7.5YR 5/6), 1/25/74/0, stiff to very stiff, wet.	
	CC					
40	MC	5-7-10 (17)			Sandy SILT, dark brown (7.5YR 5/6), 1/25/74/0, stiff to very stiff, wet, cemented fragments.	
	CC					
45	MC	3-3-4 (7)			Sandy SILT, dark brown (7.5YR 5/6), 1/25/74/0, stiff to very stiff, wet.	
	CC					
50	MC	2-2-5 (7)			Sandy SILT, dark brown (7.5YR 5/6), 1/25/74/0, stiff to very stiff, wet.	
	CC					
55	MC	3-3-7 (10)			Sandy SILT, dark brown (7.5YR 5/6), 1/25/74/0, stiff to very stiff, wet, cemented nodules.	
	CC					
60	MC	3-3-6 (9)			Sandy SILT, dark brown (7.5YR 5/6), 1/25/74/0, stiff to very stiff, wet.	
					61.5	1693.5
Bottom of borehole at 61.5 feet.						

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 15:55 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS CES.GPJ



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BORING NUMBER E1-3

PAGE 1 OF 2

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/26/16 **COMPLETED** 8/9/16

GROUND ELEVATION 1755 ft **HOLE SIZE** 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 31.00 ft / Elev 1724.00 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.61 ft / Elev 1727.39 ft

LOGGED BY Jon Coen **CHECKED BY** M. Crews

NOTES Well completed with a 24" x 24" traffic-rated well vault.

ENVIRONMENTAL BH - GINT STD US GDT - 11/22/16 15:55 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS CES.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
0.4					Asphalt.	1754.6
5					(SM) Silty SAND, brown (7.5YR 5/4), fine sand, loose, moist, some gravel, little cemented nodules.	1749.0
6.0					Moderate to strong cementation 6' to 10'.	
10						1745.0
10.0	MC	14-19-23 (42)			(SM) Silty SAND, brown (7.5YR 5/6), 5/80/15/0, medium dense, gravel in matrix.	
11-15-20 (35)	MC	11-15-20 (35)			Silty SAND, brown (7.5YR 5/4), 6/89/5/0, medium dense, fine to coarse gravel, little cobbles.	
17-20-24 (44)	MC	17-20-24 (44)			Silty SAND, 2/95/3/0, fine to medium sand, loose to medium dense, little gravel.	1740.5
14.5	MC	14-17-18 (35)			(SW) Gravelly SAND with Silt, brown (7.5YR 6/4), 6/93/1/0, medium dense, large cobbles, cemented material in matrix.	
17.5	MC	8-12-17 (29)			Gravelly SAND with Silt, brown (7.5YR 6/4), 6/93/1/0, medium dense, large cobbles, cemented material in matrix.	1737.5
20	MC	6-9-14 (23)			(SM) Silty SAND, 2/92/6/0, minor gravel.	1734.5
20.5	MC	4-15-20 (35)			Silty SAND, 2/92/6/0, minor gravel.	1733.0
22.0	MC	15-25-15 (40)			(SW) Gravelly SAND, strong brown (7.5YR 5/6), 8/88/4/0, fine sand, large gravel, cobbles, loose to medium dense.	
25	MC	40-50			(SM) Silty SAND with Gravel, strong brown (7.5YR 5/6), 3/80/17/0, medium dense, some gravel.	
27.0	MC	7-14-16 (30)			Silty SAND, dark brown (7.5YR 3/4), dense to very dense, some cemented material in matrix, minor gravel.	1728.0
30	MC	7-10-12 (22)			Silty SAND, strong brown (7.5YR 4/6), fine sand, few gravel.	
30	MC	5-8-12 (20)			(ML) Sandy SILT, brown (7.5YR 5/4), 1/30/69/0, silt, medium to stiff, minor gravel.	
30	MC	14-20			Sandy SILT, brown (7.5YR 5/4), 0/30/70/0, silt, medium to stiff.	
30					Sandy SILT, brown (7.5YR 5/4), 0/30/70/0, silt, medium to stiff, moist.	
30					Sandy SILT, brown (7.5YR 5/4), 0/20/80/0, silt, medium to stiff, wet.	
35	CC					#3 Monterey Sand.
						6" Schedule 40

(Continued Next Page)



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BORING NUMBER E1-3

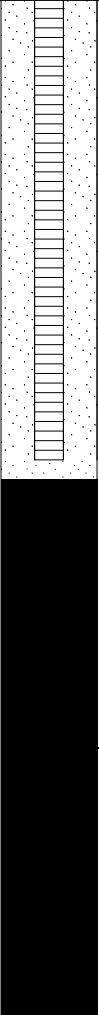
PAGE 2 OF 2

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
35	MC	4-8-10 (18)			(ML) (continued) Sandy SILT, brown (7.5YR 5/4), 0/20/80/0, silt, medium to stiff, wet.	 <p>PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
40	MC	3-3-8 (11)			Sandy SILT, light brown (7.5YR 6/4), 1/20/79/0, silt, medium to stiff, wet, few small cemented fragments, some cobbles.	
	CC					
45	MC	4-5-7 (12)			Sandy SILT, light brown (7.5YR 6/4), 1/20/79/0, silt, medium to stiff, wet, few small cemented fragments, some cobbles.	
	CC					
50	MC	4-4-8 (12)			Sandy SILT, light brown (7.5YR 6/4), 0/20/80/0, silt, medium to stiff, wet, few small cemented fragments, some cobbles.	
	CC					
55	MC	3-4-7 (11)			Sandy SILT, light brown (7.5YR 6/4), 0/20/80/0, silt, stiff to very stiff, wet, few small cemented fragments, some cobbles.	
	CC					
60	MC	3-3-4 (7)			Sandy SILT, light brown (7.5YR 6/4), 0/20/80/0, silt, stiff to very stiff, wet, few small cemented fragments, some cobbles.	
					61.5	1693.5
Bottom of borehole at 61.5 feet.						

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 15:55 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS.CES.GPJ



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BORING NUMBER E2-1

PAGE 1 OF 2

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/25/16 **COMPLETED** 8/8/16

GROUND ELEVATION 1757.93 ft **HOLE SIZE** 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 31.00 ft / Elev 1726.93 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 26.93 ft / Elev 1731.00 ft

LOGGED BY Daniel Keady **CHECKED BY** M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 15:55 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS.CES.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5					(SM) Silty SAND, brown (7.5YR 5/4), 10/80/10/0, fine to medium sand, loose, moist.	
6.0					1751.9	
10					Moderate to strong cementation 6' to 10'.	
10.0					1747.9	
14-37-50 (87)	MC				(SM) Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
15-45-40 (85)	MC				Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
26-27-35-30 (62)	MC				Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
27-24-26-24 (50)	MC				Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
14-16-20 (36)	MC				Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
16-25-22 (47)	MC					
36-40-31-40 (71)	MC				Silty SAND with Gravel, light brown (7.5YR 6/4), 20/65/15/0, fine to medium sand, very dense.	
40-56	MC				Silty SAND with Gravel, strong brown (7.5YR 4/6), 20/65/15/0, fine to medium sand, medium dense, moist.	
120	MC				Silty SAND with Gravel, strong brown (7.5YR 4/6), 20/65/15/0, fine to medium sand, medium dense, moist.	
21-43-18 (61)	MC				Silty SAND, brown (7.5YR 4/4), 5/65/30/0, fine to medium sand, no to low plasticity (silt), moist.	
28-50	MC				Silty SAND, brown (7.5YR 4/4), 5/65/30/0, fine to medium sand, no to low plasticity (silt), moist.	
90	MC					
31.0					1726.9	
	CC				(ML) SILT, reddish brown (5YR 5/4), 0/5/95/0, low to medium plasticity, stiff, moist, trace fine to medium sand	
35						

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BORING NUMBER E2-1

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
35	MC	3-6-6 (12)			(ML) (continued) SILT, reddish brown (5YR 5/4), 0/5/95/0, low to medium plasticity, stiff, wet, trace fine to medium sand	<p>#3 Monterey Sand.</p> <p>6" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
40	MC	4-6-10 (16)			SILT, reddish brown (5YR 5/4), 0/5/95/0, low to medium plasticity, stiff, wet, trace fine to medium sand	
	CC					
45	MC	3-3-4 (7)			SILT, reddish brown (5YR 5/4), 0/5/95/0, low to medium plasticity, stiff, wet, trace fine to medium sand	
	CC					
50	MC	4-4-5 (9)			SILT, reddish brown (5YR 5/4), 0/5/95/0, low to medium plasticity, stiff, wet, trace fine to medium sand	
	CC					
55	MC	8-9-17 (26)			SILT, reddish brown (5YR 5/4), 0/5/95/0, low to medium plasticity, stiff, wet, trace fine to medium sand	
	CC					
60	MC	5-5-5 (10)			SILT, reddish brown (5YR 5/4), 0/5/95/0, low to medium plasticity, stiff, wet, trace fine to medium sand	
				61.5	Bottom of borehole at 61.5 feet.	1696.4

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 15:55 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS.CES.GPJ



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BORING NUMBER E2-2

PAGE 1 OF 2

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/25/16 **COMPLETED** 8/8/16

GROUND ELEVATION 1758.12 ft **HOLE SIZE** 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 31.00 ft / Elev 1727.12 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.02 ft / Elev 1731.10 ft

LOGGED BY Daniel Keady **CHECKED BY** M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US GDT - 11/22/16 15:55 - \TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS CES.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5					(SM) Silty SAND, brown (7.5YR 5/4), 10/70/20/0, fine to medium sand, loose, moist.	
6.5					1751.6	
10					Moderate to strong cementation 6.5' to 10'.	
10.0					1748.1	
15	MC	23-50			(SM) Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	Bentonite grout.
	MC	15-24-37 (61)			Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	6" Schedule 40 PVC blank casing.
	MC	22-41-50 (91)			Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
	MC				Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
	MC	22-28-33 (61)			Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
	MC	22-50-47 (97)			Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
20	MC	38-36-37 (73)			Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
	MC	37-46-50 (96)			Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
	MC				1736.1	
	MC				No recovery.	
25	MC	38-48-20 (68)			1733.1	Hydrated bentonite chip seal.
	MC	35-40			(SM) Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
	MC	50			Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
	MC				Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
30	MC				Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, moist.	
	MC				Silty SAND, brown (7.5YR 5/4), 10/75/15/0, fine to medium sand, very dense, wet.	
	CC				1725.1	
35					(ML) SILT, reddish brown (5YR 5/4), 0/10/90/0, low to medium plasticity, fine to medium sand, wet.	

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BORING NUMBER E2-2

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
35	MC	3-5-7 (12)			(ML) (continued) SILT, reddish brown (5YR 5/4), 0/10/90/0, low to medium plasticity, fine to medium sand, wet.	
	CC					
40	MC	3-3-4 (7)			SILT, reddish brown (5YR 5/4), 0/10/90/0, low to medium plasticity, fine to medium sand, wet.	
	CC					
45	MC	5-7-10 (17)			SILT, reddish brown (5YR 5/4), 0/10/90/0, low to medium plasticity, fine to medium sand, wet.	
	CC					
				47.5	(ML) Sandy SILT, pink (7.5YR 7/4), 10/20/70/0, no to low plasticity, fine to coarse sand, wet.	1710.6
50	MC	3-3-7 (10)			(ML) SILT, reddish brown (5YR 5/4), 0/10/90/0, low to medium plasticity, fine to medium sand, wet.	1708.1
	CC					
55	MC	8-13-20 (33)			SILT, reddish brown (5YR 5/4), 0/10/90/0, low to medium plasticity, fine to medium sand, wet.	
	CC					
60	MC	8-10-16 (26)			SILT, reddish brown (5YR 5/4), 0/10/90/0, low to medium plasticity, fine to medium sand, wet.	
				61.5		1696.6
Bottom of borehole at 61.5 feet.						

← #3 Monterey Sand.
← 6" Schedule 40
PVC 0.020" slotted
screen.

← Hydrated bentonite
chips.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 15:55 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS CES.GPJ



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BORING NUMBER E2-3

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/18/16 **COMPLETED** 8/10/16

GROUND ELEVATION 1758.35 ft **HOLE SIZE** 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 30.00 ft / Elev 1728.35 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.32 ft / Elev 1731.03 ft

LOGGED BY Daniel Keady **CHECKED BY** M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US GDT - 11/22/16 15:55 - \TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS CES.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5					(SM) Silty SAND, light brown (7.5YR 6/3), 10/80/10/0, fine to medium sand, loose, moist.	
6.0					1752.4	
10					Moderate to strong cementation 6' to 10'.	
10.0					1748.4	
15	MC				(SM) SAND with Silt and Gravel, light brown (7.5 YR 6/3), 20/70/10/0, fine to medium sand, very dense, moist.	
	MC	22-27-28 (55)			SAND with Silt and Gravel, light brown (7.5 YR 6/3), 20/70/10/0, fine to medium sand, very dense, moist.	
	MC	15-37-28 (65)			SAND with Silt and Gravel, light brown (7.5 YR 6/3), 20/70/10/0, fine to medium sand, very dense, moist, little cemented nodules.	
	MC	34-31-26-24 (57)			Silty SAND, light brown (7.5YR 6/4), 10/60/30/0, fine to medium sand, very dense, moist.	
	MC	13-15-18 (33)			Silty SAND, light brown (7.5YR 6/4), 10/60/30/0, fine to medium sand, very dense, moist.	
20	MC	11-15-21 (36)			Silty SAND, light brown (7.5YR 6/4), 10/60/30/0, fine to medium sand, dense, moist.	
	MC	14-31-30-32 (61)			Silty SAND, brown (7.5YR 5/4), 5/65/30/0, fine to medium sand, very dense, moist.	
	MC	44-60			Silty SAND, brown (7.5YR 5/4), 5/65/30/0, fine to medium sand, very dense, moist.	
25	MC	70			Silty SAND, brown (7.5YR 5/4), 5/65/30/0, fine to medium sand, very dense, moist.	
	MC	13-31-30-33 (61)			Silty SAND, brown (7.5YR 5/4), 10/60/30/0, fine to medium sand, very dense, moist.	
	MC	31-45-55 (100)			▼ Silty SAND, brown (7.5YR 5/4), 10/60/30/0, fine to medium sand, very dense, moist.	
30	MC	80			▼ Silty SAND, brown (7.5YR 5/4), 10/60/30/0, fine to medium sand, very dense, moist.	
	MC	80			Silty SAND, brown (7.5YR 5/4), 10/60/30/0, fine to medium sand, very dense, wet, cemented nodules.	
32.0					1726.4	
35	CC				(ML)	

(Continued Next Page)



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BORING NUMBER E2-3

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
35	MC	9-12-11 (23)			(ML) (continued) SILT, brown (7.5YR 5/4), 0/5/95/0, no to low plasticity, fine to medium sand, very stiff, wet.	
	CC					
40	MC	6-9-11 (20)			SILT, brown (7.5YR 5/4), 0/5/95/0, no to low plasticity, fine to medium sand, stiff, wet.	
	CC					
45	MC	5-6-9 (15)				
	CC					
				45.5	1712.9	
				46.5	1711.9	
					(SW) SAND, pink (7.5YR 8/3), 0/99/1/0, fine to coarse sand, medium dense, wet, trace silt.	
					(ML) SILT, brown (7.5YR 5/4), 0/5/95/0, no to low plasticity, fine to medium sand, stiff, wet.	
				49.5	1708.9	
50	MC	6-7-7 (14)				
	CC					
				50.0	1708.4	
					(SW) SAND, pink (7.5YR 8/3), 0/99/1/0, fine to coarse sand, medium dense, wet, trace silt.	
					(ML) SILT, brown (7.5YR 5/4), 0/5/95/0, no to low plasticity, fine to medium sand, stiff, wet.	
55	MC	4-6-11 (17)			SILT, brown (7.5YR 5/4), 0/5/95/0, no to low plasticity, fine to medium sand, very stiff, wet.	
	CC					
60	MC	8-17-24 (41)			SILT, brown (7.5YR 5/4), 0/5/95/0, no to low plasticity, fine to medium sand, hard, wet.	
				61.5	1696.9	
Bottom of borehole at 61.5 feet.						

#3 Monterey Sand.
6" Schedule 40
PVC 0.020" slotted
screen.

Hydrated bentonite
chips.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 15:55 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS CES.GPJ



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BORING NUMBER E2-4

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/19/16 **COMPLETED** 8/9/16

GROUND ELEVATION 1758.48 ft **HOLE SIZE** 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 32.00 ft / Elev 1726.48 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.41 ft / Elev 1731.07 ft

LOGGED BY Daniel Keady **CHECKED BY** M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US GDT - 11/22/16 15:55 - \\TTS318FS1.TT.LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS CES.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5					(SM) Silty SAND with Gravel, light brown (7.5YR 6/3), 30/60/10/0, fine to medium sand, fine to medium gravel, loose, moist.	
6.0					1752.5	
10					Moderate to strong cementation 6' to 10'.	
10.0					1748.5	
15	MC	21-36-40-42 (76)			(SM) Silty SAND with Gravel, light brown (7.5YR 6/3), 30/55/15/0, fine to medium sand, very dense, fine to medium gravel, moist.	
	MC	10-21-28 (49)			Silty SAND, brown (7.5YR 5/3), 5/80/15/0, fine to medium sand, dense, moist, decreasing gravel with depth.	
	MC	27-70			Silty SAND with Gravel, light brown (7.5YR 6/3), 30/55/15/0, fine to medium sand, very dense, fine to medium gravel, moist.	
	MC	20-28-31-60 (59)			1742.5	
	MC	110			(SW-SM) SAND with Gravel, pinkish gray (7.5YR 7/2), 15/80/5/0, fine to coarse sand, very dense, well graded, moist.	
	MC	17-19-35 (54)			1742.0	
20	MC	32-55-60 (115)			(SM) Silty SAND with Gravel, light brown (7.5YR 6/3), 30/55/15/0, fine to medium sand, very dense, fine to medium gravel, moist.	
	MC	19-74			Silty SAND with Gravel, light brown (7.5YR 6/3), 30/55/15/0, fine to medium sand, very dense, fine to medium gravel, moist.	
	MC	130			1737.5	
25	MC	35-57-100 (157)			Silty SAND with Gravel, light brown (7.5YR 6/3), 30/55/15/0, fine to medium sand, very dense, fine to medium gravel, moist.	
	MC	27-45-42 (87)			Silty SAND with Gravel, light brown (7.5YR 6/3), 30/55/15/0, fine to medium sand, very dense, fine to medium gravel, moist.	
	MC	6-13-24 (37)			1736.5	
	MC	8-11-15 (26)			(SW-SM) SAND with Silt, strong brown (7.5YR 5/4), 10/80/10/0, fine to coarse sand, very dense, well graded, moist.	
30	MC				(SM) Silty SAND, light brown (7.5YR 6/3), 10/70/20/0, fine to medium sand, very dense, fine to medium gravel, moist.	
	MC				Silty SAND, light brown (7.5YR 6/3), 10/70/20/0, fine to medium sand, very dense, fine to medium gravel, moist, cemented nodules.	
	CC				1729.5	
35					(ML) SILT, reddish brown (5YR 5/4), 0/10/90/0, fine to medium sand, very stiff, moist.	

(Continued Next Page)



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BORING NUMBER E2-4

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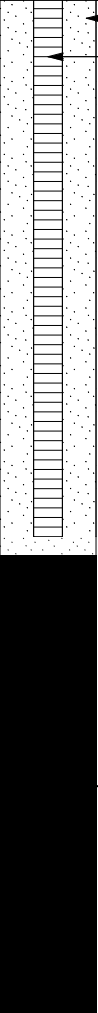
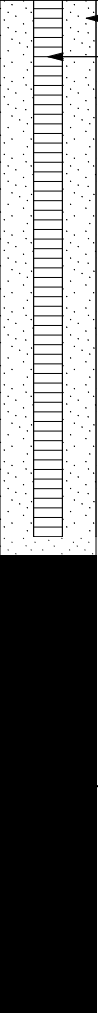
CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 15:55 - \\TTS318FS1.TT.LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS.CES.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
35	MC	9-14-17 (31)			(ML) (continued) SILT, reddish brown (5YR 5/4), 0/10/90/0, low to medium plasticity, fine to medium sand, hard, moist.	 <p>#3 Monterey Sand.</p> <p>6" Schedule 40 PVC 0.020" slotted screen.</p>
	CC					
40	MC	3-3-5 (8)			SILT, reddish brown (5YR 5/4), 0/10/90/0, low to medium plasticity, fine to medium sand, medium stiff, moist.	
	CC					
45	MC	3-4-7 (11)			SILT, reddish brown (5YR 5/4), 0/10/90/0, no to low plasticity, fine to medium sand, stiff, moist.	
	CC					
50	MC	5-6-8 (14)			SILT, reddish brown (5YR 5/4), 0/10/90/0, no to low plasticity, fine to medium sand, stiff, moist.	 <p>Hydrated bentonite chips.</p>
	CC					
55	MC	4-8-11 (19)			SILT, reddish brown (5YR 5/4), 0/10/90/0, no to low plasticity, fine to medium sand, very stiff, moist.	
	CC					
60	MC	15-25-27 (52)			SILT, reddish brown (5YR 5/4), 0/10/90/0, no to low plasticity, fine to medium sand, hard, moist.	

61.5

1697.0

Bottom of borehole at 61.5 feet.



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BORING NUMBER E2-5

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DATE STARTED 7/19/16

COMPLETED 8/9/16

GROUND ELEVATION 1758.55 ft **HOLE SIZE** 12 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 32.00 ft / Elev 1726.55 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 27.70 ft / Elev 1730.85 ft

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US GDT - 11/22/16 15:55 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\8760008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS CES.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5					(SW) SAND with Silt and Gravel, brown (7.5YR 5/3), 20/70/10/0, fine to medium sand, fine to medium gravel, loose, moist.	
6.5					Moderate to strong cementation 6.5' to 10'.	
10						
10.0	MC	30-25-37-33 (62)			(SW-SM) SAND with Silt and Gravel, brown (7.5YR 5/3), 20/70/10/0, fine to medium sand, no to low plasticity (silt), very dense, well graded, moist.	Bentonite grout.
	MC	16-45-50 (95)			SAND with Silt and Gravel, brown (7.5YR 5/3), 20/70/10/0, fine to medium sand, no to low plasticity (silt), very dense, well graded, moist.	6" Schedule 40 PVC blank casing.
15	MC	27-80			SAND with Silt and Gravel, brown (7.5YR 5/3), 20/70/10/0, fine to medium sand, no to low plasticity (silt), very dense, well graded, moist.	
	MC	25-10-16-33 (26)			SAND with Silt and Gravel, brown (7.5YR 5/3), 10/75/15/0, fine to medium sand, no to low plasticity (silt), very dense, well graded, moist.	
	MC	12-22-27 (49)			SAND with Silt and Gravel, brown (7.5YR 5/3), 10/75/15/0, fine to medium sand, no to low plasticity (silt), very dense, well graded, moist.	
20	MC	30-35-39 (74)			SAND with Silt and Gravel, brown (7.5YR 5/3), 10/75/15/0, fine to medium sand, no to low plasticity (silt), very dense, well graded, moist.	
	MC	15-24-35-36 (59)			SAND with Silt, brown (7.5YR 5/4), 5/85/10/0, fine to medium sand, no to low plasticity (silt), very dense, moist, few fine gravel.	
	MC	11-22-25 (47)			SAND with Silt, brown (7.5YR 4/4), 5/85/10/0, fine to medium sand, no to low plasticity (silt), very dense, moist, few fine gravel.	Hydrated bentonite chip seal.
25	MC	100			SAND with Silt, brown (7.5YR 4/4), 5/85/10/0, fine to medium sand, no to low plasticity (silt), very dense, moist, few fine gravel.	
	MC	120			SAND with Silt, brown (7.5YR 5/4), 5/85/10/0, fine to medium sand, no to low plasticity (silt), very dense, moist, few fine gravel, little cemented nodules.	
	MC	6-17-89 (106)			SAND with Silt, brown (7.5YR 5/4), 5/85/10/0, fine to medium sand, no to low plasticity (silt), very dense, moist, few fine gravel, little cemented nodules.	
30	MC	110			SAND with Silt, brown (7.5YR 5/4), 5/85/10/0, fine to medium sand, no to low plasticity (silt), very dense, moist, few fine gravel, little cemented nodules.	
	MC				(SM) Silty SAND, 5/65/30/0	
					(SW-SM) SAND with Silt, brown (7.5YR 5/4), 5/85/10/0, fine to medium sand, no to low plasticity (silt), very dense, moist,	
35	CC					

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BORING NUMBER E2-5

PAGE 2 OF 2

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - Soil Flushing IRM

PROJECT NUMBER 117-7502016-K01

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
35	MC	4-8-13 (21)			few fine gravel, little cemented nodules. SAND with Silt, brown (7.5YR 5/4), 5/85/10/0, fine to medium sand, no to low plasticity (silt), very dense, wet, few fine gravel, little cemented nodules.	
	CC				SILT, reddish brown (5YR 5/4), 0/5/95/0, no to low plasticity, fine to medium sand, very stiff, moist. (ML) (continued)	
40	MC	3-6-6 (12)			SILT, reddish brown (5YR 5/4), 0/5/95/0, no to low plasticity, fine to medium sand, stiff, moist.	← #3 Monterey Sand. ← 6" Schedule 40 PVC 0.020" slotted screen.
	CC					
45	MC	4-4-5 (9)			SILT, reddish brown (5YR 5/4), 0/5/95/0, no to low plasticity, fine to medium sand, stiff, moist.	
	CC					
50	MC	3-5-6 (11)			SILT, reddish brown (5YR 5/4), 0/5/95/0, no to low plasticity, fine to medium sand, stiff, moist.	
	CC					
55	MC	4-6-9 (15)			SILT, reddish brown (5YR 5/4), 0/5/95/0, no to low plasticity, fine to medium sand, stiff, moist.	
	CC					← Hydrated bentonite chips.
60	MC	11-27-32 (59)			SILT, reddish brown (5YR 5/4), 0/5/95/0, no to low plasticity, fine to medium sand, hard, moist.	
				61.5	Bottom of borehole at 61.5 feet.	1697.1

ENVIRONMENTAL BH - GINT STD US.GDT - 11/22/16 15:55 - \\TTS318FS1.TT\LOCAL\CES\PROJECTS\87600008-NERT-K01\WORKING\SOIL FLUSHING IRM\FIELD PROGRAM\BORING LOGS\GINT\SOIL FLUSHING IRM LOGS CES.GPJ



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BORING NUMBER DFS-01

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 8/11/16

COMPLETED 8/11/16

GROUND ELEVATION 1757.48 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 25.00 ft / Elev 1732.48 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Soil boring location backfilled with hydrated bentonite chips and bentonite grout.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINT\DFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5	MC	6-7-8 (15)			(SM) Silty SAND with Gravel, light brown (7.5YR 6/4), 30/50/20/0, fine to medium sand, fine to medium gravel, loose, moist. Moderate to strong cementation 4' to 5'.	
10	CC				Silty SAND, brown (7.5YR 5/3), 10/75/15/0, fine to medium sand, fine to medium gravel, medium dense, moist.	
15	MC	20-27-28 (55)			Silty SAND, brown (7.5YR 5/3), 10/75/15/0, fine to medium sand, fine to medium gravel, very dense, moist.	
12.5	CC				Moderate to strong cementation 12' to 12.5'. (SW) SAND, pinkish white (5YR 8/2), 5/85/10/1, fine to coarse sand, loose, well graded, moist.	1745.0 ← Bentonite grout.
15.0	MC	10-12-14 (26)			(SM) Silty SAND, brown (7.5YR 5/3), 10/75/15/0, fine to medium sand, fine to medium gravel, medium dense, moist.	1742.5
20	CC				No recovery.	
	NR	50-50-50				

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BORING NUMBER DFS-01

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINT\DFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	○	(100)			(SM) (continued)	
25	CC					
	MC	8-6-3 (9)			(ML) SILT, brown (7.5YR 4/4), 0/5/95/0, no to low plasticity, stiff, wet, trace fine sand.	
30	CC					
	MC	5-10-15 (25)			SILT, brown (7.5YR 4/4), 0/5/95/0, no to low plasticity, very stiff, wet, trace fine sand.	Hydrated bentonite chips.

Bottom of borehole at 31.5 feet.



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BORING NUMBER DFS-02

PAGE 1 OF 2

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 8/11/16

COMPLETED 8/11/16

GROUND ELEVATION 1757.43 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 25.00 ft / Elev 1732.43 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING ---

LOGGED BY Daniel Keady

CHECKED BY M. Crews

NOTES Soil boring location backfilled with hydrated bentonite chips and bentonite grout.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \ITTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINT\DFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5					(SM) Silty SAND with Gravel, light brown (7.5YR 6/4), 30/50/20/0, fine to medium sand, fine to medium gravel, loose, moist.	
10	MC	7-10-10 (20)			Silty SAND, brown (7.5YR 5/3), 10/75/15/0, fine to medium sand, fine to medium gravel, loose, moist, cemented chunks.	
15	CC					
20	MC	4-24-40 (64)			Silty SAND, brown (7.5YR 5/4), 5/65/30/0, fine sand, fine gravel, very dense, moist.	
	CC					
	NR	50-50-50			No recovery, cemented fragments.	

← Bentonite grout.

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BORING NUMBER DFS-02

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINT\DFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	○	(100)			(SM) (continued)	
25	CC					
	MC	7-5-5 (10)			(ML) SILT, brown (7.5YR 4/4), 0/5/95/0, no to low plasticity, fine sand, stiff, wet.	
	CC					
30	MC	7-12-20 (32)			SILT, brown (7.5YR 4/4), 0/5/95/0, no to low plasticity, fine sand, hard, wet.	Hydrated bentonite chips.

Bottom of borehole at 31.5 feet.



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BORING NUMBER DFW-03

PAGE 1 OF 3

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 8/12/16

COMPLETED 8/17/16

GROUND ELEVATION 1764.76 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 34.00 ft / Elev 1730.76 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 31.63 ft / Elev 1733.13 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINT\DFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5	MC	28-27-30 (57)			(SM) Silty SAND with Gravel, light brown (7.5YR 6/4), 35/50/15/0, fine to medium sand, fine to medium gravel, very dense, moist.	
					4.8	1760.0
					5.0	1759.8
	CC				No Recovery	
10	MC	25-57-27 (84)			(SM) Silty SAND with Gravel, reddish brown (5YR 5/4), 35/50/15/0, fine to medium sand, fine to medium gravel, no plasticity, very dense, moist, some large cobbles.	
	CC					
15	MC	30-27-30 (57)			Silty SAND with Gravel, reddish brown (5YR 5/3), 25/60/15/0, fine to medium sand, fine to medium gravel, very dense, moist, some large cobbles.	
	CC				Silty SAND, reddish brown (5YR 5/3), 10/60/30/0, fine to medium sand, little gravel.	
						2" Schedule 40 PVC blank casing.
						Bentonite grout.
20	NR	26-27-30			Silty SAND with Gravel, reddish brown (5YR 5/3), 35/50/15/0, fine to medium sand, fine to coarse gravel, very dense, moist.	
					Silty SAND, reddish brown (5YR 5/3), 10/65/25/0, fine to coarse sand, moist, little fine to coarse gravel.	

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BORING NUMBER DFW-03

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTDFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
		(57)			(SM) (continued)	
25	CC				Silty SAND, reddish brown (5YR 5/3), 15/70/15/0, fine to coarse sand, moist, little fine to coarse gravel.	
	MC	73-34-65 (99)			Silty SAND with Gravel, reddish brown (5YR 4/4), 25/50/25/0, fine to coarse sand, fine to coarse gravel, moist. Silty SAND with Gravel, reddish brown (5YR 5/4), 30/50/20/0, fine to coarse sand, fine gravel, moist.	
	CC				Silty SAND with Gravel, reddish brown (5YR 4/4), 10/65/25/0, fine to coarse sand, fine gravel, moist.	
30	MC	14-18-42 (60)			Silty SAND with Gravel, reddish brown (5YR 4/4), 15/60/25/0, fine to coarse sand, fine gravel, moist. Silty SAND, dark reddish brown (5YR 3/2), 5/75/20/0, fine to coarse sand, moist.	
	CC				Silty SAND, pinkish gray (5YR 6/2), 10/50/40/0, fine sand, dense, moist. Silty SAND, dark reddish brown (5YR 3/2), 5/75/20/0, fine to coarse sand, moist.	
35	MC	6-6-12 (18)			(ML)	Hydrated bentonite chip seal.
	CC				SILT with Sand, reddish brown (5YR 5/3), 5/10/85/0, low plasticity, fine sand, wet.	
40	MC	7-7-12 (19)				#3 Monterey Sand.
	CC					2" Schedule 40 PVC 0.020" slotted screen.
45						

(Continued Next Page)



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BORING NUMBER DFW-03

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45						
	MC				(ML) (continued) SILT with Sand, reddish brown (5YR 5/3), 5/10/85/0, low plasticity, fine sand, wet.	Hydrated bentonite chips.
				46.5	1718.3	

Bottom of borehole at 46.5 feet.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINT\DFS-DFW LOGS.GPJ



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BORING NUMBER DFW-04

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 8/12/16

COMPLETED 8/16/16

GROUND ELEVATION 1765.71 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 32.00 ft / Elev 1733.71 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 32.41 ft / Elev 1733.30 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINT\DFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5	MC	29-100			(SM) Silty SAND with Gravel, light brown (7.5YR 6/4), 35/50/15/0, fine to medium sand, fine to medium gravel, very dense, moist.	
	CC				Silty SAND with Gravel, light brown (7.5YR 6/4), 40/45/15/0, fine to medium sand, fine to medium gravel, very dense, moist, some cobbles.	
10	MC	53-65			Silty SAND with Gravel, light brown (7.5YR 6/4), 40/45/15/0, fine to medium sand, fine to medium gravel, very dense, moist, some cobbles.	
	CC					
15	MC	29-32-35 (67)			Silty SAND with Gravel, reddish brown (5YR 5/4), 25/60/15/0, fine to medium sand, fine to medium gravel, very dense, moist.	
	CC					
20	NR	11-12-50			Silty SAND with Gravel, light brown (7.5YR 6/3), 30/50/20/0, fine to medium sand, fine to medium gravel, dense, moist.	
					Silty SAND with Gravel, reddish brown (5YR 5/4), 35/50/15/0, fine to medium sand, fine to medium gravel,	

2" Schedule 40
PVC blank casing.

Bentonite grout.

(Continued Next Page)



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BORING NUMBER DFW-04

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\187600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTDFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
		(62)			medium dense, moist. (SM) (continued)	
25	CC					
	MC	11-50-27 (77)			Silty SAND with Gravel, reddish brown (5YR 5/4), 20/60/20/0, fine to medium sand, fine gravel, dense, moist.	
	CC					
30	MC	45-100			(SW) SAND with Gravel, reddish brown (5YR 5/4), 40/50/10/0, medium sand, fine gravel, dense, well graded, moist.	
	CC					
35	MC	121			SAND with Gravel, brown (7.5YR 4/3), 40/50/10/0, medium sand, fine gravel, dense, well graded, wet.	
	CC					
40	MC	20-20-38 (58)			(ML) Sandy SILT, reddish yellow (5YR 6/6), 5/40/55/0, low plasticity, fine sand, wet.	
	CC					
45						

Hydrated bentonite
chip seal.

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BORING NUMBER DFW-04

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTDFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45						
	MC	4-6-6 (12)			(ML) (continued) Sandy SILT, reddish yellow (5YR 6/6), 5/40/55/0, low plasticity, fine sand, wet.	<p>#3 Monterey Sand.</p> <p>2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	2-7-10 (17)			Silty SAND, reddish yellow (5YR 6/6), 5/40/55/0, low plasticity, fine sand, wet.	
				51.5		1714.2

Bottom of borehole at 51.5 feet.



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BORING NUMBER DFW-05

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 8/11/16

COMPLETED 8/16/16

GROUND ELEVATION 1765.79 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 33.00 ft / Elev 1732.79 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 32.39 ft / Elev 1733.40 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINT\DFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5	MC	26-60			(SM) Silty SAND with Gravel, light brown (7.5YR 6/4), 35/50/15/0, fine to medium sand, fine to medium gravel, very dense, moist.	
	CC				Silty SAND with Gravel, light brown (7.5YR 6/4), 40/45/15/0, fine to medium sand, fine to medium gravel, very dense, moist.	
10	MC	50			Silty SAND with Gravel, light brown (7.5YR 6/4), 40/45/15/0, fine to coarse sand, fine to medium gravel, medium dense to very dense, moist.	
	CC				Silty SAND, reddish brown (5YR 4/4), 20/60/20/0, fine to coarse sand, fine gravel, very dense, moist, trace coarse gravel.	
15	MC	59-100		15.0	No recovery	1750.8
	CC			16.5		1749.3
20	NR	8-13-11			(SM) Silty SAND, reddish brown (5YR 4/4), 15/65/20/0, fine to coarse sand, fine gravel, very dense, moist, trace coarse gravel.	
					Silty SAND, brown (7.5YR 4/3), 20/60/20/0, fine to coarse sand, very dense, moist, trace coarse gravel.	

2" Schedule 40
PVC blank casing.

Bentonite grout.

(Continued Next Page)



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BORING NUMBER DFW-05

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTDFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
		(24)			(SM) (continued)	
25	CC					
	MC	16-18-27 (45)			Silty SAND, reddish brown (5YR 5/4), 10/70/20/0, fine to coarse sand, very dense, moist, trace coarse gravel.	
	CC					
30	MC	21-22-41 (63)			Silty SAND, reddish gray (5YR 5/2), 10/60/30/0, coarse sand, very dense, moist, some coarse gravel.	
	CC					
35	MC	15-110			GRAVEL, dark reddish brown (5YR 3/2), 70/20/10/0, fine to coarse gravel with silt and sand, very dense, well graded, moist.	
	CC					
					GRAVEL, dark reddish brown (5YR 3/2), 70/20/10/0, cemented fine to coarse gravel with silt and sand, very dense, well graded, moist.	
40	MC	14-21-33 (54)			(ML) Sandy SILT with Gravel, pale brown (10YR 6/3), 10/20/70/0, no plasticity, hard, moist.	
	CC					
45						

Hydrated bentonite chip seal.

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CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTDFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	4-4-6 (10)			(ML) (continued) SILT with Sand, reddish brown (5YR 5/4), 5/15/80/0, low plasticity, hard, moist, trace gravel.	<p>#3 Monterey Sand.</p> <p>2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
50	CC					
	MC	5-6-8 (14)			SILT with Sand, reddish brown (5YR 5/4), 5/15/80/0, low plasticity, hard, moist, trace gravel.	
				51.5	1714.3	

Bottom of borehole at 51.5 feet.



TETRA TECH, INC.

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BORING NUMBER DFW-06

PAGE 1 OF 3

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DATE STARTED 8/11/16

COMPLETED 8/18/16

GROUND ELEVATION 1772.24 ft

HOLE SIZE 8 in

DRILLING CONTRACTOR National EWP

WATER LEVEL AT TIME OF DRILLING 37.00 ft / Elev 1735.24 ft

DRILLING METHOD Hollow Stem Auger

WATER LEVEL AFTER DRILLING 35.41 ft / Elev 1736.83 ft

LOGGED BY Eric Peirce

CHECKED BY M. Crews

NOTES Well completed with an 18" traffic-rated well box.

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING-IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTDFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Casing Type: Schedule 40 PVC
5	MC	17-37-48 (85)			(SM) Silty SAND with Gravel, light brown (7.5YR 6/4), 30/50/20/0, fine to medium sand, fine to medium gravel, very dense, moist.	
	CC				Silty SAND with Gravel, light brown (7.5YR 6/4), 40/40/20/0, fine to medium sand, fine to medium gravel, very dense, moist. Silty SAND with Gravel, reddish brown (5YR 5/4), 30/50/20/0, fine to medium sand, fine to medium gravel, very dense, moist. Silty SAND with Gravel, reddish brown (5YR 4/3), 15/60/25/0, fine to medium sand, coarse gravel, very dense, moist.	
10	MC	29-63			Silty SAND with Gravel, reddish brown (5YR 4/3), 40/40/20/0, fine to medium sand, fine to coarse gravel, very dense, moist.	
	CC					
15	MC	36-11-39 (50)			Silty SAND with Gravel, reddish brown (5YR 5/4), 25/60/15/0, fine to medium sand, fine to medium gravel, very dense, well graded, moist.	2" Schedule 40 PVC blank casing.
	CC					Bentonite grout.
20	NR	21-46-54			Silty SAND, reddish brown (5YR 5/4), 10/80/10/0, fine to medium sand, fine to medium gravel, very dense, well graded, moist. Silty SAND with Gravel, reddish brown (5YR 4/4), 25/55/20/0, fine to medium sand, fine gravel, very dense,	

(Continued Next Page)



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BORING NUMBER DFW-06

PAGE 2 OF 3

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
		(100)			well graded, moist. (SM) (continued)	
25	CC					
	MC	15-20-25 (45)			Silty SAND with Gravel, reddish brown (5YR 4/4), 30/40/30/0, fine to medium sand, fine gravel, very dense, well graded, moist.	
	CC					
30	MC	41-28-27 (55)				
	CC					
35	MC	11-14				
	CC					
40	MC	3-4-11 (15)				
	CC					
45						

(Continued Next Page)



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BORING NUMBER DFW-06

PAGE 3 OF 3

CLIENT Nevada Environmental Response Trust (NERT)

PROJECT NAME NERT - AP Area Treatability Study

PROJECT NUMBER 194-87600012-M13

PROJECT LOCATION Henderson, NV

ENVIRONMENTAL BH - GINT STD US.GDT - 11/10/17 12:51 - \\TTS318FS1\CES\PROJECTS\87600014-NERT-M12\WORKING\IN-SITU CR TREATABILITY TEST\FIELD PROGRAM\BORING LOGS\GINTDFS-DFW LOGS.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
45	MC	3-4-7 (11)			(ML) (continued) SILT with Sand, reddish brown (5YR 5/3), 0/20/80/0, low plasticity, fine sand, wet.	<p>#3 Monterey Sand.</p> <p>2" Schedule 40 PVC 0.020" slotted screen.</p> <p>Hydrated bentonite chips.</p>
	CC					
50	MC	4-7-11 (18)			SILT with Sand, reddish brown (5YR 5/3), 0/20/80/0, low plasticity, fine sand, wet.	
				51.5	1720.7	

Bottom of borehole at 51.5 feet.

Appendix B

Summary Data Tables

- B-1 Summary of Down Flushing Soil Physical Property Results**
- B-2 Summary of Down Flushing Soil Analytical Results – Plot 1**
- B-3 Summary of Down Flushing Soil Analytical Results – Plot 2**
- B-4 Summary of Up Flushing Soil Analytical Results – Plot 1**
- B-5 Summary of Up Flushing Soil Analytical Results – Plot 2**
- B-6 Summary of Baseline Groundwater Analytical Results – Plot 1**
- B-7 Summary of Baseline Groundwater Analytical Results – Plot 2**
- B-8 Summary of Performance Groundwater Analytical Results – Plot 1**
- B-9 Summary of Performance Groundwater Analytical Results – Plot 2**

Table B-1 - Summary of Down Flushing Soil Physical Property Results

Boring Location	Sample Depth (ft bgs)	Sample ID	Sample Date	Moisture (%)	Dry Bulk Density (lb/ft ³)	Specific Gravity	Total Porosity (%)	Soil Type*
DFSB-03	10	DFSB-03-10'	08/11/16	7.9	101.76	2.70	39.6	Fine-Medium SAND with Silt
DFCB-03	11	DFCB-03-11'	03/05/18	8.9	99.50	2.68	40.3	
DFSB-04	15	DFSB-04-15'	08/11/16	13.9	76.79	2.63	53.3	Silty Fine SAND
DFCB-04	15	DFCB-04-15'	03/05/18	12.6	84.80	2.69	49.3	
DFSB-05	20	DFSB-05-20'	08/11/16	20.6	78.03	2.66	52.8	Silty Fine-Coarse SAND with Gravel
DFCB-05	20	DFCB-05-20'	03/05/18	11.4	100.60	2.65	39	
DFSB-06	25	DFSB-06-25'	08/11/16	9.5	92.39	2.56	42.2	Silty Fine-Medium SAND
DFCB-06	25	DFCB-06-25'	03/05/18	30.0	99.50	2.72	41.2	
DFSB-07	30	DFSB-07-30'	08/11/16	43.5	68.67	2.59	57.5	Silt/CLAY with Fine Sand
DFCB-07	30	DFCB-07-30'	03/05/18	53.9	68.20	2.64	58.5	
DFSB-08	35	DFSB-08-35'	08/11/16	59.0	59.30	2.55	62.9	Sandy GRAVEL with Silt/Clay
DFCB-08	35	DFCB-08-35'	03/05/18	51.9	71.80	2.70	57.2	
DFSB-09	40	DFSB-09-40'	08/11/16	100.4	36.21	2.53	77.2	Gravelly Silt/CLAY with Sand
DFCB-09	40	DFCB-09-40'	03/05/18	68.7	59.60	2.72	64.8	
DFSB-10	10	DFSB-10-10'	08/11/16	15.3	84.27	2.61	48.3	Gravelly SAND with Silt
DFCB-10	10	DFCB-10-10'	03/05/18	11.0	113.00	2.67	32.1	
DFSB-12	20	DFSB-12-20'	08/11/16	13.7	73.67	2.63	55.3	Silty Fine-Medium SAND with Gravel
DFCB-12	20	DFCB-12-20'	03/05/18	18.1	88.20	2.60	45.5	
DFSB-14	30	DFSB-14-30'	08/11/16	21.9	76.16	2.61	53.5	Clayey Fine-medium SAND with Gravel
DFCB-14	30	DFCB-14-30'	03/05/18	39.4	82.70	2.67	50.3	
DFSB-16	40	DFSB-16-40'	08/11/16	53.0	63.05	2.56	60.7	Sandy CLAY
DFCB-16	40	DFCB-16-40'	03/05/18	71.2	57.80	2.69	65.5	

Notes:

lb/ft³ Pounds per cubic feet
 % Percent

* Soil type based on results of the sieve analysis.

Table B-2 - Summary of Down Flushing Soil Analytical Results
Plot 1

Boring Location	Sample Depth (ft bgs)	Baseline Sample ID	Baseline Sample Date	Perchlorate by USEPA Method 314.0 (mg/kg)	Hexavalent Chromium by USEPA Method 7199 (mg/kg)	Confirmation Sample ID	Confirmation Sample Date	Perchlorate by USEPA Method 314.0 (mg/kg)	Hexavalent Chromium by USEPA Method 7199 (mg/kg)
DFSB-01 /DFCB-01	0.5	DFSB-01-0.5'	07/06/16	210	<0.17	DFCB-01-0.5-20180223	02/23/18	65	<0.17
	5.0	DFSB-01-5'	07/06/16	210	<0.16	DFCB-01-5.0-20180227	02/27/18	260	<0.16
	10.0	DFSB-01-10'	07/08/16	91	<0.17	DFCB-01-10.0-20180227	02/27/18	0.55 J+	<0.17
	15.0	DFSB-01-15'	07/08/16	340 J+	0.50	DFCB-01-15.0-20180227	02/27/18	6.9 J	<0.16
						DFCB-01-15.0-20180227-FD	02/27/18	0.39 J	<0.16
	20.0	DFSB-01-20'	07/08/16	440 J+	0.18 J	DFCB-01-20.0-20180227	02/27/18	0.48	<0.17
		DFSB-01-20'-DUP	07/08/16	290 J+	<0.16				
	25.0	DFSB-01-25'	07/08/16	120 J+	<0.18	DFCB-01-25.0-20180227	02/27/18	0.49	<0.19
	30.0	DFSB-01-30'	07/08/16	430 J+	<0.25	DFCB-01-30.0-20180227	02/27/18	80	<0.24
	35.0	DFSB-01-35'	07/08/16	370 J+	<0.26	DFCB-01-35.0-20180227	02/27/18	130	<0.24
DFSB-02 /DFCB-02	40.0	DFSB-01-40'	07/08/16	520	<0.30	DFCB-01-40.0-20180227	02/27/18	200	<0.27
	0.5	DFSB-02-0.5'	07/05/16	2.4	<0.16	DFCB-02-0.5-20180223	02/23/18	0.52	<0.16
	5.0	DFSB-02-5'	07/05/16	1.9	<0.16	DFCB-02-5.0-20180226	02/26/18	0.60 J	<0.18
						DFCB-02-5.0-20180226-FD	02/26/18	0.089 J	<0.18
	10.0	DFSB-02-10'	07/07/16	5.7 J	<0.18	DFCB-02-10.0-20180226	02/26/18	0.45 J	<0.17
		DFSB-02-10'-DUP	07/07/16	45 J	<0.19				
	15.0	DFSB-02-15'	07/08/16	0.071 J+	<0.19	DFCB-02-15.0-20180226	02/26/18	0.021 J	<0.16
	20.0	DFSB-02-20'	07/08/16	20	<0.17	DFCB-02-20.0-20180226	02/26/18	0.026 J	<0.17
	25.0	DFSB-02-25'	07/08/16	39	<0.18	DFCB-02-25.0-20180226	02/26/18	0.040 J	0.18 J
	30.0	DFSB-02-30'	07/07/16	350	<0.26	DFCB-02-30.0-20180226	02/26/18	170	<0.22
DFSB-03 /DFCB-03	35.0	DFSB-02-35'	07/07/16	610	<0.26	DFCB-02-35.0-20180226	02/26/18	140	<0.24
		DFSB-02-35'-DUP	07/07/16	610	<0.27				
	40.0	DFSB-02-40	07/07/16	1,300	<0.34	DFCB-02-40.0-20180226	02/26/18	380	<0.30
						DFCB-02-40.0-20180226-FD	02/26/18	440	<0.30
	0.5	DFSB-03-0.5'	07/05/16	3.5	<0.16	--	--	--	--
	5.0	DFSB-03-5'	07/05/16	5.3	<0.17	DFCB-03-5.0-20180302	03/02/18	0.21	<0.16
	10.0	DFSB-03-10'	07/06/16	12	<0.18	DFCB-03-10.0-20180302	03/02/18	0.13	<0.16
	15.0	DFSB-03-15'	07/06/16	0.35	<0.17	DFCB-03-15.0-20180302	03/02/18	0.83 J	<0.16
						DFCB-03-15.0-20180302-FD	03/02/18	7.7 J	<0.16
	20.0	DFSB-03-20'	07/06/16	23	<0.17	DFCB-03-20.0-20180302	03/02/18	0.24	<0.16
DFSB-04 /DFCB-04	25.0	DFSB-03-25'	07/06/16	950	0.27 J	DFCB-03-25.0-20180302	03/02/18	2.4	<0.18
	30.0	DFSB-03-30'	07/06/16	560	<0.27	DFCB-03-30.0-20180302	03/02/18	180	<0.24
		DFSB-03-30'-DUP	07/06/16	500	<0.27				
	35.0	DFSB-03-35'	07/06/16	480	<0.27	DFCB-03-35.0-20180302	03/02/18	180	<0.24
	40.0	DFSB-03-40	07/06/16	1,000	<0.28	DFCB-03-40.0-20180302	03/02/18	320	<0.28
	0.5	DFSB-04-0.5'	07/06/16	120	<0.17	DFCB-04-0.5-20180223	02/23/18	2.8	<0.17
	5.0	DFSB-04-5'	07/06/16	39.0	<0.16	DFCB-04-5.0-20180227	02/27/18	0.29	<0.17
	10.0	DFSB-04-10'	07/08/16	90	<0.18	DFCB-04-10.0-20180227	02/27/18	0.28 J-	<0.16
	15.0	DFSB-04-15'	07/08/16	130 J+	<0.16	DFCB-04-15.0-20180227	02/27/18	0.21	<0.21
		DFSB-04-15'-DUP	07/08/16	100	<0.16				
DFSB-04 /DFCB-04	20.0	DFSB-04-20'	07/09/16	170 J+	<0.18	DFCB-04-20.0-20180227	02/27/18	0.11	<0.16
	25.0	DFSB-04-25'	07/09/16	49 J+	<0.18	DFCB-04-25.0-20180227	02/27/18	0.34	<0.18
	30.0	DFSB-04-30'	07/09/16	280 J+	<0.21	DFCB-04-30.0-20180227	02/27/18	150	<0.25
						DFCB-04-30.0-20180227-FD	02/27/18	110	<0.23
	35.0	DFSB-04-35'	07/09/16	520	<0.29	DFCB-04-35.0-20180227	02/27/18	150	<0.23
	40.0	DFSB-04-40'	07/09/16	1,100	<0.39	DFCB-04-40.0-20180227	02/27/18	200 J	<0.30

Table B-2 - Summary of Down Flushing Soil Analytical Results
Plot 1

Boring Location	Sample Depth (ft bgs)	Baseline Sample ID	Baseline Sample Date	Perchlorate by USEPA Method 314.0 (mg/kg)	Hexavalent Chromium by USEPA Method 7199 (mg/kg)	Confirmation Sample ID	Confirmation Sample Date	Perchlorate by USEPA Method 314.0 (mg/kg)	Hexavalent Chromium by USEPA Method 7199 (mg/kg)
DFSB-05 /DFCB-05	0.5	DFSB-05-0.5'	07/06/16	20	0.41	DFCB-05-0.5-20180223	02/23/18	1.1	0.64
	5.0	DFSB-05-5'	07/06/16	9.9	0.27 J	DFCB-05-5.0-20180226	02/26/18	0.16	<0.17
	10.0	DFSB-05-10'	07/07/16	190 J	<0.18 UJ	DFCB-05-10.0-20180226	02/26/18	0.20 J	<0.17
		DFSB-05-10'-DUP	07/07/16	18 J	<0.19 UJ	DFCB-05-10.0-20180226-FD	02/26/18	17 J	<0.17
	15.0	DFSB-05-15'	07/07/16	290	<0.19	DFCB-05-15.0-20180226	02/26/18	0.23 J-	<0.17
	20.0	DFSB-05-20'	07/07/16	220	<0.18	DFCB-05-20.0-20180226	02/26/18	0.058	<0.17
	25.0	DFSB-05-25'	07/07/16	100	<0.16	DFCB-05-25.0-20180226	02/26/18	0.43	<0.25
	30.0	DFSB-05-30'	07/07/16	180	<0.23	DFCB-05-30.0-20180226	02/26/18	350	<0.25
	35.0	DFSB-05-35'	07/07/16	540	<0.28	DFCB-05-35.0-20180226	02/26/18	480	<0.24
		DFSB-05-35'-DUP	07/07/16	400	<0.27				
	40.0	DFSB-05-40'	07/07/16	1,300	<0.36	DFCB-05-40.0-20180226	02/26/18	590	<0.24
DFSB-06 /DFCB-06	0.5	DFSB-06-0.5'	07/07/16	6.7	<0.16	--	--	--	--
	5.0	DFSB-06-5'	07/07/16	9.8	<0.17	DFCB-06-5.0-20180302	03/02/18	290	<0.16
	10.0	DFSB-06-10'	07/07/16	7.2	<0.18	DFCB-06-10.0-20180302	03/02/18	0.12	<0.18
	15.0	DFSB-06-15'	07/07/16	5.0 J	<0.19 UJ	DFCB-06-15.0-20180302	03/02/18	0.23	<0.16
	20.0	DFSB-06-20'	07/07/16	75	<0.17	DFCB-06-20.0-20180302	03/02/18	0.079 J	<0.17
	25.0	DFSB-06-25'	07/07/16	3.2	<0.19	DFCB-06-25.0-20180302	03/02/18	0.31	<0.17
		DFSB-06-30'	07/07/16	390	<0.27	DFCB-06-30.0-20180302	03/02/18	270	<0.27
	30.0	DFSB-06-30'-DUP	07/07/16	440	<0.27				
	35.0	DFSB-06-35'	07/07/16	360	<0.24	DFCB-06-35.0-20180302	03/02/18	230	<0.25
DFSB-07 /DFCB-07	0.5	DFSB-07-0.5'	07/06/16	3.4	0.44	DFCB-07-0.5-20180223	02/23/18	1.1	<0.16
	5.0	--	--	--	--	DFCB-07-5.0-20180226	02/26/18	1.7	<0.16
	10.0	DFSB-07-10'	07/11/16	100	0.50	DFCB-07-10.0-20180226	02/26/18	2.0	<0.17
	15.0	DFSB-07-15'	07/11/16	80 J	0.28 J	DFCB-07-15.0-20180226	02/26/18	0.19	<0.19
		DFSB-07-15'-DUP	07/11/16	370 J	0.33 J				
	20.0	DFSB-07-20'	07/11/16	48 J+	0.24 J	DFCB-07-20.0-20180226	02/26/18	0.51	<0.18
	25.0	DFSB-07-25'	07/11/16	210 J+	<0.17	DFCB-07-25.0-20180226	02/26/18	0.24 J	<0.21
						DFCB-07-25.0-20180226-FD	02/26/18	2.7 J	<0.20
	30.0	DFSB-07-30'	07/11/16	180 J+	<0.25	DFCB-07-30.0-20180226	02/26/18	140	<0.26
DFSB-08 /DFCB-08	0.5	DFSB-08-0.5'	07/07/16	360	0.29 J	DFCB-08-0.5-20180223	02/23/18	1.5	<0.16
	5.0	DFSB-08-5'	07/07/16	540	<0.16	DFCB-08-5.0-20180226	02/26/18	0.27	<0.17
	10.0	DFSB-08-10'	07/11/16	460 J+	<0.16	DFCB-08-10.0-20180226	02/26/18	0.47	<0.16
	15.0	DFSB-08-15'	07/11/16	110	<0.16	DFCB-08-15.0-20180226	02/26/18	0.89 J	<0.17
						DFCB-08-15.0-20180226-FD	02/26/18	0.091 J	<0.16
	20.0	DFSB-08-20'	07/11/16	72 J+	<0.16	DFCB-08-20.0-20180226	02/26/18	0.27	<0.16
		DFSB-08-20'-DUP	07/11/16	65 J+	<0.16				
	25.0	DFSB-08-25'	07/11/16	270 J+	<0.18	DFCB-08-25.0-20180226	02/26/18	0.70 J+	<0.20
	30.0 - 31.0	DFSB-08-31'	07/11/16	150 J+	<0.17	DFCB-08-30.0-20180226	02/26/18	71	<0.26
	35.0	DFSB-08-35'	07/11/16	250 J+	<0.25	DFCB-08-35.0-20180226	02/26/18	240	<0.27
	40.0	DFSB-08-40'	07/11/16	380 J+	<0.24	DFCB-08-40.0-20180226	02/26/18	250	<0.27

Table B-2 - Summary of Down Flushing Soil Analytical Results
Plot 1

Boring Location	Sample Depth (ft bgs)	Baseline Sample ID	Baseline Sample Date	Perchlorate by USEPA Method 314.0 (mg/kg)	Hexavalent Chromium by USEPA Method 7199 (mg/kg)	Confirmation Sample ID	Confirmation Sample Date	Perchlorate by USEPA Method 314.0 (mg/kg)	Hexavalent Chromium by USEPA Method 7199 (mg/kg)
DFSB-09 /DFCB-09	0.5	DFSB-09-0.5'	07/06/16	660	<0.16	--	--	--	--
	5.0	DFSB-09-5'	07/06/16	490	<0.16	DFCB-09-5.0-20180302	03/02/18	0.46	<0.17
	10.0	DFSB-09-10'	07/08/16	170 J+	<0.18	DFCB-09-10.0-20180302	03/02/18	0.16	<0.17
	15.0	DFSB-09-15'	07/08/16	150 J	<0.17	DFCB-09-15.0-20180302	03/02/18	1.6	<0.17
		DFSB-09-15'-DUP	07/08/16	19 J	<0.21				
	20.0	DFSB-09-20'	07/08/16	29 J+	<0.20	DFCB-09-20.0-20180302	03/02/18	0.22	<0.19
	25.0	DFSB-09-25'	07/08/16	31 J+	<0.18	DFCB-09-25.0-20180302	03/02/18	0.23	<0.18
	30.0	DFSB-09-30'	07/08/16	360 J+	<0.27	DFCB-09-30.0-20180302	03/02/18	330	<0.25
	35.0	DFSB-09-35'	07/08/16	240 J+	<0.23	DFCB-09-35.0-20180302	03/02/18	320	<0.24
	40.0	DFSB-09-40'	07/08/16	430 J+	<0.27	DFCB-09-40.0-20180302	03/02/18	650	<0.31

Notes:

DUP	Duplicate
FD	Field Duplicate
ft bgs	Feet below ground surface
ID	Identification
mg/kg	Milligram per kilogram
USEPA	United States Environmental Protection Agency
--	No sample available
<	Denotes concentration is less than the laboratory method detection limit indicated
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Table B-3 - Summary of Down Flushing Soil Analytical Results
Plot 2

Boring Location	Sample Depth (ft bgs)	Baseline Sample ID	Baseline Sample Date	Perchlorate by USEPA Method 314.0 (mg/kg)	Hexavalent Chromium by USEPA Method 7199 (mg/kg)	Confirmation Sample ID	Confirmation Sample Date	Perchlorate by USEPA Method 314.0 (mg/kg)	Hexavalent Chromium by USEPA Method 7199 (mg/kg)
DFSB-10 /DFCB-10	0.5	DFSB-10-0.5'	07/07/16	0.14 J+	<0.17	DFCB-10-0.5-20180226	02/26/18	0.36	<0.16
	5.0	DFSB-10-5'	07/07/16	0.48 J+	<0.17	DFCB-10-5.0-20180301	03/01/18	0.19 J	<0.18
						DFCB-10-5.0-20180301-FD	03/01/18	0.061 J	<0.18
	10.0	DFSB-10-10'	07/14/16	0.77	<0.17	DFCB-10-10.0-20180301	03/01/18	0.042 J	<0.17
	15.0	DFSB-10-15'	07/14/16	4.6	0.18 J	DFCB-10-15.0-20180301	03/01/18	0.029 J	<0.17
	20.0	DFSB-10-20'	07/14/16	18	<0.16	DFCB-10-20.0-20180301	03/01/18	0.069	<0.19
	25.0	DFSB-10-25'	07/14/16	41	<0.17	DFCB-10-25.0-20180301	03/01/18	0.058	<0.17
	30.0	DFSB-10-30'	07/14/16	28	<0.19	DFCB-10-30.0-20180301	03/01/18	15	<0.20
	35.0	DFSB-10-35'	07/14/16	81	<0.24	DFCB-10-35.0-20180301	03/01/18	61	<0.23
		DFSB-10-35'-DUP	07/14/16	80	<0.24				
	40.0	DFSB-10-40'	07/14/16	140	<0.25	DFCB-10-40.0-20180301	03/01/18	66	<0.23
DFSB-11 /DFCB-11	0.5	DFSB-11-0.5'	07/07/16	240	<0.15	DFCB-11-0.5-20180226	02/26/18	0.025 J	<0.16
	5.0	DFSB-11-5'	07/07/16	17	<0.16	DFCB-11-5.0-20180228	02/28/18	0.15	<0.17
	10.0	DFSB-11-10'	07/14/16	16.0	<0.16	DFCB-11-10.0-20180228	02/28/18	0.95	0.17 J
	15.0	DFSB-11-15'	07/14/16	0.40	<0.16	DFCB-11-15.0-20180228	02/28/18	0.064	<0.16
	20.0	DFSB-11-20'	07/14/16	1.5	<0.17	DFCB-11-20.0-20180228	02/28/18	0.034 J	<0.18
		DFSB-11-20'-DUP	07/14/16	1.8	<0.16				
	25.0	DFSB-11-25'	07/14/16	6.3	0.31 J	DFCB-11-25.0-20180228	02/28/18	0.12	<0.17
	30.0	DFSB-11-30'	07/14/16	53	<0.18	DFCB-11-30.0-20180228	02/28/18	21	<0.17
	35.0	DFSB-11-35'	07/14/16	140	<0.24	DFCB-11-35.0-20180228	02/28/18	56	<0.24
DFSB-12 /DFCB-12	0.5	DFSB-12-0.5'	07/07/16	0.30	<0.16	DFCB-12-0.5-20180226	02/26/18	0.11	0.23 J
						DFCB-12-5.0-20180227	02/27/18	0.020 J	<0.17
	10.0	DFSB-12-10'	07/13/16	33	<0.18	DFCB-12-10.0-20180227	02/27/18	0.061	<0.17
		DFSB-12-10'-DUP	07/13/16	46	<0.18				
	15.0	DFSB-12-15'	07/13/16	3.8	<0.16	DFCB-12-15.0-20180227	02/27/18	0.096 J-	<0.16
	20.0	DFSB-12-20'	07/13/16	9.8 J+	<0.17	DFCB-12-20.0-20180227	02/27/18	0.37	<0.17
	25.0	DFSB-12-25'	07/13/16	25 J+	<0.16	DFCB-12-25.0-20180227	02/27/18	0.17	<0.17
	30.0	DFSB-12-30'	07/13/16	110	<0.21	DFCB-12-30.0-20180227	02/27/18	33	<0.17
	35.0	DFSB-12-35'	07/13/16	280 J+	<0.23	DFCB-12-35.0-20180227	02/27/18	67	<0.24
						DFCB-12-35.0-20180227-FD	02/27/18	66	<0.24
	40.0	DFSB-12-40'	07/13/16	780	<0.27	DFCB-12-40.0-20180227	02/27/18	260	<0.23

Table B-3 - Summary of Down Flushing Soil Analytical Results
Plot 2

Boring Location	Sample Depth (ft bgs)	Baseline Sample ID	Baseline Sample Date	Perchlorate by USEPA Method 314.0 (mg/kg)	Hexavalent Chromium by USEPA Method 7199 (mg/kg)	Confirmation Sample ID	Confirmation Sample Date	Perchlorate by USEPA Method 314.0 (mg/kg)	Hexavalent Chromium by USEPA Method 7199 (mg/kg)
DFSB-13 /DFCB-13	0.5	DFSB-13-0.5'	07/07/16	1,500	0.15 J	DFCB-13-0.5-20180226	02/26/18	2.3	0.22 J
	5.0	DFSB-13-5'	07/07/16	190	<0.17	DFCB-13-5.0-20180301	03/01/18	1.4	0.63
	12.5	DFSB-13-12.5'	07/12/16	200	<0.17	DFCB-13-12.5-20180301	03/01/18	0.10	<0.17
	15.0	DFSB-13-15'	07/12/16	48	<0.16	DFCB-13-15.0-20180301	03/01/18	2.8	<0.17
	20.0	DFSB-13-20'	07/12/16	26	<0.16	DFCB-13-20.0-20180301	03/01/18	<0.010	<0.16
	27.5	DFSB-13-27.5'	07/12/16	88	<0.18	DFCB-13-27.5-20180301	03/01/18	0.049	<0.18
	33.5	DFSB-13-33.5'	07/12/16	25 J	<0.21	DFCB-13-33.5-20180301	03/01/18	16	<0.18
		DFSB-13-33.5'-DUP	07/12/16	58 J	<0.21				
	35.0	DFSB-13-35'	07/12/16	83	<0.28	DFCB-13-35.0-20180301	03/01/18	77	<0.25
	40.0	DFSB-13-40'	07/12/16	180	<0.26	DFCB-13-40.0-20180301	03/01/18	100	<0.26
						DFCB-13-40.0-20180301-FD	03/01/18	120	<0.26
DFSB-14 /DFCB-14	0.5	DFSB-14-0.5'	07/07/16	340	<0.16	DFCB-14-0.5-20180226	02/26/18	0.014 J	<0.17
	5.0	DFSB-14-5'	07/07/16	540	<0.16	DFCB-14-5.0-20180228	02/28/18	0.037 J	<0.16
	10.0	DFSB-14-10'	07/12/16	440	0.17 J	DFCB-14-10.0-20180228	02/28/18	0.12	<0.17
	15.0	DFSB-14-15'	07/12/16	180	<0.15	DFCB-14-15.0-20180228	02/28/18	0.012 J	<0.16
	20.0	DFSB-14-20'	07/12/16	56	<0.16	DFCB-14-20.0-20180228	02/28/18	0.012 J	<0.17
	25.0	DFSB-14-25'	07/12/16	14 J-	<0.17 UJ	DFCB-14-25.0-20180228	02/28/18	0.70 J	<0.17
						DFCB-14-25.0-20180228-FD	02/28/18	0.084 J	0.19 J
	30.0	DFSB-14-30'	07/12/16	84	<0.19	DFCB-14-30.0-20180228	02/28/18	42	<0.22
	35.0*	--	--	--	--	DFCB-14-35.0-20180228	02/28/18	43	<0.24
	40.0	DFSB-14-40'	07/12/16	110	<0.23	DFCB-14-40.0-20180228	02/28/18	180	<0.25
DFSB-15 /DFCB-15	0.5	DFSB-15-0.5'	07/07/16	340	<0.16	DFCB-15-0.5-20180223	02/23/18	0.062	0.35
	5.0	DFSB-15-5'	07/07/16	16 J+	<0.16	DFCB-15-5.0-20180227	02/27/18	0.075	<0.17
	10.0	DFSB-15-10'	07/11/16	22	<0.18	DFCB-15-10.0-20180227	02/27/18	0.026 J	<0.18
	15.0	DFSB-15-15'	07/11/16	2.5	<0.19	DFCB-15-15.0-20180227	02/27/18	1.1	<0.16
	20.0	DFSB-15-20'	07/11/16	59	<0.16	DFCB-15-20.0-20180227	02/27/18	0.066	<0.16
		DFSB-15-20'-DUP	07/11/16	71	<0.16				
	25.0	DFSB-15-25'	07/11/16	110	<0.17	DFCB-15-25.0-20180227	02/27/18	0.061	<0.17
	30.0	DFSB-15-30'	07/11/16	79	<0.19	DFCB-15-30.0-20180227	02/27/18	65	<0.17
	35.0	DFSB-15-35'	07/11/16	200	<0.24	DFCB-15-35.0-20180227	02/27/18	78	<0.23
	40.0	DFSB-15-39'	07/11/16	270	<0.22	DFCB-15-40.0-20180227	02/27/18	290 J	<0.26
						DFCB-15-40.0-20180227-FD	02/27/18	110 J	0.36 J
DFSB-16 /DFCB-16	0.5	DFSB-16-0.5'	07/07/16	2,500	0.89	DFCB-16-0.5-20180223	02/23/18	0.38	7.0
	5.0	DFSB-16-5'	07/07/16	370	<0.16	DFCB-16-5.0-20180301	03/01/18	0.17	<0.18
	10.0	DFSB-16-10'	07/12/16	120	0.54	DFCB-16-10.0-20180301	03/01/18	0.088	<0.17
	15.0	DFSB-16-15'	07/12/16	8.7	<0.17	DFCB-16-15.0-20180301	03/01/18	0.47	<0.17
	20.0	DFSB-16-20'	07/12/16	36	<0.057	DFCB-16-20.0-20180301	03/01/18	0.29	<0.16
	25.0	DFSB-16-25'	07/12/16	35	<0.20	DFCB-16-25.0-20180301	03/01/18	2.2	<0.17
	30.0	DFSB-16-30'	07/12/16	27	<0.20	DFCB-16-30.0-20180301	03/01/18	27	<0.23
	35.0	DFSB-16-35'	07/12/16	160	<0.25	DFCB-16-35.0-20180301	03/01/18	71 J	<0.25
		DFSB-16-35'DUP	07/12/16	140	<0.25	DFCB-16-35.0-20180301-FD	03/01/18	120 J	<0.24
	40.0	DFSB-16-40'	07/12/16	530	<0.23	DFCB-16-40.0-20180301	03/01/18	370	<0.28

Table B-3 - Summary of Down Flushing Soil Analytical Results
Plot 2

Boring Location	Sample Depth (ft bgs)	Baseline Sample ID	Baseline Sample Date	Perchlorate by USEPA Method 314.0 (mg/kg)	Hexavalent Chromium by USEPA Method 7199 (mg/kg)	Confirmation Sample ID	Confirmation Sample Date	Perchlorate by USEPA Method 314.0 (mg/kg)	Hexavalent Chromium by USEPA Method 7199 (mg/kg)
DFSB-17 /DFCB-17	0.5	DFSB-17-0.5'	07/07/16	740	<0.16	DFCB-17-0.5-20180223	02/23/18	0.041 J	<0.16
	5.0	DFSB-17-5'	07/07/16	500	<0.17	DFCB-17-5.0-20180228	02/28/18	0.36	<0.17
	10.0	DFSB-17-10	07/13/16	260	<0.16	DFCB-17-10.0-20180228	02/28/18	0.19	<0.19
	15.0	DFSB-17-15	07/13/16	68	<0.16	DFCB-17-15.0-20180228	02/28/18	0.068 J	<0.16
						DFCB-17-15.0-20180228-FD	02/28/18	0.27 J	<0.16
	20.0	DFSB-17-20	07/13/16	62	<0.16	DFCB-17-20.0-20180228	02/28/18	0.093	<0.16
	25.0	DFSB-17-25	07/13/16	49	<0.18	DFCB-17-25.0-20180228	02/28/18	2.7	<0.17
	30.0	DFSB-17-30	07/13/16	52	<0.19	DFCB-17-30.0-20180228	02/28/18	44	<0.19
	35.0	DFSB-17-35	07/13/16	140	<0.24	DFCB-17-35.0-20180228	02/28/18	130	<0.25
DFSB-18 /DFCB-18	40.0	DFSB-17-40'	07/13/16	550	<0.23	DFCB-17-40.0-20180228	02/28/18	140	<0.28
	0.5	DFSB-18-0.5'	07/08/16	1,200 J+	0.92	DFCB-18-0.5-20180223	02/23/18	1.8	<0.16
	5.0	DFSB-18-5'	07/08/16	87	0.17	DFCB-18-5.0-20180228	02/28/18	<0.012	<0.18
	12.0	DFSB-18-12	07/13/16	99	<0.16	DFCB-18-12.0-20180228	02/28/18	3.3	<0.16
		DFSB-18-12-DUP	07/13/16	100	<0.16				
	15.0	DFSB-18-15	07/13/16	49	<0.16	DFCB-18-15.0-20180228	02/28/18	0.91	<0.16
	20.0	DFSB-18-20	07/13/16	65	<0.16	DFCB-18-20.0-20180228	02/28/18	2.3	<0.17
						DFCB-18-20.0-20180228-FD	02/28/18	2.0	<0.17
	25.0	DFSB-18-25	07/13/16	72	<0.16	DFCB-18-25.0-20180228	02/28/18	25	<0.19
	32.5	DFSB-18-32.5	07/13/16	480	<0.22	DFCB-18-32.5-20180228	02/28/18	93 J	<0.20
	35.0	DFSB-18-35	07/13/16	220	<0.27	DFCB-18-35.0-20180228	02/28/18	220	0.45 J
	40.0	DFSB-18-40	07/13/16	270	<0.23	DFCB-18-40.0-20180228	02/28/18	160	<0.23

Notes:

DUP	Duplicate
FD	Field Duplicate
ft bgs	Feet below ground surface
ID	Identification
mg/kg	Milligram per kilogram
USEPA	United States Environmental Protection Agency
--	No sample available
<	Denotes concentration is less than the laboratory method detection limit indicated
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Table B-4 - Summary of Up Flushing Soil Analytical Results
Plot 1

Boring Location	Sample Depth (ft bgs)	Sample ID	Sample Date	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Total Chromium (mg/kg)	Moisture Content
Up Flushing Injection Borings							
UFIW-01D	0.5	UFIW-01D-0.5-20160713	07/13/16	13	0.16 J	24	5.6%
	5.0	UFIW-01D-5.0-20160713	07/13/16	68	0.16 J	28	5.1%
	10.0	UFIW-01D-10.0-20160718	07/18/16	2.3	<0.16	20	9.0%
	15.0	UFIW-01D-15.0-20160718	07/18/16	2.4	<0.16	20	7.5%
	20.0	UFIW-01D-20.0-20160718	07/18/16	1.6	<0.16	18	8.1%
	25.0	UFIW-01D-25.0-20160718	07/18/16	210	<0.18	16	16.9%
	30.0	UFIW-01D-30.0-20160718	07/18/16	640	<0.24	28	37.7%
	35.0	UFIW-01D-35.0-20160718	07/18/16	630	<0.28	64	45.8%
	40.0	UFIW-01D-40.0-20160718	07/18/16	980	<0.27	46	44.9%
	45.0	UFIW-01D-45.0-20160718	07/18/16	1,800	<0.32	37	53.5%
	50.0	UFIW-01D-50.0-20160718	07/18/16	1,300	<0.25	23	41.2%
	55.0	UFIW-01D-55.0-20160718	07/18/16	1,900	<0.26	20 J	41.0%
UFIW-02D	55.0	UFIW-01D-55.0-20160718-FD	07/18/16	2,700	<0.26	38 J	41.5%
	60.0	UFIW-01D-60.0-20160718	07/18/16	1,200	<0.24	20	36.9%
	0.5	UFIW-02D-0.5-20160712	07/12/16	2.8	<0.16	22	8.3%
	5.0	UFIW-02D-5.0-20160712	07/12/16	9.5	<0.20	18	23.0%
	10.0	UFIW-02D-10.0-20160720	07/20/16	39 J	<0.18	13	15.9%
	15.0	UFIW-02D-15.0-20160720	07/20/16	80 J+	<0.19	21	22.2%
	20.0	UFIW-02D-20.0-20160720	07/20/16	67 J+	<0.17	27	13.5%
	25.0	UFIW-02D-25.0-20160720	07/20/16	1,100 J+	<0.26	66	42.2%
	30.0	UFIW-02D-30.0-20160720	07/20/16	610	<0.26	27	43.2%
	35.0	UFIW-02D-35.0-20160720	07/20/16	880 J+	<0.29	43	49.0%
	40.0	UFIW-02D-40.0-20160720	07/20/16	1,200	<0.29	40	47.0%
	45.0	UFIW-02D-45.0-20160720	07/20/16	1,500 J+	0.31 J	28	50.8%
UFIW-03D	45.0	UFIW-02D-45.0-20160720-FD	07/20/16	1,400 J+	<0.30	36	49.7%
	50.0	UFIW-02D-50.0-20160720	07/20/16	1,300 J+	<0.24	25	39.1%
	55.0	UFIW-02D-55.0-20160720	07/20/16	1,700 J+	<0.24	38	35.1%
	60.0	UFIW-02D-60.0-20160720	07/20/16	2,100 J+	<0.27	40	44.7%
	0.5	UFIW-03D-0.5'	07/11/16	23	1.4	42	6.0%
	5.0	UFIW-03D-5'	07/11/16	18	0.28 J	17	10.3%
	10.0	UFIW-03D-10.0-20160715	07/15/16	27 J+	<0.17	14	12.8%
	15.0	UFIW-03D-15.0-20160715	07/15/16	11	<0.17	14	12.9%
	20.0	UFIW-03D-20.0-20160715	07/15/16	97	<0.19	24	20.6%
	25.0	UFIW-03D-25.0-20160715	07/15/16	380	0.32 J	24	19.0%
	30.0	UFIW-03D-30.0-20160715	07/15/16	780 J+	<0.27	27	43.4%
	30.0	UFIW-03D-30.0-20160715-FD	07/15/16	820 J+	<0.27	34	43.7%
	35.0	UFIW-03D-35.0-20160715	07/15/16	570 J+	<0.26	34	43.2%
	40.0	UFIW-03D-40.0-20160715	07/15/16	870	<0.28	35	45.6%
	45.0	UFIW-03D-45.0-20160715	07/15/16	1,400	<0.30	45	50.7%
	50.0	UFIW-03D-50.0-20160715	07/15/16	2,100 J+	<0.27	31	45.3%
	55.0	UFIW-03D-55.0-20160715	07/15/16	1,600	<0.25	24	38.8%
	55.0	UFIW-03D-60.0-20160715	07/15/16	2,700 J+	<0.28	60	46.1%
	60.0	UFIW-03D-60.0-20160715-FD	07/15/16	3,300 J+	<0.30	43	49.6%

Table B-4 - Summary of Up Flushing Soil Analytical Results
Plot 1

Boring Location	Sample Depth (ft bgs)	Sample ID	Sample Date	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Total Chromium (mg/kg)	Moisture Content
UFIW-04D	0.5	UFIW-04D-0.5'	07/11/16	200	<0.16	19	6.5%
	5.0	UFIW-04D-5'	07/11/16	120	<0.16	18	7.9%
	10.0	UFIW-04D-10.0-20160718	07/18/16	79	<0.16	17	8.0%
	15.0	UFIW-04D-15.0-20160718	07/18/16	85	<0.16	15	6.0%
	20.0	UFIW-04D-20.0-20160718	07/18/16	27	<0.17	15	12.2%
	25.0	UFIW-04D-25.0-20160718	07/18/16	1,200	0.22 J	71	27.8%
	30.0	UFIW-04D-30.0-20160718	07/18/16	550	<0.25	43	38.8%
	35.0	UFIW-04D-35.0-20160718	07/18/16	690	<0.26	46	42.8%
	40.0	UFIW-04D-40.0-20160718	07/18/16	1,300	<0.37	51 J	59.4%
	40.0	UFIW-04D-40.0-20160718-FD	07/18/16	1,700	<0.38	150 J	60.8%
	45.0	UFIW-04D-45.0-20160718	07/18/16	1,800	<0.28	48	47.5%
	50.0	UFIW-04D-50.0-20160718	07/18/16	1,900	<0.25	30	40.4%
55.0	UFIW-04D-55.0-20160718	07/18/16	2,100	<0.24	27	38.4%	
60.0	UFIW-04D-60.0-20160718	07/18/16	2,500	<0.26	53	42.3%	
Up Flushing Monitoring Well Borings							
UFMW-01	0.5	UFMW-01-0.5-20160714	07/14/16	0.90 J+	<0.16	19	6.1%
	5.0	UFMW-01-5.0-20160714	07/14/16	2.4	<0.16	21	8.3%
	10.0	UFMW-01-10.0-20160722	07/22/16	45	<0.17	16	10.1%
	15.0	UFMW-01-15.0-20160722	07/22/16	26	<0.19	8.7	19.7%
	20.0	UFMW-01-20.0-20160722	07/22/16	11 J+	<0.20	17	24.0%
	25.0	UFMW-01-25.0-20160722	07/22/16	12 J+	<0.17	37	12.5%
	30.0	UFMW-01-30.0-20160722	07/22/16	430	<0.24	21	38.6%
	35.0	UFMW-01-35.0-20160722	07/22/16	450	0.55	32	36.3%
	40.0	UFMW-01-40.0-20160722	07/22/16	870	<0.28	31	47.1%
	40.0	UFMW-01-40.0-20160722-FD	07/22/16	860	<0.28	30	47.2%
	45.0	UFMW-01-45.0-20160722	07/22/16	1,100 J+	<0.29	34	47.5%
	50.0	UFMW-01-50.0-20160722	07/22/16	820	<0.25	23	39.3%
55.0	UFMW-01-55.0-20160722	07/22/16	1,700 J+	<0.26	48	42.7%	
60.0	UFMW-01-60.0-20160722	07/22/16	1,400 J+	<0.24	19	37.4%	
UFMW-02	0.5	UFMW-02-0.5-20160714	07/14/16	27	<0.16	17	6.4%
	5.0	UFMW-02-5.0-20160714	07/14/16	18	<0.16	19	9.4%
	10.0	UFMW-02-10.0-20160725	07/25/16	3.5	<0.16	19	8.5%
	15.0	UFMW-02-15.0-20160725	07/25/16	0.69	<0.16	14	8.6%
	20.0	UFMW-02-20.0-20160725	07/25/16	2.1 J	<0.16	18	9.5%
	25.0	UFMW-02-25.0-20160725	07/25/16	36	<0.17	19	11.2%
	30.0	UFMW-02-30.0-20160725	07/25/16	670 J+	<0.24	58 J	38.7%
	30.0	UFMW-02-30.0-20160725-FD	07/25/16	670 J+	<0.25	31 J	38.6%
	35.0	UFMW-02-35.0-20160725	07/25/16	1,300 J+	<0.28	38	45.2%
	40.0	UFMW-02-40.0-20160725	07/25/16	1,300 J+	<0.25	35	41.2%
	45.0	UFMW-02-45.0-20160725	07/25/16	2,400	<0.29	29	47.5%
	50.0	UFMW-02-50.0-20160725	07/25/16	4,000 J+	<0.40	99	62.6%
55.0	UFMW-02-55.0-20160725	07/25/16	3,100	<0.26	35	42.4%	
60.0	UFMW-02-60.0-20160725	07/25/16	3,800	<0.31	74	52.3%	

Table B-4 - Summary of Up Flushing Soil Analytical Results
Plot 1

Boring Location	Sample Depth (ft bgs)	Sample ID	Sample Date	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Total Chromium (mg/kg)	Moisture Content
UFMW-03	0.5	UFMW-03-0.5-20160713	07/13/16	92	0.16 J	18	6.2%
	5.0	UFMW-03-5.0-20160713	07/13/16	210	<0.17	18	10.3%
	5.0	UFMW-03-5.0-20160713-FD	07/13/16	200	<0.17	16	10.5%
	10.0	UFMW-03-10.0-20160719	07/19/16	30	<0.16	18	8.5%
	15.0	UFMW-03-15.0-20160719	07/19/16	14 J+	<0.17	16	9.4%
	20.0	UFMW-03-20.0-20160719	07/19/16	20 J+	<0.17	16	9.2%
	25.0	UFMW-03-25.0-20160719	07/19/16	1,200	<0.22	32	32.8%
	30.0	UMFW-03-30.0-20160719	07/19/16	700	<0.25	24	38.8%
	35.0	UFMW-03-35.0-20160719	07/19/16	770	<0.25	35	40.2%
	40.0	UFMW-03-40.0-20160719	07/19/16	1,000	<0.25 UJ	28	39.8%
	45.0	UFMW-03-45.0-20160719	07/19/16	1,700	<0.30	45	50.8%
	50.0	UFMW-03-50.0-20160719	07/19/16	1,500	<0.25	24	41.2%
	50.0	UFMW-03-50.0-20160719-FD	07/19/16	1,500	<0.25	37	41.5%
	55.0	UFMW-03-55.0-20160719	07/19/16	3,600 J+	<0.28	47	46.1%
	60.0	UFMW-03-60.0-20160719	07/19/16	2,800 J+	<0.27	77	44.5%
Extraction Well Borings							
E1-1	10.0	E1-1-10.0-20160804	08/04/16	250	<0.17	21	12.0%
	12.5	E1-1-12.5-20160804	08/04/16	140	---	---	16.4%
	15.0	E1-1-15.0-20160804	08/04/16	84	<0.18	14	14.4%
	17.5	E1-1-17.5-20160804	08/04/16	290	---	---	10.8%
	20.0	E1-1-20.0-20160804	08/04/16	130	<0.18	11	16.2%
	22.5	E1-1-22.5-20160804	08/04/16	260	---	---	11.3%
	25.0	E1-1-25.0-20160804	08/04/16	670	<0.17	18	12.8%
	27.5	E1-1-27.5-20160804	08/04/16	1,200	---	---	34.9%
	30.0	E1-1-30.0-20160804	08/04/16	440 J	<0.22	31	31.5%
	30.0	E1-1-30.0-20160804-FD	08/04/16	910 J	<0.22	29	32.5%
	35.0	E1-1-35.0-20160804	08/04/16	630	<0.24	30	37.2%
	40.0	E1-1-40.0-20160804	08/04/16	1,100	<0.23	25	34.2%
	45.0	E1-1-45.0-20160804	08/04/16	1,300	<0.27	37	44.5%
	50.0	E1-1-50.0-20160804	08/04/16	1,200	<0.25	25	40.1%
	55.0	E1-1-55.0-20160804	08/04/16	1,500	<0.24	35	36.8%
	60.0	E1-1-60.0-20160804	08/04/16	2,200	2.8	29	49.2%

Table B-4 - Summary of Up Flushing Soil Analytical Results
Plot 1

Boring Location	Sample Depth (ft bgs)	Sample ID	Sample Date	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Total Chromium (mg/kg)	Moisture Content
E1-2	10.0	E1-2-10.0-20160808	08/08/16	0.019 J	<0.18	14	15.1%
	12.5	E1-2-12.5-20160808	08/08/16	0.065 J+	---	---	15.1%
	15.0	E1-2-15-20160808	08/08/16	0.068 J	<0.17	12	12.9%
	15.0	E1-2-15-20160808-FD	08/08/16	0.20 J	<0.17 UJ	16	14.4%
	17.5	E1-2-17.5-20160808	08/08/16	0.15 J+	---	---	12.1%
	20.0	E1-2-20.0-20160808	08/08/16	1.6	<0.17	16	11.4%
	22.5	E1-2-22.5-20160808	08/08/16	4.8 J+	---	---	13.9%
	25.0	E1-2-25.0-20160808	08/08/16	130 J+	<0.19	26	20.7%
	27.5	E1-2-27.5-20160808	08/08/16	88 J+	---	---	14.3%
	30.0	E1-2-30.0-20160808	08/08/16	750 J+	<0.24	29	37.9%
	35.0	E1-2-35.0-20160808	08/08/16	1,000 J+	0.33 J	29	42.9%
	40.0	E1-2-40.0-20160808	08/08/16	1,500 J+	<0.29	40	48.0%
	45.0	E1-2-45.0-20160808	08/08/16	3,100 J+	<0.32	67	53.6%
	50.0	E1-2-50.0-20160808	08/08/16	2,400	<0.26	18	41.6%
	55.0	E1-2-55.0-20160808	08/08/16	2,700 J+	<0.25	37	39.0%
E1-3	60.0	E1-2-60.0-20160808	08/08/16	4,900 J+	<0.28	90	46.0%
	10.0	E1-3-10.0-20160726	07/26/16	0.094 J+	<0.17	16	12.5%
	10.0	E1-3-10.0-20160809	08/09/16	2.3 J+	<0.19	16	19.6%
	12.5	E1-3-12.5-20160809	08/09/16	3.5	---	---	10.5%
	15.0	E1-3-15.0-20160809	08/09/16	0.33 J+	<0.17	13	14.7%
	17.5	E1-3-17.5-20160809	08/09/16	0.39 J+	---	---	10.1%
	20.0	E1-3-20.0-20160809	08/09/16	20 J	0.21 J	11	28.4%
	20.0	E1-3-20.0-20160809-FD	08/09/16	53 J	<0.21	15	29.5%
	22.5	E1-3-22.5-20160809	08/09/16	300	---	---	29.2%
	25.0	E1-3-25.0-20160809	08/09/16	47	<0.19	25	18.3%
	27.5	E1-3-27.5-20160809	08/09/16	740	---	---	37.3%
	30.0	E1-3-30.0-20160809	08/09/16	570 J+	<0.24	26	36.9%
	35.0	E1-3-35.0-20160809	08/09/16	730	<0.24	26	37.7%
	40.0	E1-3-40.0-20160809	08/09/16	720	<0.22	19	30.3%
	45.0	E1-3-45.0-20160809	08/09/16	3,300 J+	<0.30	18	49.1%
	50.0	E1-3-50.0-20160809	08/09/16	3,200 J+	<0.29	27	47.4%
	55.0	E1-3-55.0-20160809	08/09/16	1,800 J+	<0.28	25	46.2%
	60.0	E1-3-60.0-20160809	08/09/16	4,100 J+	<0.27	39	45.0%

Notes:

ID	Identification
FD	Field duplicate
ft bgs	Feet below ground surface
mg/kg	Milligram per kilogram
---	No sample available
<	The concentration is less than the laboratory method detection limit indicated.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Table B-5 - Summary of Up Flushing Soil Analytical Results
Plot 2

Boring Location	Sample Depth (ft bgs)	Sample ID	Sample Date	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Total Chromium (mg/kg)	Moisture Content
Up Flushing Injection Borings							
UFIW-05D	0.5	UFIW-05D-0.5-20160715	07/15/16	0.49 J+	<0.16	19	6.4%
	5.0	UFIW-05D-5.0-20160715	07/15/16	0.33 J+	<0.17	18	9.0%
	10.0	UFIW-05D-10.0-20160726	07/26/16	1.5 J+	<0.17	16	12.7%
	15.0	UFIW-05D-15.0-20160726	07/26/16	8.9 J+	<0.16	16	6.9%
	20.0	UFIW-05D-20.0-20160726	07/26/16	24	<0.17	15	15.2%
	25.0	UFIW-05D-25.0-20160726	07/26/16	75 J+	<0.17	18	12.9%
	30.0	UFIW-05D-30.0-20160726	07/26/16	63	<0.24	28	39.1%
	35.0	UFIW-05D-35.0-20160726	07/26/16	79	<0.24	29	37.7%
	40.0	UFIW-05D-40.0-20160726-FD	07/26/16	110	<0.21	18	30.3%
	45.0	UFIW-05D-45.0-20160726	07/26/16	500	<0.30	31	49.2%
	50.0	UFIW-05D-50.0-20160726	07/26/16	760	<0.29	40	48.2%
	55.0	UFIW-05D-55.0-20160726	07/26/16	830	<0.28	56	46.7%
UFIW-06D	0.5	UFIW-06D-0.5-20160715	07/15/16	310 J+	<0.16	16	4.8%
	5.0	UFIW-06D-5.0-20160715	07/15/16	56 J+	<0.18	17	15.6%
	10.0	UFIW-06D-10.0-20160729	07/29/16	7.5 J+	<0.18	21	19.0%
	15.0	UFIW-06D-15.0-20160729	07/29/16	1.6 J+	<0.16	14	9.7%
	20.0	UFIW-06D-20.0-20160729	07/29/16	0.28 J+	<0.19	19	21.5%
	25.0	UFIW-06D-25.0-20160729	07/29/16	16 J+	<0.16	22	6.7%
	30.0	UFIW-06D-30.0-20160729	07/29/16	140 J+	<0.27	56	44.6%
	35.0	UFIW-06D-35.0-20160729	07/29/16	130 J+	<0.24 UJ	35	37.8%
	40.0	UFIW-06D-40.0-20160729-FD	07/29/16	210 J+	<0.27	26	44.6%
	45.0	UFIW-06D-45.0-20160729	07/29/16	360 J+	<0.22	25	32.4%
	50.0	UFIW-06D-50.0-20160729	07/29/16	2,000 J+	<0.25	40	42.3%
	55.0	UFIW-06D-55.0-20160729	07/29/16	4,400 J+	<0.28	27	46.2%
UFIW-07D	0.5	UFIW-07D-0.5-20160714	07/14/16	150 J+	<0.16	23	4.9%
	5.0	UFIW-07D-5.0-20160714	07/14/16	69	<0.16	19	7.4%
	10.0	UFIW-07D-10.0-20160727	07/27/16	62 J+	<0.17	25	13.0%
	15.0	UFIW-07D-15.0-20160727	07/27/16	36	<0.19	20	21.0%
	20.0	UFIW-07D-20.0-20160727	07/27/16	39	<0.20	22	24.4%
	25.0	UFIW-07D-25.0-20160727	07/27/16	9.2 J+	<0.17	17	12.9%
	30.0	UFIW-07D-30.0-20160727	07/27/16	150 J+	<0.25	40	40.5%
	35.0	UFIW-07D-35.0-20160727	07/27/16	150	<0.25 UJ	41	41.5%
	40.0	UFIW-07D-40.0-20160727-FD	07/27/16	150 J+	<0.22	18	30.6%
	45.0	UFIW-07D-45.0-20160727	07/27/16	360 J+	<0.33	50	53.7%
	50.0	UFIW-07D-50.0-20160727	07/27/16	860	<0.29	41	48.8%
	55.0	UFIW-07D-55.0-20160727	07/27/16	1,400 J+	<0.28	53	47.0%
UFIW-07D	60.0	UFIW-07D-60.0-20160727	07/27/16	4,700	<0.27	37	42.4%

Table B-5 - Summary of Up Flushing Soil Analytical Results
Plot 2

Boring Location	Sample Depth (ft bgs)	Sample ID	Sample Date	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Total Chromium (mg/kg)	Moisture Content
UFIW-08D	0.5	UFIW-08D-0.5-20160714	07/14/16	550	<0.16	18	5.6%
	5.0	UFIW-08D-5.0-20160714	07/14/16	160 J+	<0.17	17	10.1%
	10.0	UFIW-08D-10.0-20160728	07/28/16	2.6 J	<0.19	51	20.8%
	15.0	UFIW-08D-15.0-20160728	07/28/16	2.9 J+	<0.19	15	18.3%
	20.0	UFIW-08D-20.0-20160728	07/28/16	24 J+	<0.23	9.2	32.3%
	25.0	UFIW-08D-25.0-20160728	07/28/16	4.4 J+	<0.18	25	18.9%
	30.0	UFIW-08D-30.0-2016728	07/28/16	230	<0.24	23	37.6%
	35.0	UFIW-08D-35.0-20160728	07/28/16	280	<0.24	24	38.6%
	40.0	UFIW-08D-40.0-20160728	07/28/16	470	<0.25	32	40.5%
	45.0	UFIW-08D-45.0-20160728	07/28/16	1,300 J+	<0.28	44	47.3%
	50.0	UFIW-08D-50.0-20160728	07/28/16	1,700 J+	<0.27	28	44.4%
	55.0	UFIW-08D-55.0-20160728	07/28/16	3,100 J+	<0.30	38	49.5%
	60.0	UFIW-08D-60.0-20160728	07/28/16	3,200	<0.27	33	43.0%
Up Flushing Monitoring Well Borings							
UFMW-04	0.5	UFMW-04-0.5-20160725	07/25/16	29	<0.20	26	24.5%
	5.0	UFMW-04-5.0-20160725	07/25/16	2.9 J+	<0.18	16	16.0%
	10.0	UFMW-04-10.0-20160804	08/04/16	1.6	<0.17	18	9.5%
	12.5	UFMW-04-12.5-20160804	08/04/16	0.15	---	---	19.5%
	15.0	UFMW-04-15.0-20160804	08/04/16	0.11	<0.17	15	14.5%
	17.5	UFMW-04-17.5-20160804	08/04/16	0.18	---	---	30.5%
	20.0	UFMW-04-20.0-20160804	08/04/16	2.7 J+	<0.17	24	13.9%
	22.5	UFMW-04-22.5-20160804	08/04/16	4.3 J+	---	---	13.7%
	25.0	UFMW-04-25.0-20160804	08/04/16	3.0 J	<0.18	21 J	16.7%
	25.0	UFMW-04-25.0-20160804-FD	08/04/16	6.5 J	0.35	39 J	15.6%
	27.5	UFMW-04-27.5-20160804	08/04/16	23	---	---	21.3%
	30.0	UFMW-04-30.0-20160804	08/04/16	66	<0.25	64	41%
	35.0	UFMW-04-35.0-20160804	08/04/16	140	<0.25	24	41%
	40.0	UFMW-04-40.0-20160804	08/04/16	250	<0.21	27	29.4%
	45.0	UFMW-04-45.0-20160804	08/04/16	670	<0.28	40	46.9%
	50.0	UFMW-04-50.0-20160804	08/04/16	710	<0.25	28	41%
	55.0	UFMW-04-55.0-20160804	08/04/16	1,500	<0.32	89	54%
	55.0	UFMW-04-55.0-20160804-FD	08/04/16	1,200	<0.30	100	51.5%
	60.0	UFMW-04-60.0-20160804	08/04/16	860	0.25 J	46	34.7%

Table B-5 - Summary of Up Flushing Soil Analytical Results
Plot 2

Boring Location	Sample Depth (ft bgs)	Sample ID	Sample Date	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Total Chromium (mg/kg)	Moisture Content
UFMW-05	1.0	UFMW-05-1.0-20160722	07/22/16	1.2 J+	<0.16	19	5.4%
	5.0	UFMW-05-5.0-20160722	07/22/16	2.2 J+	<0.16	18	7.9%
	10.0	UFMW-05-10.0-20160803	08/03/16	2.2 J+	<0.17	21	12.0%
	15.0	UFMW-05-15.0-20160803	08/03/16	0.38 J+	<0.16	14	5.3%
	20.0	UFMW-05-20.0-20160803	08/03/16	0.12 J+	<0.16	16	9.1%
	25.0	UFMW-05-25.0-20160803	08/03/16	40 J+	<0.19	21	21.7%
	30.0	UFMW-05-30.0-20160803	08/03/16	130 J+	<0.25	30	40.9%
	35.0	UFMW-05-35.0-20160803	08/03/16	130 J+	<0.23	32	36.1%
	40.0	UFMW-05-40.0-20160803	08/03/16	250 J+	<0.21	23	29.8%
	45.0	UFMW-05-45.0-20160803	08/03/16	590 J+	<0.30	39	50.8%
	50.0	UFMW-05-50.0-20160803	08/03/16	840 J+	<0.28	43	47.3%
	50.0	UFMW-05-50.0-20160803-FD	08/03/16	1,000 J+	<0.28	41	46.5%
	55.0	UFMW-05-55.0-20160803	08/03/16	2,900 J+	<0.30	32	49.9%
UFMW-06	60.0	UFMW-05-60.0-20160803	08/03/16	4,200 J+	<0.25 UJ	31	41.9%
	1.0	UFMW-06-1.0-20160722	07/22/16	7.1 J+	<0.16	19	6.3%
	5.0	UFMW-06-5.0-20160722	07/22/16	2.7 J+	<0.16	18	5.3%
	10.0	UFMW-06-10.0-20160802	08/02/16	8.9 J+	<0.18	13	19.7%
	15.0	UFMW-06-15.0-20160802	08/02/16	1.5 J+	<0.17	14	14.5%
	20.0	UFMW-06-20.0-20160802	08/02/16	3.7	<0.18	15	15.6%
	25.0	UFMW-06-25.0-20160802	08/02/16	58	<0.18	22	17.3%
	30.0	UFMW-06-30.0-20160802	08/02/16	270 J+	<0.25	26	40.7%
	35.0	UFMW-06-35.0-20160802	08/02/16	240 J+	<0.24	37	38.7%
	40.0	UFMW-06-40.0-20160802	08/02/16	410	<0.21	22	29.7%
	45.0	UFMW-06-45.0-20160802	08/02/16	1,300	0.35 J	46	51.9%
	50.0	UFMW-06-50.0-20160802	08/02/16	990	<0.26	36	41.8%
	50.0	UFMW-06-50.0-20160802-FD	08/02/16	1,200	0.72	35	43.2%
	55.0	UFMW-06-55-20160802	08/02/16	2,400	<0.30	47	51.2%
	60.0	UFMW-06-60.0-20160802	08/02/16	3,000 J+	<0.28	32 J+	45.3%

Table B-5 - Summary of Up Flushing Soil Analytical Results
Plot 2

Boring Location	Sample Depth (ft bgs)	Sample ID	Sample Date	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Total Chromium (mg/kg)	Moisture Content
Extraction Well Borings							
E2-1	10.0	E2-1-10.0-20160808	08/08/16	220	<0.16	15	9.0%
	12.5	E2-1-12.5-20160808	08/08/16	14	---	---	11.7%
	15.0	E2-1-15.0-20160808	08/08/16	31	<0.19	8.9	22.4%
	17.5	E2-1-17.5-20160808	08/08/16	10	---	---	10.1%
	20.0	E2-1-20.0-20160808	08/08/16	66	<0.18	17	16.5%
	22.5	E2-1-22.5-20160808	08/08/16	52	---	---	17.3%
	25.0	E2-1-25.0-20160808	08/08/16	21	<0.17	20	9.4%
	27.5	E2-1-27.5-20160808	08/08/16	62	---	---	16.0%
	30.0	E2-1-30.0-20160808	08/08/16	35	<0.17	29	13.2%
	35.0	E2-1-35.0-20160808	08/08/16	110	<0.25	26	39.6%
	40.0	E2-1-40.0-20160808	08/08/16	210	<0.25	31	41.6%
	40.0	E2-1-40.0-20160808-FD	08/08/16	190	<0.26	30	42.2%
	45.0	E2-1-45.0-20160808	08/08/16	890	<0.27	28	44.7%
	50.0	E2-1-50.0-20160808	08/08/16	1,400	<0.29	39	48.4%
	55.0	E2-1-55.0-20160808	08/08/16	1,100	<0.26	41	44.1%
	60.0	E2-1-60.0-20160808	08/08/16	920	<0.22 UJ	24	31.8%
	60.0	E2-1-60.0-20160808-FD	08/08/16	920	<0.22	22	32.8%
E2-2	10.0	E2-2-10.0-20160808	08/08/16	320 J	<0.19	14	21.5%
	12.5	E2-2-12.5-20160808	08/08/16	23	---	---	21.2%
	16.0	E2-2-16.0-20160808	08/08/16	30	<0.19	16	20.7%
	17.5	E2-2-17.5-20160808	08/08/16	0.34 J+	---	---	21.2%
	20.0	E2-2-20.0-20160808	08/08/16	0.66 J	<0.18	11	14.4%
	20.0	E2-2-20.0-20160808-FD	08/08/16	4.9 J	<0.18	9.8	16.2%
	25.0	E2-2-25.0-20160808	08/08/16	25	<0.16	44	8.0%
	27.5	E2-2-27.5-20160808	08/08/16	17	---	---	19.9%
	30.0	E2-2-30.0-20160808	08/08/16	38	<0.21	46	28.9%
	35.0	E2-2-35.0-20160808	08/08/16	530	<0.24	28	37.7%
	40.0	E2-2-40.0-20160808	08/08/16	670	<0.25	31	40.1%
	40.0	E2-2-40.0-20160808-FD	08/08/16	660	<0.26	31	41.4%
	45.0	E2-2-45.0-20160808	08/08/16	770	<0.18	32	13.9%
	50.0	E2-2-50.0-20160808	08/08/16	2,300 J+	<0.30	44	51.1%
	55.0	E2-2-55.0-20160808	08/08/16	1,400	<0.26	42	41.5%
	60.0	E2-2-60.0-20160808	08/08/16	1,200	<0.24	20	36.5%

Table B-5 - Summary of Up Flushing Soil Analytical Results
Plot 2

Boring Location	Sample Depth (ft bgs)	Sample ID	Sample Date	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Total Chromium (mg/kg)	Moisture Content
E2-3	10.0	E2-3-10.0-20160810	08/10/16	100 J+	<0.16	11	7.6%
	12.5	E2-3-12.5-20160810	08/10/16	27 J+	---	---	13.5%
	15.0	E2-3-15.0-20160810	08/10/16	30 J+	<0.16	11	5.6%
	17.5	E2-3-17.5-20160810	08/10/16	13 J+	---	---	13.7%
	20.0	E2-3-20.0-20160810	08/10/16	4.0 J+	<0.18	11	17.9%
	22.5	E2-3-22.5-20160810	08/10/16	6.4 J+	---	---	9.4%
	25.0	E2-3-25.0-20160810	08/10/16	9.5 J+	<0.16	8.9	8.9%
	27.5	E2-3-27.5-20160810	08/10/16	120 J+	---	---	11.6%
	30.0	E2-3-30.0-20160810	08/10/16	120 J+	<0.19	23	21.5%
	35.0	E2-3-35.0-20160810	08/10/16	270 J+	<0.24	23	37.0%
	40.0	E2-3-40.0-20160810	08/10/16	600	0.41 J	31	40.9%
	45.0	E2-3-45.0-20160810	08/10/16	1,400 J+	<0.23	22	33.7%
	50.0	E2-3-50.0-20160810	08/10/16	3,500 J+	<0.26	25	42.2%
	50.0	E2-3-50.0-20160810-FD	08/10/16	3,300 J+	<0.25	27	39.7%
	55.0	E2-3-55.0-20160810	08/10/16	2,800	<0.25	140	38.4%
	60.0	E2-3-60.0-20160810	08/10/16	2,800 J+	<0.22	23 J	32.2%
	60.0	E2-3-60.0-20160810-FD	08/10/16	3,200 J+	<0.23	12 J	33.4%
E2-4	10.0	E2-4-10.0-20160809	08/09/16	10 J+	<0.18	16	15.5%
	12.5	E2-4-12.5-20160809	08/09/16	190 J+	---	---	19.1%
	15.0	E2-4-15.0-20160809	08/09/16	8.9 J+	<0.19	8.3	20.4%
	18.5	E2-4-18.5-20160809	08/09/16	2.2 J+	---	---	11.6%
	20.0	E2-4-20.0-20160809	08/09/16	0.44 J	<0.17	17	12.7%
	22.5	E2-4-22.5-20160809	08/09/16	3.7 J+	---	---	13.9%
	25.0	E2-4-25.0-20160809	08/09/16	140 J+	<0.18	18	18.4%
	25.0	E2-4-25.0-20160809-FD	08/09/16	110 J+	<0.18	14	17.4%
	27.5	E2-4-27.5-20160809	08/09/16	140 J+	---	---	20.8%
	30.0	E2-4-30.0-20160809	08/09/16	170	<0.25	31	38.0%
	35.0	E2-4-35.0-20160809	08/09/16	310	<0.25	31	39.8%
	40.0	E2-4-40.0-20160809	08/09/16	590	<0.24	25	37.8%
	45.0	E2-4-45.0-20160809	08/09/16	2,100	<0.36	42	58.2%
	50.0	E2-4-50.0-20160809	08/09/16	4,000	<0.34	68	55.7%
	55.0	E2-4-55.0-20160809	08/09/16	1,500	<0.27	44	43.4%
	55.0	E2-4-55.0-20160809-FD	08/09/16	1,800 J+	<0.28	59	45.2%
	60.0	E2-4-60.0-20160809	08/09/16	3,300 J+	<0.24	30	38.1%

Table B-5 - Summary of Up Flushing Soil Analytical Results
Plot 2

Boring Location	Sample Depth (ft bgs)	Sample ID	Sample Date	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Total Chromium (mg/kg)	Moisture Content
E2-5	10.0	E2-5-10.0-20160808	08/08/16	13 J+	<0.17	19	11.2%
	12.5	E2-5-12.5-20160808	08/08/16	17 J+	<0.16	11	6.1%
	15.0	E2-5-15.0-20160808	08/08/16	22 J+	<0.19	17	21.1%
	17.5	E2-5-17.5-20160808	08/08/16	190 J+	<0.18	15	14.0%
	20.0	E2-5-20.0-20160808	08/08/16	130 J+	<0.17	11	10.5%
	22.5	E2-5-22.5-20160808	08/08/16	67 J+	0.18 J	17	13.5%
	25.0	E2-5-25.0-20160808	08/08/16	66 J+	0.18 J	21	14.3%
	27.5	E2-5-27.5-20160808	08/08/16	120 J+	<0.19	26	20.0%
	30.0	E2-5-30.0-20160808	08/08/16	130 J+	<0.19	34	20.6%
	35.0	E2-5-35.0-20160809	08/09/16	870	<0.26	34	43.9%
	35.0	E2-5-35.0-20160809-FD	08/09/16	890	<0.27	31	45.7%
	40.0	E2-5-3-40.0-20160809	08/09/16	1,000 J+	<0.20	18	27.0%
	45.0	E2-5-45.0-20160809	08/09/16	3,300	<0.36	43	57.8%
	50.0	E2-5-50.0-20160809	08/09/16	3,600 J+	<0.27	44	44.8%
	55.0	E2-5-55.0-20160809	08/09/16	4,300 J+	<0.27	63	45.2%
	60.0	E2-5-60.0-20160809	08/09/16	3,600 J+	<0.25	24	40.2%

Notes:

ID	Identification
ft bgs	Feet below ground surface
mg/kg	Milligram per kilogram
---	No sample available
<	The concentration is less than the laboratory method detection limit indicated.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Table B-6 - Summary of Baseline Groundwater Analytical Results
Plot 1

Well Location	Sample ID	Sample Date	Perchlorate (µg/L)	Hexavalent Chromium (µg/L)	Total Chromium (mg/L)	Nitrate as N (mg/L)	Total Dissolved Solids (mg/L)
UFIW-01S	UFIW-01S-20160805	08/05/16	510,000	9.7	0.025	--	--
UFIW-01I	UFIW-01I-2016802	08/02/16	660,000	14	0.015	--	--
UFIW-01D	UFIW-01D-20160802	08/02/16	1,700,000	18	0.021	--	--
UFIW-02S	UFIW-02S-20160805	08/05/16	1,500,000	3.6	0.0099	--	--
UFIW-02I	UFIW-02I-20160803	08/03/16	1,500,000	25	0.031	--	--
UFIW-02D	UFIW-02D-20160803	08/03/16	2,100,000	19	0.025 J	--	--
UFIW-03S	UFIW-03S-20160804	08/04/16	1,300,000	<0.25 UJ	<0.0025	--	--
UFIW-03I	UFIW-03I-20160804	08/04/16	1,500,000	24	0.029	--	--
UFIW-03D	UFIW-03D-20160804	08/04/16	1,800,000	18	0.019	--	--
UFIW-04S	UFIW-04S-20160805	08/05/16	1,500,000	<0.25	0.0095	--	--
UFIW-04I	UFIW-04I-20160802	08/02/16	1,100,000	7.2	0.0074	--	--
UFIW-04I	UFIW-04I-20160802-FD	08/02/16	1,200,000	6.4	0.0081	--	--
UFIW-04D	UFIW-04D-20160801	08/01/16	1,900,000	12	0.012	92	5,700
UFMW-01S	UFMW-01S-20160809	08/09/16	950,000	<0.25	0.035	--	--
UFMW-01I	UFMW-01I-20160809	08/09/16	920,000	19	0.021	--	--
UFMW-01I	UFMW-01I-20160809-FD	08/09/16	1,100,000	20	0.021	--	--
UFMW-01D	UFMW-01D-20160809	08/09/16	1,700,000	15	0.013	--	--
UFMW-02S	UFMW-02S-20160810	08/10/16	1,200,000	<0.25	0.18	--	--
UFMW-02I	UFMW-02I-20160810	08/10/16	1,900,000 J+	18	0.018	--	--
UFMW-02D	UFMW-02D-20160810	08/10/16	2,900,000	12	0.014	--	--
UFMW-03S	Well is dry; not analyzed						
UFMW-03I	UFMW-03I-20160808	08/08/16	1,400,000 J+	18	0.018	--	--
UFMW-03D	UFMW-03D-20160808	08/08/16	2,200,000	29	0.033	--	--
E1-1	E1-1-20160824	08/24/16	1,300,000	18	0.020	160	6,000
E1-2	E1-2-20160824	08/24/16	1,600,000	9.9	0.013	--	--
E1-3	E1-3-20160824	08/24/16	1,600,000	32	0.036	--	--

Notes:

ID	Identification
µg/L	Microgram per liter
mg/L	Milligram per liter
<	The concentration is less than the laboratory method detection limit indicated.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Table B-7 - Summary of Baseline Groundwater Analytical Results
Plot 2

Well Location	Sample ID	Sample Date	Perchlorate (µg/L)	Hexavalent Chromium (µg/L)	Total Chromium (mg/L)	Nitrate as N (mg/L)	Total Dissolved Solids (mg/L)
UFIW-05S	UFIW-05S-20160819	08/19/16	180,000	0.65 J	0.0032 J	--	--
UFIW-05I	UFIW-05I-20160815	08/15/16	250,000	19	0.019	--	--
UFIW-05I	UFIW-05I-20160815-FD	08/15/16	260,000	19	0.019	--	--
UFIW-05D	UFIW-05D-20160815	08/15/16	830,000	8.9	0.015	--	--
UFIW-06S	UFIW-06S-20160816	08/16/16	240,000	27	0.026	56	3,800
UFIW-06I	UFIW-06I-20160816	08/16/16	290,000	28	0.029	--	--
UFIW-06D	UFIW-06D-20160815	08/15/16	2,600,000	13	0.016	--	--
UFIW-07S	UFIW-07S-20160817	08/17/16	360,000	30	0.032	--	--
UFIW-07I	UFIW-07I-20160817	08/17/16	360,000	4	0.0051	--	--
UFIW-07D	UFIW-07D-20160816	08/16/16	870,000	18	0.019	--	--
UFIW-08S	UFIW-08S-20160819	08/19/16	810,000	33	0.040	--	--
UFIW-08I	UFIW-08I-20160817	08/17/16	680,000	26	0.029	--	--
UFIW-08D	UFIW-08D-20160817	08/17/16	2,100,000	9.2	0.010	--	--
UFMW-04S	UFMW-04S-20160819	08/19/16	220,000	6.6	0.037	--	--
UFMW-04I	UFMW-04I-20160818	08/18/16	400,000	26	0.039	--	--
UFMW-04I	UFMW-04I-20160818-FD	08/18/16	390,000	26	0.044	--	--
UFMW-04D	UFMW-04D-20160818	08/18/16	870,000	27	0.028	--	--
UFMW-05S	UFMW-05S-20160819	08/19/16	610,000	<0.25	0.16 J+	--	--
UFMW-05I	UFMW-05I-20160823	08/23/16	610,000	11	0.014	--	--
UFMW-05D	UFMW-05D-20160822	08/22/16	1,400,000	5.8	0.0066	--	--
UFMW-06S	UFMW-06S-20160819	08/19/16	730,000	28	0.031	--	--
UFMW-06I	UFMW-06I-20160822	08/22/16	700,000	27	0.028	--	--
UFMW-06D	UFMW-06D-20160822	08/22/16	1,700,000	16	0.020	--	--
E2-1	E2-1-20160823	08/23/16	440,000	27	0.027	--	--
E2-2	E2-2-20160823	08/23/16	1,700,000	31	0.034	--	--
E2-3	E2-3-20160823	08/23/16	620,000	22	0.023	--	--
E2-4	E2-4-20160826	08/26/16	2,000,000	34	0.037	--	--
E2-4	E2-4-20160826-FD	08/26/16	2,100,000	34	0.035	--	--
E2-5	E2-5-20160826	08/26/16	920,000	19	0.022	--	--

Notes:

ID	Identification
µg/L	Microgram per liter
mg/L	Milligram per liter
<	The concentration is less than the laboratory method detection limit indicated.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Table B-8 - Summary of Performance Groundwater Analytical Results
Plot 1

Well ID	Sample ID	Sample Date	Perchlorate by USEPA Method 314.0 (mg/L)	Hexavalent Chromium by USEPA Method 7199 (mg/L)	Total Metals by USEPA Method 6010B (mg/L)		Disinfection By-Products by USEPA Method 300.1B (µg/L)		Nitrate as N by USEPA Method 300.0 (mg/L)	General Chemistry (mg/L)	
					Chromium	Manganese	Chlorate	Chlorite		Total Dissolved Solids	Total Sulfide
UFMW-01S	UFMW-01S-20160809	08/09/16	950	<0.00025	0.035	--	--	--	--	--	--
	UFMW-01S-20170126	01/26/17	2,000	<0.00025	--	--	--	--	--	--	--
	--	04/12/17	Less Than 1" of Water Observed in Well; Unable to Sample.								
	UFMW-01S-20170619	06/19/17	260	0.0027	0.0050	--	2,200	<200	53	3,300	<0.027
	UFMW-01S-20170817	08/17/17	92	0.00075 J	0.0053	--	1,200	<100	72	3,200	<0.027 UJ
	--	10/06/17	Well is dry								
UFMW-01I	UFMW-01I-20160809	08/09/16	920	0.019	0.021	--	--	--	--	--	--
	UFMW-01I-20160809-FD	08/09/16	1,100	0.02	0.021	--	--	--	--	--	--
	UFMW-01I-20170411	04/11/17	440	0.0013 J	<0.0025	<0.010	4,400	<500	90	3,500	<0.020
	UFMW-01I-20170619	06/19/17	220	0.53 J	<0.0025	--	1,700	<200	37	2,800	<0.027
	UFMW-01I-20170816	08/16/17	150	0.00078 J	<0.0025	--	1,800	<50	23	2,400	<0.027
	UFMW-01I-20171006	10/06/17	160	0.0008 J	--	--	2,000	<500	25	2,300	<0.027
	UFMW-01I-20180126	01/26/18	250	0.00081 J	0.0025 J	0.017 J	5,200	<500	33	2,800	<0.027
	UFMW-01D-20160809	08/09/16	1,700	0.015	0.013	--	--	--	--	--	--
UFMW-01D	--	04/13/17	Not sampled								
	UFMW-01D-20170619	06/19/17	690	0.015	0.017	--	6,200	<200	81	3,800	<0.027
	UFMW-01D-20170816	08/16/17	560	0.016	0.018	--	6,100	<50	67	4,000	<0.027
	UFMW-01D-20171005	10/05/17	530	0.021	--	--	6,200	<100	56	3,300	<0.027
	UFMW-01D-20180126	01/26/18	630	0.026	0.029	0.027	9,100	<500	51	3,500	<0.027 UJ
	UFMW-02S-20160810	08/10/16	1,200	<0.00025	0.18	--	--	--	--	--	--
UFMW-02S	UFMW-02S-20170126	01/26/17	15	0.00043 J	--	--	--	--	--	--	--
	UFMW-02S-20170412	04/12/17	270	0.009	0.024	0.57	3,000	<100	99	3,300	0.12
	UFMW-02S-20170619	06/19/17	41	0.0038	0.0043 J	--	340	<200	8.0	2,200	<0.027
	--	08/17/17	Less Than 1" of Water Observed in Well; Unable to Sample.								
	--	10/06/17	Well is dry								
	--	01/26/18	Well is dry								
UFMW-02I	UFMW-02I-20160810	08/10/16	1,900 J+	0.018	0.018	--	--	--	--	--	--
	UFMW-02I-20170411	04/11/17	480	0.0037	0.0066	<0.010	3,900	<500	70	3,200	<0.020
	UFMW-02I-20170619	06/19/17	550	0.0026	0.0056	--	3,500	<200	68	2,900	<0.027
	UFMW-02I-20170817	08/17/17	430	0.0052	0.0059	--	3,500	<100	54	3,200	<0.027 UJ
	UFMW-02I-20171006	10/06/17	370	0.0042	--	--	2,900	<500	43	3,000	<0.027
	UFMW-02I-20180126	01/26/18	470	0.0051	0.016	0.070	4,400	<500	56	3,100	<0.027
	UFMW-02D-20160810	08/10/16	2,900	0.012	0.014	--	--	--	--	--	--
UFMW-02D	--	04/13/17	Not sampled - Only measured for dye								
	UFMW-02D-20170620	06/20/17	1,300	0.015 J-	0.017	--	7,900	<200	96	4,800	<0.027
	UFMW-02D-20170817	08/17/17	980	0.013	0.015	--	6,200	<50	82	4,200	<0.027 UJ
	UFMW-02D-20171006	10/06/17	950	0.013	--	--	6,800	<500	80	4,500	<0.027
	UFMW-02D-20180126	01/26/18	1,200	0.011	0.055	0.22	7,300	<500	76	4,100	<0.027
	--	08/08/16	Well is dry								
UFMW-03S	--	01/27/17	Well is dry								
	--	04/12/17	Well is dry								
	--	06/19/17	Well is dry								
	--	08/17/17	Well is dry								
	--	10/06/17	Well is dry								
	--	01/26/18	Well is dry								
	--	01/26/18	Well is dry								
UFMW-03I	UFMW-03I-20160808	08/08/16	1,400 J+	0.018	0.018	--	--	--	--	--	--
	UFMW-03I-20170411	04/11/17	140	0.0018 J	0.0025 J	0.022	1,500	<100	18	2,200	<0.020
	UFMW-03I-20170620	06/20/17	130	0.0034	<0.0025	--	1,200	<200	18	2,800	<0.027
	UFMW-03I-20170817	08/17/17	160	0.0013 J	0.0033 J	--	2,200	<50	27	2,900	<0.027 UJ
	UFMW-03I-20170817-FD	08/17/17	160	0.0014 J	0.0043 J	--	2,400	<50	27	2,900	<0.027 UJ
	UFMW-03I-20171006	10/06/17	230	0.0024	--	--	3,600	<500	33	2,900	<0.027
	UFMW-03I-20180126	01/26/18	390	0.04	0.041	0.072	32,000	<500	73	3,200	<0.027
	UFMW-03D-20160808	08/08/16	2,200	0.029	0.033	--	--	--	--	--	--
UFMW-03D	--	04/13/17	Not sampled - Only measured for dye								
	UFMW-3D-20170620	06/20/17	420	0.0085	0.0093	--	4,300	<200	43	2,700	<0.027
	UFMW-3D-20170817	08/17/17	610	0.011	0.014	--	4,900	<50	45	3,400	<0.027 UJ
	UFMW-03D-20171006	10/06/17	480	0.0083	--	--	4,600	<500	40	2,900	<0.027
	UFMW-03D-20180126	01/26/18	620	0.019	0.020	0.018 J	8,300	<500	47	3,000	<0.050
	UFMW-03D-20180126-FD	01/26/18	580	0.019	0.020	0.017 J	8,100	<500	49	3,000	<0.050
	--	01/26/18	Well is dry								

Table B-8 - Summary of Performance Groundwater Analytical Results
Plot 1

Well ID	Sample ID	Sample Date	Dissolved Metals by USEPA Method 6020 (µg/L)																	
			Aluminum	Antimony	Arsenic	Barium	Beryllium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Nickel	Selenium	Silver	Thallium	Uranium	Vanadium	Zinc
UFMW-01S	UFMW-01S-20160809	08/09/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-01S-20170126	01/26/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	04/12/17	Less Than 1" of Water Observed in Well; Unable to Sample.																	
	UFMW-01S-20170619	06/19/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-01S-20170817	08/17/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	10/06/17	Well is dry																	
UFMW-01I	--	01/26/18	Well is dry																	
	UFMW-01I-20160809	08/09/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-01I-20160809-FD	08/09/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-01I-20170411	04/11/17	<25	<2.5	190	20	<1.3	<2.5	<2.5	5.7 J	<40	<2.5	6.9	6.0 J	2.9 J	<2.5	<2.5	39	27	<13
	UFMW-01I-20170619	06/19/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-01I-20170816	08/16/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UFMW-01D	UFMW-01I-20171006	10/06/17	5.9 J	<0.50	160	16	<0.25	0.99 J	<0.50	1.4 J	320	<0.50	10	1.8 J	1.8 J	<0.50	<0.50	28	24	3.7 J
	UFMW-01I-20180126	01/26/18	48	<0.50	170	22	<0.25	1.4 J	<0.50	8.0	46 J+	<0.50	14	2.0	2.3	0.89 J	<0.50	35	21	21 J+
	UFMW-01D-20160809	08/09/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	04/13/17	Not sampled																	
	UFMW-01D-20170619	06/19/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-01D-20170816	08/16/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UFMW-02S	UFMW-01D-20171005	10/05/17	<5.0	<0.50	120	21	<0.25	18	<0.50	<0.50	<8.0	<0.50	8.9	0.75 J	2.7	<0.50	0.59 J	39	16	5.7 J
	UFMW-01D-20180126	01/26/18	250 J+	0.54 J	130	25	<0.25	24	0.50 J	1.9 J	140	<0.50	11	2.0	3.4	1.4	0.85 J	37	15	4.0 J
	UFMW-02S-20160810	08/10/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-02S-20170126	01/26/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-02S-20170412	04/12/17	<25	<2.5	140	19	<1.3	10	<2.5	<2.5	460	<2.5	450	2.6 J	3.4 J	<2.5	<2.5	68	46	84 J
	UFMW-02S-20170619	06/19/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UFMW-02I	--	08/17/17	Less Than 1" of Water Observed in Well; Unable to Sample.																	
	--	10/06/17	Well is dry																	
	--	01/26/18	Well is dry																	
	UFMW-02I-20160810	08/10/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-02I-20170411	04/11/17	<25	<2.5	130	17	<1.3	3.3 J	<2.5	5.3 J	<40	<2.5	4.4 J	3.3 J	<2.5	<2.5	<2.5	32	19	15 J
	UFMW-02I-20170619	06/19/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UFMW-02D	UFMW-02I-20170817	08/17/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-02I-20171006	10/06/17	5.7 J	<0.50	180	15	<0.25	7	<0.50	1.7 J	<8.0	<0.50	8.9	2.0 J+	1.8 J	<0.50	<0.50	18	36	6.0 J
	UFMW-02I-20180126	01/26/18	1,500	<0.50	120	24	<0.25	8.4	0.72 J	3.0	910	0.84 J	27	2.9	2.5	<0.50	0.62 J	32	17	65
	UFMW-02D-20160810	08/10/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	04/13/17	Not sampled - Only measured for dye																	
	UFMW-02D-20170620	06/20/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UFMW-03S	UFMW-02D-20170817	08/17/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-02D-20171006	10/06/17	<5.0	<0.50	61	25	<0.25	12	<0.50	1.4 J	<8.0	<0.50	7.8	1.9 J	2.8	<0.50	0.80 J	25	14	2.7 J
	UFMW-02D-20180126	01/26/18	7,000	<0.50	64	92	0.40 J	26	1.8	5.8	3,500	4.7	90	6.0	2.7	<0.50	<0.50	27	20	32 J+
	--	08/08/16	Well is dry																	
	--	01/27/17	Well is dry																	
	--	04/12/17	Well is dry																	
UFMW-03I	--	06/19/17	Well is dry																	
	--	08/17/17	Well is dry																	
	--	10/06/17	Well is dry																	
	--	01/26/18	Well is dry																	
	UFMW-03I-20160808	08/08/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-03I-20170411	04/11/17	31 J	<2.5	160	17	<1.3	2.6 J	<2.5	6.2 J	<40	<2.5	18	3.3 J	4.4 J	<2.5	<2.5	23	31	18 J
UFMW-03D	UFMW-03I-20170620	06/20/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-03I-20170817	08/17/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-03I-20170817-FD	08/17/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-03I-20171006	10/06/17	<5.0	<0.50	150	18	<0.25	14	0.51 J	1.4 J	46	<0.50	33	7.6	2.3	<0.50	<0.50	30	23	2.5 J
	UFMW-03I-20180126	01/26/18	230	<0.50	150	24	<0.25	36	0.53 J	2.3	170	<0.50	59	2.3	2.8	0.73 J	<0.50	41	21	4.9 J
	UFMW-03D-20160808	08/08/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UFMW-03D	--	04/13/17	Not sampled - Only measured for dye																	
	UFMW-3D-20170620	06/20/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-3D-20170817	08/17/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-03D-20171006	10/06/17	5.0 J	<0.50	120	18	<0.25	8.7	<0.50	1.5 J	<8.0	<0.50	7.6	1.5 J	2.7	<0.50	1.3	28	17	15 J
	UFMW-03D-20180126	01/26/18	220	<0.50	110	19	<0.25	17	<0.50	2.0	150	<0.50	11	1.6 J	2.6	0.68 J	1.3	25	15	4.8 J
	UFMW-03D-20180126-FD	01/26/18	200	<0.50	110	20	<0.25	18	<0.50	2.1	130	<0.50	12	1.5 J	2.3	0.92 J	1.3	25	15	5.8 J

Table B-8 - Summary of Performance Groundwater Analytical Results
Plot 1

Well ID	Sample ID	Sample Date	General Water Quality Parameters using Field Water Quality Meter							Dye Testing		
			pH	Temp (°C)	Specific Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Sulfide (mg/L)	Rhodamine (ppm)	Uranine (ppm)	Notes
UFMW-01S	UFMW-01S-20160809	08/09/16	7.90	27.36	7.87	200	1.91	>1,000	--	--	--	--
	UFMW-01S-20170126	01/26/17	5.97	16.59	3.77	1.208	6.94	370	--	--	--	--
	--	04/12/17	Less Than 1" of Water Observed in Well; Unable to Sample.									
	UFMW-01S-20170619	06/19/17	7.16	26.96	3.55	163	0.32	0.48	--	1.368	10.24	No visible dye
	UFMW-01S-20170817	08/17/17	6.97	29.10	4.38	142	1.21	52.0	--	1.942	6.746	No visible dye
	--	10/06/17										
UFMW-01I	--	01/26/18	Well is dry									
	UFMW-01I-20160809	08/09/16	7.62	29.84	6.53	164	0.56	1.9	--	--	--	--
	UFMW-01I-20160809-FD	08/09/16	--	--	--	--	--	--	--	--	--	--
	UFMW-01I-20170411	04/11/17	7.67	26.68	4.82	88	1.75	0.0	0.00	17.8	43.22	No visible dye
	UFMW-01I-20170619	06/19/17	7.49	28.38	4.00	142	0.33	0.69	--	0.752	11.88	No visible dye
	UFMW-01I-20170816	08/16/17	7.23	23.31	3.55	41	0.00	1.90	--	2.232	4.998	No visible dye
	UFMW-01I-20171006	10/06/17	7.40	22.95	2.98	110	0.24	0.0	--	--	--	No visible dye
	UFMW-01I-20180126	01/26/18	8.24	16.26	3.69	138	0.75	3.2	--	1.632	8.112	No visible dye
UFMW-01D	UFMW-01D-20160809	08/09/16	7.97	29.21	6.73	180	3.54	33.0	--	--	--	--
	--	04/13/17	Not sampled							14.2	35.66	No visible dye
	UFMW-01D-20170619	06/19/17	7.54	29.91	5.36	148	0.45	0.00	--	0.218	10.53	No visible dye
	UFMW-01D-20170816	08/16/17	7.23	25.24	5.20	61	0.69	0.10	--	1.294	4.090	No visible dye
	UFMW-01D-20171005	10/05/17	7.44	25.31	4.58	154	0.18	0.0	--	--	--	--
	UFMW-01D-20180126	01/26/18	8.16	18.85	4.97	116	0.16	0.4	--	1.638	6.904	No visible dye
UFMW-02S	UFMW-02S-20160810	08/10/16	7.15	27.03	10.3	219	1.89	>1,000	--	--	--	--
	UFMW-02S-20170126	01/26/17	7.34	16.38	2.73	147	7.80	249	--	--	--	--
	UFMW-02S-20170412	04/12/17	6.30	26.61	6.50	12	2.95	211	0.00	23.40	57.13	No visible dye
	UFMW-02S-20170619	06/19/17	7.32	27.13	2.52	169	0.25	0.00	--	2.199	56.81	No visible dye
	--	08/17/17	Less Than 1" of Water Observed in Well; Unable to Sample.									
	--	10/06/17	Well is dry									
UFMW-02I	--	01/26/18	Well is dry									
	UFMW-02I-20160810	08/10/16	7.60	30.60	7.45	180	0.65	1.1	--	--	--	--
	UFMW-02I-20170411	04/11/17	7.82	29.59	4.73	86	1.66	0.0	0.00	21.8	60.69	No visible dye
	UFMW-02I-20170619	06/19/17	7.37	43.11	4.77	159	0.81	34.3	--	0.461	26.14	No visible dye
	UFMW-02I-20170817	08/17/17	7.30	24.52	4.74	90	0.00	0.7	--	1.112	7.779	No visible dye
	UFMW-02I-20171006	10/06/17	7.52	23.86	4.08	156	0.19	0.0	--	--	--	--
	UFMW-02I-20180126	01/26/18	8.20	2013.00	4.50	117	2.98	82.1	--	1.089	5.989	No visible dye
UFMW-02D	UFMW-02D-20160810	08/10/16	7.79	29.39	8.02	171	0.58	5.5	--	--	--	--
	--	04/13/17	Not sampled - Only measured for dye							13.9	34.32	No visible dye
	UFMW-02D-20170620	06/20/17	7.52	31.34	5.86	149	0.78	0.0	--	0.499	13.98	No visible dye
	UFMW-02D-20170817	08/17/17	7.30	25.81	5.59	66	0.00	0.0	--	1.004	5.422	No visible dye
	UFMW-02D-20171006	10/06/17	7.50	24.56	5.18	162	0.23	0.0	--	--	--	No visible dye
	UFMW-02D-20180126	01/26/18	7.61	22.28	4.97	26	2.53	38.8	--	1.232	5.911	No visible dye
UFMW-03S	--	08/08/16	Well is dry									
	--	01/27/17	Well is dry									
	--	04/12/17	Well is dry									
	--	06/19/17	Well is dry									
	--	08/17/17	Well is dry									
	--	10/06/17	Well is dry									
	--	01/26/18	Well is dry									
UFMW-03I	UFMW-03I-20160808	08/08/16	7.64	33.48	6.85	152	1.50	0.0	--	--	--	--
	UFMW-03I-20170411	04/11/17	7.88	28.73	3.29	94	1.36	0.0	0.00	16.070	52.58	No visible dye
	UFMW-03I-20170620	06/20/17	7.61	23.51	3.76	126	1.95	1.91	--	0.719	11.16	No visible dye
	UFMW-03I-20170817	08/17/17	7.32	21.37	4.02	38	0.00	1.30	--	0.983	7.72	No visible dye
	UFMW-03I-20170817-FD	08/17/17	--	--	--	--	--	--	--	--	--	--
	UFMW-03I-20171006	10/06/17	7.21	20.92	3.90	100	3.06	0.0	--	--	--	No visible dye
	UFMW-03I-20180126	01/26/18	7.11	19.27	4.63	17	0.16	3.7	--	1.011	6.998	No visible dye
UFMW-03D	UFMW-03D-20160808	08/08/16	7.75	30.65	7.36	169	2.52	0.0	--	--	--	--
	--	04/13/17	Not sampled - Only measured for dye							14.15	32.65	No visible dye
	UFMW-3D-20170620	06/20/17	7.73	25.86	4.79	143	0.56	0.00	--	0.409	16.91	No visible dye
	UFMW-3D-20170817	08/17/17	7.30	23.26	4.95	84	0.00	0.30	--	2.135	8.418	No visible dye
	UFMW-03D-20171006	10/06/17	7.41	20.39	4.37	88	5.31	37.7	--	--	--	--
	UFMW-03D-20180126	01/26/18	7.59	19.81	4.50	5	2.63	11.4	--	1.741	7.032	No visible dye
	UFMW-03D-20180126-FD	01/26/18	--	--	--	--	--	--	--	--	--	--

Notes:
°C Degrees Celsius
DO Dissolved oxygen
FD Field duplicate
µg/L Microgram per liter
mg/L Milligram per liter
mS/cm Millisiemens per centimeter
mV Millivolt
NTU Nephelometric turbidity units
ORP Oxidation reduction potential
ppm Parts per million
-- Not applicable
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Table B-9 - Summary of Performance Groundwater Analytical Results
Plot 2

Well ID	Sample ID	Sample Date	Perchlorate by USEPA Method 314.0 (mg/L)	Hexavalent Chromium by USEPA Method 7199 (mg/L)	Total Metals by USEPA Method 6010B (mg/L)		Disinfection By-Products by USEPA Method 300.1B (µg/L)		Nitrate as N by USEPA Method 300.0 (mg/L)	General Chemistry (mg/L)	
					Chromium	Manganese	Chlorate	Chlorite		Total Dissolved Solids	Total Sulfide
UFMW-04S	UFMW-04S-20160819	08/19/16	220	0.0066	0.037	--	--	--	--	--	--
	UFMW-04S-20170127	01/27/17	240	0.027	--	--	--	--	--	--	--
	UFMW-04S-20170127-DUP	01/27/17	250	0.027	--	--	--	--	--	--	--
	UFMW-04S-20170407	04/07/17	210	0.03	0.029	0.040	8,900	<1,000	40	3,700	<0.020
	UFMW-04S-20170620	06/20/17	150	0.014	0.016	--	8,600	<200	31	3,200	<0.027
	UFMW-04S-20170816	08/16/17	130	0.011	0.018	--	180	<50	55	3,400	<0.027
	UFMW-04S-20171005	10/05/17	21	0.002	--	--	860	<500	14	3,800	<0.027 UJ
	UFMW-04S-20180125	01/25/18	35	0.0013 J	0.079	0.150	1,400	<500	160	4,500	<0.027
UFMW-04I	UFMW-04I-20160818	08/18/16	400	0.026	0.039	--	--	--	--	--	--
	UFMW-04I-20160818-FD	08/18/16	390	0.026	0.044	--	--	--	--	--	--
	UFMW-04I-20170406	04/06/17	330	0.042 J-	0.044	0.024	9,600	<20	22	3,100	<0.020
	UFMW-04I-20170620	06/20/17	350	0.032	0.039	--	8,000	<200	21	3,100	<0.027
	UFMW-04I-20170620-FD	06/20/17	370	0.031	0.038	--	7,800	<200	22	3,200	<0.027
	UFMW-04I-20170816	08/16/17	240	0.031	0.034	--	10,000	<50	22	3,200	<0.027
	UFMW-04I-20171005	10/05/17	31	0.0085	--	--	1,500	<500	6.2	3,400	<0.027 UJ
	UFMW-04I-20180125	01/25/18	66	0.01	0.013 J+	0.017 J	3,600	<500	15	3,100	<0.027
UFMW-04D	UFMW-04D-20160818	08/18/16	870	0.027	0.028	--	--	--	--	--	--
	--	04/13/17	Not sampled - Only measured for dye								
	UFMW-04D-20170621	06/21/17	840	0.036	0.044	0.015 J	12,000	<100	18	3,800	<0.027 UJ
	UFMW-04D-20170816	08/16/17	670	0.036	0.038	--	12,000	<50	17	3,900	<0.027
	UFMW-04D-20171005	10/05/17	220	0.029	--	--	7,000	<500	14	3,800	<0.027 UJ
	UFMW-04D-20171005-FD	10/05/17	210	0.029	--	--	7,000	<500	18	3,700	<0.027 UJ
	UFMW-04D-20180125	01/25/18	150	0.02	0.031 J+	0.015 J	5,600	<500	14	3,300	<0.027
	UFMW-05S-20160819	08/19/16	610	<0.00025	0.16 J+	--	--	--	--	--	--
UFMW-05S	UFMW-05S-20170127	01/27/17	550	0.001 J	--	--	--	--	--	--	--
	UFMW-05S-20170407	04/07/17	440	0.0037	0.0046 J	0.11	13,000	<1,000	85	5,700	<0.020
	UFMW-05S-20170621	06/21/17	460	0.0032	0.0049 J	0.14	14,000	<100	100	5,100	<0.027 UJ
	UFMW-05S-20170816	08/16/17	290	0.006	0.021	--	11,000	<50	87	4,200	<0.027
	UFMW-05S-20171005	10/05/17	230	0.0011 J	--	--	16,000	<500	30	6,300	<0.027 UJ
	UFMW-05S-20180125	01/25/18	180	0.0012 J	0.059	0.62	15,000	<500	140	7,300	<0.027
	UFMW-05I-20160823	08/23/16	610	0.011	0.014	--	--	--	--	--	--
	UFMW-05I-20170407	04/07/17	410	0.027	0.027	0.029	9,200	<1,000	40	3,200	<0.020
UFMW-05I	UFMW-05I-20170621	06/21/17	470	0.022	0.027	0.029	7,900	<100	45	3,000	<0.027 UJ
	UFMW-05I-20170816	08/16/17	350	0.013	0.018	--	8,700	<50	47	3,500	<0.027
	UFMW-05I-20171004	10/04/17	230	0.014	--	--	5,100	<1,000	30	3,800	<0.027
	UFMW-05I-20180125	01/25/18	110	0.0058	0.041	0.023	2,200	<500	11	3,200	<0.027
	UFMW-05D-20160822	08/22/16	1,400	0.0058	0.0066	--	--	--	--	--	--
UFMW-05D	--	04/13/17	Not sampled - Only measured for dye								
	UFMW-05D-20170621	06/21/17	1,900	0.01	0.013	0.12	13,000	<100	33 J	4,700	<0.027 UJ
	UFMW-05D-20170815	08/15/17	1400 J-	0.022	0.024	--	11,000	<50	35	4,600	<0.027 UJ
	UFMW-05D-20171004	10/04/17	630	0.018	--	--	10,000	<1,000	29	4,700	<0.027
	UFMW-05D-20180125	01/25/18	660	0.014	0.029 J+	0.042	6,600	<500	23	4,000	<0.027
	UFMW-06S-20160819	08/19/16	730	0.028	0.031	--	--	--	--	--	--
UFMW-06S	UFMW-06S-20170127	01/27/17	560	0.0044	--	--	--	--	--	--	--
	UFMW-06S-20170410	04/10/17	770	0.0072	0.0083	0.048	8,100	<1,000	120	4,200	<0.020
	UFMW-06S-20170621	06/21/17	740	0.0038	0.0054	0.061	9,300	<100	100	3,800	<0.027 UJ
	UFMW-06S-20170815	08/15/17	490 J-	0.0045	0.049	--	8,900	<50	78	3,600	<0.027 UJ
	UFMW-06S-20171005	10/05/17	360	<0.013	--	--	12,000	<100	59	4,300	<0.027 UJ
	UFMW-06S-20180125	01/25/18	27	0.00073 J	0.31	1.6	910	<200	18	3,100	<0.027
	UFMW-06I-20160822	08/22/16	700	0.027	0.028	--	--	--	--	--	--
UFMW-06I	UFMW-06I-20170410	04/10/17	590	0.021	0.022	<0.010	8,600	<1,000	77	3,500	<0.020
	UFMW-06I-20170410-FD	04/10/17	600	0.021	0.021	<0.010	8,700	<1,000	79	3,400	<0.020
	UFMW-06I-20170622	06/22/17	740	0.02	0.024	--	1,700	<200	80	3,400	<0.027
	UFMW-06I-20170815	08/15/17	610 J-	0.016	0.017	--	8,700	<50	79 J-	3,400	<0.027 UJ
	UFMW-06I-20170815-FD	08/15/17	640 J-	0.016 J-	0.018	--	8,900	<50	77 J-	3,400	<0.027 UJ
	UFMW-06I-20171004	10/04/17	340	0.0082	--	--	12,000	<1,000	59	4,300	<0.027
	UFMW-06I-20180125	01/25/18	58	0.002	0.010 J+	0.041	1,900	<500	9.5	2,900	<0.027
	UFMW-06D-20160822	08/22/16	1,700	0.016	0.020	--	--	--	--	--	--
UFMW-06D	--	04/13/17	Not sampled - Only measured for dye								
	UFMW-06D-20170622	06/22/17	1,300	0.022	0.034	--	11,000	<500	48	3,700	<0.027
	UFMW-06D-20170622-FD	06/22/17	1,300	0.022	0.030	--	11,000	<500	53	3,800	<0.027
	UFMW-06D-20170815	08/15/17	1,300 J-	0.026 J-	0.025	--	11,000	<100	49 J-	3,600	<0.027 UJ
	UFMW-06D-20171004	10/04/17	1,300	0.027	--	--	9,900	<1,000	55	3,700	<0.027
	UFMW-06D-20180125	01/25/18	550	0.015	0.023 J+	0.023	7,300	<500	33	3,400	<0.027
	UFMW-06D-20180125-FD	01/25/18	480	0.015	0.022 J+	0.021	7,200	<500	34	3,300	<0.027

Table B-9 - Summary of Performance Groundwater Analytical Results
Plot 2

Well ID	Sample ID	Sample Date	Dissolved Metals by USEPA Method 6020 (µg/L)																
			Aluminum	Antimony	Arsenic	Barium	Beryllium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Nickel	Selenium	Silver	Thallium	Uranium	Vanadium
UFMW-04S	UFMW-04S-20160819	08/19/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-04S-20170127	01/27/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-04S-20170127-DUP	01/27/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-04S-20170407	04/07/17	94	0.68 J	140	36	<0.25	28	0.51 J	1.3 J	<40	<0.50	45	2.2	3.1	<0.50	<0.50	26	51
	UFMW-04S-20170620	06/20/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-04S-20170816	08/16/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-04S-20171005	10/05/17	7.1 J	1.0 J	180	23	<0.25	2.1 J+	<0.50	2.0	<8.0	<0.50	50	2.7 J+	2.1	<0.50	<0.50	24	40
UFMW-04I	UFMW-04S-20180125	01/25/18	7.3 J	2.0	130	22	<0.25	1.3 J	<0.50	2.3	<8.0	<0.50	65	2.3	1.9 J	<0.50	<0.50	48	26
	UFMW-04I-20160818	08/18/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-04I-20160818-FD	08/18/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-04I-20170406	04/06/17	350	<0.50	110	26	<0.25	39	<0.50	1.8 J	190	<0.50	25	1.3 J	3.0	<0.50	<0.50	21	26
	UFMW-04I-20170620	06/20/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-04I-20170620-FD	06/20/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-04I-20170816	08/16/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UFMW-04D	UFMW-04I-20171005	10/05/17	5.7 J	<0.50	180	15	<0.25	7.0	<0.50	1.7 J	<8.0	<0.50	8.9	2.0 J+	1.8 J	<0.50	<0.50	18	36
	UFMW-04I-20180125	01/25/18	8.2 J	<0.50	170	16	<0.25	8.8	<0.50	2.3	13 J	<0.50	9.5	1.3 J	2.1	<0.50	<0.50	16	37
	UFMW-04D-20160818	08/18/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	04/13/17	Not sampled - Only measured for dye																
	UFMW-04D-20170621	06/21/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-04D-20170816	08/16/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-04D-20171005	10/05/17	<5.0	<0.50	96	20	<0.25	25	<0.50	1.7 J	<8.0	<0.50	3.8	1.5 J	2.8	<0.50	<0.50	23	20
UFMW-05S	UFMW-04D-20171005-FD	10/05/17	<5.0	<0.50	98	20	<0.25	25	<0.50	1.5 J	<8.0	<0.50	3.6	1.3 J	2.7	<0.50	<0.50	23	20
	UFMW-04D-20180125	01/25/18	9.7 J	<0.50	130	20	<0.25	17	<0.50	1.7 J	<8.0	<0.50	4.9	1.1 J	2.7	<0.50	<0.50	19	22
	UFMW-05S-20160819	08/19/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-05S-20170127	01/27/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-05S-20170407	04/07/17	350	<0.50	49	45	<0.25	4.8	0.87 J	2.0	260	<0.50	130	4.2	4.1	<0.50	<0.50	35	20
	UFMW-05S-20170621	06/21/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-05S-20170816	08/16/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UFMW-05I	UFMW-05S-20171005	10/05/17	5.6 J	<0.50	120	31	<0.25	1.3 J	1.1	4.1	15 J	<0.50	130	4.0	5.1	<0.50	<0.50	53	27
	UFMW-05S-20180125	01/25/18	480	0.52 J	51	41	<0.25	2.5	1.2	3.9	340	<0.50	370	6.2	5.1	<0.50	<0.50	75	11
	UFMW-05I-20160823	08/23/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-05I-20170407	04/07/17	210	<0.50	130	25	<0.25	27	<0.50	1.9 J	150	<0.50	33	1.2 J	3.3	<0.50	<0.50	23	30
	UFMW-05I-20170621	06/21/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-05I-20170816	08/16/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-05I-20171004	10/04/17	<25	<2.5	140	24	<1.3	15	<2.5	<2.5	<40	<2.5	32	<2.5	2.9 J	<2.5	<2.5	27	28
UFMW-05D	UFMW-05I-20180125	01/25/18	9.3 J	<0.50	160	6.1	<0.25	5.3	<0.50	1.7 J	<8.0	<0.50	0.93 J	1.3 J	2.4	<0.50	<0.50	18	29
	UFMW-05D-20160822	08/22/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	04/13/17	Not sampled - Only measured for dye																
	UFMW-05D-20170621	06/21/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-05D-20170815	08/15/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-05D-20171004	10/04/17	<25	<2.5	110	26	<1.3	18	<2.5	<2.5	<40	<2.5	63	<2.5	4.2 J	<2.5	<2.5	22	18
	UFMW-05D-20180125	01/25/18	10	<0.50	130	19	<0.25	14	<0.50	2.4	15 J	<0.50	23	2.4	3.0	<0.50	<0.50	26	18
UFMW-06S	UFMW-06S-20160819	08/19/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-06S-20170127	01/27/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-06S-20170410	04/10/17	12	<0.50	170	32	<0.25	6.0	0.54 J	3.7	<16	1.0	96	4.0	2.2	<0.50	<0.50	34	42
	UFMW-06S-20170621	06/21/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-06S-20170815	08/15/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-06S-20171005	10/05/17	<5.0	<0.50	140	26	<0.25	5.8	0.63 J	1.3 J	<8.0	<0.50	40	2.3 J+	3.9	<1.0	<0.50	32	35
	UFMW-06S-20180125	01/25/18	68	<0.50	170	15	<0.25	1.1 J	<0.50	1.9 J	41	<0.50	30	1.8 J	1.9 J	<0.50	<0.50	26	38
UFMW-06I	UFMW-06I-20160822	08/22/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-06I-20170410	04/10/17	6.0 J	<0.50	180	21	<0.25	17	<0.50	3.4	<8.0	<0.50	7.1	2.6	3.0	<0.50	<0.50	28	31
	UFMW-06I-20170410-FD	04/10/17	<5.0	<0.50	160	19	<0.25	16	<0.50	3.3	<8.0	<0.50	7.1	2.3	3.1	<0.50	<0.50	25	28
	UFMW-06I-20170622	06/22/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-06I-20170815	08/15/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-06I-20170815-FD	08/15/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-06I-20171004	10/04/17	<25	<2.5	160	29	<1.3	9.3 J	<2.5	<2.5	<40	<2.5	10	<2.5	3.5 J	<2.5	<2.5	28	32
UFMW-06D	UFMW-06I-20180125	01/25/18	9.2 J	0.79 J	190	13	<0.25	1.9 J	<0.50	88	100	14	6.9	4.9	2.1	<0.50	<0.50	15	34
	UFMW-06D-20160822	08/22/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	04/13/17	Not sampled - Only measured for dye																
	UFMW-06D-20170622	06/22/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-06D-20170622-FD	06/22/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-06D-20170815	08/15/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	UFMW-06D-20171004	10/04/17	<25	<2.5	140	25	<1.3	28	<2.5	<2.5	<40	<2.5	5.0	<2.5	4.4 J	<2.5	<2.5	21	19
	UFMW-06D-20180125	01/25/18	7.3 J	<0.50	160	23	<0.25	15	<0.50	1.5 J	<8.0	<0.50	4.5	1.4 J	3.2	<0.50	<0.50	22	18
	UFMW-06D-20180125-FD	01/25/18	7.9 J	<0.50	160	23	<0.25	14	<0.50	1.9 J	<8.0	<0.50	3.7	1.2 J	3.0	<0.50	0.55 J	22	18

Table B-9 - Summary of Performance Groundwater Analytical Results
Plot 2

Well ID	Sample ID	Sample Date	General Water Quality Parameters using Field Water Quality Meter							Dye Testing		
			pH	Temp (°C)	Specific Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Sulfide (mg/L)	Rhodamine (ppm)	Uranine (ppm)	Notes
UFMW-04S	UFMW-04S-20160819	08/19/16	7.91	25.95	4.80	133	0.96	196	--	--	--	--
	UFMW-04S-20170127	01/27/17	7.53	8.99	5.71	-10	3.39	140	--	--	--	--
	UFMW-04S-20170127-DUP	01/27/17	--	--	--	--	--	--	--	--	--	--
	UFMW-04S-20170407	04/07/17	7.51	26.97	4.48	128	1.12	0.00	0.02	32.68	61.59	No visible dye
	UFMW-04S-20170620	06/20/17	7.43	27.63	4.22	160	0.46	0.00	--	0.485	13.36	No visible dye
	UFMW-04S-20170816	08/16/17	7.20	27.00	4.60	150	0.18	0.00	--	1.113	6.675	No visible dye
	UFMW-04S-20171005	10/05/17	7.30	26.52	4.25	161	0.19	0.00	--	--	--	No visible dye
UFMW-04I	UFMW-04S-20180125	01/25/18	7.23	16.77	3.96	85	10.08	36.3	--	2.011	7.312	No visible dye
	UFMW-04I-20160818	08/18/16	7.84	29.16	4.28	125	2.12	12.0	--	--	--	--
	UFMW-04I-20160818-FD	08/18/16	--	--	--	--	--	--	--	--	--	--
	UFMW-04I-20170406	04/06/17	7.74	30.76	4.52	112	1.08	5.8	0.00	21.02	58.36	No visible dye
	UFMW-04I-20170620	06/20/17	7.63	29.31	4.61	153	0.27	4.6	--	1.588	84.47	No visible dye
	UFMW-04I-20170620-FD	06/20/17	--	--	--	--	--	--	--	--	--	No visible dye
	UFMW-04I-20170816	08/16/17	7.32	26.65	4.67	68	0.00	2.5	--	1.003	8.941	No visible dye
UFMW-04D	UFMW-04I-20171005	10/05/17	7.31	26.37	4.02	153	0.10	0.0	--	--	--	No visible dye
	UFMW-04I-20180125	01/25/18	7.59	18.28	4.08	129	0.78	4.6	--	0.996	6.325	No visible dye
	UFMW-04D-20160818	08/18/16	7.79	28.01	5.04	130	0.95	0.1	--	--	--	--
	--	04/13/17	Not sampled - Only measured for dye							12.62	29.78	No visible dye
	UFMW-04D-20170621	06/21/17	7.70	26.96	5.17	113	1.08	4.98	--	1.387	0.813	No visible dye
	UFMW-04D-20170816	08/16/17	7.42	26.69	5.12	75	0.00	1.80	--	1.342	5.770	No visible dye
	UFMW-04D-20171005	10/05/17	7.41	24.43	4.92	173	0.17	0.0	--	--	--	No visible dye
UFMW-05S	UFMW-04D-20171005-FD	10/05/17	--	--	--	--	--	--	--	--	--	--
	UFMW-04D-20180125	01/25/18	7.86	21.28	4.57	108	0.08	0.0	--	1.646	7.110	No visible dye
	UFMW-05S-20160819	08/19/16	8.14	26.66	5.65	31	1.13	205	--	--	--	--
	UFMW-05S-20170127	01/27/17	7.35	16.35	8.76	36	1.11	545	--	--	--	--
	UFMW-05S-20170407	04/07/17	7.31	27.86	7.12	127	1.14	0.0	0.00	21.80	55.5	No visible dye
	UFMW-05S-20170621	06/21/17	7.23	27.03	6.93	159	1.03	3.6	--	1.264	50.21	No visible dye
	UFMW-05S-20170816	08/16/17	7.21	27.13	6.72	145	0.30	6.4	--	0.980	2.347	No visible dye
UFMW-05I	UFMW-05S-20171005	10/05/17	5.58	25.08	9.02	206	1.63	68.4	--	--	--	No visible dye
	UFMW-05S-20180125	01/25/18	8.07	18.75	6.01	113	6.92	620	--	0.545	4.321	No visible dye
	UFMW-05I-20160823	08/23/16	7.81	26.57	5.37	119	0.32	7.8	--	--	--	--
	UFMW-05I-20170407	04/07/17	7.76	29.76	4.87	126	0.88	0.0	0.08	18.1	43.98	No visible dye
	UFMW-05I-20170621	06/21/17	7.65	28.34	5.03	146	0.85	4.49	--	0.983	19.13	No visible dye
	UFMW-05I-20170816	08/16/17	7.18	26.77	5.08	12	0.00	2.90	--	0.616	4.420	No visible dye
	UFMW-05I-20171004	10/04/17	7.13	27.50	5.39	109	0.51	3.80	--	--	--	No visible dye
UFMW-05D	UFMW-05I-20180125	01/25/18	8.01	20.55	4.68	22	1.25	20.9	--	0.988	5.136	No visible dye
	UFMW-05D-20160822	08/22/16	7.74	30.98	6.10	93	0.55	34.8	--	--	--	--
	--	04/13/17	Not sampled - Only measured for dye							14.8	35.33	No visible dye
	UFMW-05D-20170621	06/21/17	7.57	30.00	6.61	113	0.82	4.75	--	1.114	9.260	No visible dye
	UFMW-05D-20170815	08/15/17	7.20	27.49	6.47	116	0.00	0.50	--	0.745	2.316	No visible dye
	UFMW-05D-20171004	10/04/17	7.14	27.38	5.90	115	0.30	4.3	--	--	--	No visible dye
	UFMW-05D-20180125	01/25/18	7.81	21.02	6.07	93	0.05	9.4	--	1.463	6.817	No visible dye
UFMW-06S	UFMW-06S-20160819	08/19/16	7.57	29.61	5.32	88	0.85	5.4	--	--	--	--
	UFMW-06S-20170127	01/27/17	7.49	16.35	5.32	-25	6.32	348	--	--	--	--
	UFMW-06S-20170410	04/10/17	7.46	26.24	5.67	134	5.73	0.0	0.00	61.31	134.1	No visible dye
	UFMW-06S-20170621	06/21/17	7.30	30.88	5.77	141	1.25	3.23	--	1.032	41.13	No visible dye
	UFMW-06S-20170815	08/15/17	7.07	29.11	5.46	182	0.00	23.1	--	1.139	0.879	No visible dye
	UFMW-06S-20171005	10/05/17	5.93	23.97	6.34	164	1.99	0.3	--	--	--	No visible dye
	UFMW-06S-20180125	01/25/18	7.06	21.39	3.48	9	0.00	727	--	1.985	8.132	No visible dye
UFMW-06I	UFMW-06I-20160822	08/22/16	7.52	26.84	5.43	121	0.67	2.3	--	--	--	--
	UFMW-06I-20170410	04/10/17	7.76	27.45	5.46	140	0.98	0.0	0.01	18.90	45.95	No visible dye
	UFMW-06I-20170410-FD	04/10/17	--	--	--	--	--	--	--	--	--	--
	UFMW-06I-20170622	06/22/17	7.57	28.09	5.51	130	0.88	4.73	--	0.763	12.06	No visible dye
	UFMW-06I-20170815	08/15/17	7.18	26.65	5.71	185	0.51	0.0	--	2.175	4.069	No visible dye
	UFMW-06I-20170815-FD	08/15/17	--	--	--	--	--	--	--	--	--	--
	UFMW-06I-20171004	10/04/17	7.24	25.59	6.8	71	0.61	0.0	--	--	--	No visible dye
UFMW-06D	UFMW-06I-20180125	01/25/18	7.46	22.66	4.02	7	0.88	74.9	--	1.465	8.019	No visible dye
	UFMW-06D-20160822	08/22/16	7.78	29.67	6.61	134	2.46	5.2	--	--	--	--
	--	04/13/17	Not sampled - Only measured for dye							14.9	34.47	No visible dye
	UFMW-06D-20170622	06/22/17	7.74	27.31	6.47	134	0.89	129	--	0.846	7.23	No visible dye
	UFMW-06D-20170622-FD	06/22/17	--	--	--	--	--	--	--	--	--	--
	UFMW-06D-20170815	08/15/17	7.27	26.61	6.52	178	0.71	1.1	--	1.031	0.923	No visible dye
	UFMW-06D-20171004	10/04/17	7.51	26.76	5.97	49	0.62	9.0	--	--	--	--
	UFMW-06D-20180125	01/25/18	7.33	22.91	5.57	-13	0.29	115	--	0.987	7.394	No visible dye
	UFMW-06D-20180125-FD	01/25/18	--	--	--	--	--	--	--	--	--	--

Notes:
°C Degrees Celsius
DO Dissolved oxygen
FD Field duplicate
µg/L Microgram per liter
mg/L Milligram per liter
mS/cm Millisiemens per centimeter
mV Millivolt
NTU Nephelometric turbidity units
ORP Oxidation reduction potential
ppm Parts per million
-- Not applicable
J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Appendix C

Physical Parameter Laboratory Reports



8100 Secura Way • Santa Fe Springs, CA 90670
Telephone (562) 347-2500 • Fax (562) 907-3610

August 11, 2016

Mark Feldman
Tetra Tech, Inc.
301 E. Vanderbilt Way, Suite 450
San Bernardino, CA 92408

Re: PTS File No: 46425
Physical Properties Data
NERT Downflushing; 117-7502016-K01

Dear Mr. Feldman:

Please find enclosed report for Physical Properties analyses conducted upon samples received from your NERT Downflushing; 117-7502016-K01 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. The samples are currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

PTS Laboratories appreciates the opportunity to be of service. If you have any questions or require additional information, please give me a call at (562) 347-2502.

Sincerely,
PTS Laboratories, Inc.

Michael Mark Brady, P.G.
Laboratory Director

Encl.

Project Name: NERT Downflushing
Project Number: 117-7502016-K01

PTS File No: 46425
Client: Tetra Tech, Inc.

TEST PROGRAM - 20160715

CORE ID	Depth ft.	Core Recovery ft.	Total/Air/Water Porosity API RP 40	Dry Bulk Density API RP40	Moisture Content ASTM D2216/API RP40	Grain Density API RP40			Comments
		Plugs:	Vert. 1.5"	Vert. 1.5"	Vert. 1" or Vert. 1.5"	Vert. 1.5"			
Date Received: 20160715									
DFSB-03-10'	N/A	0.50	X	X	X	X			
DFSB-04-15'	N/A	0.50	X	X	X	X			
DFSB-05-20'	N/A	0.50	X	X	X	X			
DFSB-06-25'	N/A	0.50	X	X	X	X			
DFSB-07-30'	N/A	0.50	X	X	X	X			
DFSB-08-35'	N/A	0.50	X	X	X	X			
DFSB-09-40'	N/A	0.50	X	X	X	X			
DFSB-10-10'	N/A	0.50	X	X	X	X			
DFSB-12-20'	N/A	0.50	X	X	X	X			
DFSB-14-30'	N/A	0.50	X	X	X	X			
DFSB-16-40'	N/A	0.50	X	X	X	X			
TOTALS:	11 Cores	5.50	11	11	11	11			11

Laboratory Test Program Notes

Contaminant identification: _____

Standard TAT for basic analysis is 15 business days.

PTS File No: 46425
 Client: Tetra Tech, Inc.
 Report Date: 08/11/16

PHYSICAL PROPERTIES DATA

Project Name: NERT Downflushing
 Project No: 117-7502016-K01

SAMPLE ID.	DEPTH, ft.	METHODS: SAMPLE ORIENTATION (1)	API RP 40 / ASTM D2216 MOISTURE CONTENT, % weight	API RP 40		API RP 40		
				DENSITY		POROSITY, %Vb (2)		
				DRY BULK, g/cc	GRAIN, g/cc	TOTAL	AIR-FILLED	WATER-FILLED
DFSB-03-10'	N/A	V	7.9	1.63	2.70	39.6	26.8	12.9
DFSB-04-15'	N/A	V	13.9	1.23	2.63	53.3	36.2	17.1
DFSB-05-20'	N/A	V	20.6	1.25	2.66	52.8	26.9	25.9
DFSB-06-25'	N/A	V	9.5	1.48	2.56	42.2	28.1	14.0
DFSB-07-30'	N/A	V	43.5	1.10	2.59	57.5	9.6	48.0
DFSB-08-35'	N/A	V	59.0	0.95	2.55	62.9	7.1	55.8
DFSB-09-40'	N/A	V	100.4	0.58	2.53	77.2	19.1	58.1
DFSB-10-10'	N/A	V	15.3	1.35	2.61	48.3	27.6	20.6
DFSB-12-20'	N/A	V	13.7	1.18	2.63	55.3	39.2	16.1
DFSB-14-30'	N/A	V	21.9	1.22	2.61	53.5	26.8	26.7
DFSB-16-40'	N/A	V	53.0	1.01	2.56	60.7	7.3	53.4

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Total Porosity = all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids.

Vb = Bulk Volume, cc; - - = Analysis not requested.



TETRA TECH, INC.
301 E. Vanderbilt Way, Suite 450
San Bernardino, California 92408
Telephone: (909) 381-1674
FAX: (909) 889-1391

SHIP TO:

PTS Laboratories
8100 Secura Way
Santa Fe Springs, CA
90670

CHAIN OF CUSTODY RECORD

46425

DATE 07/15/2016 PAGE 1 OF 2

CLIENT: <u>Tetra Tech</u>				PARAMETERS													TURN-AROUND TIME	
PROJECT NAME: <u>NEAT Decontamination</u>				<div style="display: flex; justify-content: space-between;"> <div> <p>Dry Bulk Density API-PP40</p> <p>Grain Density API-RP40</p> <p>Porosity API-RP40</p> <p>Moisture Content ASTM D-2911/A91-RP40</p> </div> <div> <p>FILTERED/UNFILTERED</p> <p>MATRIX TYPE</p> <p>CONTAINER TYPE</p> <p>NUMBER OF CONTAINERS</p> <p>PRESERVATIVE</p> </div> </div>													Standard	
PROJECT MANAGER: <u>Mark Feldman</u>																	OBSERVATIONS/COMMENTS	
TC #: <u>100-SB0-T35000-2016-K01-C0P1100</u>																	Please report all data to MDL	
SAMPLERS (Signatures): <u>[Signature]</u>																		
LINE ITEM	SAMPLE NO.	DATE	TIME	Dry Bulk Density API-PP40	Grain Density API-RP40	Porosity API-RP40	Moisture Content ASTM D-2911/A91-RP40											
1.	DFSB-03-10'	07/06/16	1310	X	X	X	X								Un	S	BS	NR
2.	DFSB-04-15'	07/08/16	0800	X	X	X	X									SS		
3.	DFSB-05-20'	07/07/16	1410	X	X	X	X									SS		
4.	DFSB-06-25'	07/07/16	1025	X	X	X	X									SS		
5.	DFSB-07-30'	07/11/2016	0835	X	X	X	X									SS		
6.	DFSB-08-35'	07/11/2016	1150	X	X	X	X									SS		
7.	DFSB-09-40'	07/08/16	1510	X	X	X	X									SS		
8.	DFSB-10-10'	07/14/16	0955	X	X	X	X									SS		
9.	DFSB-12-20'	07/13/16	1435	X	X	X	X									SS		
10.	DFSB-14-30'	07/12/2016	0815	X	X	X	X								X	V	SS	V

FILTERING:
☐ FILTERED ☒ UNFILTERED

MATRIX TYPE:
S - Soil
M - Sediment
W - Water

CONTAINER TYPE:
G - Glass Bottle/Jar
SS - Stainless Steel Sleeve
SB - Brass Sleeve
P - Plastic Bottle/Jar

PRESERVATIVES: (Water Only)
HCL
NR (None required)
NaOH
H₂SO₄

RELINQUISHED BY <u>Vanessa Calder</u>	SIGNATURE <u>[Signature]</u>	TETRA TECH, INC.	DATE/ <u>07/15/16</u>	TIME <u>1512</u>	TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY: <u>10</u>
RECEIVED BY <u>Robert Roja</u>	SIGNATURE <u>[Signature]</u>		COMPANY <u>PTS LABS</u>	DATE <u>7.15.16</u>	TIME <u>1512</u>
RELINQUISHED BY	SIGNATURE	COMPANY	DATE	TIME	Special Shipping/Handling/Storage Requirements:
RECEIVED BY	SIGNATURE	COMPANY	DATE	TIME	



SHIP TO: PTS Laboratories
8100 Secura Way
Santa Fe Springs, CA
90607

46425

DATE 07/15/14 PAGE 2 OF 2

CLIENT: Tetra Tech				PARAMETERS										TURN-AROUND TIME			
PROJECT NAME: NERT Downflushing				<div>dry Bulk Density API-RP40</div> <div>Grain Density API-RP40</div> <div>Porosity API-RP40</div> <div>Moisture Content ASTM D-2911/API-RP40</div> <div>FILTERED/UNFILTERED</div> <div>MATRIX TYPE</div> <div>CONTAINER TYPE</div> <div>NUMBER OF CONTAINERS</div> <div>PRESERVATIVE</div>										Standard			
PROJECT MANAGER:														OBSERVATIONS/COMMENTS			
TC #: 100-580-T35000-2011-KOL, COPI 6006														Please report all data to MDL			
SAMPLERS (Signatures)																	
LINE ITEM	SAMPLE NO.	DATE	TIME														
1.	DFS8-16-40'	7/12/16	1540	XX	XX								Un	S	SS	1	NR
2.																	
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	
FILTERING: <input type="checkbox"/> FILTERED <input type="checkbox"/> UNFILTERED				MATRIX TYPE: S - Soil M - Sediment W - Water		CONTAINER TYPE: G - Glass Bottle/Jar SS - Stainless Steel Sleeve		SB - Brass Sleeve P - Plastic Bottle/Jar		PRESERVATIVES: (Water Only) HCL NaOH NR (None required) H ₂ SO ₄							
RELINQUISHED BY: [Signature]		SIGNATURE		TETRA TECH, INC.				DATE: 07/15/15		TIME: 1312		TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY: 1					
RECEIVED BY: Robert Rojo		SIGNATURE		COMPANY: PTS LABS				DATE: 7.15.16		TIME: 1512		METHOD OF SHIPMENT/SHIPMENT NO. 1					
RELINQUISHED BY:		SIGNATURE		COMPANY:				DATE:		TIME:		Special Shipping/Handling/Storage Requirements:					
RECEIVED BY:		SIGNATURE		COMPANY:				DATE:		TIME:							

DISTRIBUTION: White and Pink = Tetra Tech, Inc.

Canary = Laboratory

X:\GIS\ATT-MISC\COCR.CDR



8100 Secura Way • Santa Fe Springs, CA 90670
Telephone (562) 347-2500 • Fax (562) 907-3610

September 14, 2016

Mike Crews
Tetra Tech, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614

Re: PTS File No: 46457
Physical Properties Data
NERT-K01; 194-87600008

Dear Mr. Crews:

Please find enclosed report for Physical Properties analyses conducted upon samples received from your NERT-K01; 194-87600008 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. The samples are currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

PTS Laboratories appreciates the opportunity to be of service. If you have any questions or require additional information, please give me a call at (562) 347-2502.

Sincerely,
PTS Laboratories, Inc.

Michael Mark Brady, P.G.
Laboratory Director

Encl.

Project Name: NERT-K01
Project Number: 194-87600008

PTS File No: 46457
Client: Tetra Tech, Inc.

TEST PROGRAM - 20160901

CORE ID	Depth ft.	Core Recovery ft.	Hydraulic Conductivity Pkg.	Horizontal Hydraulic Conductivity			Hydraulic Conductivity Pkg.	RUSH TAT	Comments
		Plugs:	Vert. 1.5"	Hor. 1"			Vert. 1.5"		
Date Received: 20160805									
UFIW-03S-33.5-20160714	33.5	0.50	X	X					
UFIW-03D-47.0-20160715	47.0	0.50	X	X					
UFIW-03I-37.0-20160715	37.0	0.50	X	X					
UFIW-04D-47.0-20160718	47.0	0.50	X	X					
UFIW-01D-47.0-20160718	47.0	0.50	X	X					
UFIW-04S-25.0-20160718	25.0	0.50	X	X					
UFIW-02D-45.0-20160720	45.0	0.50		X			X	X	Data for two RUSH Hydraulic Conductivity Pkgs. Report 8/20/16.
UFIW-02S-25.0-20160720	25.0	0.50		X			X	X	
UFIW-01S-25.0-20160720	25.0	0.50	X	X					
UFIW-01I-35.0-20160721	35.0	0.50	X	X					
UFIW-02I-35.0-20160721	35.0	0.50	X	X					
UFIW-04I-35.0-20160721	35.0	0.50	X	X					
UFIW-05D-46.5-20160726	46.5	0.50	X	X					
UFIW-05S-27.5-20160727	27.5	0.50	X	X					
UFIW-07D-50.0-20160727	50.0	0.50	X	X					
UFIW-08D-50.0-20160728	50.0	0.50	X	X					
UFIW-08S-27.0-20160728	27.0	0.50	X	X					
UFIW-06D-50.0-20160729	50.0	0.50	X	X					
TOTALS:	18 Cores	9.00	16	18	18		2	2	18

Laboratory Test Program Notes

Contaminant identification: Perchlorate, Hexavalent Chromium

Standard TAT for basic analysis is 15 business days.

Hydraulic Conductivity Package – Saturated Zone: Native-state permeability to water, total and air-filled porosity, grain and bulk density, moisture content, total pore fluid (water only) saturation.

Please expedite results for hydraulic conductivity for samples UFIW-02D-45.0-20160720 and UFIW-02S-25.0-20160720 per M. Crews/Tetra Tech 20160816.

Note: Due to small diameter of cores, only 1" diameter plugs can be obtained for Horizontal Hydraulic Conductivity. MMB 20160902

PTS File No: 46457
 Client: Tetra Tech, Inc.
 Report Date: 09/14/16

PHYSICAL PROPERTIES DATA - HYDRAULIC CONDUCTIVITY PACKAGE

Project Name: NERT-K01
 Project No: 194-87600008

METHODS:		API RP 40 / ASTM D2216		API RP 40		API RP 40		API RP 40		API RP 40; EPA 9100	
										25 PSI CONFINING STRESS	
SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	MOISTURE CONTENT, % weight	DENSITY		POROSITY, %Vb (2)		TOTAL PORE FLUID SATURATIONS (3), % Pv	EFFECTIVE (4,5) PERMEABILITY TO WATER, millidarcy	HYDRAULIC CONDUCTIVITY (4,5), cm/s	
				DRY BULK, g/cc	GRAIN, g/cc	TOTAL	AIR-FILLED				
UFIW-03S-33.5-20160714	33.5	V	51.9	1.02	2.62	60.9	7.8	87.1	1.16	1.20E-06	
UFIW-03D-47.0-20160715	47.0	V	68.1	0.90	2.60	65.3	3.8	94.1	4.35	4.54E-06	
UFIW-03I-37.0-20160715	37.0	V	86.4	0.78	2.53	69.2	1.7	97.5	2.24	2.32E-06	
UFIW-04D-47.0-20160718	47.0	V	83.3	0.78	2.59	69.8	4.6	93.4	2.30	2.38E-06	
UFIW-01D-47.0-20160718	47.0	V	63.0	0.96	2.64	63.7	3.3	94.8	1.96	2.03E-06	
UFIW-04S-25.0-20160718	25.0	V	75.5	0.86	2.56	66.4	1.6	97.6	4.49	4.66E-06	
UFIW-02D-45.0-20160720	45.4	V	54.1	1.03	2.61	60.7	5.1	91.5	0.55	5.77E-07	
UFIW-02S-25.0-20160720	25.4	V	15.4	1.55	2.62	40.7	16.6	59.0	167	1.73E-04	
UFIW-01S-25.0-20160720	25.0	V	17.6	1.38	2.63	47.5	23.2	51.2	233	2.43E-04	
UFIW-01I-35.0-20160721	35.0	V	56.3	0.91	2.62	65.2	13.9	78.6	0.58	6.01E-07	
UFIW-02I-35.0-20160721	35.0	V	60.2	0.90	2.61	65.4	11.1	83.0	0.22	2.24E-07	
UFIW-04I-35.0-20160721	35.0	V	64.1	0.96	2.61	63.2	1.7	97.2	1.07	1.11E-06	
UFIW-05D-46.5-20160726	46.5	V	80.6	0.82	2.59	68.5	2.7	96.0	0.43	4.46E-07	
UFIW-05S-27.5-20160727	27.5	V	13.2	1.49	2.61	42.7	22.9	46.3	814	8.44E-04	
UFIW-07D-50.0-20160727	50.0	V	90.2	0.68	2.59	73.8	12.7	82.8	1.08	1.11E-06	
UFIW-08D-50.0-20160728	50.0	V	81.7	0.69	2.57	73.1	16.6	77.3	0.38	3.85E-07	
UFIW-08S-27.0-20160728	27.0	V	25.3	1.27	2.65	51.9	19.6	62.2	435	4.43E-04	
UFIW-06D-50.0-20160729	50.0	V	87.9	0.69	2.61	73.7	13.4	81.7	0.77	7.80E-07	

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Total Porosity = all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids.

(3) Fluid density used to calculate pore fluid saturations: Water = 0.9996 g/cc.

(4) Effective (Native) = With as-received pore fluids in place.

(5) Permeability to water and hydraulic conductivity measured at saturated conditions.

Vb = Bulk Volume, cc; Pv = Pore Volume, cc; ND = Not Detected

Water = filtered Laboratory Fresh (tap) or Site water.

PTS File No: 46457
 Client: Tetra Tech, Inc.
 Report Date: 09/14/16

PHYSICAL PROPERTIES DATA - HYDRAULIC CONDUCTIVITY

(Methodology: API RP 40; EPA 9100)

Project Name: NERT-K01
 Project No: 194-87600008

SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	ANALYSIS DATE	25 PSI CONFINING STRESS		
				EFFECTIVE PERMEABILITY TO WATER (2,3), millidarcy	HYDRAULIC CONDUCTIVITY (3), cm/s	INTRINSIC PERMEABILITY TO WATER (3), cm ²
UFIW-03S-33.5-20160714	33.85	H	20160912	2.65	2.65E-06	2.62E-11
UFIW-03D-47.0-20160715	47.35	H	20160912	15.8	1.56E-05	1.55E-10
UFIW-03I-37.0-20160715	37.35	H	20160912	4.04	4.00E-06	3.98E-11
UFIW-04D-47.0-20160718	47.35	H	20160912	4.61	4.61E-06	4.55E-11
UFIW-01D-47.0-20160718	47.35	H	20160912	4.84	4.86E-06	4.77E-11
UFIW-04S-25.0-20160718	25.35	H	20160912	1.15	1.16E-06	1.13E-11
UFIW-02D-45.0-20160720	45.1	H	20160912	2.91	2.94E-06	2.87E-11
UFIW-02S-25.0-20160720	25.1	H	20160912	297	3.04E-04	2.94E-09
UFIW-01S-25.0-20160720	25.35	H	20160912	104	1.08E-04	1.03E-09
UFIW-01I-35.0-20160721	35.35	H	20160912	4.22	4.35E-06	4.17E-11
UFIW-02I-35.0-20160721	35.35	H	20160912	4.63	4.78E-06	4.57E-11
UFIW-04I-35.0-20160721	35.4	H	20160912	3.87	3.91E-06	3.82E-11
UFIW-05D-46.5-20160726	46.85	H	20160912	5.73	5.81E-06	5.66E-11
UFIW-05S-27.5-20160727	27.85	H	20160912	120	1.19E-04	1.18E-09
UFIW-07D-50.0-20160727	50.35	H	20160912	4.35	4.39E-06	4.29E-11
UFIW-08D-50.0-20160728	50.35	H	20160912	5.11	5.09E-06	5.05E-11
UFIW-08S-27.0-20160728	27.4	H	20160912	1970	1.96E-03	1.94E-08
UFIW-06D-50.0-20160729	50.35	H	20160912	4.72	4.69E-06	4.66E-11

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Effective (Native) = With as-received pore fluids in place.

(3) Permeability to water and hydraulic conductivity measured at saturated conditions.

Water = filtered Laboratory Fresh (tap) or Site water.

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September 16, 2016

Mike Crews
Tetra Tech, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614

Re: PTS File No: 46465
Physical Properties Data
NERT-K01; 194-87600008

Dear Mr. Crews:

Please find enclosed report for Physical Properties analyses conducted upon samples received from your NERT-K01; 194-87600008 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. The samples are currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

PTS Laboratories appreciates the opportunity to be of service. If you have any questions or require additional information, please give me a call at (562) 347-2502.

Sincerely,
PTS Laboratories, Inc.

Michael Mark Brady, P.G.
Laboratory Director

Encl.

Project Name: NERT-K01
Project Number: 194-87600008

PTS File No: 46465
Client: Tetra Tech, Inc.

TEST PROGRAM - 20160902

CORE ID	Depth ft.	Core Recovery ft.	Hydraulic Conductivity Pkg.	Horizontal Hydraulic Conductivity					Comments
		Plugs:	Vert. 1.5"	Hor. 1"					
Date Received: 20160809									
UFIW-06I-40.5-20160801	40.0-40.5	0.50	X	X					Sample UFIW-06I-40.5-20160801 was received with ID: UFIW-06I-40 to 40.5-20160801
E1-1-46.0-20160804	46.0	0.50							
UFIW-08I-37.0-20160803	36.5-37.0	0.50	X	X					Sample UFIW-08I-37.0-20160803 was received with ID: UFIW-08I-36.5- 37.0-20160803
UFIW-05I-37.5-20160802	37.0-37.5	0.50	X	X					Sample UFIW-05I-37.5-20160802 was received with ID: UFIW-05I-37 to 37.5-20160802
UFIW-07S-28.5-20160801	28.0-28.5	0.50	X	X					Sample UFIW-07S-28.5-20160801 was received with ID: UFIW-07S-28 to 28.5-20160801
TOTALS:	5 Cores	2.50	4	4	4				5

Laboratory Test Program Notes

Contaminant identification: Perchlorate, Hexavalent Chromium

Standard TAT for basic analysis is 15 business days.

Hydraulic Conductivity Package – Saturated Zone: Native-state permeability to water, total and air-filled porosity, grain and bulk density, moisture content, total pore fluid (water only) saturation.

Horizontal Hydraulic Conductivity: If samples are not suitable for 1.5" diameter subcores then 1" diameter subcores will be taken and measured.

No Analyses on sample E1-1-46.0-20160804 per M. Crews/Tetra Tech 20160902.

Note: Due to small diameter of cores, only 1" diameter plugs can be obtained for Horizontal Hydraulic Conductivity. MMB 20160902

PTS File No: 46465
 Client: Tetra Tech, Inc.
 Report Date: 09/16/16

PHYSICAL PROPERTIES DATA - HYDRAULIC CONDUCTIVITY PACKAGE

Project Name: NERT-K01
 Project No: 194-87600008

			API RP 40 / METHODS: ASTM D2216	API RP 40		API RP 40		API RP 40	API RP 40; EPA 9100	
SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	MOISTURE CONTENT, % weight	DENSITY		POROSITY, %Vb (2)		TOTAL PORE FLUID SATURATIONS (3), % Pv	25 PSI CONFINING STRESS	
				DRY BULK, g/cc	GRAIN, g/cc	TOTAL	AIR-FILLED		EFFECTIVE (4,5) PERMEABILITY TO WATER, millidarcy	HYDRAULIC CONDUCTIVITY (4,5), cm/s
UFIW-06I-40.5-20160801	40.4	V	23.5	1.56	2.70	42.3	5.7	86.6	1.30	1.33E-06
UFIW-08I-37.0-20160803	36.5-37.0	V	70.0	0.86	2.58	66.5	6.1	90.8	2.53	2.59E-06
UFIW-05I-37.5-20160802	37.0-37.5	V	36.8	1.27	2.65	52.2	5.7	89.1	0.19	1.91E-07
UFIW-07S-28.5-20160801	28.0-28.5	V	18.6	1.30	2.63	50.6	26.5	47.7	16.6	1.70E-05

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Total Porosity = all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids.

(3) Fluid density used to calculate pore fluid saturations: Water = 0.9996 g/cc.

(4) Effective (Native) = With as-received pore fluids in place.

(5) Permeability to water and hydraulic conductivity measured at saturated conditions.

Vb = Bulk Volume, cc; Pv = Pore Volume, cc; ND = Not Detected

Water = filtered Laboratory Fresh (tap) or Site water.

PTS File No: 46465
Client: Tetra Tech, Inc.
Report Date: 09/16/16

PHYSICAL PROPERTIES DATA - HYDRAULIC CONDUCTIVITY

(Methodology: API RP 40; EPA 9100)

Project Name: NERT-K01
Project No: 194-87600008

SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	ANALYSIS DATE	25 PSI CONFINING STRESS		
				EFFECTIVE PERMEABILITY TO WATER (2,3), millidarcy	HYDRAULIC CONDUCTIVITY (3), cm/s	INTRINSIC PERMEABILITY TO WATER (3), cm ²
UFIW-06I-40.5-20160801	40.3	H	20160913	3.24	3.25E-06	3.20E-11
UFIW-08I-37.0-20160803	36.6	H	20190913	4.20	4.18E-06	4.14E-11
UFIW-05I-37.5-20160802	37.4	H	20160913	6.18	6.06E-06	6.10E-11
UFIW-07S-28.5-20160801	28.3	H	20160913	18.3	1.84E-05	1.80E-10

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Effective (Native) = With as-received pore fluids in place.

(3) Permeability to water and hydraulic conductivity measured at saturated conditions.

Water = filtered Laboratory Fresh (tap) or Site water.

72°F



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October 12, 2016

Guy Roemer
Tetra Tech, Inc.
301 E. Vanderbilt Way, Suite 450
San Bernardino, CA 92408

Re: PTS File No: 46429
Physical Properties Data
NERT Downflushing

Dear Mr. Roemer:

Please find enclosed report for Physical Properties analyses conducted upon samples received from your NERT Downflushing project. All analyses were performed by applicable ASTM, EPA, or API methodologies. The cores remain in frozen storage and will be held indefinitely. Please note that core storage will be billed monthly beginning November 1, 2016.

PTS Laboratories appreciates the opportunity to be of service. If you have any questions or require additional information, please give me a call at (562) 347-2502.

Sincerely,
PTS Laboratories, Inc.

Michael Mark Brady, P.G.
Laboratory Director

Encl.

Project Name: NERT Downflushing
Project Number: N/A

PTS File No: 46429
Client: Tetra Tech, Inc.

TEST PROGRAM - 20160909

CORE ID	Depth ft.	Core Recovery ft.	Slab and Core Photo	Grain Size Analysis	A/W Drng. Capillarity Pkg.	Hydraulic Conductivity Pkg.	Horizontal Hydraulic Conductivity			Comments from Lith Log
		Plugs:	1/4:3/4	Grab	Vert. 1"	Horiz. 1"	Horiz. 1"			
Date Received: 20160720										
DFSB-13-12.5'	12.5	0.5	1							
DFSB-13-15'	15	0.5	1							20/60/20/0
DFSB-13-20'	20	0.5	1	X		X				15/70/15/0
DFSB-13-35'	35	0.5	1							
DFSB-13-40'	40	0.5	1							
DFSB-16-10'	10	0.5	1							
DFSB-16-15'	15	0.5	1	X		X				15/70/15/0
DFSB-16-20'	20	0.5	1							
DFSB-16-30'	30	0.5	1							
DFSB-16-35'	35	0.5	1	X	X		X			0/5/95/0
DFSB-12-10'	10	0.5	1	X		X				15/65/20/0
DFSB-12-15'	15	0.5	1	X		X				15/70/15/0
DFSB-12-25'	25	0.5	1							
DFSB-12-30'	30	0.5	1	X		X				15/65/20/0
DFSB-12-35'	35	0.5	1							
DFSB-12-40'	40	0.5	1							
DFSB-17-10'	10	0.5	1	X		X				15/55/30/0
DFSB-17-15'	15	0.5	1							
DFSB-17-20'	20	0.5	1							
DFSB-17-25'	25	0.5	1	X		X				10/80/10
DFSB-17-30'	30	0.5	1	X		X				15/65/20/0
DFSB-17-35'	35	0.5	1							
DFSB-17-40'	40	0.5	1							
DFSB-18-12'	12	0.5	1							
DFSB-18-15'	15	0.5	1	X		X				15/70/15/0
DFSB-18-20'	20	0.5	1							
DFSB-18-25'	25	0.5	1							
DFSB-18-35'	35	0.5	1							<5/10/90/0
DFSB-18-40'	40	0.5	1							
DFSB-05-10'	10	0.5	1	X	X		X			15/60/25/0
DFSB-05-15'	15	0.5	1							
DFSB-05-25'	25	0.5	1							
DFSB-05-30'	30	0.5	1	X	X		X			<5/40/60/0
DFSB-05-35'	35	0.5	1							<5/40/60/0
DFSB-05-40'	40	0.5	1							
DFSB-05-45'	45	0.5	1							<5/<5/100/0
DFSB-04-10'	10	0.5	1							
DFSB-04-20'	20	0.5	1							
DFSB-04-25'	25	0.5	1	X		X				15/70/15/0

Project Name: NERT Downflushing
Project Number: N/A

PTS File No: 46429
Client: Tetra Tech, Inc.

TEST PROGRAM - 20160909

CORE ID	Depth ft.	Core Recovery ft.	Slab and Core Photo	Grain Size Analysis	A/W Drng. Capillarity Pkg.	Hydraulic Conductivity Pkg.	Horizontal Hydraulic Conductivity			Comments from Lith Log
		Plugs:	1/4:3/4	Grab	Vert. 1"	Horiz. 1"	Horiz. 1"			
DFSB-04-30'	30	0.5	1							
DFSB-04-35'	35	0.5	1							5/10/85
DFSB-04-40'	40	0.5	1							
DFSB-01-10'	10	0.5	1	X		X				15/70/15/0
DFSB-01-15'	15	0.5	1	X		X				0/90/10/0
DFSB-01-20'	20	0.5	1							
DFSB-01-25'	25	0.5	1							
DFSB-01-30'	30	0.5	1	X		X				0/5/95/0
DFSB-01-35'	35	0.5	1							
DFSB-01-40'	40	0.5	1							
DFSB-09-10'	10	0.5	1	X		X				15/55/30/0
DFSB-09-15'	15	0.5	1							
DFSB-09-20'	20	0.5	1							
DFSB-09-25'	25	0.5	1	X		X				5/80/15/0
DFSB-09-30'	30	0.5	1	X	X		X			<5/10/90/0
DFSB-09-35'	35	0.5	1							
DFSB-07-10'	10	0.5	1	X	X		X			20/40/30/0
DFSB-07-15'	15	0.5	1							
DFSB-07-20'	20	0.5	1	X		X				15/65/20/0
DFSB-07-25'	25	0.5	1	X	X		X			0/40/60/0
DFSB-07-35'	35	0.5	1							
DFSB-07-40'	40	0.5	1							
DFSB-06-10'	10	0.5	1	X		X				15/70/15/0
DFSB-06-15'	15	0.5	1							
DFSB-06-20'	20	0.5	1							
DFSB-06-30'	30	0.5	1							0/20/80/0
DFSB-06-35'	35	0.5	1							<5/40/60/0
DFSB-06-40'	40	0.5	1							
DFSB-08-10'	10	0.5	1	X		X				15/65/20/0
DFSB-08-15'	15	0.5	1							
DFSB-08-20'	20	0.5	1							
DFSB-08-25'	25	0.5	1	X	X		X			15/70/15/0
DFSB-08-40'	40	0.5	1							0/10/90/0
DFSB-02-10'	10	0.5	1	X		X				15/60/25/0
DFSB-02-15'	15	0.5	1							
DFSB-02-20'	20	0.5	1	X	X		X			5/80/15/0
DFSB-02-25'	25	0.5	1							
DFSB-02-30'	30	0.5	1	X		X				0/40/60/0
DFSB-02-35'	35	0.5	1							
DFSB-02-40'	40	0.5	1							

Project Name: NERT Downflushing
Project Number: N/A

PTS File No: 46429
Client: Tetra Tech, Inc.

TEST PROGRAM - 20160909

CORE ID	Depth ft.	Core Recovery ft.	Slab and Core Photo	Grain Size Analysis	A/W Drng. Capillarity Pkg.	Hydraulic Conductivity Pkg.	Horizontal Hydraulic Conductivity			Comments from Lith Log
		Plugs:	1/4:3/4	Grab	Vert. 1"	Horiz. 1"	Horiz. 1"			
DFSB-15-10'	10	0.5	1	X		X				15/65/20/0
DFSB-15-15'	15	0.5	1	X		X				15/65/20/0
DFSB-15-20'	20	0.5	1							
DFSB-15-25'	25	0.5	1	X	X		X			20/60/20/0
DFSB-15-30'	30	0.5	1							
DFSB-15-35'	35	0.5	1							
DFSB-14-10'	10	0.5	1	X		X				15/50/35/0
DFSB-14-15'	15	0.5	1							
DFSB-14-20'	20	0.5	1	X		X				15/70/15/0
DFSB-14-25'	25	0.5	1							
DFSB-14-40'	40	0.5	1							
DFSB-10-15'	15	0.5	1	X	X		X			15/70/15/0
DFSB-10-20'	20	0.5	1							
DFSB-10-25'	25	0.5	1	X		X				15/75/10/0
DFSB-10-30'	30	0.5	1							
DFSB-10-40'	40	0.5	1							
DFSB-11-10'	10	0.5	1	X		X				15/70/15/0
DFSB-11-15'	15	0.5	1							
DFSB-11-20'	20	0.5	1							
DFSB-11-25'	25	0.5	1	X	X		X			20/65/15/0
DFSB-11-35'	35	0.5	1	X		X				0/10/90/0
DFSB-11-40'	40	0.5	1							
DFSB-03-15'	15	0.5	1							
DFSB-03-20'	20	0.5	1	X		X				5/65/20/0
DFSB-03-25'	25	0.5	1							
DFSB-03-30'	30	0.5	1	X	X		X			0/40/60/0
DFSB-03-35'	35	0.5	1							
DFSB-03-40'	40	0.5	1							
TOTALS:	107 Cores	53.5	107	40	12	28	12			54

Laboratory Test Program Notes

Contaminant identification:

Standard TAT for basic analysis is 15 business days. Special core analysis tests (capillary pressure, horizontal orientation tests, etc.) require additional time.

Note: 99 - 2.5" x 6" Stainless Steel sleeves received (8 sleeves are brass).

Grain Size Analysis: Run the most appropriate grain size distribution test (laser or sieve method) based on sample characteristics; includes tabular data, graphics and statistical sorting in Excel format.

Air/Water Drainage Capillarity Package: Air/Water Drainage Capillary Pressure Curve (air displacing water) with Air Permeability and Hydraulic Conductivity: includes fluid production vs. capillary pressure, total and air-filled porosity, grain density, dry bulk density, moisture content and total (water only) pore fluid saturations. All A/W Pc Drng. Capillarity Pkg. tests to be in vertical orientation.

Hydraulic Conductivity Package – Saturated Zone: Native-state permeability to water, total and air-filled porosity, grain and bulk density, moisture content, total pore fluid (water only) saturation.

All Hydraulic Conductivity Pkg. and Hydraulic Conductivity only tests to be in horizontal orientation.

Note: Due to small diameter of cores, only 1" diameter plugs can be obtained for Horizontal Hydraulic Conductivity. MMB 20160902

Samples received cryogenically preserved will be stored frozen at standard core storage rates from sample date of receipt. Core storage charges will be billed monthly or quarterly depending upon project.

* van Genuchten Parameters analyses to be conducted by PTS Subcontract Consultant.

PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

PHYSICAL PROPERTIES DATA - HYDRAULIC CONDUCTIVITY PACKAGE

Project Name: NERT Downflushing
 Project No: N/A

SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	MOISTURE CONTENT, % weight	API RP 40 / ASTM D2216		API RP 40		API RP 40		API RP 40		API RP 40; EPA 9100	
				METHODS:		25 PSI CONFINING STRESS		TOTAL PORE FLUID SATURATIONS (3), % Pv		EFFECTIVE (4,5) PERMEABILITY TO WATER, millidarcy		HYDRAULIC CONDUCTIVITY (4,5), cm/s	
				DENSITY		POROSITY, %Vb (2)							
				DRY BULK, g/cc	GRAIN, g/cc	TOTAL	AIR-FILLED						
DFSB-13-20'	20	H	6.1	1.58	2.64	40.3	30.7	23.9		589		5.78E-04	
DFSB-16-15'	15	H	5.9	1.44	2.64	45.5	37.0	18.8		667		6.55E-04	
DFSB-12-10'	10	H	15.4	1.48	2.65	44.0	21.1	51.9		24.0		2.40E-05	
DFSB-12-15'	15	H	10.5	1.44	2.61	44.9	29.9	33.5		336		3.40E-04	
DFSB-12-30'	30	H	29.5	1.33	2.66	50.2	11.2	77.7		6.33		6.28E-06	
DFSB-17-10'	10	H	13.4	1.56	2.66	41.3	20.4	50.6		205		2.04E-04	
DFSB-17-25'	25	H	8.6	1.42	2.63	45.9	33.7	26.6		580		5.66E-04	
DFSB-17-30'	30	H	36.3	1.22	2.64	53.8	9.6	82.1		61.9		6.19E-05	
DFSB-18-15'	15	H	8.3	1.45	2.66	45.4	33.3	26.6		38.3		3.82E-05	
DFSB-04-25'	25	H	15.4	1.36	2.62	48.1	27.2	43.6		160		1.57E-04	
DFSB-01-10'	10	H	7.4	1.63	2.67	38.8	26.7	31.3		122		1.24E-04	
DFSB-01-15'	15	H	10.3	1.44	2.60	44.8	29.9	33.1		71.4		7.24E-05	
DFSB-01-30'	30	H	62.8	0.88	2.61	66.4	11.3	82.9		9.67		9.57E-06	
DFSB-09-10'	10	H	9.4	1.51	2.64	43.0	28.9	32.8		264		2.61E-04	
DFSB-09-25'	25	H	26.6	1.26	2.61	51.5	17.9	65.3		370		3.65E-04	
DFSB-07-20'	20	H	14.6	1.20	2.62	54.1	36.5	32.5		489		4.89E-04	
DFSB-06-10'	10	H	11.6	1.59	2.66	40.4	21.9	45.7		79.0		8.12E-05	
DFSB-08-10'	10	H	9.1	1.49	2.62	43.1	29.6	31.4		114		1.16E-04	
DFSB-02-10'	10	H	8.1	1.69	2.67	36.7	22.9	37.5		102		1.06E-04	
DFSB-02-30'	30	H	68.4	0.79	2.57	69.4	15.5	77.7		9.29		9.51E-06	

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Total Porosity = all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids.

(3) Fluid density used to calculate pore fluid saturations: Water = 0.9996 g/cc.

(4) Effective (Native) = With as-received pore fluids in place.

(5) Permeability to water and hydraulic conductivity measured at saturated conditions.

Vb = Bulk Volume, cc; Pv = Pore Volume, cc; ND = Not Detected

Water = filtered Laboratory Fresh (tap) or Site water.

PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

PHYSICAL PROPERTIES DATA - HYDRAULIC CONDUCTIVITY PACKAGE

Project Name: NERT Downflushing
 Project No: N/A

METHODS:			API RP 40 / ASTM D2216	API RP 40		API RP 40		API RP 40	API RP 40; EPA 9100	
SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	MOISTURE CONTENT, % weight	DENSITY		POROSITY, %Vb (2)		TOTAL PORE FLUID SATURATIONS (3), % Pv	25 PSI CONFINING STRESS	
				DRY BULK, g/cc	GRAIN, g/cc	TOTAL	AIR-FILLED		EFFECTIVE (4,5) PERMEABILITY TO WATER, millidarcy	HYDRAULIC CONDUCTIVITY (4,5), cm/s
DFSB-15-10'	10	H	13.9	1.35	2.64	48.9	30.1	38.5	158	1.55E-04
DFSB-15-15'	15	H	5.8	1.49	2.62	43.0	34.4	20.0	208	2.07E-04
DFSB-14-10'	10	H	11.3	1.61	2.66	39.4	21.1	46.3	57.2	5.71E-05
DFSB-14-20'	20	H	11.6	1.71	2.61	34.3	14.4	57.9	33.1	3.29E-05
DFSB-10-25'	25	H	8.6	1.55	2.64	41.2	27.9	32.4	708	7.03E-04
DFSB-11-10'	10	H	10.3	1.36	2.64	48.6	34.6	28.8	158	1.59E-04
DFSB-11-35'	35	H	59.1	0.88	2.59	66.0	14.1	78.6	5.68	5.66E-06
DFSB-03-20'	20	H	8.8	1.26	2.56	50.6	39.5	22.0	447	4.47E-04

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Total Porosity = all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids.

(3) Fluid density used to calculate pore fluid saturations: Water = 0.9996 g/cc.

(4) Effective (Native) = With as-received pore fluids in place.

(5) Permeability to water and hydraulic conductivity measured at saturated conditions.

Vb = Bulk Volume, cc; Pv = Pore Volume, cc; ND = Not Detected

Water = filtered Laboratory Fresh (tap) or Site water.

PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

PHYSICAL PROPERTIES DATA - HYDRAULIC CONDUCTIVITY

(Methodology: API RP 40; EPA 9100)

Project Name: NERT Downflushing
 Project No: N/A

SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	ANALYSIS DATE	25 PSI CONFINING STRESS		
				EFFECTIVE PERMEABILITY TO WATER (2,3), millidarcy	HYDRAULIC CONDUCTIVITY (3), cm/s	INTRINSIC PERMEABILITY TO WATER (3), cm ²
DFSB-16-35'	35	H	20161003	3.43	3.40E-06	3.39E-11
DFSB-05-10'	10	H	20161003	121	1.21E-04	1.19E-09
DFSB-05-30'	30	H	20161003	7.90	7.94E-06	7.80E-11
DFSB-09-30'	30	H	20161003	6.29	6.35E-06	6.21E-11
DFSB-07-10'	10	H	20161003	99.3	9.94E-05	9.81E-10
DFSB-07-25'	25	H	20161003	5.44	5.53E-06	5.37E-11
DFSB-08-25'	25	H	20161003	314	3.15E-04	3.10E-09
DFSB-02-20'	20	H	20161003	116	1.17E-04	1.15E-09
DFSB-15-25'	25	H	20161003	173	1.72E-04	1.71E-09
DFSB-10-15'	15	H	20161003	197	1.98E-04	1.94E-09
DFSB-11-25'	25	H	20161003	284	2.85E-04	2.81E-09
DFSB-03-30'	30	H	20161003	7.64	7.57E-06	7.54E-11

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Effective (Native) = With as-received pore fluids in place.

(3) Permeability to water and hydraulic conductivity measured at saturated conditions.

Water = filtered Laboratory Fresh (tap) or Site water.

PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

SAMPLE PROPERTIES - AIR/WATER CAPILLARY PRESSURE

Project Name: NERT Downflushing
 Project No: N/A

		METHODS:		API RP 40 / ASTM D2216	API RP 40		API RP 40		API RP 40
SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	MOISTURE CONTENT, % weight	DENSITY		POROSITY, %Vb (2)		TOTAL PORE FLUID SATURATIONS (3), % Pv	
				DRY BULK, g/cc	GRAIN, g/cc	TOTAL	AIR FILLED		
DFSB-16-35'	35	V	56.6	0.93	2.62	64.6	12.2	81.1	
DFSB-05-10'	10	V	11.1	1.42	2.66	46.8	31.0	33.7	
DFSB-05-30'	30	V	38.4	1.20	2.63	54.2	7.9	85.3	
DFSB-09-30'	30	V	62.5	0.89	2.61	65.8	9.9	85.0	
DFSB-07-10'	10	V	10.4	1.53	2.64	41.9	26.0	38.0	
DFSB-07-25'	25	V	17.1	1.58	2.66	40.7	13.8	66.2	
DFSB-08-25'	25	V	32.9	1.28	2.62	51.1	9.0	82.4	
DFSB-02-20'	20	V	22.0	1.29	2.68	51.8	23.4	54.8	
DFSB-15-25'	25	V	10.7	1.61	2.63	38.9	21.7	44.1	
DFSB-10-15'	15	V	8.0	1.61	2.66	39.3	26.4	32.7	
DFSB-11-25'	25	V	9.9	1.53	2.63	41.9	26.7	36.3	
DFSB-03-30'	30	V	67.3	0.84	2.55	67.0	10.5	84.2	

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Total Porosity = all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids.

(3) Fluid density used to calculate pore fluid saturations: Water = 0.9996 g/cc.

Vb = Bulk Volume, cc; Pv = Pore Volume, cc; ND = Not Detected

PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

PERMEABILITY DATA - AIR/WATER CAPILLARY PRESSURE

Project Name: NERT Downflushing
 Project No: N/A

METHODS:			API RP 40; EPA 9100		
			25 PSI CONFINING STRESS		
SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	SPECIFIC PERMEABILITY TO AIR, millidarcy (2)	EFFECTIVE PERMEABILITY TO WATER, millidarcy (3,4)	HYDRAULIC CONDUCTIVITY, cm/s (4)
DFSB-16-35'	35	V	143	4.37	4.43E-06
DFSB-05-10'	10	V	1370	198	2.01E-04
DFSB-05-30'	30	V	226	17.2	1.74E-05
DFSB-09-30'	30	V	181	9.11	9.22E-06
DFSB-07-10'	10	V	583	94.8	9.50E-05
DFSB-07-25'	25	V	1530	22.8	2.29E-05
DFSB-08-25'	25	V	674	82.3	8.34E-05
DFSB-02-20'	20	V	1010	206	2.10E-04
DFSB-15-25'	25	V	1250	340	3.45E-04
DFSB-10-15'	15	V	4400	610	6.13E-04
DFSB-11-25'	25	V	6450	442	4.44E-04
DFSB-03-30'	30	V	122	13.1	1.32E-05

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Specific = No pore fluids in place.

(3) Effective (Native) = With as-received pore fluids in place.

(4) Permeability to water and hydraulic conductivity measured at saturated conditions.

Air = Nitrogen gas, Water = filtered Laboratory Fresh (tap) or Site water.

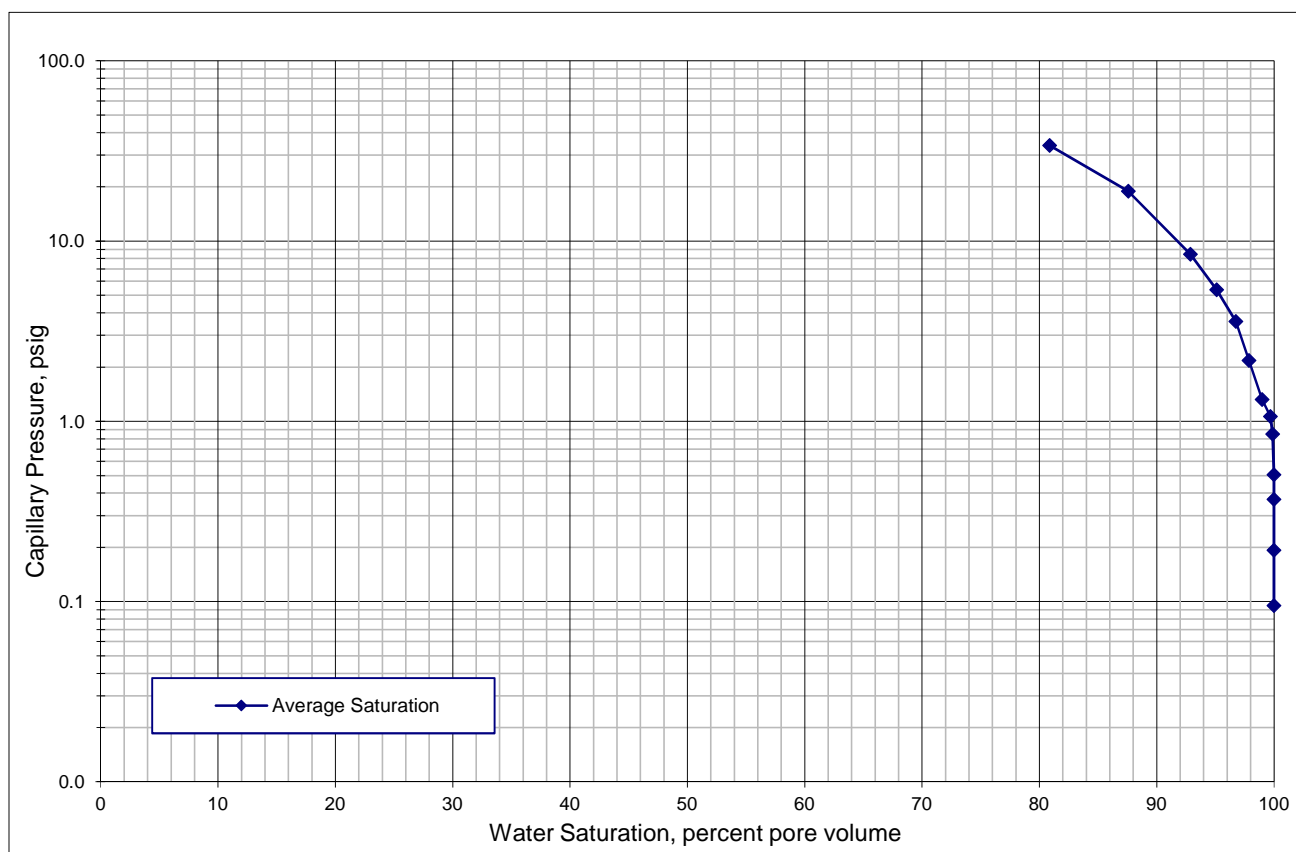
PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

AIR/WATER CAPILLARY PRESSURE TABULAR DATA

ASTM D6836; Method E (Centrifugal Method: air displacing water)

Project Name: NERT Downflushing
 Project No: N/A

Capillary Pressure		Height Above Water Table, ft	Sample ID	
			DFSB-16-35' at 35 ft.	
psi	cm water		Average Saturation % pore volume	Moisture, % dry weight
0.000	0.00	0.000	100.0	61.4
0.095	6.67	0.219	100.0	61.4
0.192	13.5	0.445	100.0	61.4
0.369	25.9	0.853	100.0	61.4
0.506	35.6	1.17	100.0	61.4
0.848	59.6	1.96	99.9	61.3
1.06	74.8	2.46	99.7	61.2
1.32	93.0	3.06	99.0	60.8
2.18	153	5.04	97.9	60.1
3.59	252	8.30	96.7	59.4
5.36	377	12.4	95.1	58.4
8.45	594	19.6	92.9	57.0
18.9	1331	43.8	87.6	53.8
33.9	2383	78.4	80.9	49.7



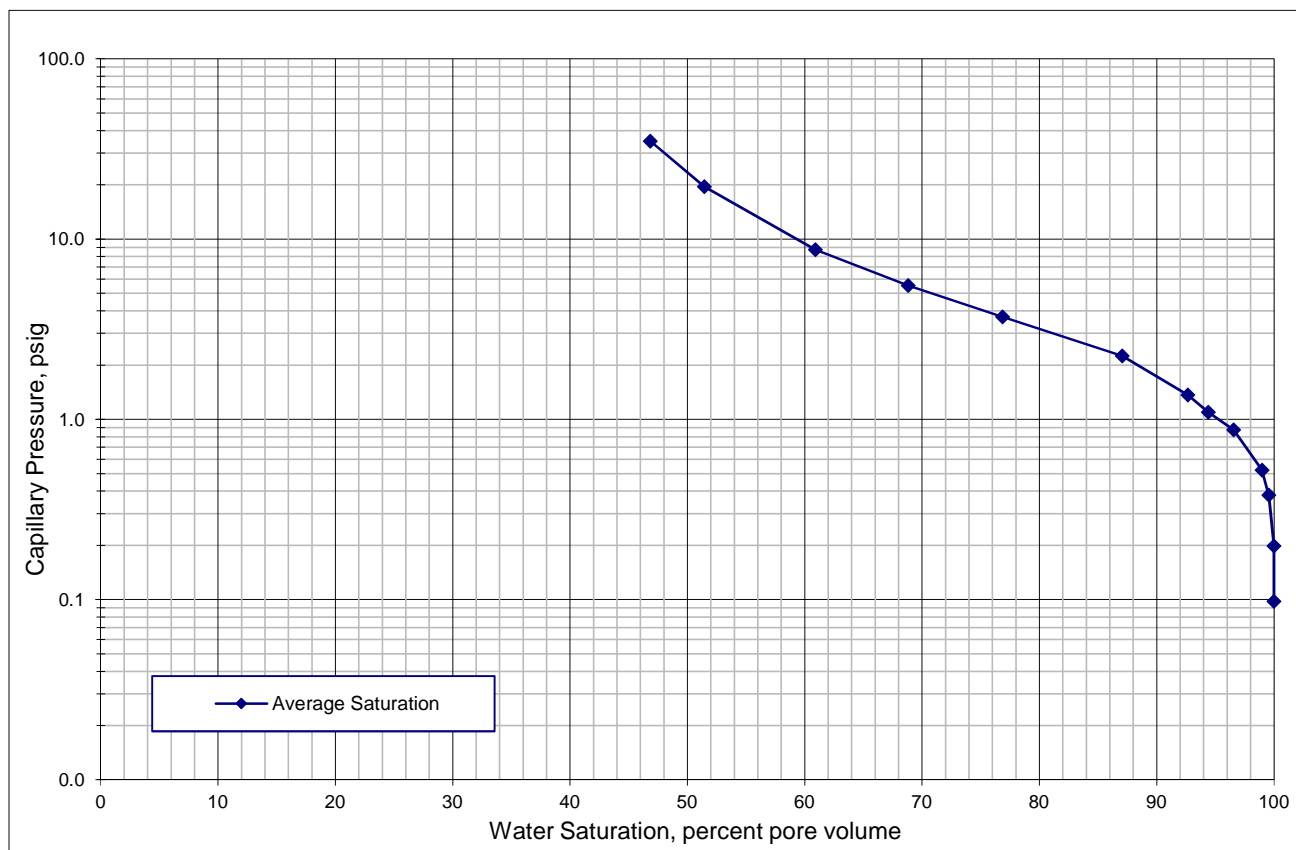
PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

AIR/WATER CAPILLARY PRESSURE TABULAR DATA

ASTM D6836; Method E (Centrifugal Method: air displacing water)

Project Name: NERT Downflushing
 Project No: N/A

Capillary Pressure		Height Above Water Table, ft	Sample ID	
			DFSB-05-10' at 10 ft.	
psi	cm water		Average Saturation % pore volume	Moisture, % dry weight
0.000	0.00	0.000	100.0	25.8
0.098	6.87	0.226	100.0	25.8
0.198	13.9	0.459	100.0	25.8
0.380	26.7	0.879	99.6	25.7
0.522	36.7	1.21	99.0	25.6
0.874	61.5	2.02	96.6	25.0
1.10	77.1	2.54	94.4	24.4
1.36	95.9	3.16	92.7	24.0
2.24	158	5.20	87.1	22.5
3.70	260	8.56	76.9	19.9
5.53	388	12.8	68.8	17.8
8.72	613	20.2	60.9	15.8
19.5	1372	45.2	51.4	13.3
34.9	2456	80.8	46.8	12.1



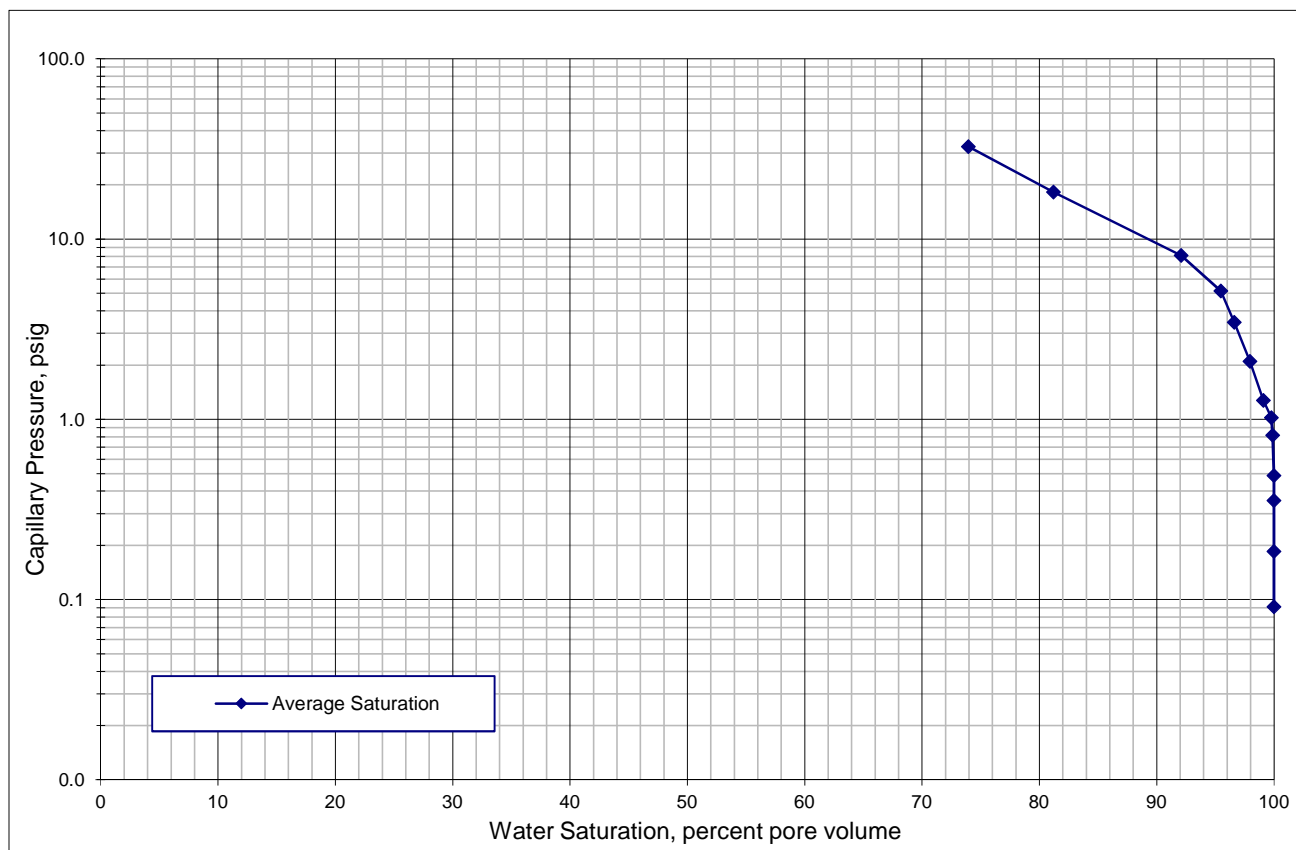
PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

AIR/WATER CAPILLARY PRESSURE TABULAR DATA

ASTM D6836; Method E (Centrifugal Method: air displacing water)

Project Name: NERT Downflushing
 Project No: N/A

Capillary Pressure		Height Above Water Table, ft	Sample ID	
			DFSB-05-30' at 30 ft.	
psi	cm water		Average Saturation % pore volume	Moisture, % dry weight
0.000	0.00	0.000	100.0	42.2
0.091	6.41	0.211	100.0	42.2
0.185	13.0	0.428	100.0	42.2
0.354	24.9	0.820	100.0	42.2
0.487	34.2	1.13	100.0	42.2
0.815	57.3	1.89	99.9	42.2
1.02	71.9	2.37	99.8	42.2
1.27	89.4	2.94	99.1	41.9
2.09	147	4.84	98.0	41.4
3.45	242	7.98	96.6	40.8
5.15	362	11.9	95.5	40.3
8.13	571	18.8	92.1	38.9
18.2	1280	42.1	81.2	34.3
32.6	2290	75.4	74.0	31.3



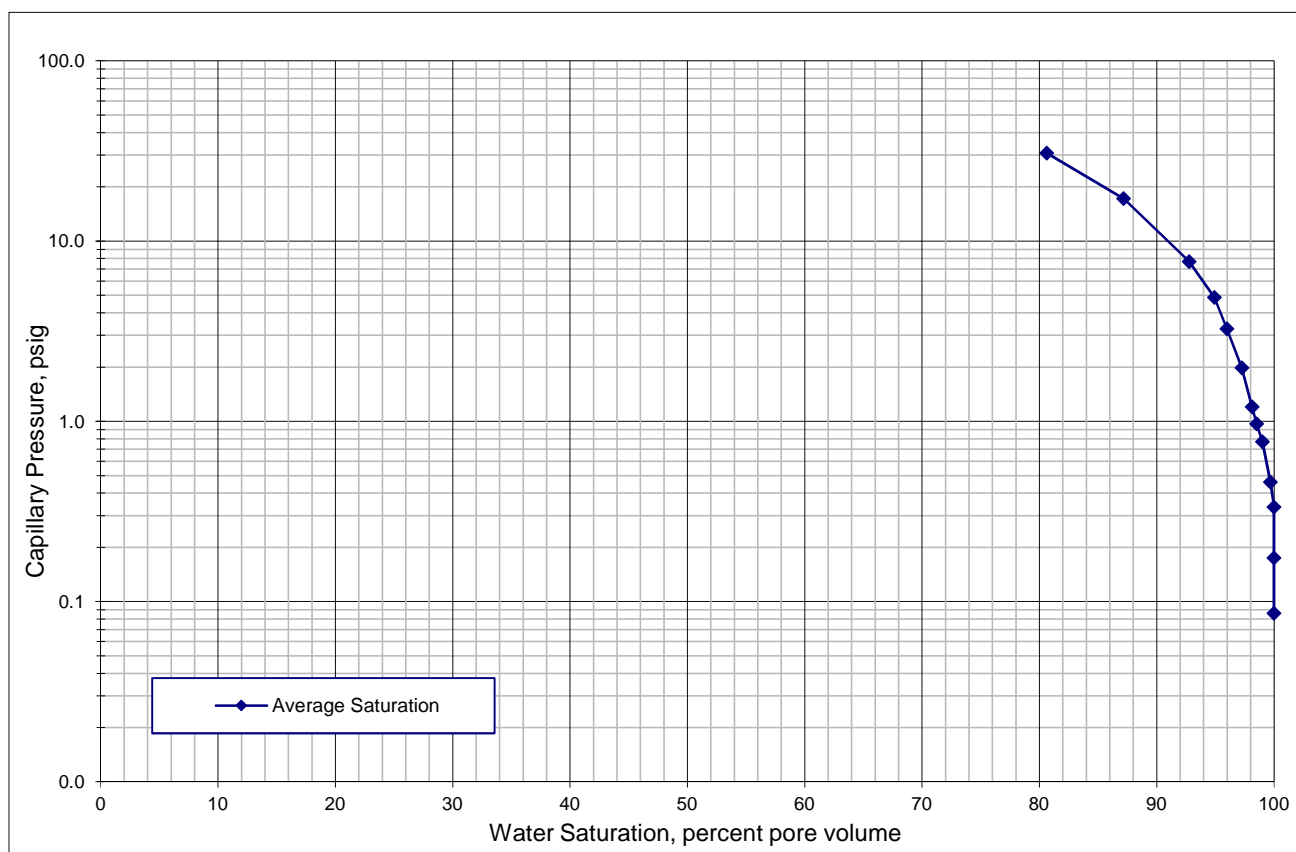
PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

AIR/WATER CAPILLARY PRESSURE TABULAR DATA

ASTM D6836; Method E (Centrifugal Method: air displacing water)

Project Name: NERT Downflushing
 Project No: N/A

Capillary Pressure		Height Above Water Table, ft	Sample ID	
			DFSB-09-30' at 30 ft.	
psi	cm water		Average Saturation % pore volume	Moisture, % dry weight
0.000	0.00	0.000	100.0	69.4
0.086	6.06	0.200	100.0	69.4
0.175	12.3	0.405	100.0	69.4
0.335	23.6	0.776	100.0	69.4
0.461	32.4	1.07	99.7	69.2
0.771	54.2	1.78	99.0	68.7
0.967	68.0	2.24	98.5	68.4
1.20	84.6	2.78	98.1	68.1
1.98	139	4.58	97.3	67.5
3.26	229	7.55	96.0	66.6
4.87	343	11.3	94.9	65.9
7.69	541	17.8	92.8	64.4
17.2	1211	39.8	87.2	60.5
30.8	2167	71.3	80.6	56.0



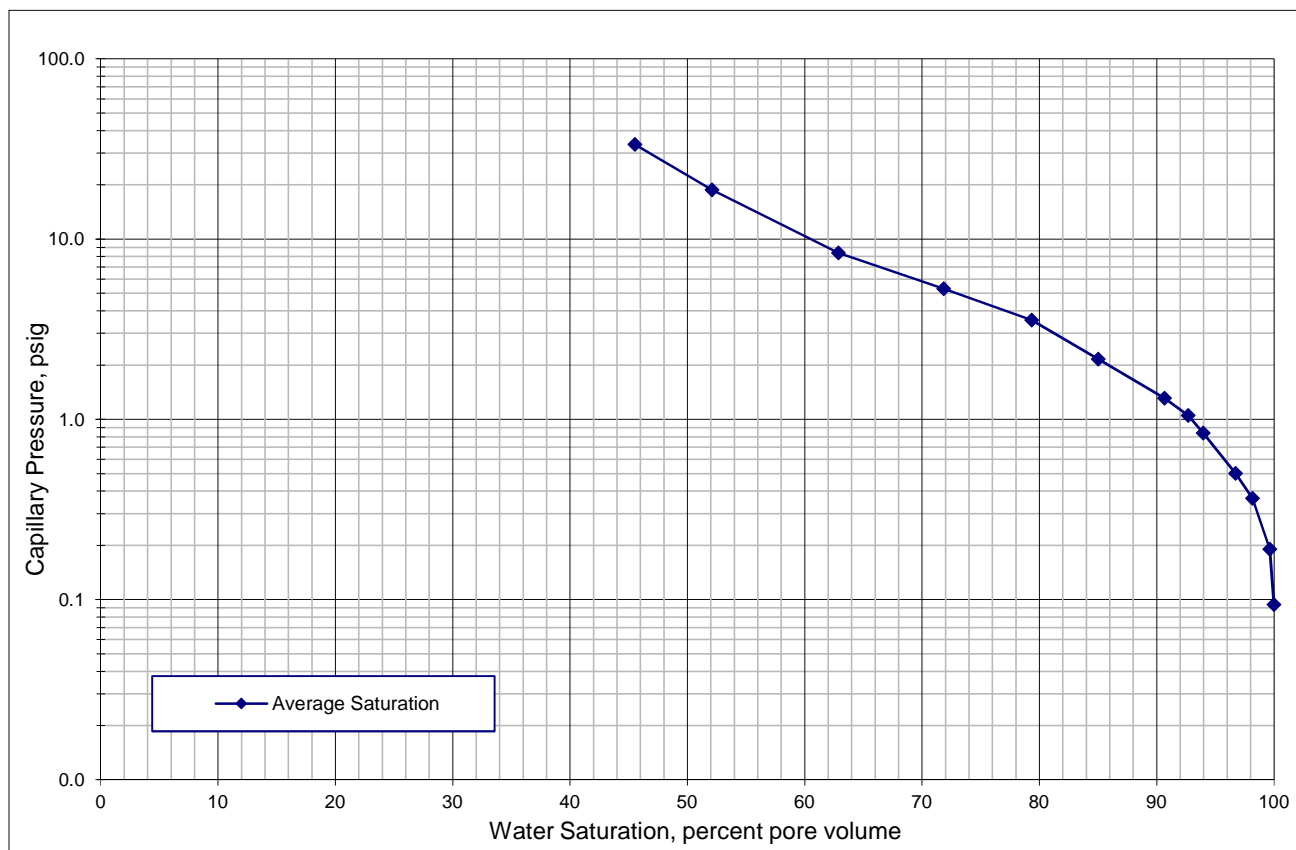
PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

AIR/WATER CAPILLARY PRESSURE TABULAR DATA

ASTM D6836; Method E (Centrifugal Method: air displacing water)

Project Name: NERT Downflushing
 Project No: N/A

Capillary Pressure		Height Above Water Table, ft	Sample ID	
			DFSB-07-10' at 10 ft.	
psi	cm water		Average Saturation % pore volume	Moisture, % dry weight
0.000	0.00	0.000	100.0	20.6
0.094	6.60	0.217	100.0	20.6
0.190	13.4	0.441	99.6	20.5
0.365	25.7	0.844	98.2	20.2
0.501	35.3	1.16	96.7	19.9
0.839	59.0	1.94	94.0	19.3
1.05	74.0	2.44	92.7	19.1
1.31	92.1	3.03	90.7	18.7
2.16	152	4.99	85.0	17.5
3.55	250	8.22	79.3	16.3
5.31	373	12.3	71.8	14.8
8.37	589	19.4	62.9	13.0
18.7	1318	43.4	52.1	10.7
33.5	2359	77.6	45.5	9.4



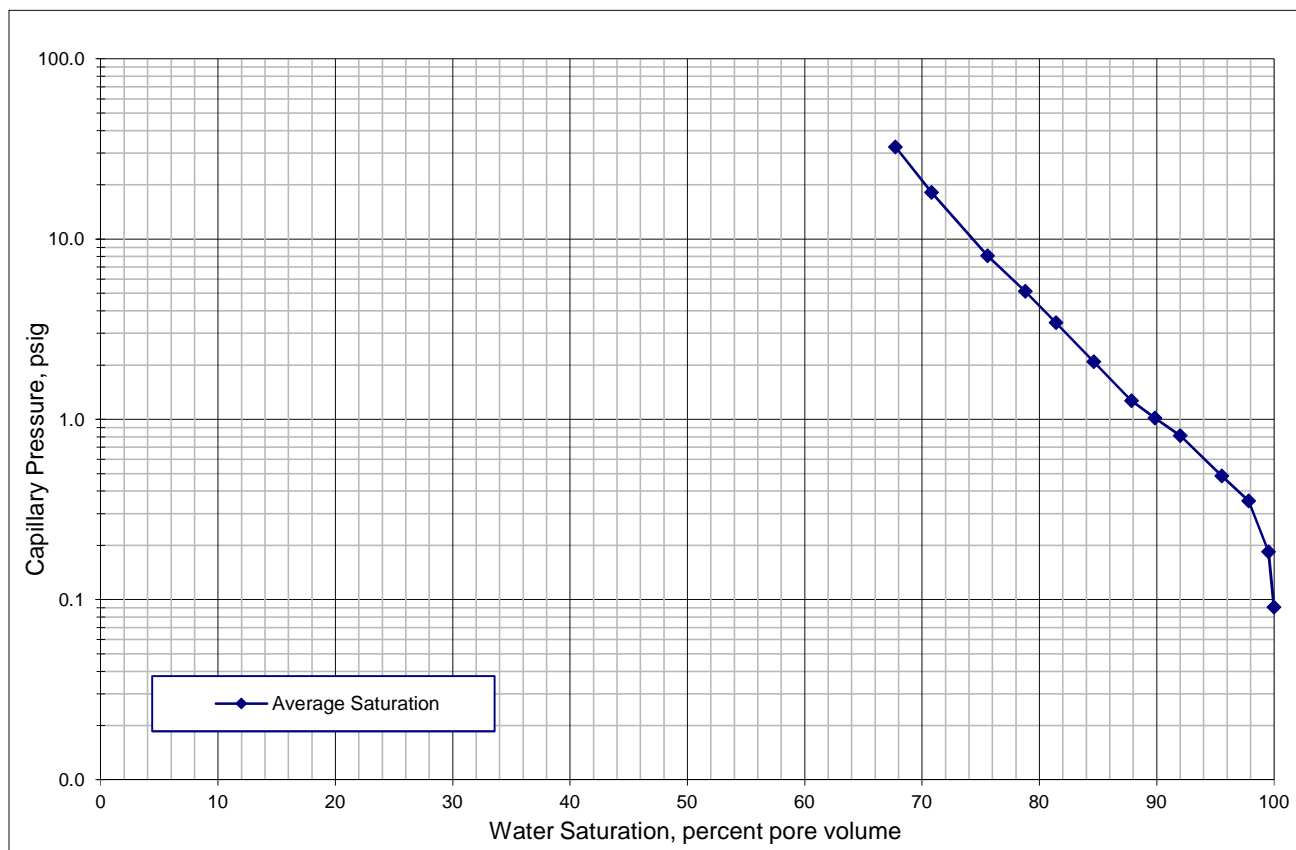
PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

AIR/WATER CAPILLARY PRESSURE TABULAR DATA

ASTM D6836; Method E (Centrifugal Method: air displacing water)

Project Name: NERT Downflushing
 Project No: N/A

Capillary Pressure		Height Above Water Table, ft	Sample ID	
			DFSB-07-25' at 25 ft.	
psi	cm water		Average Saturation % pore volume	Moisture, % dry weight
0.000	0.00	0.000	100.0	23.1
0.091	6.38	0.210	100.0	23.1
0.184	13.0	0.426	99.5	23.0
0.353	24.8	0.817	97.8	22.6
0.485	34.1	1.12	95.5	22.1
0.812	57.1	1.88	92.0	21.3
1.02	71.6	2.36	89.9	20.8
1.27	89.1	2.93	87.9	20.3
2.08	147	4.83	84.6	19.6
3.43	241	7.95	81.4	18.8
5.13	361	11.9	78.8	18.2
8.10	569	18.7	75.6	17.5
18.1	1275	42.0	70.8	16.4
32.4	2281	75.1	67.7	15.7



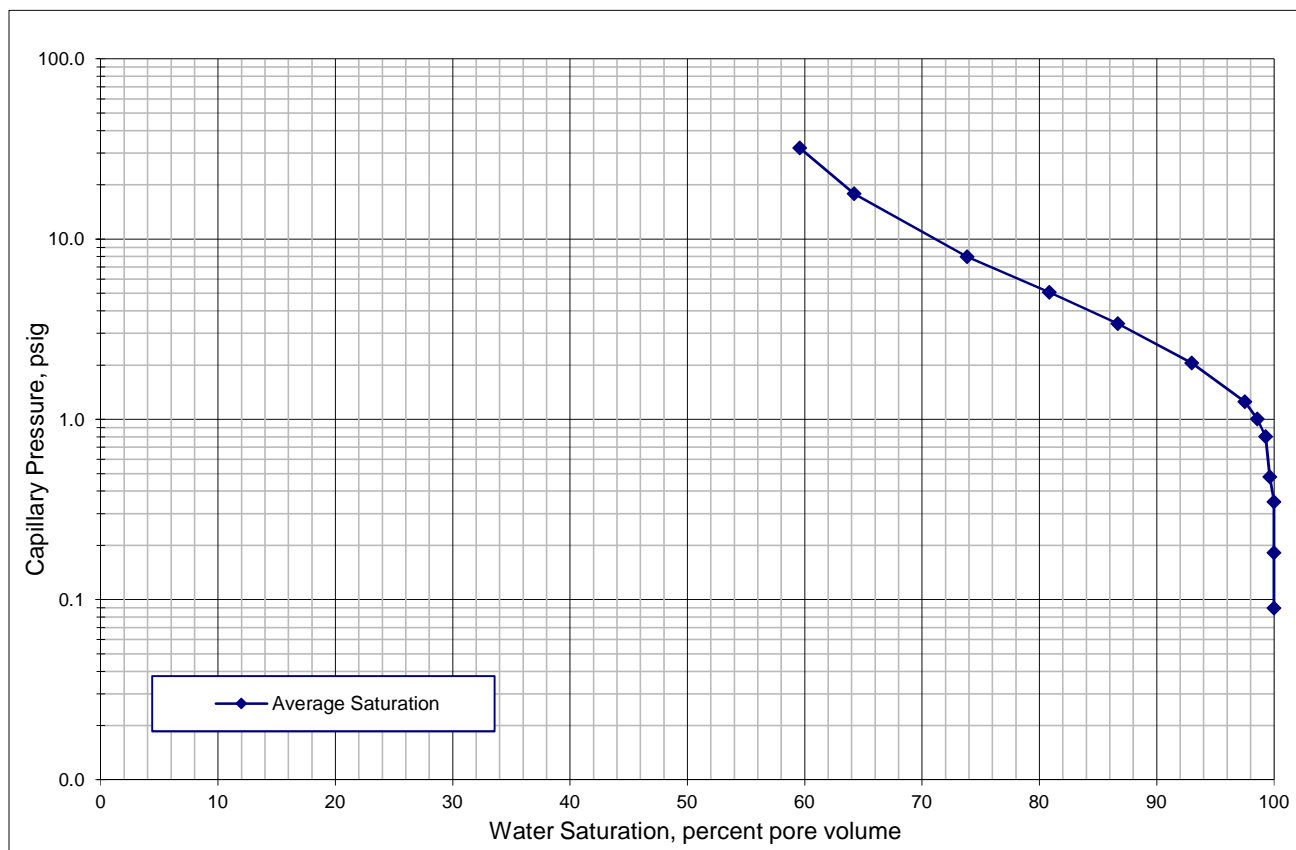
PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

AIR/WATER CAPILLARY PRESSURE TABULAR DATA

ASTM D6836; Method E (Centrifugal Method: air displacing water)

Project Name: NERT Downflushing
 Project No: N/A

Capillary Pressure		Height Above Water Table, ft	Sample ID	
			DFSB-08-25' at 25 ft.	
psi	cm water		Average Saturation % pore volume	Moisture, % dry weight
0.000	0.00	0.000	100.0	37.5
0.090	6.30	0.207	100.0	37.5
0.182	12.8	0.421	100.0	37.5
0.348	24.5	0.806	100.0	37.5
0.479	33.6	1.11	99.6	37.4
0.801	56.3	1.85	99.3	37.2
1.00	70.6	2.33	98.6	37.0
1.25	87.9	2.89	97.5	36.6
2.06	145	4.76	93.0	34.9
3.39	238	7.84	86.7	32.5
5.06	356	11.7	80.9	30.3
7.99	562	18.5	73.8	27.7
17.9	1258	41.4	64.2	24.1
32.0	2251	74.1	59.6	22.4



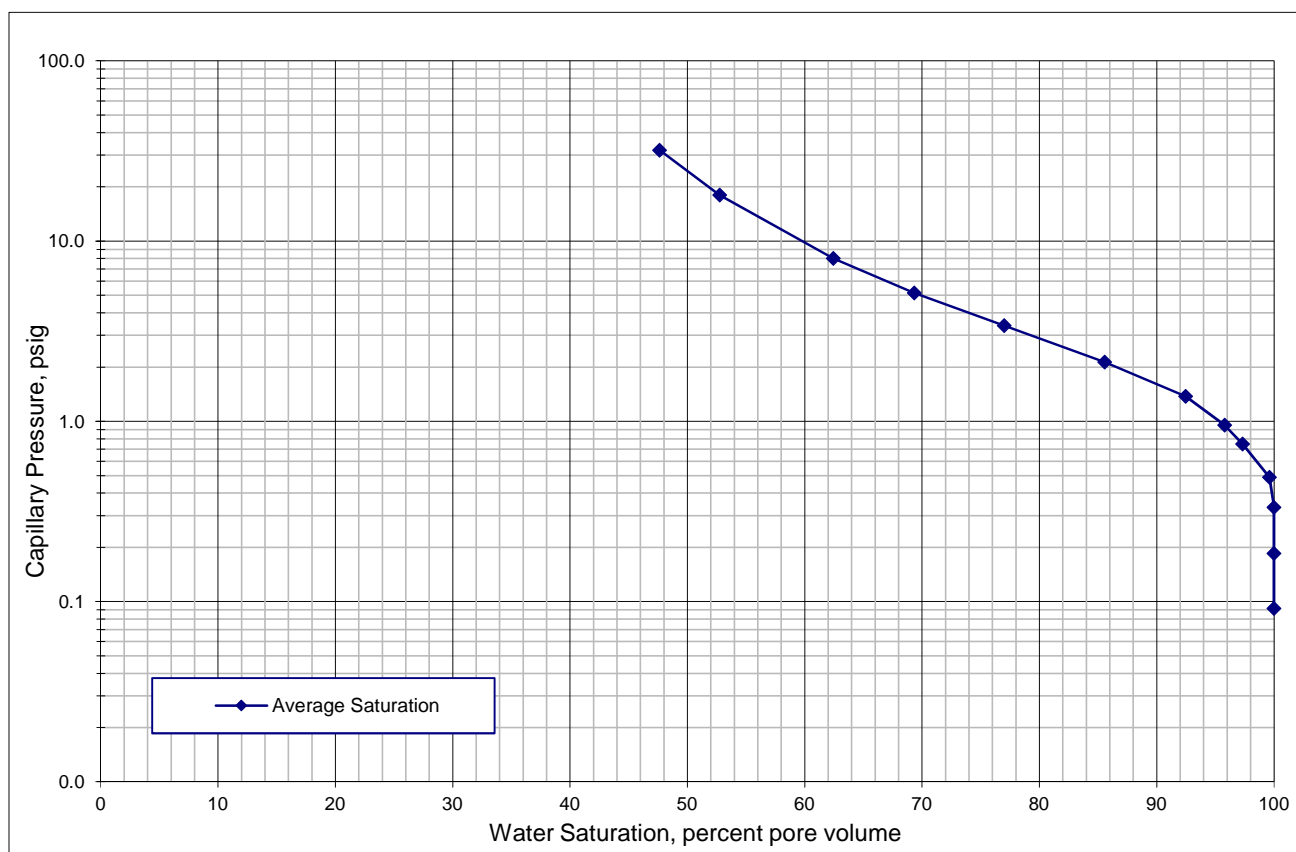
PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

AIR/WATER CAPILLARY PRESSURE TABULAR DATA

ASTM D6836; Method E (Centrifugal Method: air displacing water)

Project Name: NERT Downflushing
 Project No: N/A

Capillary Pressure		Height Above Water Table, ft	Sample ID	
			DFSB-02-20' at 20 ft.	
psi	cm water		Average Saturation % pore volume	Moisture, % dry weight
0.000	0.00	0.000	100.0	35.1
0.092	6.44	0.212	100.0	35.1
0.185	13.0	0.428	100.0	35.1
0.333	23.4	0.771	100.0	35.1
0.488	34.3	1.13	99.6	34.9
0.750	52.7	1.73	97.3	34.1
0.953	67.0	2.21	95.8	33.6
1.38	96.9	3.19	92.5	32.4
2.13	150	4.93	85.6	30.0
3.40	239	7.88	77.0	27.0
5.16	363	11.9	69.3	24.3
8.01	563	18.5	62.5	21.9
18.0	1268	41.7	52.7	18.5
32.0	2247	74.0	47.6	16.7



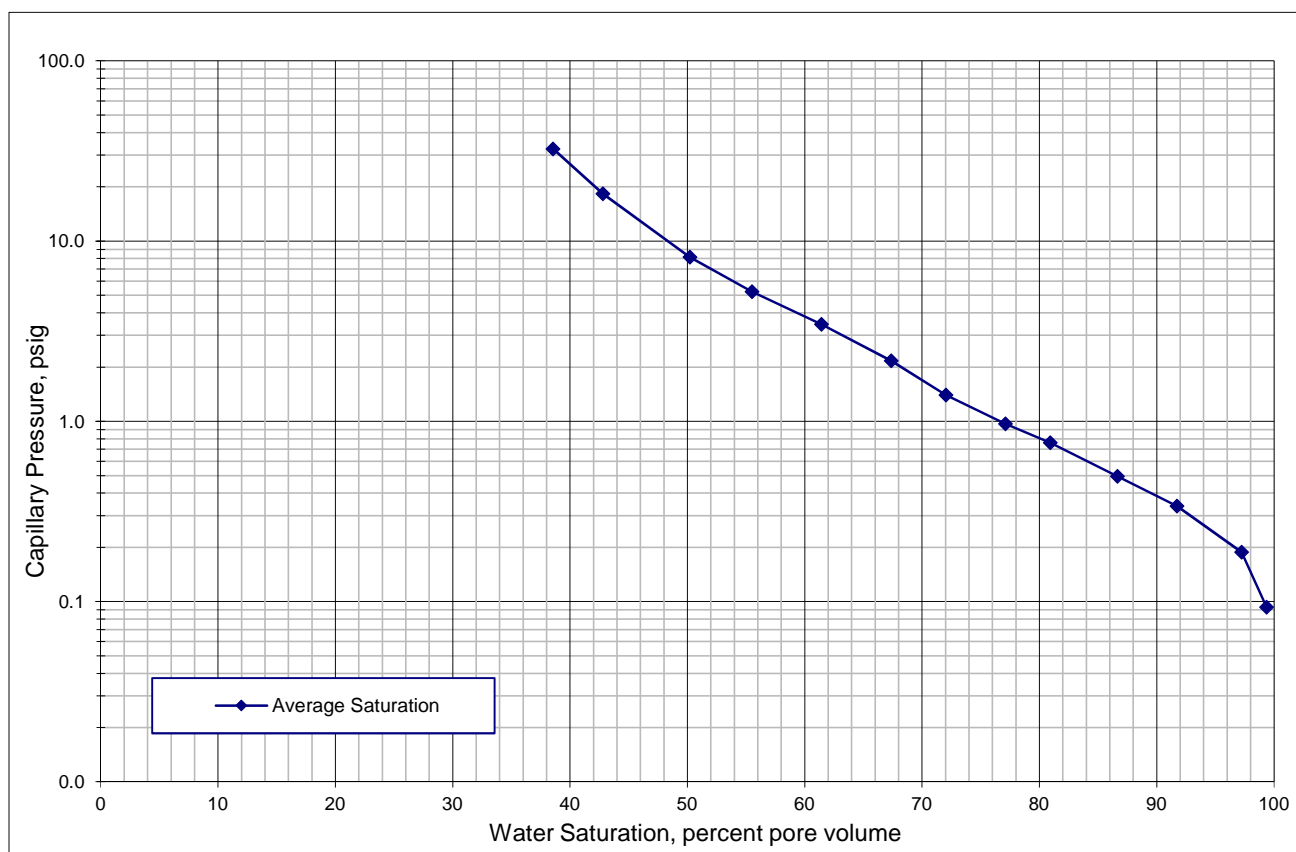
PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

AIR/WATER CAPILLARY PRESSURE TABULAR DATA

ASTM D6836; Method E (Centrifugal Method: air displacing water)

Project Name: NERT Downflushing
 Project No: N/A

Capillary Pressure		Height Above Water Table, ft	Sample ID	
			DFSB-15-25' at 25 ft.	
psi	cm water		Average Saturation % pore volume	Moisture, % dry weight
0.000	0.00	0.000	100.0	16.8
0.093	6.55	0.215	99.4	16.7
0.188	13.2	0.435	97.2	16.4
0.338	23.8	0.783	91.7	15.4
0.496	34.9	1.15	86.7	14.6
0.761	53.5	1.76	80.9	13.6
0.968	68.1	2.24	77.1	13.0
1.40	98.5	3.24	72.0	12.1
2.17	152	5.01	67.4	11.3
3.46	243	8.00	61.4	10.3
5.24	369	12.1	55.5	9.3
8.13	572	18.8	50.2	8.5
18.3	1288	42.4	42.8	7.2
32.5	2283	75.1	38.6	6.5



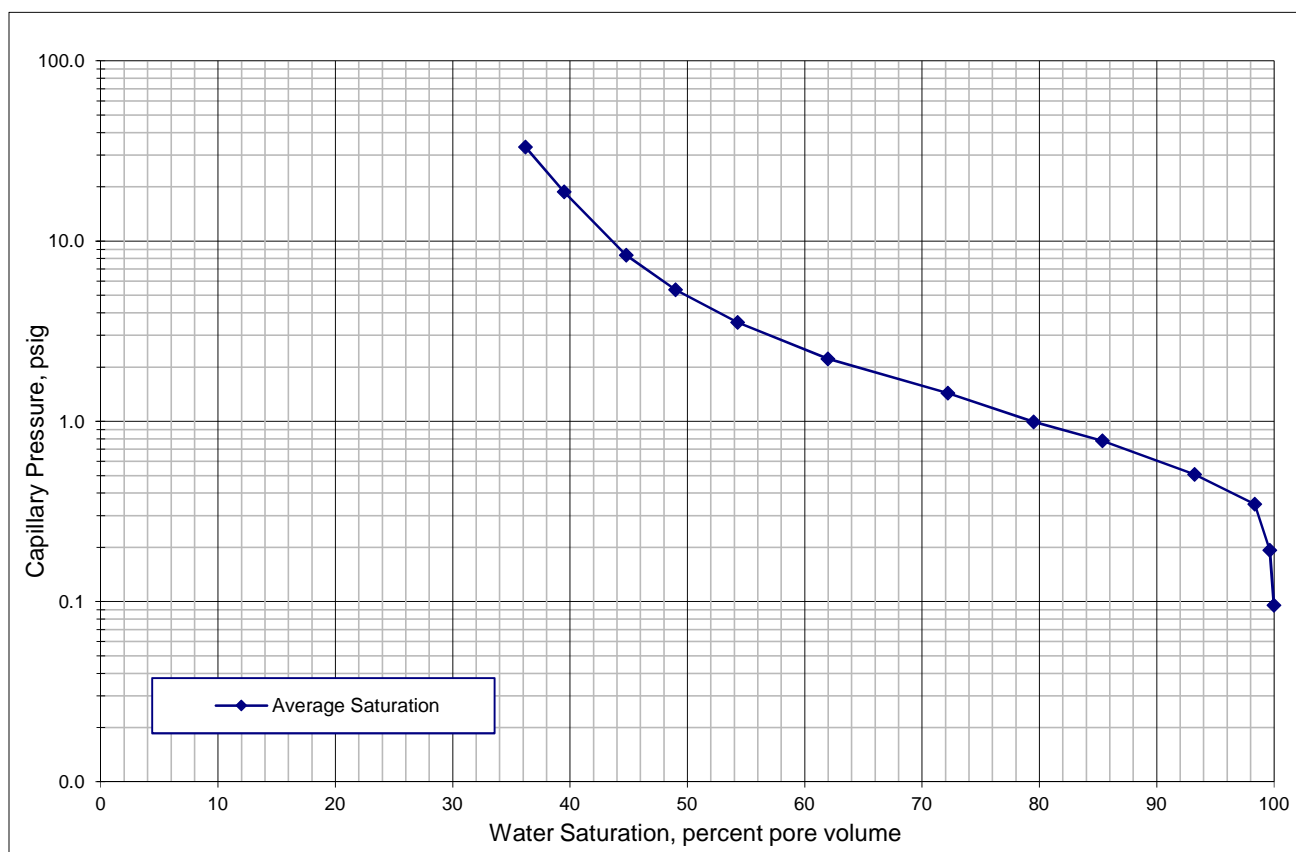
PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

AIR/WATER CAPILLARY PRESSURE TABULAR DATA

ASTM D6836; Method E (Centrifugal Method: air displacing water)

Project Name: NERT Downflushing
 Project No: N/A

Capillary Pressure		Height Above Water Table, ft	Sample ID	
			DFSB-10-15' at 15 ft.	
psi	cm water		Average Saturation % pore volume	Moisture, % dry weight
0.000	0.00	0.000	100.0	19.0
0.095	6.71	0.221	100.0	19.0
0.193	13.5	0.446	99.6	18.9
0.347	24.4	0.803	98.4	18.7
0.508	35.7	1.18	93.2	17.7
0.780	54.9	1.81	85.4	16.2
0.992	69.7	2.30	79.5	15.1
1.44	101	3.32	72.2	13.7
2.22	156	5.13	62.0	11.8
3.54	249	8.20	54.3	10.3
5.37	378	12.4	49.0	9.3
8.33	586	19.3	44.8	8.5
18.8	1320	43.4	39.5	7.5
33.3	2339	77.0	36.2	6.9



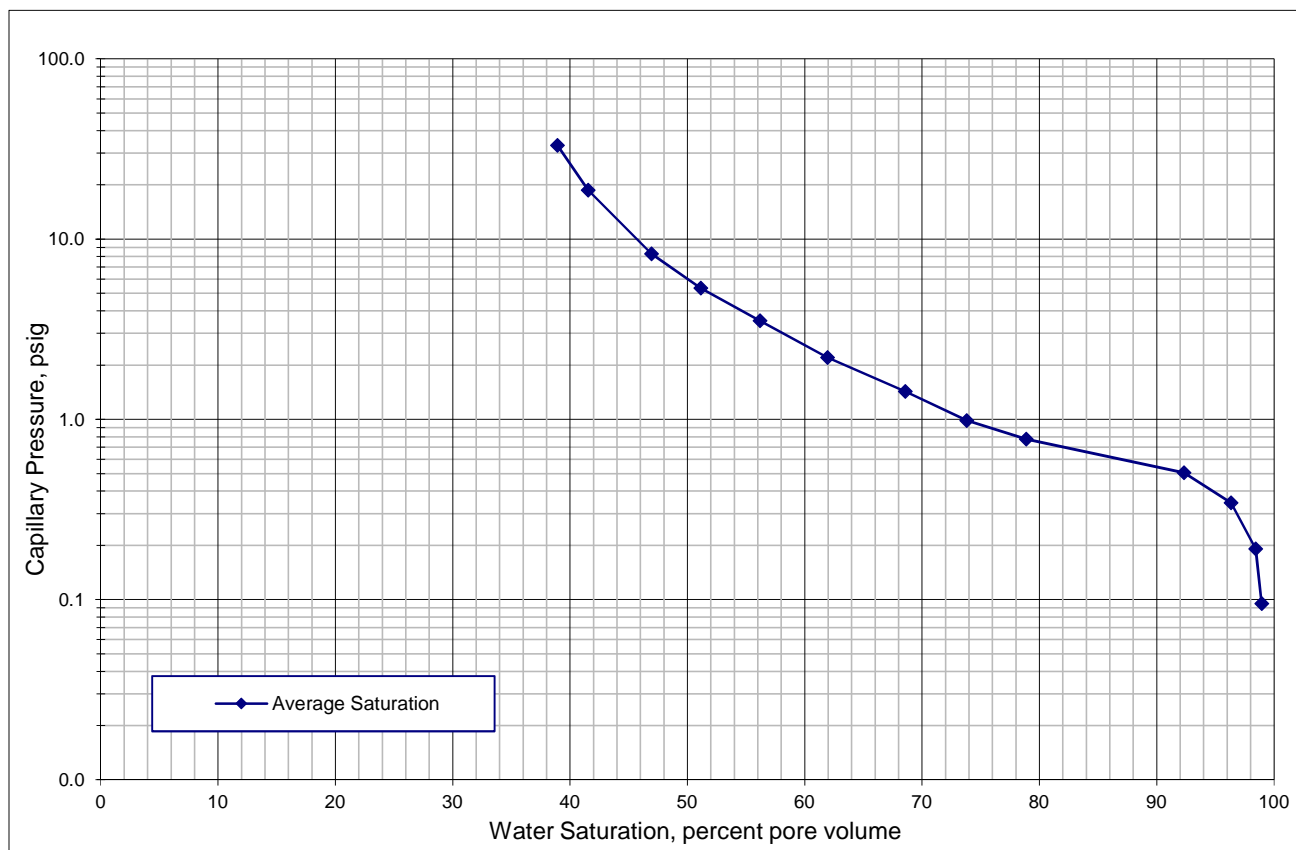
PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

AIR/WATER CAPILLARY PRESSURE TABULAR DATA

ASTM D6836; Method E (Centrifugal Method: air displacing water)

Project Name: NERT Downflushing
 Project No: N/A

Capillary Pressure		Height Above Water Table, ft	Sample ID	
			DFSB-11-25' at 25 ft.	
psi	cm water		Average Saturation % pore volume	Moisture, % dry weight
0.000	0.00	0.000	100.0	21.5
0.095	6.67	0.219	99.0	21.3
0.191	13.5	0.443	98.4	21.2
0.345	24.2	0.797	96.3	20.7
0.505	35.5	1.17	92.3	19.8
0.775	54.5	1.79	78.9	17.0
0.986	69.3	2.28	73.8	15.9
1.43	100	3.30	68.6	14.8
2.20	155	5.10	62.0	13.3
3.52	247	8.15	56.2	12.1
5.34	375	12.4	51.1	11.0
8.28	582	19.2	46.9	10.1
18.7	1312	43.2	41.5	8.9
33.1	2324	76.5	38.9	8.4



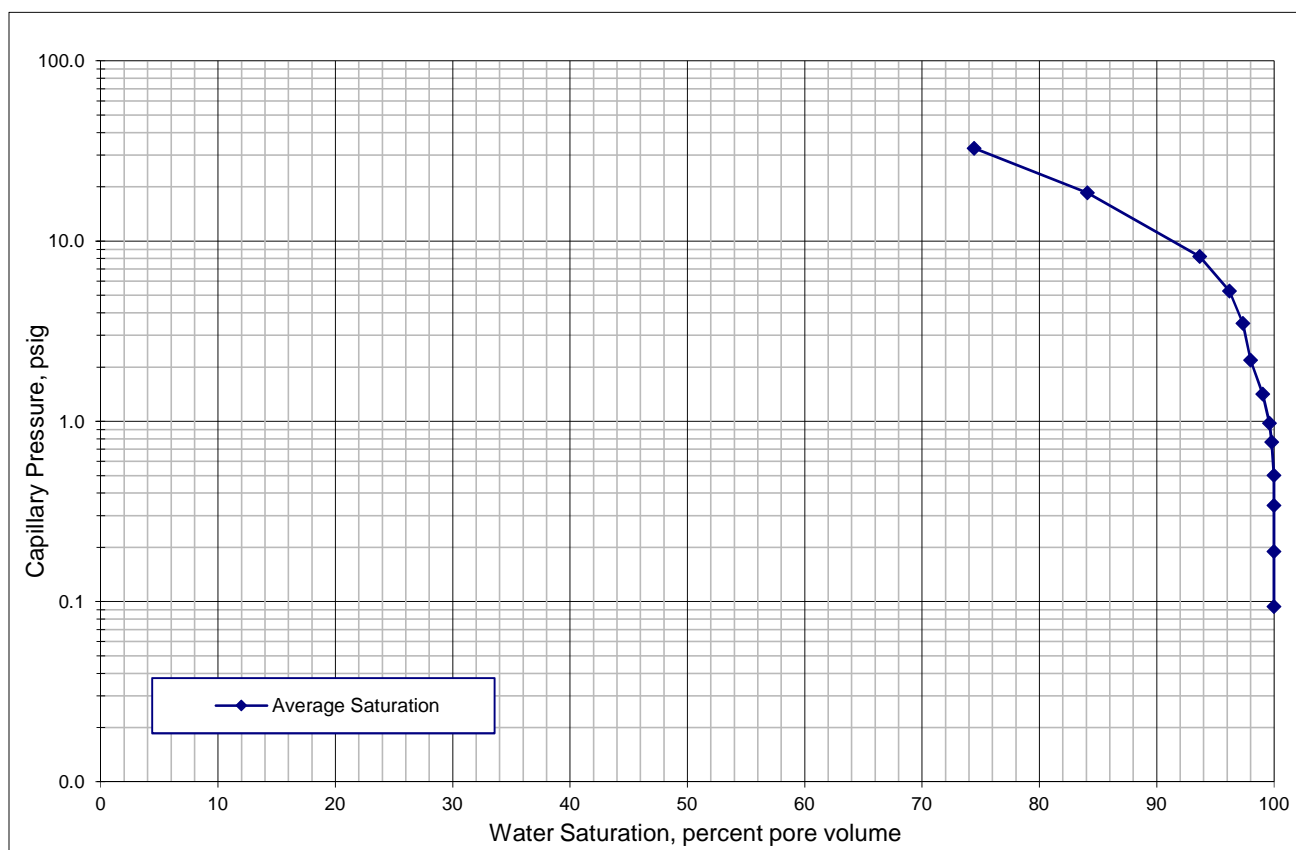
PTS File No: 46429
 Client: Tetra Tech, Inc.
 Report Date: 10/12/16

AIR/WATER CAPILLARY PRESSURE TABULAR DATA

ASTM D6836; Method E (Centrifugal Method: air displacing water)

Project Name: NERT Downflushing
 Project No: N/A

Capillary Pressure		Height Above Water Table, ft	Sample ID	
			DFSB-03-30' at 30 ft.	
psi	cm water		Average Saturation % pore volume	Moisture, % dry weight
0.000	0.00	0.000	100.0	68.5
0.094	6.61	0.217	100.0	68.5
0.190	13.3	0.439	100.0	68.5
0.342	24.0	0.790	100.0	68.5
0.501	35.2	1.16	100.0	68.5
0.768	54.0	1.78	99.8	68.4
0.977	68.7	2.26	99.6	68.2
1.41	99.4	3.27	99.1	67.8
2.19	154	5.06	98.0	67.1
3.49	245	8.07	97.3	66.7
5.29	372	12.2	96.2	65.9
8.21	577	19.0	93.7	64.1
18.5	1300	42.8	84.1	57.6
32.8	2303	75.8	74.4	51.0



PARTICLE SIZE SUMMARY
(METHODOLOGY: ASTM D422/D4464M)

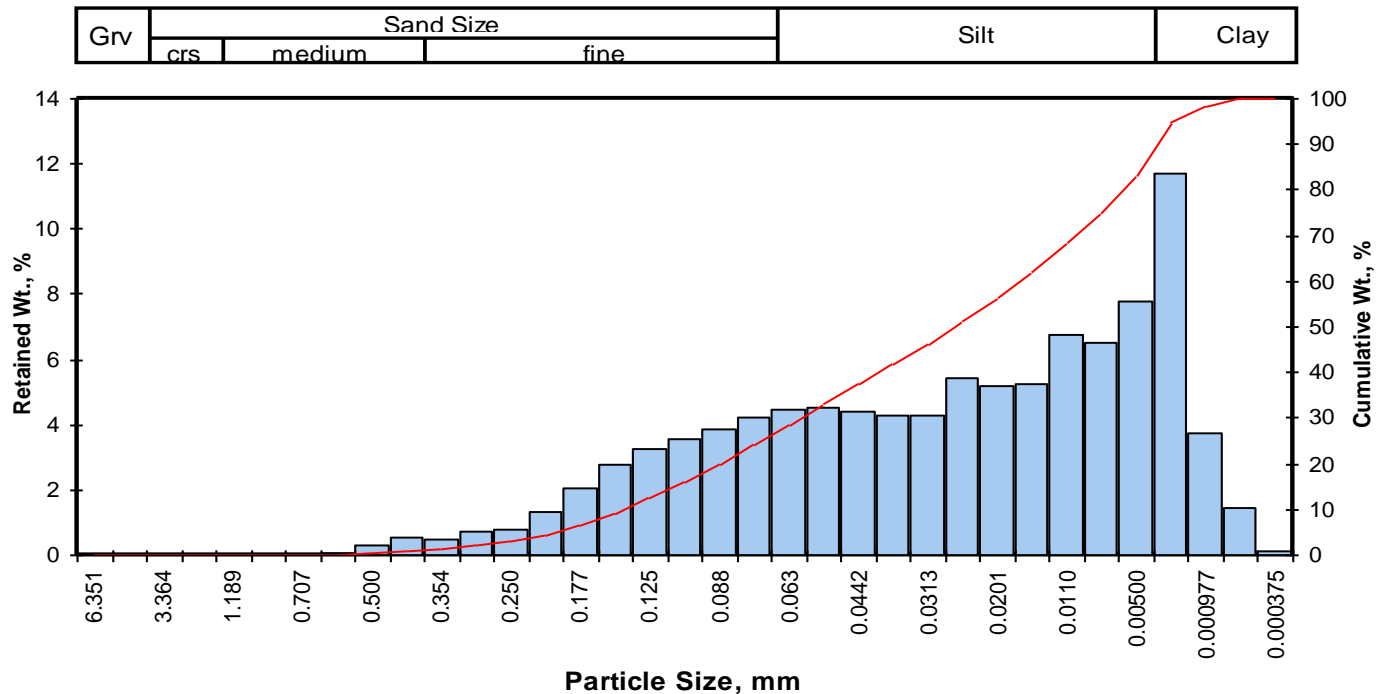
PROJECT NAME: NERT Downflushing
PROJECT NO: N/A

Sample ID	Depth, ft.	Mean Grain Size Description (1)	Median Grain Size mm	Particle Size Distribution, wt. percent						Silt & Clay
				Gravel	Sand Size			Silt	Clay	
					Coarse	Medium	Fine			
DFSB-16-35'	35	Silt	0.027	0.00	0.00	0.88	23.12	59.00	17.01	76.00
DFSB-12-30'	30	Fine sand	0.086	0.00	0.00	24.62	28.56	36.30	10.52	46.82
DFSB-17-30'	30	Fine sand	0.147	0.00	0.00	28.04	36.93	28.31	6.73	35.04
DFSB-05-30'	30	Silt	0.041	0.00	0.00	3.98	29.59	54.85	11.58	66.43
DFSB-01-30'	30	Silt	0.031	0.00	0.00	5.59	24.10	55.40	14.91	70.31
DFSB-09-30'	30	Silt	0.031	0.00	0.00	1.22	26.07	58.95	13.76	72.72
DFSB-02-30'	30	Silt	0.037	0.00	0.00	6.58	26.95	52.94	13.53	66.47
DFSB-11-35'	35	Silt	0.025	0.00	0.00	1.87	22.04	59.05	17.04	76.09
DFSB-03-30'	30	Silt	0.036	0.00	0.00	2.71	28.23	56.16	12.91	69.07

(1) Based on Mean from Trask

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-16-35'
Depth, ft: 35



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.00	0.00	0.00
0.0234	0.595	0.75	30	0.06	0.06	0.06
0.0197	0.500	1.00	35	0.30	0.30	0.36
0.0166	0.420	1.25	40	0.52	0.52	0.88
0.0139	0.354	1.50	45	0.49	0.49	1.37
0.0117	0.297	1.75	50	0.72	0.72	2.09
0.0098	0.250	2.00	60	0.81	0.81	2.90
0.0083	0.210	2.25	70	1.31	1.31	4.21
0.0070	0.177	2.50	80	2.04	2.04	6.25
0.0059	0.149	2.75	100	2.78	2.78	9.03
0.0049	0.125	3.00	120	3.27	3.27	12.30
0.0041	0.105	3.25	140	3.58	3.58	15.88
0.0035	0.088	3.50	170	3.88	3.88	19.77
0.0029	0.074	3.75	200	4.23	4.23	24.00
0.0025	0.063	4.00	230	4.48	4.48	28.48
0.0021	0.053	4.25	270	4.52	4.52	33.00
0.00174	0.0442	4.50	325	4.42	4.42	37.42
0.00146	0.0372	4.75	400	4.30	4.30	41.72
0.00123	0.0313	5.00	450	4.28	4.28	46.00
0.000986	0.0250	5.32	500	5.44	5.44	51.45
0.000790	0.0201	5.64	635	5.21	5.21	56.66
0.000615	0.0156	6.00		5.27	5.27	61.93
0.000435	0.0110	6.50		6.76	6.76	68.69
0.000308	0.00781	7.00		6.49	6.49	75.18
0.000197	0.00500	7.65		7.81	7.81	82.99
0.000077	0.00195	9.00		11.70	11.70	94.70
0.000038	0.000977	10.00		3.75	3.75	98.45
0.000019	0.000488	11.00		1.42	1.42	99.87
0.000015	0.000375	11.38		0.13	0.13	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	2.35	0.0077	0.197
10	2.82	0.0056	0.141
16	3.26	0.0041	0.105
25	3.81	0.0028	0.071
40	4.65	0.0016	0.040
50	5.24	0.0010	0.027
60	5.87	0.0007	0.017
75	6.99	0.0003	0.008
84	7.76	0.0002	0.005
90	8.46	0.0001	0.003
95	9.08	0.0001	0.002

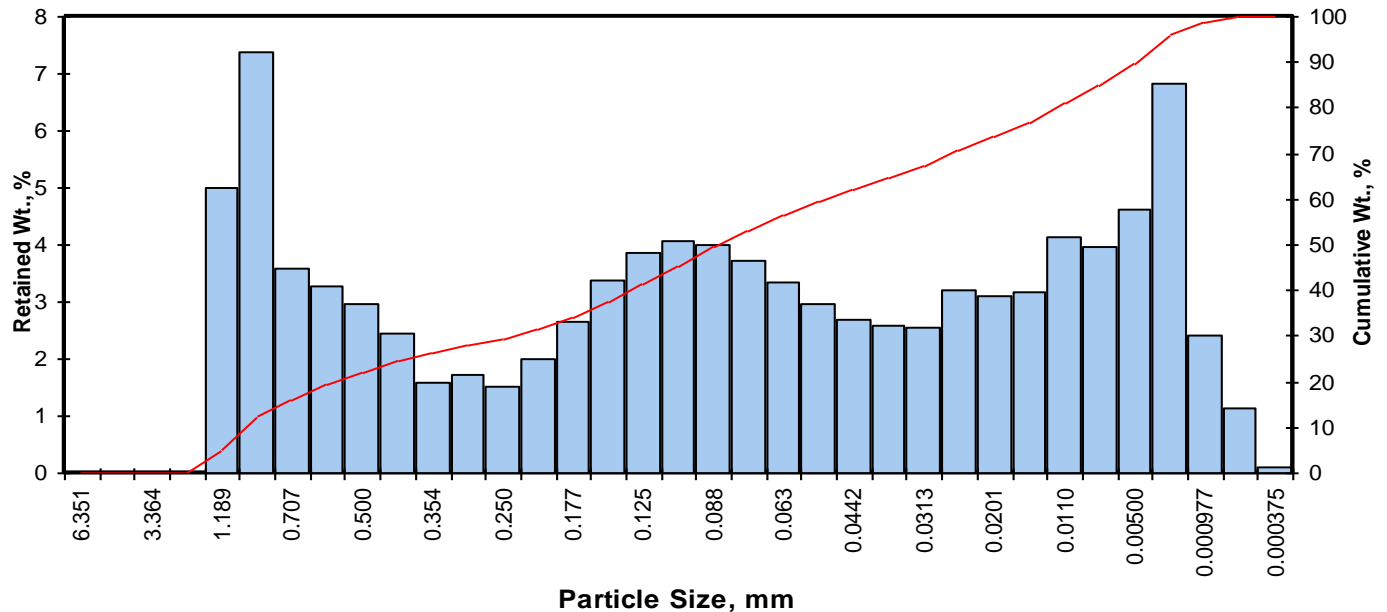
Measure	Trask	Inman	Folk-Ward
Median, phi	5.24	5.24	5.24
Median, in.	0.0010	0.0010	0.0010
Median, mm	0.027	0.027	0.027
Mean, phi	4.65	5.51	5.42
Mean, in.	0.0016	0.0009	0.0009
Mean, mm	0.040	0.022	0.023
Sorting	3.010	2.252	2.146
Skewness	0.894	0.122	0.132
Kurtosis	0.230	0.495	0.868
Grain Size Description		Silt	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	0.88
Fine Sand	200	23.12
Silt	>0.005 mm	59.00
Clay	<0.005 mm	17.01
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-12-30'
Depth, ft: 30

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	5.00	5.00	5.00
0.0331	0.841	0.25	20	7.38	7.38	12.38
0.0278	0.707	0.50	25	3.57	3.57	15.95
0.0234	0.595	0.75	30	3.28	3.28	19.23
0.0197	0.500	1.00	35	2.95	2.95	22.18
0.0166	0.420	1.25	40	2.44	2.44	24.62
0.0139	0.354	1.50	45	1.58	1.58	26.21
0.0117	0.297	1.75	50	1.72	1.72	27.93
0.0098	0.250	2.00	60	1.53	1.53	29.46
0.0083	0.210	2.25	70	2.00	2.00	31.46
0.0070	0.177	2.50	80	2.67	2.67	34.13
0.0059	0.149	2.75	100	3.38	3.38	37.51
0.0049	0.125	3.00	120	3.87	3.87	41.38
0.0041	0.105	3.25	140	4.08	4.08	45.46
0.0035	0.088	3.50	170	4.00	4.00	49.46
0.0029	0.074	3.75	200	3.72	3.72	53.18
0.0025	0.063	4.00	230	3.34	3.34	56.52
0.0021	0.053	4.25	270	2.96	2.96	59.48
0.00174	0.0442	4.50	325	2.70	2.70	62.18
0.00146	0.0372	4.75	400	2.57	2.57	64.75
0.00123	0.0313	5.00	450	2.54	2.54	67.29
0.000986	0.0250	5.32	500	3.22	3.22	70.51
0.000790	0.0201	5.64	635	3.09	3.09	73.60
0.000615	0.0156	6.00		3.17	3.17	76.78
0.000435	0.0110	6.50		4.12	4.12	80.90
0.000308	0.00781	7.00		3.95	3.95	84.85
0.000197	0.00500	7.65		4.63	4.63	89.48
0.000077	0.00195	9.00		6.82	6.82	96.30
0.000038	0.000977	10.00		2.43	2.43	98.73
0.000019	0.000488	11.00		1.15	1.15	99.88
0.000015	0.000375	11.38		0.12	0.12	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-0.25	0.0468	1.189
10	0.09	0.0370	0.940
16	0.50	0.0278	0.705
25	1.31	0.0159	0.404
40	2.91	0.0052	0.133
50	3.54	0.0034	0.086
60	4.30	0.0020	0.051
75	5.80	0.0007	0.018
84	6.89	0.0003	0.008
90	7.75	0.0002	0.005
95	8.74	0.0001	0.002

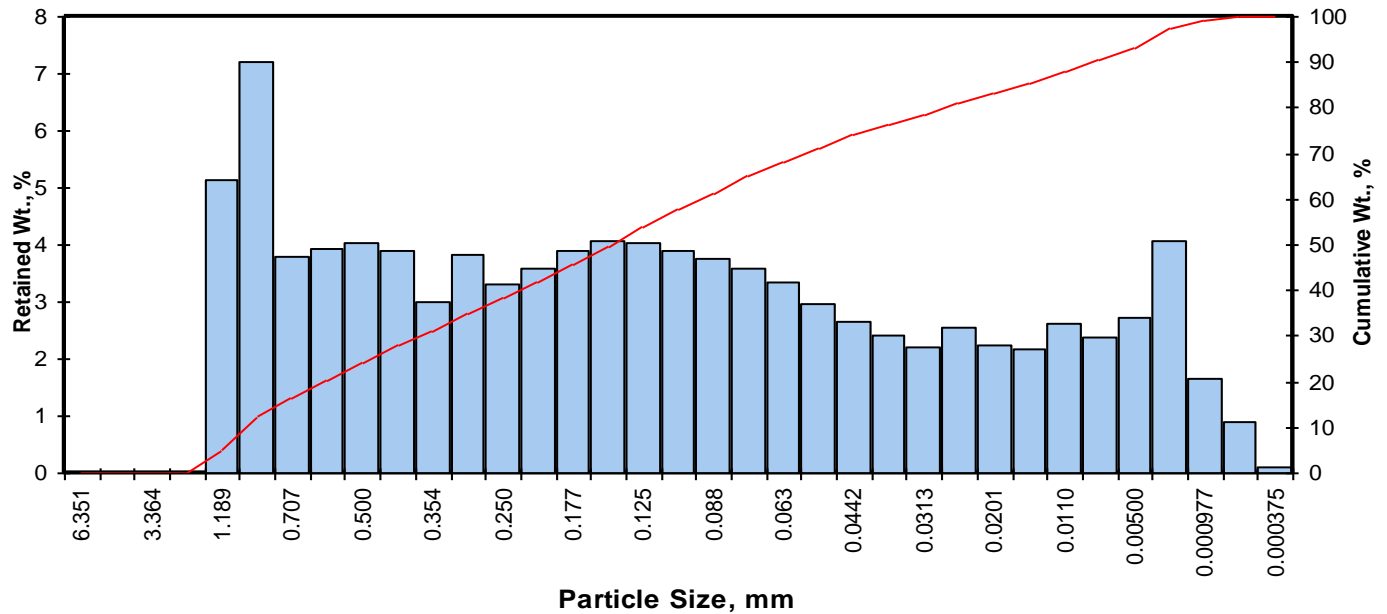
Measure	Trask	Inman	Folk-Ward
Median, phi	3.54	3.54	3.54
Median, in.	0.0034	0.0034	0.0034
Median, mm	0.086	0.086	0.086
Mean, phi	2.25	3.70	3.64
Mean, in.	0.0083	0.0030	0.0031
Mean, mm	0.211	0.077	0.080
Sorting	4.739	3.195	2.960
Skewness	0.988	0.051	0.104
Kurtosis	0.206	0.407	0.821
Grain Size Description		Fine sand	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	24.62
Fine Sand	200	28.56
Silt	>0.005 mm	36.30
Clay	<0.005 mm	10.52
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-17-30'
Depth, ft: 30

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	5.15	5.15	5.15
0.0331	0.841	0.25	20	7.22	7.22	12.37
0.0278	0.707	0.50	25	3.81	3.81	16.18
0.0234	0.595	0.75	30	3.93	3.93	20.11
0.0197	0.500	1.00	35	4.04	4.04	24.15
0.0166	0.420	1.25	40	3.89	3.89	28.04
0.0139	0.354	1.50	45	2.99	2.99	31.03
0.0117	0.297	1.75	50	3.83	3.83	34.86
0.0098	0.250	2.00	60	3.30	3.30	38.16
0.0083	0.210	2.25	70	3.59	3.59	41.75
0.0070	0.177	2.50	80	3.90	3.90	45.65
0.0059	0.149	2.75	100	4.08	4.08	49.73
0.0049	0.125	3.00	120	4.02	4.02	53.75
0.0041	0.105	3.25	140	3.88	3.88	57.63
0.0035	0.088	3.50	170	3.75	3.75	61.38
0.0029	0.074	3.75	200	3.59	3.59	64.96
0.0025	0.063	4.00	230	3.33	3.33	68.29
0.0021	0.053	4.25	270	2.98	2.98	71.27
0.00174	0.0442	4.50	325	2.66	2.66	73.93
0.00146	0.0372	4.75	400	2.41	2.41	76.34
0.00123	0.0313	5.00	450	2.22	2.22	78.56
0.000986	0.0250	5.32	500	2.56	2.56	81.12
0.000790	0.0201	5.64	635	2.23	2.23	83.35
0.000615	0.0156	6.00		2.16	2.16	85.51
0.000435	0.0110	6.50		2.63	2.63	88.14
0.000308	0.00781	7.00		2.39	2.39	90.53
0.000197	0.00500	7.65		2.74	2.74	93.27
0.000077	0.00195	9.00		4.07	4.07	97.34
0.000038	0.000977	10.00		1.65	1.65	98.99
0.000019	0.000488	11.00		0.91	0.91	99.90
0.000015	0.000375	11.38		0.10	0.10	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-0.27	0.0475	1.207
10	0.09	0.0371	0.942
16	0.49	0.0281	0.713
25	1.05	0.0190	0.481
40	2.13	0.0090	0.229
50	2.77	0.0058	0.147
60	3.41	0.0037	0.094
75	4.61	0.0016	0.041
84	5.75	0.0007	0.019
90	6.89	0.0003	0.008
95	8.22	0.0001	0.003

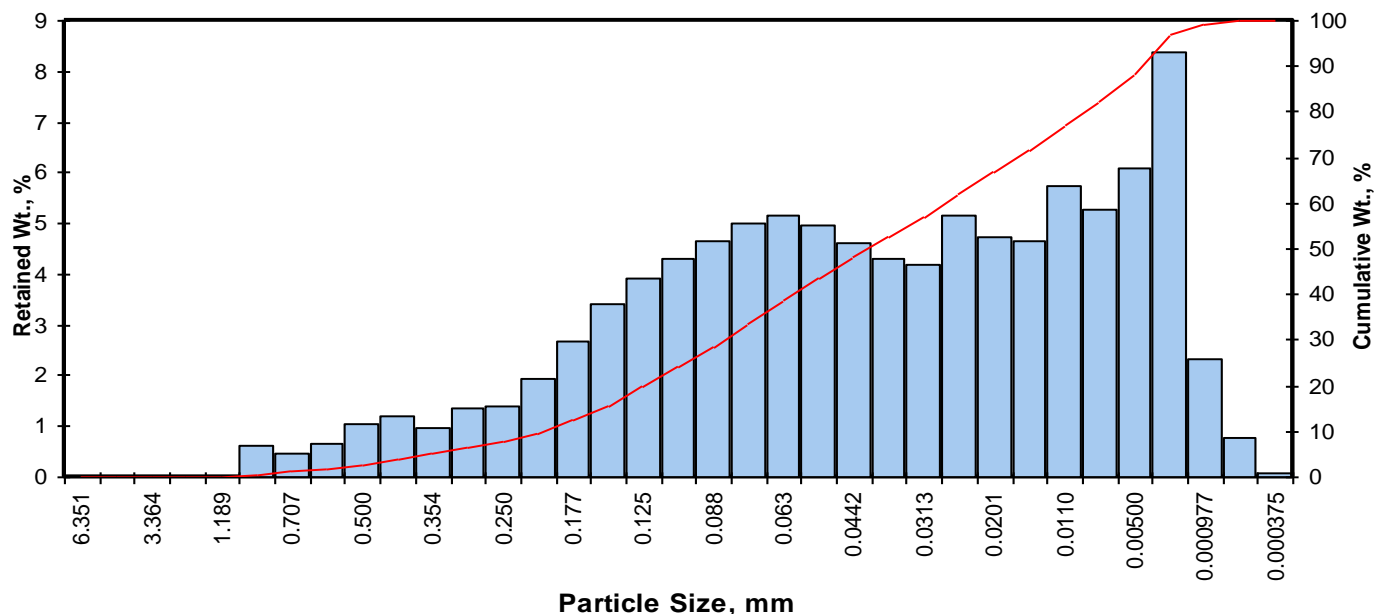
Measure	Trask	Inman	Folk-Ward
Median, phi	2.77	2.77	2.77
Median, in.	0.0058	0.0058	0.0058
Median, mm	0.147	0.147	0.147
Mean, phi	1.94	3.12	3.00
Mean, in.	0.0103	0.0045	0.0049
Mean, mm	0.261	0.115	0.125
Sorting	3.429	2.630	2.602
Skewness	0.956	0.133	0.209
Kurtosis	0.236	0.615	0.979
Grain Size Description		Fine sand	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	28.04
Fine Sand	200	36.93
Silt	>0.005 mm	28.31
Clay	<0.005 mm	6.73
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-05-30'
Depth, ft: 30

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.02	0.02	0.02
0.0331	0.841	0.25	20	0.62	0.62	0.64
0.0278	0.707	0.50	25	0.45	0.45	1.09
0.0234	0.595	0.75	30	0.65	0.65	1.74
0.0197	0.500	1.00	35	1.03	1.03	2.77
0.0166	0.420	1.25	40	1.21	1.21	3.98
0.0139	0.354	1.50	45	0.98	0.98	4.96
0.0117	0.297	1.75	50	1.34	1.34	6.30
0.0098	0.250	2.00	60	1.40	1.40	7.70
0.0083	0.210	2.25	70	1.95	1.95	9.65
0.0070	0.177	2.50	80	2.66	2.66	12.31
0.0059	0.149	2.75	100	3.40	3.40	15.71
0.0049	0.125	3.00	120	3.92	3.92	19.63
0.0041	0.105	3.25	140	4.29	4.29	23.92
0.0035	0.088	3.50	170	4.65	4.65	28.57
0.0029	0.074	3.75	200	4.99	4.99	33.57
0.0025	0.063	4.00	230	5.14	5.14	38.71
0.0021	0.053	4.25	270	4.95	4.95	43.66
0.00174	0.0442	4.50	325	4.61	4.61	48.27
0.00146	0.0372	4.75	400	4.32	4.32	52.59
0.00123	0.0313	5.00	450	4.19	4.19	56.78
0.000986	0.0250	5.32	500	5.17	5.17	61.95
0.000790	0.0201	5.64	635	4.74	4.74	66.69
0.000615	0.0156	6.00		4.65	4.65	71.34
0.000435	0.0110	6.50		5.73	5.73	77.07
0.000308	0.00781	7.00		5.27	5.27	82.34
0.000197	0.00500	7.65		6.07	6.07	88.42
0.000077	0.00195	9.00		8.39	8.39	96.81
0.000038	0.000977	10.00		2.33	2.33	99.14
0.000019	0.000488	11.00		0.79	0.79	99.93
0.000015	0.000375	11.38		0.07	0.07	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	1.51	0.0138	0.352
10	2.28	0.0081	0.205
16	2.77	0.0058	0.147
25	3.31	0.0040	0.101
40	4.07	0.0024	0.060
50	4.60	0.0016	0.041
60	5.20	0.0011	0.027
75	6.32	0.0005	0.013
84	7.18	0.0003	0.007
90	7.90	0.0002	0.004
95	8.71	0.0001	0.002

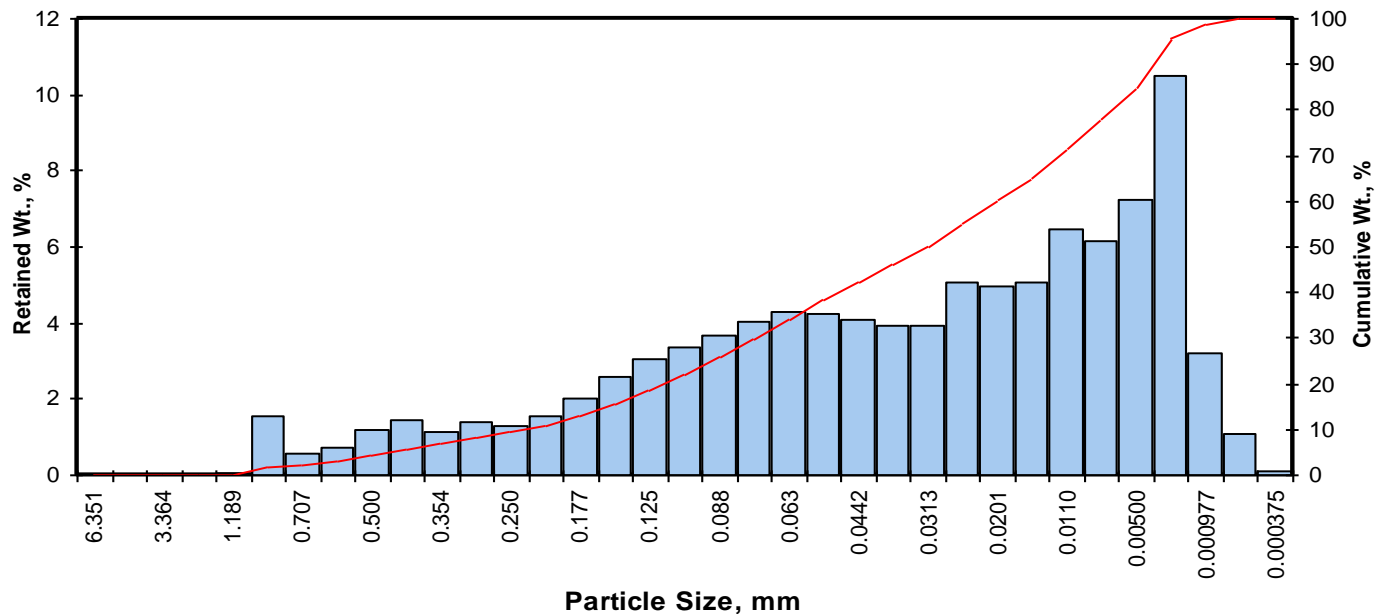
Measure	Trask	Inman	Folk-Ward
Median, phi	4.60	4.60	4.60
Median, in.	0.0016	0.0016	0.0016
Median, mm	0.041	0.041	0.041
Mean, phi	4.14	4.97	4.85
Mean, in.	0.0022	0.0013	0.0014
Mean, mm	0.057	0.032	0.035
Sorting	2.839	2.204	2.193
Skewness	0.863	0.169	0.155
Kurtosis	0.220	0.634	0.980
Grain Size Description		Silt	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	3.98
Fine Sand	200	29.59
Silt	>0.005 mm	54.85
Clay	<0.005 mm	11.58
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-01-30'
Depth, ft: 30

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Particle Size, mm

Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.08	0.07	0.07
0.0331	0.841	0.25	20	1.56	1.56	1.63
0.0278	0.707	0.50	25	0.58	0.58	2.21
0.0234	0.595	0.75	30	0.72	0.72	2.93
0.0197	0.500	1.00	35	1.21	1.21	4.14
0.0166	0.420	1.25	40	1.45	1.45	5.59
0.0139	0.354	1.50	45	1.13	1.13	6.72
0.0117	0.297	1.75	50	1.41	1.41	8.13
0.0098	0.250	2.00	60	1.27	1.27	9.40
0.0083	0.210	2.25	70	1.56	1.56	10.96
0.0070	0.177	2.50	80	2.03	2.03	12.99
0.0059	0.149	2.75	100	2.60	2.60	15.59
0.0049	0.125	3.00	120	3.03	3.03	18.62
0.0041	0.105	3.25	140	3.35	3.35	21.97
0.0035	0.088	3.50	170	3.68	3.68	25.65
0.0029	0.074	3.75	200	4.04	4.04	29.69
0.0025	0.063	4.00	230	4.27	4.27	33.96
0.0021	0.053	4.25	270	4.25	4.25	38.21
0.00174	0.0442	4.50	325	4.07	4.07	42.28
0.00146	0.0372	4.75	400	3.91	3.91	46.19
0.00123	0.0313	5.00	450	3.91	3.91	50.10
0.000986	0.0250	5.32	500	5.08	5.08	55.18
0.000790	0.0201	5.64	635	4.98	4.98	60.16
0.000615	0.0156	6.00		5.09	5.09	65.25
0.000435	0.0110	6.50		6.49	6.49	71.74
0.000308	0.00781	7.00		6.14	6.14	77.87
0.000197	0.00500	7.65		7.22	7.22	85.09
0.000077	0.00195	9.00		10.50	10.50	95.59
0.000038	0.000977	10.00		3.20	3.20	98.79
0.000019	0.000488	11.00		1.11	1.11	99.90
0.000015	0.000375	11.38		0.10	0.10	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	1.15	0.0178	0.451
10	2.10	0.0092	0.234
16	2.78	0.0057	0.145
25	3.46	0.0036	0.091
40	4.36	0.0019	0.049
50	4.99	0.0012	0.031
60	5.63	0.0008	0.020
75	6.77	0.0004	0.009
84	7.55	0.0002	0.005
90	8.28	0.0001	0.003
95	8.92	0.0001	0.002

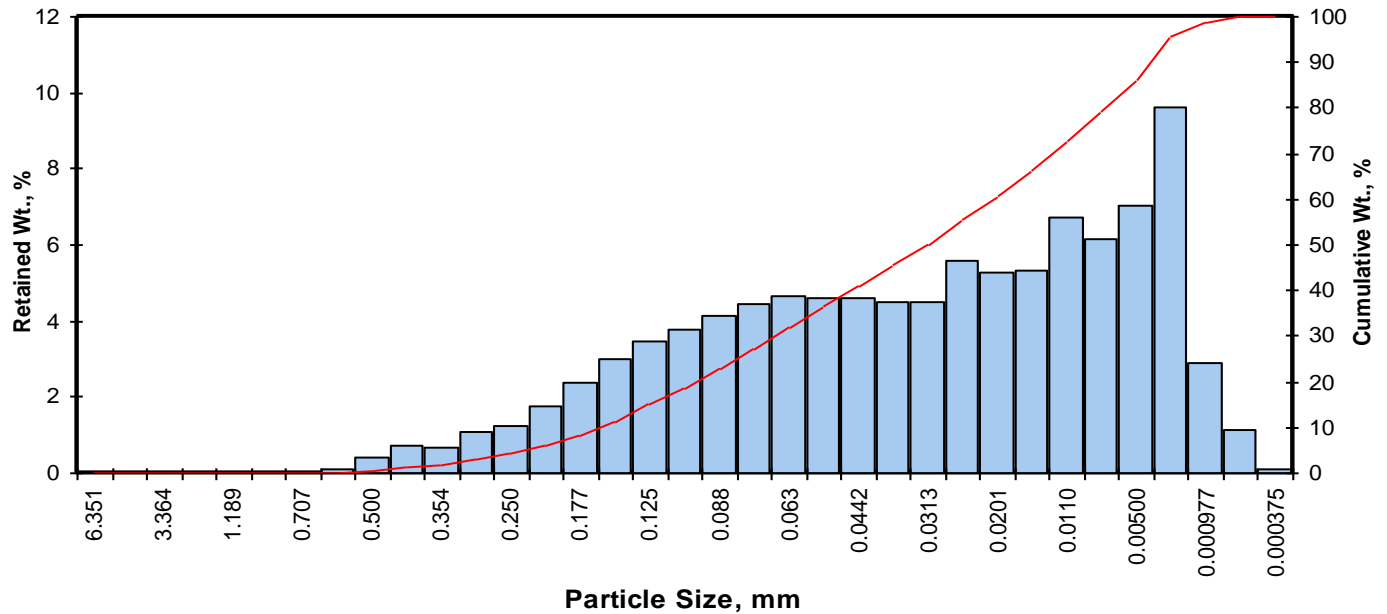
Measure	Trask	Inman	Folk-Ward
Median, phi	4.99	4.99	4.99
Median, in.	0.0012	0.0012	0.0012
Median, mm	0.031	0.031	0.031
Mean, phi	4.32	5.17	5.11
Mean, in.	0.0020	0.0011	0.0011
Mean, mm	0.050	0.028	0.029
Sorting	3.149	2.382	2.369
Skewness	0.922	0.072	0.041
Kurtosis	0.178	0.632	0.963
Grain Size Description (ASTM-USCS Scale)		Silt (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	5.59
Fine Sand	200	24.10
Silt	>0.005 mm	55.40
Clay	<0.005 mm	14.91
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-09-30'
Depth, ft: 30

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Particle Size, mm

Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.00	0.00	0.00
0.0234	0.595	0.75	30	0.08	0.08	0.09
0.0197	0.500	1.00	35	0.42	0.42	0.51
0.0166	0.420	1.25	40	0.71	0.71	1.22
0.0139	0.354	1.50	45	0.68	0.68	1.90
0.0117	0.297	1.75	50	1.10	1.10	3.00
0.0098	0.250	2.00	60	1.26	1.26	4.26
0.0083	0.210	2.25	70	1.75	1.75	6.01
0.0070	0.177	2.50	80	2.38	2.38	8.39
0.0059	0.149	2.75	100	3.02	3.02	11.41
0.0049	0.125	3.00	120	3.47	3.47	14.88
0.0041	0.105	3.25	140	3.80	3.80	18.68
0.0035	0.088	3.50	170	4.14	4.14	22.82
0.0029	0.074	3.75	200	4.46	4.46	27.28
0.0025	0.063	4.00	230	4.63	4.63	31.91
0.0021	0.053	4.25	270	4.62	4.62	36.53
0.00174	0.0442	4.50	325	4.58	4.58	41.12
0.00146	0.0372	4.75	400	4.52	4.52	45.64
0.00123	0.0313	5.00	450	4.48	4.48	50.12
0.000986	0.0250	5.32	500	5.59	5.59	55.71
0.000790	0.0201	5.64	635	5.28	5.28	60.99
0.000615	0.0156	6.00		5.34	5.34	66.33
0.000435	0.0110	6.50		6.70	6.70	73.03
0.000308	0.00781	7.00		6.17	6.17	79.20
0.000197	0.00500	7.65		7.03	7.03	86.24
0.000077	0.00195	9.00		9.64	9.64	95.88
0.000038	0.000977	10.00		2.88	2.88	98.76
0.000019	0.000488	11.00		1.13	1.13	99.89
0.000015	0.000375	11.38		0.11	0.11	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	2.11	0.0091	0.232
10	2.63	0.0063	0.161
16	3.07	0.0047	0.119
25	3.62	0.0032	0.081
40	4.44	0.0018	0.046
50	4.99	0.0012	0.031
60	5.58	0.0008	0.021
75	6.66	0.0004	0.010
84	7.44	0.0002	0.006
90	8.17	0.0001	0.003
95	8.88	0.0001	0.002

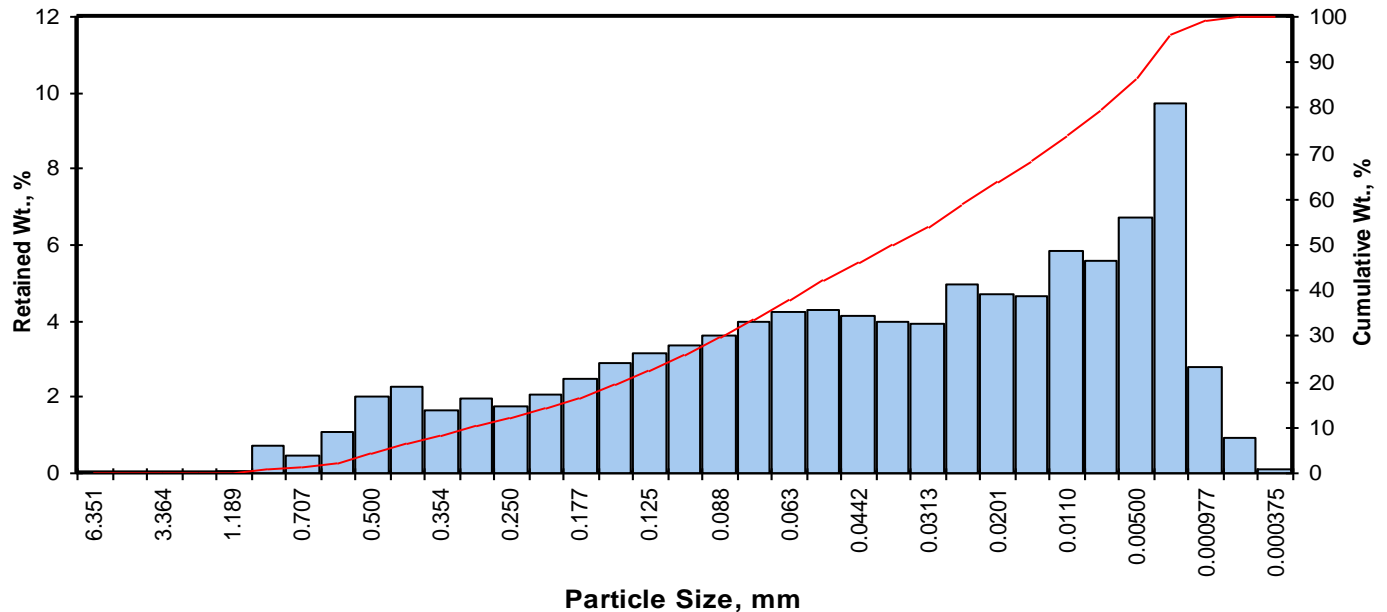
Measure	Trask	Inman	Folk-Ward
Median, phi	4.99	4.99	4.99
Median, in.	0.0012	0.0012	0.0012
Median, mm	0.031	0.031	0.031
Mean, phi	4.46	5.26	5.17
Mean, in.	0.0018	0.0010	0.0011
Mean, mm	0.046	0.026	0.028
Sorting	2.865	2.183	2.117
Skewness	0.903	0.121	0.134
Kurtosis	0.226	0.551	0.914
Grain Size Description		Silt	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	1.22
Fine Sand	200	26.07
Silt	>0.005 mm	58.95
Clay	<0.005 mm	13.76
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-02-30'
Depth, ft: 30

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.04	0.04	0.04
0.0331	0.841	0.25	20	0.70	0.70	0.74
0.0278	0.707	0.50	25	0.45	0.45	1.19
0.0234	0.595	0.75	30	1.10	1.10	2.29
0.0197	0.500	1.00	35	2.02	2.02	4.31
0.0166	0.420	1.25	40	2.27	2.27	6.58
0.0139	0.354	1.50	45	1.67	1.67	8.25
0.0117	0.297	1.75	50	1.97	1.97	10.22
0.0098	0.250	2.00	60	1.74	1.74	11.96
0.0083	0.210	2.25	70	2.08	2.08	14.04
0.0070	0.177	2.50	80	2.50	2.50	16.54
0.0059	0.149	2.75	100	2.90	2.90	19.44
0.0049	0.125	3.00	120	3.14	3.14	22.58
0.0041	0.105	3.25	140	3.34	3.34	25.92
0.0035	0.088	3.50	170	3.63	3.63	29.55
0.0029	0.074	3.75	200	3.98	3.98	33.53
0.0025	0.063	4.00	230	4.24	4.24	37.77
0.0021	0.053	4.25	270	4.27	4.27	42.04
0.00174	0.0442	4.50	325	4.14	4.14	46.18
0.00146	0.0372	4.75	400	3.97	3.97	50.15
0.00123	0.0313	5.00	450	3.91	3.91	54.06
0.000986	0.0250	5.32	500	4.94	4.94	59.00
0.000790	0.0201	5.64	635	4.69	4.69	63.69
0.000615	0.0156	6.00		4.67	4.67	68.36
0.000435	0.0110	6.50		5.84	5.84	74.20
0.000308	0.00781	7.00		5.56	5.56	79.76
0.000197	0.00500	7.65		6.70	6.70	86.47
0.000077	0.00195	9.00		9.73	9.73	96.20
0.000038	0.000977	10.00		2.79	2.79	98.99
0.000019	0.000488	11.00		0.93	0.93	99.92
0.000015	0.000375	11.38		0.08	0.08	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	1.08	0.0187	0.474
10	1.72	0.0119	0.303
16	2.45	0.0072	0.183
25	3.18	0.0043	0.110
40	4.13	0.0022	0.057
50	4.74	0.0015	0.037
60	5.39	0.0009	0.024
75	6.57	0.0004	0.011
84	7.41	0.0002	0.006
90	8.14	0.0001	0.004
95	8.83	0.0001	0.002

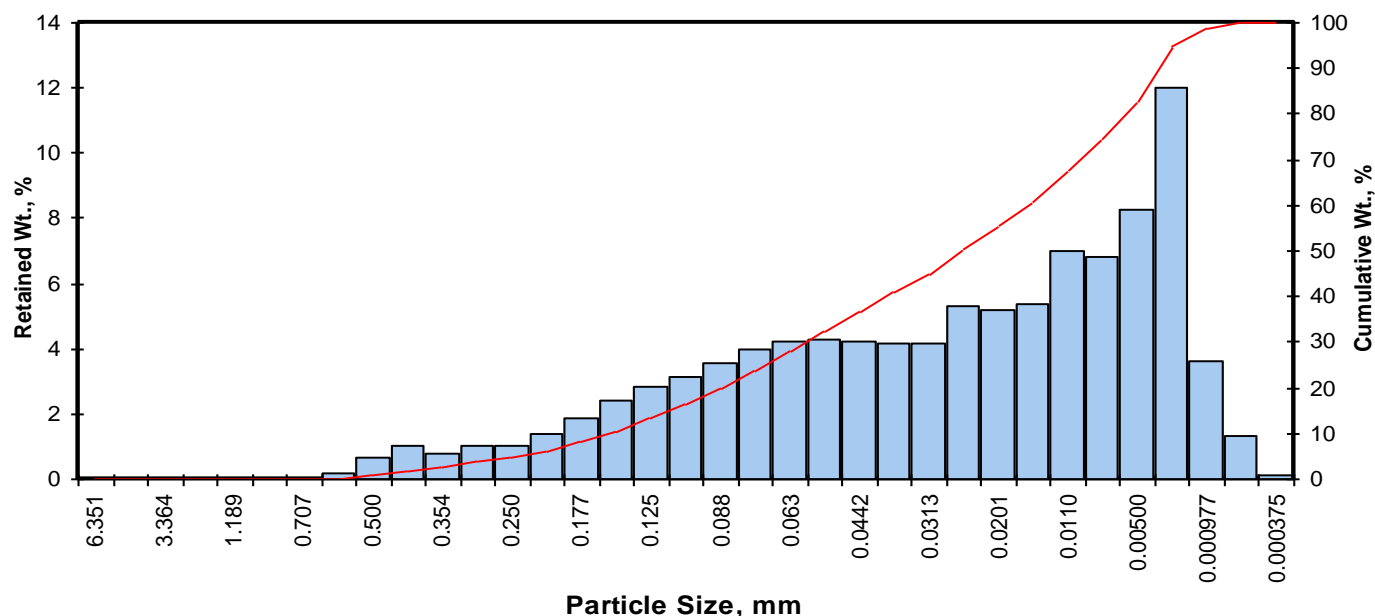
Measure	Trask	Inman	Folk-Ward
Median, phi	4.74	4.74	4.74
Median, in.	0.0015	0.0015	0.0015
Median, mm	0.037	0.037	0.037
Mean, phi	4.05	4.93	4.86
Mean, in.	0.0024	0.0013	0.0014
Mean, mm	0.060	0.033	0.034
Sorting	3.238	2.481	2.416
Skewness	0.910	0.075	0.065
Kurtosis	0.167	0.563	0.938
Grain Size Description		Silt	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	6.58
Fine Sand	200	26.95
Silt	>0.005 mm	52.94
Clay	<0.005 mm	13.53
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-11-35'
Depth, ft: 35

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.01	0.01	0.01
0.0234	0.595	0.75	30	0.17	0.17	0.18
0.0197	0.500	1.00	35	0.69	0.69	0.87
0.0166	0.420	1.25	40	1.00	1.00	1.87
0.0139	0.354	1.50	45	0.81	0.81	2.68
0.0117	0.297	1.75	50	1.02	1.02	3.70
0.0098	0.250	2.00	60	1.00	1.00	4.70
0.0083	0.210	2.25	70	1.38	1.38	6.08
0.0070	0.177	2.50	80	1.90	1.90	7.98
0.0059	0.149	2.75	100	2.44	2.44	10.42
0.0049	0.125	3.00	120	2.83	2.83	13.26
0.0041	0.105	3.25	140	3.15	3.15	16.41
0.0035	0.088	3.50	170	3.54	3.54	19.95
0.0029	0.074	3.75	200	3.96	3.96	23.91
0.0025	0.063	4.00	230	4.24	4.24	28.15
0.0021	0.053	4.25	270	4.29	4.29	32.44
0.00174	0.0442	4.50	325	4.23	4.23	36.67
0.00146	0.0372	4.75	400	4.16	4.16	40.84
0.00123	0.0313	5.00	450	4.17	4.17	45.01
0.000986	0.0250	5.32	500	5.33	5.33	50.34
0.000790	0.0201	5.64	635	5.18	5.18	55.52
0.000615	0.0156	6.00		5.35	5.35	60.87
0.000435	0.0110	6.50		7.00	7.00	67.88
0.000308	0.00781	7.00		6.83	6.83	74.71
0.000197	0.00500	7.65		8.25	8.25	82.96
0.000077	0.00195	9.00		12.00	12.00	94.97
0.000038	0.000977	10.00		3.60	3.60	98.57
0.000019	0.000488	11.00		1.31	1.31	99.88
0.000015	0.000375	11.38		0.12	0.12	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	2.05	0.0095	0.241
10	2.71	0.0060	0.153
16	3.22	0.0042	0.107
25	3.81	0.0028	0.071
40	4.70	0.0015	0.038
50	5.30	0.0010	0.025
60	5.94	0.0006	0.016
75	7.02	0.0003	0.008
84	7.76	0.0002	0.005
90	8.44	0.0001	0.003
95	9.01	0.0001	0.002

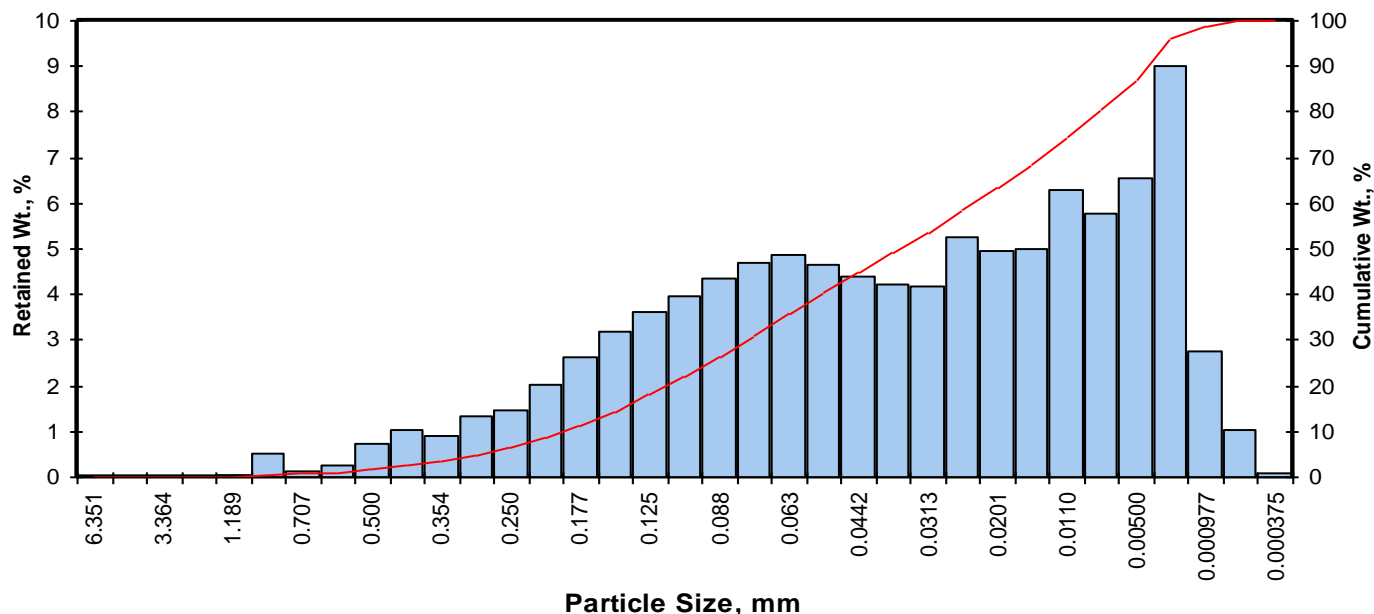
Measure	Trask	Inman	Folk-Ward
Median, phi	5.30	5.30	5.30
Median, in.	0.0010	0.0010	0.0010
Median, mm	0.025	0.025	0.025
Mean, phi	4.67	5.49	5.43
Mean, in.	0.0016	0.0009	0.0009
Mean, mm	0.039	0.022	0.023
Sorting	3.040	2.272	2.190
Skewness	0.921	0.084	0.075
Kurtosis	0.211	0.530	0.888
Grain Size Description		Silt	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	1.87
Fine Sand	200	22.04
Silt	>0.005 mm	59.05
Clay	<0.005 mm	17.04
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-03-30'
Depth, ft: 30

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.03	0.03	0.03
0.0331	0.841	0.25	20	0.50	0.50	0.53
0.0278	0.707	0.50	25	0.12	0.12	0.65
0.0234	0.595	0.75	30	0.28	0.28	0.93
0.0197	0.500	1.00	35	0.75	0.75	1.68
0.0166	0.420	1.25	40	1.03	1.03	2.71
0.0139	0.354	1.50	45	0.90	0.90	3.61
0.0117	0.297	1.75	50	1.33	1.33	4.94
0.0098	0.250	2.00	60	1.48	1.48	6.42
0.0083	0.210	2.25	70	2.03	2.03	8.45
0.0070	0.177	2.50	80	2.64	2.64	11.09
0.0059	0.149	2.75	100	3.21	3.21	14.30
0.0049	0.125	3.00	120	3.62	3.62	17.92
0.0041	0.105	3.25	140	3.96	3.96	21.87
0.0035	0.088	3.50	170	4.34	4.34	26.21
0.0029	0.074	3.75	200	4.72	4.72	30.93
0.0025	0.063	4.00	230	4.86	4.86	35.79
0.0021	0.053	4.25	270	4.67	4.67	40.46
0.00174	0.0442	4.50	325	4.40	4.40	44.86
0.00146	0.0372	4.75	400	4.23	4.23	49.09
0.00123	0.0313	5.00	450	4.18	4.18	53.27
0.000986	0.0250	5.32	500	5.24	5.24	58.51
0.000790	0.0201	5.64	635	4.94	4.94	63.45
0.000615	0.0156	6.00		5.00	5.00	68.45
0.000435	0.0110	6.50		6.31	6.31	74.76
0.000308	0.00781	7.00		5.79	5.79	80.55
0.000197	0.00500	7.65		6.55	6.55	87.09
0.000077	0.00195	9.00		9.03	9.03	96.12
0.000038	0.000977	10.00		2.74	2.74	98.86
0.000019	0.000488	11.00		1.04	1.04	99.90
0.000015	0.000375	11.38		0.10	0.10	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	1.76	0.0116	0.295
10	2.40	0.0075	0.190
16	2.87	0.0054	0.137
25	3.43	0.0037	0.093
40	4.23	0.0021	0.053
50	4.80	0.0014	0.036
60	5.42	0.0009	0.023
75	6.52	0.0004	0.011
84	7.34	0.0002	0.006
90	8.08	0.0001	0.004
95	8.83	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	4.80	4.80	4.80
Median, in.	0.0014	0.0014	0.0014
Median, mm	0.036	0.036	0.036
Mean, phi	4.27	5.10	5.00
Mean, in.	0.0020	0.0011	0.0012
Mean, mm	0.052	0.029	0.031
Sorting	2.919	2.236	2.189
Skewness	0.888	0.134	0.137
Kurtosis	0.220	0.581	0.938
Grain Size Description		Silt	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	2.71
Fine Sand	200	28.23
Silt	>0.005 mm	56.16
Clay	<0.005 mm	12.91
Total		100

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422M)

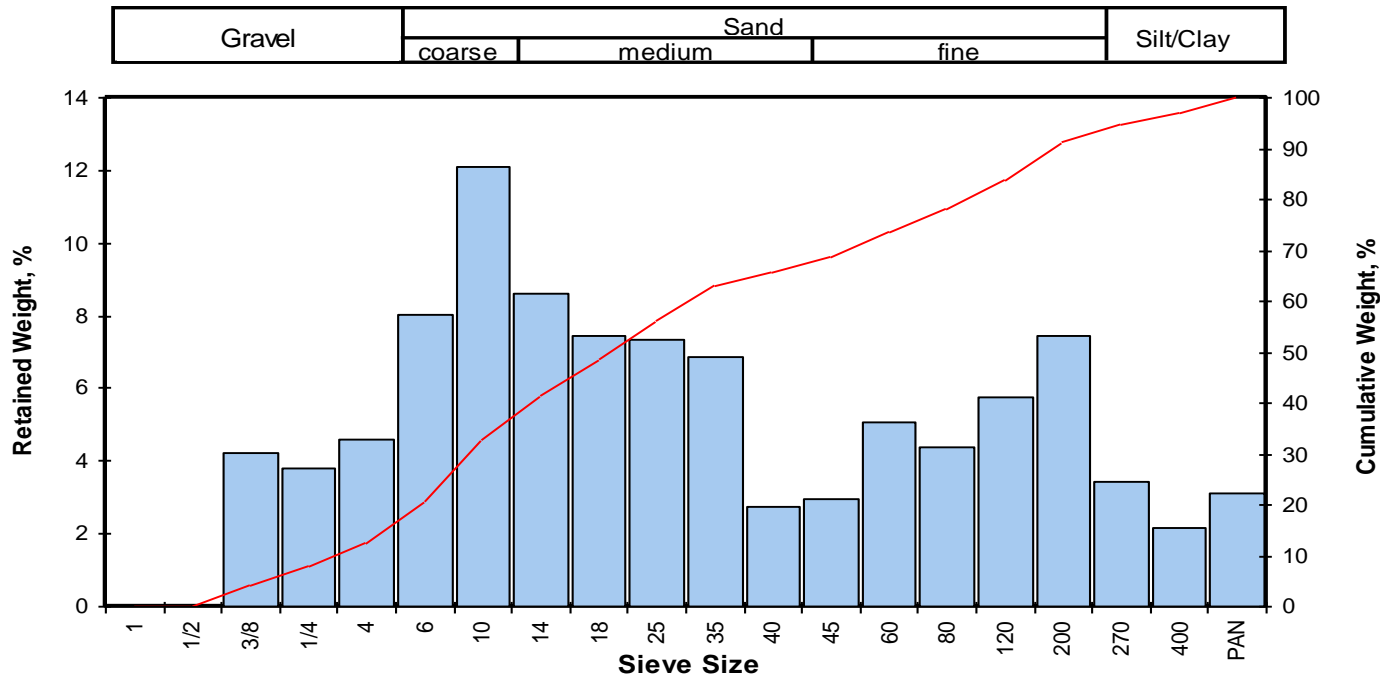
PROJECT NAME: NERT Downflushing
PROJECT NO: N/A

Sample ID	Depth, ft.	Mean Grain Size Description USCS/ASTM (1)	Median Grain Size, mm	Particle Size Distribution, wt. percent				
				Gravel	Sand Size			Silt/Clay
					Coarse	Medium	Fine	
DFSB-13-20	20	Medium sand	0.943	12.56	20.12	33.03	25.61	8.68
DFSB-16-15	15	Coarse sand	1.422	21.32	20.79	31.53	20.31	6.06
DFSB-12-10	10	Coarse sand	2.451	35.01	19.29	21.90	16.57	7.23
DFSB-12-15	15	Fine sand	0.172	1.16	6.84	25.39	42.87	23.73
DFSB-17-10	10	Gravel	3.330	43.14	14.64	21.78	14.24	6.20
DFSB-17-25	25	Coarse sand	2.471	22.52	34.92	25.14	13.49	3.92
DFSB-18-15	15	Medium sand	0.876	10.34	20.88	31.86	25.33	11.58
DFSB-05-10	10	Medium sand	0.725	11.91	16.04	32.45	27.76	11.84
DFSB-04-25	25	Medium sand	0.451	8.65	10.72	32.11	34.05	14.47
DFSB-01-10	10	Gravel	2.069	35.24	15.37	20.86	19.88	8.65

(1) Based on Mean from Trask

Client: Tetra Tech Inc.
Project: NERT Downflushing
Project No: N/A

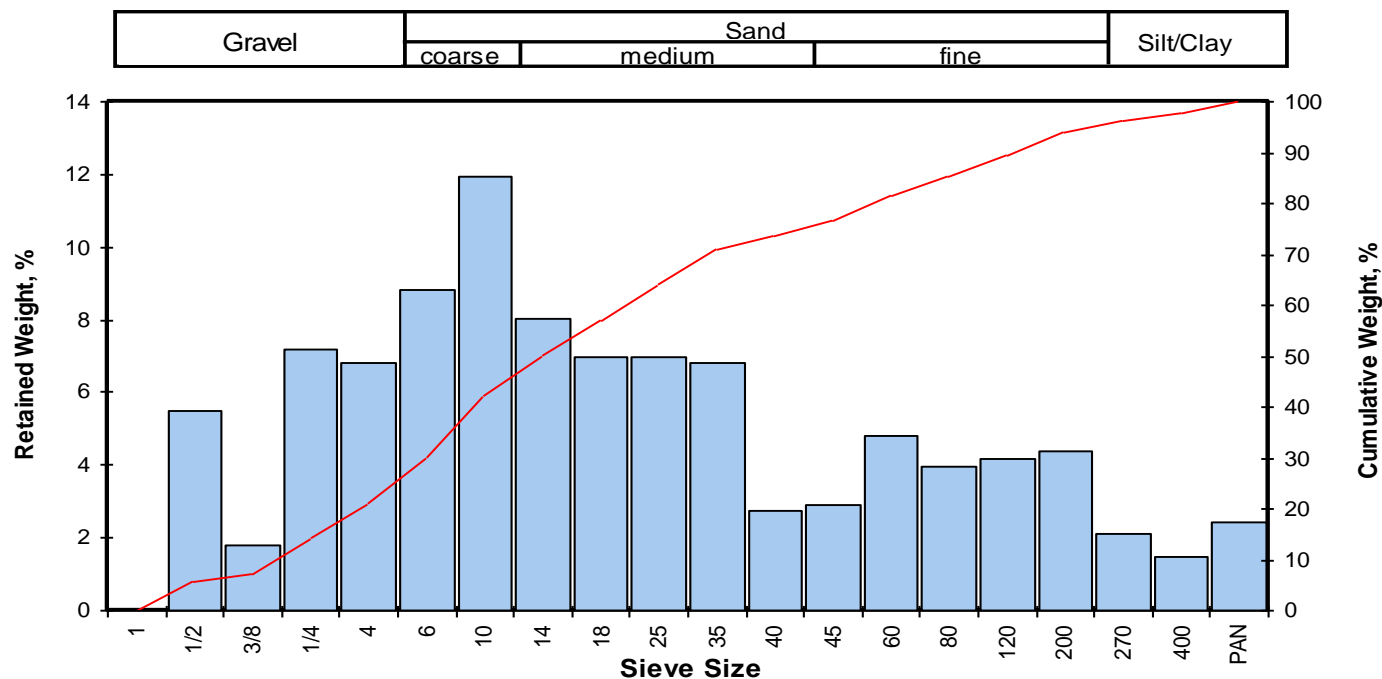
PTS File No: 46429
Sample ID: DFSB-13-20
Depth, ft: 20



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
Inches	Millimeters						Weight percent	Phi Value	Particle Size	
							Inches	Millimeters		
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-3.13	0.3439	8.736
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00	10	-2.48	0.2202	5.594
0.3740	9.500	-3.25	3/8	7.06	4.21	4.21	16	-2.04	0.1615	4.102
0.2500	6.351	-2.67	1/4	6.33	3.78	7.99	25	-1.48	0.1096	2.784
0.1873	4.757	-2.25	4	7.66	4.57	12.56	40	-0.58	0.0587	1.491
0.1324	3.364	-1.75	6	13.48	8.04	20.61	50	0.08	0.0371	0.943
0.0787	2.000	-1.00	10	20.24	12.08	32.69	60	0.78	0.0229	0.581
0.0557	1.414	-0.50	14	14.47	8.64	41.32	75	2.14	0.0089	0.226
0.0394	1.000	0.00	18	12.47	7.44	48.76	84	3.01	0.0049	0.124
0.0278	0.707	0.50	25	12.33	7.36	56.12	90	3.62	0.0032	0.082
0.0197	0.500	1.00	35	11.51	6.87	62.99	95	4.31	0.0020	0.050
0.0166	0.420	1.25	40	4.56	2.72	65.71				
0.0139	0.354	1.50	45	4.96	2.96	68.67				
0.0098	0.250	2.00	60	8.50	5.07	73.75				
0.0070	0.177	2.50	80	7.31	4.36	78.11				
0.0049	0.125	3.00	120	9.67	5.77	83.88				
0.0029	0.074	3.75	200	12.47	7.44	91.32				
0.0021	0.053	4.25	270	5.71	3.41	94.73				
0.0015	0.037	4.75	400	3.60	2.15	96.88				
			PAN	5.23	3.12	100.00				

Client: Tetra Tech Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-16-15
Depth, ft: 15



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	10.34	5.50	5.50
0.3740	9.500	-3.25	3/8	3.39	1.80	7.30
0.2500	6.351	-2.67	1/4	13.53	7.20	14.50
0.1873	4.757	-2.25	4	12.82	6.82	21.32
0.1324	3.364	-1.75	6	16.62	8.84	30.16
0.0787	2.000	-1.00	10	22.46	11.95	42.10
0.0557	1.414	-0.50	14	15.09	8.03	50.13
0.0394	1.000	0.00	18	13.11	6.97	57.10
0.0278	0.707	0.50	25	13.13	6.98	64.08
0.0197	0.500	1.00	35	12.82	6.82	70.90
0.0166	0.420	1.25	40	5.13	2.73	73.63
0.0139	0.354	1.50	45	5.49	2.92	76.55
0.0098	0.250	2.00	60	9.05	4.81	81.36
0.0070	0.177	2.50	80	7.49	3.98	85.35
0.0049	0.125	3.00	120	7.86	4.18	89.53
0.0029	0.074	3.75	200	8.29	4.41	93.94
0.0021	0.053	4.25	270	4.00	2.13	96.06
0.0015	0.037	4.75	400	2.79	1.48	97.55
			PAN	4.61	2.45	100.00
TOTALS				188.02	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-3.73	0.5242	13.313
10	-3.03	0.3216	8.169
16	-2.58	0.2346	5.959
25	-2.04	0.1621	4.117
40	-1.13	0.0863	2.192
50	-0.51	0.0560	1.422
60	0.21	0.0341	0.866
75	1.37	0.0153	0.388
84	2.33	0.0078	0.199
90	3.08	0.0047	0.118
95	4.00	0.0025	0.063

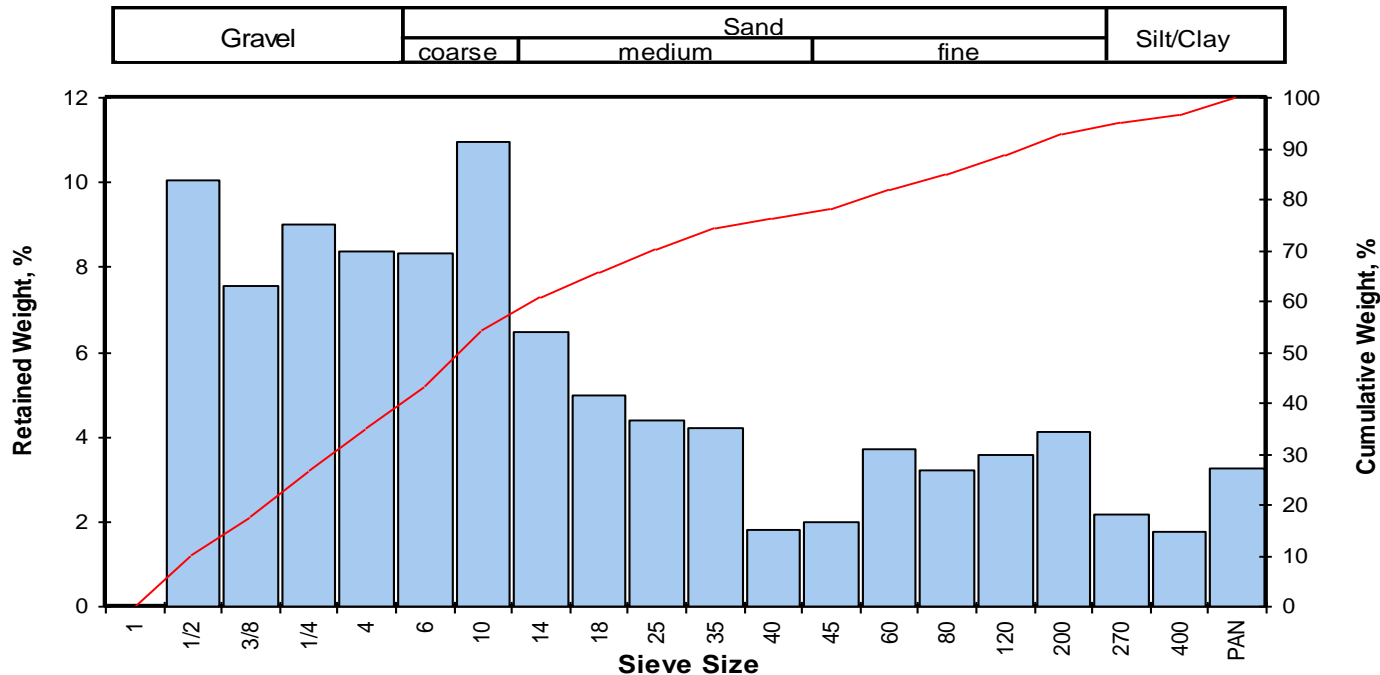
Measure	Trask	Inman	Folk-Ward
Median, phi	-0.51	-0.51	-0.51
Median, in.	0.0560	0.0560	0.0560
Median, mm	1.422	1.422	1.422
Mean, phi	-1.17	-0.12	-0.25
Mean, in.	0.0887	0.0428	0.0468
Mean, mm	2.252	1.088	1.190
Sorting	3.259	2.453	2.398
Skewness	0.888	0.157	0.161
Kurtosis	0.232	0.577	0.930

Grain Size Description (ASTM-USCS Scale)	Coarse sand (based on Mean from Trask)
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Description	Retained on Sieve #	Weight Percent
Gravel	4	21.32
Coarse Sand	10	20.79
Medium Sand	40	31.53
Fine Sand	200	20.31
Silt/Clay	<200	6.06
Total		100

Client: Tetra Tech Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-12-10
Depth, ft: 10



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	15.74	10.07	10.07
0.3740	9.500	-3.25	3/8	11.84	7.58	17.65
0.2500	6.351	-2.67	1/4	14.07	9.00	26.65
0.1873	4.757	-2.25	4	13.06	8.36	35.01
0.1324	3.364	-1.75	6	12.99	8.31	43.32
0.0787	2.000	-1.00	10	17.15	10.97	54.30
0.0557	1.414	-0.50	14	10.15	6.50	60.79
0.0394	1.000	0.00	18	7.79	4.98	65.78
0.0278	0.707	0.50	25	6.88	4.40	70.18
0.0197	0.500	1.00	35	6.60	4.22	74.40
0.0166	0.420	1.25	40	2.80	1.79	76.20
0.0139	0.354	1.50	45	3.13	2.00	78.20
0.0098	0.250	2.00	60	5.77	3.69	81.89
0.0070	0.177	2.50	80	5.00	3.20	85.09
0.0049	0.125	3.00	120	5.59	3.58	88.67
0.0029	0.074	3.75	200	6.41	4.10	92.77
0.0021	0.053	4.25	270	3.43	2.19	94.96
0.0015	0.037	4.75	400	2.75	1.76	96.72
			PAN	5.12	3.28	100.00
TOTALS				156.27	100.00	100.00

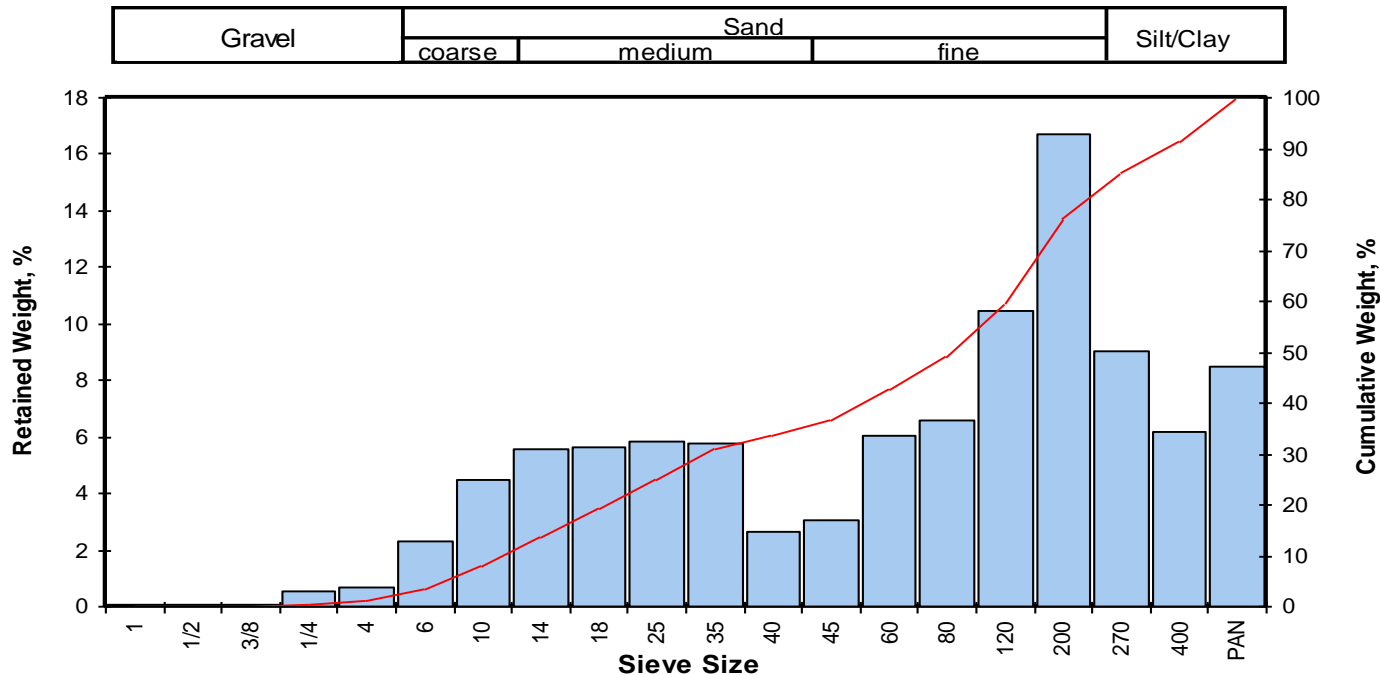
Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-4.15	0.6978	17.723
10	-3.65	0.4946	12.564
16	-3.33	0.3971	10.085
25	-2.77	0.2692	6.838
40	-1.95	0.1521	3.863
50	-1.29	0.0965	2.451
60	-0.56	0.0581	1.475
75	1.08	0.0186	0.472
84	2.33	0.0078	0.199
90	3.24	0.0042	0.106
95	4.26	0.0021	0.052

Measure	Trask	Inman	Folk-Ward
Median, phi	-1.29	-1.29	-1.29
Median, in.	0.0965	0.0965	0.0965
Median, mm	2.451	2.451	2.451
Mean, phi	-1.87	-0.50	-0.77
Mean, in.	0.1439	0.0558	0.0670
Mean, mm	3.655	1.416	1.701
Sorting	3.806	2.832	2.690
Skewness	0.733	0.279	0.300
Kurtosis	0.256	0.484	0.893
Grain Size Description		Coarse sand	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	35.01
Coarse Sand	10	19.29
Medium Sand	40	21.90
Fine Sand	200	16.57
Silt/Clay	<200	7.23
Total		100

Client: Tetra Tech Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-12-15
Depth, ft: 15



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.75	0.52	0.52
0.1873	4.757	-2.25	4	0.94	0.65	1.16
0.1324	3.364	-1.75	6	3.39	2.33	3.50
0.0787	2.000	-1.00	10	6.55	4.51	8.01
0.0557	1.414	-0.50	14	8.08	5.56	13.57
0.0394	1.000	0.00	18	8.18	5.63	19.20
0.0278	0.707	0.50	25	8.49	5.84	25.04
0.0197	0.500	1.00	35	8.34	5.74	30.78
0.0166	0.420	1.25	40	3.80	2.62	33.40
0.0139	0.354	1.50	45	4.43	3.05	36.45
0.0098	0.250	2.00	60	8.82	6.07	42.52
0.0070	0.177	2.50	80	9.56	6.58	49.10
0.0049	0.125	3.00	120	15.22	10.48	59.57
0.0029	0.074	3.75	200	24.25	16.69	76.27
0.0021	0.053	4.25	270	13.10	9.02	85.28
0.0015	0.037	4.75	400	9.01	6.20	91.49
			PAN	12.37	8.51	100.00
TOTALS				145.28	100.00	100.00

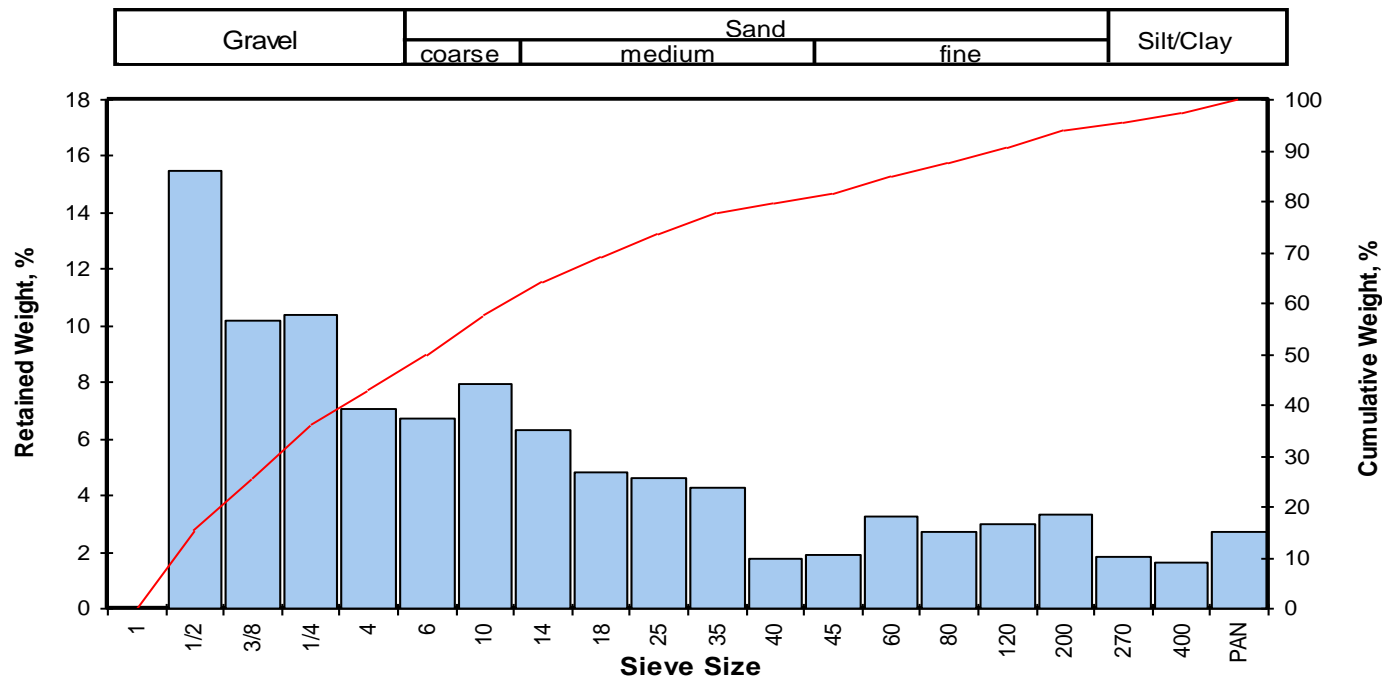
Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-1.50	0.1113	2.828
10	-0.82	0.0695	1.766
16	-0.28	0.0479	1.218
25	0.50	0.0279	0.709
40	1.79	0.0114	0.289
50	2.54	0.0068	0.172
60	3.02	0.0049	0.123
75	3.69	0.0030	0.077
84	4.18	0.0022	0.055
90	4.63	0.0016	0.040
95			

Measure	Trask	Inman	Folk-Ward
Median, phi	2.54	2.54	2.54
Median, in.	0.0068	0.0068	0.0068
Median, mm	0.172	0.172	0.172
Mean, phi	1.35	1.95	2.15
Mean, in.	0.0155	0.0102	0.0089
Mean, mm	0.393	0.259	0.226
Sorting	3.028	2.231	
Skewness	1.364	-0.267	
Kurtosis	0.183		
Grain Size Description		Fine sand	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	1.16
Coarse Sand	10	6.84
Medium Sand	40	25.39
Fine Sand	200	42.87
Silt/Clay	<200	23.73
Total		100

Client: Tetra Tech Inc.
Project: N/A
Project No: NERT Downflushing

PTS File No: 46429
Sample ID: DFSB-17-10
Depth, ft: 10



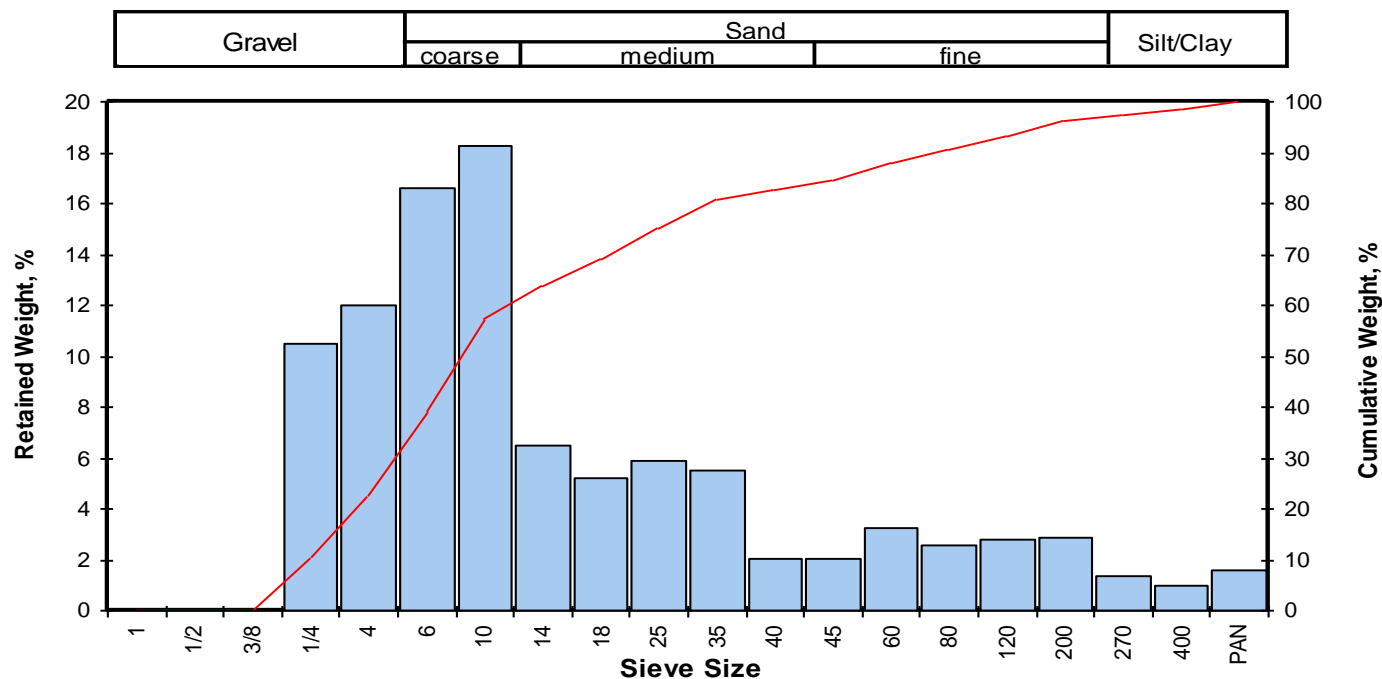
Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
Inches	Millimeters						Weight percent	Phi Value	Particle Size	
									Inches	Millimeters
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-4.32	0.7869	19.988
0.4922	12.501	-3.64	1/2	18.50	15.48	15.48	10	-4.00	0.6291	15.979
0.3740	9.500	-3.25	3/8	12.21	10.22	25.70	16	-3.62	0.4854	12.329
0.2500	6.351	-2.67	1/4	12.38	10.36	36.06	25	-3.28	0.3811	9.681
0.1873	4.757	-2.25	4	8.46	7.08	43.14	40	-2.44	0.2129	5.408
0.1324	3.364	-1.75	6	8.01	6.70	49.85	50	-1.74	0.1311	3.330
0.0787	2.000	-1.00	10	9.48	7.93	57.78	60	-0.82	0.0697	1.771
0.0557	1.414	-0.50	14	7.55	6.32	64.10	75	0.67	0.0248	0.630
0.0394	1.000	0.00	18	5.78	4.84	68.93	84	1.89	0.0106	0.270
0.0278	0.707	0.50	25	5.55	4.64	73.58	90	2.92	0.0052	0.132
0.0197	0.500	1.00	35	5.08	4.25	77.83	95	4.08	0.0023	0.059
0.0166	0.420	1.25	40	2.07	1.73	79.56				
0.0139	0.354	1.50	45	2.24	1.87	81.44				
0.0098	0.250	2.00	60	3.92	3.28	84.72				
0.0070	0.177	2.50	80	3.28	2.74	87.46				
0.0049	0.125	3.00	120	3.59	3.00	90.47				
0.0029	0.074	3.75	200	3.98	3.33	93.80				
0.0021	0.053	4.25	270	2.19	1.83	95.63				
0.0015	0.037	4.75	400	1.94	1.62	97.26				
			PAN	3.28	2.74	100.00				
TOTALS				119.49	100.00	100.00				

Measure	Trask	Inman	Folk-Ward
Median, phi	-1.74	-1.74	-1.74
Median, in.	0.1311	0.1311	0.1311
Median, mm	3.330	3.330	3.330
Mean, phi	-2.37	-0.87	-1.16
Mean, in.	0.2030	0.0718	0.0877
Mean, mm	5.155	1.824	2.229
Sorting	3.921	2.757	2.651
Skewness	0.742	0.315	0.350
Kurtosis	0.286	0.523	0.873

Grain Size Description		Gravel	
(ASTM-USCS Scale)		(based on Mean from Trask)	
Description	Retained on Sieve #	Weight Percent	
Gravel	4	43.14	
Coarse Sand	10	14.64	
Medium Sand	40	21.78	
Fine Sand	200	14.24	
Silt/Clay	<200	6.20	
Total		100	

Client: Tetra Tech Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-17-25
Depth, ft: 25



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	17.90	10.49	10.49
0.1873	4.757	-2.25	4	20.52	12.03	22.52
0.1324	3.364	-1.75	6	28.38	16.64	39.16
0.0787	2.000	-1.00	10	31.19	18.28	57.45
0.0557	1.414	-0.50	14	11.10	6.51	63.95
0.0394	1.000	0.00	18	8.91	5.22	69.18
0.0278	0.707	0.50	25	9.98	5.85	75.03
0.0197	0.500	1.00	35	9.45	5.54	80.57
0.0166	0.420	1.25	40	3.45	2.02	82.59
0.0139	0.354	1.50	45	3.52	2.06	84.65
0.0098	0.250	2.00	60	5.58	3.27	87.92
0.0070	0.177	2.50	80	4.35	2.55	90.47
0.0049	0.125	3.00	120	4.71	2.76	93.23
0.0029	0.074	3.75	200	4.85	2.84	96.08
0.0021	0.053	4.25	270	2.26	1.32	97.40
0.0015	0.037	4.75	400	1.68	0.98	98.39
PAN				2.75	1.61	100.00
TOTALS				170.58	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-2.97	0.3087	7.842
10	-2.69	0.2548	6.473
16	-2.48	0.2191	5.564
25	-2.18	0.1779	4.518
40	-1.72	0.1293	3.284
50	-1.31	0.0973	2.471
60	-0.80	0.0687	1.746
75	0.50	0.0279	0.708
84	1.42	0.0147	0.373
90	2.41	0.0074	0.189
95	3.47	0.0036	0.091

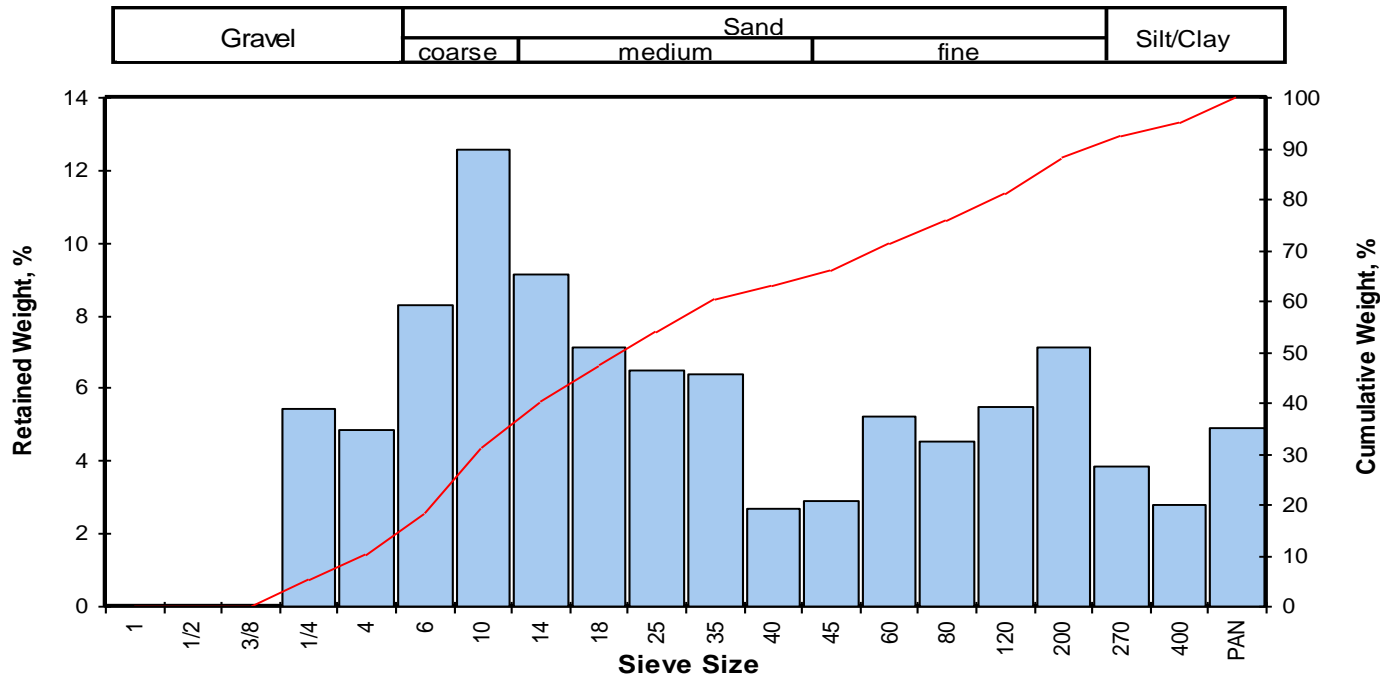
Measure	Trask	Inman	Folk-Ward
Median, phi	-1.31	-1.31	-1.31
Median, in.	0.0973	0.0973	0.0973
Median, mm	2.471	2.471	2.471
Mean, phi	-1.39	-0.53	-0.79
Mean, in.	0.1029	0.0568	0.0679
Mean, mm	2.613	1.442	1.725
Sorting	2.526	1.949	1.950
Skewness	0.724	0.399	0.441
Kurtosis	0.303	0.652	0.987

Grain Size Description	Coarse sand
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	22.52
Coarse Sand	10	34.92
Medium Sand	40	25.14
Fine Sand	200	13.49
Silt/Clay	<200	3.92
Total		100

Client: Tetra Tech Inc.
Project: NERT Downflushing
Project No: N/A

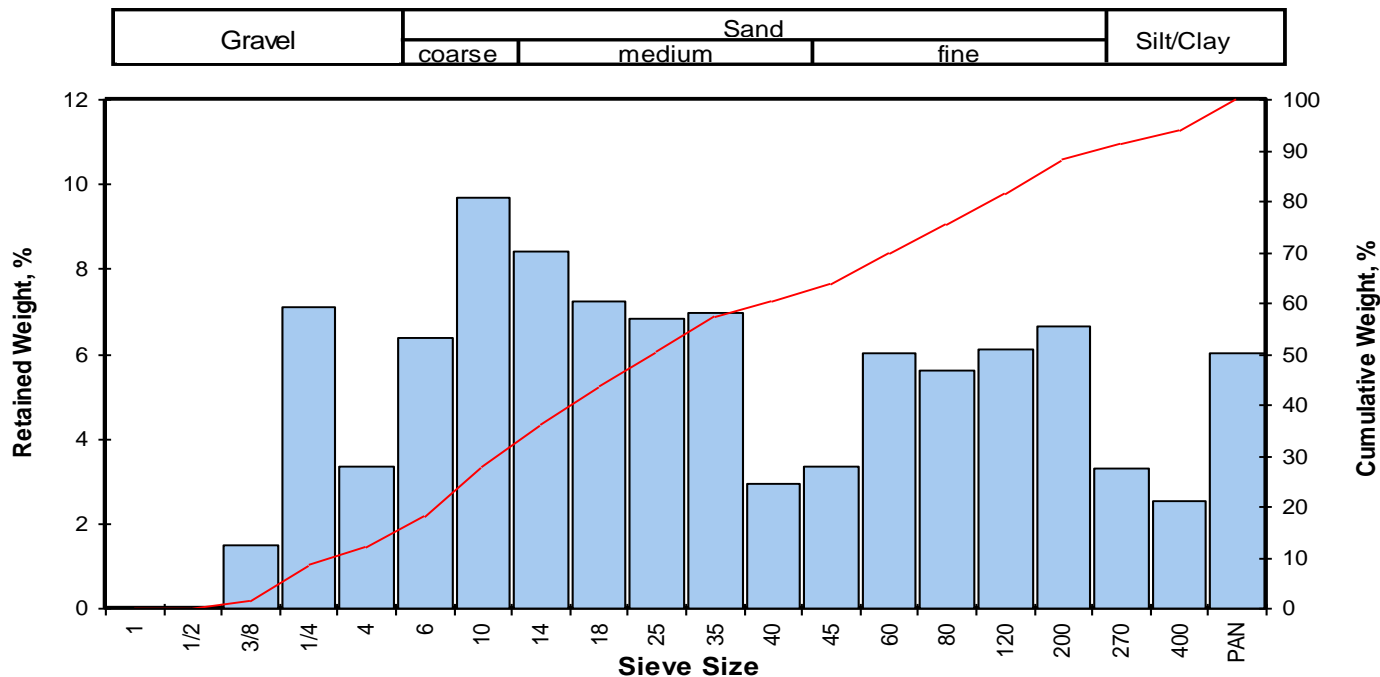
PTS File No: 46429
Sample ID: DFSB-18-15
Depth, ft: 15



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
Inches	Millimeters						Weight percent	Phi Value	Particle Size	
							Inches	Millimeters		
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-2.72	0.2587	6.570
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00	10	-2.28	0.1911	4.855
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00	16	-1.91	0.1479	3.757
0.2500	6.351	-2.67	1/4	11.08	5.46	5.46	25	-1.37	0.1019	2.587
0.1873	4.757	-2.25	4	9.91	4.88	10.34	40	-0.52	0.0565	1.435
0.1324	3.364	-1.75	6	16.86	8.31	18.65	50	0.19	0.0345	0.876
0.0787	2.000	-1.00	10	25.51	12.57	31.23	60	0.97	0.0201	0.511
0.0557	1.414	-0.50	14	18.57	9.15	40.38	75	2.41	0.0074	0.188
0.0394	1.000	0.00	18	14.51	7.15	47.53	84	3.28	0.0040	0.103
0.0278	0.707	0.50	25	13.17	6.49	54.02	90	3.96	0.0025	0.064
0.0197	0.500	1.00	35	12.95	6.38	60.40	95	4.74	0.0015	0.037
0.0166	0.420	1.25	40	5.45	2.69	63.09				
0.0139	0.354	1.50	45	5.91	2.91	66.00				
0.0098	0.250	2.00	60	10.61	5.23	71.23				
0.0070	0.177	2.50	80	9.27	4.57	75.80				
0.0049	0.125	3.00	120	11.16	5.50	81.30				
0.0029	0.074	3.75	200	14.45	7.12	88.42				
0.0021	0.053	4.25	270	7.81	3.85	92.27				
0.0015	0.037	4.75	400	5.69	2.80	95.07				
			PAN	10.00	4.93	100.00				

Client: Tetra Tech Inc.
Project: NERT Downflushing
Project No: N/A

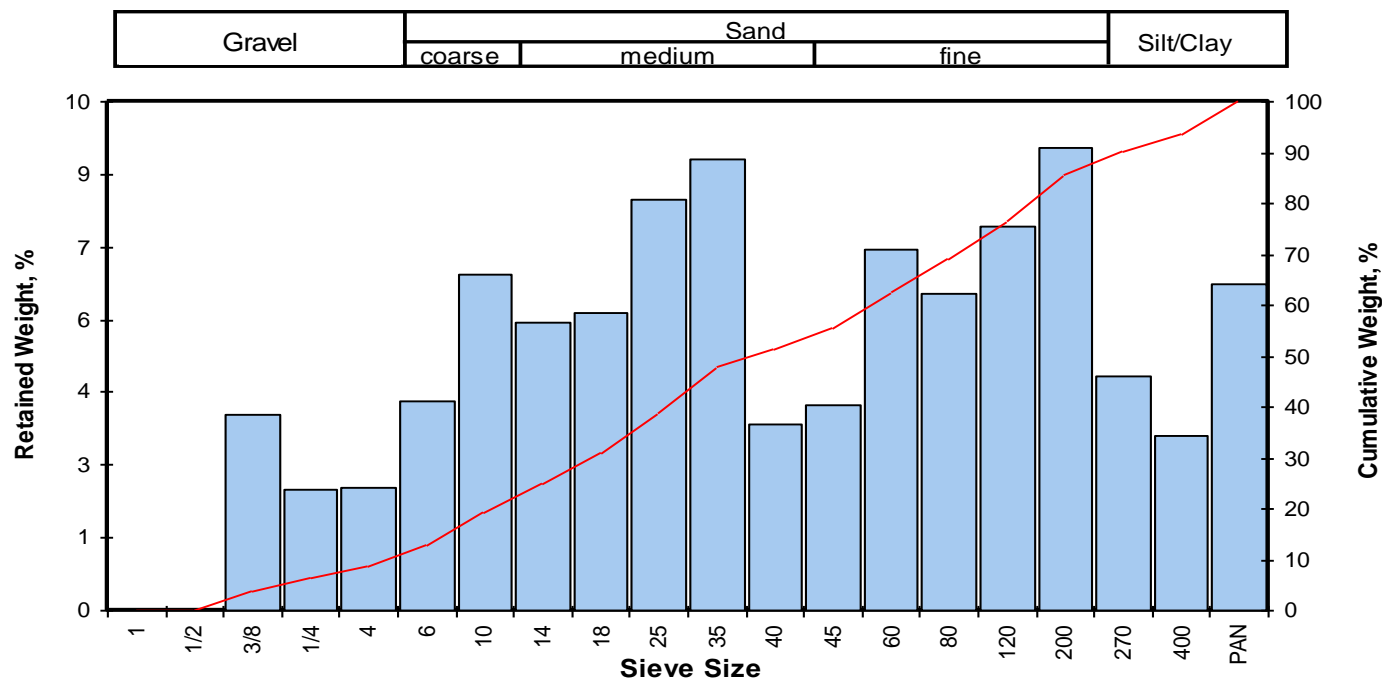
PTS File No: 46429
Sample ID: DFSB-05-10
Depth, ft: 10



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
							Weight percent	Phi Value	Particle Size	
Inches	Millimeters							Inches	Millimeters	
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-2.96	0.3063	7.780
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00	10	-2.49	0.2210	5.613
0.3740	9.500	-3.25	3/8	2.28	1.48	1.48	16	-1.93	0.1499	3.807
0.2500	6.351	-2.67	1/4	10.94	7.10	8.57	25	-1.23	0.0923	2.343
0.1873	4.757	-2.25	4	5.14	3.33	11.91	40	-0.25	0.0469	1.190
0.1324	3.364	-1.75	6	9.81	6.36	18.27	50	0.46	0.0285	0.725
0.0787	2.000	-1.00	10	14.92	9.68	27.95	60	1.22	0.0169	0.430
0.0557	1.414	-0.50	14	13.01	8.44	36.39	75	2.47	0.0071	0.181
0.0394	1.000	0.00	18	11.19	7.26	43.65	84	3.28	0.0040	0.103
0.0278	0.707	0.50	25	10.56	6.85	50.50	90	4.03	0.0024	0.061
0.0197	0.500	1.00	35	10.73	6.96	57.46	95			
0.0166	0.420	1.25	40	4.54	2.94	60.40				
0.0139	0.354	1.50	45	5.14	3.33	63.73				
0.0098	0.250	2.00	60	9.29	6.03	69.76				
0.0070	0.177	2.50	80	8.64	5.60	75.36				
0.0049	0.125	3.00	120	9.45	6.13	81.49				
0.0029	0.074	3.75	200	10.27	6.66	88.16				
0.0021	0.053	4.25	270	5.09	3.30	91.46				
0.0015	0.037	4.75	400	3.88	2.52	93.97				
			PAN	9.29	6.03	100.00				
							Measure	Trask	Inman	Folk-Ward
							Median, phi	0.46	0.46	0.46
							Median, in.	0.0285	0.0285	0.0285
							Median, mm	0.725	0.725	0.725
							Mean, phi	-0.34	0.68	0.61
							Mean, in.	0.0497	0.0246	0.0259
							Mean, mm	1.262	0.626	0.657
							Sorting	3.600	2.605	
							Skewness	0.898	0.082	
							Kurtosis	0.195		
							Grain Size Description		Medium sand	
							(ASTM-USCS Scale)		(based on Mean from Trask)	
							Description	Retained on Sieve #	Weight Percent	
							Gravel	4	11.91	
							Coarse Sand	10	16.04	
							Medium Sand	40	32.45	
							Fine Sand	200	27.76	
							Silt/Clay	<200	11.84	
TOTALS				154.17	100.00	100.00	Total		100	

Client: Tetra Tech Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-04-25
Depth, ft: 25



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	4.98	3.86	3.86
0.2500	6.351	-2.67	1/4	3.07	2.38	6.25
0.1873	4.757	-2.25	4	3.10	2.41	8.65
0.1324	3.364	-1.75	6	5.32	4.13	12.78
0.0787	2.000	-1.00	10	8.49	6.59	19.37
0.0557	1.414	-0.50	14	7.27	5.64	25.01
0.0394	1.000	0.00	18	7.56	5.87	30.88
0.0278	0.707	0.50	25	10.41	8.08	38.96
0.0197	0.500	1.00	35	11.41	8.86	47.82
0.0166	0.420	1.25	40	4.73	3.67	51.49
0.0139	0.354	1.50	45	5.22	4.05	55.54
0.0098	0.250	2.00	60	9.16	7.11	62.65
0.0070	0.177	2.50	80	8.03	6.23	68.88
0.0049	0.125	3.00	120	9.72	7.54	76.42
0.0029	0.074	3.75	200	11.74	9.11	85.53
0.0021	0.053	4.25	270	5.95	4.62	90.15
0.0015	0.037	4.75	400	4.43	3.44	93.59
			PAN	8.26	6.41	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-2.97	0.3087	7.842
10	-2.09	0.1673	4.248
16	-1.38	0.1027	2.609
25	-0.50	0.0557	1.415
40	0.56	0.0267	0.679
50	1.15	0.0178	0.451
60	1.81	0.0112	0.284
75	2.91	0.0053	0.133
84	3.62	0.0032	0.081
90	4.23	0.0021	0.053
95			

Measure	Trask	Inman	Folk-Ward
Median, phi	1.15	1.15	1.15
Median, in.	0.0178	0.0178	0.0178
Median, mm	0.451	0.451	0.451
Mean, phi	0.37	1.12	1.13
Mean, in.	0.0305	0.0181	0.0180
Mean, mm	0.774	0.460	0.457
Sorting	3.257	2.504	
Skewness	0.964	-0.011	
Kurtosis	0.153		

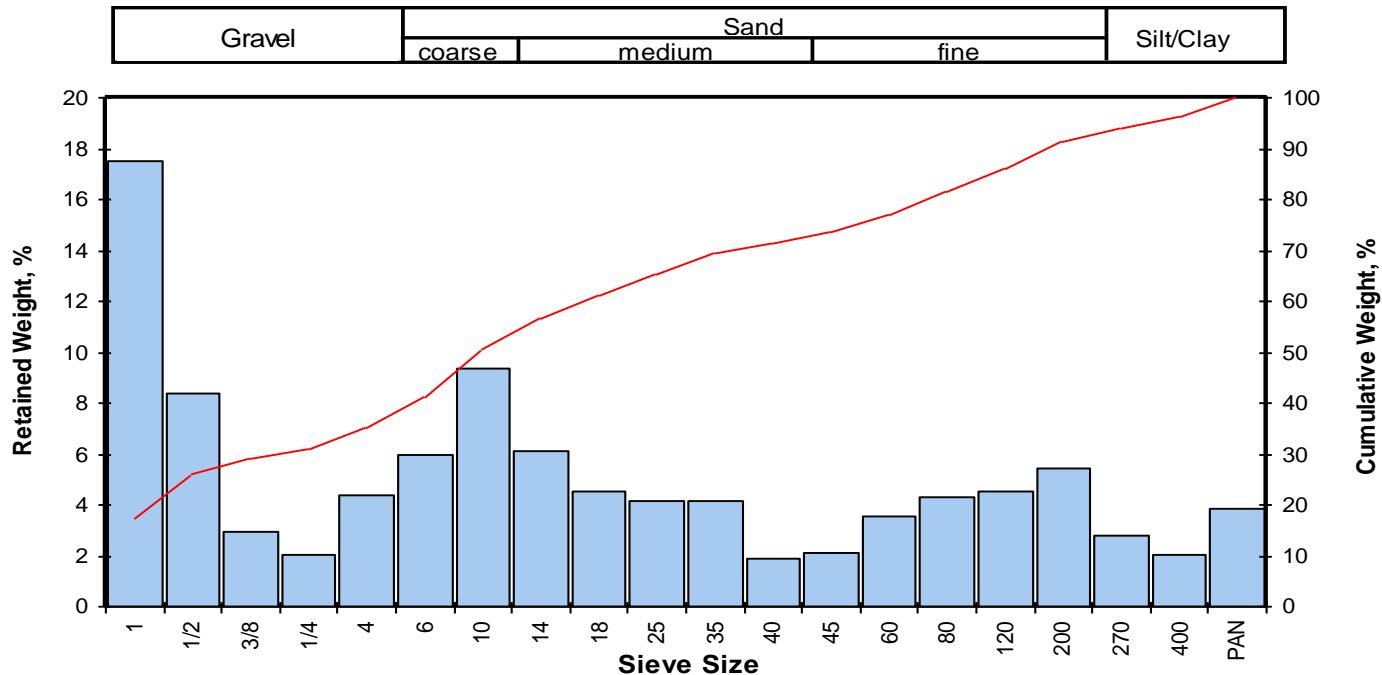
Grain Size Description	Medium sand
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	8.65
Coarse Sand	10	10.72
Medium Sand	40	32.11
Fine Sand	200	34.05
Silt/Clay	<200	14.47
Total		100

TOTALS 128.85 100.00 100.00

Client: Tetra Tech Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-01-10
Depth, ft: 10



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	34.13	17.53	17.53
0.4922	12.501	-3.64	1/2	16.31	8.38	25.90
0.3740	9.500	-3.25	3/8	5.79	2.97	28.88
0.2500	6.351	-2.67	1/4	3.93	2.02	30.89
0.1873	4.757	-2.25	4	8.46	4.34	35.24
0.1324	3.364	-1.75	6	11.67	5.99	41.23
0.0787	2.000	-1.00	10	18.26	9.38	50.61
0.0557	1.414	-0.50	14	11.89	6.11	56.71
0.0394	1.000	0.00	18	8.81	4.52	61.24
0.0278	0.707	0.50	25	8.09	4.15	65.39
0.0197	0.500	1.00	35	8.14	4.18	69.57
0.0166	0.420	1.25	40	3.69	1.89	71.47
0.0139	0.354	1.50	45	4.17	2.14	73.61
0.0098	0.250	2.00	60	6.89	3.54	77.15
0.0070	0.177	2.50	80	8.35	4.29	81.44
0.0049	0.125	3.00	120	8.78	4.51	85.94
0.0029	0.074	3.75	200	10.53	5.41	91.35
0.0021	0.053	4.25	270	5.44	2.79	94.15
0.0015	0.037	4.75	400	3.94	2.02	96.17
			PAN	7.46	3.83	100.00
TOTALS				194.73	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5			
10			
16			
25	-3.75	0.5303	13.471
40	-1.85	0.1422	3.612
50	-1.05	0.0814	2.069
60	-0.14	0.0433	1.100
75	1.70	0.0121	0.309
84	2.78	0.0057	0.145
90	3.56	0.0033	0.085
95	4.46	0.0018	0.045

Measure	Trask	Inman	Folk-Ward
Median, phi	-1.05	-1.05	-1.05
Median, in.	0.0814	0.0814	0.0814
Median, mm	2.069	2.069	2.069
Mean, phi	-2.78		
Mean, in.	0.2712		
Mean, mm	6.890		
Sorting	6.608		
Skewness	0.986		
Kurtosis			

Grain Size Description	Gravel
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	35.24
Coarse Sand	10	15.37
Medium Sand	40	20.86
Fine Sand	200	19.88
Silt/Clay	<200	8.65
Total		100

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422M)

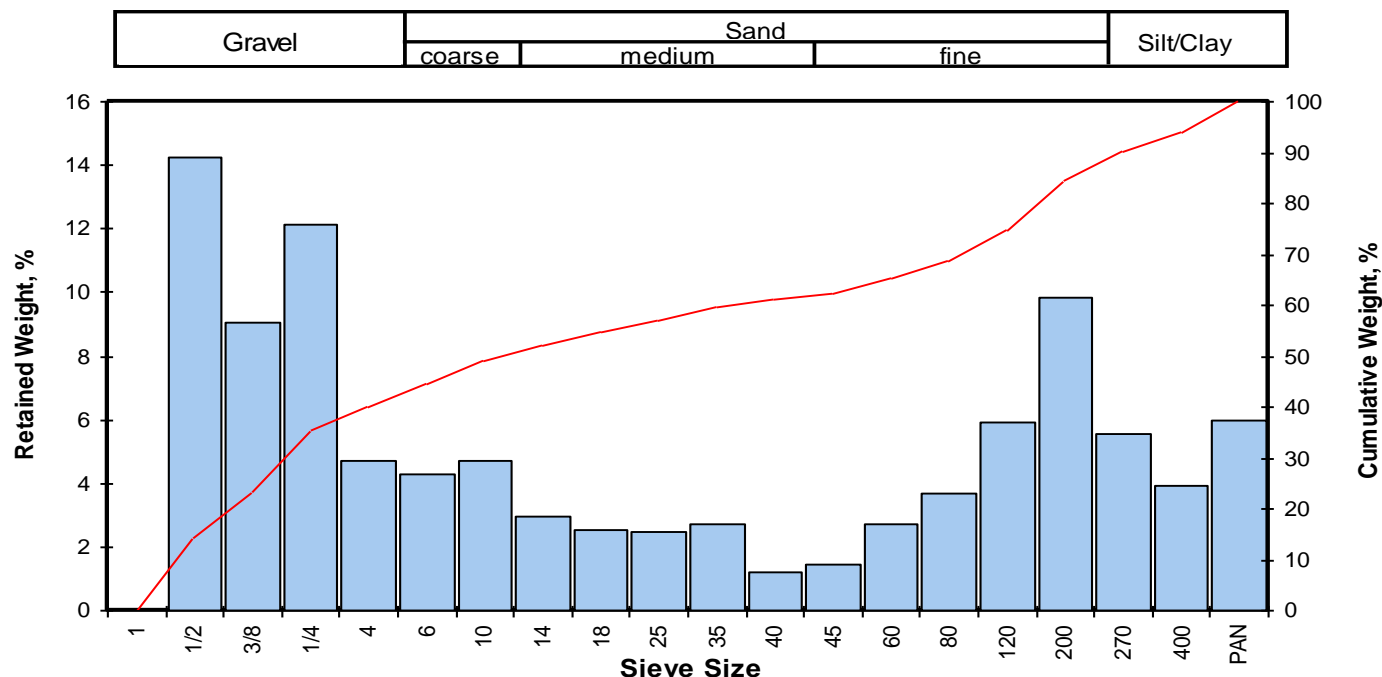
PROJECT NAME: NERT Downflushing
PROJECT NO: N/A

Sample ID	Depth, ft.	Mean Grain Size Description USCS/ASTM (1)	Median Grain Size, mm	Particle Size Distribution, wt. percent				
				Gravel	Sand Size			Silt/Clay
					Coarse	Medium	Fine	
DFSB-01-15	15	Coarse sand	1.812	40.17	9.00	11.80	23.63	15.40
DFSB-09-10	10	Coarse sand	2.092	32.43	18.46	21.61	18.48	9.02
DFSB-09-25	25	Medium sand	0.421	3.51	8.62	37.87	32.30	17.70
DFSB-07-10	10	Medium sand	1.160	16.52	21.47	27.99	23.60	10.42
DFSB-07-20	20	Medium sand	0.744	10.10	26.77	20.27	29.83	13.04
DFSB-07-25	25	Medium sand	0.548	14.17	13.18	27.81	32.14	12.71
DFSB-06-10	10	Coarse sand	2.099	35.12	15.69	26.60	17.03	5.55
DFSB-08-10	10	Coarse sand	1.656	23.93	21.68	25.03	20.04	9.31
DFSB-08-25	25	Fine sand	0.217	2.60	5.12	24.23	49.89	18.17
DFSB-02-10	10	Medium sand	0.829	15.58	16.60	30.17	26.18	11.47

(1) Based on Mean from Trask

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-01-15
Depth, ft: 15



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	31.48	14.24	14.24
0.3740	9.500	-3.25	3/8	20.07	9.08	23.31
0.2500	6.351	-2.67	1/4	26.82	12.13	35.44
0.1873	4.757	-2.25	4	10.44	4.72	40.17
0.1324	3.364	-1.75	6	9.44	4.27	44.43
0.0787	2.000	-1.00	10	10.46	4.73	49.17
0.0557	1.414	-0.50	14	6.49	2.94	52.10
0.0394	1.000	0.00	18	5.58	2.52	54.62
0.0278	0.707	0.50	25	5.44	2.46	57.08
0.0197	0.500	1.00	35	5.97	2.70	59.78
0.0166	0.420	1.25	40	2.62	1.18	60.97
0.0139	0.354	1.50	45	3.23	1.46	62.43
0.0098	0.250	2.00	60	6.00	2.71	65.14
0.0070	0.177	2.50	80	8.15	3.69	68.83
0.0049	0.125	3.00	120	13.08	5.92	74.75
0.0029	0.074	3.75	200	21.79	9.85	84.60
0.0021	0.053	4.25	270	12.24	5.54	90.14
0.0015	0.037	4.75	400	8.65	3.91	94.05
			PAN	13.16	5.95	100.00
TOTALS				221.11	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-4.29	0.7717	19.600
10	-3.94	0.6049	15.365
16	-3.57	0.4666	11.852
25	-3.17	0.3537	8.983
40	-2.26	0.1892	4.805
50	-0.86	0.0714	1.812
60	1.05	0.0191	0.485
75	3.02	0.0049	0.123
84	3.70	0.0030	0.077
90	4.24	0.0021	0.053
95			

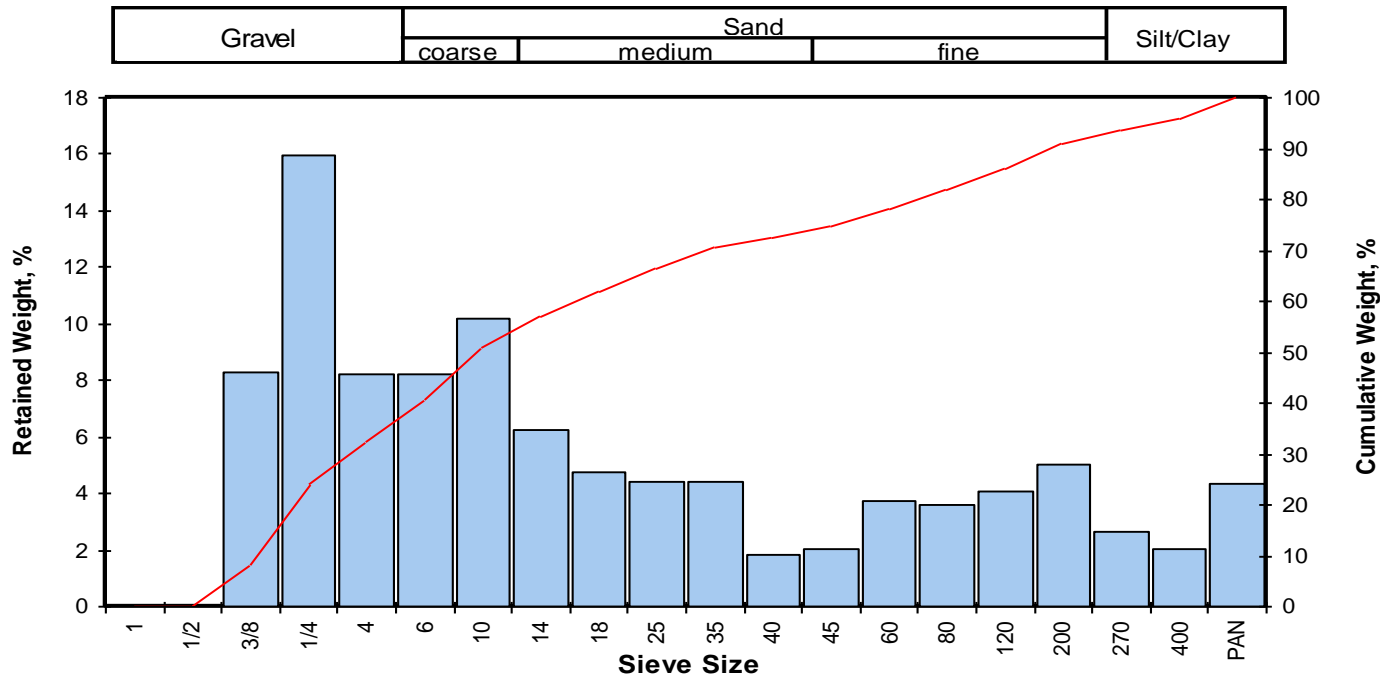
Measure	Trask	Inman	Folk-Ward
Median, phi	-0.86	-0.86	-0.86
Median, in.	0.0714	0.0714	0.0714
Median, mm	1.812	1.812	1.812
Mean, phi	-2.19	0.07	-0.24
Mean, in.	0.1793	0.0375	0.0465
Mean, mm	4.553	0.954	1.181
Sorting	8.534	3.636	
Skewness	0.581	0.255	
Kurtosis	0.289		

Grain Size Description	Coarse sand
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	40.17
Coarse Sand	10	9.00
Medium Sand	40	11.80
Fine Sand	200	23.63
Silt/Clay	<200	15.40
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

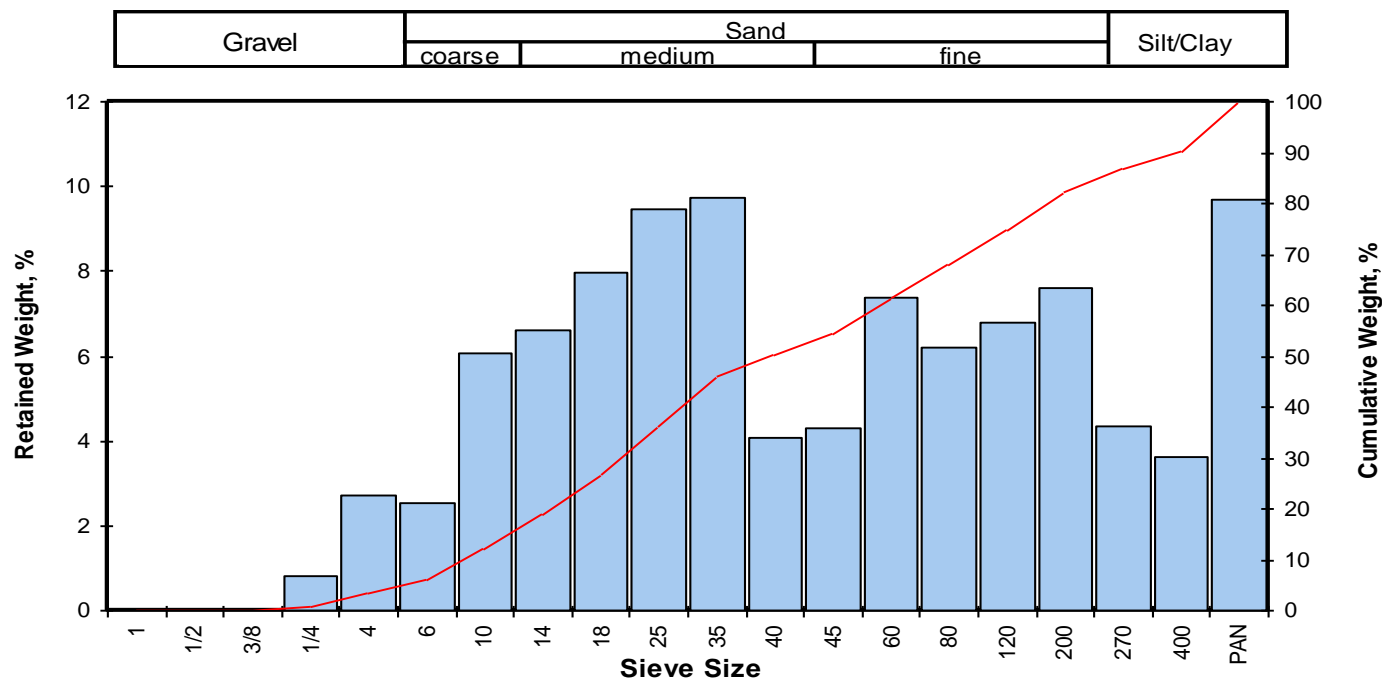
PTS File No: 46429
Sample ID: DFSB-09-10
Depth, ft: 10



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
Inches	Millimeters						Weight percent	Phi Value	Particle Size	
							Inches	Millimeters		
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-3.41	0.4172	10.597
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00	10	-3.19	0.3584	9.102
0.3740	9.500	-3.25	3/8	14.91	8.31	8.31	16	-2.97	0.3079	7.821
0.2500	6.351	-2.67	1/4	28.60	15.93	24.24	25	-2.63	0.2434	6.183
0.1873	4.757	-2.25	4	14.71	8.19	32.43	40	-1.79	0.1362	3.460
0.1324	3.364	-1.75	6	14.79	8.24	40.67	50	-1.07	0.0824	2.092
0.0787	2.000	-1.00	10	18.34	10.22	50.89	60	-0.20	0.0452	1.147
0.0557	1.414	-0.50	14	11.18	6.23	57.12	75	1.56	0.0134	0.339
0.0394	1.000	0.00	18	8.56	4.77	61.89	84	2.76	0.0058	0.148
0.0278	0.707	0.50	25	7.88	4.39	66.27	90	3.60	0.0032	0.082
0.0197	0.500	1.00	35	7.87	4.38	70.66	95	4.58	0.0016	0.042
0.0166	0.420	1.25	40	3.30	1.84	72.50				
0.0139	0.354	1.50	45	3.70	2.06	74.56				
0.0098	0.250	2.00	60	6.68	3.72	78.28				
0.0070	0.177	2.50	80	6.47	3.60	81.88				
0.0049	0.125	3.00	120	7.35	4.09	85.98				
0.0029	0.074	3.75	200	8.97	5.00	90.98				
0.0021	0.053	4.25	270	4.77	2.66	93.63				
0.0015	0.037	4.75	400	3.68	2.05	95.68				
			PAN	7.75	4.32	100.00				
								</		

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

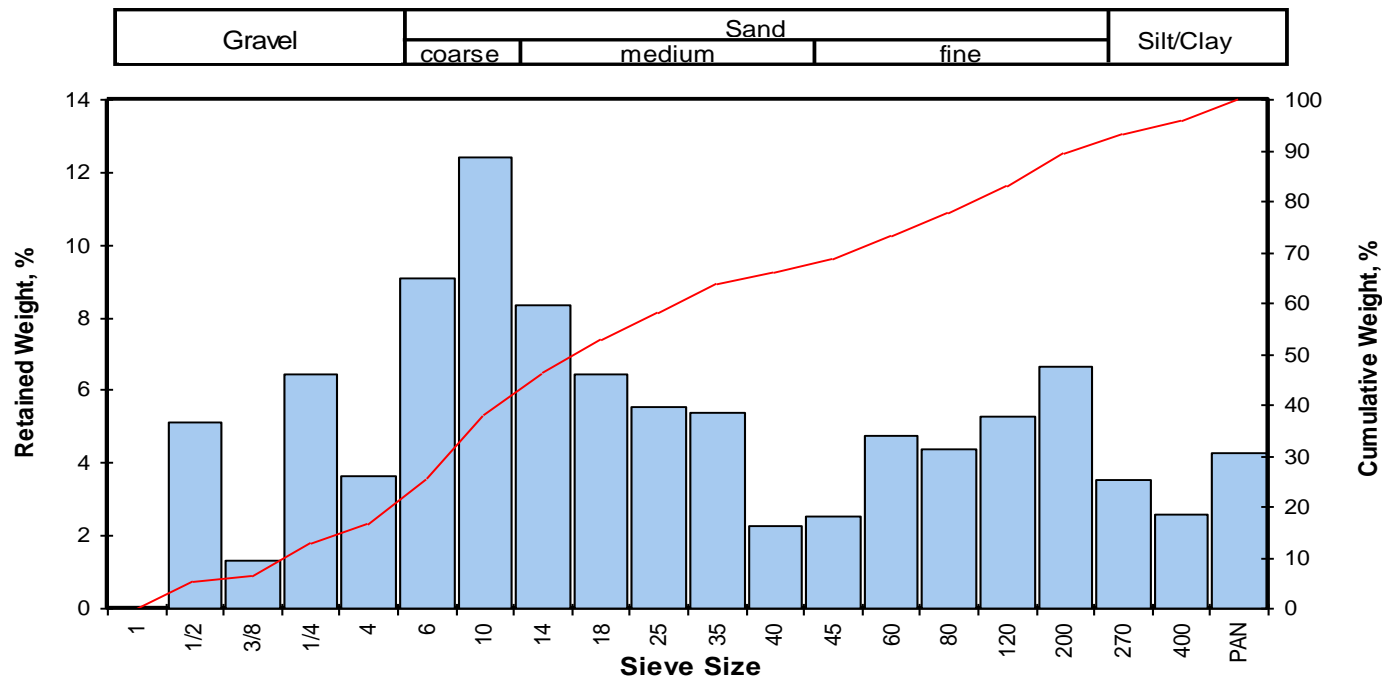
PTS File No: 46429
Sample ID: DFSB-09-25
Depth, ft: 25



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
							Weight percent	Phi Value	Particle Size	
Inches	Millimeters							Inches	Millimeters	
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-1.96	0.1529	3.883
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00	10	-1.26	0.0945	2.400
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00	16	-0.71	0.0643	1.634
0.2500	6.351	-2.67	1/4	1.21	0.81	0.81	25	-0.11	0.0425	1.079
0.1873	4.757	-2.25	4	4.05	2.71	3.51	40	0.69	0.0243	0.618
0.1324	3.364	-1.75	6	3.80	2.54	6.05	50	1.25	0.0166	0.421
0.0787	2.000	-1.00	10	9.10	6.08	12.13	60	1.89	0.0107	0.271
0.0557	1.414	-0.50	14	9.93	6.63	18.76	75	3.03	0.0048	0.122
0.0394	1.000	0.00	18	11.96	7.99	26.75	84	3.95	0.0026	0.065
0.0278	0.707	0.50	25	14.15	9.45	36.20	90	4.71	0.0015	0.038
0.0197	0.500	1.00	35	14.58	9.74	45.94	95			
0.0166	0.420	1.25	40	6.08	4.06	50.00				
0.0139	0.354	1.50	45	6.41	4.28	54.28				
0.0098	0.250	2.00	60	11.08	7.40	61.69				
0.0070	0.177	2.50	80	9.31	6.22	67.90				
0.0049	0.125	3.00	120	10.15	6.78	74.68				
0.0029	0.074	3.75	200	11.40	7.61	82.30				
0.0021	0.053	4.25	270	6.51	4.35	86.65				
0.0015	0.037	4.75	400	5.45	3.64	90.29				
			PAN	14.54	9.71	100.00				
							Measure	Trask	Inman	Folk-Ward
							Median, phi	1.25	1.25	1.25
							Median, in.	0.0166	0.0166	0.0166
							Median, mm	0.421	0.421	0.421
							Mean, phi	0.74	1.62	1.50
							Mean, in.	0.0236	0.0128	0.0140
							Mean, mm	0.601	0.326	0.355
							Sorting	2.970	2.327	
							Skewness	0.864	0.159	
							Kurtosis	0.203		
							Grain Size Description		Medium sand	
							(ASTM-USCS Scale)		(based on Mean from Trask)	
							Description		Retained on Sieve #	Weight Percent
							Gravel		4	3.51
							Coarse Sand		10	8.62
							Medium Sand		40	37.87
							Fine Sand		200	32.30
							Silt/Clay		<200	17.70
TOTALS				149.71	100.00	100.00	Total		100	

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

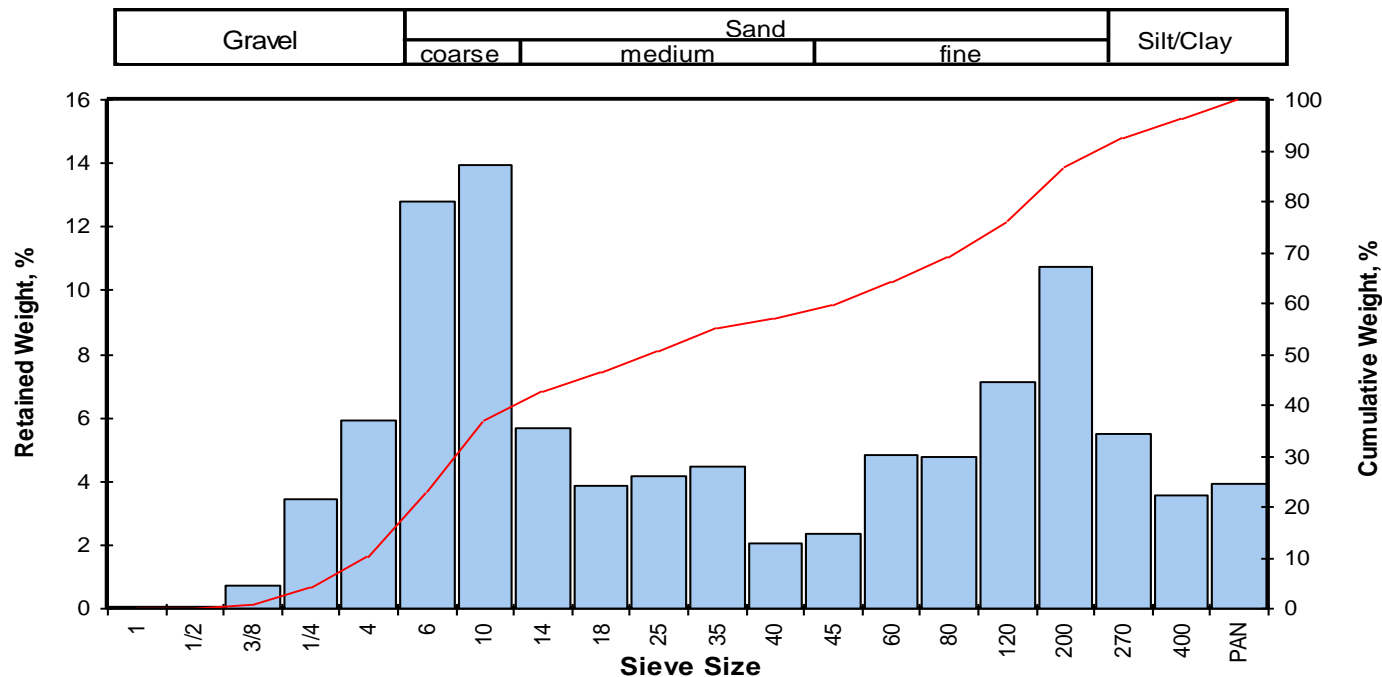
PTS File No: 46429
Sample ID: DFSB-07-10
Depth, ft: 10



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
Inches	Millimeters						Weight percent	Phi Value	Particle Size	
							Inches	Millimeters		
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-3.67	0.5009	12.724
0.4922	12.501	-3.64	1/2	9.38	5.13	5.13	10	-2.93	0.2999	7.617
0.3740	9.500	-3.25	3/8	2.46	1.35	6.48	16	-2.31	0.1952	4.958
0.2500	6.351	-2.67	1/4	11.74	6.42	12.90	25	-1.78	0.1354	3.439
0.1873	4.757	-2.25	4	6.62	3.62	16.52	40	-0.88	0.0724	1.839
0.1324	3.364	-1.75	6	16.57	9.06	25.58	50	-0.21	0.0457	1.160
0.0787	2.000	-1.00	10	22.68	12.40	37.99	60	0.66	0.0249	0.633
0.0557	1.414	-0.50	14	15.23	8.33	46.32	75	2.20	0.0086	0.218
0.0394	1.000	0.00	18	11.77	6.44	52.75	84	3.12	0.0045	0.115
0.0278	0.707	0.50	25	10.11	5.53	58.28	90	3.81	0.0028	0.071
0.0197	0.500	1.00	35	9.87	5.40	63.68	95	4.61	0.0016	0.041
0.0166	0.420	1.25	40	4.20	2.30	65.98				
0.0139	0.354	1.50	45	4.68	2.56	68.54				
0.0098	0.250	2.00	60	8.70	4.76	73.30				
0.0070	0.177	2.50	80	7.97	4.36	77.66				
0.0049	0.125	3.00	120	9.63	5.27	82.92				
0.0029	0.074	3.75	200	12.17	6.66	89.58				
0.0021	0.053	4.25	270	6.51	3.56	93.14				
0.0015	0.037	4.75	400	4.74	2.59	95.73				
			PAN	7.80	4.27	100.00				

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-07-20
Depth, ft: 20



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	1.23	0.72	0.72
0.2500	6.351	-2.67	1/4	5.84	3.43	4.16
0.1873	4.757	-2.25	4	10.11	5.94	10.10
0.1324	3.364	-1.75	6	21.82	12.83	22.93
0.0787	2.000	-1.00	10	23.70	13.94	36.87
0.0557	1.414	-0.50	14	9.67	5.69	42.55
0.0394	1.000	0.00	18	6.62	3.89	46.45
0.0278	0.707	0.50	25	7.09	4.17	50.61
0.0197	0.500	1.00	35	7.59	4.46	55.08
0.0166	0.420	1.25	40	3.50	2.06	57.14
0.0139	0.354	1.50	45	4.04	2.38	59.51
0.0098	0.250	2.00	60	8.17	4.80	64.31
0.0070	0.177	2.50	80	8.13	4.78	69.10
0.0049	0.125	3.00	120	12.09	7.11	76.20
0.0029	0.074	3.75	200	18.30	10.76	86.96
0.0021	0.053	4.25	270	9.39	5.52	92.49
0.0015	0.037	4.75	400	6.08	3.57	96.06
			PAN	6.70	3.94	100.00
TOTALS				170.07	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-2.61	0.2400	6.096
10	-2.26	0.1882	4.780
16	-2.02	0.1597	4.056
25	-1.64	0.1226	3.114
40	-0.72	0.0651	1.652
50	0.43	0.0293	0.744
60	1.55	0.0134	0.341
75	2.92	0.0052	0.133
84	3.54	0.0034	0.086
90	4.02	0.0024	0.061
95	4.60	0.0016	0.041

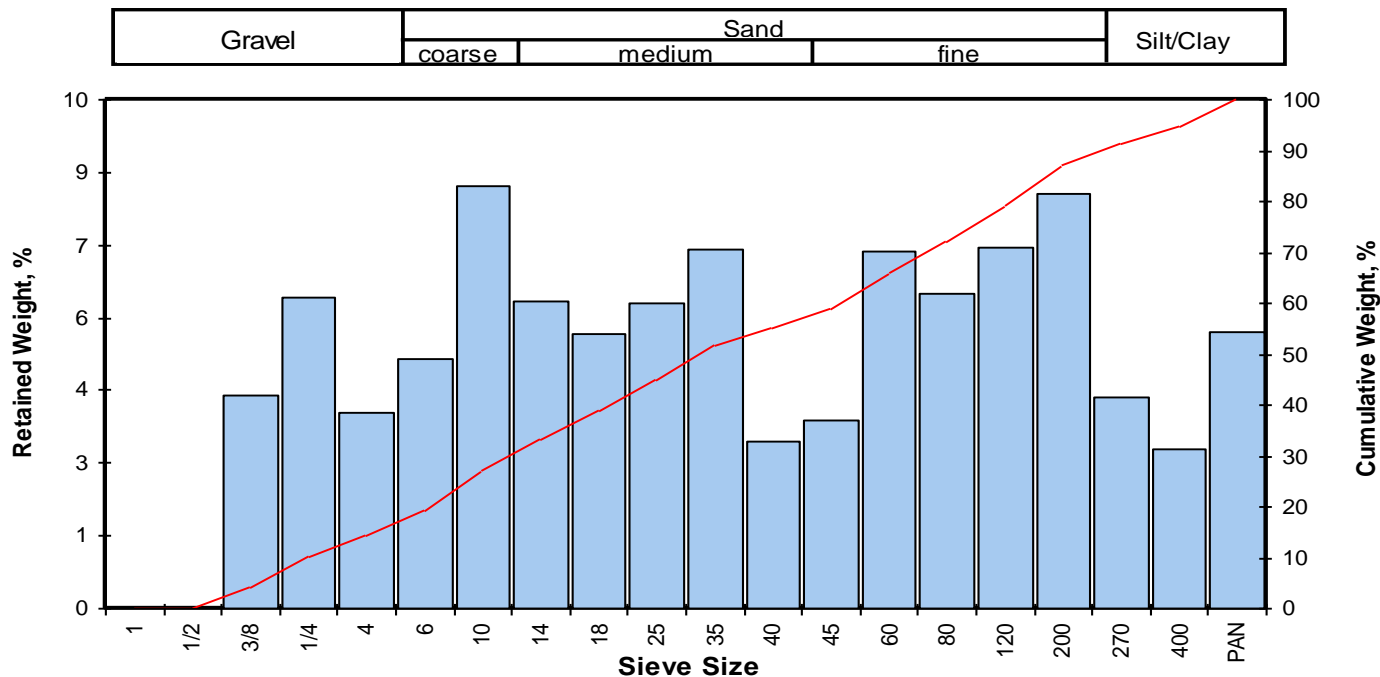
Measure	Trask	Inman	Folk-Ward
Median, phi	0.43	0.43	0.43
Median, in.	0.0293	0.0293	0.0293
Median, mm	0.744	0.744	0.744
Mean, phi	-0.70	0.76	0.65
Mean, in.	0.0639	0.0232	0.0251
Mean, mm	1.623	0.590	0.637
Sorting	4.847	2.782	2.483
Skewness	0.863	0.121	0.139
Kurtosis	0.316	0.296	0.649

Grain Size Description	Medium sand
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	10.10
Coarse Sand	10	26.77
Medium Sand	40	20.27
Fine Sand	200	29.83
Silt/Clay	<200	13.04
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-07-25
Depth, ft: 25



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
Inches	Millimeters						Weight percent	Phi Value	Particle Size	
									Inches	Millimeters
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-3.17	0.3544	9.003
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00	10	-2.70	0.2552	6.482
0.3740	9.500	-3.25	3/8	7.41	4.18	4.18	16	-2.06	0.1645	4.178
0.2500	6.351	-2.67	1/4	10.86	6.13	10.31	25	-1.21	0.0912	2.317
0.1873	4.757	-2.25	4	6.84	3.86	14.17	40	0.10	0.0367	0.933
0.1324	3.364	-1.75	6	8.67	4.89	19.06	50	0.87	0.0216	0.548
0.0787	2.000	-1.00	10	14.68	8.28	27.35	60	1.58	0.0132	0.334
0.0557	1.414	-0.50	14	10.72	6.05	33.40	75	2.71	0.0060	0.153
0.0394	1.000	0.00	18	9.56	5.39	38.79	84	3.45	0.0036	0.092
0.0278	0.707	0.50	25	10.65	6.01	44.80	90	4.08	0.0023	0.059
0.0197	0.500	1.00	35	12.53	7.07	51.87	95			
0.0166	0.420	1.25	40	5.82	3.28	55.15				
0.0139	0.354	1.50	45	6.57	3.71	58.86				
0.0098	0.250	2.00	60	12.41	7.00	65.87				
0.0070	0.177	2.50	80	10.97	6.19	72.06				
0.0049	0.125	3.00	120	12.58	7.10	79.15				
0.0029	0.074	3.75	200	14.42	8.14	87.29				
0.0021	0.053	4.25	270	7.34	4.14	91.43				
0.0015	0.037	4.75	400	5.54	3.13	94.56				
			PAN	9.64	5.44	100.00				
TOTALS				177.21	100.00	100.00				

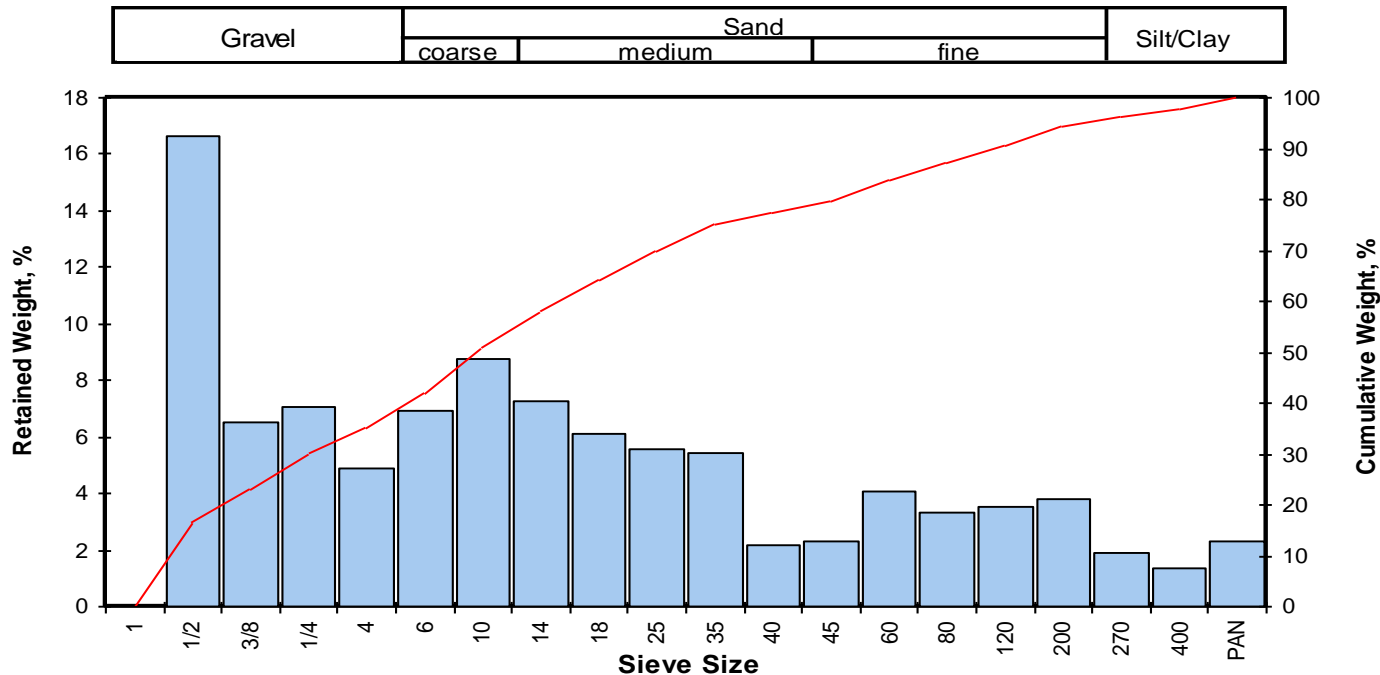
Measure	Trask	Inman	Folk-Ward
Median, phi	0.87	0.87	0.87
Median, in.	0.0216	0.0216	0.0216
Median, mm	0.548	0.548	0.548
Mean, phi	-0.30	0.69	0.75
Mean, in.	0.0486	0.0244	0.0234
Mean, mm	1.235	0.619	0.594
Sorting	3.890	2.755	
Skewness	1.087	-0.064	
Kurtosis	0.168		

Grain Size Description		Medium sand	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	14.17
Coarse Sand	10	13.18
Medium Sand	40	27.81
Fine Sand	200	32.14
Silt/Clay	<200	12.71
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

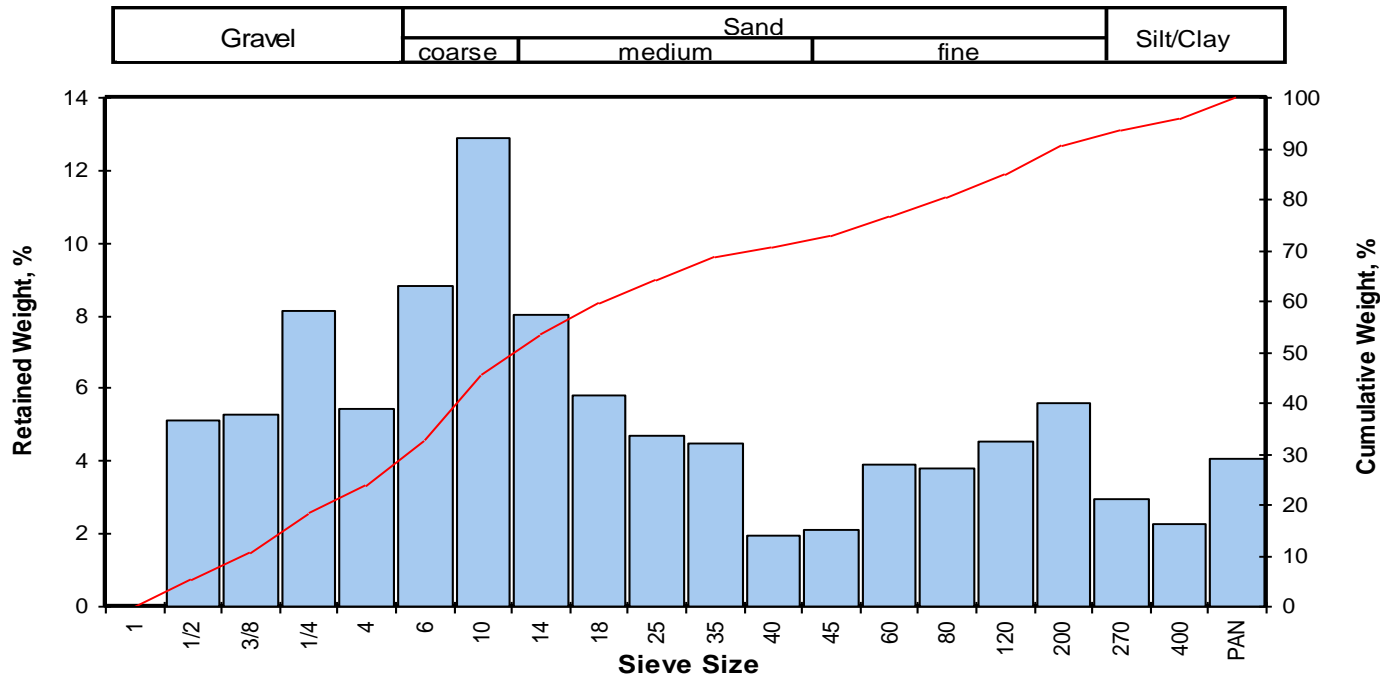
PTS File No: 46429
Sample ID: DFSB-06-10
Depth, ft: 10



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
Inches	Millimeters						Weight percent	Phi Value	Particle Size	
								Inches	Millimeters	
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-4.34	0.7996	20.311
0.4922	12.501	-3.64	1/2	35.18	16.68	16.68	10	-4.04	0.6496	16.499
0.3740	9.500	-3.25	3/8	13.73	6.51	23.18	16	-3.68	0.5062	12.857
0.2500	6.351	-2.67	1/4	14.87	7.05	30.23	25	-3.10	0.3372	8.564
0.1873	4.757	-2.25	4	10.32	4.89	35.12	40	-1.90	0.1467	3.726
0.1324	3.364	-1.75	6	14.60	6.92	42.04	50	-1.07	0.0826	2.099
0.0787	2.000	-1.00	10	18.51	8.77	50.82	60	-0.34	0.0499	1.268
0.0557	1.414	-0.50	14	15.31	7.26	58.07	75	0.98	0.0200	0.507
0.0394	1.000	0.00	18	12.93	6.13	64.20	84	2.04	0.0096	0.244
0.0278	0.707	0.50	25	11.79	5.59	69.79	90	2.91	0.0052	0.133
0.0197	0.500	1.00	35	11.45	5.43	75.22	95	3.90	0.0026	0.067
0.0166	0.420	1.25	40	4.64	2.20	77.42				
0.0139	0.354	1.50	45	4.82	2.28	79.70				
0.0098	0.250	2.00	60	8.55	4.05	83.76				
0.0070	0.177	2.50	80	7.03	3.33	87.09				
0.0049	0.125	3.00	120	7.50	3.56	90.64				
0.0029	0.074	3.75	200	8.03	3.81	94.45				
0.0021	0.053	4.25	270	3.97	1.88	96.33				
0.0015	0.037	4.75	400	2.89	1.37	97.70				
			PAN	4.85	2.30	100.00				

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-08-10
Depth, ft: 10



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	12.33	5.12	5.12
0.3740	9.500	-3.25	3/8	12.69	5.27	10.39
0.2500	6.351	-2.67	1/4	19.55	8.12	18.51
0.1873	4.757	-2.25	4	13.05	5.42	23.93
0.1324	3.364	-1.75	6	21.23	8.82	32.75
0.0787	2.000	-1.00	10	30.98	12.87	45.62
0.0557	1.414	-0.50	14	19.36	8.04	53.66
0.0394	1.000	0.00	18	14.03	5.83	59.48
0.0278	0.707	0.50	25	11.32	4.70	64.19
0.0197	0.500	1.00	35	10.85	4.51	68.69
0.0166	0.420	1.25	40	4.70	1.95	70.64
0.0139	0.354	1.50	45	5.11	2.12	72.77
0.0098	0.250	2.00	60	9.43	3.92	76.68
0.0070	0.177	2.50	80	9.21	3.83	80.51
0.0049	0.125	3.00	120	10.98	4.56	85.07
0.0029	0.074	3.75	200	13.53	5.62	90.69
0.0021	0.053	4.25	270	7.17	2.98	93.67
0.0015	0.037	4.75	400	5.43	2.26	95.92
			PAN	9.82	4.08	100.00
TOTALS				240.77	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-3.67	0.5003	12.708
10	-3.28	0.3817	9.696
16	-2.85	0.2832	7.194
25	-2.19	0.1796	4.561
40	-1.33	0.0988	2.509
50	-0.73	0.0652	1.656
60	0.05	0.0379	0.963
75	1.79	0.0114	0.290
84	2.88	0.0053	0.136
90	3.66	0.0031	0.079
95	4.55	0.0017	0.043

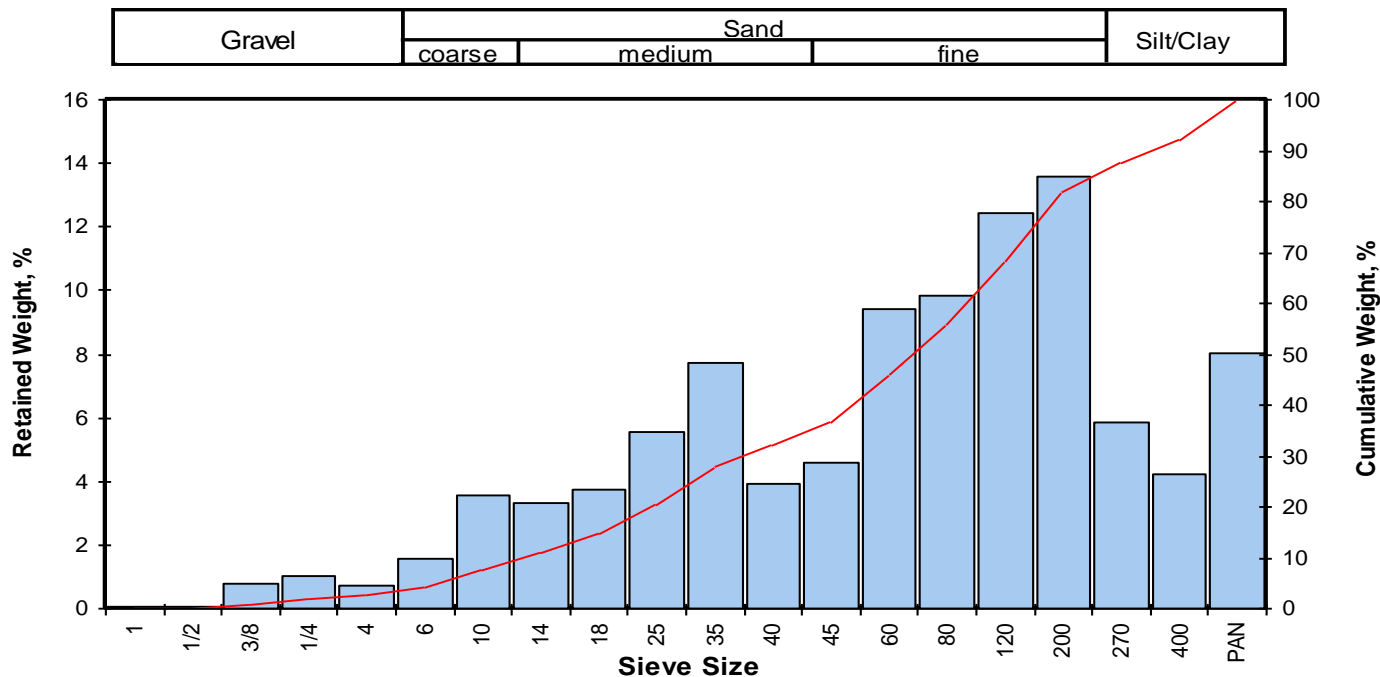
Measure	Trask	Inman	Folk-Ward
Median, phi	-0.73	-0.73	-0.73
Median, in.	0.0652	0.0652	0.0652
Median, mm	1.656	1.656	1.656
Mean, phi	-1.28	0.02	-0.23
Mean, in.	0.0955	0.0389	0.0462
Mean, mm	2.426	0.988	1.173
Sorting	3.965	2.865	2.677
Skewness	0.695	0.260	0.272
Kurtosis	0.222	0.434	0.847

Grain Size Description (ASTM-USCS Scale)	Coarse sand (based on Mean from Trask)
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Description	Retained on Sieve #	Weight Percent
Gravel	4	23.93
Coarse Sand	10	21.68
Medium Sand	40	25.03
Fine Sand	200	20.04
Silt/Clay	<200	9.31
Total		100

Client: Tetra Tech, Inc.
Project: N/A
Project No: NERT Downflushing

PTS File No: 46429
Sample ID: DFSB-08-25
Depth, ft: 25



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	1.13	0.81	0.81
0.2500	6.351	-2.67	1/4	1.46	1.04	1.85
0.1873	4.757	-2.25	4	1.05	0.75	2.60
0.1324	3.364	-1.75	6	2.19	1.56	4.16
0.0787	2.000	-1.00	10	4.98	3.56	7.72
0.0557	1.414	-0.50	14	4.69	3.35	11.07
0.0394	1.000	0.00	18	5.21	3.72	14.78
0.0278	0.707	0.50	25	7.77	5.55	20.33
0.0197	0.500	1.00	35	10.81	7.72	28.05
0.0166	0.420	1.25	40	5.46	3.90	31.95
0.0139	0.354	1.50	45	6.45	4.60	36.55
0.0098	0.250	2.00	60	13.20	9.42	45.97
0.0070	0.177	2.50	80	13.76	9.82	55.80
0.0049	0.125	3.00	120	17.46	12.46	68.26
0.0029	0.074	3.75	200	19.01	13.57	81.83
0.0021	0.053	4.25	270	8.23	5.88	87.71
0.0015	0.037	4.75	400	5.95	4.25	91.95
			PAN	11.27	8.05	100.00
TOTALS				140.08	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-1.57	0.1172	2.976
10	-0.66	0.0622	1.579
16	0.11	0.0365	0.927
25	0.80	0.0226	0.573
40	1.68	0.0123	0.311
50	2.20	0.0085	0.217
60	2.67	0.0062	0.157
75	3.37	0.0038	0.097
84	3.93	0.0026	0.065
90	4.52	0.0017	0.044
95			

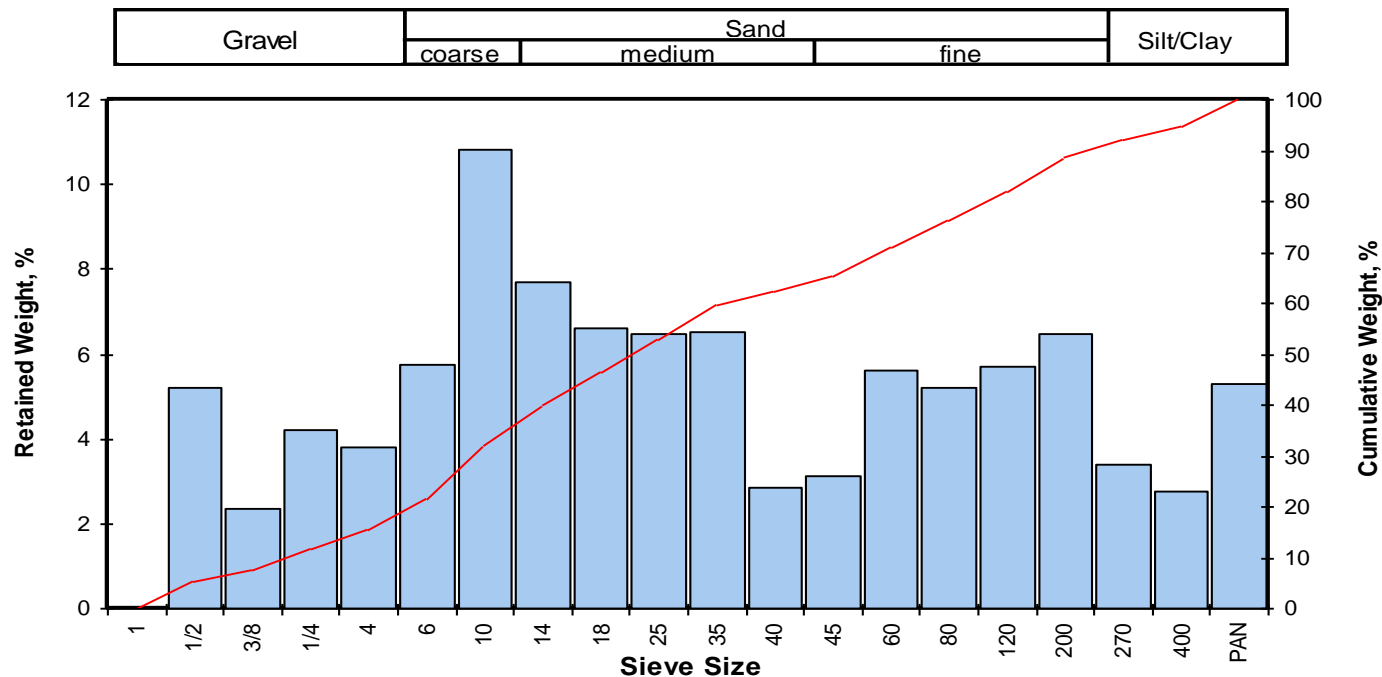
Measure	Trask	Inman	Folk-Ward
Median, phi	2.20	2.20	2.20
Median, in.	0.0085	0.0085	0.0085
Median, mm	0.217	0.217	0.217
Mean, phi	1.58	2.02	2.08
Mean, in.	0.0132	0.0097	0.0093
Mean, mm	0.335	0.246	0.236
Sorting	2.437	1.912	
Skewness	1.085	-0.096	
Kurtosis	0.155		

Grain Size Description (ASTM-USCS Scale)	Fine sand (based on Mean from Trask)
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Description	Retained on Sieve #	Weight Percent
Gravel	4	2.60
Coarse Sand	10	5.12
Medium Sand	40	24.23
Fine Sand	200	49.89
Silt/Clay	<200	18.17
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-02-10
Depth, ft: 10



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	10.96	5.20	5.20
0.3740	9.500	-3.25	3/8	4.98	2.36	7.56
0.2500	6.351	-2.67	1/4	8.91	4.23	11.79
0.1873	4.757	-2.25	4	7.98	3.79	15.58
0.1324	3.364	-1.75	6	12.16	5.77	21.35
0.0787	2.000	-1.00	10	22.82	10.83	32.18
0.0557	1.414	-0.50	14	16.20	7.69	39.87
0.0394	1.000	0.00	18	13.96	6.62	46.49
0.0278	0.707	0.50	25	13.62	6.46	52.96
0.0197	0.500	1.00	35	13.77	6.53	59.49
0.0166	0.420	1.25	40	6.02	2.86	62.35
0.0139	0.354	1.50	45	6.58	3.12	65.47
0.0098	0.250	2.00	60	11.83	5.61	71.08
0.0070	0.177	2.50	80	11.00	5.22	76.31
0.0049	0.125	3.00	120	12.06	5.72	82.03
0.0029	0.074	3.75	200	13.69	6.50	88.53
0.0021	0.053	4.25	270	7.17	3.40	91.93
0.0015	0.037	4.75	400	5.80	2.75	94.68
			PAN	11.21	5.32	100.00
TOTALS				210.72	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-3.68	0.5056	12.841
10	-2.91	0.2966	7.534
16	-2.21	0.1826	4.638
25	-1.50	0.1111	2.823
40	-0.49	0.0553	1.404
50	0.27	0.0326	0.829
60	1.04	0.0191	0.485
75	2.38	0.0076	0.193
84	3.23	0.0042	0.107
90	3.97	0.0025	0.064
95			

Measure	Trask	Inman	Folk-Ward
Median, phi	0.27	0.27	0.27
Median, in.	0.0326	0.0326	0.0326
Median, mm	0.829	0.829	0.829
Mean, phi	-0.59	0.51	0.43
Mean, in.	0.0594	0.0277	0.0293
Mean, mm	1.508	0.704	0.743
Sorting	3.827	2.721	
Skewness	0.890	0.087	
Kurtosis	0.176		

Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)
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Description	Retained on Sieve #	Weight Percent
Gravel	4	15.58
Coarse Sand	10	16.60
Medium Sand	40	30.17
Fine Sand	200	26.18
Silt/Clay	<200	11.47
Total		100

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422M)

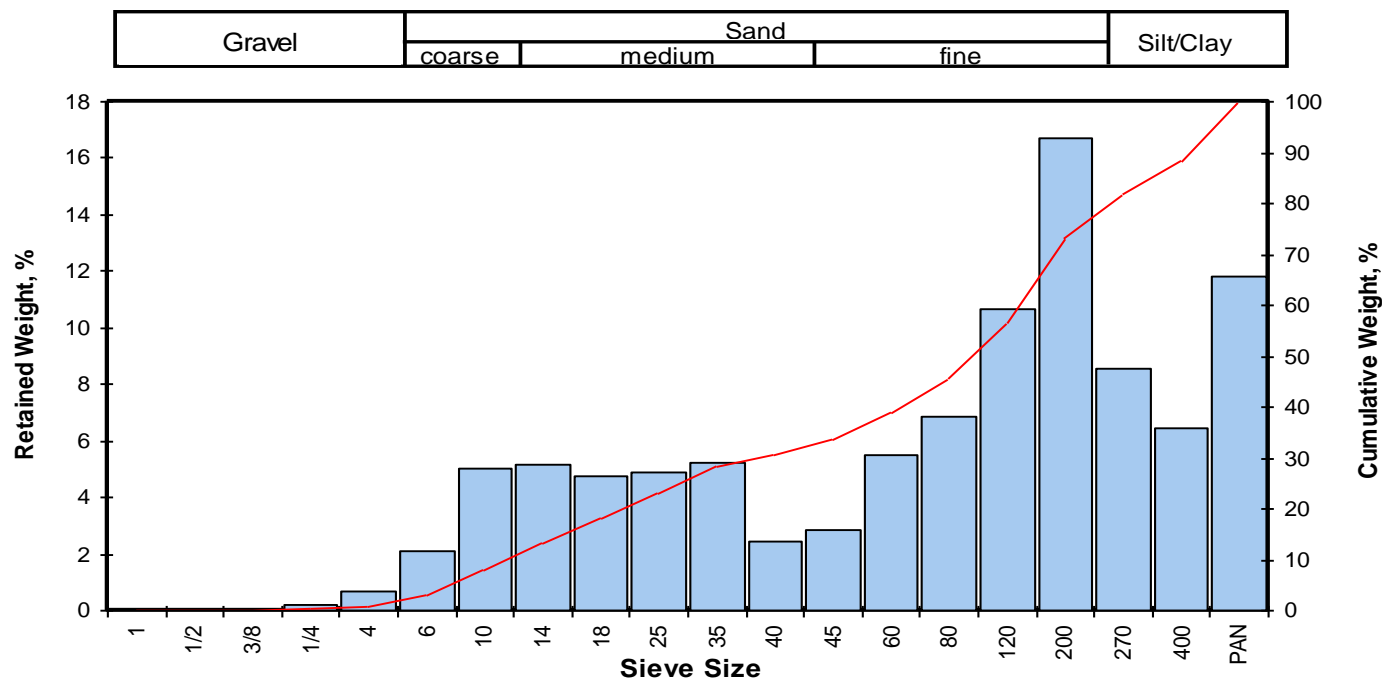
PROJECT NAME: NERT Downflushing
PROJECT NO: N/A

Sample ID	Depth, ft.	Mean Grain Size Description USCS/ASTM (1)	Median Grain Size, mm	Particle Size Distribution, wt. percent				
				Gravel	Sand Size			Silt/Clay
					Coarse	Medium	Fine	
DFSB-02-20	20	Fine sand	0.154	0.89	7.15	22.52	42.62	26.81
DFSB-15-10	10	Coarse sand	1.955	30.88	18.66	24.09	18.32	8.05
DFSB-15-15	15	Coarse sand	1.655	29.87	16.79	23.18	21.46	8.70
DFSB-15-25	25	Coarse sand	1.336	26.50	16.81	23.35	23.37	9.97
DFSB-14-10	10	Medium sand	0.738	12.51	19.56	26.61	27.71	13.60
DFSB-14-20	20	Coarse sand	0.877	26.39	12.14	22.17	27.16	12.15
DFSB-10-15	15	Medium sand	0.915	9.08	21.58	35.22	25.24	8.88
DFSB-10-25	25	Medium sand	1.290	8.26	30.19	37.90	19.83	3.82
DFSB-11-10	10	Gravel	8.992	61.37	13.15	15.00	7.64	2.85
DFSB-11-25	25	Coarse sand	1.620	16.27	29.27	26.89	20.75	6.81
DFSB-03-20	20	Fine sand	0.158	5.04	6.89	16.75	53.69	17.63

(1) Based on Mean from Trask

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

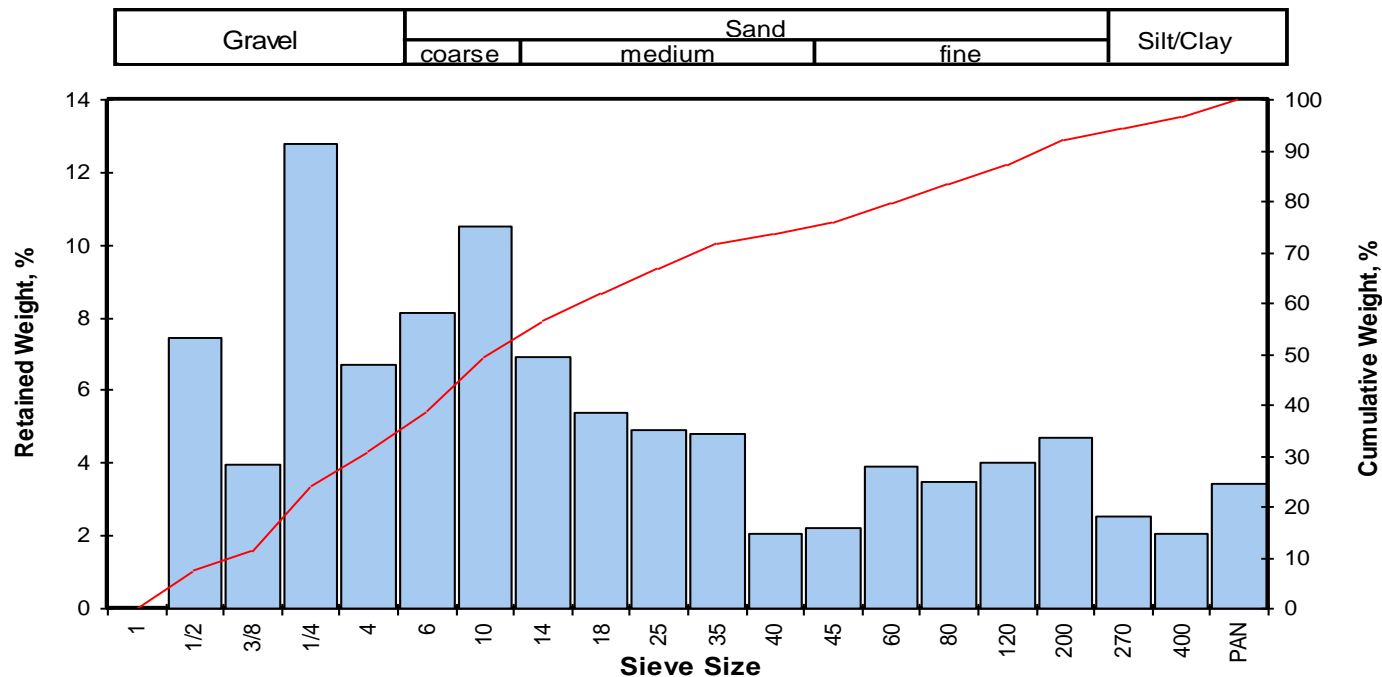
PTS File No: 46429
Sample ID: DFSB-02-20
Depth, ft: 20



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
							Weight percent	Phi Value	Particle Size	
Inches	Millimeters							Inches	Millimeters	
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-1.45	0.1077	2.735
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00	10	-0.81	0.0691	1.755
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00	16	-0.21	0.0455	1.155
0.2500	6.351	-2.67	1/4	0.33	0.22	0.22	25	0.70	0.0242	0.615
0.1873	4.757	-2.25	4	1.01	0.67	0.89	40	2.08	0.0093	0.237
0.1324	3.364	-1.75	6	3.14	2.09	2.99	50	2.70	0.0061	0.154
0.0787	2.000	-1.00	10	7.58	5.06	8.05	60	3.16	0.0044	0.112
0.0557	1.414	-0.50	14	7.76	5.18	13.22	75	3.86	0.0027	0.069
0.0394	1.000	0.00	18	7.13	4.76	17.98	84	4.43	0.0018	0.047
0.0278	0.707	0.50	25	7.34	4.90	22.88	90			
0.0197	0.500	1.00	35	7.89	5.26	28.14	95			
0.0166	0.420	1.25	40	3.64	2.43	30.57				
0.0139	0.354	1.50	45	4.29	2.86	33.43				
0.0098	0.250	2.00	60	8.25	5.50	38.94				
0.0070	0.177	2.50	80	10.30	6.87	45.81				
0.0049	0.125	3.00	120	16.00	10.67	56.48				
0.0029	0.074	3.75	200	25.04	16.71	73.19				
0.0021	0.053	4.25	270	12.81	8.55	81.73				
0.0015	0.037	4.75	400	9.65	6.44	88.17				
			PAN	17.73	11.83	100.00				

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

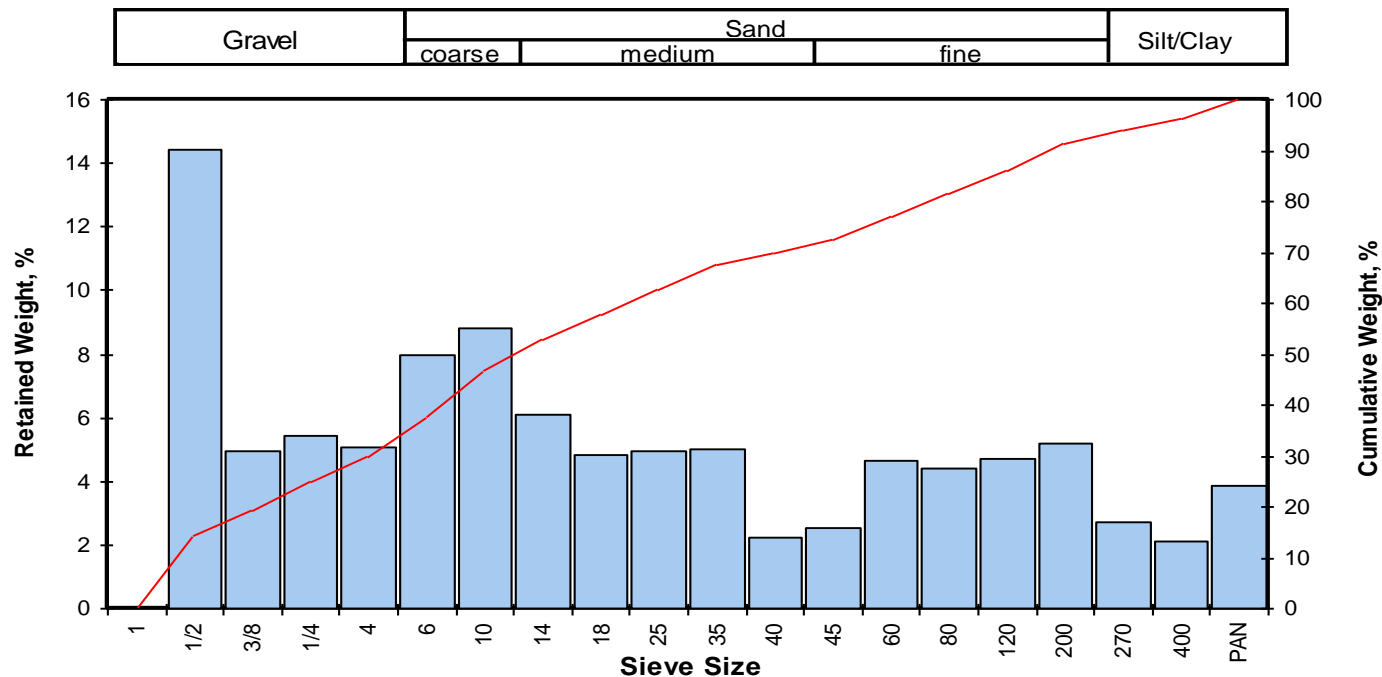
PTS File No: 46429
Sample ID: DFSB-15-10
Depth, ft: 10



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
							Weight percent	Phi Value	Particle Size	
Inches	Millimeters							Inches	Millimeters	
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-3.97	0.6187	15.715
0.4922	12.501	-3.64	1/2	12.93	7.46	7.46	10	-3.39	0.4124	10.475
0.3740	9.500	-3.25	3/8	6.82	3.94	11.40	16	-3.04	0.3236	8.219
0.2500	6.351	-2.67	1/4	22.14	12.78	24.18	25	-2.62	0.2414	6.130
0.1873	4.757	-2.25	4	11.61	6.70	30.88	40	-1.68	0.1263	3.208
0.1324	3.364	-1.75	6	14.14	8.16	39.04	50	-0.97	0.0770	1.955
0.0787	2.000	-1.00	10	18.19	10.50	49.54	60	-0.17	0.0444	1.127
0.0557	1.414	-0.50	14	12.02	6.94	56.48	75	1.41	0.0149	0.378
0.0394	1.000	0.00	18	9.31	5.37	61.86	84	2.60	0.0065	0.165
0.0278	0.707	0.50	25	8.50	4.91	66.76	90	3.44	0.0036	0.092
0.0197	0.500	1.00	35	8.30	4.79	71.55	95	4.38	0.0019	0.048
0.0166	0.420	1.25	40	3.61	2.08	73.64				
0.0139	0.354	1.50	45	3.80	2.19	75.83				
0.0098	0.250	2.00	60	6.73	3.88	79.72				
0.0070	0.177	2.50	80	6.08	3.51	83.23				
0.0049	0.125	3.00	120	6.94	4.01	87.23				
0.0029	0.074	3.75	200	8.18	4.72	91.95				
0.0021	0.053	4.25	270	4.37	2.52	94.48				
0.0015	0.037	4.75	400	3.59	2.07	96.55				
			PAN	5.98	3.45	100.00				

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-15-15
Depth, ft: 15



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	30.74	14.41	14.41
0.3740	9.500	-3.25	3/8	10.60	4.97	19.38
0.2500	6.351	-2.67	1/4	11.57	5.43	24.81
0.1873	4.757	-2.25	4	10.80	5.06	29.87
0.1324	3.364	-1.75	6	17.05	7.99	37.87
0.0787	2.000	-1.00	10	18.75	8.79	46.66
0.0557	1.414	-0.50	14	13.04	6.11	52.78
0.0394	1.000	0.00	18	10.33	4.84	57.62
0.0278	0.707	0.50	25	10.50	4.92	62.54
0.0197	0.500	1.00	35	10.74	5.04	67.58
0.0166	0.420	1.25	40	4.82	2.26	69.84
0.0139	0.354	1.50	45	5.42	2.54	72.38
0.0098	0.250	2.00	60	9.94	4.66	77.04
0.0070	0.177	2.50	80	9.35	4.38	81.43
0.0049	0.125	3.00	120	10.05	4.71	86.14
0.0029	0.074	3.75	200	11.01	5.16	91.30
0.0021	0.053	4.25	270	5.82	2.73	94.03
0.0015	0.037	4.75	400	4.47	2.10	96.13
			PAN	8.26	3.87	100.00
TOTALS				213.26	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-4.30	0.7740	19.659
10	-3.95	0.6086	15.458
16	-3.52	0.4509	11.453
25	-2.65	0.2473	6.283
40	-1.57	0.1167	2.965
50	-0.73	0.0652	1.655
60	0.24	0.0333	0.846
75	1.78	0.0115	0.291
84	2.77	0.0058	0.146
90	3.56	0.0033	0.085
95	4.48	0.0018	0.045

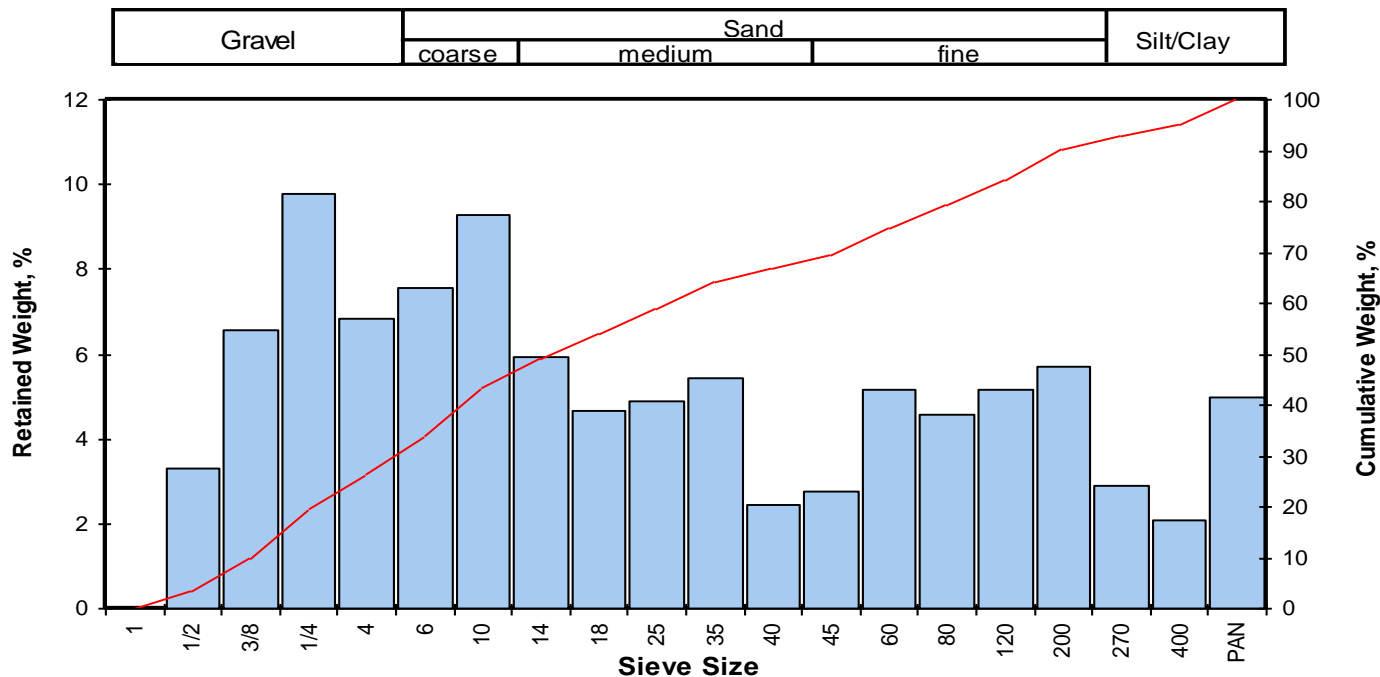
Measure	Trask	Inman	Folk-Ward
Median, phi	-0.73	-0.73	-0.73
Median, in.	0.0652	0.0652	0.0652
Median, mm	1.655	1.655	1.655
Mean, phi	-1.72	-0.37	-0.49
Mean, in.	0.1294	0.0510	0.0553
Mean, mm	3.287	1.294	1.405
Sorting	4.647	3.145	2.903
Skewness	0.817	0.113	0.150
Kurtosis	0.195	0.395	0.812

Grain Size Description	Coarse sand
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	29.87
Coarse Sand	10	16.79
Medium Sand	40	23.18
Fine Sand	200	21.46
Silt/Clay	<200	8.70
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-15-25
Depth, ft: 25



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	9.16	3.30	3.30
0.3740	9.500	-3.25	3/8	18.22	6.57	9.88
0.2500	6.351	-2.67	1/4	27.08	9.77	19.64
0.1873	4.757	-2.25	4	19.02	6.86	26.50
0.1324	3.364	-1.75	6	20.92	7.55	34.05
0.0787	2.000	-1.00	10	25.68	9.26	43.31
0.0557	1.414	-0.50	14	16.40	5.92	49.23
0.0394	1.000	0.00	18	12.99	4.69	53.91
0.0278	0.707	0.50	25	13.51	4.87	58.78
0.0197	0.500	1.00	35	15.01	5.41	64.20
0.0166	0.420	1.25	40	6.83	2.46	66.66
0.0139	0.354	1.50	45	7.65	2.76	69.42
0.0098	0.250	2.00	60	14.25	5.14	74.56
0.0070	0.177	2.50	80	12.71	4.58	79.15
0.0049	0.125	3.00	120	14.34	5.17	84.32
0.0029	0.074	3.75	200	15.85	5.72	90.03
0.0021	0.053	4.25	270	7.98	2.88	92.91
0.0015	0.037	4.75	400	5.80	2.09	95.00
PAN				13.85	5.00	100.00
TOTALS				277.25	100.00	100.00

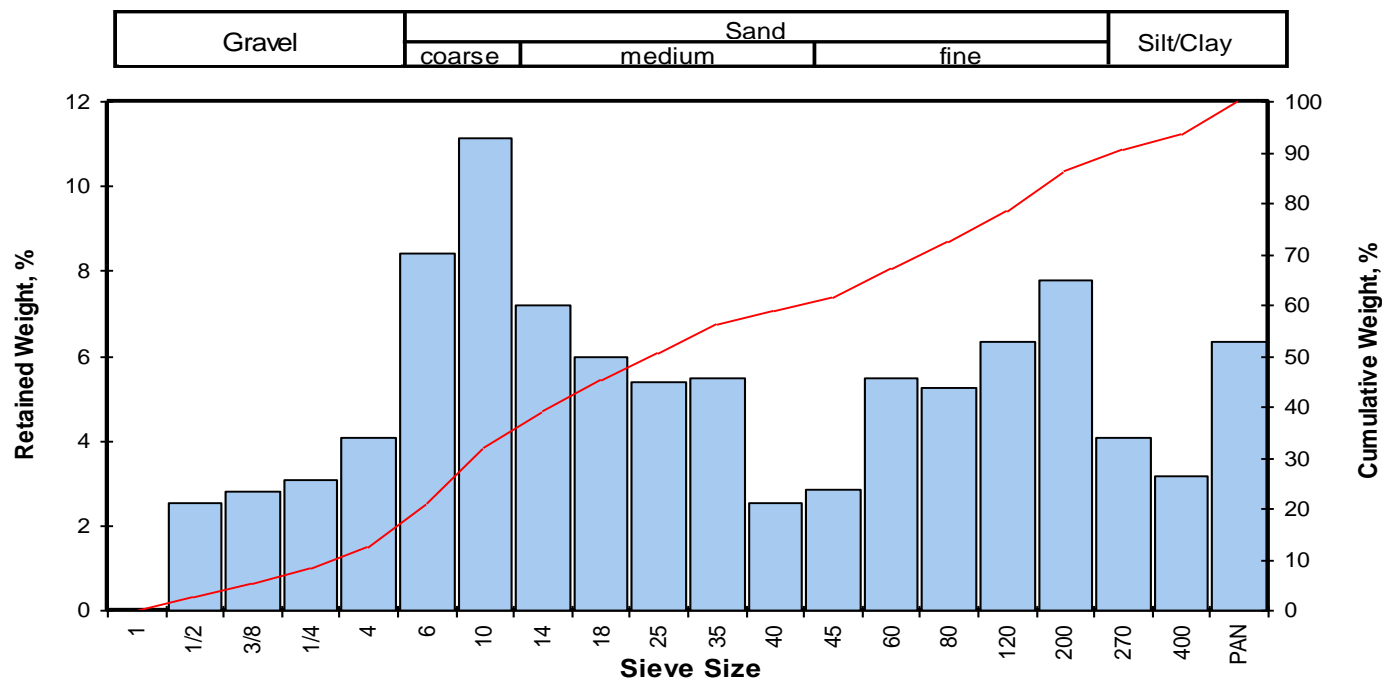
Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-3.54	0.4585	11.646
10	-3.24	0.3721	9.452
16	-2.88	0.2906	7.380
25	-2.34	0.1995	5.068
40	-1.27	0.0948	2.408
50	-0.42	0.0526	1.336
60	0.61	0.0258	0.654
75	2.05	0.0095	0.242
84	2.97	0.0050	0.128
90	3.75	0.0029	0.075
95	4.75	0.0015	0.037

Measure	Trask	Inman	Folk-Ward
Median, phi	-0.42	-0.42	-0.42
Median, in.	0.0526	0.0526	0.0526
Median, mm	1.336	1.336	1.336
Mean, phi	-1.41	0.04	-0.11
Mean, in.	0.1045	0.0382	0.0425
Mean, mm	2.655	0.971	1.080
Sorting	4.578	2.927	2.719
Skewness	0.829	0.157	0.202
Kurtosis	0.257	0.416	0.774
Grain Size Description (ASTM-USCS Scale)		Coarse sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	26.50
Coarse Sand	10	16.81
Medium Sand	40	23.35
Fine Sand	200	23.37
Silt/Clay	<200	9.97
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-14-10
Depth, ft: 10



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
Inches	Millimeters						Weight percent	Phi Value	Particle Size	
									Inches	Millimeters
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-3.30	0.3869	9.828
0.4922	12.501	-3.64	1/2	4.63	2.56	2.56	10	-2.51	0.2239	5.686
0.3740	9.500	-3.25	3/8	5.05	2.79	5.34	16	-2.04	0.1623	4.122
0.2500	6.351	-2.67	1/4	5.61	3.10	8.44	25	-1.48	0.1096	2.784
0.1873	4.757	-2.25	4	7.37	4.07	12.51	40	-0.44	0.0534	1.356
0.1324	3.364	-1.75	6	15.29	8.44	20.95	50	0.44	0.0290	0.738
0.0787	2.000	-1.00	10	20.14	11.12	32.07	60	1.37	0.0153	0.388
0.0557	1.414	-0.50	14	13.04	7.20	39.27	75	2.71	0.0060	0.152
0.0394	1.000	0.00	18	10.83	5.98	45.25	84	3.52	0.0034	0.087
0.0278	0.707	0.50	25	9.79	5.41	50.66	90	4.19	0.0022	0.055
0.0197	0.500	1.00	35	9.96	5.50	56.16	95			
0.0166	0.420	1.25	40	4.58	2.53	58.69				
0.0139	0.354	1.50	45	5.14	2.84	61.53				
0.0098	0.250	2.00	60	9.96	5.50	67.03				
0.0070	0.177	2.50	80	9.50	5.25	72.27				
0.0049	0.125	3.00	120	11.50	6.35	78.62				
0.0029	0.074	3.75	200	14.09	7.78	86.40				
0.0021	0.053	4.25	270	7.41	4.09	90.49				
0.0015	0.037	4.75	400	5.70	3.15	93.64				
			PAN	11.52	6.36	100.00				
TOTALS				181.11	100.00	100.00				

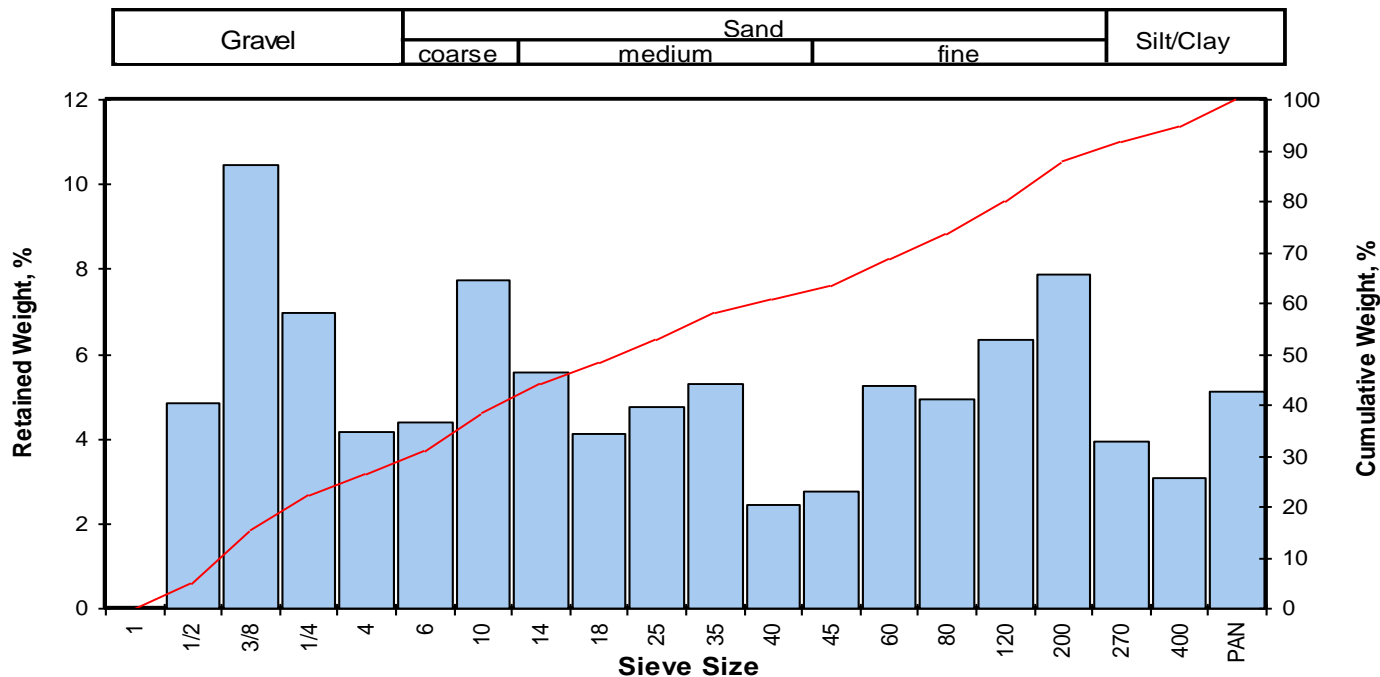
Measure	Trask	Inman	Folk-Ward
Median, phi	0.44	0.44	0.44
Median, in.	0.0290	0.0290	0.0290
Median, mm	0.738	0.738	0.738
Mean, phi	-0.55	0.74	0.64
Mean, in.	0.0578	0.0236	0.0253
Mean, mm	1.468	0.600	0.643
Sorting	4.275	2.781	
Skewness	0.883	0.107	
Kurtosis	0.234		

Grain Size Description		Medium sand	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	12.51
Coarse Sand	10	19.56
Medium Sand	40	26.61
Fine Sand	200	27.71
Silt/Clay	<200	13.60
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-14-20
Depth, ft: 20



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	9.78	4.84	4.84
0.3740	9.500	-3.25	3/8	21.10	10.44	15.29
0.2500	6.351	-2.67	1/4	14.05	6.95	22.24
0.1873	4.757	-2.25	4	8.39	4.15	26.39
0.1324	3.364	-1.75	6	8.88	4.40	30.79
0.0787	2.000	-1.00	10	15.64	7.74	38.53
0.0557	1.414	-0.50	14	11.25	5.57	44.10
0.0394	1.000	0.00	18	8.29	4.10	48.20
0.0278	0.707	0.50	25	9.59	4.75	52.95
0.0197	0.500	1.00	35	10.70	5.30	58.25
0.0166	0.420	1.25	40	4.95	2.45	60.70
0.0139	0.354	1.50	45	5.62	2.78	63.48
0.0098	0.250	2.00	60	10.57	5.23	68.71
0.0070	0.177	2.50	80	9.95	4.93	73.64
0.0049	0.125	3.00	120	12.77	6.32	79.96
0.0029	0.074	3.75	200	15.95	7.90	87.85
0.0021	0.053	4.25	270	7.98	3.95	91.80
0.0015	0.037	4.75	400	6.18	3.06	94.86
			PAN	10.38	5.14	100.00
TOTALS				202.02	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-3.64	0.4901	12.449
10	-3.45	0.4298	10.916
16	-3.19	0.3589	9.115
25	-2.39	0.2063	5.241
40	-0.87	0.0719	1.825
50	0.19	0.0345	0.877
60	1.18	0.0174	0.442
75	2.61	0.0065	0.164
84	3.38	0.0038	0.096
90	4.02	0.0024	0.062
95			

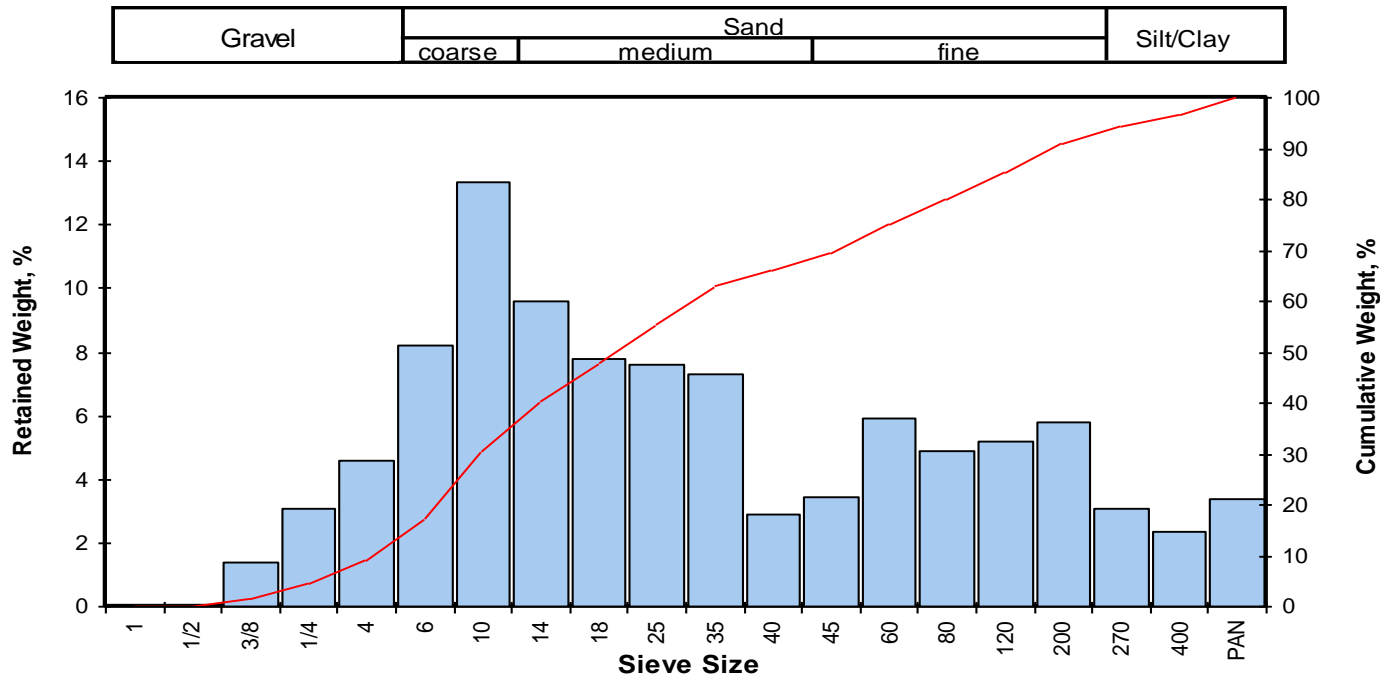
Measure	Trask	Inman	Folk-Ward
Median, phi	0.19	0.19	0.19
Median, in.	0.0345	0.0345	0.0345
Median, mm	0.877	0.877	0.877
Mean, phi	-1.43	0.10	0.13
Mean, in.	0.1064	0.0368	0.0360
Mean, mm	2.703	0.934	0.915
Sorting	5.653	3.286	
Skewness	1.057	-0.028	
Kurtosis	0.234		

Grain Size Description	Coarse sand
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	26.39
Coarse Sand	10	12.14
Medium Sand	40	22.17
Fine Sand	200	27.16
Silt/Clay	<200	12.15
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-10-15
Depth, ft: 15



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	2.63	1.38	1.38
0.2500	6.351	-2.67	1/4	5.92	3.10	4.48
0.1873	4.757	-2.25	4	8.77	4.60	9.08
0.1324	3.364	-1.75	6	15.65	8.21	17.29
0.0787	2.000	-1.00	10	25.49	13.37	30.66
0.0557	1.414	-0.50	14	18.28	9.59	40.25
0.0394	1.000	0.00	18	14.87	7.80	48.04
0.0278	0.707	0.50	25	14.52	7.61	55.66
0.0197	0.500	1.00	35	13.96	7.32	62.98
0.0166	0.420	1.25	40	5.53	2.90	65.88
0.0139	0.354	1.50	45	6.53	3.42	69.30
0.0098	0.250	2.00	60	11.33	5.94	75.25
0.0070	0.177	2.50	80	9.33	4.89	80.14
0.0049	0.125	3.00	120	9.91	5.20	85.34
0.0029	0.074	3.75	200	11.02	5.78	91.12
0.0021	0.053	4.25	270	5.92	3.10	94.22
0.0015	0.037	4.75	400	4.54	2.38	96.60
			PAN	6.48	3.40	100.00
TOTALS				190.68	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-2.62	0.2421	6.148
10	-2.19	0.1802	4.576
16	-1.83	0.1398	3.552
25	-1.32	0.0981	2.492
40	-0.51	0.0562	1.427
50	0.13	0.0360	0.915
60	0.80	0.0227	0.576
75	1.98	0.0100	0.254
84	2.87	0.0054	0.137
90	3.61	0.0032	0.082
95	4.41	0.0018	0.047

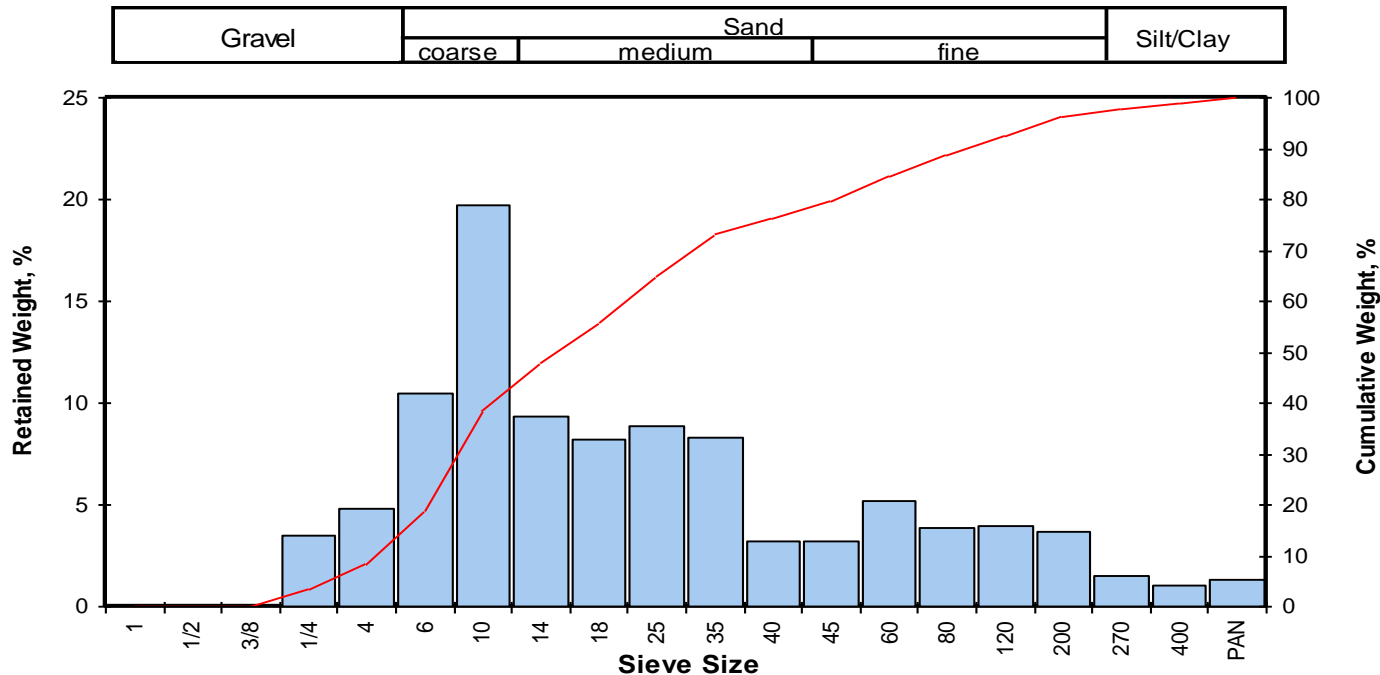
Measure	Trask	Inman	Folk-Ward
Median, phi	0.13	0.13	0.13
Median, in.	0.0360	0.0360	0.0360
Median, mm	0.915	0.915	0.915
Mean, phi	-0.46	0.52	0.39
Mean, in.	0.0541	0.0274	0.0300
Mean, mm	1.373	0.697	0.763
Sorting	3.135	2.350	2.241
Skewness	0.869	0.167	0.193
Kurtosis	0.249	0.497	0.874

Grain Size Description	Medium sand
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	9.08
Coarse Sand	10	21.58
Medium Sand	40	35.22
Fine Sand	200	25.24
Silt/Clay	<200	8.88
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-10-25
Depth, ft: 25



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
Inches	Millimeters						Weight percent	Phi Value	Particle Size	
									Inches	Millimeters
0.9844	25.002	-4.64	1	0.00	0.00	0.00	5	-2.53	0.2281	5.794
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00	10	-2.17	0.1768	4.490
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00	16	-1.88	0.1448	3.679
0.2500	6.351	-2.67	1/4	8.62	3.48	3.48	25	-1.51	0.1122	2.850
0.1873	4.757	-2.25	4	11.84	4.78	8.26	40	-0.92	0.0744	1.889
0.1324	3.364	-1.75	6	25.84	10.44	18.70	50	-0.37	0.0508	1.290
0.0787	2.000	-1.00	10	48.90	19.75	38.45	60	0.23	0.0337	0.856
0.0557	1.414	-0.50	14	23.23	9.38	47.83	75	1.14	0.0178	0.453
0.0394	1.000	0.00	18	20.24	8.17	56.01	84	1.93	0.0103	0.262
0.0278	0.707	0.50	25	21.96	8.87	64.88	90	2.68	0.0061	0.156
0.0197	0.500	1.00	35	20.57	8.31	73.19	95	3.51	0.0035	0.088
0.0166	0.420	1.25	40	7.84	3.17	76.35				
0.0139	0.354	1.50	45	7.90	3.19	79.54				
0.0098	0.250	2.00	60	12.73	5.14	84.68				
0.0070	0.177	2.50	80	9.57	3.87	88.55				
0.0049	0.125	3.00	120	9.77	3.95	92.50				
0.0029	0.074	3.75	200	9.13	3.69	96.18				
0.0021	0.053	4.25	270	3.74	1.51	97.69				
0.0015	0.037	4.75	400	2.49	1.01	98.70				
			PAN	3.22	1.30	100.00				
TOTALS							247.59	100.00	100.00	

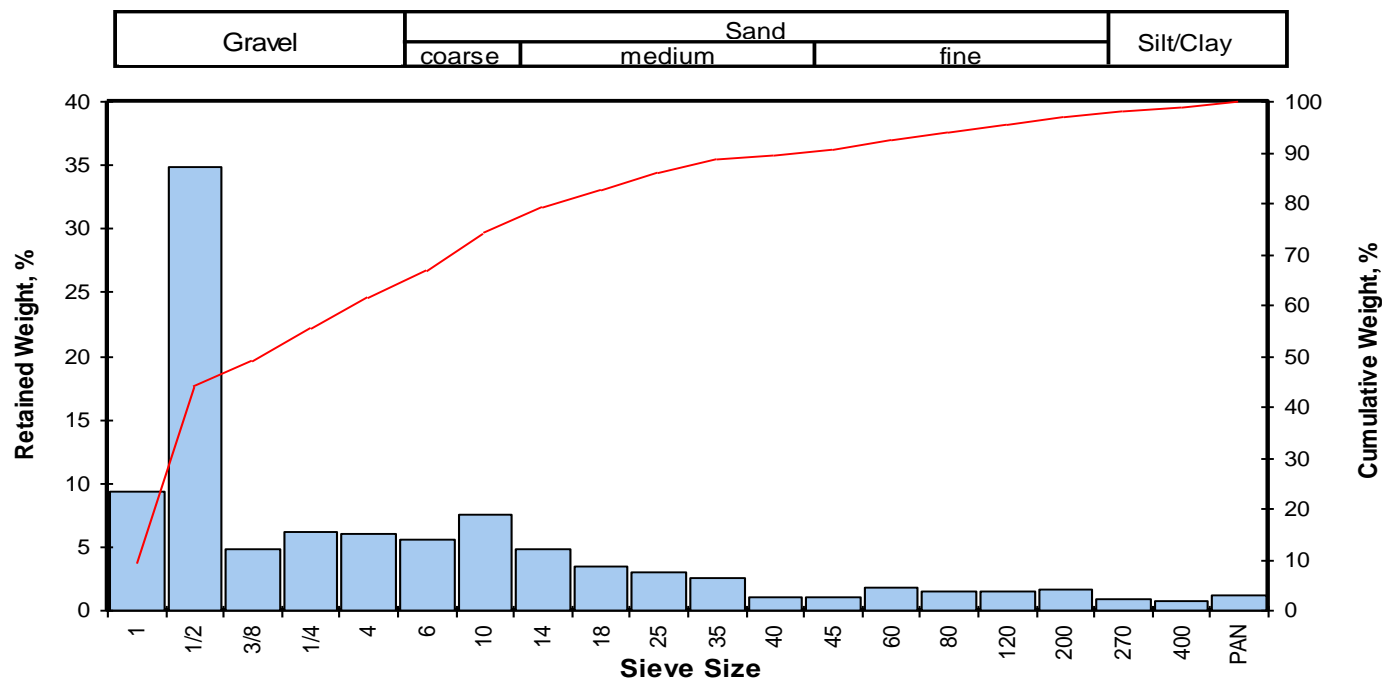
Measure	Trask	Inman	Folk-Ward
Median, phi	-0.37	-0.37	-0.37
Median, in.	0.0508	0.0508	0.0508
Median, mm	1.290	1.290	1.290
Mean, phi	-0.72	0.03	-0.10
Mean, in.	0.0650	0.0386	0.0423
Mean, mm	1.651	0.981	1.075
Sorting	2.509	1.906	1.869
Skewness	0.880	0.207	0.245
Kurtosis	0.276	0.585	0.933

Grain Size Description (ASTM-USCS Scale)		Medium sand (based on Mean from Trask)	
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Description	Retained on Sieve #	Weight Percent
Gravel	4	8.26
Coarse Sand	10	30.19
Medium Sand	40	37.90
Fine Sand	200	19.83
Silt/Clay	<200	3.82
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-11-10
Depth, ft: 10



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	24.56	9.36	9.36
0.4922	12.501	-3.64	1/2	91.61	34.93	44.29
0.3740	9.500	-3.25	3/8	12.77	4.87	49.16
0.2500	6.351	-2.67	1/4	16.06	6.12	55.29
0.1873	4.757	-2.25	4	15.96	6.09	61.37
0.1324	3.364	-1.75	6	14.59	5.56	66.93
0.0787	2.000	-1.00	10	19.89	7.58	74.52
0.0557	1.414	-0.50	14	12.58	4.80	79.32
0.0394	1.000	0.00	18	9.10	3.47	82.78
0.0278	0.707	0.50	25	8.09	3.08	85.87
0.0197	0.500	1.00	35	6.92	2.64	88.51
0.0166	0.420	1.25	40	2.64	1.01	89.51
0.0139	0.354	1.50	45	2.84	1.08	90.60
0.0098	0.250	2.00	60	4.74	1.81	92.40
0.0070	0.177	2.50	80	3.92	1.49	93.90
0.0049	0.125	3.00	120	4.13	1.57	95.47
0.0029	0.074	3.75	200	4.40	1.68	97.15
0.0021	0.053	4.25	270	2.30	0.88	98.03
0.0015	0.037	4.75	400	1.83	0.70	98.73
			PAN	3.34	1.27	100.00
TOTALS				262.27	100.00	100.00

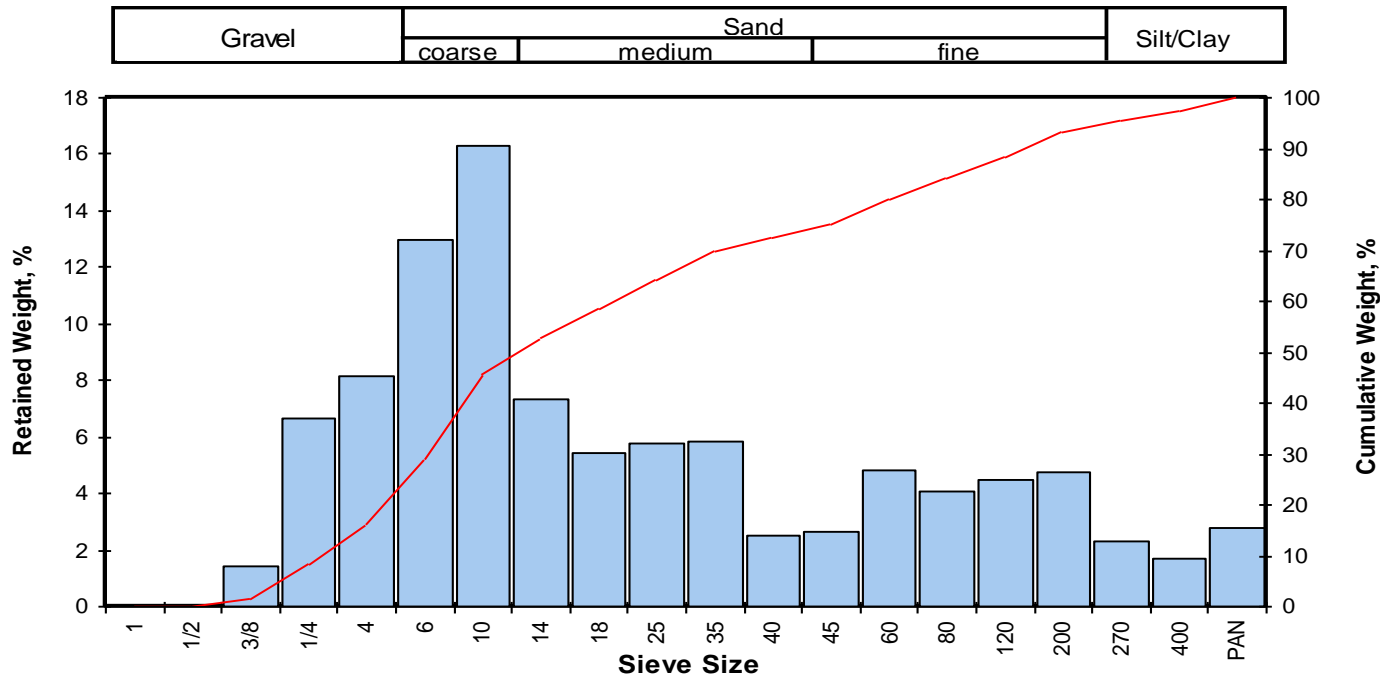
Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5			
10	-4.63	0.9720	24.689
16	-4.45	0.8629	21.918
25	-4.20	0.7218	18.333
40	-3.77	0.5360	13.613
50	-3.17	0.3540	8.992
60	-2.34	0.1999	5.077
75	-0.95	0.0760	1.932
84	0.20	0.0343	0.872
90	1.36	0.0153	0.389
95	2.85	0.0055	0.139

Measure	Trask	Inman	Folk-Ward
Median, phi	-3.17	-3.17	-3.17
Median, in.	0.3540	0.3540	0.3540
Median, mm	8.992	8.992	8.992
Mean, phi	-3.34	-2.13	-2.48
Mean, in.	0.3989	0.1722	0.2189
Mean, mm	10.132	4.373	5.561
Sorting	3.081	2.325	
Skewness	0.662	0.447	
Kurtosis	0.337		
Grain Size Description (ASTM-USCS Scale)		Gravel (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	61.37
Coarse Sand	10	13.15
Medium Sand	40	15.00
Fine Sand	200	7.64
Silt/Clay	<200	2.85
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-11-25
Depth, ft: 25



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	3.29	1.46	1.46
0.2500	6.351	-2.67	1/4	15.08	6.67	8.13
0.1873	4.757	-2.25	4	18.40	8.14	16.27
0.1324	3.364	-1.75	6	29.27	12.95	29.22
0.0787	2.000	-1.00	10	36.89	16.32	45.54
0.0557	1.414	-0.50	14	16.56	7.33	52.87
0.0394	1.000	0.00	18	12.35	5.46	58.34
0.0278	0.707	0.50	25	13.00	5.75	64.09
0.0197	0.500	1.00	35	13.22	5.85	69.94
0.0166	0.420	1.25	40	5.65	2.50	72.44
0.0139	0.354	1.50	45	6.03	2.67	75.11
0.0098	0.250	2.00	60	10.91	4.83	79.93
0.0070	0.177	2.50	80	9.20	4.07	84.00
0.0049	0.125	3.00	120	10.09	4.46	88.47
0.0029	0.074	3.75	200	10.67	4.72	93.19
0.0021	0.053	4.25	270	5.16	2.28	95.47
0.0015	0.037	4.75	400	3.86	1.71	97.18
			PAN	6.37	2.82	100.00
TOTALS				226.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-2.94	0.3020	7.671
10	-2.57	0.2340	5.943
16	-2.26	0.1891	4.803
25	-1.91	0.1483	3.766
40	-1.25	0.0939	2.386
50	-0.70	0.0638	1.620
60	0.14	0.0356	0.905
75	1.49	0.0140	0.356
84	2.50	0.0070	0.177
90	3.24	0.0042	0.106
95	4.15	0.0022	0.056

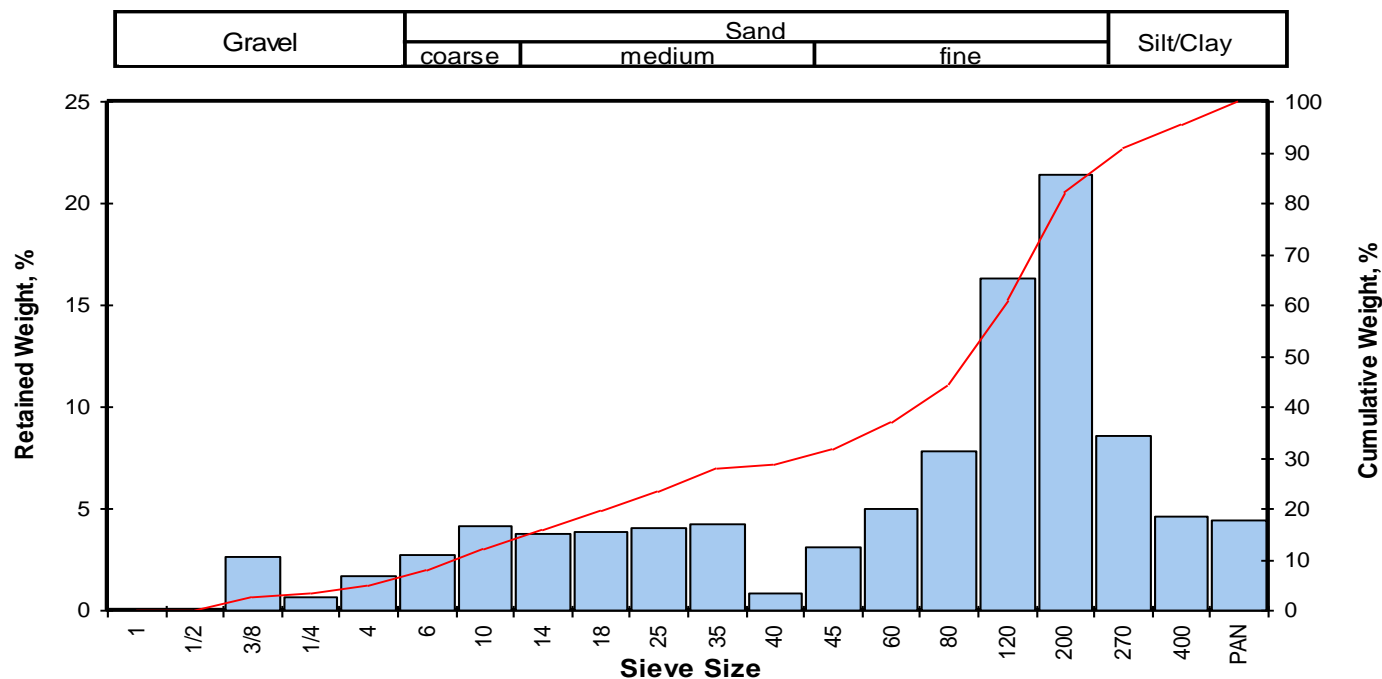
Measure	Trask	Inman	Folk-Ward
Median, phi	-0.70	-0.70	-0.70
Median, in.	0.0638	0.0638	0.0638
Median, mm	1.620	1.620	1.620
Mean, phi	-1.04	0.12	-0.15
Mean, in.	0.0811	0.0363	0.0438
Mean, mm	2.061	0.922	1.112
Sorting	3.252	2.382	2.264
Skewness	0.715	0.342	0.354
Kurtosis	0.292	0.488	0.853

Grain Size Description (ASTM-USCS Scale)	Coarse sand (based on Mean from Trask)
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Description	Retained on Sieve #	Weight Percent
Gravel	4	16.27
Coarse Sand	10	29.27
Medium Sand	40	26.89
Fine Sand	200	20.75
Silt/Clay	<200	6.81
Total		100

Client: Tetra Tech, Inc.
Project: NERT Downflushing
Project No: N/A

PTS File No: 46429
Sample ID: DFSB-03-20
Depth, ft: 20



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	4.98	2.68	2.68
0.2500	6.351	-2.67	1/4	1.22	0.66	3.33
0.1873	4.757	-2.25	4	3.18	1.71	5.04
0.1324	3.364	-1.75	6	5.04	2.71	7.75
0.0787	2.000	-1.00	10	7.78	4.18	11.93
0.0557	1.414	-0.50	14	7.06	3.79	15.72
0.0394	1.000	0.00	18	7.12	3.83	19.55
0.0278	0.707	0.50	25	7.49	4.02	23.57
0.0197	0.500	1.00	35	7.84	4.21	27.78
0.0166	0.420	1.25	40	1.66	0.89	28.68
0.0139	0.354	1.50	45	5.87	3.15	31.83
0.0098	0.250	2.00	60	9.24	4.96	36.80
0.0070	0.177	2.50	80	14.56	7.82	44.62
0.0049	0.125	3.00	120	30.42	16.35	60.96
0.0029	0.074	3.75	200	39.84	21.41	82.37
0.0021	0.053	4.25	270	15.98	8.59	90.96
0.0015	0.037	4.75	400	8.54	4.59	95.55
			PAN	8.29	4.45	100.00
TOTALS				186.11	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-2.26	0.1885	4.789
10	-1.35	0.1001	2.542
16	-0.46	0.0543	1.379
25	0.67	0.0248	0.629
40	2.20	0.0085	0.217
50	2.66	0.0062	0.158
60	2.97	0.0050	0.128
75	3.49	0.0035	0.089
84	3.84	0.0027	0.070
90	4.19	0.0022	0.055
95	4.69	0.0015	0.039

Measure	Trask	Inman	Folk-Ward
Median, phi	2.66	2.66	2.66
Median, in.	0.0062	0.0062	0.0062
Median, mm	0.158	0.158	0.158
Mean, phi	1.48	1.69	2.02
Mean, in.	0.0141	0.0122	0.0097
Mean, mm	0.359	0.310	0.247
Sorting	2.659	2.154	2.130
Skewness	1.499	-0.452	-0.435
Kurtosis	0.109	0.613	1.009
Grain Size Description		Fine sand	
(ASTM-USCS Scale)		(based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	5.04
Coarse Sand	10	6.89
Medium Sand	40	16.75
Fine Sand	200	53.69
Silt/Clay	<200	17.63
Total		100



SHIP TO: PTS Laboratories
8100 Secura Way
Santa Fe Springs, CA
90670

CHAIN OF CUSTODY RECORD

DATE 07/19/16 PAGE 1 OF 11

CLIENT: Tetra Tech				PARAMETERS																TURN-AROUND TIME Standard			
PROJECT NAME: NERT Downflushing																				OBSERVATIONS/COMMENTS Please report all data to MDL			
PROJECT MANAGER: Mark Feldman																							
TC #: 100-580-T35000-2016-KOI																							
SAMPLERS (Signatures)																							
LINE ITEM	SAMPLE NO.	DATE	TIME														FILTERED/UNFILTERED	MATRIX TYPE	CONTAINER TYPE	NUMBER OF CONTAINERS	PRESERVATIVE		
1.	DfsB-13-12.5'	07/12/16	1110																				
2.	DfsB-13-15'	07/12/16	1115																				
3.	DfsB-13-20'	07/12/16	1125																				
4.	DfsB-13-35'	07/12/16	1320																				
5.	DfsB-13-40'	07/12/16	1330																				
6.	DfsB-16-10'	07/12/16	1435																				
7.	DfsB-16-15'	07/12/16	1445																				
8.	DfsB-16-20'	07/12/16	1455																				
9.	DfsB-16-30'	07/12/16	1520																				
10.	DfsB-16-35'	07/12/16	1530																				
FILLERING:				MATRIX TYPE:				CONTAINER TYPE:				PRESERVATIVES: (Water Only)											
<input type="checkbox"/> FILTERED <input type="checkbox"/> UNFILTERED				S - Soil M - Sediment W - Water				G - Glass Bottle/Jar SS - Stainless Steel Sleeve				SB - Brass Sleeve P - Plastic Bottle/Jar											
HCL NR (None required)				NaOH H ₂ SO ₄																			
RELINQUISHED BY		SIGNATURE		TETRA TECH, INC.				DATE		TIME		TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY:											
RECEIVED BY		SIGNATURE		COMPANY				DATE		TIME		METHOD OF SHIPMENT/SHIPMENT NO.											
RELINQUISHED BY		SIGNATURE		COMPANY				DATE		TIME		Special Shipping/Handling/Storage Requirements:											
RECEIVED BY		SIGNATURE		COMPANY				DATE		TIME													



TETRA TECH, INC.
301 E. Vanderbilt Way, Suite 450
San Bernardino, California 92408
Telephone: (909) 381-1674
FAX: (909) 889-1391

SHIP TO: PTS Laboratories
8100 Secura Way
Santa Fe Springs, CA
90607

CHAIN OF CUSTODY RECORD

DATE 07/19/16 PAGE 2 OF 11

CLIENT: <u>Tetra Tech</u>				PARAMETERS														TURN-AROUND TIME		
PROJECT NAME: <u>NERT Downflushing</u>																		<u>Standard</u>		
PROJECT MANAGER: <u>Mark Feldman</u>																		OBSERVATIONS/COMMENTS		
TC #: <u>100-SB0-T35000-2016-K01</u>																				
SAMPLERS (Signatures) <u>[Signature]</u>																				
LINE ITEM	SAMPLE NO.	DATE	TIME																	
✓ 1.	DFSB-12-10'	7/13/16	1415																	
✓ 2.	DFSB-12-15'	7/13/16	1425																	
✓ 3.	DFSB-12-25'	7/13/16	1445																	
✓ 4.	DFSB-12-30'	7/13/16	1455																	
✓ 5.	DFSB-12-35'	7/13/16	1505																	
✓ 6.	DFSB-12-40'	7/13/16	1530																	
✓ 7.	DFSB-17-10'	7/13/16	0740																	
✓ 8.	DFSB-17-15'	7/13/16	0745																	
✓ 9.	DFSB-17-20'	7/13/16	0750																	
✓ 10.	DFSB-17-25'	7/13/16	0800																	

DEM ICE FROZEN

FILTERING: <input type="checkbox"/> FILTERED <input type="checkbox"/> UNFILTERED		MATRIX TYPE: S - Soil M - Sediment W - Water		CONTAINER TYPE: G - Glass Bottle/Jar SS - Stainless Steel Sleeve		SB - Brass Sleeve P - Plastic Bottle/Jar		PRESERVATIVES: (Water Only) HCL NR (None required)		NaOH H ₂ SO ₄	
--	--	--	--	---	--	---	--	---	--	--	--

RELINQUISHED BY <u>MARK FELDMAN</u>	SIGNATURE <u>[Signature]</u>	TETRA TECH, INC.	DATE <u>7/20/16</u>	TIME <u>4:30</u>	TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY: <u>10</u>
RECEIVED BY <u>FRED ADAMS</u>	SIGNATURE <u>[Signature]</u>		DATE <u>7/20/16</u>	TIME <u>16:30</u>	METHOD OF SHIPMENT/SHIPMENT NO.
RELINQUISHED BY	SIGNATURE	COMPANY	DATE	TIME	Special Shipping/Handling/Storage Requirements:
RECEIVED BY	SIGNATURE	COMPANY	DATE	TIME	



TETRA TECH, INC.
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SHIP TO: PTS Laboratories
8100 Secura Way
San Jose, CA
95128

CHAIN OF CUSTODY RECORD

DATE 07/19/2016 PAGE 3 OF 11

CLIENT: <u>Tetra Tech</u>				PARAMETERS														TURN-AROUND TIME	
PROJECT NAME: <u>NERT Downflushing</u>																		Standard	
PROJECT MANAGER: <u>Mark Feldman</u>																		OBSERVATIONS/COMMENTS	
TC #: <u>100-SB0-T35000-2016-K01</u>																		Please report all data to MDL	
SAMPLERS (Signatures) <u>[Signature]</u>																			
LINE ITEM	SAMPLE NO.	DATE	TIME																
1.	DFSB-17-30'	07/13/16	0835																
2.	DFSB-17-40'	07/13/16	0855																
3.	DFSB-17-35'	07/13/16	0845																
4.	DFSB-18-12'	07/13/16	1000																
5.	DFSB-18-15'	07/13/16	1010																
6.	DFSB-18-20'	07/13/16	1015																
7.	DFSB-18-25'	07/13/16	1025																
8.	DFSB-18-35'	07/13/16	1115																
9.	DFSB-18-40'	07/13/16	1125																
10.	DFSB-05-10'	07/07/16	1340																

FILTERING:
☐ FILTERED ☐ UNFILTERED

MATRIX TYPE:
S - Soil
M - Sediment
W - Water

CONTAINER TYPE:
G - Glass Bottle/Jar
SS - Stainless Steel Sleeve
SB - Brass Sleeve
P - Plastic Bottle/Jar

PRESERVATIVES: (Water Only)
HCL
NR (None required)
NaOH
H₂SO₄

RELINQUISHED BY <u>MARK FELDMAN</u>	SIGNATURE <u>[Signature]</u>	TETRA TECH, INC.	DATE <u>7/20/16</u>	TIME <u>4:30</u>	TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY: <u>10</u>
RECEIVED BY <u>FRED ADAMS</u>	SIGNATURE <u>[Signature]</u>		DATE <u>7/20/16</u>	TIME <u>46:30</u>	METHOD OF SHIPMENT/SHIPMENT NO.
RELINQUISHED BY	SIGNATURE	COMPANY	DATE	TIME	Special Shipping/Handling/Storage Requirements:
RECEIVED BY	SIGNATURE	COMPANY	DATE	TIME	



TETRA TECH, INC.
301 E. Vanderbilt Way, Suite 450
San Bernardino, California 92408
Telephone: (909) 381-1674
FAX: (909) 889-1391

SHIP TO: PTS Laboratories
8100 Secura Way
Santa Fe Springs, CA
90607

CHAIN OF CUSTODY RECORD

DATE 07/19/2016 PAGE 4 OF 11

CLIENT: <u>Tetra Tech</u>				PARAMETERS													TURN-AROUND TIME			
PROJECT NAME: <u>NERT Downflushing</u>																	OBSERVATIONS/COMMENTS Please report all data to MDL			
PROJECT MANAGER: <u>Mark Feldman</u>																				
TC #: <u>100-SB0-T35000-2016-K01</u>																				
SAMPLERS (Signatures): <u>[Signature]</u>																				
LINE ITEM	SAMPLE NO.	DATE	TIME																	
✓ 1.	DFSB-05-15'	07/07/16	1350																	
✓ 2.	DFSB-05-25'	07/07/16	1445																	
✓ 3.	DFSB-05-30'	07/07/16	1515																	
✓ 4.	DFSB-05-35'	07/07/16	1520																	
✓ 5.	DFSB-05-40'	07/07/16	1535																	
✓ 6.	DFSB-05-45'	07/07/16	1850																	
✓ 7.	DFSB-04-10'	07/08/16	0750																	
✓ 8.	DFSB-04-20'	07/08/16	0810																	
✓ 9.	DFSB-04-25'	07/08/16	0820																	
✓ 10.	DFSB-04-30'	07/08/16	0830																	

FILTERING: <input type="checkbox"/> FILTERED <input type="checkbox"/> UNFILTERED		MATRIX TYPE: S - Soil M - Sediment W - Water		CONTAINER TYPE: G - Glass Bottle/Jar SS - Stainless Steel Sleeve		SB - Brass Sleeve P - Plastic Bottle/Jar		PRESERVATIVES: (Water Only) HCL NR (None required)		NaOH H ₂ SO ₄	
--	--	--	--	---	--	---	--	---	--	--	--

RELINQUISHED BY <u>MARK FELDMAN</u>	SIGNATURE <u>[Signature]</u>	TETRA TECH, INC.	DATE <u>7/20/16</u>	TIME <u>4:30</u>	TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY: <u>10</u>
RECEIVED BY <u>FRED ADAME</u>	SIGNATURE <u>[Signature]</u>		DATE <u>7/20/16</u>	TIME <u>16:30</u>	METHOD OF SHIPMENT/SHIPMENT NO.
RELINQUISHED BY	SIGNATURE	COMPANY	DATE	TIME	Special Shipping/Handling/Storage Requirements:
RECEIVED BY	SIGNATURE	COMPANY	DATE	TIME	



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SHIP TO: PTS Laboratories
8100 Secura Way
Santa Fe Springs, CA
90807

CHAIN OF CUSTODY RECORD

46429

DATE 07/19/2016 PAGE 5 OF 11

CLIENT: <u>Tetra Tech</u>				PARAMETERS														TURN-AROUND TIME	
PROJECT NAME: <u>NERT Downflushing</u>																		Standard	
PROJECT MANAGER: <u>Mark Feldman</u>																		OBSERVATIONS/COMMENTS	
TC #: <u>150-SB0-T35000-2016-K01</u>																			
SAMPLERS (signatures)																			
LINE ITEM	SAMPLE NO.	DATE	TIME																
✓ 1.	DFSB-04-35'	07/08/16	0845																
✓ 2.	DFSB-04-40'	07/08/16	0900																
✓ 3.	DFSB-01-10'	07/08/16	1000																
✓ 4.	DFSB-01-15'	07/08/16	1010																
✓ 5.	DFSB-01-20'	07/08/16	1020																
✓ 6.	DFSB-01-25'	07/08/16	1050																
✓ 7.	DFSB-01-30'	07/08/16	1100																
✓ 8.	DFSB-01-35'	07/08/16	1115																
✓ 9.	DFSB-01-40'	07/08/16	1125																
✓ 10.	DFSB-09-10'	07/08/16	1350																

FILTERING: ☐ FILTERED ☐ UNFILTERED
 MATRIX TYPE: S - Soil, M - Sediment, W - Water
 CONTAINER TYPE: G - Glass Bottle/Jar, SS - Stainless Steel Sleeve, SB - Brass Sleeve, P - Plastic Bottle/Jar
 PRESERVATIVES: (Water Only) HCL, NR (None required), NaOH, H₂SO₄

RELINQUISHED BY <u>Mark Feldman</u>	SIGNATURE <u>[Signature]</u>	TETRA TECH, INC.	DATE <u>7/20/16</u>	TIME <u>4:30</u>	TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY: <u>10</u>
RECEIVED BY <u>FRED ADAME</u>	SIGNATURE <u>[Signature]</u>	<u>PTS LABS</u>	DATE <u>7/20/16</u>	TIME <u>16:30</u>	METHOD OF SHIPMENT/SHIPMENT NO.
RELINQUISHED BY	SIGNATURE	COMPANY	DATE	TIME	Special Shipping/Handling/Storage Requirements:
RECEIVED BY	SIGNATURE	COMPANY	DATE	TIME	



TETRA TECH, INC.
 301 E. Vanderbilt Way, Suite 450
 San Bernardino, California 92408
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 FAX: (909) 889-1391

SHIP TO: PTS Laboratories
8100 Secura Way
Santa Fe Springs, CA
90607

CHAIN OF CUSTODY RECORD

46429

DATE 07/19/2016 PAGE 6 OF 11

CLIENT: <u>Tetra Tech</u>				PARAMETERS														TURN-AROUND TIME	
PROJECT NAME: <u>NERT Downflushing</u>																		Standard	
PROJECT MANAGER: <u>Mark Feldman</u>																		OBSERVATIONS/COMMENTS	
TC #: <u>100-580-T35000-2016-K01</u>																		Please report all data to MDL	
SAMPLERS (Signatures)																			
LINE ITEM	SAMPLE NO.	DATE	TIME																
✓ 1.	DFSB-09-15'	07/08/16	1400																
✓ 2.	DFSB-09-20'	07/08/16	1410																
✓ 3.	DFSB-09-25'	07/08/16	1420																
✓ 4.	DFSB-09-30'	07/08/16	1445																
✓ 5.	DFSB-09-35'	07/08/16	1455																
✓ 6.	DFSB-07-10'	07/11/16	0750																
✓ 7.	DFSB-07-15'	07/11/16	0800																
✓ 8.	DFSB-07-20'	07/11/16	0810																
✓ 9.	DFSB-07-25'	07/11/16	0820																
✓ 10.	DFSB-07-35'	07/11/16	0850																

FILTERING:

☐ FILTERED ☐ UNFILTERED

MATRIX TYPE:

S - Soil
M - Sediment
W - Water

CONTAINER TYPE:

G - Glass Bottle/Jar
SS - Stainless Steel Sleeve

PRESERVATIVES: (Water Only)

HCL NaOH
NR (None required) H₂SO₄

RELINQUISHED BY <u>MARK FELDMAN</u>	SIGNATURE <u>[Signature]</u>	TETRA TECH, INC.	DATE <u>7/20/16</u>	TIME <u>4:30</u>	TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY: <u>10</u>
RECEIVED BY <u>FAR ADAMS</u>	SIGNATURE <u>[Signature]</u>		DATE <u>7/20/16</u>	TIME <u>16:30</u>	METHOD OF SHIPMENT/SHIPMENT NO.
RELINQUISHED BY	SIGNATURE	COMPANY	DATE	TIME	Special Shipping/Handling/Storage Requirements:
RECEIVED BY	SIGNATURE	COMPANY	DATE	TIME	



TETRA TECH, INC.
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San Bernardino, California 92408
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FAX: (909) 889-1391

SHIP TO:

PTS Laboratories
8100 Secura Way
Santa Fe Springs, CA
90607

CHAIN OF CUSTODY RECORD

46429

DATE 07/19/2016 PAGE 7 OF 11

CLIENT: <u>Tetra Tech</u>				PARAMETERS														TURN-AROUND TIME	
PROJECT NAME: <u>NERT Downflushing</u>																		OBSERVATIONS/COMMENTS Please report all data to MDL	
PROJECT MANAGER: <u>Mark Feldman</u>																			
TC #: <u>100-580-T35000-2016-K01</u>																			
SAMPLERS (Signatures)																			
LINE ITEM	SAMPLE NO.	DATE	TIME																
✓ 1.	DFSB-07-40'	07/11/16	0905																
✓ 2.	DFSB-06-10'	07/07/16	0945																
✓ 3.	DFSB-06-15'	07/07/16	1000																
✓ 4.	DFSB-06-20'	07/07/16	1010																
✓ 5.	DFSB-06-30'	07/07/16	1040															DRY ICE (FROZEN)	
✓ 6.	DFSB-06-35'	07/07/16	1055																
✓ 7.	DFSB-06-40'	07/07/16	1110																
✓ 8.	DFSB-08-10'	07/11/16	1030																
✓ 9.	DFSB-08-15'	07/11/16	1040																
✓ 10.	DFSB-08-20'	07/11/16	1050																

FILTERING: <input type="checkbox"/> FILTERED <input type="checkbox"/> UNFILTERED		MATRIX TYPE: S - Soil M - Sediment W - Water		CONTAINER TYPE: G - Glass Bottle/Jar SS - Stainless Steel Sleeve		PRESERVATIVES: (Water Only) HCL NR (None required)		NaOH H ₂ SO ₄	
--	--	--	--	---	--	---	--	--	--

RELINQUISHED BY <u>MARK FELDMAN</u>	SIGNATURE <u>[Signature]</u>	TETRA TECH, INC.	DATE <u>7/20/16</u>	TIME <u>4:30</u>	TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY: <u>10</u>
RECEIVED BY <u>FRBO ADAME</u>	SIGNATURE <u>[Signature]</u>		DATE <u>7/20/16</u>	TIME <u>16:30</u>	METHOD OF SHIPMENT/SHIPMENT NO.
RELINQUISHED BY	SIGNATURE		DATE	TIME	Special Shipping/Handling/Storage Requirements:
RECEIVED BY	SIGNATURE		DATE	TIME	



TETRA TECH, INC.
 301 E. Vanderbilt Way, Suite 450
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SHIP TO: PTS Laboratories
8100 Secura Way
Santa Fe Springs, CA
90607

CHAIN OF CUSTODY RECORD

46429

DATE 07/19/2016 PAGE 8 OF 11

CLIENT: <u>Tetra Tech</u> PROJECT NAME: <u>NERT Downflushing</u> PROJECT MANAGER: <u>Mark Feldman</u> TC #: <u>100-SB0-T35000-2016-K01</u> SAMPLERS (Signatures): <u>[Signature]</u>				PARAMETERS												TURN-AROUND TIME <u>Standard</u> OBSERVATIONS/COMMENTS Please report all data to MDL	
LINE ITEM	SAMPLE NO.	DATE	TIME														
✓ 1.	DFSB-08-25'	07/11/16	1100														
✓ 2.	DFSB-08-40'	07/11/16	1155														
✓ 3.	DFSB-02-10'	07/07/16	0655														
✓ 4.	DFSB-02-15'	07/07/16	0705														
✓ 5.	DFSB-02-20'	07/07/16	0715														
✓ 6.	DFSB-02-25'	07/07/16	0725													DRY ICE FROZEN	
✓ 7.	DFSB-02-30'	07/07/16	0800														
✓ 8.	DFSB-02-35'	07/07/16	0810														
✓ 9.	DFSB-15-10'	07/11/16	1445														
✓ 10.	DFSB-15-15'	07/11/16	1455														

FILTERING:
☐ FILTERED ☐ UNFILTERED

MATRIX TYPE:
 S - Soil
 M - Sediment
 W - Water

CONTAINER TYPE:
 G - Glass Bottle/Jar
 SS - Stainless Steel Sleeve
 SB - Brass Sleeve
 P - Plastic Bottle/Jar

PRESERVATIVES: (Water Only)
 HCL
 NR (None required)
 NaOH
 H₂SO₄

RELINQUISHED BY <u>MARK FELDMAN</u>	SIGNATURE <u>[Signature]</u>	COMPANY TETRA TECH, INC.	DATE <u>7/20/16</u>	TIME <u>4:30</u>	TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY: <u>10</u>
RECEIVED BY <u>FRED ADAME</u>	SIGNATURE <u>[Signature]</u>	COMPANY <u>PTS LABS</u>	DATE <u>7/20/16</u>	TIME <u>16:30</u>	METHOD OF SHIPMENT/SHIPMENT NO.
RELINQUISHED BY	SIGNATURE	COMPANY	DATE	TIME	Special Shipping/Handling/Storage Requirements:
RECEIVED BY	SIGNATURE	COMPANY	DATE	TIME	



TETRA TECH, INC.
 301 E. Vanderbilt Way, Suite 450
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 Telephone: (909) 381-1674
 FAX: (909) 889-1391

SHIP TO: PTS Laboratories
8100 Secura Way
Santa Fe Springs, CA
90607

CHAIN OF CUSTODY RECORD

DATE 07/19/2016 PAGE 9 OF 11

CLIENT: <u>Tetra Tech</u>				PARAMETERS														TURN-AROUND TIME	
PROJECT NAME: <u>NERT Downflushing</u>																		Standard	
PROJECT MANAGER: <u>Mark Feldman</u>																		OBSERVATIONS/COMMENTS	
TC #: <u>100-SB0-T35000-2016-K01</u>																		Please report all data to MDL	
SAMPLERS (Signatures)																			
LINE ITEM	SAMPLE NO.	DATE	TIME																
✓ 1.	DFSB-15-20'	07/11/16	1505																
✓ 2.	DFSB-15-25'	07/11/16	1535																
✓ 3.	DFSB-15-30'	07/11/16	1540																
✓ 4.	DFSB-15-35'	7/11/16	1610																
✓ 5.	DFSB-02-40'	07/07/16	0825																
✓ 6.	DFSB-14-10'	07/12/16	0710																
✓ 7.	DFSB-14-15'	07/12/16	0720																
✓ 8.	DFSB-14-20'	07/12/16	0730																
✓ 9.	DFSB-14-25'	07/12/16	0800																
✓ 10.	DFSB-14-40'	07/12/16	0900																

FILTERING:

☐ FILTERED ☐ UNFILTERED

MATRIX TYPE:

S - Soil
M - Sediment
W - Water

CONTAINER TYPE:

G - Glass Bottle/Jar
SS - Stainless Steel Sleeve
SB - Brass Sleeve
P - Plastic Bottle/Jar

PRESERVATIVES: (Water Only)

HCL NaOH
NR (None required) H₂SO₄

RELINQUISHED BY <u>MARK FELDMAN</u>	SIGNATURE <u>[Signature]</u>	TETRA TECH, INC.	DATE <u>7/20/16</u>	TIME <u>4:30</u>	TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY: <u>10</u>
RECEIVED BY <u>FRED ADAMS</u>	SIGNATURE <u>[Signature]</u>		COMPANY <u>PTS LABS</u>	DATE <u>7/20/16</u>	TIME <u>16:30</u>
RELINQUISHED BY	SIGNATURE	COMPANY	DATE	TIME	Special Shipping/Handling/Storage Requirements:
RECEIVED BY	SIGNATURE	COMPANY	DATE	TIME	



SHIP TO: PTS Laboratories
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Santa Fe Springs, CA
90607

46429

DATE 07/19/2010 PAGE 10 OF 11

CLIENT: Tetra Tech				PARAMETERS																TURN-AROUND TIME Standard				
PROJECT NAME: NERT Downflowing																				OBSERVATIONS/COMMENTS				
PROJECT MANAGER: Mark Feldman																								
TC #: 100-SBO-T35000-2016-K01																								
SAMPLERS (Signatures) 																								
LINE ITEM	SAMPLE NO.	DATE	TIME															FILTERED/UNFILTERED	MATRIX TYPE	CONTAINER TYPE	NUMBER OF CONTAINERS	PRESERVATIVE	DRY ICE FROZEN	
1.	DFSB-10-15'	07/14/16	1600																					
2.	DFSB-10-20'	07/14/16	1010																					
3.	DFSB-10-25'	07/14/16	1015																					
4.	DFSB-10-30'	07/14/16	1045																					
5.	DFSB-10-40'	07/14/16	1115																					
6.	DFSB-11-10'	07/14/16	0715																					
7.	DFSB-11-15'	07/14/16	0725																					
8.	DFSB-11-20'	07/14/16	0730																					
9.	DFSB-11-25'	07/14/16	0740																					
10.	DFSB-11-35'	07/14/16	0825																					
FILTERING:				MATRIX TYPE:				CONTAINER TYPE:				PRESERVATIVES: (Water Only)												
<input type="checkbox"/> FILTERED <input type="checkbox"/> UNFILTERED				S - Soil M - Sediment W - Water				G - Glass Bottle/Jar SS - Stainless Steel Sleeve				SB - Brass Sleeve P - Plastic Bottle/Jar				HCL NaOH NR (None required) H ₂ SO ₄								
RELINQUISHED BY MARK FELDMAN		SIGNATURE 		TETRA TECH, INC.				DATE 7/20/16		TIME 4:30		TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY: 10												
RECEIVED BY TRIS DANNF		SIGNATURE 		COMPANY PTS LABS				DATE 7/20/16		TIME 16:30		METHOD OF SHIPMENT/SHIPMENT NO.												
RELINQUISHED BY		SIGNATURE		COMPANY				DATE		TIME		Special Shipping/Handling/Storage Requirements:												
RECEIVED BY		SIGNATURE		COMPANY				DATE		TIME														

DISTRIBUTION: White and Pink = Tetra Tech, Inc.

Canary = Laboratory

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Santa Fe Springs, CA
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CHAIN OF CUSTODY RECORD

46429

DATE 07/19/2016 PAGE 11 OF 11

CLIENT: Tetra Tech				PARAMETERS																TURN-AROUND TIME Standard			
PROJECT NAME: NERT Downflushing																						OBSERVATIONS/COMMENTS	
PROJECT MANAGER: Mark Feldman																							
TC #: 100-SB-T35000-2016-K01																							
SAMPLERS (Signatures) 																							
LINE ITEM	SAMPLE NO.	DATE	TIME																				
1.	DFOB-11-40'	07/14/16	0840																				
2.	DFOB-03-15'	07/06/16	1315																				
3.	DFOB-03-20'	07/06/16	1325																				
4.	DFOB-03-25'	07/06/16	1350																				
5.	DFOB-03-30'	07/06/16	1400																				
6.	DFOB-03-35'	07/06/16	1420																				
7.	DFOB-03-40'	07/06/16	1430																				
8.																							
9.																							
10.																							
FILTERING: <input type="checkbox"/> FILTERED <input type="checkbox"/> UNFILTERED				MATRIX TYPE: S - Soil M - Sediment W - Water				CONTAINER TYPE: G - Glass Bottle/Jar SS - Stainless Steel Sleeve				SB - Brass Sleeve P - Plastic Bottle/Jar				PRESERVATIVES: (Water Only) HCL NR (None required)				NaOH H ₂ SO ₄			
RELINQUISHED BY MARK FELDMAN		SIGNATURE 		TETRA TECH, INC.				DATE 7/20/16				TIME 4:30				TOTAL NUMBER OF CONTAINERS ON THIS CHAIN OF CUSTODY: 10							
RECEIVED BY FRED ADAMS		SIGNATURE 		COMPANY PTS LABS				DATE 7/20/16				TIME 16:30				METHOD OF SHIPMENT/SHIPMENT NO.							
RELINQUISHED BY		SIGNATURE		COMPANY				DATE				TIME				Special Shipping/Handling/Storage Requirements							
RECEIVED BY		SIGNATURE		COMPANY				DATE				TIME											

DISTRIBUTION: White and Pink = Tetra Tech, Inc.

Canary = Laboratory

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466
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**GEOTECHNICAL &
ENVIRONMENTAL
SERVICES, INC.**

**7150 Placid Street
Las Vegas, NV 89119
(702) 365-1001**

Moisture/Density Log - Sample Rings

Project Name:	NERT LAB TESTING					Lab No.:	18-097	
Project No.:	20153663E9		Tested By:	A. SANDERS		Date:	3/5/2018	
Sample	DFCB-01	DFCB-01	DFCB-01	DFCB-02	DFCB-02	DFCB-02	DFCB-03	DFCB-03
Depth	5.0'	20.0'	35.0'	5.0'	20.0'	35.0'	11.0'	20.0'
Soil Description: Remarks/Condition:								
Length (in)	5.00	6.00	6.00	6.00	6.00	6.00	6	6
Tube + Wet Soil (gm)	789.61	1022.69	948.29	970.40	1047.60	943.10	1023.80	1016.10
Tube (gm)	170.10	277.46	280.52	202.10	204.00	203.20	252.00	252.00
Wet Soil (gm)	619.51	745.23	667.77	768.30	843.60	739.90	771.80	764.10
Volume (in ³)	0.0131	0.0157	0.0157	0.0157	0.0157	0.0157	0.0157	0.0157
Wet Density lbs/ft ³	104.3	104.6	93.7	107.8	118.4	103.8	108.3	107.2
Tare + Wet Soil (gm)	357.85	474.71	475.66	554.80	553.80	549.90	572.00	600.20
Tare + Dry Soil (gm)	336.60	423.80	334.00	518.00	539.30	524.00	536.20	565.70
Water Loss (gm)	21.25	50.91	141.66	36.80	14.50	25.90	35.80	34.50
Tare Weight (gm)	129.58	130.48	154.05	156.50	131.30	131.80	131.80	126.30
Wt. Dry Soil (gm)	207.02	293.32	179.95	361.50	408.00	392.20	404.40	439.40
Moisture Content (%)	10.3	17.4	78.7	10.2	3.6	6.6	8.9	7.9
Dry Density (lbs/ft ³)	94.6	89.1	52.4	97.9	114.3	97.4	99.5	99.4
Specific Gravity	2.733	2.626	2.672	2.666	2.691	2.626	2.677	2.629
Total Porosity	44.4	45.5	68.5	41.1	31.8	40.5	40.3	39.3



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Moisture/Density Log - Sample Rings

Project Name:	NERT LAB TESTING					Lab No.:	18-097	
Project No.:	20153663E9		Tested By:	A. SANDERS		Date:	3/5/2018	
Sample	DFCB-03	DFCB-04	DFCB-04	DFCB-04	DFCB-05	DFCB-05	DFCB-05	DFCB-06
Depth	35.0'	5.0'	15.0'	35.0'	5.0'	20.0'	35.0'	10.0'
Soil Description: Remarks/Condition:								
Length (in)	6.00	6.00	6.00	6.00	6.00	6.00	5.00	6
Tube + Wet Soil (gm)	965.60	1128.33	962.84	987.02	1005.70	1003.27	917.22	1006.60
Tube (gm)	280.83	280.83	282.13	279.40	205.10	204.71	171.53	252.00
Wet Soil (gm)	684.77	847.50	680.71	707.62	800.60	798.56	745.69	754.60
Volume (in ³)	0.0157	0.0157	0.0157	0.0157	0.0157	0.0157	0.0131	0.0157
Wet Density lbs/ft ³	96.1	118.9	95.5	99.3	112.4	112.1	125.6	105.9
Tare + Wet Soil (gm)	520.80	546.71	541.62	426.87	636.10	575.59	567.39	562.50
Tare + Dry Soil (gm)	376.20	504.20	498.40	305.40	590.70	529.50	399.70	522.20
Water Loss (gm)	144.60	42.51	43.22	121.47	45.40	46.09	167.69	40.30
Tare Weight (gm)	131.60	137.40	155.70	130.43	130.90	126.26	126.24	132.30
Wt. Dry Soil (gm)	244.60	366.80	342.70	174.97	459.80	403.24	273.46	389.90
Moisture Content (%)	59.1	11.6	12.6	69.4	9.9	11.4	61.3	10.3
Dry Density (lbs/ft ³)	60.4	106.6	84.8	58.6	102.3	100.6	77.8	96.0
Specific Gravity	2.680	2.756	2.685	2.757	2.746	2.648	2.638	2.649
Total Porosity	63.8	37.9	49.3	65.9	40.2	39.0	52.6	41.8



7150 Placid St
Las Vegas, Nevada 89120
702.365.1001

CONCRETE COMPRESSION TEST RESULTS

JOB NAME Summerlin Parkway Improvements - Phase 3 JOB # 20174271C1
CLIENT CMWorks
ADDRESS Summerlin Parkway REPORT # 3
SAMPLE DATE 3/1/2018 PERMIT # Bid No. 17.67056-SK

STRUCTURE Light Post Base

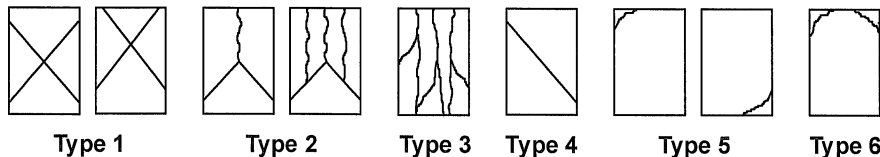
LOCATION OF SAMPLE Station 25+97 R

GENERAL CONTRACTOR	<u>Las Vegas Paving</u>	MIX #	<u>4552F</u>
CONCRETE CONTRACTOR	<u>Las Vegas Paving</u>	TRUCK #	<u>2667</u>
CONCRETE SUPPLIER	<u>Sierra Ready Mix</u>	TICKET #	<u>463374</u>
WEATHER	<u>Clear</u>	WATER	
28 DAY STRENGTH	<u>4500 psi</u>	ADDED	<u>0 gal.</u>
TEST METHOD	ASTM C 39 <u>X</u> ASTM C 1064 <u>X</u> ASTM C 173 <u> </u> ASTM C 143 <u>X</u> ASTM C 138 <u>X</u> ASTM C 31 <u>X</u> ASTM C 1231 <u>X</u> OTHER <u> </u>	SLUMP	<u>4 in.</u>
PROJECT MANAGER	<u>A. Akubakr, P.E.</u>	MIX TEMP	<u>64 °F</u>
TECHNICIAN	<u>D. Keel</u>	AIR TEMP	<u>53 °F</u>
REVIEWED BY	<u> </u>	AIR CONTENT	<u>1.4 %</u>
		UNIT WEIGHT	<u>155.2 pcf</u>

SAMPLE NO.	DIAMETER (IN)	X-SECT AREA (SQ IN)	DATE RECVD	DATE TESTED	AGE OF SPECIMEN (DAYS)	TOTAL LOAD (LBS)	UNIT LOAD (PSI)	TYPE OF FRACTURE
24628-a	4.00	12.57	3/6/2018	3/8/2018	7	46440	3695	2
24628-b	4.00	12.57	3/6/2018	3/29/2018	28	67490	5370	2
24628-c	4.00	12.57	3/6/2018	3/29/2018	28	69890	5560	3
24628-d	4.00	12.57	3/6/2018	3/29/2018	28	70400	5600	2
24628-e	4.00	12.57	3/6/2018		Hold			

REMARKS/DEFECTS --

TYPES OF FRACTURE





**GEOTECHNICAL &
ENVIRONMENTAL
SERVICES, INC.**

7150 Placid Street
Las Vegas, NV 89119
(702) 365-1001

Moisture/Density Log - Sample Rings

Project Name:	NERT LAB TESTING					Lab No.:	18-097	
Project No.:	20153663E9		Tested By:	A. SANDERS		Date:	3/5/2018	
Sample	DFCB-06	DFCB-06	DFCB-07	DFCB-07	DFCB-07	DFCB-08	DFCB-08	DFCB-08
Depth	25.0'	40.0'	5.0'	15.0'	30.0'	10.0'	20.0'	35.0'
Soil Description: Remarks/Condition:								
Length (in)	6.00	6.00	5.00	6.00	6.00	6.00	6.00	6.00
Tube + Wet Soil (gm)	1092.30	892.50	785.79	916.86	953.53	1030.77	1029.81	991.58
Tube (gm)	170.50	170.50	170.50	203.28	205.89	203.40	203.12	214.21
Wet Soil (gm)	921.80	722.00	615.29	713.58	747.64	827.37	826.69	777.37
Volume (in ³)	0.0157	0.0157	0.0131	0.0157	0.0157	0.0157	0.0157	0.0157
Wet Density lbs/ft ³	129.4	101.3	103.6	100.1	104.9	116.1	116.0	109.1
Tare + Wet Soil (gm)	610.50	461.70	400.05	508.60	436.27	398.43	577.02	436.80
Tare + Dry Soil (gm)	498.40	312.00	379.70	459.50	328.10	378.10	536.50	330.90
Water Loss (gm)	112.10	149.70	20.35	49.10	108.17	20.33	40.52	105.90
Tare Weight (gm)	125.10	132.20	132.16	126.56	127.47	130.40	132.02	126.91
Wt. Dry Soil (gm)	373.30	179.80	247.54	332.94	200.63	247.70	404.48	203.99
Moisture Content (%)	30.0	83.3	8.2	14.7	53.9	8.2	10.0	51.9
Dry Density (lbs/ft ³)	99.5	55.3	95.8	87.3	68.2	107.3	105.5	71.8
Specific Gravity	2.717	2.761	2.682	2.666	2.635	2.672	2.659	2.695
Total Porosity	41.2	67.9	42.7	47.5	58.5	35.5	36.3	57.2



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7150 Placid Street
Las Vegas, NV 89119
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Moisture/Density Log - Sample Rings

Project Name:	NERT LAB TESTING					Lab No.:	18-097	
Project No.:	20153663E9		Tested By:	A. SANDERS		Date:	3/5/2018	
Sample	DFCB-09	DFCB-09	DFCB-09	DFCB-10	DFCB-10	DFCB-10	DFCB-11	DFCB-11
Depth	5.0'	20.0'	40.0'	10.0'	20.0'	40.0'	10.0'	20.0'
Soil Description: Remarks/Condition:								
Length (in)	6.00	6.00	6.00	5.00	5.75	5.75	6.00	6.00
Tube + Wet Soil (gm)	1018.80	958.60	918.70	906.30	990.40	942.90	1093.60	982.10
Tube (gm)	202.20	209.00	201.90	161.60	194.80	194.26	202.40	202.50
Wet Soil (gm)	816.60	749.60	716.80	744.70	795.60	748.64	891.20	779.60
Volume (in ³)	0.0157	0.0157	0.0157	0.0131	0.0151	0.0151	0.0157	0.0157
Wet Density lbs/ft ³	114.6	105.2	100.6	125.4	116.5	109.6	125.1	109.4
Tare + Wet Soil (gm)	509.40	590.60	495.40	475.00	541.00	491.90	617.10	517.00
Tare + Dry Soil (gm)	474.60	506.90	345.10	440.80	475.80	376.00	559.80	443.30
Water Loss (gm)	34.80	83.70	150.30	34.20	65.20	115.90	57.30	73.70
Tare Weight (gm)	132.40	126.20	126.30	129.90	156.90	132.20	142.00	126.20
Wt. Dry Soil (gm)	342.20	380.70	218.80	310.90	318.90	243.80	417.80	317.10
Moisture Content (%)	10.2	22.0	68.7	11.0	20.4	47.5	13.7	23.2
Dry Density (lbs/ft ³)	104.0	86.2	59.6	113.0	96.7	74.3	110.0	88.8
Specific Gravity	2.708	2.679	2.719	2.673	2.702	2.673	2.643	2.718
Total Porosity	38.3	48.3	64.8	32.1	42.5	55.4	33.2	47.6



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Moisture/Density Log - Sample Rings

Project Name:	NERT LAB TESTING					Lab No.:	18-097	
Project No.:	20153663E9		Tested By:	A. SANDERS		Date:	3/5/2018	
Sample	DFCB-11	DFCB-12	DFCB-12	DFCB-12	DFCB-13	DFCB-13	DFCB-13	DFCB-14
Depth	40.0'	10.0'	20.0'	40.0'	5.0'	20.0'	35.0'	5.0'
Soil Description: Remarks/Condition:								
Length (in)	6.00	6.00	6.00	6.00	6.00	6.00	5.50	6.00
Tube + Wet Soil (gm)	1024.80	1135.59	1021.60	1001.49	1048.40	986.30	885.70	1100.10
Tube (gm)	281.60	280.69	278.98	282.07	202.00	202.60	168.84	280.80
Wet Soil (gm)	743.20	854.90	742.62	719.42	846.40	783.70	716.86	819.30
Volume (in ³)	0.0157	0.0157	0.0157	0.0157	0.0157	0.0157	0.0144	0.0157
Wet Density lbs/ft ³	104.3	120.0	104.2	101.0	118.8	110.0	109.8	115.0
Tare + Wet Soil (gm)	499.90	570.03	561.62	473.12	585.90	520.20	481.10	549.20
Tare + Dry Soil (gm)	369.10	529.20	499.30	339.60	541.20	451.50	348.30	509.30
Water Loss (gm)	130.80	40.83	62.32	133.52	44.70	68.70	132.80	39.90
Tare Weight (gm)	133.10	134.91	155.10	126.70	155.60	128.00	139.60	137.80
Wt. Dry Soil (gm)	236.00	394.29	344.20	212.90	385.60	323.50	208.70	371.50
Moisture Content (%)	55.4	10.4	18.1	62.7	11.6	21.2	63.6	10.7
Dry Density (lbs/ft ³)	67.1	108.7	88.2	62.1	106.5	90.7	67.1	103.8
Specific Gravity	2.642	2.626	2.600	2.702	2.642	2.711	2.668	2.735
Total Porosity	59.2	33.5	45.5	63.1	35.3	46.3	59.6	39.1



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Moisture/Density Log - Sample Rings

Project Name:	NERT LAB TESTING					Lab No.:	18-097	
Project No.:	20153663E9		Tested By:	A. SANDERS		Date:	3/5/2018	
Sample	DFCB-14	DFCB-14	DFCB-15	DFCB-15	DFCB-15	DFCB-16	DFCB-16	DFCB-16
Depth	15.0'	30.0'	5.0'	20.0'	35.0'	10.0'	25.0'	40.0'
Soil Description: Remarks/Condition:								
Length (in)	6.00	6.00	6.00	6.00	6.00	5.50	6.00	6.00
Tube + Wet Soil (gm)	954.90	1024.40	1092.76	1127.07	1073.07	979.80	1030.40	908.30
Tube (gm)	203.00	202.80	282.64	277.17	282.28	168.42	202.10	203.60
Wet Soil (gm)	751.90	821.60	810.12	849.90	790.79	811.38	828.30	704.70
Volume (in ³)	0.0157	0.0157	0.0157	0.0157	0.0157	0.0144	0.0157	0.0157
Wet Density lbs/ft ³	105.5	115.3	113.7	119.3	111.0	124.2	116.3	98.9
Tare + Wet Soil (gm)	515.00	557.50	527.46	545.95	556.88	533.90	463.40	531.40
Tare + Dry Soil (gm)	494.40	437.80	483.00	497.80	439.50	492.10	421.70	363.50
Water Loss (gm)	20.60	119.70	44.46	48.15	117.38	41.80	41.70	167.90
Tare Weight (gm)	130.90	133.70	132.20	140.56	131.99	155.80	141.30	127.80
Wt. Dry Soil (gm)	363.50	304.10	350.80	357.24	307.51	336.30	280.40	235.70
Moisture Content (%)	5.7	39.4	12.7	13.5	38.2	12.4	14.9	71.2
Dry Density (lbs/ft ³)	99.9	82.7	100.9	105.1	80.3	110.5	101.2	57.8
Specific Gravity	2.640	2.670	2.705	2.718	2.679	2.624	2.681	2.688
Total Porosity	39.3	50.3	40.1	37.9	51.9	32.4	39.4	65.5



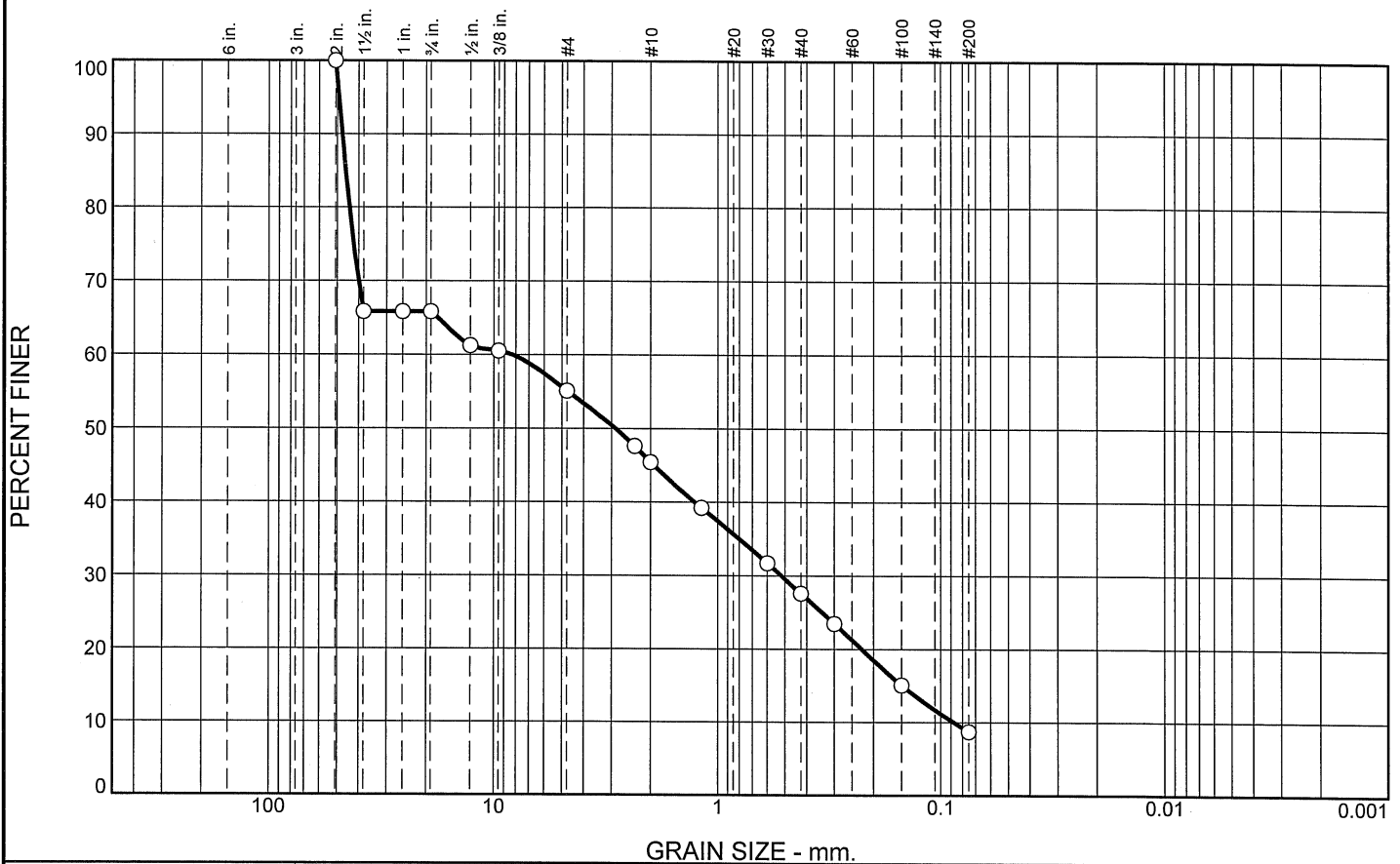
**GEOTECHNICAL &
ENVIRONMENTAL
SERVICES, INC.**

7150 Placid Street
Las Vegas, NV 89119
(702) 365-1001

Moisture/Density Log - Sample Rings

Project Name:	NERT LAB TESTING					Lab No.:	18-097	
Project No.:	20153663E9		Tested By:	A. SANDERS		Date:	3/5/2018	
Sample	DFCB-17	DFCB-17	DFCB-17	DFCB-18	DFCB-18	DFCB-18		
Depth	10.0'	25.0'	40.0'	10.0'	25.0'	40.0'		
Soil Description: Remarks/Condition:								
Length (in)	6.00	6.00	6.00	6.00	6.00	6.00		
Tube + Wet Soil (gm)	1109.98	978.62	919.00	1038.68	1164.38	1027.33		
Tube (gm)	202.40	203.77	202.70	281.00	280.37	280.94		
Wet Soil (gm)	907.58	774.85	716.30	757.68	884.01	746.39		
Volume (in ³)	0.0157	0.0157	0.0157	0.0157	0.0157	0.0157		
Wet Density lbs/ft ³	127.4	108.7	100.5	106.3	124.1	104.8		
Tare + Wet Soil (gm)	581.36	551.69	512.30	542.08	622.56	502.43		
Tare + Dry Soil (gm)	538.00	491.50	351.50	503.20	536.90	378.10		
Water Loss (gm)	43.36	60.19	160.80	38.88	85.66	124.33		
Tare Weight (gm)	132.60	155.75	131.60	130.46	154.14	130.57		
Wt. Dry Soil (gm)	405.40	335.75	219.90	372.74	382.76	247.53		
Moisture Content (%)	10.7	17.9	73.1	10.4	22.4	50.2		
Dry Density (lbs/ft ³)	115.1	92.2	58.1	96.3	101.4	69.7		
Specific Gravity	2.675	2.781	2.621	2.665	2.686	2.607		
Total Porosity	31.0	46.8	64.4	42.0	39.4	57.1		

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	34	11	10	17	19	9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100		
1.5	66		
1	66		
.75	66		
.5	61		
.375	61		
#4	55		
#8	48		
#10	45		
#16	39		
#30	32		
#40	28		
#50	23		
#100	15		
#200	8.7		

* (no specification provided)

Material Description

Atterberg Limits
 PL= -- LL= -- PI= --
Coefficients
 D₉₀= 47.3932 D₈₅= 45.7074 D₆₀= 8.3332
 D₅₀= 2.8849 D₃₀= 0.5193 D₁₅= 0.1485
 D₁₀= 0.0871 C_u= 95.65 C_c= 0.37
Classification
 USCS= -- AASHTO= --
Remarks
 SAMPLED BY: CLIENT

Location: DFCB-01 @ 5.0'
Sample Number: DFCB-01

Depth: 5.0'

Date: 3/6/18



GEOTECHNICAL & ENVIRONMENTAL SERVICES, INC.

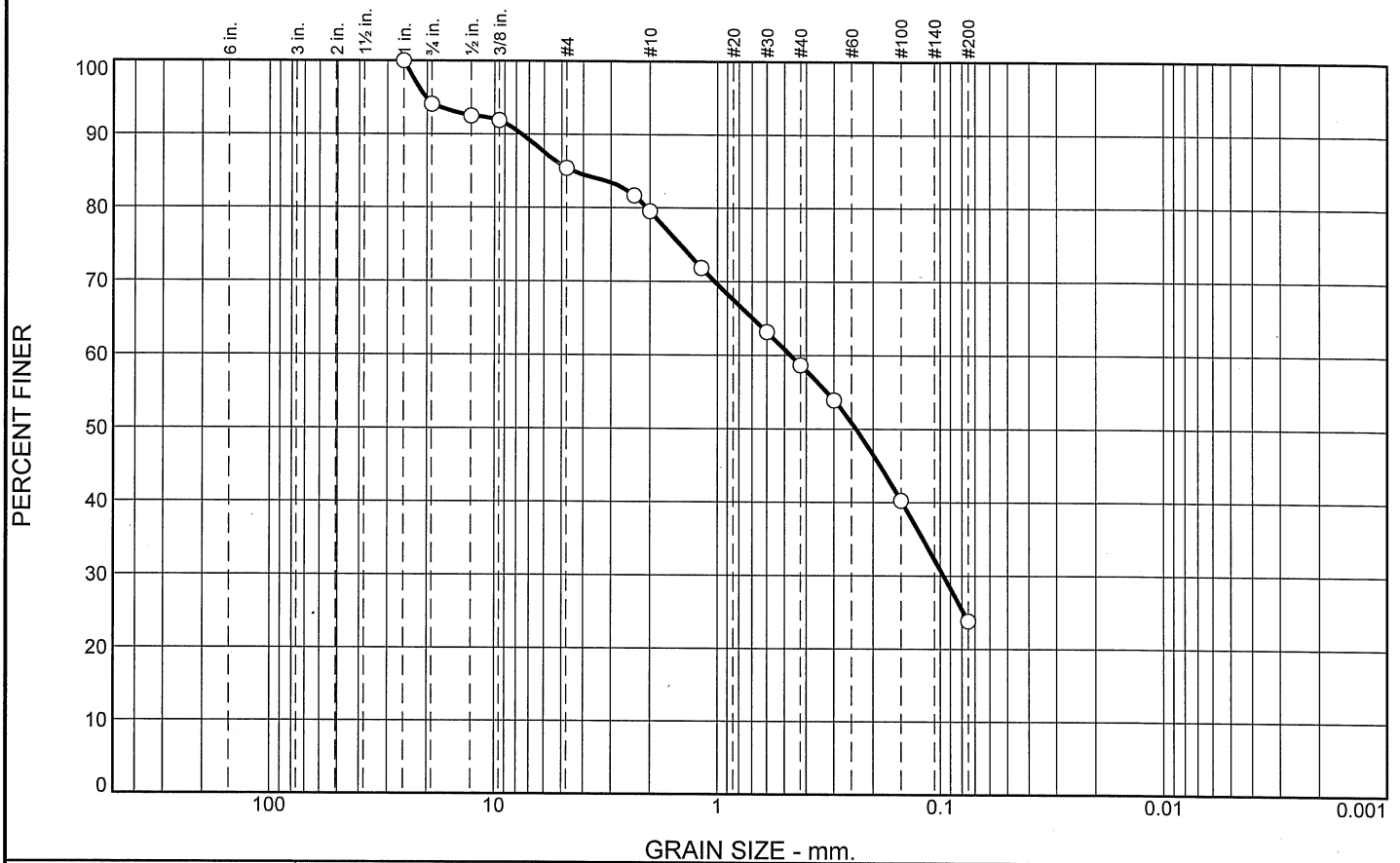
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	6	9	5	21	35	24	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100		
.75	94		
.5	92		
.375	92		
#4	85		
#8	82		
#10	80		
#16	72		
#30	63		
#40	59		
#50	54		
#100	40		
#200	24		

* (no specification provided)

Material Description		
<p>Atterberg Limits</p> <p>PL= -- LL= -- PI= --</p>		
<p>Coefficients</p> <p>D₉₀= 7.5709 D₈₅= 4.4580 D₆₀= 0.4709</p> <p>D₅₀= 0.2389 D₃₀= 0.0968 D₁₅=</p> <p>D₁₀= C_u= C_c=</p>		
<p>Classification</p> <p>USCS= -- AASHTO= --</p>		
<p>Remarks</p> <p>SAMPLED BY: CLIENT</p>		

Location: DFCB-01 @ 20.0'
Sample Number: DFCB-01

Depth: 20.0'

Date: 3/7/18



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SERVICES, INC.**

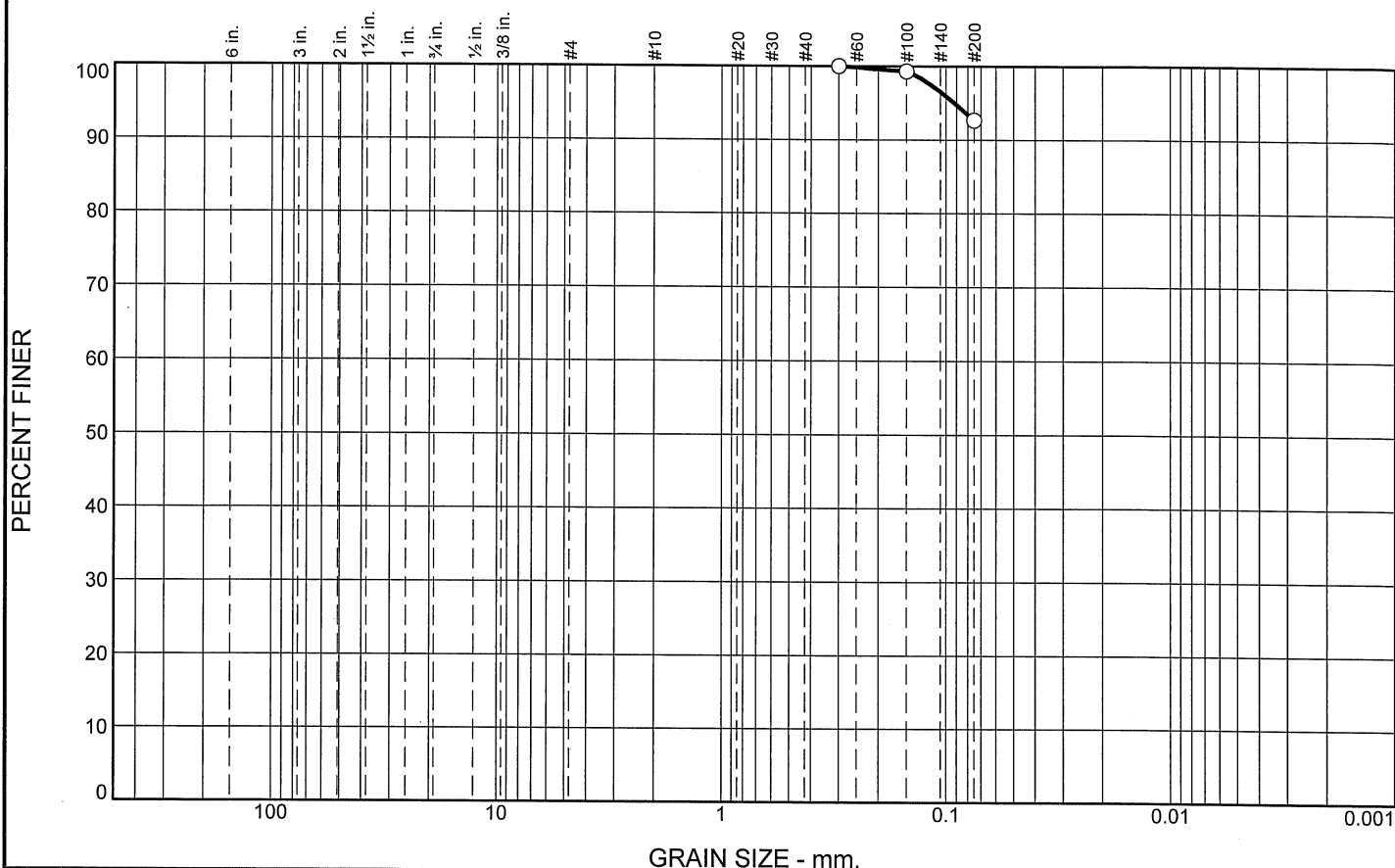
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	0	7	93	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#50	100		
#100	99		
#200	93		

* (no specification provided)

Material Description

Atterberg Limits
 PL= -- LL= -- PI= --

Coefficients
 D₉₀= D₈₅= D₆₀=
 D₅₀= D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= -- AASHTO= --

Remarks
 SAMPLED BY: CLIENT

Location: DFCB-01 @ 35.0'
Sample Number: DFCB-01

Depth: 35.0'

Date: 3/7/18



GEOTECHNICAL & ENVIRONMENTAL SERVICES, INC.

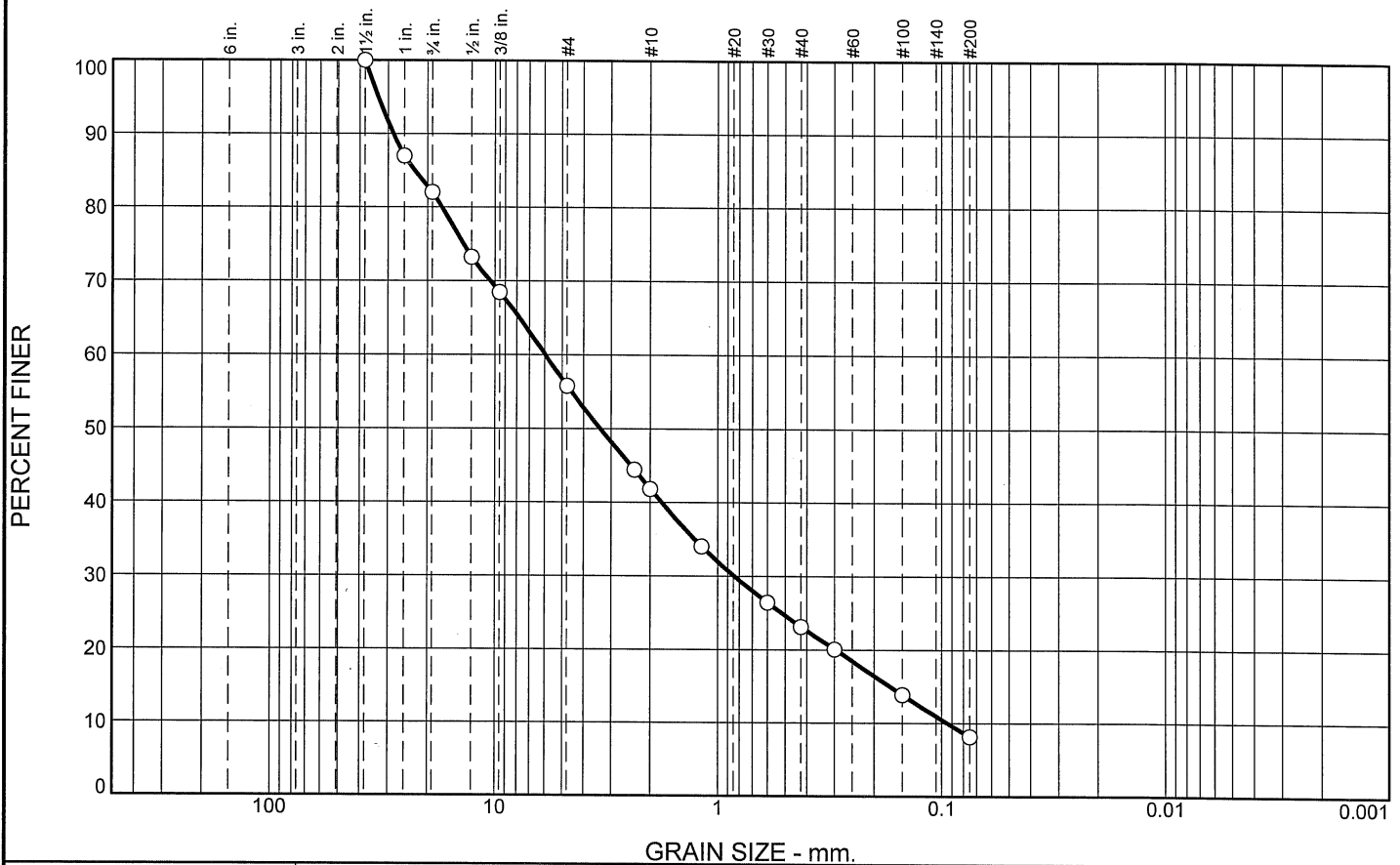
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	18	26	14	19	15	8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100		
1	87		
.75	82		
.5	73		
.375	68		
#4	56		
#8	44		
#10	42		
#16	34		
#30	26		
#40	23		
#50	20		
#100	14		
#200	8.2		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 28.5364 D₈₅= 22.8994 D₆₀= 5.9660
D₅₀= 3.3631 D₃₀= 0.8427 D₁₅= 0.1702
D₁₀= 0.0942 C_u= 63.32 C_c= 1.26

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-02 @ 5.0'
Sample Number: DFCB-02

Depth: 5.0'

Date: 3/7/18



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SERVICES, INC.**

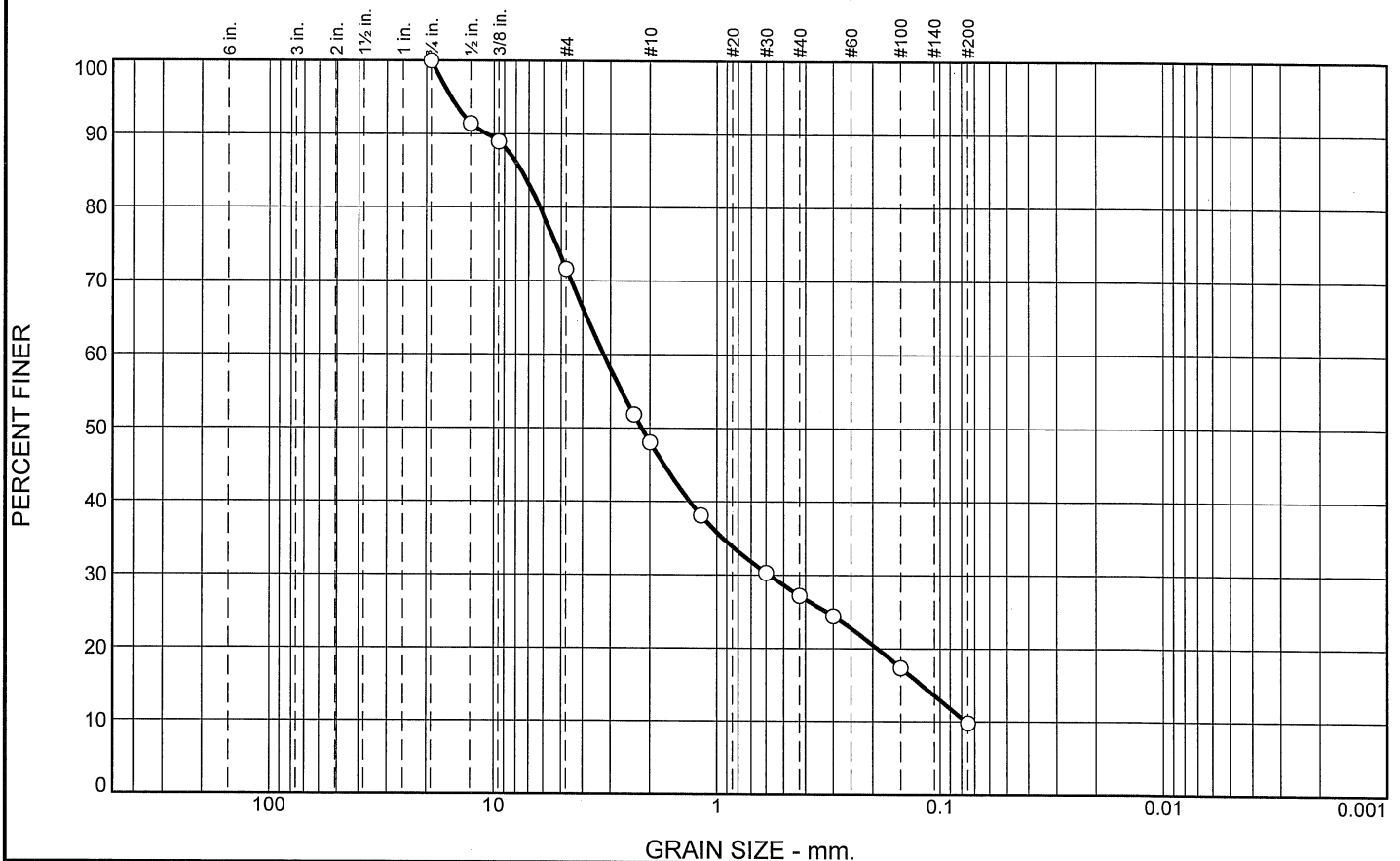
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	28	24	21	17	10	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100		
.5	91		
.375	89		
#4	72		
#8	52		
#10	48		
#16	38		
#30	30		
#40	27		
#50	24		
#100	17		
#200	9.8		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 10.7589 D₈₅= 7.5774 D₆₀= 3.2241
D₅₀= 2.1838 D₃₀= 0.5801 D₁₅= 0.1207
D₁₀= 0.0764 C_u= 42.22 C_c= 1.37

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-02 @ 20.0'
Sample Number: DFCB-02

Depth: 20.0'

Date: 3/7/18



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ENVIRONMENTAL
SERVICES, INC.**

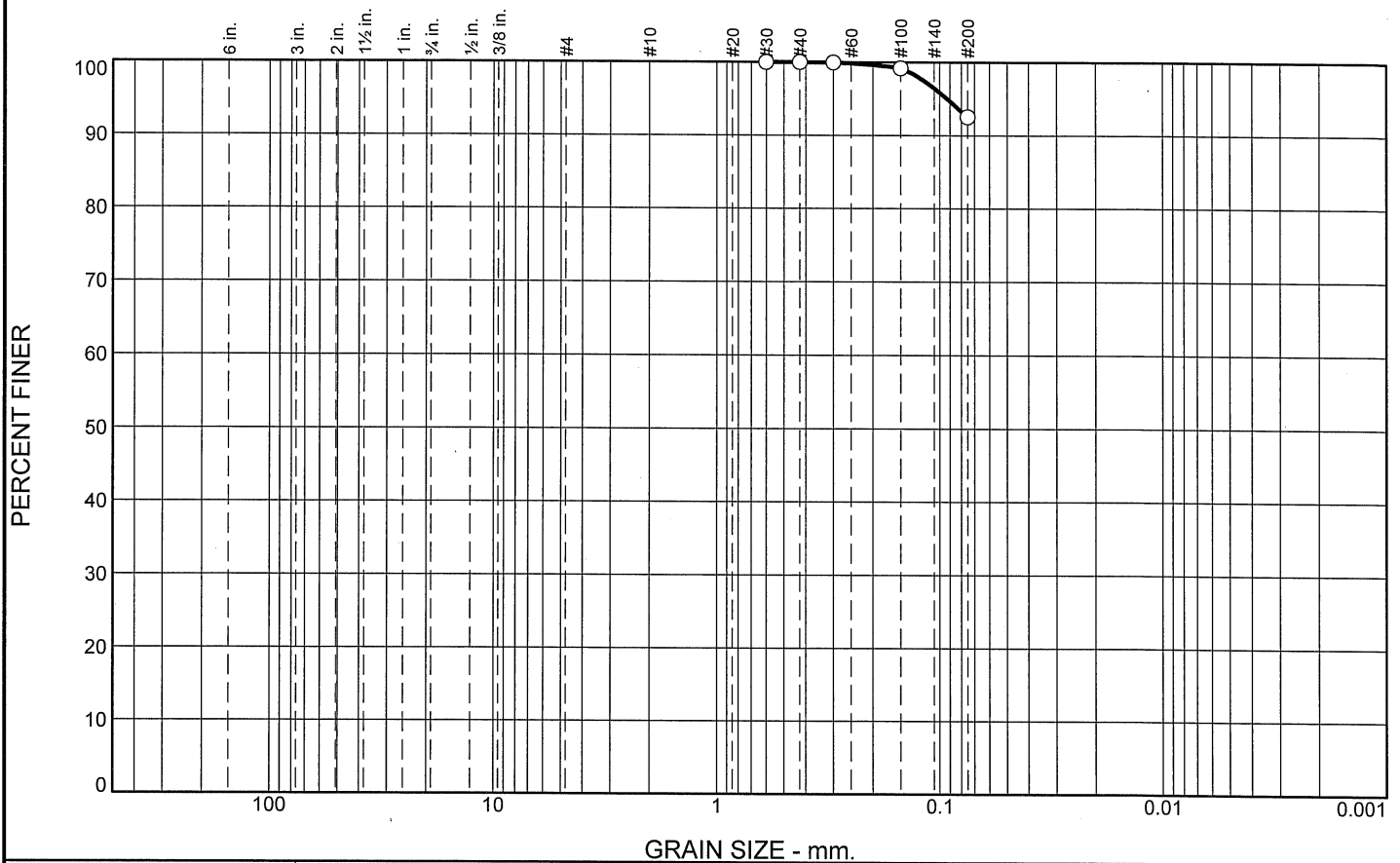
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	0	7	93	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#30	100		
#40	100		
#50	100		
#100	99		
#200	93		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= D₈₅= D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-02 @ 35.0'
Sample Number: DFCB-02

Depth: 35.0'

Date: 3/7/18



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SERVICES, INC.**

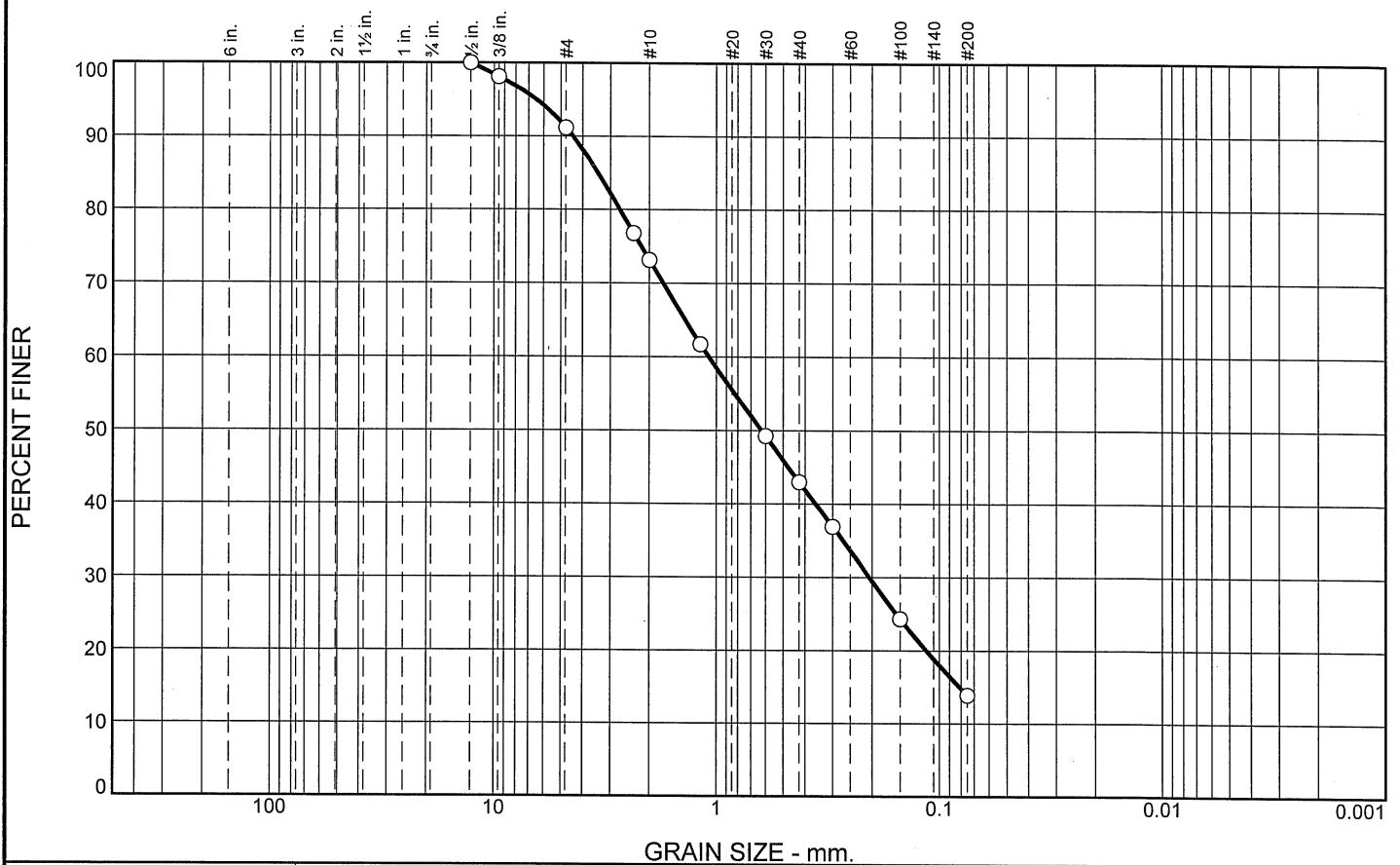
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	9	18	30	29	14	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100		
.375	98		
#4	91		
#8	77		
#10	73		
#16	62		
#30	49		
#40	43		
#50	37		
#100	24		
#200	14		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 4.4332 D₈₅= 3.4204 D₆₀= 1.0815
D₅₀= 0.6260 D₃₀= 0.2057 D₁₅= 0.0812
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-03 @ 11.0'
Sample Number: DFCB-03

Depth: 11.0'

Date: 3/28/18



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SERVICES, INC.**

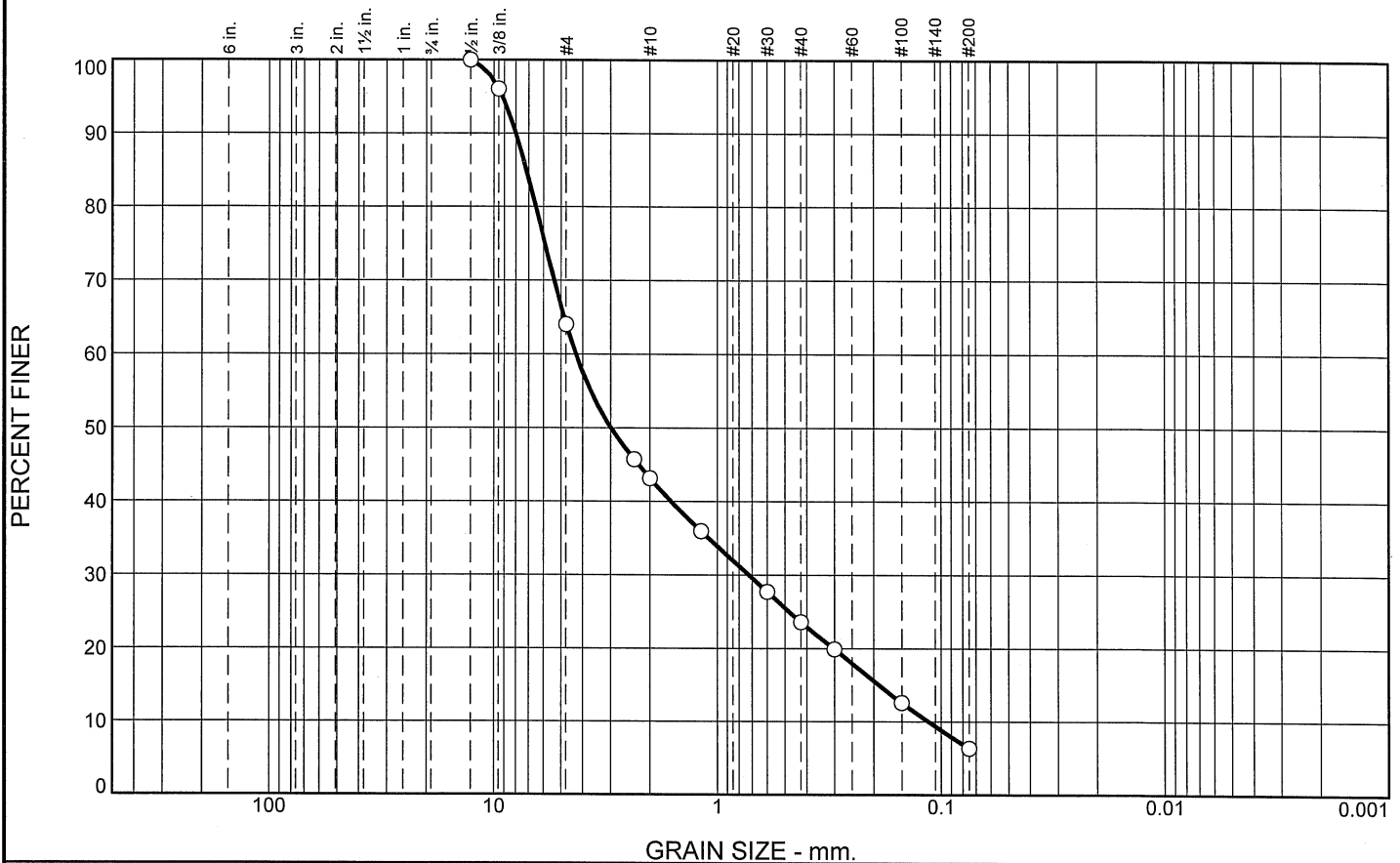
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	36	21	19	18	6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100		
.375	96		
#4	64		
#8	46		
#10	43		
#16	36		
#30	28		
#40	24		
#50	20		
#100	13		
#200	6.4		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 8.0085 D₈₅= 7.1901 D₆₀= 4.2963
D₅₀= 2.9936 D₃₀= 0.7227 D₁₅= 0.1896
D₁₀= 0.1139 C_u= 37.73 C_c= 1.07

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-03 @ 20.0'
Sample Number: DFCB-03

Depth: 20.0'

Date: 3/28/18



**GEOTECHNICAL &
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SERVICES, INC.**

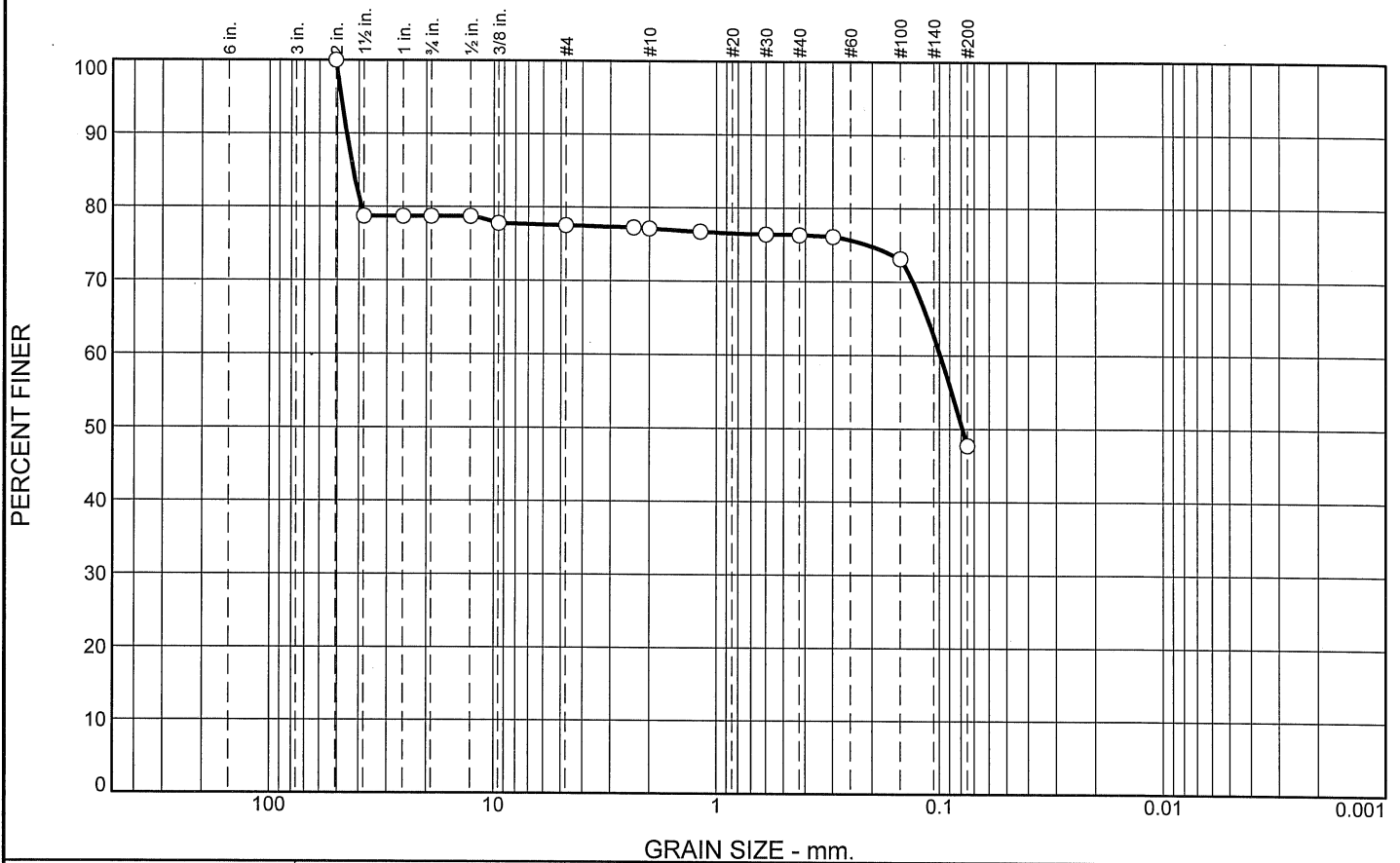
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	21	1	1	1	28	48	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100		
1.5	79		
1	79		
.75	79		
.5	79		
.375	78		
#4	78		
#8	77		
#10	77		
#16	77		
#30	76		
#40	76		
#50	76		
#100	73		
#200	48		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 45.3562 D₈₅= 42.5284 D₆₀= 0.0993

D₅₀= 0.0789 D₃₀= D₁₅=

D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-03 @ 35.0'
Sample Number: DFCB-03

Depth: 35.0'

Date: 3/29/18



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SERVICES, INC.**

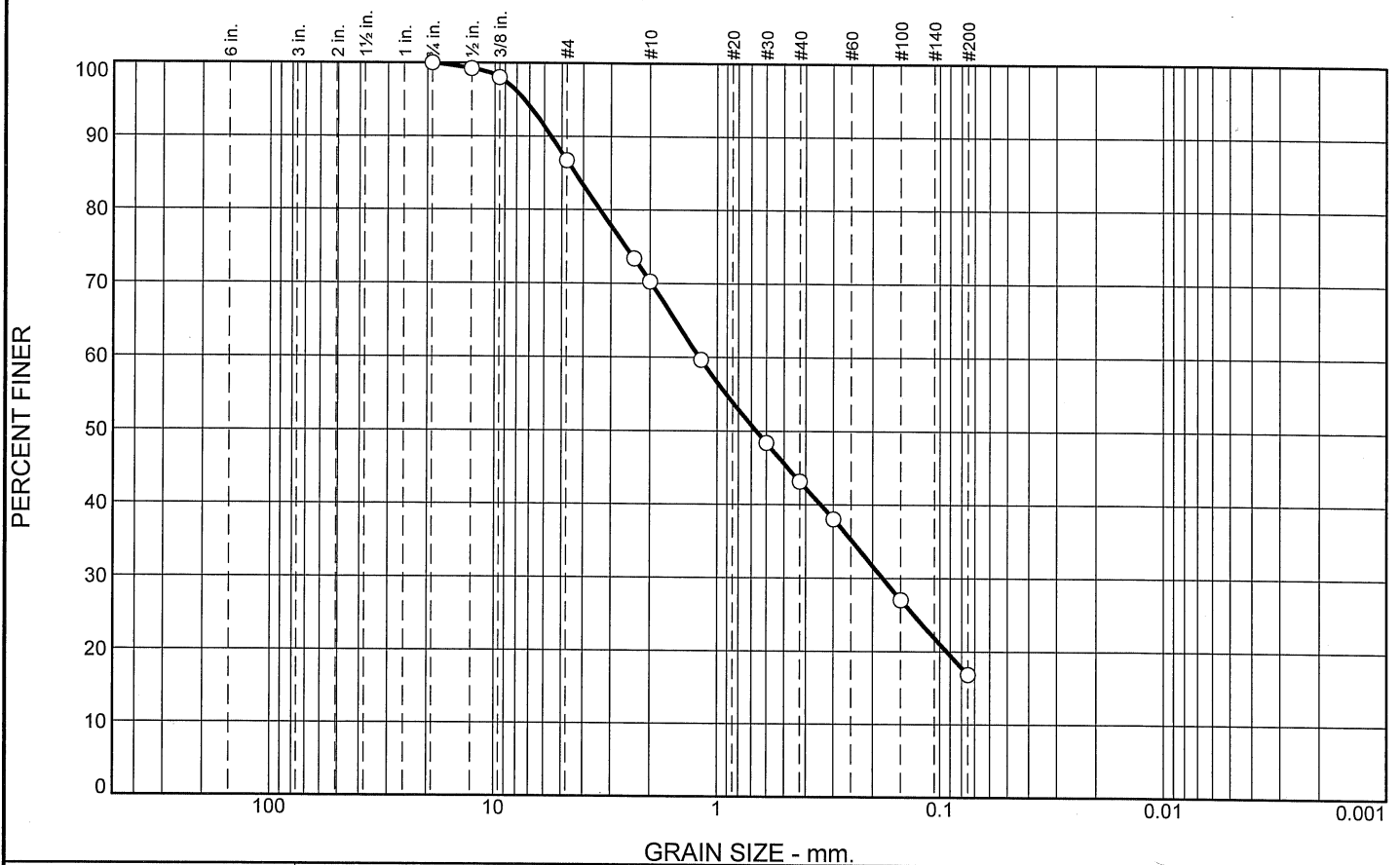
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	13	17	27	26	17	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100		
.5	99		
.375	98		
#4	87		
#8	73		
#10	70		
#16	60		
#30	48		
#40	43		
#50	38		
#100	27		
#200	17		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 5.6036 D₈₅= 4.3543 D₆₀= 1.2026
D₅₀= 0.6665 D₃₀= 0.1806 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-04 @ 5.0'
Sample Number: DFCB-04

Depth: 5.0'

Date: 3/7/18



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SERVICES, INC.**

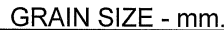
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

PERCENT FINER



% +3"

% G

	% S
1	100
2	100
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	100
19	100
20	100
21	100
22	100
23	100
24	100
25	100
26	100
27	100
28	100
29	100
30	100
31	100
32	100
33	100
34	100
35	100
36	100
37	100
38	100
39	100
40	100
41	100
42	100
43	100
44	100
45	100
46	100
47	100
48	100
49	100
50	100
51	100
52	100
53	100
54	100
55	100
56	100
57	100
58	100
59	100
60	100
61	100
62	100
63	100
64	100
65	100
66	100
67	100
68	100
69	100
70	100
71	100
72	100
73	100
74	100
75	100
76	100
77	100
78	100
79	100
80	100
81	100
82	100
83	100
84	100
85	100
86	100
87	100
88	100
89	100
90	100
91	100
92	100
93	100
94	100
95	100
96	100
97	100
98	100
99	100
100	100

100

% Fines

001

1

9

4

34

**SIEVE
SIZE**

PERCENT
FINER

SPEC.*
PERCENT

PASS?
(X=NO)

.375
#4
#8
#10
#16
#30
#40
#50
#100
#200

100
99
97
97
95
91
88
85
67
34

Atterberg Limits

$$LL = \dots$$

Coefficients

D₈₅= 0.3090
D₃₀=
C_u=

$$\begin{aligned} D_{60} &= 0.1255 \\ D_{15} &= \\ C_u &= \end{aligned}$$

Classification

AASHTO= --

Remarks

SAMPLED BY: CLIENT

*_____

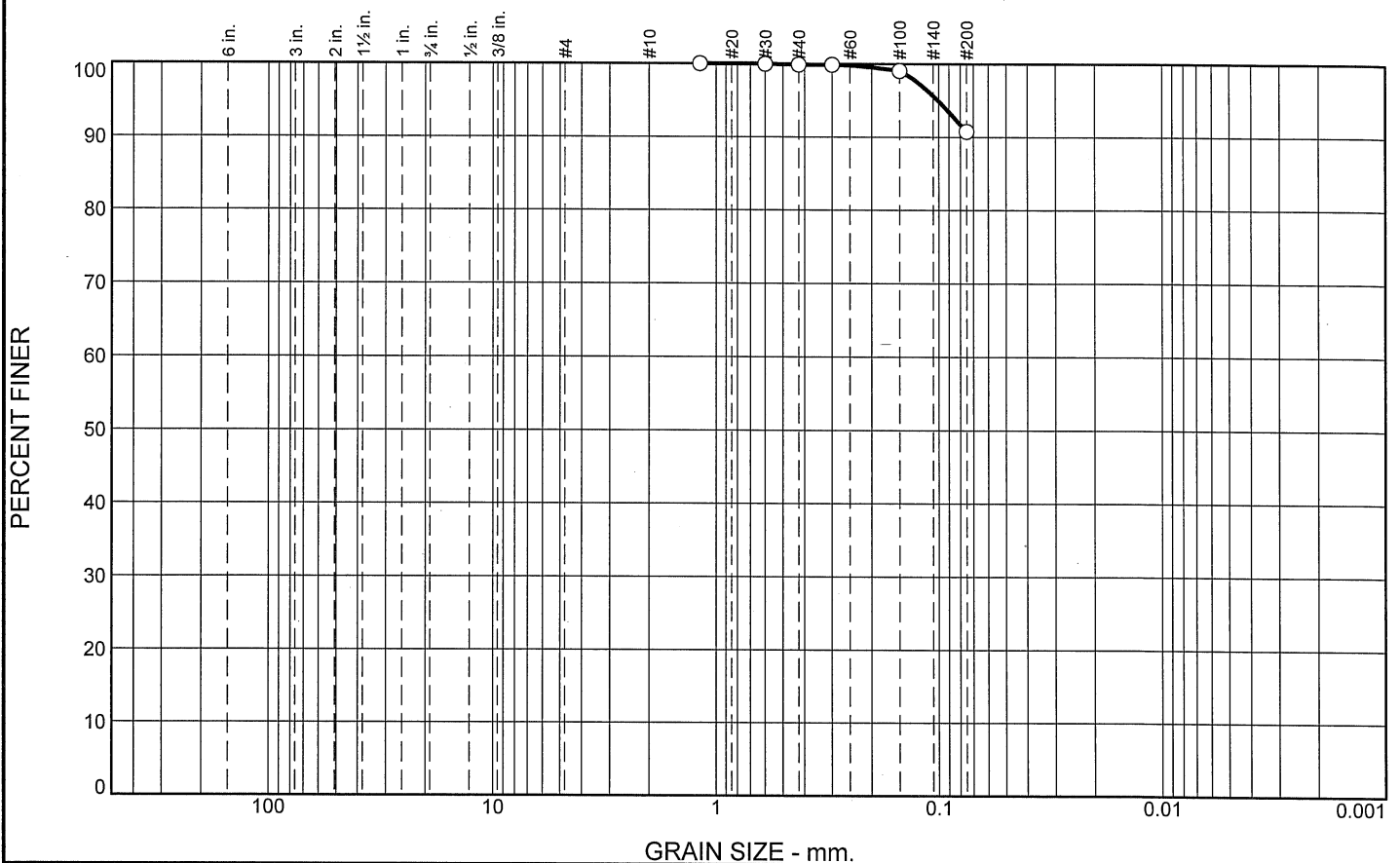
Date: 3/6/18



Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	0	9	91	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#16	100		
#30	100		
#40	100		
#50	100		
#100	99		
#200	91		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= D₈₅= D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-04 @ 35.0'
Sample Number: DFCB-04

Depth: 35.0'

Date: 3/7/18



**GEOTECHNICAL &
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SERVICES, INC.**

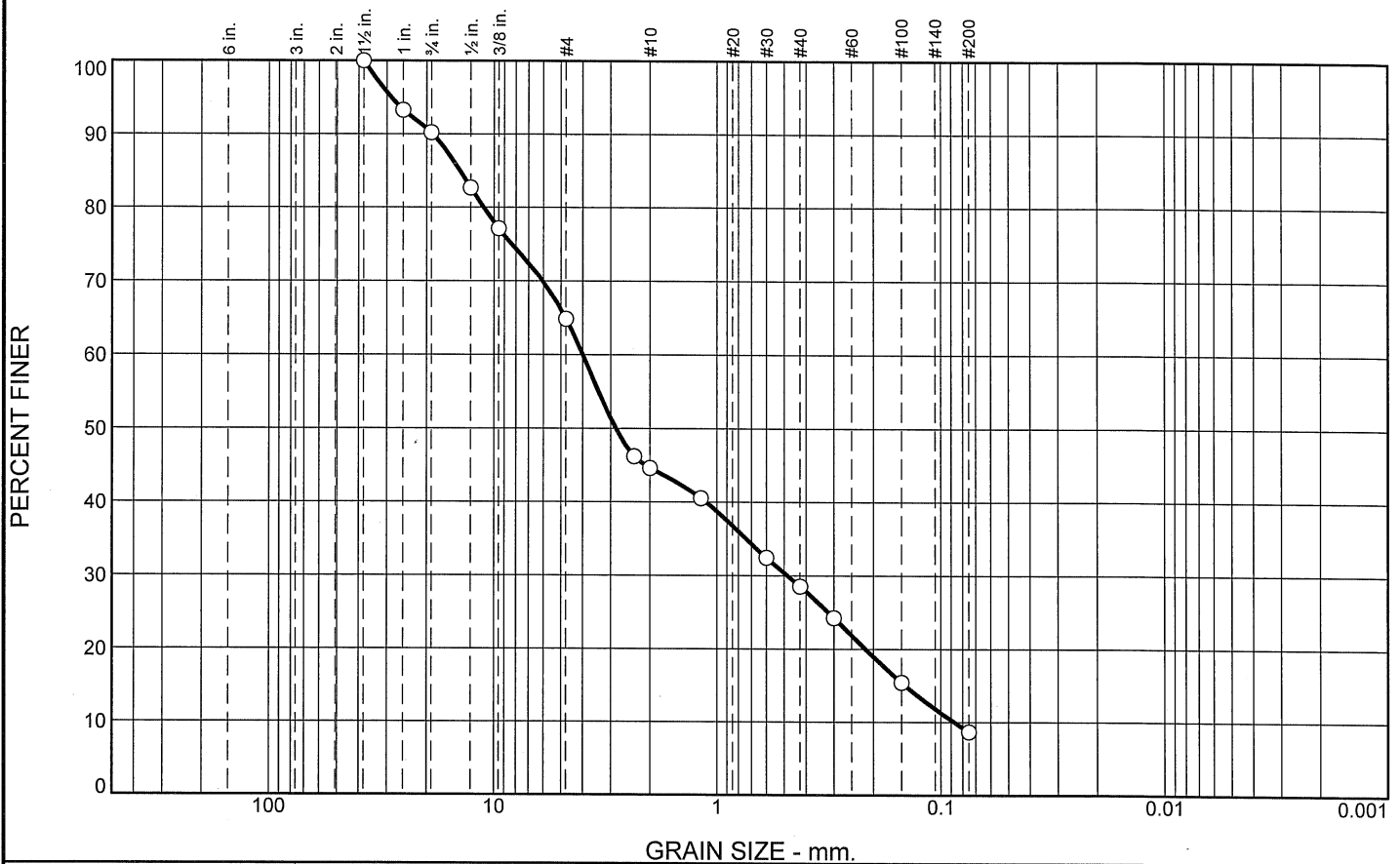
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	10	25	20	16	20	9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100		
1	93		
.75	90		
.5	83		
.375	77		
#4	65		
#8	46		
#10	45		
#16	41		
#30	32		
#40	29		
#50	24		
#100	15		
#200	8.7		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 18.7802 D₈₅= 14.2091 D₆₀= 4.0039
D₅₀= 2.8498 D₃₀= 0.4842 D₁₅= 0.1445
D₁₀= 0.0870 C_u= 46.04 C_c= 0.67

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-05 @ 5.0'
Sample Number: DFCB-05

Depth: 5.0'

Date: 3/7/18



**GEOTECHNICAL &
ENVIRONMENTAL
SERVICES, INC.**

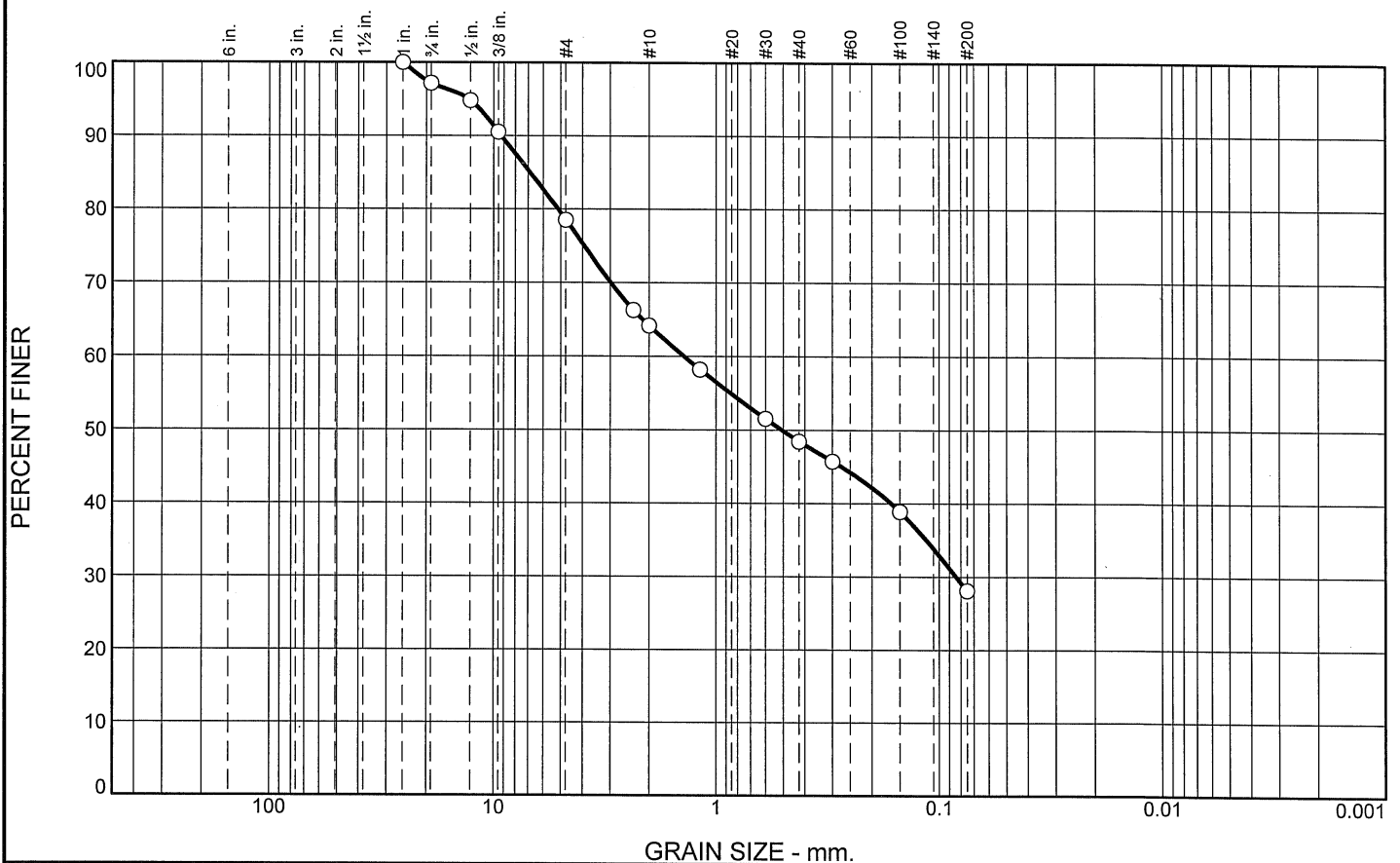
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	3	18	15	16	20	28	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100		
.75	97		
.5	95		
.375	90		
#4	79		
#8	66		
#10	64		
#16	58		
#30	52		
#40	48		
#50	46		
#100	39		
#200	28		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 9.2517 D₈₅= 6.8820 D₆₀= 1.3957
D₅₀= 0.5083 D₃₀= 0.0840 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-05 @ 20.0'
Sample Number: DFCB-05

Depth: 20.0'

Date: 3/7/18



**GEOTECHNICAL &
ENVIRONMENTAL
SERVICES, INC.**

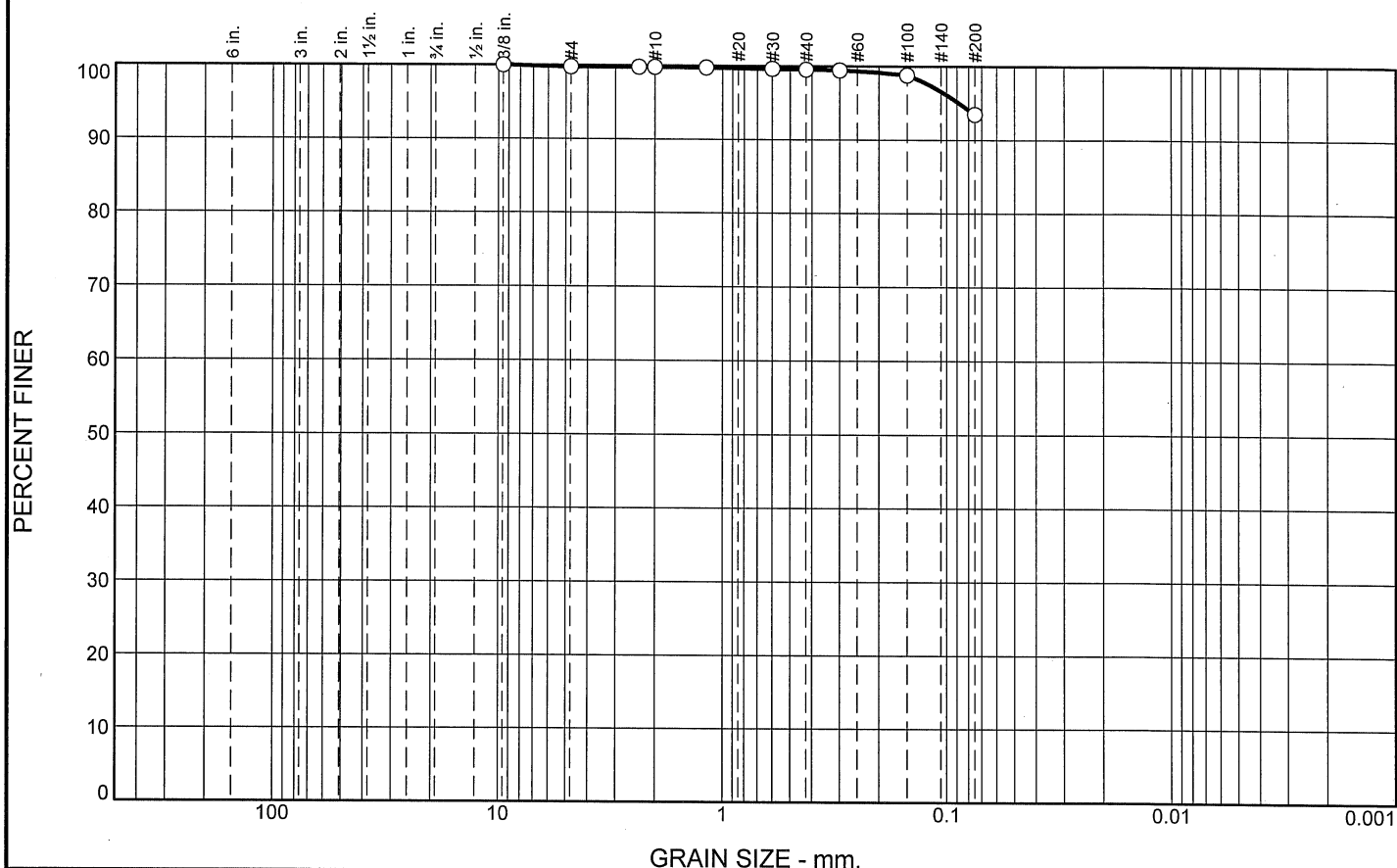
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	0	7	93	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100		
#4	100		
#8	100		
#10	100		
#16	100		
#30	100		
#40	100		
#50	99		
#100	99		
#200	93		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= D₈₅= D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-05 @ 35.0'
Sample Number: DFCB-05

Depth: 35.0'

Date: 3/7/18



**GEOTECHNICAL &
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SERVICES, INC.**

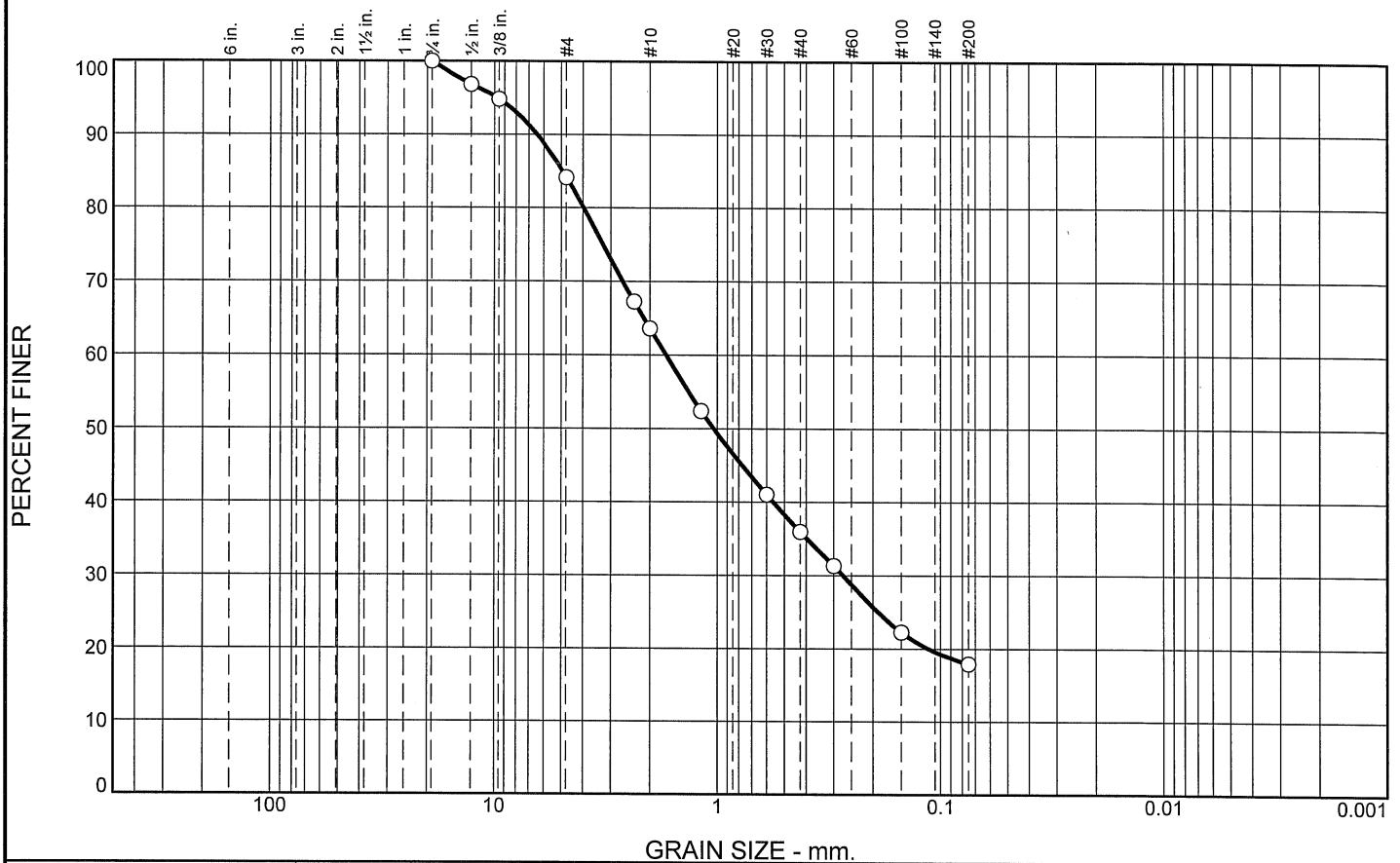
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	16	20	28	18	18	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100		
.5	97		
.375	95		
#4	84		
#8	67		
#10	64		
#16	52		
#30	41		
#40	36		
#50	31		
#100	22		
#200	18		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 6.4629 D₈₅= 4.9435 D₆₀= 1.6964
D₅₀= 1.0383 D₃₀= 0.2726 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-06 @ 10.0'
Sample Number: DFCB-06

Depth: 10.0'

Date: 3/28/18



**GEOTECHNICAL &
ENVIRONMENTAL
SERVICES, INC.**

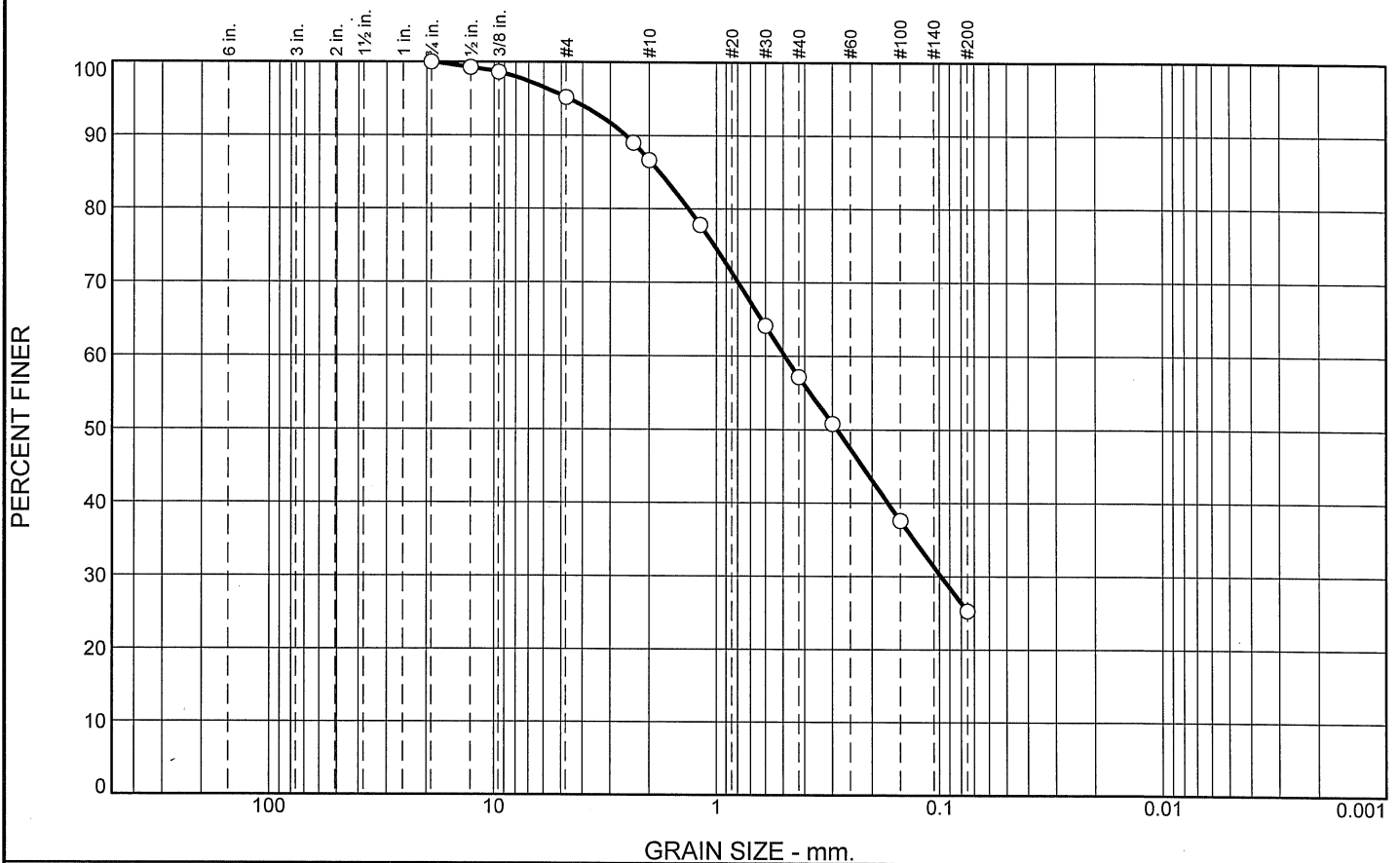
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	5	8	30	32	25	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100		
.5	99		
.375	99		
#4	95		
#8	89		
#10	87		
#16	78		
#30	64		
#40	57		
#50	51		
#100	38		
#200	25		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 2.5572 D₈₅= 1.7986 D₆₀= 0.4911
D₅₀= 0.2873 D₃₀= 0.0984 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-06 @ 25.0'
Sample Number: DFCB-06

Depth: 25.0'

Date: 3/28/18



**GEOTECHNICAL &
ENVIRONMENTAL
SERVICES, INC.**

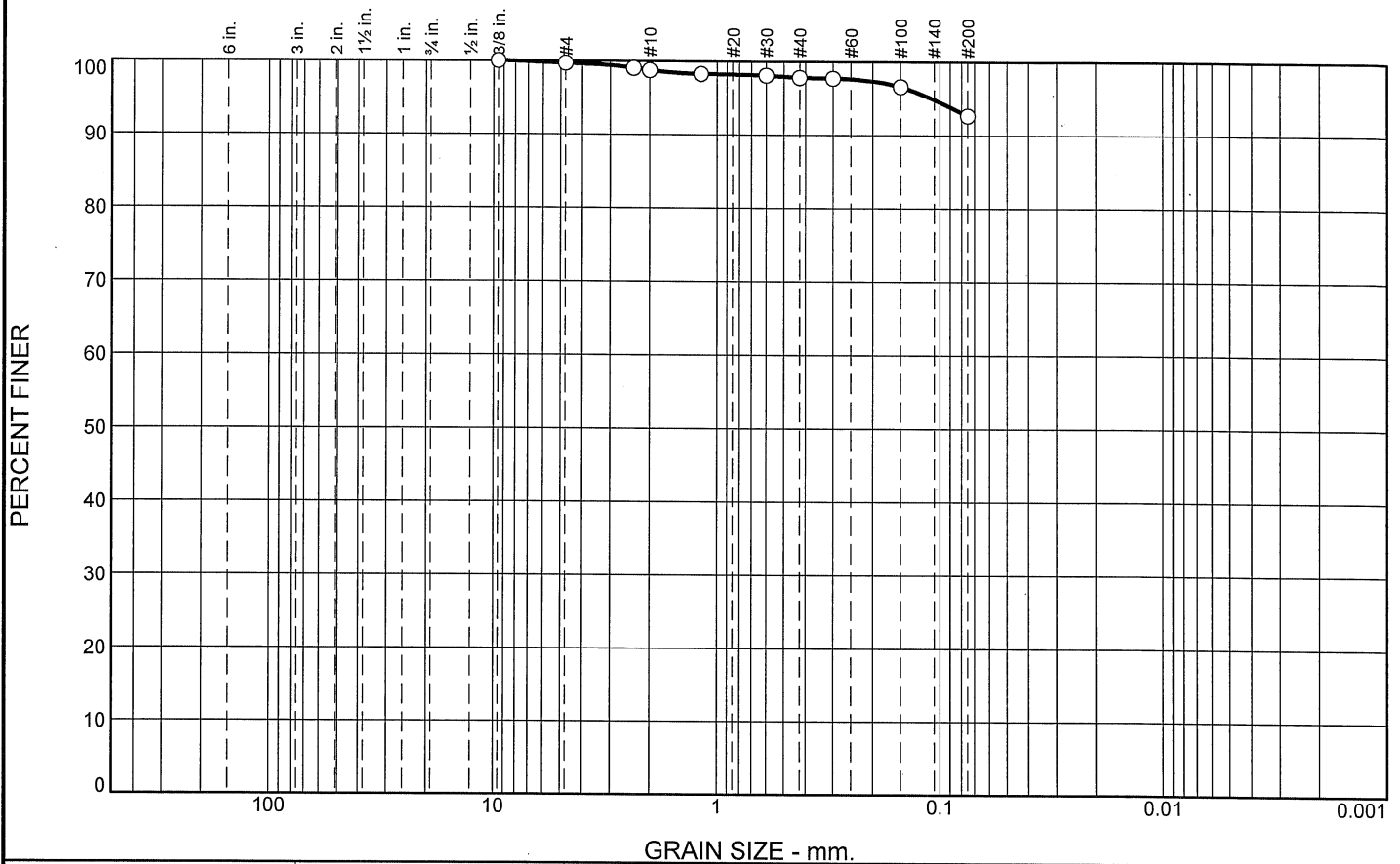
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	1	1	5	93	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100		
#4	100		
#8	99		
#10	99		
#16	98		
#30	98		
#40	98		
#50	98		
#100	97		
#200	93		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients
D₉₀= D₈₅= D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification
USCS= -- AASHTO= --

Remarks
SAMPLED BY: CLIENT

Location: DFCB-06 @ 40.0'
Sample Number: DFCB-06

Depth: 40.0'

Date: 3/29/18



**GEOTECHNICAL &
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SERVICES, INC.**

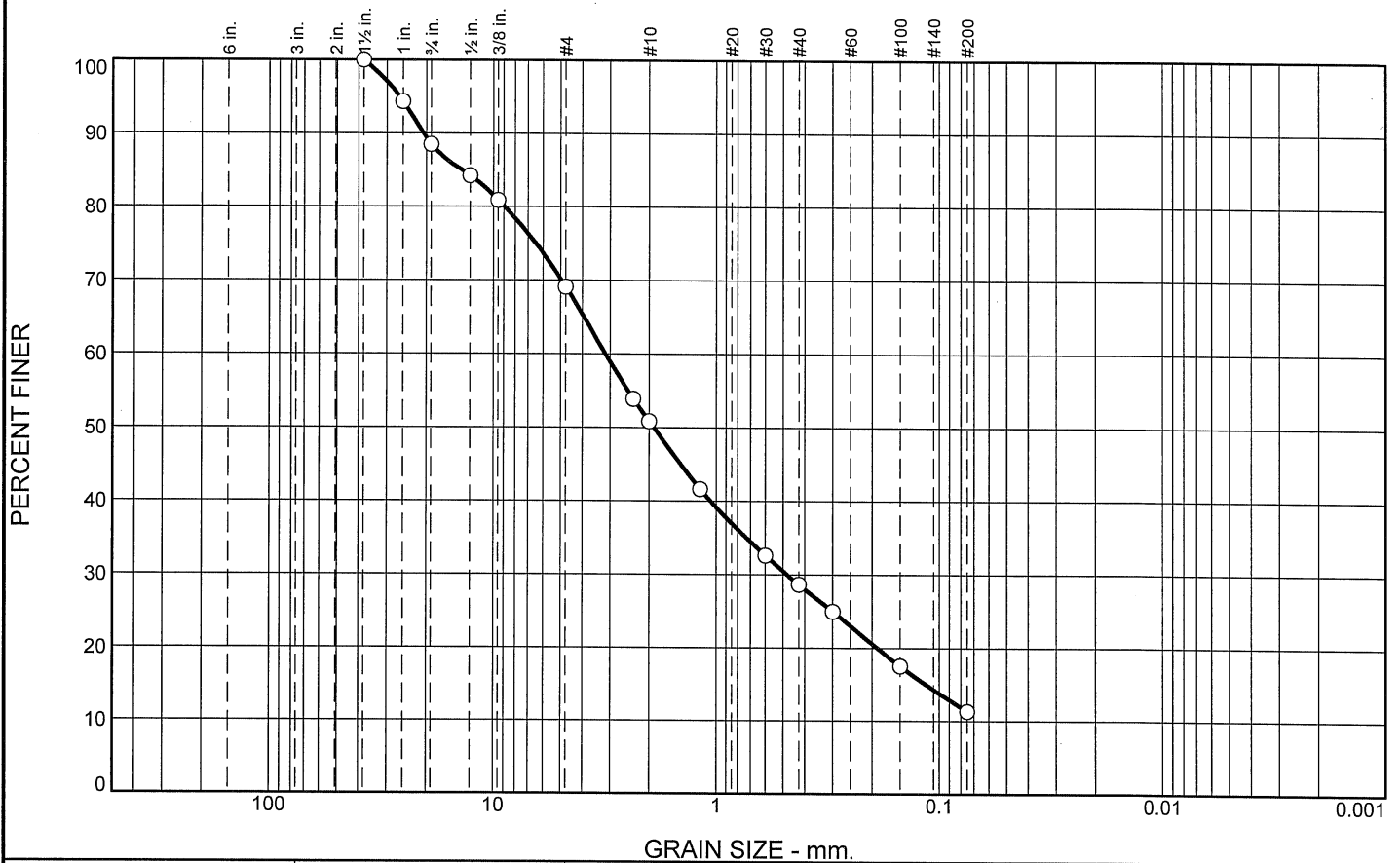
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	12	19	18	22	18	11	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100		
1	94		
.75	88		
.5	84		
.375	81		
#4	69		
#8	54		
#10	51		
#16	42		
#30	33		
#40	29		
#50	25		
#100	18		
#200	11		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 20.6535 D₈₅= 13.8604 D₆₀= 3.1524
D₅₀= 1.9083 D₃₀= 0.4794 D₁₅= 0.1148
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-07 @ 5.0'
Sample Number: DFCB-07

Depth: 5.0'

Date: 3/6/18



**GEOTECHNICAL &
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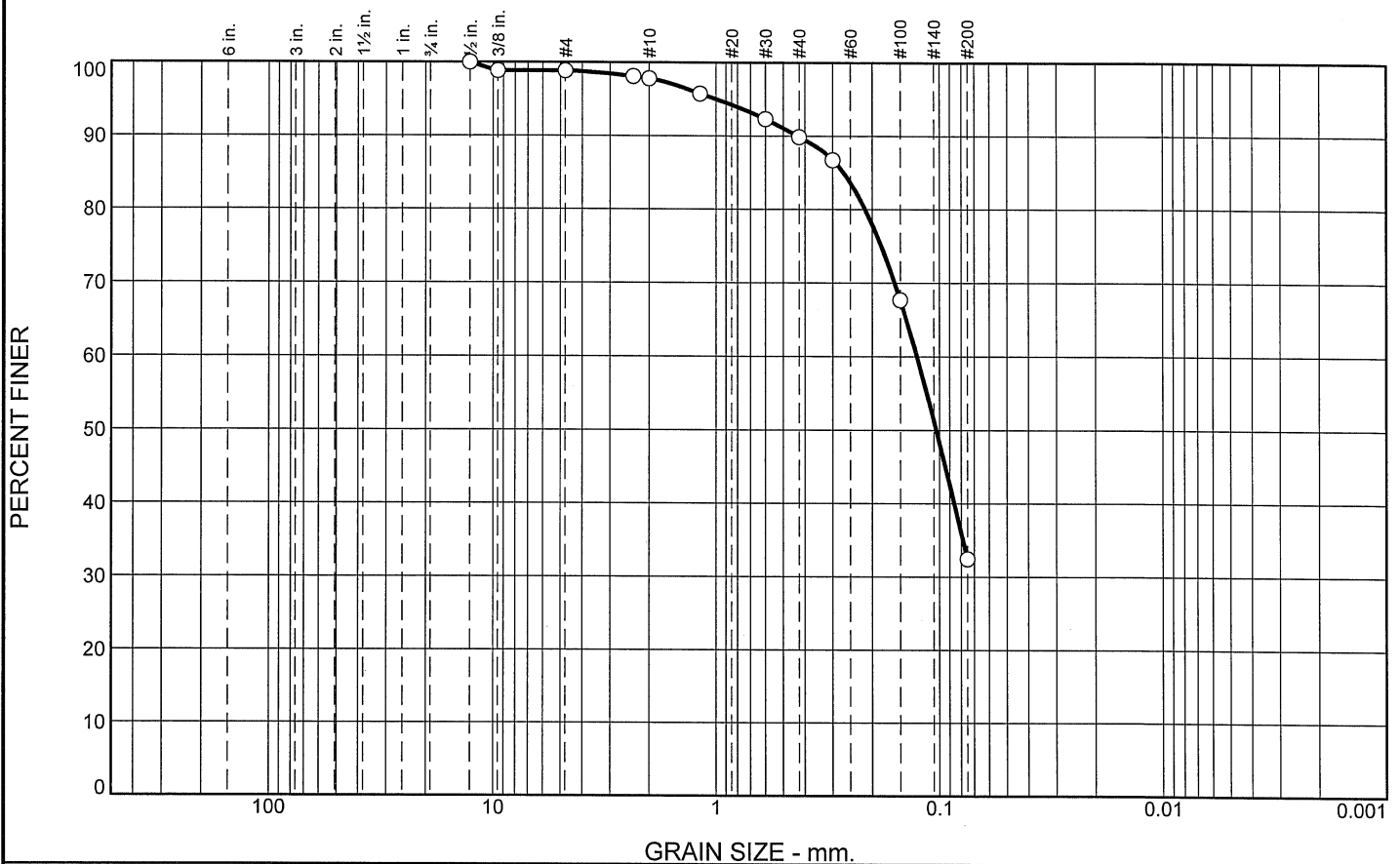
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	1	1	8	58	32	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100		
.375	99		
#4	99		
#8	98		
#10	98		
#16	96		
#30	92		
#40	90		
#50	87		
#100	68		
#200	32		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 0.4330 D₈₅= 0.2686 D₆₀= 0.1263
D₅₀= 0.1035 D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-07 @ 15.0'
Sample Number: DFCB-07

Depth: 15.0'

Date: 3/6/18



**GEOTECHNICAL &
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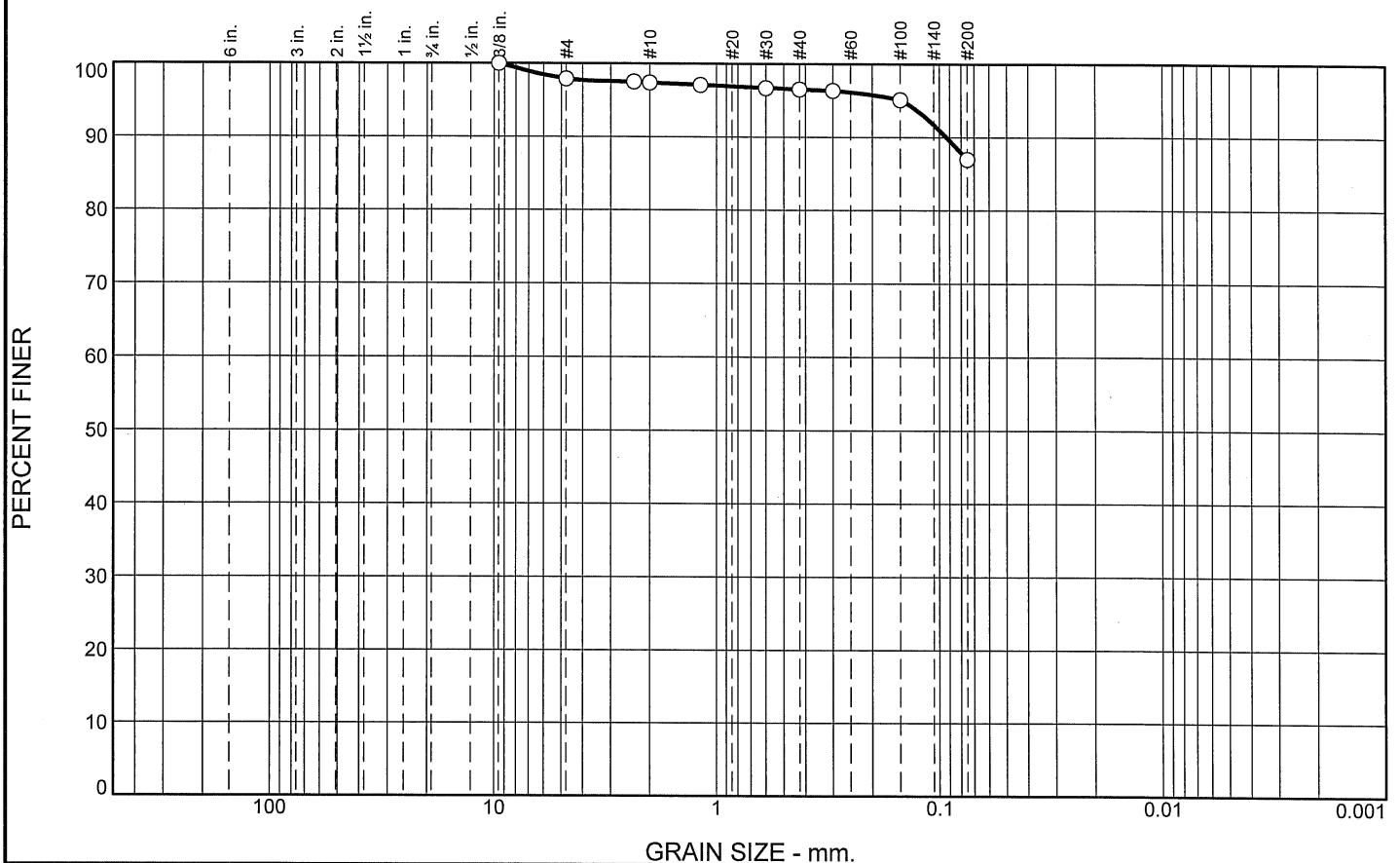
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	2	1	0	10	87	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100		
#4	98		
#8	97		
#10	97		
#16	97		
#30	97		
#40	97		
#50	96		
#100	95		
#200	87		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients
D₉₀= 0.0930 D₈₅= D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification
USCS= -- AASHTO= --

Remarks
SAMPLED BY: CLIENT

Location: DFCB-07 @ 30.0'
Sample Number: DFCB-07

Depth: 30.0'

Date: 3/7/18



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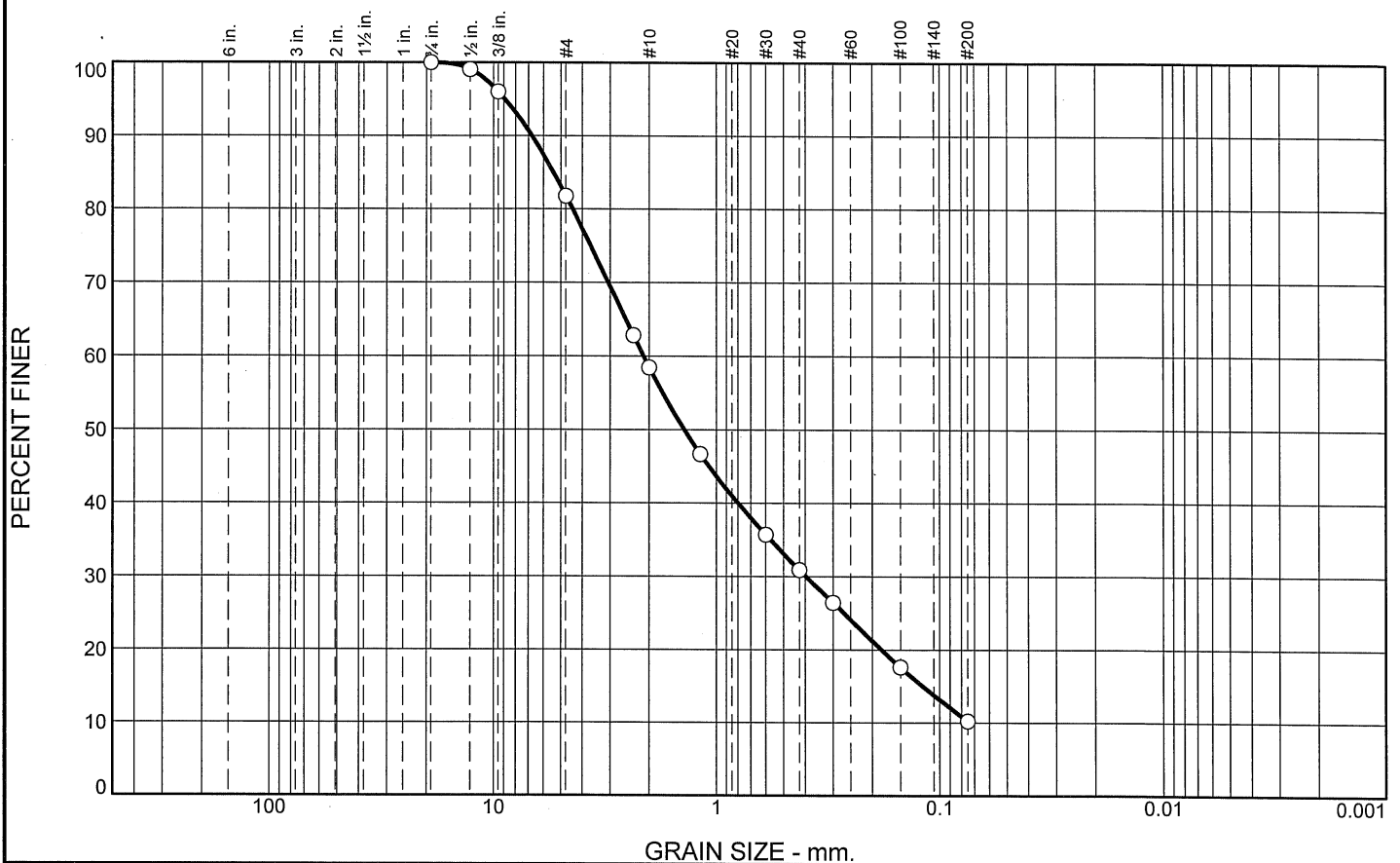
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	18	24	27	21	10	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100		
.5	99		
.375	96		
#4	82		
#8	63		
#10	58		
#16	47		
#30	36		
#40	31		
#50	26		
#100	18		
#200	10		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 6.7781 D₈₅= 5.4176 D₆₀= 2.1234
D₅₀= 1.3936 D₃₀= 0.3972 D₁₅= 0.1191
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-08 @ 10.0'
Sample Number: DFCB-08

Depth: 10.0'

Date: 3/6/18



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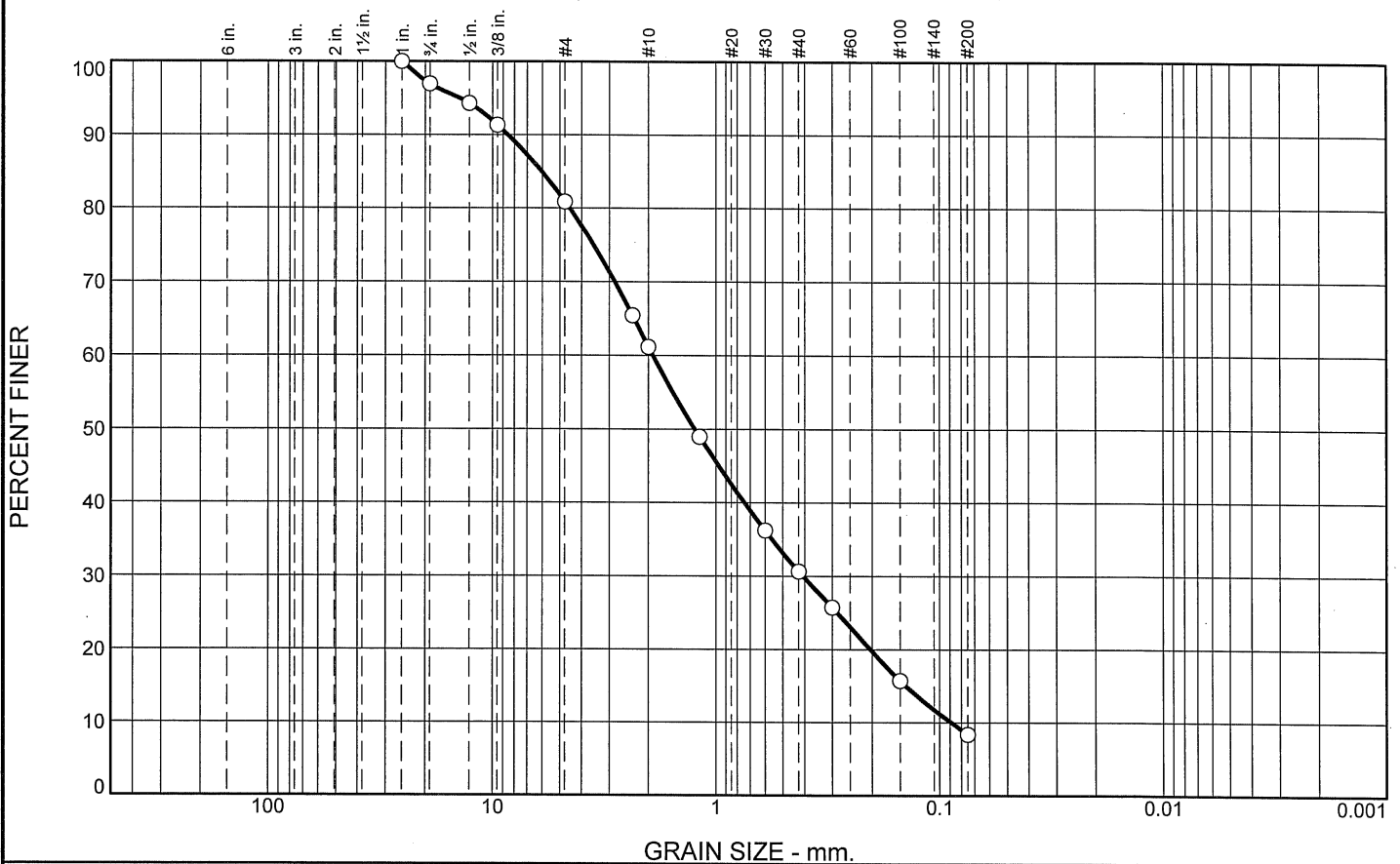
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	3	16	20	30	23	8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100		
.75	97		
.5	94		
.375	91		
#4	81		
#8	65		
#10	61		
#16	49		
#30	36		
#40	31		
#50	26		
#100	16		
#200	8.4		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 8.5754 D₈₅= 6.0475 D₆₀= 1.9125
D₅₀= 1.2397 D₃₀= 0.4070 D₁₅= 0.1417
D₁₀= 0.0888 C_u= 21.55 C_c= 0.98

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-08 @ 20.0'
Sample Number: DFCB-08

Depth: 20.0'

Date: 3/6/18



**GEOTECHNICAL &
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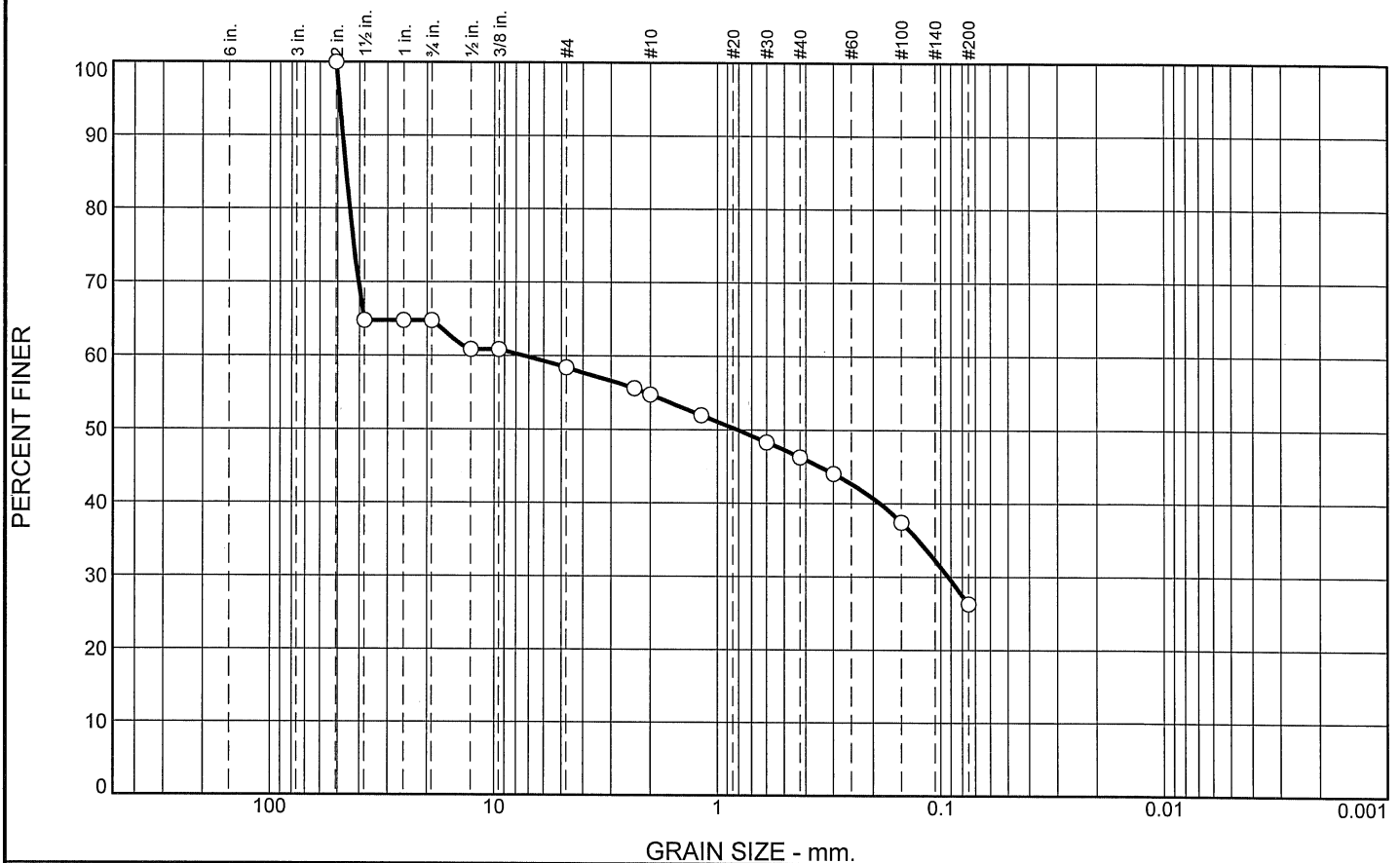
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	35	7	3	9	20	26	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100		
1.5	65		
1	65		
.75	65		
.5	61		
.375	61		
#4	58		
#8	56		
#10	55		
#16	52		
#30	48		
#40	46		
#50	44		
#100	37		
#200	26		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --
 Coefficients
 D₉₀= 47.4943 D₈₅= 45.8602 D₆₀= 7.4105
 D₅₀= 0.8148 D₃₀= 0.0927 D₁₅=
 D₁₀= C_u= C_c=

USCS= -- Classification
 AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-08 @ 35.0'
 Sample Number: DFCB-08

Depth: 35.0'

Date: 3/6/18



**GEOTECHNICAL &
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 SERVICES, INC.**

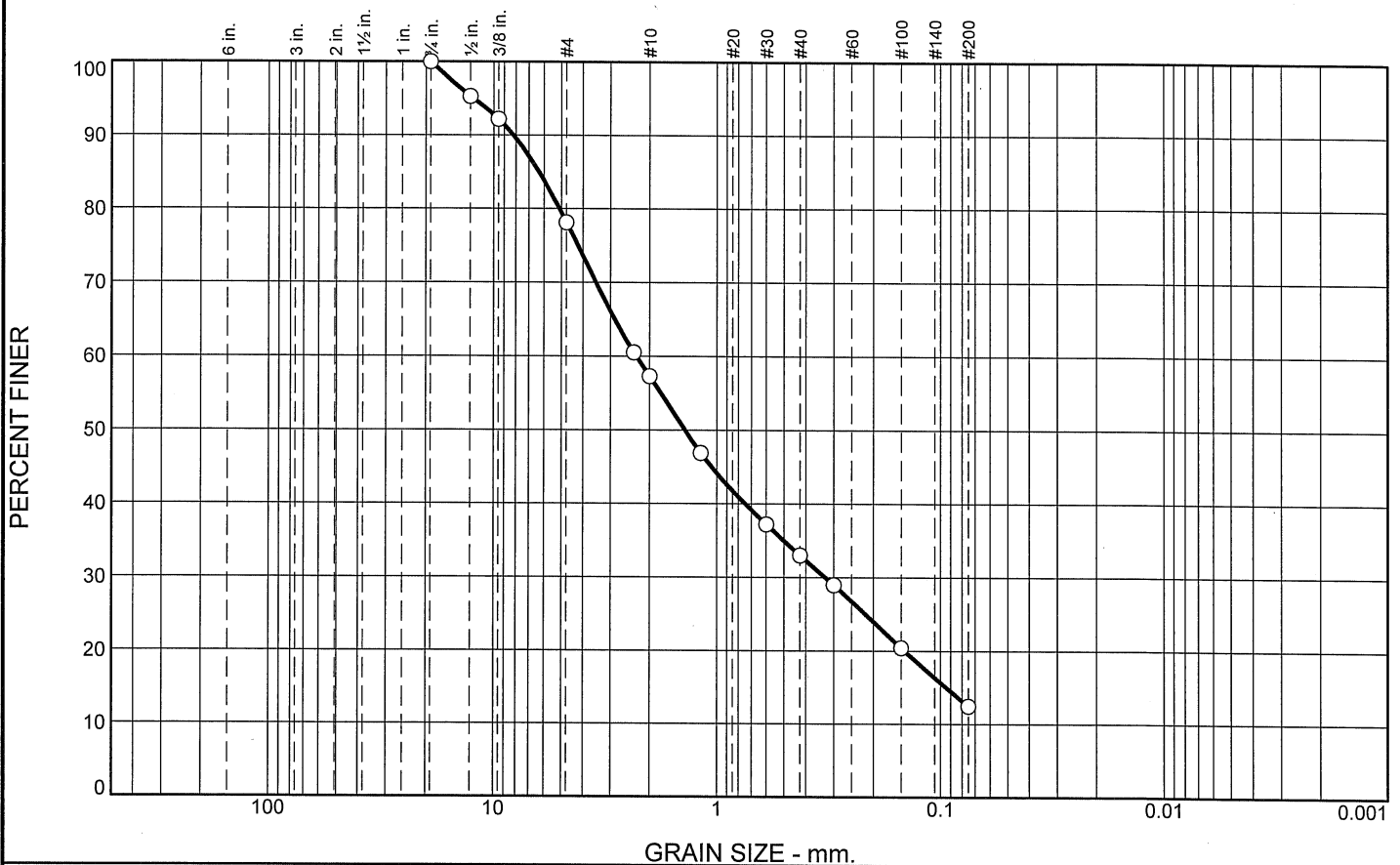
Client: NERT TESTING
 Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	22	21	24	21	12	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100		
.5	95		
.375	92		
#4	78		
#8	61		
#10	57		
#16	47		
#30	37		
#40	33		
#50	29		
#100	20		
#200	12		

* (no specification provided)

Material Description

PL= -- **Atterberg Limits** LL= -- PI= --
 Coefficients
 D₉₀= 8.2128 D₈₅= 6.3337 D₆₀= 2.3009
 D₅₀= 1.3916 D₃₀= 0.3281 D₁₅= 0.0942
 D₁₀= C_u= C_c=
 Classification
 USCS= -- AASHTO= --
 Remarks
 SAMPLED BY: CLIENT

Location: DFCB-09 @ 5.0'
 Sample Number: DFCB-09

Depth: 5.0'

Date: 3/22/18



**GEOTECHNICAL &
 ENVIRONMENTAL
 SERVICES, INC.**

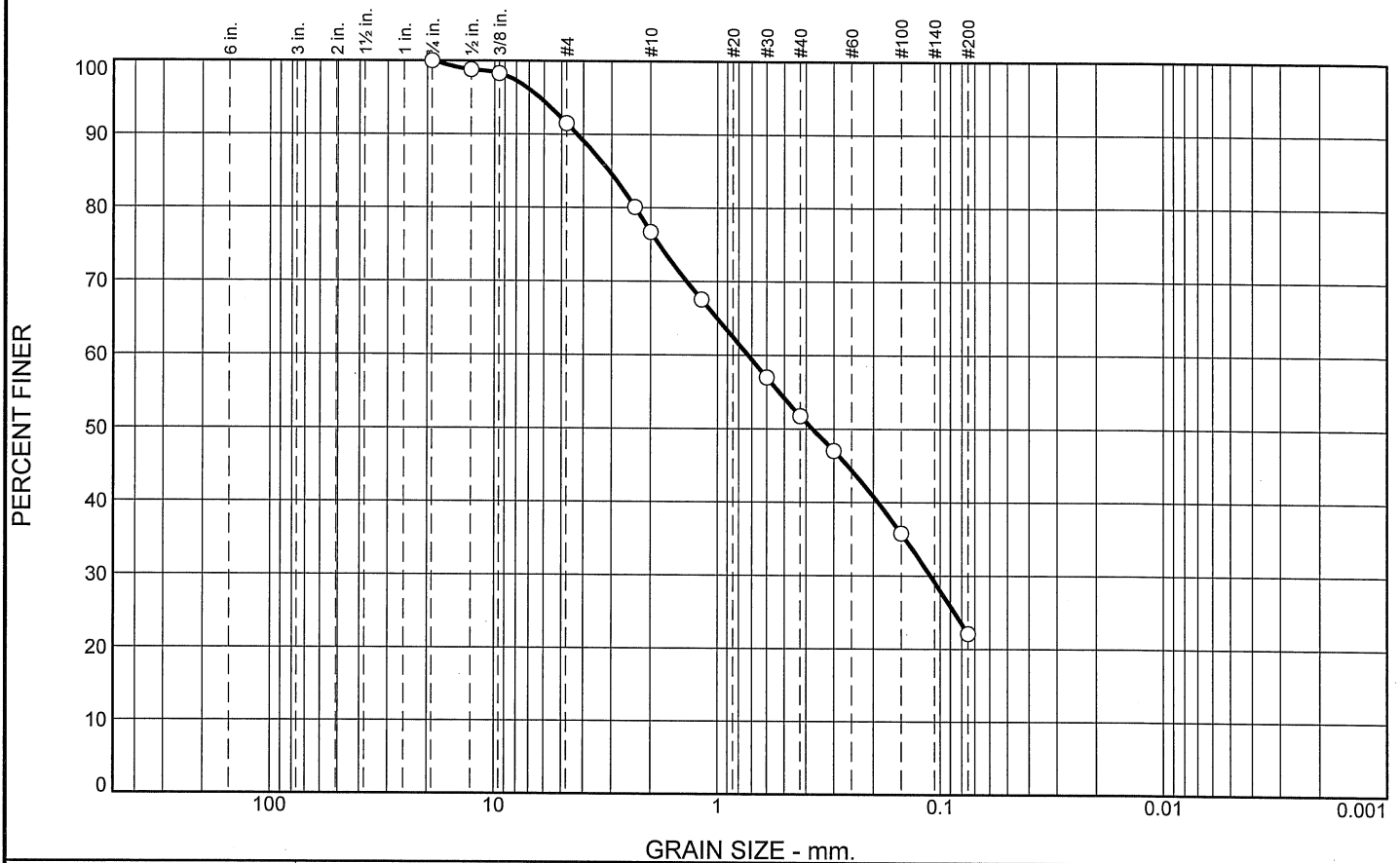
Client: NERT TESTING
 Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	9	14	25	30	22	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100		
.5	99		
.375	98		
#4	91		
#8	80		
#10	77		
#16	68		
#30	57		
#40	52		
#50	47		
#100	36		
#200	22		

* (no specification provided)

Material Description

Atterberg Limits
 PL= -- LL= -- PI= --
Coefficients
 D₉₀= 4.2704 D₈₅= 3.0769 D₆₀= 0.7282
 D₅₀= 0.3747 D₃₀= 0.1109 D₁₅=
 D₁₀= C_u= C_c=
Classification
 USCS= -- AASHTO= --
Remarks
 SAMPLED BY: CLIENT

Location: DFCB-09 @ 20.0'
Sample Number: DFCB-09

Depth: 20.0'

Date: 3/22/18



GEOTECHNICAL & ENVIRONMENTAL SERVICES, INC.

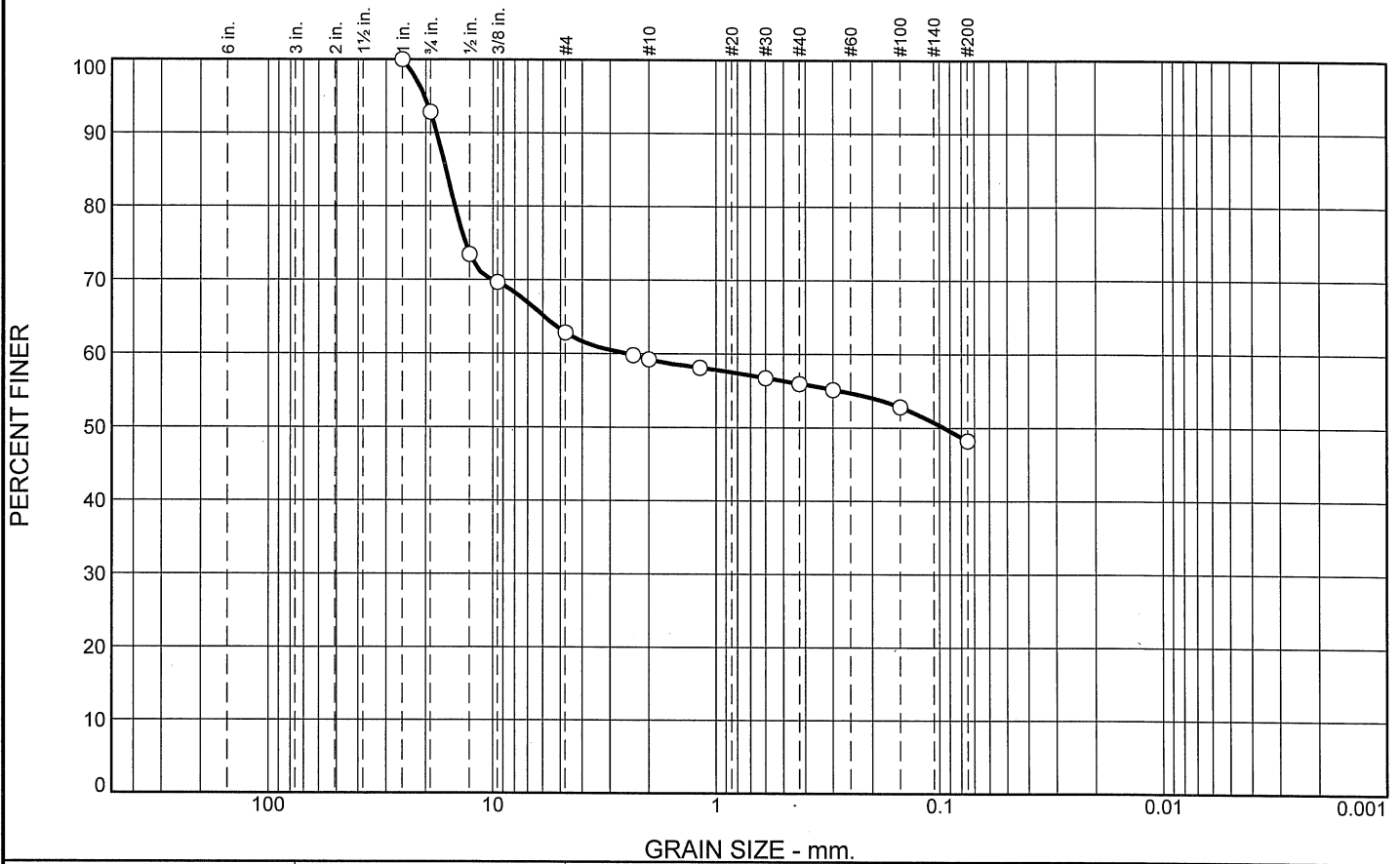
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	7	30	4	3	8	48	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100		
.75	93		
.5	73		
.375	70		
#4	63		
#8	60		
#10	59		
#16	58		
#30	57		
#40	56		
#50	55		
#100	53		
#200	48		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 17.8842 D₈₅= 16.2402 D₆₀= 2.5358
D₅₀= 0.0957 D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-09 @ 40.0'
Sample Number: DFCB-09

Depth: 40.0'

Date: 3/22/18



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SERVICES, INC.**

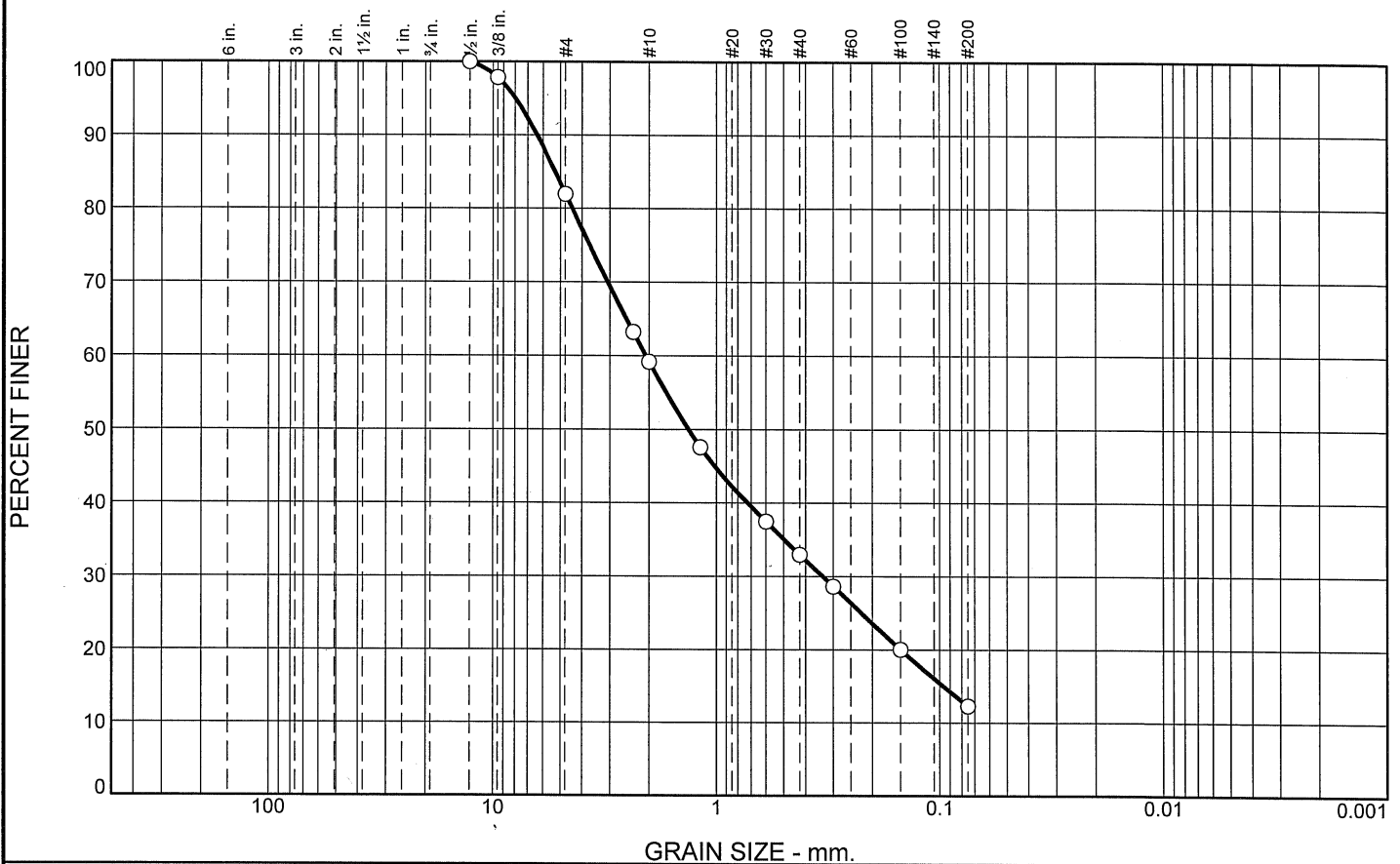
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	18	23	26	21	12	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100		
.375	98		
#4	82		
#8	63		
#10	59		
#16	48		
#30	37		
#40	33		
#50	29		
#100	20		
#200	12		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 6.3873 D₈₅= 5.2966 D₆₀= 2.0698
D₅₀= 1.3342 D₃₀= 0.3350 D₁₅= 0.0964
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-10 @ 10.0'
Sample Number: DFCB-10

Depth: 10.0'

Date: 3/22/18



**GEOTECHNICAL &
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SERVICES, INC.**

Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

PERCENT FINER

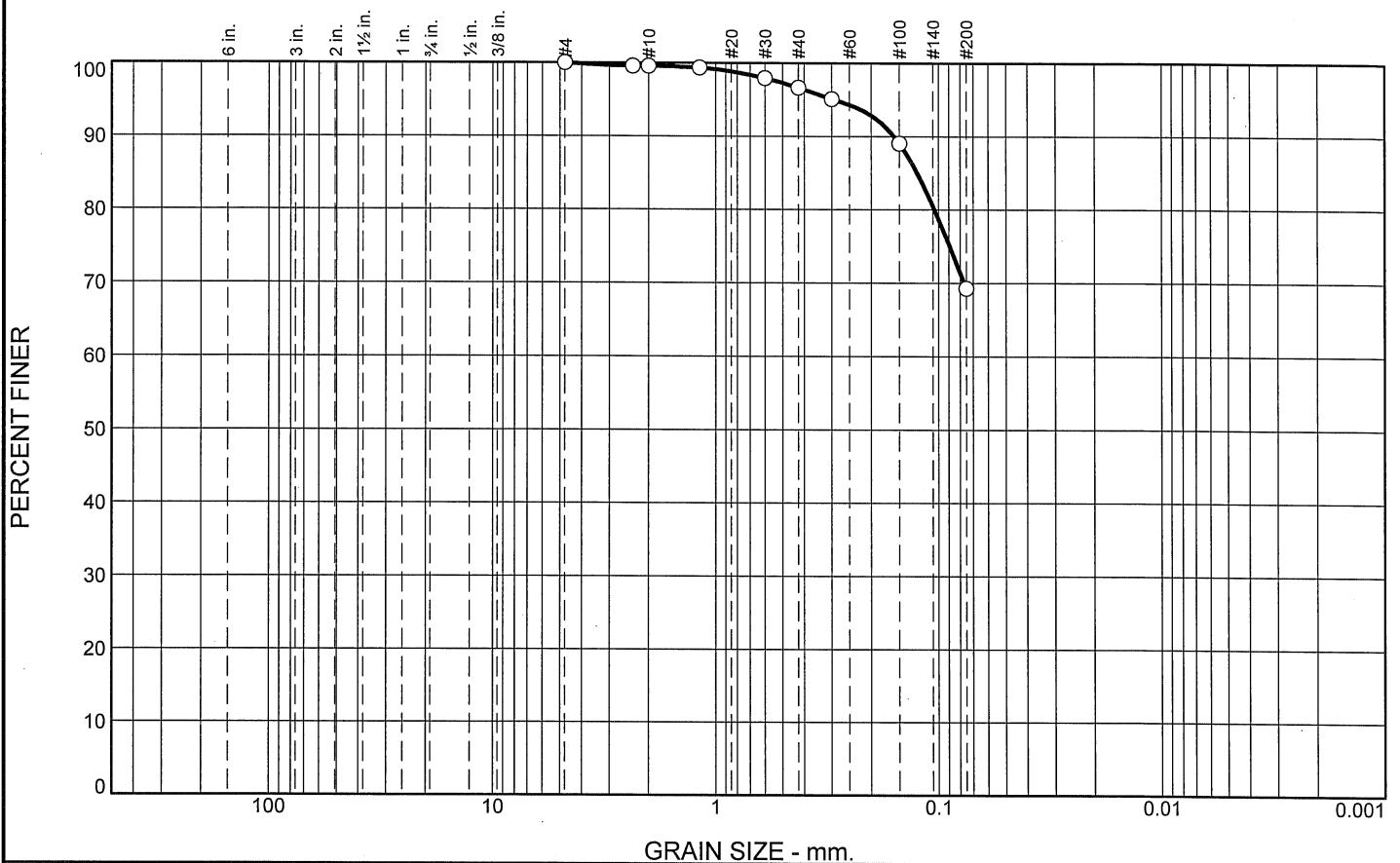


SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100		
.5	96		
.375	95		
#4	92		
#8	90		
#10	89		
#16	81		
#30	74		
#40	71		
#50	67		
#100	53		
#200	29		

<u>Material Description</u>		
<u>Atterberg Limits</u>		
PL= --	LL= --	PI= --
<u>Coefficients</u>		
D ₉₀ = 2.2812	D ₈₅ = 1.5554	D ₆₀ = 0.2006
D ₅₀ = 0.1352	D ₃₀ = 0.0763	D ₁₅ =
D ₁₀ =	C _u =	C _c =
<u>Classification</u>		
USCS= --	AASHTO= --	
<u>Remarks</u>		
SAMPLED BY: CLIENT		

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	3	28	69	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100		
#8	100		
#10	100		
#16	99		
#30	98		
#40	97		
#50	95		
#100	89		
#200	69		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients
D₉₀= 0.1585 D₈₅= 0.1249 D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification
USCS= -- AASHTO= --

Remarks
SAMPLED BY: CLIENT

Location: DFCB-10 @ 40.0'
Sample Number: DFCB-10

Depth: 40.0'

Date: 3/22/18



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SERVICES, INC.**

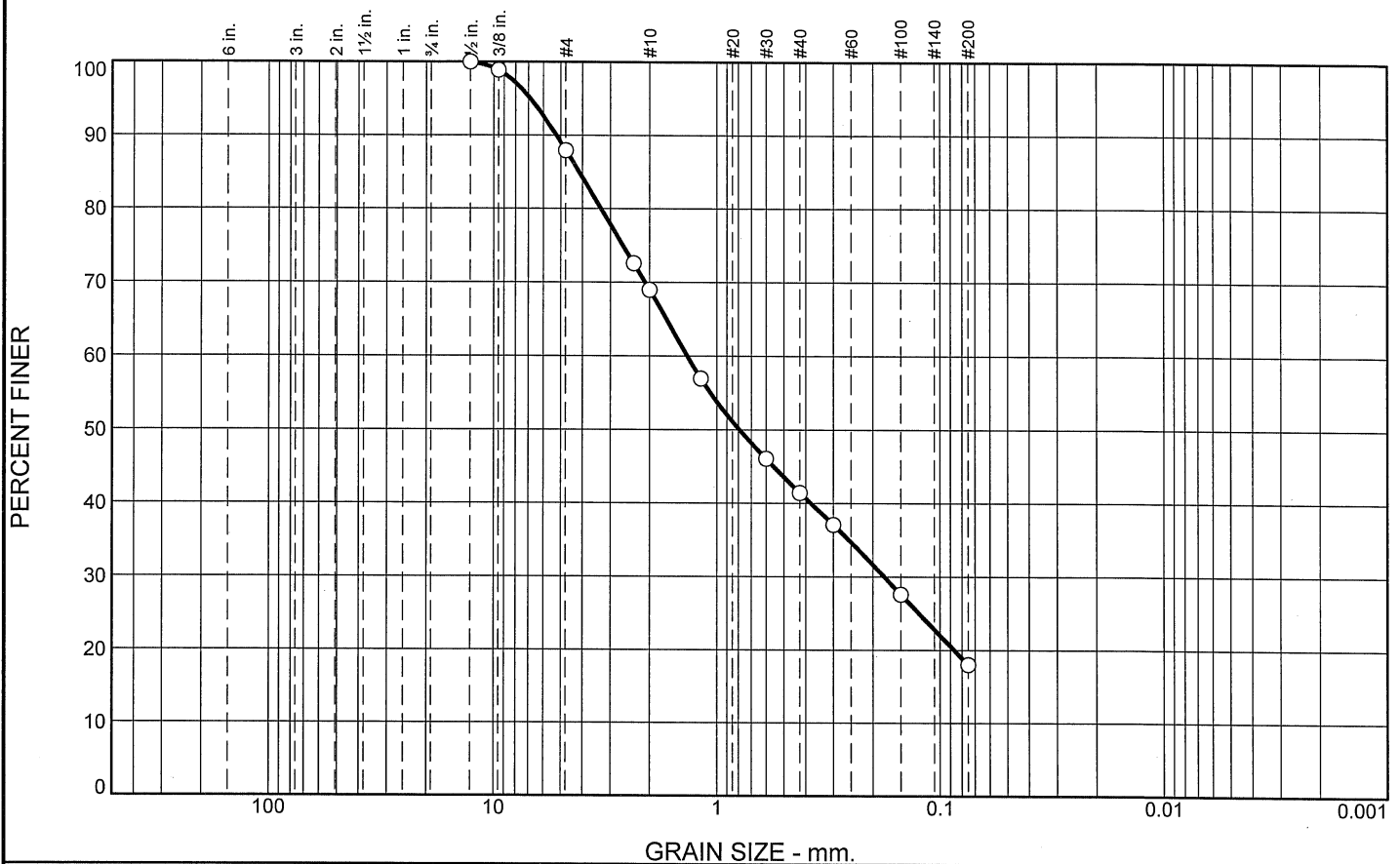
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	12	19	28	23	18	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100		
.375	99		
#4	88		
#8	73		
#10	69		
#16	57		
#30	46		
#40	41		
#50	37		
#100	28		
#200	18		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 5.2524 D₈₅= 4.1450 D₆₀= 1.3597
D₅₀= 0.7926 D₃₀= 0.1778 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-11 @ 10.0'
Sample Number: DFCB-11

Depth: 10.0'

Date: 3/22/18



**GEOTECHNICAL &
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SERVICES, INC.**

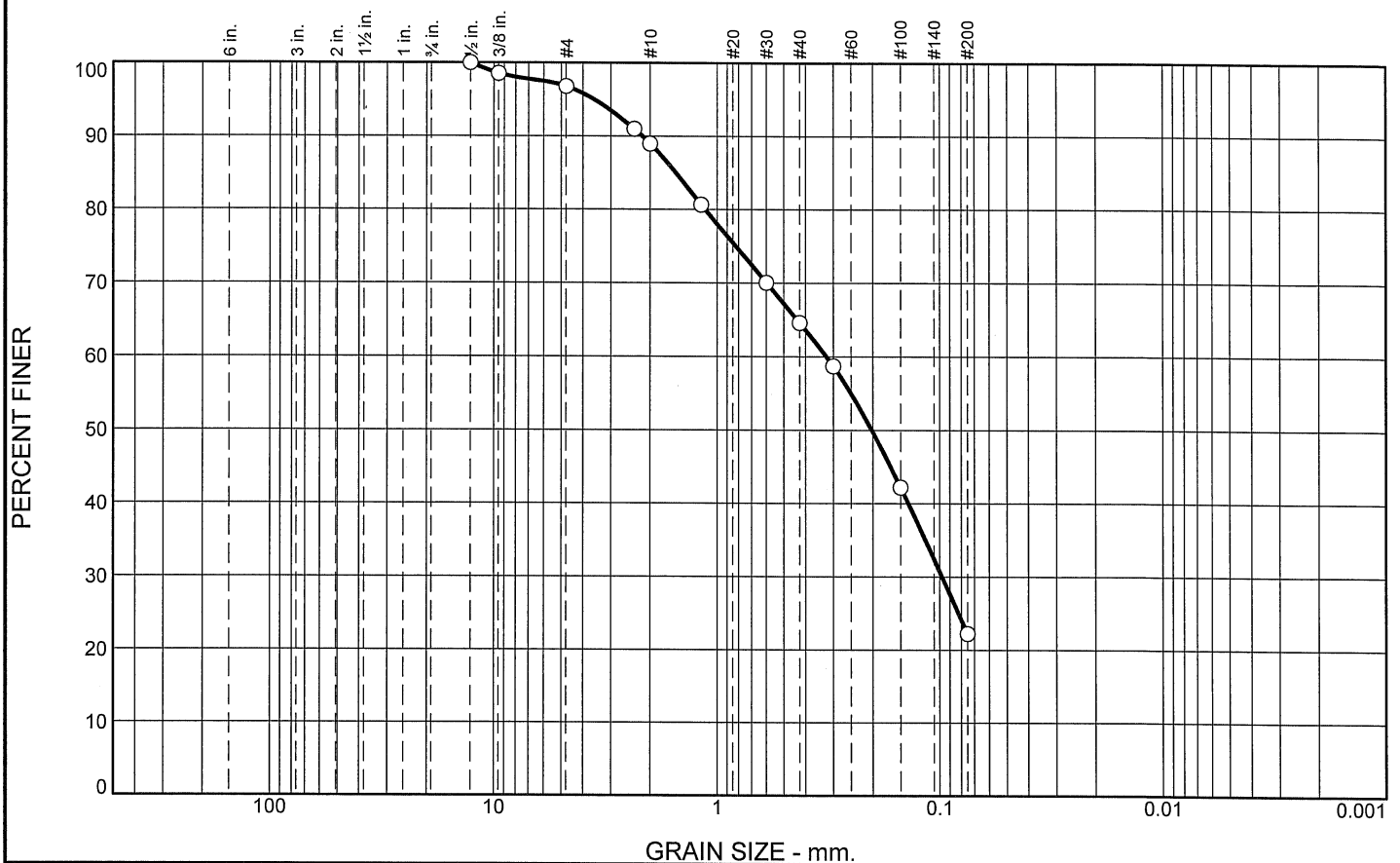
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	3	8	24	43	22	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100		
.375	99		
#4	97		
#8	91		
#10	89		
#16	81		
#30	70		
#40	65		
#50	59		
#100	42		
#200	22		

* (no specification provided)

Material Description

Atterberg Limits
 PL= -- LL= -- PI= --
Coefficients
 D₉₀= 2.1729 D₈₅= 1.5333 D₆₀= 0.3223
 D₅₀= 0.2021 D₃₀= 0.0977 D₁₅=
 D₁₀= C_u= C_c=
Classification
 USCS= -- AASHTO= --
Remarks
 SAMPLED BY: CLIENT

Location: DFCB-11 @ 20.0'
Sample Number: DFCB-11

Depth: 20.0'

Date: 3/22/18



**GEOTECHNICAL &
ENVIRONMENTAL
SERVICES, INC.**

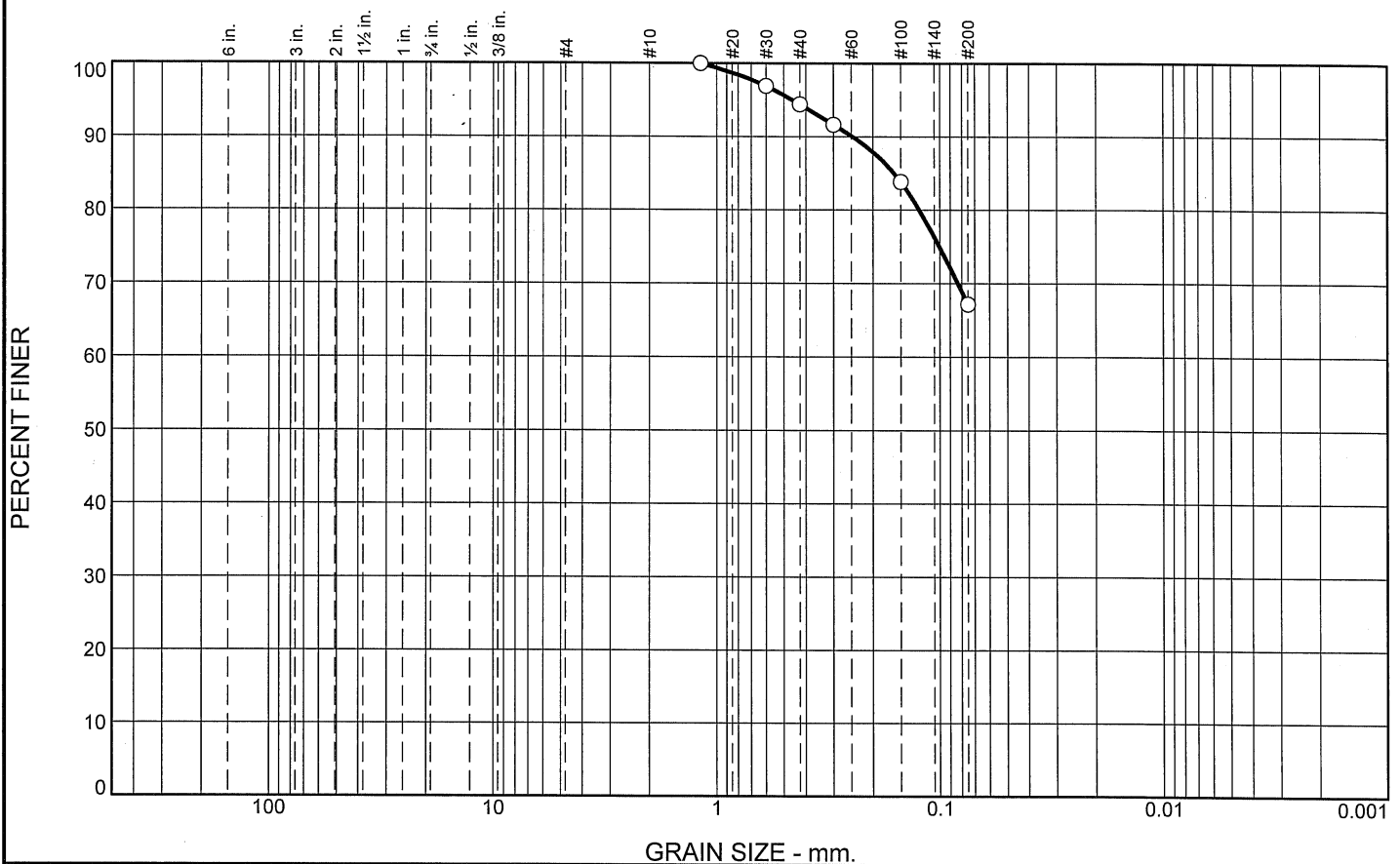
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	6	27	67	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#16	100		
#30	97		
#40	94		
#50	92		
#100	84		
#200	67		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients
D₉₀= 0.2475 D₈₅= 0.1609 D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification
USCS= -- AASHTO= --

Remarks
SAMPLED BY: CLIENT

Location: DFCB-11 @ 40.0'
Sample Number: DFCB-11

Depth: 40.0'

Date: 3/22/18



**GEOTECHNICAL &
ENVIRONMENTAL
SERVICES, INC.**

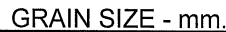
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

PERCENT FINER

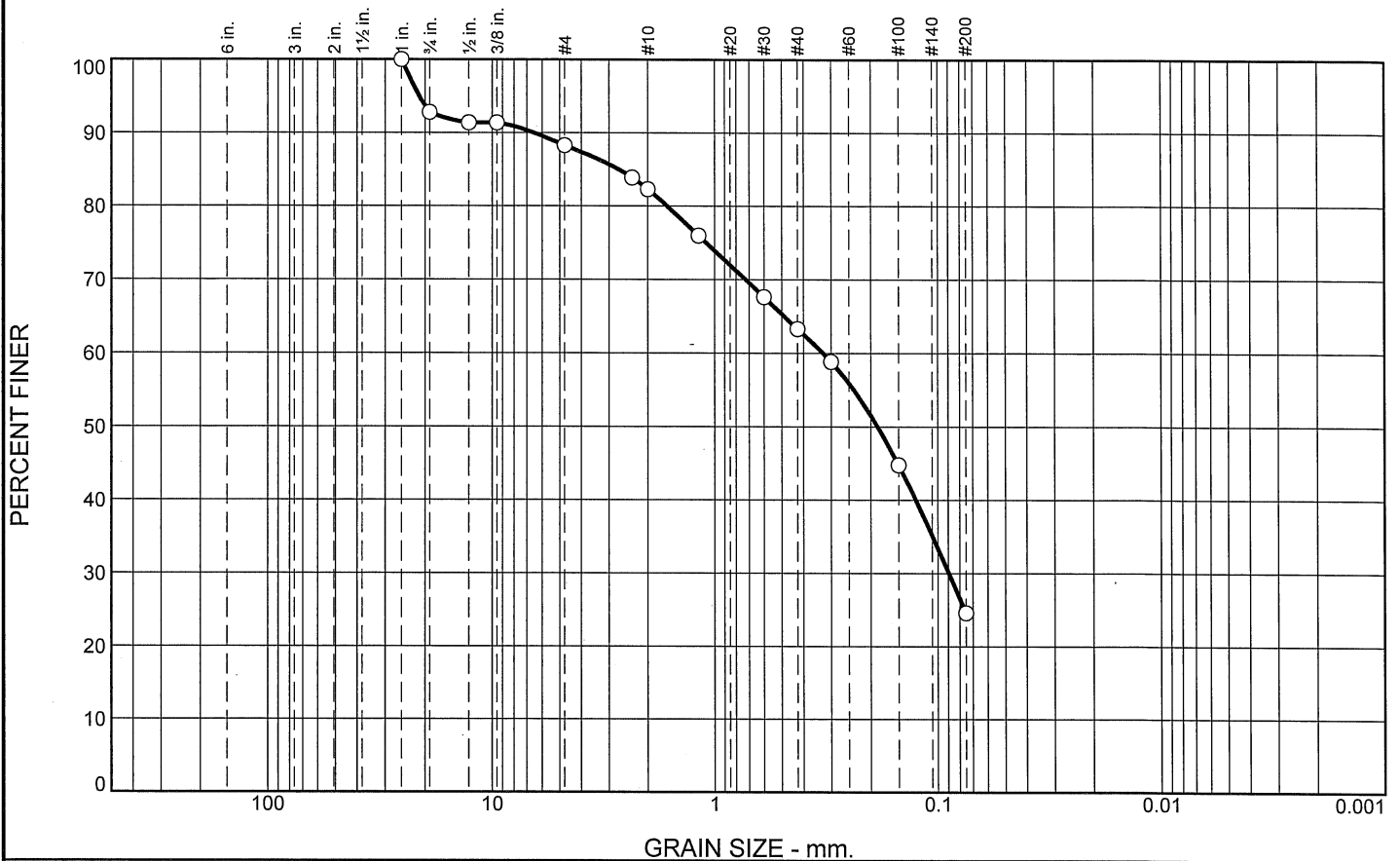


SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100		
.75	95		
.5	93		
.375	91		
#4	79		
#8	64		
#10	60		
#16	50		
#30	40		
#40	36		
#50	32		
#100	23		
#200	15		



Tested By: A. SANDERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	7	5	6	19	38	25	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100		
.75	93		
.5	91		
.375	91		
#4	88		
#8	84		
#10	82		
#16	76		
#30	68		
#40	63		
#50	59		
#100	45		
#200	25		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 6.5634 D₈₅= 2.7129 D₆₀= 0.3267
D₅₀= 0.1864 D₃₀= 0.0894 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-12 @ 20.0'
Sample Number: DFCB-12

Depth: 20.0'

Date: 3/7/18



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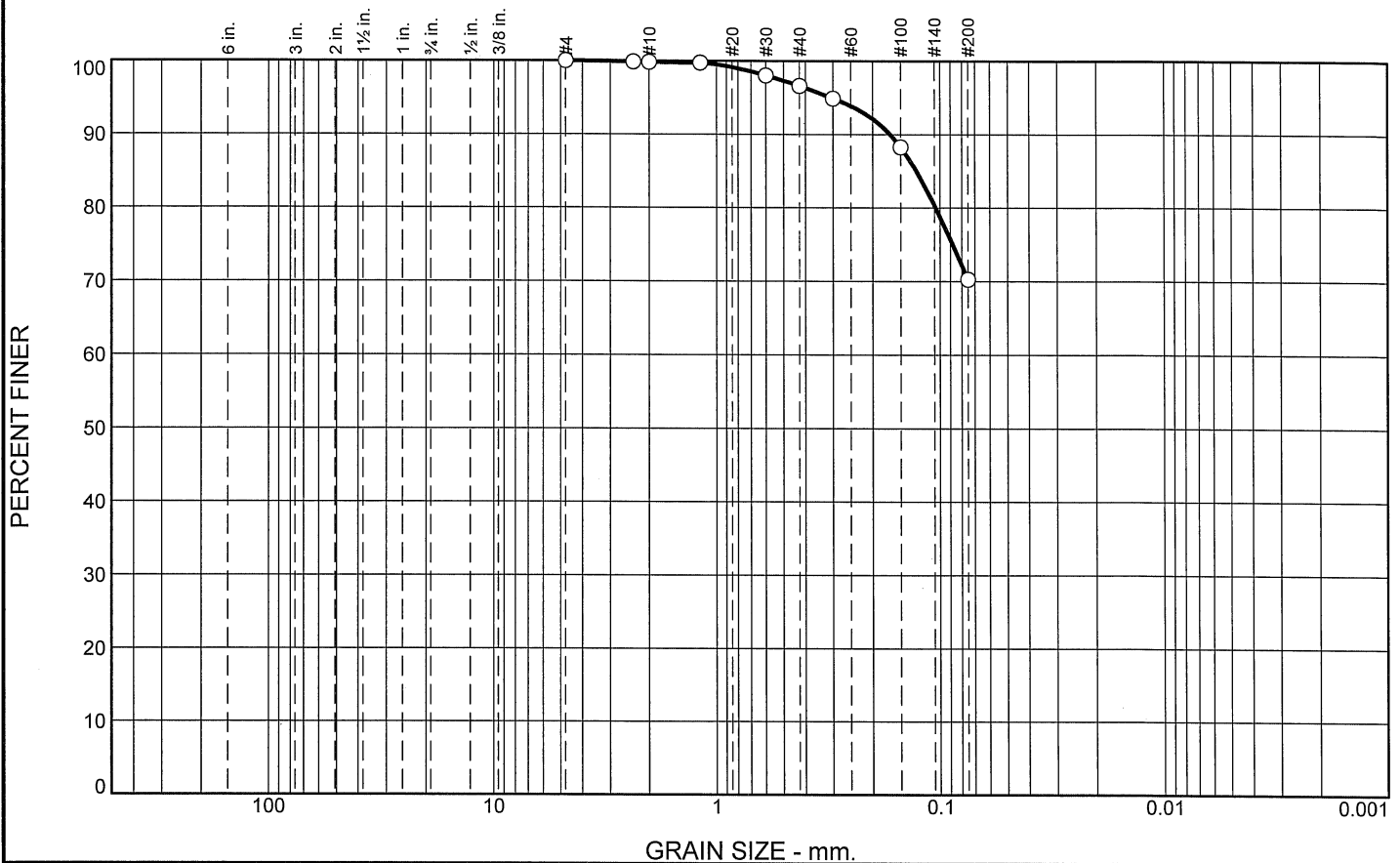
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	3	27	70	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100		
#8	100		
#10	100		
#16	100		
#30	98		
#40	97		
#50	95		
#100	88		
#200	70		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients
D₉₀= 0.1672 D₈₅= 0.1278 D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification
USCS= -- AASHTO= --

Remarks
SAMPLED BY: CLIENT

Location: DFCB-12 @ 40.0'
Sample Number: DFCB-12

Depth: 40.0'

Date: 3/7/18



**GEOTECHNICAL &
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SERVICES, INC.**

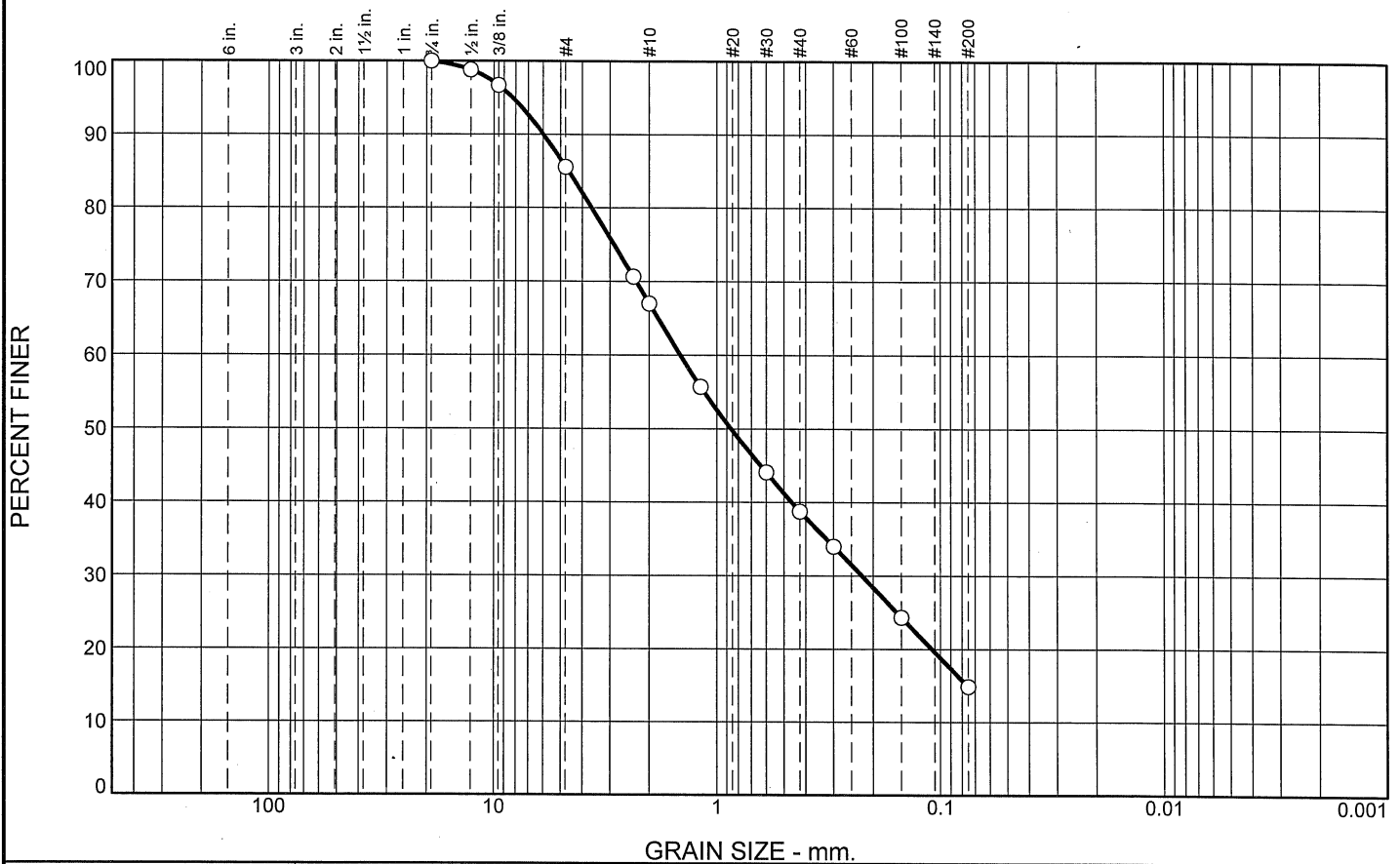
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	14	19	28	24	15	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100		
.5	99		
.375	97		
#4	86		
#8	71		
#10	67		
#16	56		
#30	44		
#40	39		
#50	34		
#100	24		
#200	15		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 5.9965 D₈₅= 4.6173 D₆₀= 1.4540
D₅₀= 0.8640 D₃₀= 0.2245 D₁₅= 0.0758
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-13 @ 5.0'
Sample Number: DFCB-13

Depth: 5.0'

Date: 3/22/18



**GEOTECHNICAL &
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SERVICES, INC.**

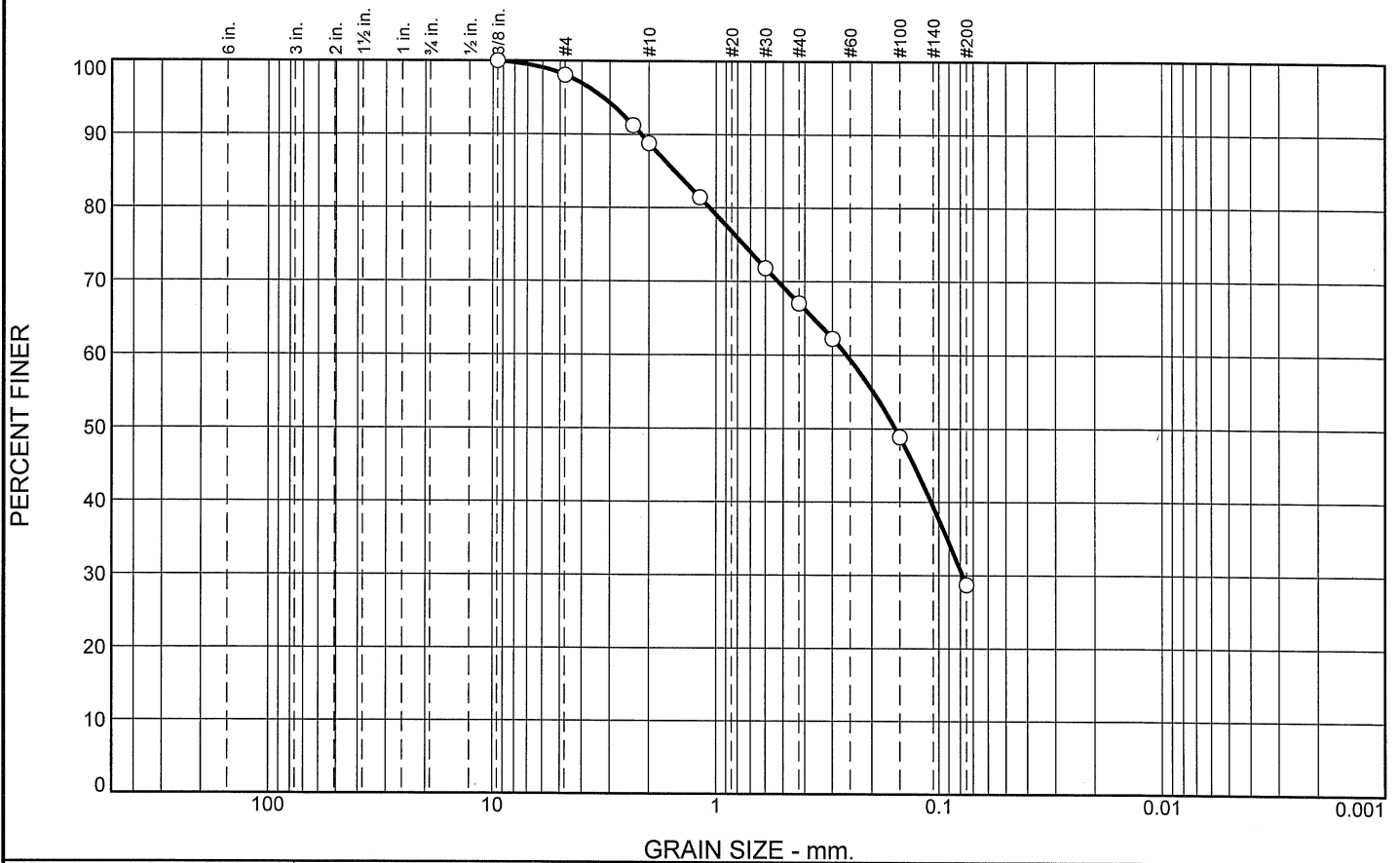
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	2	9	22	38	29	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100		
#4	98		
#8	91		
#10	89		
#16	81		
#30	72		
#40	67		
#50	62		
#100	49		
#200	29		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 2.1699 D₈₅= 1.5332 D₆₀= 0.2600
D₅₀= 0.1572 D₃₀= 0.0781 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-13 @ 20.0'
Sample Number: DFCB-13

Depth: 20.0'

Date: 3/22/18



**GEOTECHNICAL &
ENVIRONMENTAL
SERVICES, INC.**

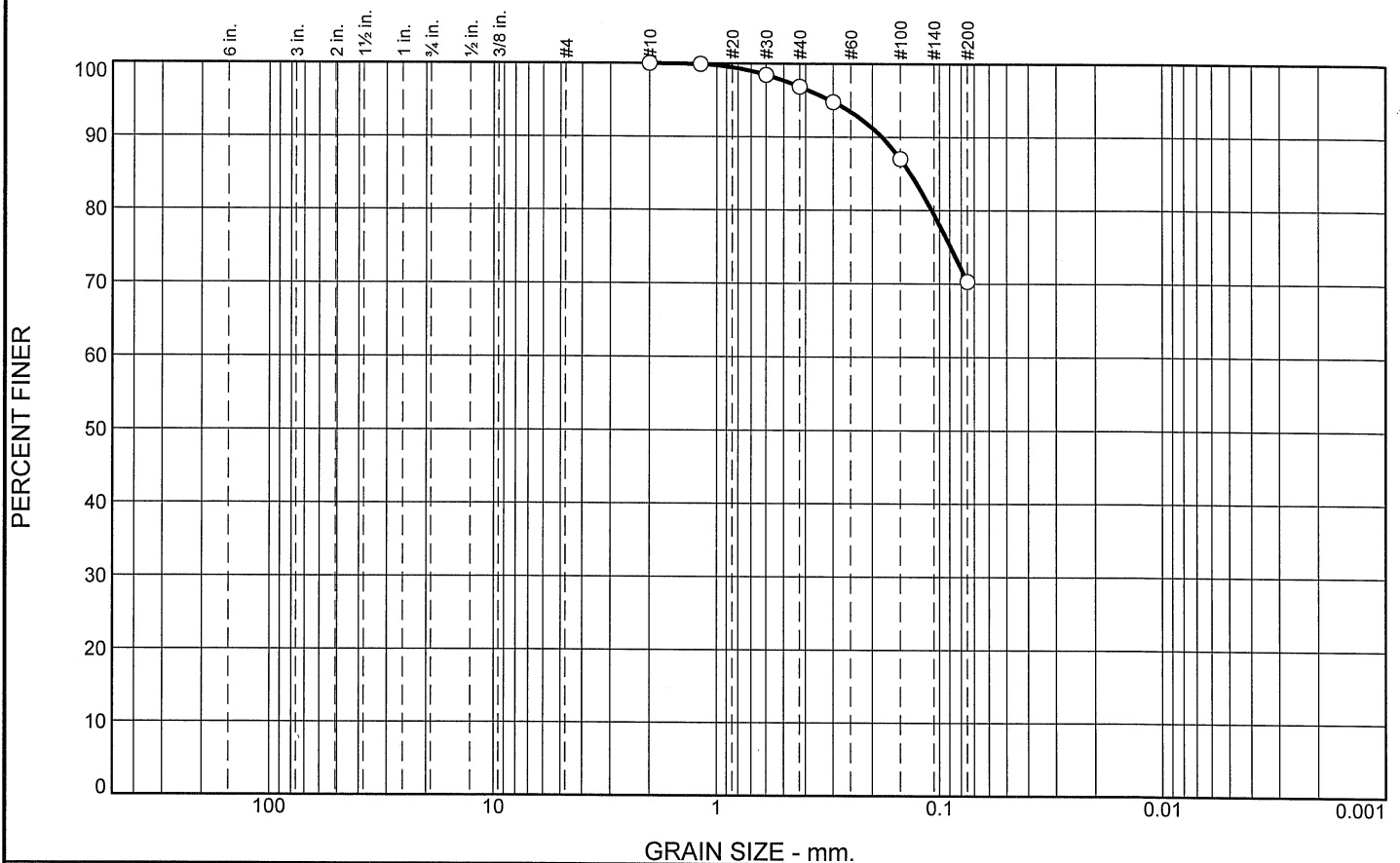
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	3	27	70	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100		
#16	100		
#30	98		
#40	97		
#50	95		
#100	87		
#200	70		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients
D₉₀= 0.1818 D₈₅= 0.1352 D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification
USCS= -- AASHTO= --

Remarks
SAMPLED BY: CLIENT

Location: DFCB-13 @ 35.0'
Sample Number: DFCB-13

Depth: 35.0'

Date: 3/22/18



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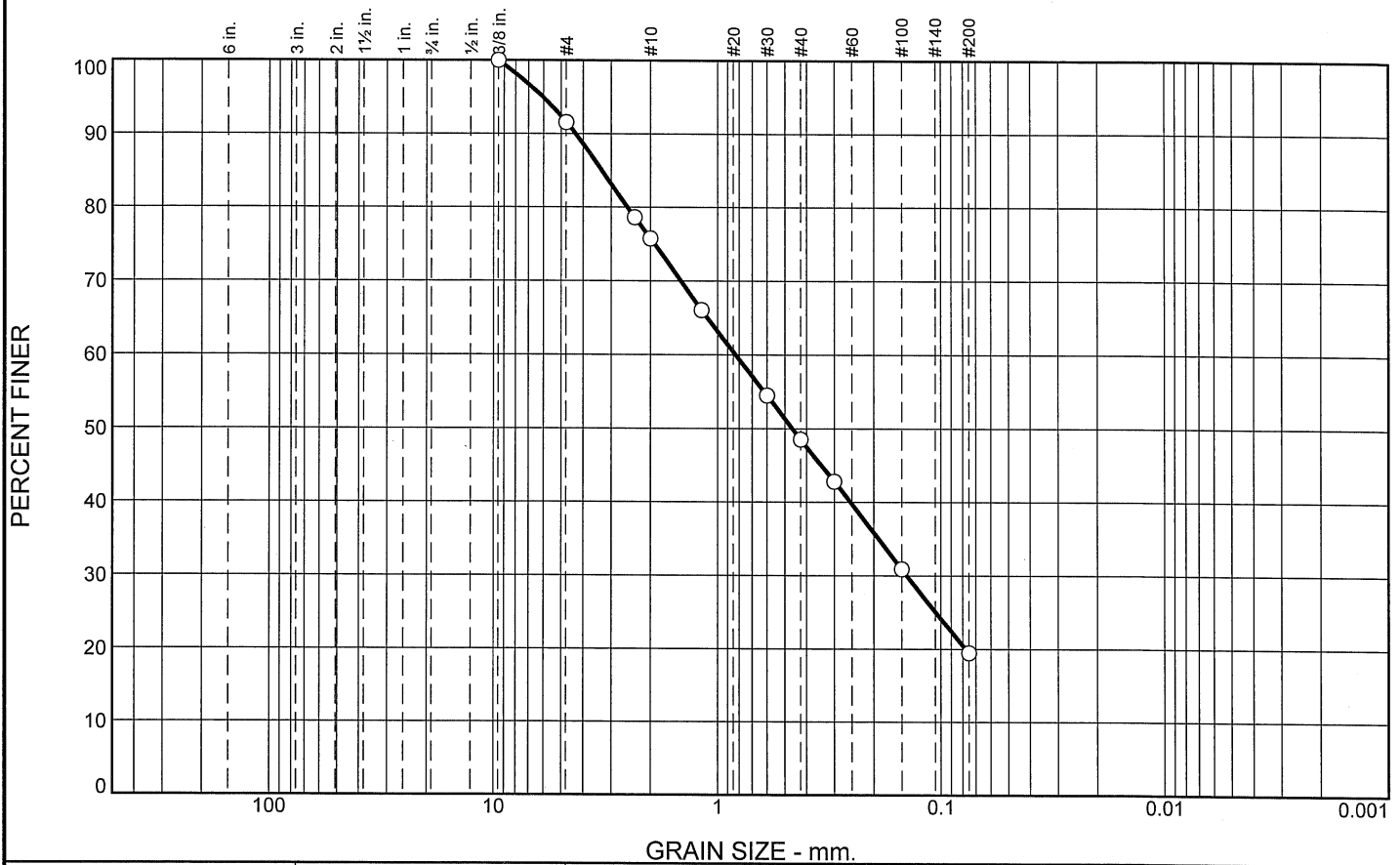
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	8	16	27	30	19	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100		
#4	92		
#8	79		
#10	76		
#16	66		
#30	54		
#40	49		
#50	43		
#100	31		
#200	19		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 4.3270 D₈₅= 3.3023 D₆₀= 0.8315

D₅₀= 0.4637 D₃₀= 0.1424 D₁₅=

D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-14 @ 5.0'

Sample Number: DFCB-14

Depth: 5.0'

Date: 3/22/18



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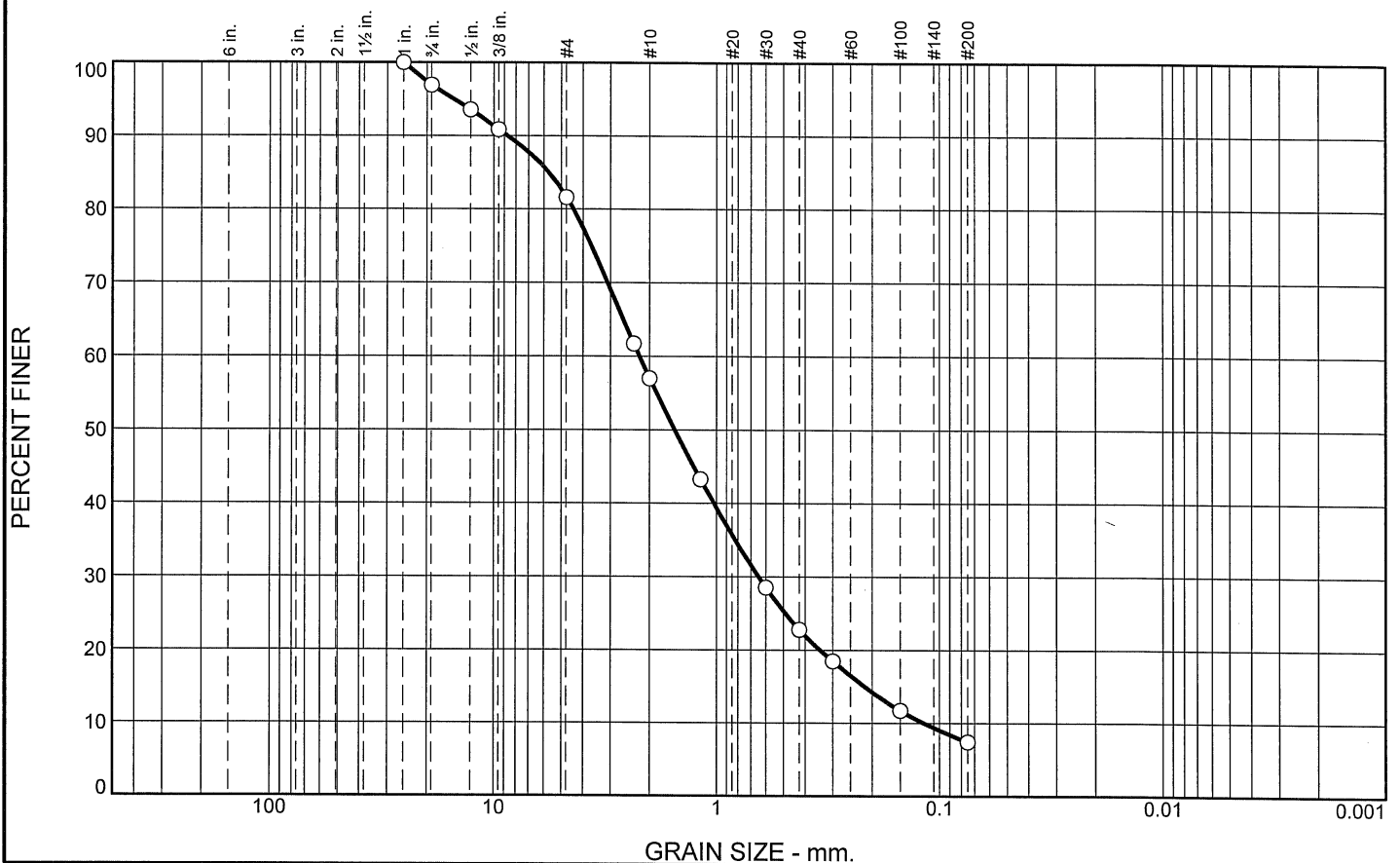
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	3	15	25	34	16	7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100		
.75	97		
.5	94		
.375	91		
#4	82		
#8	62		
#10	57		
#16	43		
#30	29		
#40	23		
#50	18		
#100	12		
#200	7.4		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 8.7277 D₈₅= 5.7093 D₆₀= 2.2240
D₅₀= 1.5414 D₃₀= 0.6467 D₁₅= 0.2161
D₁₀= 0.1174 C_u= 18.94 C_c= 1.60

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-14 @ 15.0'
Sample Number: DFCB-14

Depth: 15.0'

Date: 3/20/18



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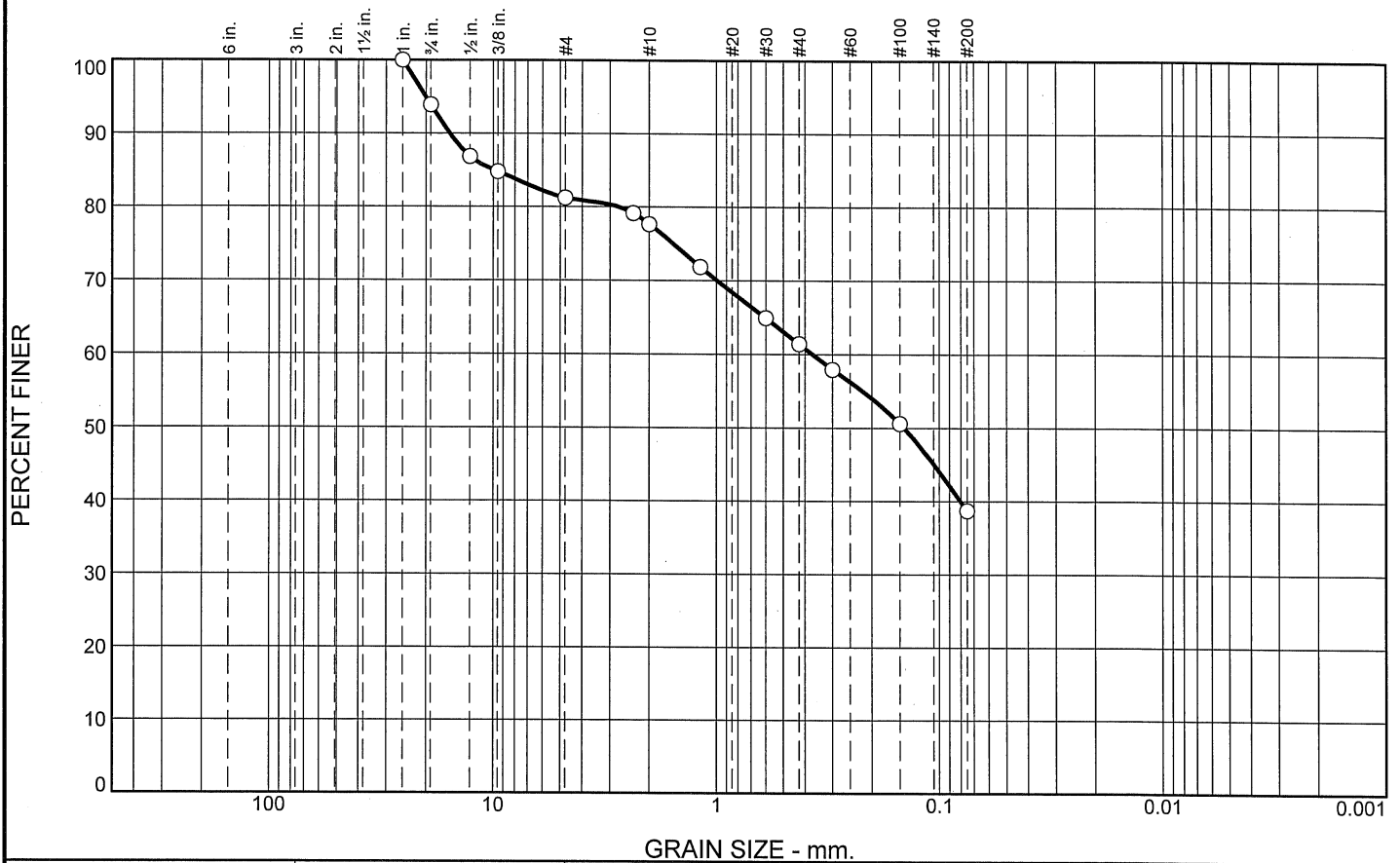
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	6	13	3	17	22	39	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100		
.75	94		
.5	87		
.375	85		
#4	81		
#8	79		
#10	78		
#16	72		
#30	65		
#40	61		
#50	58		
#100	51		
#200	39		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 15.6620 D₈₅= 9.9184 D₆₀= 0.3702
D₅₀= 0.1439 D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-14 @ 30.0'
Sample Number: DFCB-14

Depth: 30.0'

Date: 3/22/18



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SERVICES, INC.**

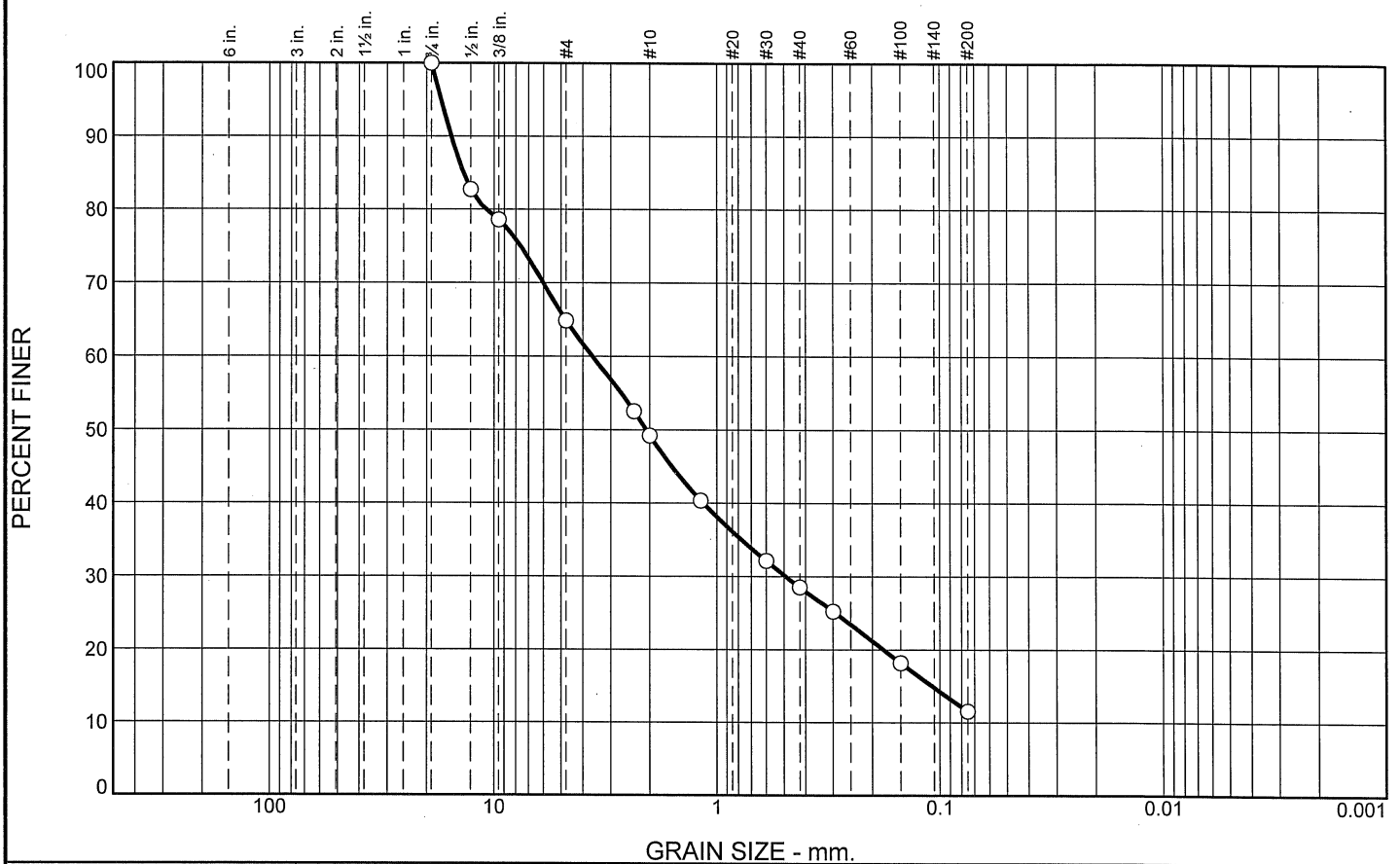
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	35	16	20	17	12	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100		
.5	83		
.375	79		
#4	65		
#8	53		
#10	49		
#16	40		
#30	32		
#40	29		
#50	25		
#100	18		
#200	12		

* (no specification provided)

Material Description

PL= -- **Atterberg Limits** LL= -- PI= --

Coefficients

D₉₀= 15.5487 D₈₅= 13.7148 D₆₀= 3.6327
D₅₀= 2.0821 D₃₀= 0.4912 D₁₅= 0.1083
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-15 @ 5.0'
Sample Number: DFCB-15

Depth: 5.0'

Date: 3/13/18



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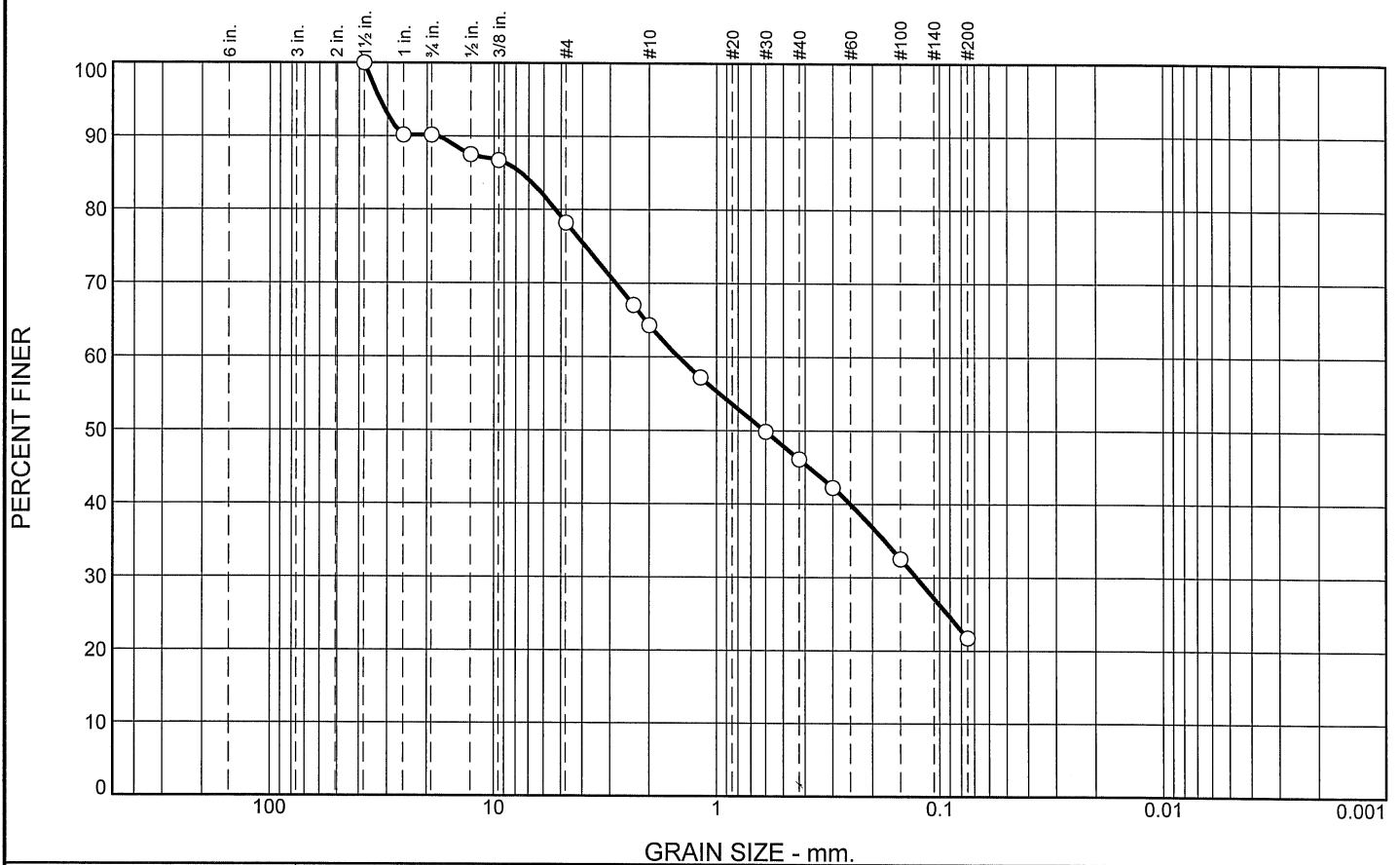
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	10	12	14	18	24	22	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100		
1	90		
.75	90		
.5	87		
.375	87		
#4	78		
#8	67		
#10	64		
#16	57		
#30	50		
#40	46		
#50	42		
#100	33		
#200	22		

* (no specification provided)

Material Description

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D₉₀= 17.8749 D₈₅= 7.6002 D₆₀= 1.4829
D₅₀= 0.6073 D₃₀= 0.1272 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-15 @ 20.0'
Sample Number: DFCB-15

Depth: 20.0'

Date: 3/13/18



**GEOTECHNICAL &
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SERVICES, INC.**

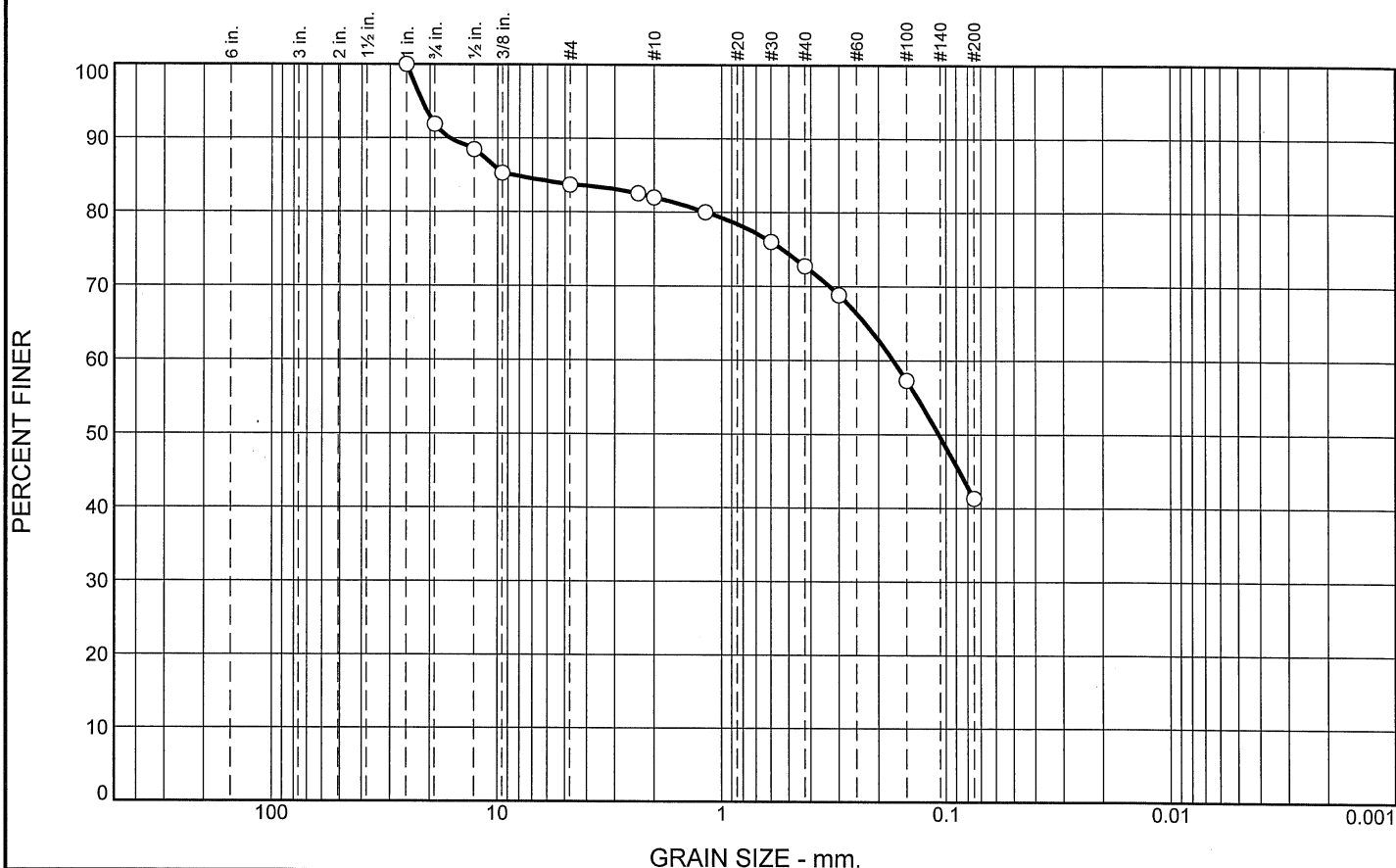
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	8	8	2	9	32	41	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100		
.75	92		
.5	88		
.375	85		
#4	84		
#8	83		
#10	82		
#16	80		
#30	76		
#40	73		
#50	69		
#100	57		
#200	41		

* (no specification provided)

Material Description

Atterberg Limits
 PL= -- LL= -- PI= --
Coefficients
 D₉₀= 16.4390 D₈₅= 8.5678 D₆₀= 0.1721
 D₅₀= 0.1078 D₃₀= C_u= D₁₅=
 D₁₀= C_c=
Classification
 USCS= -- AASHTO= --
Remarks
 SAMPLED BY: CLIENT

Location: DFCB-15 @ 35.0'
Sample Number: DFCB-15

Depth: 35.0'

Date: 3/13/18



**GEOTECHNICAL &
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SERVICES, INC.**

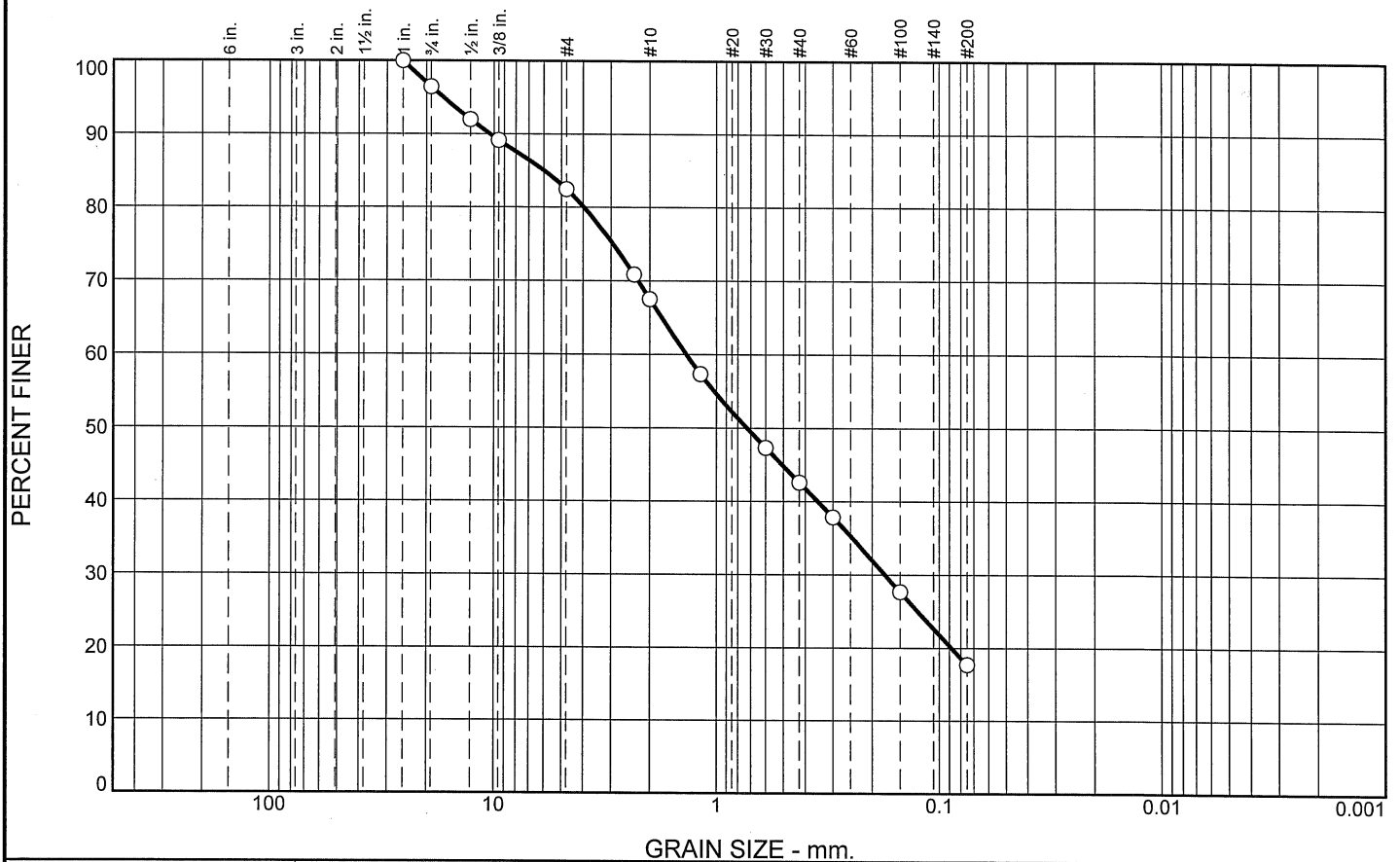
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	4	14	14	25	25	18	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100		
.75	96		
.5	92		
.375	89		
#4	82		
#8	71		
#10	68		
#16	57		
#30	47		
#40	43		
#50	38		
#100	28		
#200	18		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 10.4607 D₈₅= 5.9944 D₆₀= 1.3688
D₅₀= 0.7287 D₃₀= 0.1754 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-16 @ 10.0'
Sample Number: DFCB-16

Depth: 10.0'

Date: 3/22/18



**GEOTECHNICAL &
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SERVICES, INC.**

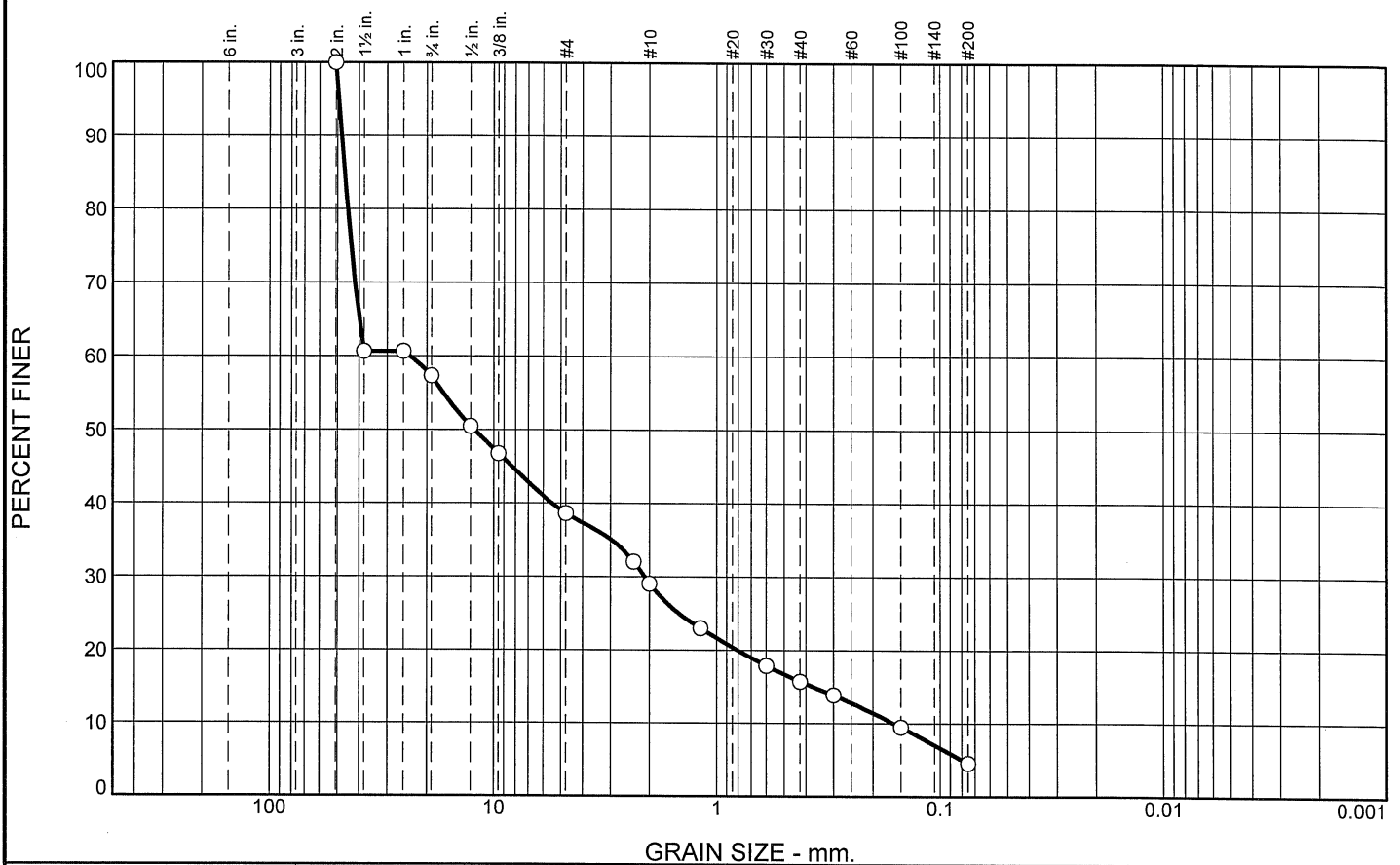
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	43	18	10	13	11	5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100		
1.5	61		
1	61		
.75	57		
.5	50		
.375	47		
#4	39		
#8	32		
#10	29		
#16	23		
#30	18		
#40	16		
#50	14		
#100	10		
#200	4.5		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 47.8539 D₈₅= 46.4007 D₆₀= 23.8059
D₅₀= 12.2915 D₃₀= 2.1050 D₁₅= 0.3704
D₁₀= 0.1613 C_u= 147.56 C_c= 1.15

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-16 @ 25.0'
Sample Number: DFCB-16

Depth: 25.0'

Date: 3/22/18



**GEOTECHNICAL &
ENVIRONMENTAL
SERVICES, INC.**

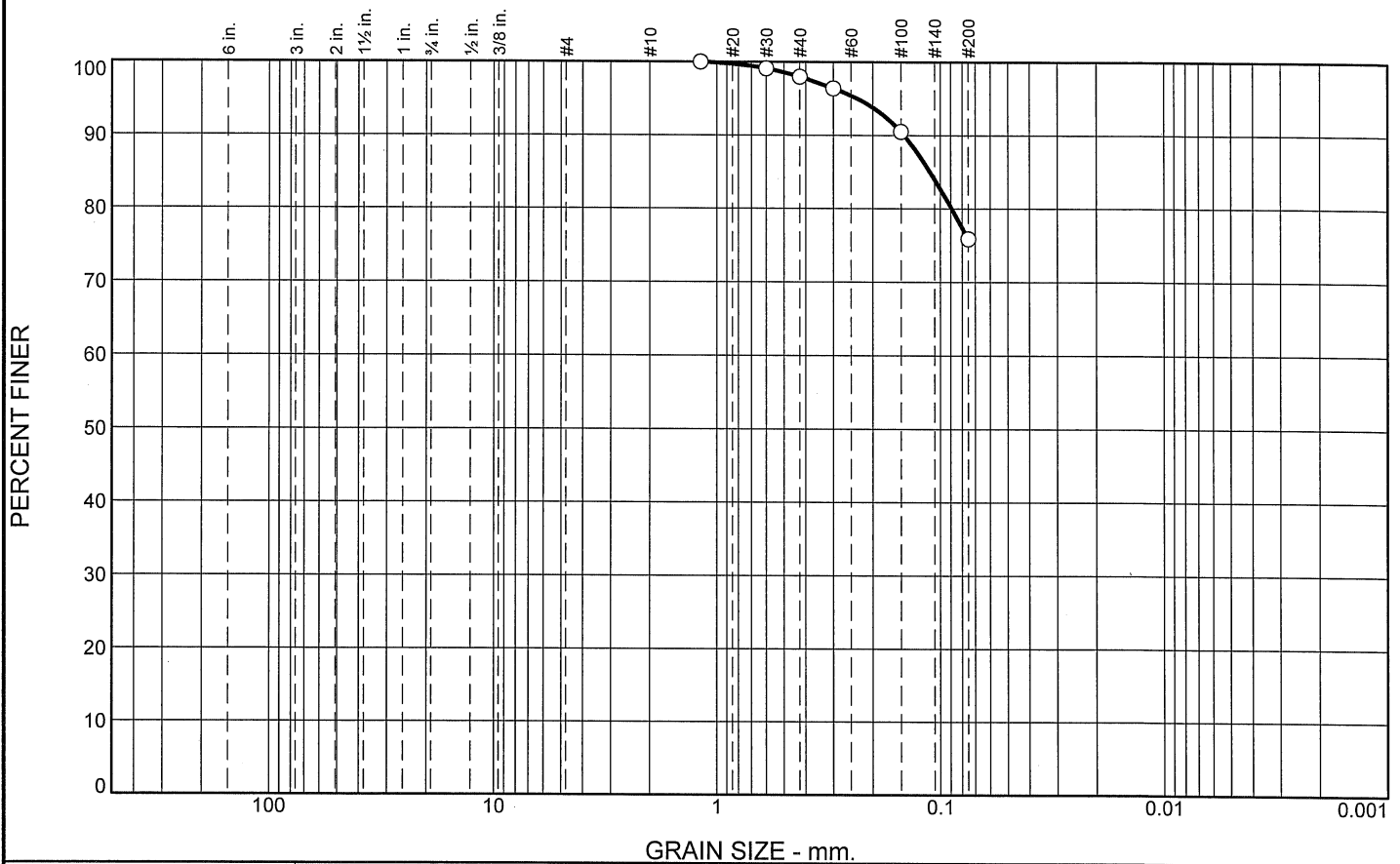
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	2	22	76	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#16	100		
#30	99		
#40	98		
#50	96		
#100	90		
#200	76		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients
 D₉₀= 0.1454 D₈₅= 0.1112 D₆₀=
 D₅₀= D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= -- AASHTO= --

Remarks
 SAMPLED BY: CLIENT

Location: DFCB-16 @ 40.0'
 Sample Number: DFCB-16

Depth: 40.0'

Date: 3/22/18



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 SERVICES, INC.

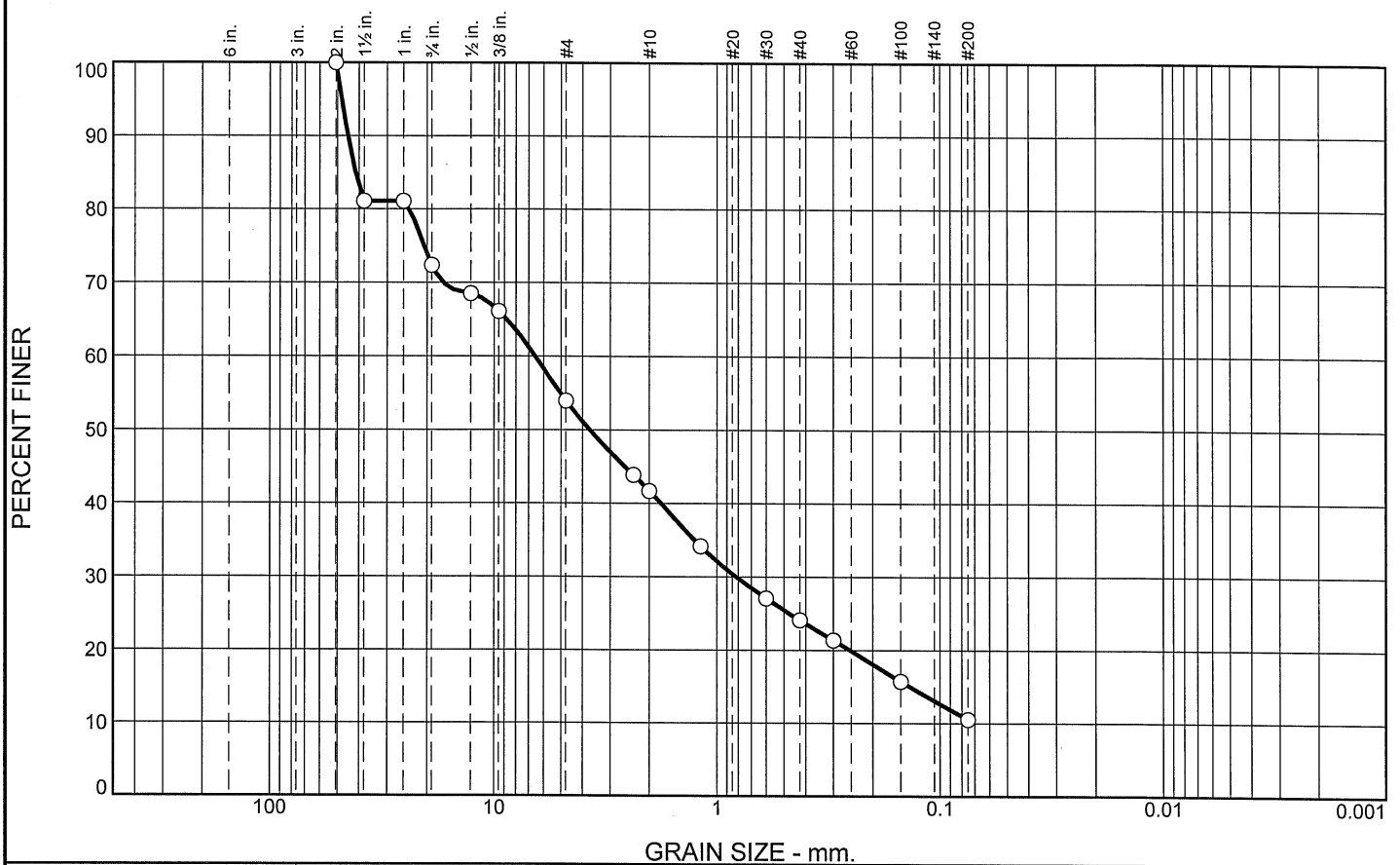
Client: NERT TESTING
 Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	28	18	12	18	13	11	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100		
1.5	81		
1	81		
.75	72		
.5	68		
.375	66		
#4	54		
#8	44		
#10	42		
#16	34		
#30	27		
#40	24		
#50	21		
#100	16		
#200	11		

* (no specification provided)

Material Description

Atterberg Limits
 PL= -- LL= -- PI= --
Coefficients
 D₉₀= 44.8165 D₈₅= 41.5457 D₆₀= 6.5714
 D₅₀= 3.7192 D₃₀= 0.8184 D₁₅= 0.1364
 D₁₀= -- C_u= -- C_c= --
Classification
 USCS= -- AASHTO= --
Remarks
 SAMPLED BY: CLIENT

Location: DFCB-17 @ 10.0'
 Sample Number: DFCB-17

Depth: 10.0'

Date: 3/16/18



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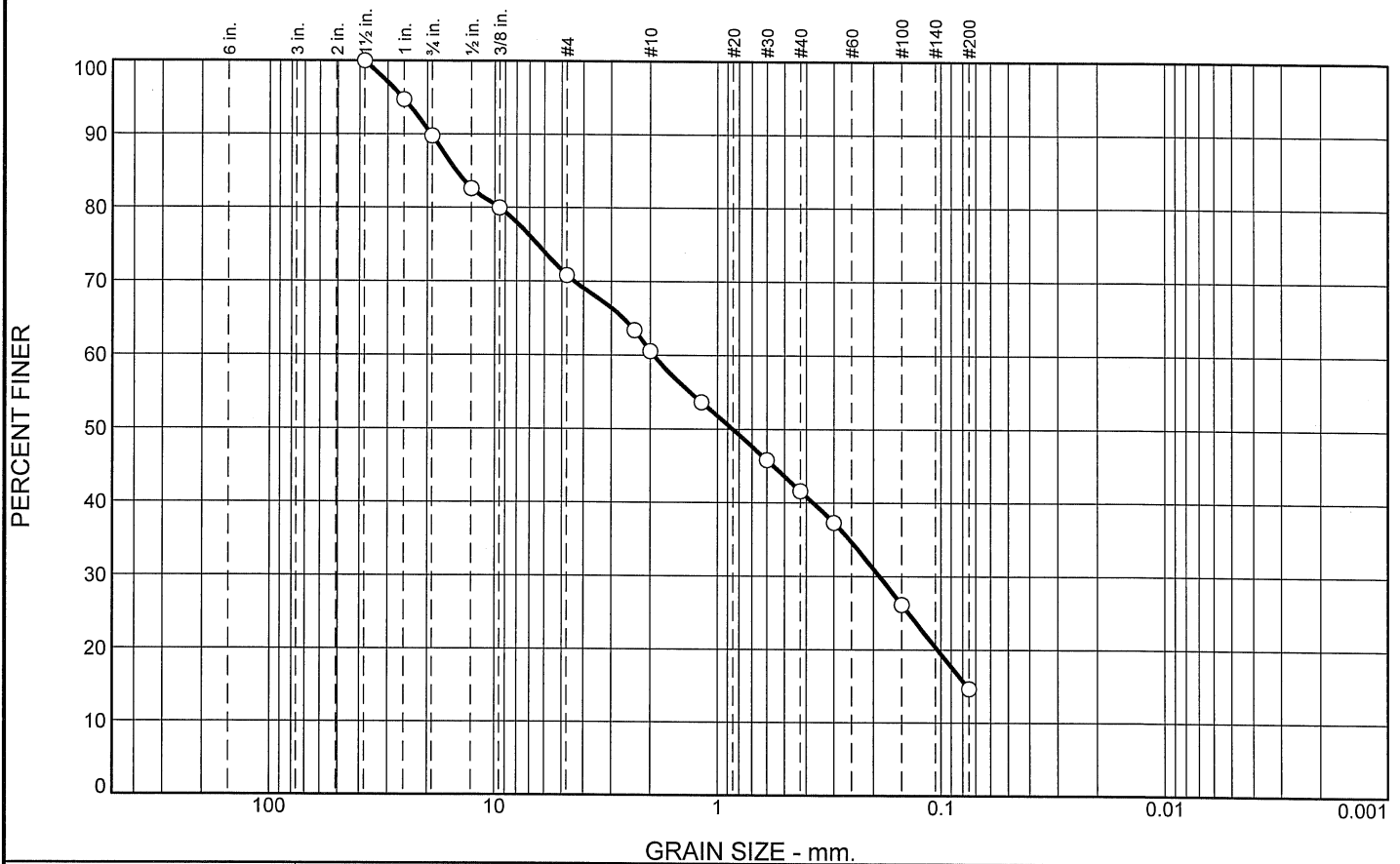
Client: NERT TESTING
 Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	10	19	10	19	27	15	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100		
1	95		
.75	90		
.5	83		
.375	80		
#4	71		
#8	63		
#10	61		
#16	54		
#30	46		
#40	42		
#50	37		
#100	26		
#200	15		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 19.2741 D₈₅= 14.8494 D₆₀= 1.9352
D₅₀= 0.8561 D₃₀= 0.1880 D₁₅= 0.0765
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-17 @ 25.0'
Sample Number: DFCB-17

Depth: 25.0'

Date: 3/16/18



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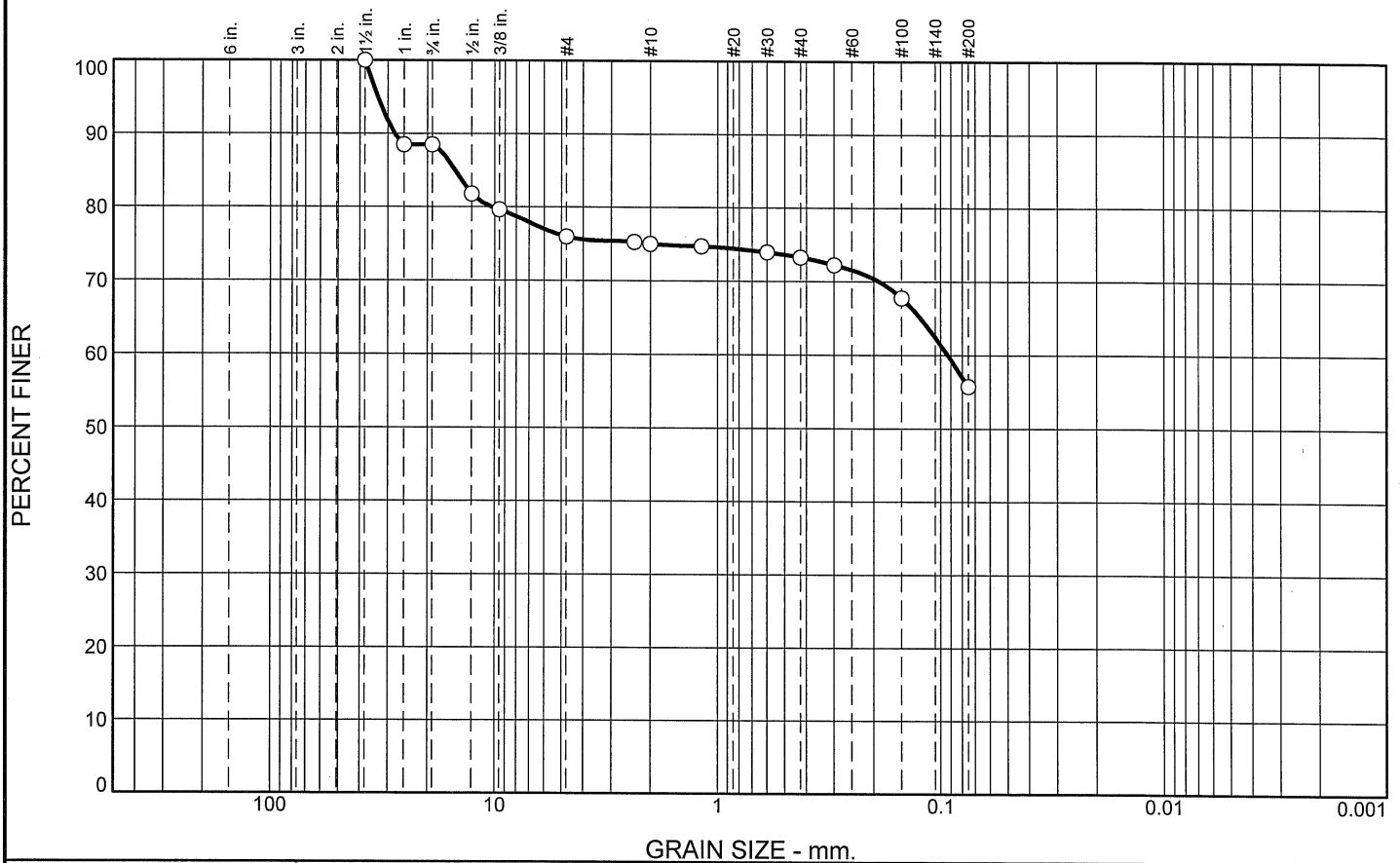
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	12	12	1	2	17	56	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100		
1	88		
.75	88		
.5	82		
.375	80		
#4	76		
#8	75		
#10	75		
#16	75		
#30	74		
#40	73		
#50	72		
#100	68		
#200	56		

* (no specification provided)

Material Description

Atterberg Limits
 PL= -- LL= -- PI= --
Coefficients
 D₉₀= 28.0735 D₈₅= 15.0776 D₆₀= 0.0931
 D₅₀= D₃₀= D₁₅=
 D₁₀= C_u= C_c=
Classification
 USCS= -- AASHTO= --
Remarks
 SAMPLED BY: CLIENT

Location: DFCB-17 @ 40.0'
 Sample Number: DFCB-17

Depth: 40.0'

Date: 3/22/18



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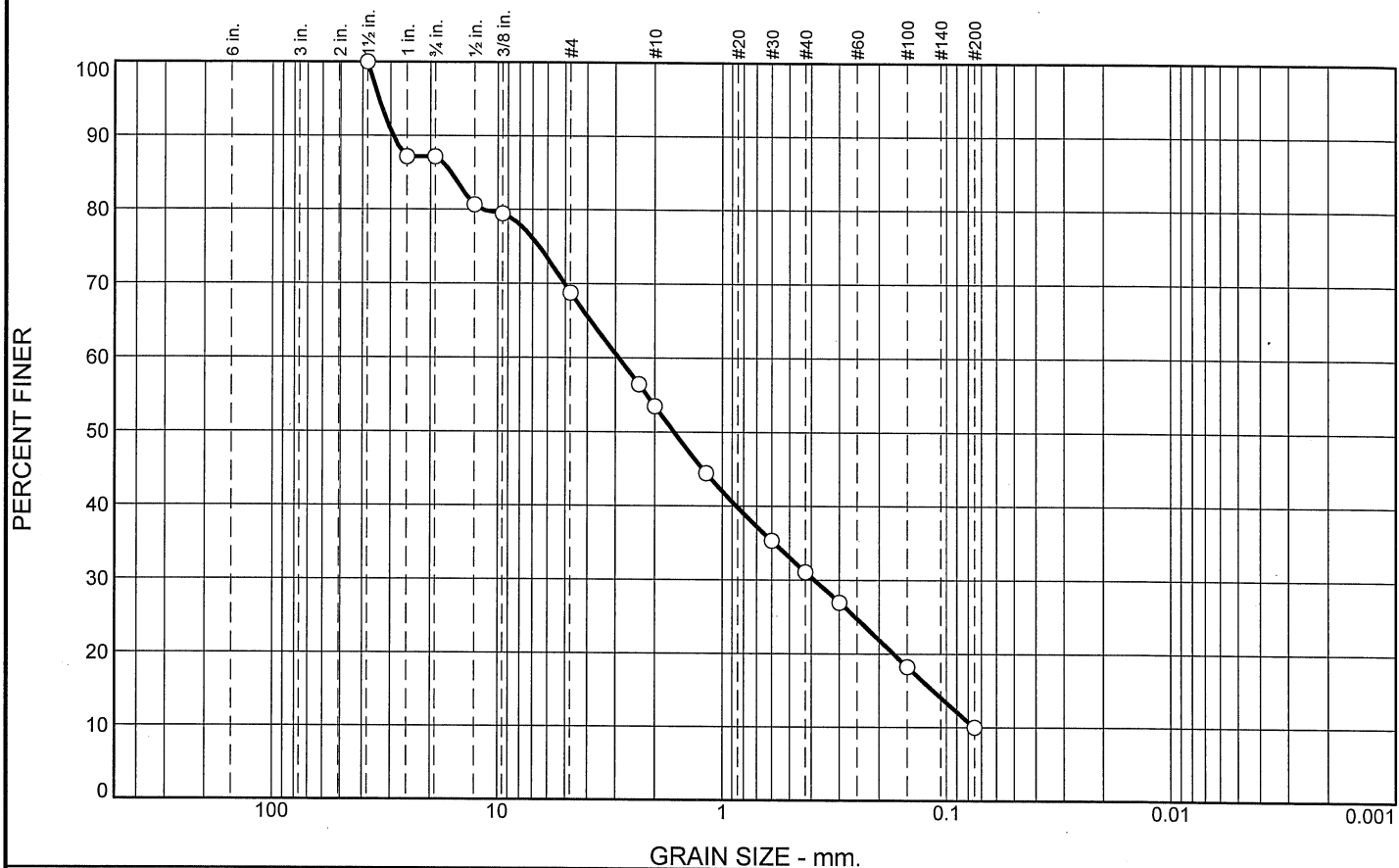
Client: NERT TESTING
 Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	13	18	16	22	21	10	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100		
1	87		
.75	87		
.5	81		
.375	79		
#4	69		
#8	56		
#10	53		
#16	44		
#30	35		
#40	31		
#50	27		
#100	18		
#200	10		

* (no specification provided)

Material Description

Atterberg Limits
 PL= -- LL= -- PI= --
Coefficients
 D₉₀= 29.3148 D₈₅= 16.1764 D₆₀= 2.9053
 D₅₀= 1.6461 D₃₀= 0.3883 D₁₅= 0.1151
 D₁₀= C_u= C_c=
Classification
 USCS= -- AASHTO= --
Remarks
 SAMPLED BY: CLIENT

Location: DFCB-18 @ 10.0'
 Sample Number: DFCB-18

Depth: 10.0'

Date: 3/14/18



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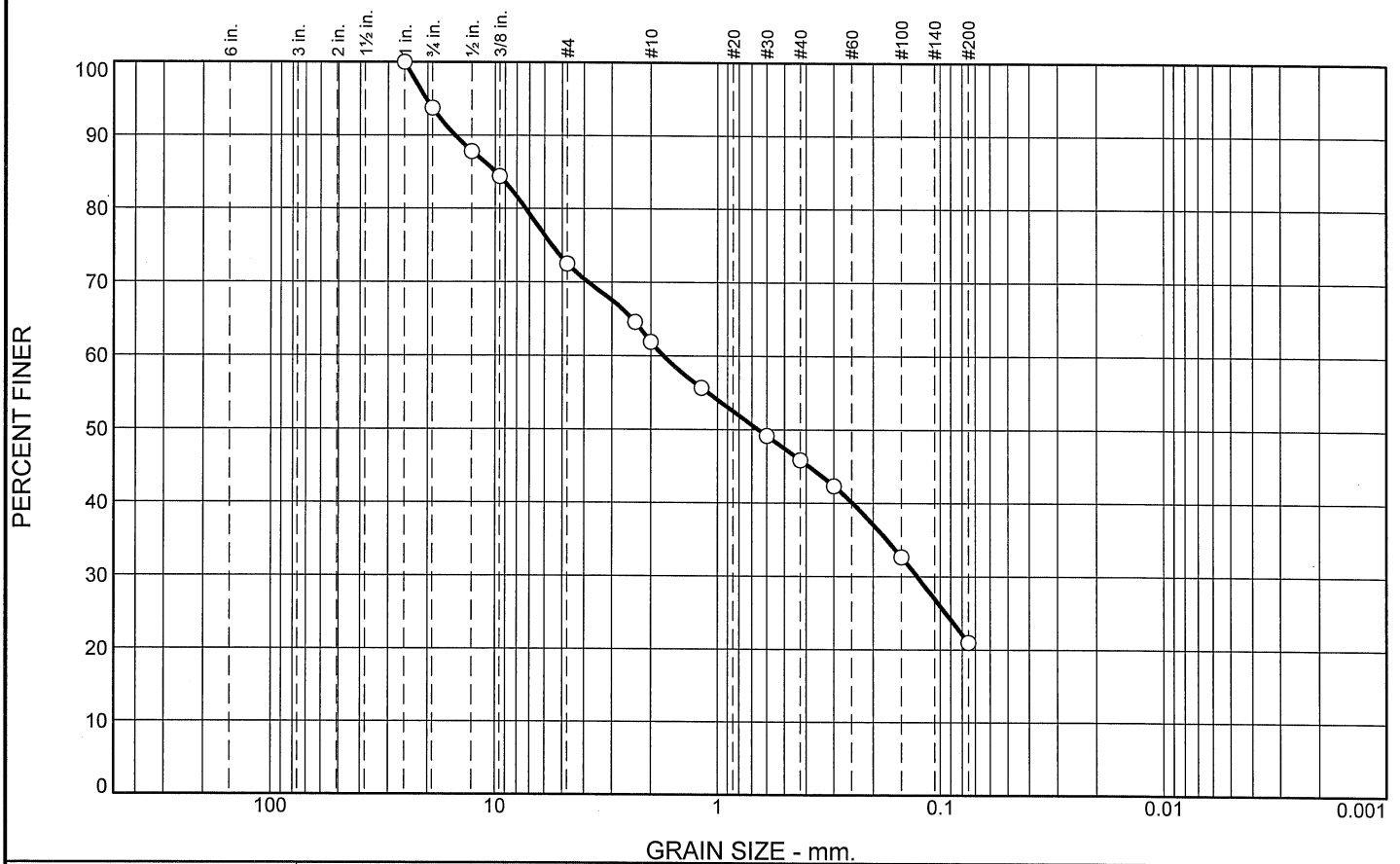
Client: NERT TESTING
 Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	6	21	11	16	25	21	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100		
.75	94		
.5	88		
.375	84		
#4	73		
#8	65		
#10	62		
#16	56		
#30	49		
#40	46		
#50	42		
#100	33		
#200	21		

* (no specification provided)

Material Description

PL= -- **Atterberg Limits** LL= -- PI= --

Coefficients

D₉₀= 15.1487 D₈₅= 9.9504 D₆₀= 1.7584
D₅₀= 0.6560 D₃₀= 0.1273 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-18 @ 25.0'
Sample Number: DFCB-18

Depth: 25.0'

Date: 3/14/18



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SERVICES, INC.**

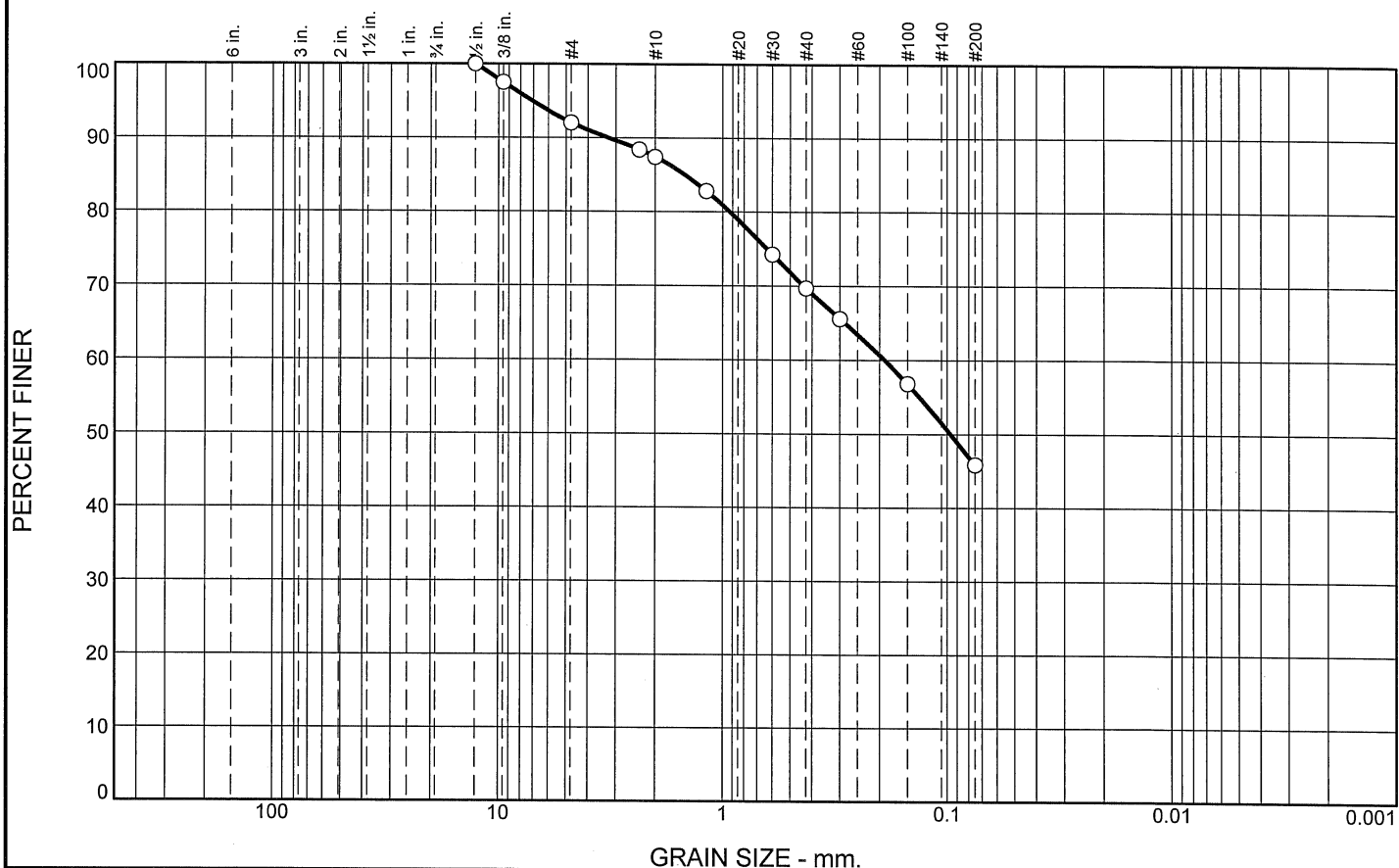
Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	8	5	17	24	46	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100		
.375	97		
#4	92		
#8	88		
#10	87		
#16	83		
#30	74		
#40	70		
#50	66		
#100	57		
#200	46		

* (no specification provided)

Material Description

PL= -- Atterberg Limits LL= -- PI= --

Coefficients

D₉₀= 3.2476 D₈₅= 1.4702 D₆₀= 0.1898
D₅₀= 0.0965 D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= -- AASHTO= --

Remarks

SAMPLED BY: CLIENT

Location: DFCB-18 @ 40.0'
Sample Number: DFCB-18

Depth: 40.0'

Date: 3/14/18



**GEOTECHNICAL &
ENVIRONMENTAL
SERVICES, INC.**

Client: NERT TESTING
Project: TETRA TECH

Project No: 20153663E9

Figure

Tested By: C. BYER

Appendix D

Groundwater Monitoring Field Logs

WELL DEVELOPMENT LOG DATA SHEET

WFIW-015

1. PROJECT INFORMATION Project Number: <u>144-87600088</u> Task Number: <u>02.01</u> Client: <u>NERIS</u> Project Location: <u>WEST OF A-5 BUND</u>						WELL ID: <u>WFIW-015</u> Date: <u>8-5-16</u> Time: <u>0245</u> Personnel: <u>M. CRENS, J. L. GARDY</u> Weather: <u>100% Sunny & breezy</u>					
2. WELL DEVELOPMENT LOG Method: <u>PUMP</u> BAILER <input checked="" type="checkbox"/> SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOC): <u>28.31</u> ft. Screen Length: <u>~28.21</u> to <u>~25.21</u> ft bgs Depth to Static Water (BTOC): <u>27.63</u> ft. Calculated Casing Vol.: <u>0.114</u> gal Depth to Product (BTOC): _____ ft. Length of Water Column (h): <u>0.68</u> ft. Purge Vol. Calculation (one casing vol. = 0.041 * d ² * h)											
3. DEVELOPMENT DATA Purge Method: <u>BAIL</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ Was well purged dry? <u>YES</u> <u>NO</u> Development Criteria: _____										EQUIPMENT MODELS 1. <u>BAILER</u> 2. <u>HORIBA U-5C</u> 3. <u>YSI-SS</u> 4. <u>SOLVER WLM</u>	
Time	Flow Rate (gpm)	DTW (ft. BTOC)	Cum. Water Removed (gall)	pH	Temp (°F)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments
0754	Bail			6.21	26.51	2.44	239	1.41	400		
0759				6.90	26.62	2.98	180	1.25	167		
0803				7.00	26.63	2.99	181	1.19	39.8		
0812		27.64		7.03	26.61	2.46	145	1.22	34.8		
0817				7.08	26.68	2.99	205	1.19	36.1		
0821				7.10	26.83	2.99	201	1.62	42.5		
0827		27.64		7.09	27.05	2.99	208	1.49	34.1		
0833				7.12	27.00	3.00	210	1.52	24.9		
0843				7.10	27.03	3.00	217	2.00	19.9		
0851				7.14	27.18	3.01	225	2.00	20.8		
0904				7.14	27.08	3.01	227	2.08	18.5		
0909			1.2	7.15	26.91	3.00	234	2.02	78.0		Stopped
1387	Bail			7.06	28.92	5.95	253	2.08	12.6		Returned
1335				7.06	28.42	5.93	292	1.62	12.9		
1340				7.07	27.16	5.82	289	1.63	19.4		
1345		27.65	2.2	7.05	28.96	5.93	299	1.61	8.0		Collect sample 1350
4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ DTW at Time of Sampling: <u>27.65</u> Sample ID: <u>WFIW-015-20160805</u> Duplicate Sample ID: _____ Field Filtered: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <div style="float: right;"> Analyte Method <input type="checkbox"/> VOCs 8260B <input type="checkbox"/> SVOCs 8270 <input type="checkbox"/> Metals 6010B / 7000 Series <input type="checkbox"/> TPH 8015B <input checked="" type="checkbox"/> <u>SEE LOG</u> </div>											
5. COMMENTS <u>CALIBRATION: 4.00 pH, 2.25 mS/cm, 0.0 NTU, 8.02 mg/L</u>											

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature: _____



WELL DEVELOPMENT LOG DATA SHEET

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:

WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION

Project Number: 154-8760008 Task Number: 02.01

Client: MERT

Project Location: Henderson, NV

WELL ID: 4F1W-030

Date: 8-2-2016 Time: 1000

Personnel: Joel L., Hao R., Mike C.

Weather: Sunny 84-100°F

2. WELL DEVELOPMENT LOG

Method: PUMP ☒ BAILER ☒

Total Depth of Well (BTOC): 48.13

Depth to Static Water (BTOC): 27.76

Depth to Product (BTOC): -

Length of Water Column (h): 20.37

SURGE BLOCK ☒

ft. Screen Length: 43.0 to 48.13 ft bgs

ft. Calculated Casing Vol.: 3.40 gal

ft. Purge Vol. Calculation (one casing vol. = 0.041 * d² * h)

3. DEVELOPMENT DATA

Purge Method: _____

Materials: Pump / Bailer _____

Materials: Tubing / Rope _____

Was well purged dry? YES ☒ NO ☐

Development Criteria: _____

EQUIPMENT MODELS

1. As before.

2. _____

3. _____

4. _____

Time	Flow Rate (gpm) (mL/min)	DTW (ft. BTOC)	Cum. Water Removed (gal)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments
1030	120	27.80	0	8.18	29.48	7.74	148.8	8.34	13.2		
1033	120	27.80	360	8.21	28.97	7.76	145.5	8.27	11.6		
1036	120	27.80	720	8.23	28.65	7.76	142.1	7.90	7.6		
1039	120	27.80	1080	8.25	28.46	7.75	139.6	7.33	4.1		
1042	120	27.80	1440	8.27	28.39	7.74	138.3	7.13	3.4		
1045	120	27.80	1800	8.28	28.33	7.74	137.4	6.99	3.0		
1048	120	27.80	2160	8.29	28.25	7.74	136.2	6.76	3.4		
Stable	Collected	GW sample @ 1100	4F1W-01D-20160802								DTW=27.80

4. SAMPLING DATA

Method(s): 0.1 3% 3% ±10 6% ±10%

Materials: Pump / Bailer Low flow

Materials: Tubing / Rope Bladder

OTW at Time of Sampling: LDP tubing

Sample ID: 27.80

Duplicate Sample ID: 4F1W-01D-20160802

Field Filtered: NA YES ☒ NO ☐

Analyte

☐ VOCs

☐ SVOCs

☐ Metals

☐ TPH

☐ See CAC

Method

8260B

8270

6010B / 7000 Series

8015B

5. COMMENTS

RED setting CPM6 5/5(165) 100p+i

Note: 2-inch well = 0.167 gal/ft

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:

Hao Zhang

WELL DEVELOPMENT LOG DATA SHEET

UFIW-025

1. PROJECT INFORMATION Project Number: <u>87600008</u> Task Number: <u>02-01</u> Client: <u>NERT</u> Project Location: <u>Wetland APS Pond (A.11)</u>		WELL ID: <u>UFIW-025</u> Date: <u>8-5-14</u> Time: <u>0925</u> Personnel: <u>J. C. ...</u> Weather: <u>100°F Sunny, clear</u>											
2. WELL DEVELOPMENT LOG Method: PUMP <u>BAILER</u> <input checked="" type="checkbox"/> SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOC): <u>27.98</u> ft. Screen Length: <u>228</u> to <u>23</u> ft bgs Depth to Static Water (BTOC): <u>27.20</u> ft. Calculated Casing Vol.: <u>0.130</u> gal Depth to Product (BTOC): _____ ft. Length of Water Column (h): <u>0.98</u> ft. Purge Vol. Calculation (one casing vol. = 0.041 * d ² * h)													
3. DEVELOPMENT DATA Purge Method: <u>BAIL</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ Was well purged dry? <input checked="" type="checkbox"/> YES NO Development Criteria: _____		EQUIPMENT MODELS 1. <u>HOBAS 4-52</u> 2. <u>401-55</u> 3. <u>SOLWEL VLM</u> 4. _____											
Time	Flow Rate (gpm)	DTW (ft. BTOC)	Cum. Water Removed (gal)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments		
0926	Bail			7.00	27.31	4.32	179	1.19	2.1				
0942				7.11	27.12	4.29	180	1.28	20.2				
0949		27.56		7.11	27.11	4.29	188	1.48	10.4				
0956											PURGED BY		
1135					28.48								
1327				7.06	28.92	5.95	299		12.5				
1415	Collected sample UFIW-025-20160805												
<div style="border: 1px solid black; width: 100%; height: 100%; transform: rotate(-45deg); opacity: 0.5;"></div>													
4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ DTW at Time of Sampling: <u>UFIW-025 27.65</u> Sample ID: _____ Duplicate Sample ID: _____						Field Filtered: <input checked="" type="checkbox"/> YES NO <table border="0" style="width:100%;"> <tr> <td style="width:50%; vertical-align: top;"> Analyte <input type="checkbox"/> VOCs <input type="checkbox"/> SVOCs <input type="checkbox"/> Metals <input type="checkbox"/> TPH </td> <td style="width:50%; vertical-align: top;"> Method 8260B 8270 6010B / 7000 Series 8015B </td> </tr> </table>						Analyte <input type="checkbox"/> VOCs <input type="checkbox"/> SVOCs <input type="checkbox"/> Metals <input type="checkbox"/> TPH	Method 8260B 8270 6010B / 7000 Series 8015B
Analyte <input type="checkbox"/> VOCs <input type="checkbox"/> SVOCs <input type="checkbox"/> Metals <input type="checkbox"/> TPH	Method 8260B 8270 6010B / 7000 Series 8015B												
5. COMMENTS _____ _____ _____													

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature: _____

WELL DEVELOPMENT LOG DATA SHEET

PURGE

1. PROJECT INFORMATION

Project Number: 674-8700008 Task Number: 02-01

Client: NERI

Project Location: HEMERSON, NV

WELL ID: WFIW-021

Date: 8-3-2016 Time: 10:28

Personnel: M. CREWS, H. ZHANG, J. LAGAN

Weather: SUNNY 91-106°F

2. WELL DEVELOPMENT LOG

Method: PUMP BAILER _____

Total Depth of Well (BTOC): 40.89

Depth to Static Water (BTOC): 27.06

Depth to Product (BTOC): —

Length of Water Column (h): 13.83

SURGE BLOCK _____

ft. Screen Length: ~36 to ~41 ft bgs

ft. Calculated Casing Vol.: 2.31 gal

ft. PUMP @

ft. Purge Vol. Calculation (one casing vol. = 0.041 * d² * h)

3. DEVELOPMENT DATA

Purge Method: LOW FLOW

Materials: PUMP / Bailer

Materials: ROPE / Rope

Was well purged dry? YES (NO)

Development Criteria: _____

EQUIPMENT MODELS

1. HORIBA TA-52

2. QED MP-50

3. JOHNSON WLM

4. _____

Time	Flow Rate (gpm)	DTW (ft. BTOC)	Cum. Water Removed (gallons)	±0.10 pH ✓	3% Temp (°C) ✓	3% Cond. (mS/cm) ✓	±10.0 ORP (mV) ✓	10% DO (mg/L) ✓	10% Turbidity (NTU) ✓	Other	Comments
11:09	100	27.26	1000	7.53	33.89	7.15	143	0.68	132		
11:14		27.30	1500	7.49	33.48	7.49	144	0.54	156		
11:19		27.30	2000	7.52	32.86	7.16	141	0.25	105		
11:24		27.30	2500	7.48	32.58	7.21	139	0.21	40.0		PAUSE - AFTER ATTACK FLOW (CEN)
13:47		27.30	3000	7.50	38.64	7.23	119	1.04	109		
13:52		27.32	3500	7.82	38.26	7.04	123	0.71	91.7		DO DROP
13:57		27.30	4000	7.54	36.24	7.11	126	0.73	81.1		
14:02		27.30	4500	7.65	35.54	7.11	132	0.80	79.8		
14:07		27.31	5000	7.54	35.32	7.11	135	0.58	76.3		
14:22		27.31	5500	7.53	35.29	7.11	138	0.55	73.5		STABILIZE AFTER PUMPING
14:25		27.06					5L 8-3-16				

4. SAMPLING DATA

Method(s): LOW FLOW

Materials: PUMP / Bailer

Materials: ROPE / Rope

DTW at Time of Sampling: 27.32

Sample ID: WFIW-021-20160803

Duplicate Sample ID: _____

Analyte

☐ VOCs

☐ SVOCs

☐ Metals

☐ TPH

☐ SEE CCL

Method

8260B

8270

6010B / 7000 Series

8015B

Field Filtered: YES NO

5. COMMENTS

QED Col. Autocal 5.97 4.02 (4.00 pH) 4.55 (4.49 mS/cm)

0.0 NTU (0.0) 9.21 DO 130.3% DO

QED SETTING: 0.06 3/5 (165), 70 FT 3000

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



TETRA TECH

UFIW-020

WELL DEVELOPMENT LOG DATA SHEET

PURGE

1. PROJECT INFORMATION Project Number: <u>194-27600008</u> Task Number: <u>02.01</u> Client: <u>NEKI</u> Project Location: <u>HENDERSON, NV</u>		WELL ID: <u>UFIW-020</u> Date: <u>8-3-2016</u> Time: <u>0630</u> Personnel: <u>M. CRENS, H. ZHANG, J. LARABEE</u> Weather: <u>SUNNY 91-106°F</u>									
2. WELL DEVELOPMENT LOG Method: <u>PUMP</u> <input checked="" type="checkbox"/> BAILER <input type="checkbox"/> SURGE BLOCK <input type="checkbox"/> OTHER <input type="checkbox"/> Total Depth of Well (BTOC): <u>48.50</u> ft. Screen Length: <u>48</u> to <u>~48</u> ft bgs Depth to Static Water (BTOC): <u>27.15</u> ft. Calculated Casing Vol.: <u>3.38</u> gal Depth to Product (BTOC): <u>-</u> ft. <u>PUMP @ ~48.1 FT BTOC</u> Length of Water Column (h): <u>21.43</u> ft. <u>Purge Vol. Calculation (one casing vol. = 0.041 * d² * h)</u>											
3. DEVELOPMENT DATA Purge Method: <u>LOW FLOW</u> Materials: <u>Pump / Bailer</u> Materials: <u>Tubing / Rope</u> Was well purged dry? <u>YES</u> <input checked="" type="checkbox"/> <u>NO</u> <input type="checkbox"/> Development Criteria: <u>-</u>		EQUIPMENT MODELS 1. <u>HORIBA U-52</u> 2. <u>QED MP50</u> 3. <u>JOGLIM WLM</u> 4. <u>-</u>									
Time	Flow Rate (gpm)	DTW (ft. BTOC)	Cum. Water Removed (gal)	± 0.1 pH	37° Temp (°C)	37° Cond. (mS/cm)	± 0.0 ORP (mV)	10% DO (mg/L)	10% Turbidity (NTU)	Other	Comments
0754	100	27.32	500	7.63	29.24	7.41	168	0.49	29.2		
0759	1	27.35	1000	7.64	28.92	7.42	163	0.28	55.4		
0804		27.59	1500	7.65	28.87	7.48	153	0.24	44.8		
0809		27.57	2000	7.66	28.85	7.42	151	0.08	43.0		
0814		27.58	2500	7.67	28.85	7.41	149	0.05	33.5		
0819		27.57	3000	7.67	28.86	7.41	143	0.01	28.3		
0824		27.58	3500	7.67	28.88	7.41	140	0.00	20.1		
0829		27.58	4000	7.68	28.88	7.41	137	0.00	22.9		PAUSE - CLEAN FLOW THEN
0800		27.52	4500	7.40	29.72	7.42	197	0.42	10.2		RECALIBRATE
0905		27.54	5000	7.55	29.28	7.40	190	0.00	6.6		
0910		27.58	5500	7.60	29.24	7.40	172	0.00	8.2		
0915		27.58	6000	7.60	29.32	7.40	165	0.00	7.4		
0920		27.56	6500	7.62	29.25	7.40	159	0.00	6.9		
0925		27.54	7000	7.62	29.26	7.41	154	0.00	6.7		
0930		27.58	7500	7.62	29.29	7.42	150	0.00	6.6		stabilized
1012		27.18									AFTER sampling
4. SAMPLING DATA Method(s): <u>LOW FLOW</u> Materials: <u>Pump / Bailer</u> Materials: <u>Tubing / Rope</u> DTW at Time of Sampling: <u>27.54</u> Sample ID: <u>UFIW-020-20160803</u> Duplicate Sample ID: <u>LEVEL 4</u> Field Filtered: <u>YES</u> <input checked="" type="checkbox"/> <u>NO</u> <input type="checkbox"/> <div style="float: right; text-align: right;"> Analyte Method <input type="checkbox"/> VOCs 8260B <input type="checkbox"/> SVOCs 8270 <input type="checkbox"/> Metals 6010B / 7000 Series <input type="checkbox"/> TPH 8015B <input checked="" type="checkbox"/> <u>SEE CUC</u> </div>											
5. COMMENTS <u>Calibrated Horiba U-52 with standard solution: 4.02 pH (4.00), 4.53 mS/cm (4.45)</u> <u>P.L.M.T.H. (00) 7.27 mg/L DO, 107.46% DO, -4.02 C.M.H., 4.51 ECUMPS, 0.1 C.M.H.P., 18.64 C.O.S</u> <u>QED VENTING: CPM 6, 5/5 C1633 () 80 FT / 33 PSI</u>											

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION

Project Number: 14-89600008 Task Number: 02.01

Client: NERT

Project Location: WEST OF A-5 PUNA

WELL ID: LF-075

Date: 8-4-16 Time: 1320

Personnel: M. CREWS, J. LAGARDE

Weather: 85°F - OVERCAST

2. WELL DEVELOPMENT LOG

Method: PUMP X BAILER

Total Depth of Well (BTOC): 27.89

Depth to Static Water (BTOC): 27.35 / 27.35

Depth to Product (BTOC):

Length of Water Column (h): 2.54

SURGE BLOCK

OTHER

ft. Screen Length: ~30 to ~25 ft bgs

ft. Calculated Casing Vol.: 0.42 gal

ft. 1umr @ 24.89 Ft ALW

ft. Purge Vol. Calculation (one casing vol. = 0.041 * d² * h)

3. DEVELOPMENT DATA

Purge Method: LOW FLOW

Materials: Pump / Bailer

Materials: Tubing / Rope

Was well purged dry?

Development Criteria:

EQUIPMENT MODELS

1. HORIBA U-52

2. DEO MP50

3. JULIUS W2M

4. PSI-5J

Time	Flow Rate (gpm) (ml/min)	DTW (ft. BTOC)	Cum. Water Removed (gal/mL)	±0.1 pH ✓	3% Temp (°C) ✓	3% Cond. (mS/cm) ✓	±10.0 ORP (mv) ✓	10% DO (mg/L) >0.5	10% Turbidity (NTU) >5.0 ✓	Other	Comments
1340	50	27.53	500	7.12	28.26	8.21	110	2.98	0.0		
1350		27.59	1000	7.14	28.38	8.22	104	1.24	0.0		
1400		27.62	1500	7.11	28.41	8.28	101	1.68	0.0		
1410		27.61	2000	7.10	28.35	8.22	103	1.28	0.0		
1420		27.62	2500	7.10	28.58	8.22	102	1.22	0.0		
1430		27.63	2000	7.10	28.68	8.24	101	1.25	0.0		STABLE
1450		27.60									AFTER PURGING

27.61

8-4-16

4. SAMPLING DATA

Method(s):

Materials: Pump / Bailer

Materials: Tubing / Rope

DTW at Time of Sampling: 27.61

Sample ID: WF1W-J035-20160804

Duplicate Sample ID:

Field Filtered: YES NO

Analyte

Method

VOCs 8260B

SVOCs 8270

Metals 6010B / 7000 Series

TPH 8015B

SEE COU

5. COMMENTS

DEO SETTINGS: CFMB 6/4 C(RO), 35 FT 25 PSI. SHALLOW WELL

SLW RECHARGE

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature: _____

WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION

Project Number: 144-FR00002 Task Number: 02.01

Client: HEAT

Project Location: WEST OF A-5 POND

WELL ID: UFIV-031

Date: 8-4-16 Time: 0930

Personnel: M. CREWS, J. LAGUER

Weather: 83°F DRIZZLE

2. WELL DEVELOPMENT LOG

Method: PUMP ~~BAILER~~

Total Depth of Well (BTOC): 40.23

Depth to Static Water (BTOC): 27.02/27.02

Depth to Product (BTOC): -

Length of Water Column (h): 13.21

ft. Screen Length: ~35 to ~40

ft. Calculated Casing Vol.: 2.21

ft. PUMP @ 37.5 FT BLO

ft. Purge Vol. Calculation (one casing vol. = 0.041 * d² * h)

ft bgs 100 mL / mL

gal

3. DEVELOPMENT DATA

Purge Method: LOW FLOW

Materials: PUMP / Bailer

Materials: TUBING / Rope

Was well purged dry? YES ~~NO~~

Development Criteria: -

EQUIPMENT MODELS

1. HORIBA U-52

2. GEO MASO

3. SOLIMET WLM

4. 501 55

Time	Flow Rate (gpm) (mL/min)	DTW (ft. BTOC)	Cum. Water Removed (gal) (L)	10.1 pH	37.0 Temp (°C)	37.0 Cond. (mS/cm)	100.0 ORP (mV)	10.0 DO (mg/L) 7.0-5	10.0 Turbidity (NTU) 25.0	Other	Comments
0945	100	27.06	500	7.53	26.89	7.28	131	0.68	16.4		
0950		27.06	1000	7.52	26.99	7.27	128	0.38	9.5.3		
0955		27.07	1500	7.51	27.03	7.26	125	0.15	55.9		
1000		27.06	2000	7.51	27.04	7.24	121	0.03	35.4		
1005		27.06	2500	7.51	27.04	7.23	118	0.00	19.6		
1010		27.06	3000	7.50	27.01	7.31	111	0.12	14.0		
1015		27.06	3500	7.51	26.92	7.23	111	0.38	16.9		HI 55 METER
1020		27.06	4000	7.52	26.79	7.21	110	1.26	9.0		
1025		27.06	4500	7.51	26.71	7.20	107	1.22	9.2		
1030		27.06	5000	7.56	26.71	7.21	103	1.16	8.8		STABLE
1035		27.08									NO RHYTHM
											TL
											8-4-16

4. SAMPLING DATA

Method(s): SEE ABOVE

Materials: PUMP / Bailer

Materials: TUBING / Rope

DTW at Time of Sampling: 27.06

Sample ID: UFIV-031-20160804 2/8

Duplicate Sample ID: -

Field Filtered: YES ~~NO~~

Analyte

☐ VOCs

☐ SVOCs

☐ Metals

☐ TPH

☐ SEE LOG

Method

8260B

8270

6010B / 7000 Series

8015B

5. COMMENTS

SEA SETTING: UFG 515, 70 FT 30 RJ,

CALCULATED 501 55 CDO: 1800 FT CELEVD, 7.23 (COND), 4.0 PPT (SALINITY)

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature: _____



WF-IV-03.D

WELL DEVELOPMENT LOG DATA SHEET

4-inch well = 0.667 gal/ft

Signature: _____

Pg 1 of 1

may
26 CONTINUED
31 1120



AF1W-048

4-inch well = 0.667 gal/ft

Signature _____

WELL DEVELOPMENT LOG DATA SHEET
PURGE & SAMPLING

1. PROJECT INFORMATION
 Project Number: 194-8760008 Task Number: 02.01 WELL ID: UFW-042
 Client: MERT Date: 8-2-2016 Time: 0720
 Project Location: HENDERSON, NV Personnel: Joel L. Hanna, Mike G.
 Weather: Sunny, 84-100°F

2. WELL DEVELOPMENT LOG
 Method: PUMP ☒ BAILER ☐ SURGE BLOCK ☐ OTHER ☐
 Total Depth of Well (BTOC): 38.30 ft. Screen Length: 38.30 to 38.30 ft bgs set 35.3ft bgs
 Depth to Static Water (BTOC): 27.42 ft. Calculated Casing Vol.: 1.77 gal
 Depth to Product (BTOC): NA ft.
 Length of Water Column (h): 10.58 ft. Purge Vol. Calculation (one casing vol. = 0.041 * d² * h)

3. DEVELOPMENT DATA
 Surge Method: Purge Low Flow Bladder Pump Two color bonded
 Materials: Pump / Bailer
 Materials: Tubing / Rope
 Was well purged dry? ☒ YES ☐ NO
 Development Criteria: _____

EQUIPMENT MODELS
 1. Horiba U-52 water quality meter
 2. RED Micro Pump MP 50 Controller/Compressor
 3. Solint 101 200 water level meter
 4. YSI MPS 556 water quality meter

Time	Flow Rate (gpm)	DTW (ft. BTOC)	Cum. Water Removed (gal)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments
0846	110	26.60	0	8.06	28.31	7.37	133.9	3.18	3.7		
0849	110	26.60	330	8.09	28.13	7.37	132.5	3.18	3.7		
0851	110	26.60	660	8.13	27.95	7.35	132.3	3.11	3.6		
0854	110	26.60	990	8.13	27.91	7.35	131.9	2.94	3.1		
0857	110	26.60	1320	8.15	27.81	7.34	130.8	2.97	2.1		
0900	110	26.60	1650	8.17	27.79	7.34	130.5	3.00	0.5		
Stable	collected GW sample @ 0905 UFW-042-20160802										DTW=27.40
	collected GW duplicate sample @ 0908 UFW-042-20160802										

4. SAMPLING DATA
 Method(s): Low Flow Sampling
 Materials: Pump / Bailer
 Materials: Tubing / Rope
 DTW at Time of Sampling: 27.42
 Sample ID: UFW-042-20160802
 Duplicate Sample ID: NA UFW-042-20160802-FO Field Filtered: ☒ YES ☐ NO

Analyte
☐ VOCs 82608
☐ SVOCs 8270
☐ Metals 6010B / 7000 Series
☐ TPH 8015B
See LOC

5. COMMENTS
distributed Horiba U-52 with auto-calibration solution, pH=7.92 (4.00), Conductivity=4.51 mS/cm (4.49), NTU=0.0100; 3.06 mg/L DO, 110.60% DO, RED setting: CPM6 5/5 (165) Hopsi



WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION Project Number: <u>194-8160008</u> Task Number: <u>02.01</u> Client: <u>NERT</u> Project Location: <u>Henderson, NV</u>						WELL ID: <u>UFZU-44D (165)</u> Date: <u>8-1-2016</u> Time: <u>0900</u> Personnel: <u>Mike C., Joel L., Hao S.</u> Weather: <u>Partly cloudy, 84-106°F</u>					
2. WELL DEVELOPMENT LOG Method: PUMP <input checked="" type="checkbox"/> BAILER <input type="checkbox"/> SURGE BLOCK <input type="checkbox"/> OTHER <input type="checkbox"/> Total Depth of Well (BTOC): <u>48.0m</u> ft. Screen Length: <u>43</u> to <u>48</u> ft bgs Depth to Static Water (BTOC): <u>27.43#</u> ft. Calculated Casing Vol.: <u>3.44</u> gal Depth to Product (BTOC): <u>NA</u> ft. Length of Water Column (h): <u>20.59</u> ft. Purge Vol. Calculation (one casing vol. = 0.041 * d * h)											
3. DEVELOPMENT DATA Purge Method: <u>Low Flow</u> Materials: Pump / Bailer Materials: Tubing / Rope Was well purged dry? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Development Criteria:						EQUIPMENT MODELS 1. <u>Bonded two relay tubing</u> 2. <u>Horiba U-53 water quality meter</u> 3. <u>QED MicroPurge MPSD controller/Comp</u> 4. <u>Solinst 101 200' water level me</u> <u>YSI MPS556</u>					
Time	Flow Rate (gpm) (ml/min)	DTW (ft. BTOC)	Cum. Water Removed (gal/ml)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments
0950	100			8.24	31.37	7.48	2000	4.29	0.9		
0953	100			8.25	30.84	7.56	2000	4.61	1.8		
0956	100			8.32	29.74	7.60	2000	4.70	1.5		
Change water quality monitor to PS and Horiba											DTW = 27.43
1330	100	25.7		7.33	29.08	7.14	1364	3.87	3.8		
1333	100			7.34	29.07	7.14	1363	3.89	3.5		
1336	100			7.35	29.01	7.14	135.8	3.56	3.1		
1339	100			7.35	29.02	7.12	135.3	3.49	2.8		
1342	100			7.35	29.29	7.17	134.7	3.23	3.6		
1345	100			7.33	30.19	7.12	134.1	3.55	3.7		
1348	100			7.37	29.42	7.18	133.3	3.77	1.7		
1351	100			7.38	29.08	7.14	132.2	3.61	1.9		
Stable Collect 11W sample @ 1400											DTW = 27.43
4. SAMPLING DATA Method(s): <u>Low Flow</u> Materials: Pump / Bailer <u>Baldrer</u> Materials: Tubing / Rope <u>PE12 Blue LPP tubing</u> DTW at Time of Sampling: <u>27.43</u> Sample ID: <u>UFZU-44D-20160801</u> Duplicate Sample ID: <u>NA</u> Field Filtered: YES <input checked="" type="checkbox"/> NO <input checked="" type="checkbox"/>											
5. COMMENTS <u>QED settings: CPM 6 5/5 (165) 110 PSZ</u>											

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature: Hao S.



WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION Project Number: <u>194-87600008</u> Task Number: <u>02.01</u> Client: <u>NERI</u> Project Location: <u>WEST OF AP-3 POND</u>		WELL ID: <u>UFIW-055</u> Date: <u>8-19-18</u> Time: <u>07:15</u> Personnel: <u>J. LAGARDE</u> Weather: <u>CLOUDY 90°F SLIGHT BREEZE</u>									
2. WELL DEVELOPMENT LOG Method: PUMP BAILER <input checked="" type="checkbox"/> SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOC): <u>29.42</u> ft. Screen Length: <u>24.42</u> to <u>24.42</u> ft bgs Depth to Static Water (BTOC): <u>28.00</u> ft. Calculated Casing Vol.: <u>0.2374</u> gal Depth to Product (BTOC): <u>-</u> ft. Length of Water Column (h): <u>1.42</u> ft. Purge Vol. Calculation (one casing vol. = 0.041 * d ² * h)											
3. DEVELOPMENT DATA Purge Method: <u>BAIL</u> Materials: Pump / Bailer Materials: Tubing / Rope <u>TWIND</u> Was well purged dry? YES NO Development Criteria: <u>-</u>		EQUIPMENT MODELS 1. <u>MURIDA 4-S2</u> 2. <u>SULCAST WLM</u> 3. <u>851-55</u> 4.									
Time	Flow Rate (gpm)	DTW (ft. BTOC)	Cum. Water Removed (gal)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments
0812	-	28.00	-	7.73	25.76	4.02	42	1.35	9.2		
0818	-	-	-	7.77	25.70	3.91	37	1.25	38.9		
0824	-	-	-	7.71	25.68	3.89	41	1.21	17.9		
0830	-	-	-	7.78	25.75	3.88	59	1.17	16.9		
0843	-	-	>1.0	7.80	25.44	3.81	58	1.30	19.9		GREATER THAN 3 CASING VOLUME
0850	-	28.38									
4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: Pump / Bailer Materials: Tubing / Rope DTW at Time of Sampling: Sample ID: <u>UFIW-055-20160819</u> Duplicate Sample ID: <u>-</u>		Field Filtered: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Analyte: <input type="checkbox"/> VOCs <input type="checkbox"/> SVOCs <input type="checkbox"/> Metals <input type="checkbox"/> TPH <input checked="" type="checkbox"/> <u>SEE COC</u> Method: 8260B 8270 6010B / 7000 Series 8015B									
5. COMMENTS 											

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



TETRA TECH

WELL DEVELOPMENT LOG DATA SHEET

UFWBOSI

1. PROJECT INFORMATION Project Number: <u>194-8760008</u> Task Number: <u>02.01</u> Client: <u>NERI</u> Project Location: <u>WEST OF AFS RND</u>		WELL ID: <u>UFWB-033</u> Date: <u>8-15-16</u> Time: <u>0445</u> Personnel: <u>J. LAGAPE, M. FARMER</u> Weather: <u>SUNNY, WINDY 9.80F</u>									
2. WELL DEVELOPMENT LOG Method: PUMP <u>X</u> BAILER _____ SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTWC): <u>39.17</u> ft. Screen Length: <u>23.17</u> to <u>39.17</u> ft bgs Depth to Static Water (BTWC): <u>28.10</u> ft. Calculated Casing Vol.: <u>1.848</u> gal Depth to Product (BTWC): <u>-</u> ft. Length of Water Column (h): <u>11.07</u> ft. Purge Vol. Calculation (one casing vol. = 0.041*d ² *h)											
3. DEVELOPMENT DATA Purge Method: <u>LOW FLOW</u> Materials: Pump / Bailer <u>GLASSER</u> Materials: Tubing / Rope <u>WIRE</u> Was well purged dry? YES <u>NO</u> Development Criteria: _____		EQUIPMENT MODELS 1. <u>RED MP 50</u> 2. <u>JULINER WLM</u> 3. <u>HURIBA USI</u> 4. <u>RSI-55</u>									
Time	Flow Rate (gpm) <u>100</u>	DTW (ft. BTWC) <u>28.11</u>	Cum. Water Removed (gal) <u>500</u>	pH <u>7.72</u>	Temp (°C) <u>38.18</u>	Cond. (mS/cm) <u>3.70</u>	ORP (mV) <u>134</u>	DO (mg/L) <u>1.95</u>	Turbidity (NTU) <u>0.0</u>	Other _____	Comments
10:00	100	28.11	500	7.72	38.18	3.70	134	1.95	0.0		
10:08	100	28.11	1000	8.02	39.25	3.76	125	1.98	0.0		
10:13	100	28.11	1500	8.15	39.84	3.76	120	4.45	91.5		BATTERY DEAD
10:25	100	28.11	2000	8.06	38.41	3.76	122	2.25	0.0		REPLACE BATTERY
10:33	100	28.21	2500	8.06	31.89	3.79	130	3.35	0.6		
10:40	100	28.21	3000	8.03	30.81	3.80	128	2.83	0.0		
10:45	100	28.22	3500	7.96	30.54	3.82	129	2.72	0.0		
10:52	100	28.21	4000	7.92	31.48	3.85	125	2.65	0.0		
10:57	100	28.19	4600	7.90	32.18	3.86	125	2.58	0.0		Stabilized
11:15	-	28.12	-	-	-	-	-	-	-		AFTER 1st purg.
4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ DTW at Time of Sampling: <u>28.19</u> Sample ID: <u>UFWB-033-20160815</u> Duplicate Sample ID: <u>UFWB-033-20160815-Field Filtered: YES NO</u>								Analyte <input type="checkbox"/> VOCs 8260B <input type="checkbox"/> SVOCs 8270 <input type="checkbox"/> Metals 6010B / 7000 Series <input type="checkbox"/> TPH 8015B <input checked="" type="checkbox"/> <u>SEE CUC</u>			
5. COMMENTS <u>RED CPMG 1/5 CLK</u>											

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION Project Number: <u>194-89600002</u> Task Number: <u>02.01</u> Client: <u>NEAT</u> Project Location: <u>WEST OF AT-5 POND</u>		WELL ID: <u>WFIW-05D</u> Date: <u>8-15-11</u> Time: <u>0700</u> Personnel: <u>J. LAGARE, M. PARKER</u> Weather: <u>95°F Sunny</u>																					
2. WELL DEVELOPMENT LOG Method: PUMP <u>X</u> BAILER _____ SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOC): <u>49.54</u> ft. Screen Length: <u>~44.59</u> to <u>~44.54</u> ft bgs Depth to Static Water (BTOC): <u>28.20</u> ft. Calculated Casing Vol.: <u>3.36</u> gal Depth to Product (BTOC): <u>-</u> ft. Length of Water Column (h): <u>21.34</u> ft. Purge Vol. Calculation (one casing vol. = 0.041 * d ² * h)																							
3. DEVELOPMENT DATA Purge Method: <u>Pump LOW FLOW</u> Materials: Pump / Bailer <u>BLADDER</u> Materials: Tubing / Rope <u>LDPE</u> Was well purged dry? YES <u>(NO)</u> Development Criteria: <u>-</u>		EQUIPMENT MODELS 1. <u>QED M150</u> 2. <u>HORISON M-52</u> 3. <u>401 35</u> 4. <u>SPILLER WLM</u>																					
Time	Flow Rate (gpm) <u>MLM</u>	DTW (ft. BTOC)	Cum. Water Removed (gal)	pH <u>7.83</u>	Temp (°C) <u>30.95</u>	Cond. (mS/cm) <u>5.14</u>	ORP (mV) <u>136</u>	DO (mg/L) <u>1.46</u>	Turbidity (NTU) <u>17.7</u>	Other	Comments												
8:00	100	28.58	500 mL	7.83	30.95	5.14	136	1.46	17.7														
8:05	100	28.49	1000 mL	7.83	31.14	5.15	134	1.42	11.8														
8:10	100	28.45	1500 mL	7.83	31.82	5.18	134	1.37	11.8														
8:15	100	28.45	2000	7.82	32.23	5.10	128	1.18	11.9														
8:20	100	28.45	2500	7.81	32.10	5.16	127	1.20	11.8		STABILIZED												
8:05		28.39									STABILIZED PUMP												
4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ DTW at Time of Sampling: <u>28.45</u> Sample ID: <u>WFIW-05D-20110815</u> Duplicate Sample ID: _____ Field Filtered: YES <u>(NO)</u>								<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Analyte</th> <th>Method</th> </tr> <tr> <td><input type="checkbox"/> VOCs</td> <td>8260B</td> </tr> <tr> <td><input type="checkbox"/> SVOCs</td> <td>8270</td> </tr> <tr> <td><input type="checkbox"/> Metals</td> <td>6010B / 7000 Series</td> </tr> <tr> <td><input type="checkbox"/> TPH</td> <td>8015B</td> </tr> <tr> <td><input checked="" type="checkbox"/> SEE CCL</td> <td></td> </tr> </table>				Analyte	Method	<input type="checkbox"/> VOCs	8260B	<input type="checkbox"/> SVOCs	8270	<input type="checkbox"/> Metals	6010B / 7000 Series	<input type="checkbox"/> TPH	8015B	<input checked="" type="checkbox"/> SEE CCL	
Analyte	Method																						
<input type="checkbox"/> VOCs	8260B																						
<input type="checkbox"/> SVOCs	8270																						
<input type="checkbox"/> Metals	6010B / 7000 Series																						
<input type="checkbox"/> TPH	8015B																						
<input checked="" type="checkbox"/> SEE CCL																							
5. COMMENTS <u>QED: CAN B 7.6/2.4 C152</u>																							

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



TETRA TECH

WELL DEVELOPMENT LOG DATA SHEET

WFW-080

1. PROJECT INFORMATION Project Number: <u>174-17600008</u> Task Number: <u>02.01</u> Client: <u>NEAT</u> Project Location: <u>WEST OF AA-5 POND</u>		WELL ID: <u>WFW-080</u> Date: <u>8-16-16</u> Time: <u>0945</u> Personnel: <u>J. LAGARBE</u> Weather: <u>SUNNY 100°F</u>									
2. WELL DEVELOPMENT LOG Method: PUMP <u>X</u> BAILER _____ SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOC): <u>38.60</u> ft. Screen Length: <u>31.6</u> to <u>26.0</u> ft bgs Depth to Static Water (BTOC): <u>28.20</u> ft. Calculated Casing Vol.: <u>0.5078</u> gal Depth to Product (BTOC): _____ ft. Length of Water Column (h): <u>3.4</u> ft. Purge Vol. Calculation (one casing vol. = 0.041 * d ² * h)											
3. DEVELOPMENT DATA Purge Method: <u>LOW FLOW</u> Materials: Pump / Bailer <u>BLADDER</u> Materials: Tubing / Rope <u>LDPE</u> Was well purged dry? YES <u>NO</u> Development Criteria: _____		EQUIPMENT MODELS 1. <u>MURDA M-52</u> 2. <u>QED M50</u> 3. <u>SOLVENT WLM</u> 4. <u>201 SS</u>									
Time	Flow Rate (gpm) ML/min	DTW (ft. BTOC)	Cum. Water Removed (gal)	pH ✓	3% Temp (°C) ✓	3% Cond. (mS/cm) ✓	F10.0 ORP (mV) ✓	10% DO (mg/L) ✓	10% Turbidity (NTU) ✓	Other ✓	Comments
0949	100	28.2	500	7.35	28.51	4.19	128	1.17	4.9		
0954	100	28.2	1000	7.30	28.23	4.17	125	1.90	4.16		
0959	100	28.2	1500	7.39	28.08	4.17	121	1.91	0.0		
1004	100	28.2	2000	7.40	28.02	4.17	120	1.95	0.0		
1009	100	28.2	2500	7.36	28.03	4.17	122	1.90	0.0		STABILIZE
1030	—	28.2	—	—	—	—	—	—	—		AFTER PUMP
4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ DTW at Time of Sampling: <u>28.2</u> Sample ID: <u>WFW-080-20160816</u> Duplicate Sample ID: _____								Field Filtered: <u>YES</u> NO Analyte Method <input type="checkbox"/> VOCs 8260B <input type="checkbox"/> SVOCs 8270 <input type="checkbox"/> Metals 6010B / 7000 Series <input type="checkbox"/> TPH 8015B <input type="checkbox"/> <u>SEE WQ</u>			
5. COMMENTS <u>QED CIMS 5/5 (165) 60 FT</u>											

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



TETRA TECH

WELL DEVELOPMENT LOG DATA SHEET

WFIW-081

1. PROJECT INFORMATION Project Number: <u>174-P260008</u> Task Number: <u>02.01</u> Client: <u>NEAT</u> Project Location: <u>WEST OF AFS POND</u>						WELL ID: <u>WFIW-081</u> Date: <u>8-16-16</u> Time: <u>0745</u> Personnel: <u>J. LAGASSE</u> Weather: <u>SUNNY 95°F</u>					
2. WELL DEVELOPMENT LOG Method: PUMP <input checked="" type="checkbox"/> BAILER _____ SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOC): <u>44.79</u> ft. Screen Length: <u>~34.39</u> to <u>~44.79</u> ft bgs Depth to Static Water (BTOC): <u>28.17</u> ft. Calculated Casing Vol.: <u>2.27</u> gal Depth to Product (BTOC): _____ ft. Length of Water Column (h): <u>12.62</u> ft. Purge Vol. Calculation (one casing vol. = 0.041*d ² *h)											
3. DEVELOPMENT DATA Purge Method: <u>LOW FLOW</u> Materials: Pump / Bailer <u>BLADDER</u> Materials: Tubing / Rope <u>LOPE</u> Was well purged dry? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Development Criteria: _____								EQUIPMENT MODELS 1. <u>HURIBA M-52</u> 2. <u>DEQ MP50</u> 3. <u>PULSAFE ULN</u> 4. <u>WJ-55</u>			
Time	Flow Rate (gpm) <u>ml/min</u>	DTW (ft. BTOC)	Cum. Water Removed (gal)	±0.1 pH <u>✓</u>	37° Temp (°C) <u>✓</u>	370 Cond. (mS/cm) <u>✓</u>	±40 ORP (mV) <u>✓</u>	1070 DO (mg/L) <u>27.5</u>	100 Turbidity (NTU) <u>28.0</u>	Other	Comments
0803	100	27.95	500	7.75	27.36	4.28	158	2.76	0.0		
0808	100	27.44	1000	7.74	27.47	4.29	156	3.70	0.0		
0813	100	27.90	1500	7.76	27.42	4.29	152	3.67	0.0		
0818	100	27.90	2000	7.78	27.36	4.29	150	3.65	0.0		
0823	100	27.42	2500	7.78	27.39	4.28	146	3.69	0.0		STABLE
0850	—	28.18	—	—	—	—	—	—	—	—	AFS PR Pump
4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ DTW at Time of Sampling: <u>27.40</u> Sample ID: <u>WFIW-081-20160816</u> Duplicate Sample ID: _____								Analyte <input type="checkbox"/> VOCs 8260B <input type="checkbox"/> SVOCs 8270 <input type="checkbox"/> Metals 6010B / 7000 Series <input type="checkbox"/> TPH 8015B <input checked="" type="checkbox"/> <u>SEE CCK</u>			
5. COMMENTS <u>RED SETBACK (PM 5 5/5 (165) 70 FT</u> <u>WHITE CRYSTALS OBSERVED ON EQUIPMENT</u> <u>CALIBRATION 370 PH 4.150 mS/cm 0.0 NTU 7.60 mg/L 103.090 DO</u>											

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature _____



WELL DEVELOPMENT LOG DATA SHEET

WFIW-060

1. PROJECT INFORMATION Project Number: <u>144-8260008</u> Task Number: <u>02.01</u> Client: <u>NEER</u> Project Location: <u>WEST OF AP-5 POND</u>		WELL ID: <u>WFIW-060</u> Date: <u>8-15-16</u> Time: <u>1225</u> Personnel: <u>J. LAGARDE, M. FARMER</u> Weather: <u>112°F WINDY, SUNNY</u>									
2. WELL DEVELOPMENT LOG Method: PUMP <input checked="" type="checkbox"/> BAILER _____ Total Depth of Well (BTOC): <u>51.68</u> ft. Screen Length: <u>~46.68</u> to <u>~51.68</u> ft bgs Depth to Static Water (BTOC): <u>28.38</u> ft. Calculated Casing Vol.: <u>4.3261</u> gal Depth to Product (BTOC): _____ ft. Length of Water Column (h): <u>28.30</u> ft. Purge Vol. Calculation (one casing vol. = 0.041*d ² *h)											
3. DEVELOPMENT DATA Purge Method: <u>LOW FLOW</u> Materials: Pump / Bailer <u>BLADDER</u> Materials: Tubing / Rope <u>LDPE</u> Was well purged dry? <u>YES</u> <input checked="" type="checkbox"/> NO <input type="checkbox"/> Development Criteria: _____		EQUIPMENT MODELS 1. <u>HORIBA U-52</u> 2. <u>QED M150</u> 3. <u>SOLIMET WLM</u> 4. <u>HI 55</u>									
Time	Flow Rate (gpm) ML/M	DTW (ft. BTOC)	Cum. Water Removed (gal) ML	±0.1 pH	3rd Temp (°C)	3rd Cond. (mS/cm)	±10 ORP (mV)	10% DO (mg/L) >0.5	10% Turbidity (NTU) >5.0	Other	Comments
1401	100	28.8	500	7.80	37.82	6.64	123	1.45	24.7		
1406	100	28.89	1000	7.85	34.64	6.67	117	1.39	22.0		
1412	100	28.9	1500	7.85	33.64	6.69	115	1.46	18.1		
1418	100	28.91	2000	7.89	33.00	6.72	111	1.52	15.4		
1425	100	28.91	2500	7.89	32.63	6.71	112	1.51	13.7		
1431	100	28.91	3000	7.86	32.52	6.72	115	1.61	11.1		
1438	100	28.91	3500	7.88	32.4	6.72	113	1.67	9.1		
1445	100	28.91	4000	7.82	32.38	6.75	117	1.72	7.4		
1450	100	28.91	4500	7.85	32.28	6.74	118	1.75	6.3		
1455	100	28.87	5000	7.84	32.38	6.71	119	1.83	5.6		
1500	100	28.84	5500	7.86	32.09	6.73	119	1.87	5.4		
1605	100	28.86	6000	7.87	32.10	6.71	118	1.86	4.8	STABLE	CONCENTRATION DECREASE
1515	—	28.40	—	—	—	—	—	—	—	—	OF TURBIDITY
4. SAMPLING DATA Method(s): <u>SEP ABOVE</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ DTW at Time of Sampling: <u>28.88</u> Sample ID: <u>WFIW-060-20160815</u> Duplicate Sample ID: _____		Field Filtered: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Analyte <input type="checkbox"/> VOCs 8260B <input type="checkbox"/> SVOCs 8270 <input type="checkbox"/> Metals 6010B / 7000 Series <input type="checkbox"/> TPH 80158 <input checked="" type="checkbox"/> <u>SEP WQ</u>									
5. COMMENTS <u>QED LPM6 S/S (165) 80 FT</u>											

Note: 2-inch well = 0.167 gal/ft

4 inch well = 0.667 gal/ft

Signature:



WELL DEVELOPMENT LOG DATA SHEET

1 FLOW 075

1. PROJECT INFORMATION Project Number: <u>194-F7600006</u> Task Number: <u>02.01</u> Client: <u>NEAR</u> Project Location: <u>WEST OF AP-5 POND</u>		WELL ID: <u>4FIW-075</u> Date: <u>8-17-14</u> Time: <u>0830</u> Personnel: <u>J. LAGARE</u> Weather: <u>Sunny, Low Wind 48°F</u>											
2. WELL DEVELOPMENT LOG Method: <u>PUMP</u> <input checked="" type="checkbox"/> BAILER <input type="checkbox"/> SURGE BLOCK <input type="checkbox"/> OTHER <input type="checkbox"/> Total Depth of Well (BTOC): <u>30.80</u> ft. Screen Length: <u>25.50</u> to <u>30.50</u> ft bgs Depth to Static Water (BTOC): <u>28.12</u> ft. Calculated Casing Vol.: <u>0.448</u> gal Depth to Product (BTOC): <u>-</u> ft. Length of Water Column (h): <u>2.68</u> ft. Purge Vol. Calculation (one casing vol. = 0.041*d²*h)													
3. DEVELOPMENT DATA Purge Method: <u>LOW FLOW</u> Materials: <u>Pump / Bailer</u> Materials: <u>Tubing / Rope</u> Was well purged dry? <u>YES</u> <input checked="" type="checkbox"/> <u>NO</u> <input type="checkbox"/> Development Criteria: <u>-</u>		EQUIPMENT MODELS 1. <u>HURDIS N-52</u> 2. <u>REA M350</u> 3. <u>SOLINER ULM</u> 4. <u>811-55</u>											
Time	Flow Rate (gpm) <u>ML/min</u>	DTW (ft. BTOC)	Cum. Water Removed (gal) * L	± 0.1 pH ✓	3% Temp (°C) ✓	3% Cond. (mS/cm) ✓	± 10.0 ORP (mV) ✓	10% DO (mg/L) ✓	10% Turbidity (NTU) ✓	Other _____	Comments		
0845	100	28.16	500	7.25	28.01	4.52	168	1.07	28.3				
0850	100	28.16	1000	7.34	27.70	4.52	155	1.36	17.5				
0855	100	28.16	1500	7.36	27.56	4.50	146	1.35	4.8				
0900	100	28.16	2000	7.35	27.51	4.50	140	1.39	1.2				
0905	100	28.16	2500	7.34	27.44	4.49	139	1.29	0.0		STABILIZE		
0925	—	28.12	—	—	—	—	—	—	—	—	AFTER Pump		
4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: <u>Pump / Bailer</u> Materials: <u>Tubing / Rope</u> DTW at Time of Sampling: <u>28.12</u> Sample ID: <u>4FIW-075-20140817</u> Duplicate Sample ID: <u>-</u>								Analyte <input type="checkbox"/> VOCs <input type="checkbox"/> SVOCs <input type="checkbox"/> Metals <input type="checkbox"/> TPH <input type="checkbox"/> <u>SEE CUC</u>				Method 82608 8270 6010B / 7000 Series 8015B	
5. COMMENTS <u>REA TESTING CPM5 5/C C116) 75 F1</u> <u>CALIBRATION 3.95 pH, 4.31 mS/cm, 7.60 mg/L, 103% DO</u>													

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION Project Number: <u>194-87600008</u> Task Number: <u>0201</u> Client: <u>NER</u> Project Location: <u>WEL OF AA-5 10VA</u>		WELL ID: <u>UFW-07I</u> Date: <u>8-17-16</u> Time: <u>0200</u> Personnel: <u>J. LAGARE</u> Weather: <u>partly cloudy 98°F</u>									
2. WELL DEVELOPMENT LOG Method: <u>PUMP</u> <input checked="" type="checkbox"/> <u>BAILER</u> <input type="checkbox"/> <u>SURGE BLOCK</u> <input type="checkbox"/> <u>OTHER</u> <input type="checkbox"/> Total Depth of Well (BTOC): <u>46.19</u> ft. Screen Length: <u>26.19</u> to <u>46.19</u> ft bgs Depth to Static Water (BTOC): <u>25.10</u> ft. Calculated Casing Vol.: <u>2.14</u> gal Depth to Product (BTOC): <u>13.04</u> ft. Length of Water Column (h): <u>13.04</u> ft. Purge Vol. Calculation (one casing vol. = 0.041*d ² *h)											
3. DEVELOPMENT DATA Purge Method: <u>LOW FLOW</u> Materials: <u>PUMP / Bailer</u> Materials: <u>TUBING / ROPE</u> Was well purged dry? <u>YES</u> <input checked="" type="checkbox"/> <u>NO</u> <input type="checkbox"/> Development Criteria: <u>—</u>		EQUIPMENT MODELS 1. <u>FLORIDA U-52</u> 2. <u>QED MASH</u> 3. <u>SOLVOT WLM</u> 4. <u>BLASDER PUMP TRU</u>									
Time	Flow Rate (gpm) ML/min	DTW (ft. BTOC)	Cum. Water Removed (gal)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments
0710	100	27.85	500	7.40	26.91	4.45	133	1.05	18.7		
0715	100	27.83	1000	7.50	26.84	4.46	132	1.65	8.9		
0720	100	27.75	1500	7.62	26.80	4.47	103	1.29	3.4		
0725	100	27.83	2000	7.66	26.84	4.47	98	1.47	1.3		
0730	100	27.85	2500	7.73	26.84	4.47	101	1.85	0.0		
0735	100	27.85	3000	7.73	26.84	4.47	104	1.97	0.0		
0740	100	27.83	3500	7.75	26.82	4.44	103	2.02	0.0		STABILIZED
0750	—	28.60	—	—	—	—	—	—	—		AFTER PLUG
4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: <u>PUMP / Bailer</u> Materials: <u>TUBING / ROPE</u> DTW at Time of Sampling: <u>27.85</u> Sample ID: <u>UFW-07I-2010817</u> Duplicate Sample ID: <u>—</u>						Analyte Method <input type="checkbox"/> VOCs 8260B <input type="checkbox"/> SVOCs 8270 <input type="checkbox"/> Metals 6010B / 7000 Series <input type="checkbox"/> TPH 8015B <input checked="" type="checkbox"/> <u>SEE CUL</u>					
5. COMMENTS <u>QED METING CPM 5 CG. 885.20 80 FT</u>											

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



TETRA TECH

WFIW-07D

WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION Project Number: <u>W4-87100008</u> Task Number: <u>02.01</u> Client: <u>NEAR</u> Project Location: <u>WEST OF A-5 POND</u>						WELL ID: <u>WFIW-07D</u> Date: <u>2-16-16</u> Time: <u>1325</u> Personnel: <u>J. LAGARDE</u> Weather: <u>WINDY SUNNY 145°F</u>					
2. WELL DEVELOPMENT LOG Method: <u>PUMP</u> <u>X</u> BAILER _____ SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOC): <u>51.25</u> ft. Screen Length: <u>~46.25</u> to <u>~51.25</u> ft bgs Depth to Static Water (BTOC): <u>28.35</u> ft. Calculated Casing Vol.: <u>3.82</u> gal Depth to Product (BTOC): _____ ft. Length of Water Column (h): <u>22.9</u> ft. Purge Vol. Calculation (one casing vol. = 0.041*d ² *h)											
3. DEVELOPMENT DATA Purge Method: <u>LOW FLOW</u> Materials: Pump/Bailer <u>CLANDER</u> Materials: Tubing / Rope <u>LDPE</u> Was well purged dry? YES <input type="radio"/> NO <input checked="" type="radio"/> Development Criteria: _____										EQUIPMENT MODELS 1. <u>HUMBA 0-52</u> 2. <u>RED MISO</u> 3. <u>SCHEISS WLM</u> 4. <u>RED-SS</u>	
Time	Flow Rate (gpm) <u>75 LPM</u>	DTW (ft. BTOC)	Cum. Water Removed (gallons)	pH <u>7.54</u>	370 Temp (°C)	3% Cond. (mS/cm)	±10.0 ORP (mV)	1070 DO (mg/L)	1090 Turbidity (NTU)	Other	Comments
1408	100	25.84	500	7.54	37.64	5.14	137	2.53	27.5		
1415	100	25.84	1200	7.60	34.60	5.23	140	3.54	25.1		
1420	100	25.84	1700	7.61	37.52	5.21	139	3.76	20.5		
1425	100	25.84	2200	7.71	36.60	5.22	137	3.85	15.1		
1430	100	25.84	2700	7.71	35.41	5.21	138	4.02	8.8		
1435	100	25.84	3200	7.70	35.09	5.20	139	3.83	7.6		
1440	100	25.84	3700	7.70	35.21	5.20	139	4.01	7.7		
1445	100	25.84	4200	7.70	35.06	5.24	137	4.03	7.5		STABILIZE
1500	—	28.33	—	—	—	—	—	—	—		AFTER PURGE
4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ DTW at Time of Sampling: <u>25.84</u> Sample ID: <u>WFIW-07D-20160806</u> Duplicate Sample ID: _____ Field Filtered: YES <input checked="" type="radio"/> NO <input type="radio"/>										Analyte Method <input type="checkbox"/> VOCs 8260B <input type="checkbox"/> SVOCs 8270 <input type="checkbox"/> Metals 6010B / 7000 Series <input type="checkbox"/> TPH 8015B <input checked="" type="checkbox"/> <u>SEE LOG</u>	
5. COMMENTS <u>REA BEINGS CIMG 3(5) (165)</u>											

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



1. PROJECT INFORMATION

Project Number: 194-8760008

Task Number: 02.01

WELL ID: UFIW-083

Date: 08/19/16

Time: 0700

Client: NERT

Personnel: M. Farmer

Project Location: NERT-HENDERSON, NV, west of AP-spond

Weather: cloudy, 90°F

2. WELL DEVELOPMENT LOG

Method: PUMP

BAILER ☒

SURGE BLOCK

OTHER

Total Depth of Well (BTOC): 29.55'

ft. Screen Length: to 19.11'

ft. bgs

Depth to Static Water (BTOC): 28.02'

ft. Calculated Casing Vol.: 21.87 gal

ft. gal

Depth to Product (BTOC):

ft.

Length of Water Column (h): 1.53'

ft. Purge Vol. Calculation (one casing vol. = 0.041 d² * h)

3. DEVELOPMENT DATA

Purge Method: Bail

Materials: Pump / Bailer

Materials: Tubing / Rope

Was well purged dry? YES NO

Development Criteria:

EQUIPMENT MODELS

1. HOSI 4 U-52

2. SOLIUST WZM

3. 45i 1-55

4.

Time	Flow Rate (gpm)	DTW (ft. BTOC)	Cum. Water Removed (gal)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments
0722	1	—	40	6.33	27.14	5.12	187	1.15	60.1		
0734	1	—	44	7.38	26.25	5.21	162	1.6	73		
0741	1	—	48	7.42	26.02	5.22	161	1.11	70.3		
0750	1	—	—	7.45	25.72	5.23	159	1.29	70.3		
0759	1	—	—	7.46	25.78	5.28	154	1.15	86.0		
0805	1	28.0	71								23x casing volume Reached

4. SAMPLING DATA

Method(s): SEE ABOVE

Materials: Pump / Bailer

Materials: Tubing / Rope

DTW at Time of Sampling:

Sample ID: UFIW

Duplicate Sample ID:

Field Filtered: YES NO

Analyte

☐ VOCs

☐ SVOCs

☐ Metals

☐ TPH

☒ SEE CDC

Method

82608

8270

6010B / 7000 Series

80158

5. COMMENTS

00655-Calibration: Temp = 30.38°C, pH = 4.02, ORP = 288 mV

cond. = 4.90 mS/cm, Turbidity = 0.0 NTU, DO = 7.41 mg/L, DO = 100.2%

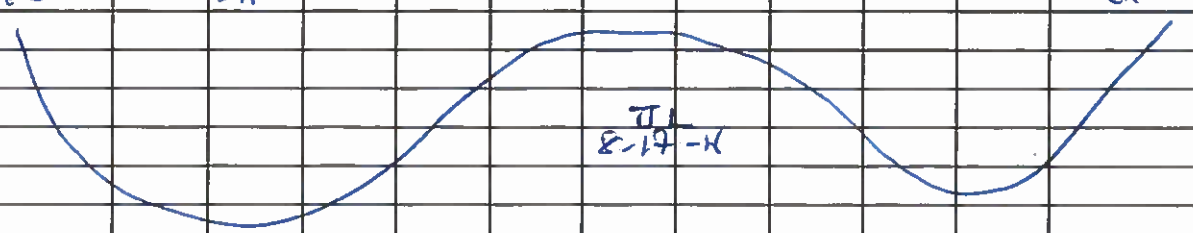
4-inch well = 0.667 gal/ft

Signature _____

Muandaji. fuma



WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION Project Number: <u>144-87600008</u> Task Number: <u>02-01</u> Client: <u>NFER</u> Project Location: <u>WEST OF AFS POMA</u>		WELL ID: <u>AFW-081</u> Date: <u>8-17-08</u> Time: <u>1310</u> Personnel: <u>J. LAGAR</u> Weather: <u>CLOUDY, WINDY 109°F</u>											
2. WELL DEVELOPMENT LOG Method: PUMP <input checked="" type="checkbox"/> BAILER _____ SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOW): <u>39.79</u> ft. Screen Length: <u>~34.79</u> to <u>~39.79</u> ft bgs Depth to Static Water (BTOW): <u>27.98</u> ft. Calculated Casing Vol.: <u>1.98</u> gal Depth to Product (BTOW): _____ ft. Length of Water Column (h): <u>11.82</u> ft. Purge Vol. Calculation (one casing vol. = 0.041 * d ² * h)													
3. DEVELOPMENT DATA Purge Method: <u>Low Flow</u> Materials: Pump/Bailer <u>BLADDER PUMP MO</u> Materials: Tubing/Rope <u>LDPE</u> Was well purged dry? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Development Criteria: <u>-</u>		EQUIPMENT MODELS 1. <u>HORIBA U-52</u> 2. <u>QPA M150</u> 3. <u>WILMOR WLM</u> 4. <u>GEI-35</u>											
Time	Flow Rate (gpm) <small>ml/min</small>	DTW (ft. BTOW)	Cum. Water Removed (gal)	±0.1 pH	370 Temp (°C)	3% Cond. (mS/cm)	±10.0 ORP (mV)	10.2 DO (mg/L)	10% Turbidity (NTU)	Other	Comments		
1318	100	28.00	500	7.49	32.81	5.17	144	1.77	28.8				
1323	100	28.00	1000	7.52	33.50	5.14	141	1.75	14.9				
1328	100	28.01	1500	7.58	33.17	5.20	138	1.24	10.8				
1333	100	28.00	2000	7.59	33.00	5.18	137	1.33	9.8				
1338	100	28.01	2500	7.61	32.62	5.18	135	1.35	8.9				
1343	100	28.01	3000	7.65	32.55	5.18	133	1.37	7.6				
1348	100	27.99	3500	7.64	32.69	5.18	132	1.82	6.0				
1353	100	27.99	4000	7.62	33.13	5.14	132	1.34	6.3				
1358	100	28.06	4500	7.63	33.25	5.19	133	1.31	6.2		STABILIZE		
1415	—	27.97	—	—	—	—	—	—	—		AFTER Pump		
													
4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: Pump/Bailer _____ Materials: Tubing/Rope _____ DTW at Time of Sampling: <u>28.00</u> Sample ID: <u>AFW-081-2010817</u> Duplicate Sample ID: _____						Analyte <input type="checkbox"/> VOCs <input type="checkbox"/> SVOCs <input type="checkbox"/> Metals <input type="checkbox"/> TPH <input checked="" type="checkbox"/> <u>SEE LOG</u>						Method 8260B 8270 6010B / 7000 Series 8015B	
5. COMMENTS <u>WELL SETTING DPM5 6/4 (129) 60 FT</u>													

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature



WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION Project Number: <u>194-87600008</u> Task Number: <u>02.01</u> Client: <u>HERT</u> Project Location: <u>WEST OF AP-5 POND</u>		WELL ID: <u>UPIW-080</u> Date: <u>8-17-16</u> Time: <u>1000</u> Personnel: <u>J. LACADE</u> Weather: <u>DRY, LOW WIND 95°F</u>									
2. WELL DEVELOPMENT LOG Method: PUMP <input checked="" type="checkbox"/> BAILER _____ SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOC): <u>50.06</u> ft. Screen Length: <u>45.01</u> to <u>50.06</u> ft bgs Depth to Static Water (BTOC): <u>28.14</u> ft. Calculated Casing Vol.: <u>3.65</u> gal Depth to Product (BTOC): _____ ft. Length of Water Column (h): <u>21.92</u> ft. Purge Vol. Calculation (one casing vol. = 0.041 * d ² * h)											
3. DEVELOPMENT DATA Purge Method: <u>LOW FLOW</u> Materials: Pump <input checked="" type="checkbox"/> Bailer _____ Materials: Tubing <input checked="" type="checkbox"/> Rope _____ Was well purged dry? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Development Criteria: _____		EQUIPMENT MODELS 1. <u>HORIBA U-52</u> 2. <u>QED MAP 30</u> 3. <u>SOLINF WLM</u> 4. <u>YI 55</u>									
Time	Flow Rate (gpm) <small>ML/M</small>	DTW (ft. BTOC)	Cum. Water Removed (gal/ML)	10.1 pH ✓	30 Temp (°C) ✓	30 Cond. (mS/cm) ✓	±10.0 ORP (mV) ✓	100 DO (mg/L) 20.5 ✓	100 Turbidity (NTU) 25.0 ✓	Other _____	Comments
1010	80	26.35	500	7.59	29.93	6.64	142	1.42	12.9		
1016	80	26.42	1000	7.66	29.81	6.44	135	1.27	6.1		
1022	80	26.40	1500	7.70	29.52	6.98	132	1.42	3.1		
1028	80	26.43	2000	7.70	29.61	6.99	130	1.39	1.2		
1034	80	26.44	2500	7.70	29.55	7.10	126	1.43	0.1		STABILIZE
1050	—	28.16	—	—	—	—	—	—	—		AFTER PUMP
4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: Pump <input checked="" type="checkbox"/> Bailer _____ Materials: Tubing <input checked="" type="checkbox"/> Rope _____ DTW at Time of Sampling: <u>26.40</u> Sample ID: _____ Duplicate Sample ID: _____				Analyte <input type="checkbox"/> VOCs 82608 <input type="checkbox"/> SVOCs 8270 <input type="checkbox"/> Metals 6010B / 7000 Series <input type="checkbox"/> TPH 80158 <input checked="" type="checkbox"/> <u>SEE CUL</u> Field Filtered: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>							
5. COMMENTS <u>QED DETINW CAM 5' (6/6) 80FT</u>											

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:

WELL DEVELOPMENT LOG DATA SHEET

[illegible]

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature: _____

WELL DEVELOPMENT LOG DATA SHEET

[illegible]

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature

4 ans 2h

WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION				WELL ID: UFMV-01D			
Project Number: 194-876 00008		Task Number: 02.01		Date: 8-9-16		Time: 0630.	
Client: MERT				Personnel: Hlaw &			
Project Location: Henderson, NV				Weather: Sunny 72°F			

2. WELL DEVELOPMENT LOG							
Method: PUMP		BAILER		SURGE BLOCK		OTHER	
Total Depth of Well (BTOW): 44.12		ft.		Screen Length: 44.12 to 44.12		ft bgs 48.62 ft set pump	
Depth to Static Water (BTOW): 27.89		ft.		Calculated Casing Vol.: 3.55		gal	
Depth to Product (BTOW):		ft.					
Length of Water Column (h): 21.23		ft.		Purge Vol. Calculation (one casing vol. = 0.041 * d² * h)			

3. DEVELOPMENT DATA				EQUIPMENT MODELS			
Purge Method:				1.			
Materials: Pump / Bailer				2.			
Materials: Tubing / Rope				3.			
Was well purged dry?	YES	NO		4.			
Development Criteria:							

Time	Flow Rate (gpm) ml/min	DTW (ft. BTOW)	Cum. Water Removed (gal) (m³)	±0.1 pH	±3% Temp (°C)	±3% Cond. (mS/cm)	±10 ORP (mV)	±10% DO (mg/L)	±10% Turbidity (NTU)	Other	Comments ±10%
0725	100	26.80	0.0	7.92	29.54	1.11	211	3.32	64.0		4.84 DO from YSZ SE
0830	100	26.70	500	7.92	29.33	6.74	206	3.22	64.2		4.76
0835	100	26.70	1000	7.92	29.21	6.75	200	3.36	51.9		5.09
0840	100	26.70	1500	7.94	29.21	6.74	192	3.42	47.3		5.12
0845	100	26.70	2000	7.93	29.12	6.75	187	3.29	51.0		5.14
0850	100	26.70	2500	7.95	29.13	6.74	185	3.32	48.1		5.140
0855	100	26.70	3000	7.96	29.14	6.74	181	3.40	40.8		6.25
0900	100	26.70	3500	7.97	29.18	6.74	180	3.46	36.2		5.64
0905	100	26.70	4000	7.98	29.22	6.73	179	3.61	33.6		6.31
0910	100	26.70	4500	7.97	29.21	6.73	170	3.54	33.0		6.26
Stable collect sample UFMV-01D @ 0920											PTW after sampling = 27.89 + 6 bgs

4. SAMPLING DATA				Analyte		Method	
Method(s): Low Flow				<input type="checkbox"/>	VOCs	8260B	
Materials: Pump / Bailer				<input type="checkbox"/>	SVOCs	8270	
Materials: Tubing / Rope LDP tubing				<input type="checkbox"/>	Metals	6010B / 7000 Series	
DTW at Time of Sampling: 26.70				<input type="checkbox"/>	TPH	8015B	
Sample ID: UFMV-01D				<input checked="" type="checkbox"/>	see COC		
Duplicate Sample ID:				Field Filtered: YES NO			

5. COMMENTS	
Calibrated Horiba U-FE2 with auto red solution; pH = 4.02(4.00), cond = 2.53(4.49 mS/cm) NTH = 0.0(gal) - 1.14 mg/L PD, 103.1% PD OAP calibrated to (240mV / 2.40mV) YSI 55 DO, 1 cal. 8.14(gal) DED cetony CPMG 5.0/5.0 (16.5) 120 psi (12) 50 psi Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft	

Signature: Hlaw



WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION Project Number: <u>194-8760008</u> Task Number: <u>02.01</u> Client: <u>NEPT</u> Project Location: <u>Henderson, NV</u>		WELL ID: <u>HEMW-025</u> Date: <u>8-10-16</u> Time: <u>1310</u> Personnel: <u>Hao & Daniel K.</u> Weather: <u>Sunny, ~100°F</u>									
2. WELL DEVELOPMENT LOG Method: <u>PUMP</u> BAILER _____ SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOC): <u>28.06</u> ft. Screen Length: <u>23.59</u> to <u>28.99</u> ft bgs Depth to Static Water (BTOC): <u>27.59</u> ft. Calculated Casing Vol.: <u>0.23</u> gal Depth to Product (BTOC): _____ ft. Length of Water Column (h): <u>1.40</u> ft. <small>Purge Vol. Calculation (one casing vol. = 0.041 * d² * h)</small>											
3. DEVELOPMENT DATA Purge Method: <u>11.2</u> <u>7.12 ft</u> <u>recovery to 30%</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ Was well purged dry? <u>YES</u> <u>NO</u> Development Criteria: _____											
EQUIPMENT MODELS 3. _____ 4. _____											
Time	Flow Rate <small>(gpm) ml/min</small>	DTW <small>(ft. BTOC)</small>	Cum. Water Removed <small>(gal)</small>	pH <small>±0.1</small>	Temp <small>(°F)</small>	Cond. <small>(mS/cm)</small>	ORP <small>(mV) ±10</small>	±10% DO <small>(mg/L)</small>	±10% Turbidity <small>(NTU)</small>	Other	Comments
1443	100	27.69	0.0	7.18	32.77	10.5	130	1.51	26.2		2.74 DO YSI
1448	100	27.90	500	7.34	32.13	10.2	132	1.44	6.5		3.46 DO YSI
1452	100		1000	7.39	31.88	10.2	141	1.87	2.0		4.11 DO YSI
1458	100		1500	7.30	31.55	10.2	149	1.90	12.6		2.58 DO YSI
1503											
Too Low RECHARGE: PUMPING NOT POSSIBLE - SWITCH TO HAND BAIL.											
1520				7.28	29.10	6.63	211	5.16	8.10		
1524				7.38	28.5	10.3	209	3.92	0.0		
1527				7.26	27.85	10.3	201	2.73	0.0		
1530				7.24	27.15	10.3	206	2.21	0.0		
4. SAMPLING DATA Method(s): <u>SEE PAGE 2</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ DTW at Time of Sampling: _____ Sample ID: _____ Duplicate Sample ID: _____				Field Filtered: <u>YES</u> <u>NO</u> Analyte <input type="checkbox"/> VOCs 8260B <input type="checkbox"/> SVOCs 8270 <input type="checkbox"/> Metals 6010B / 7000 Series <input type="checkbox"/> TPH 8015B							
5. COMMENTS <u>1430 calibrated YSI 55 DO meter, DO = 90.8/93 (calib 48, sal = 4.0)</u> <u>first reading = 5.81 mg/L @ 31.5°C</u> <u>turbidity reading out of range, too turbid.</u>											

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature: [Signature]

WELL DEVELOPMENT LOG DATA SHEET

[illegible]

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature _____

WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION Project Number: <u>144-87600008</u> Task Number: <u>R.O.I</u> Client: <u>MEPT</u> Project Location: <u>Henderson, NV</u>		WELL ID: <u>WFMW-027</u> Date: <u>8-10-16</u> Time: <u>1000</u> Personnel: <u>Har R.</u> Weather: <u>Sunny</u>																																																																																																																																																																																																									
2. WELL DEVELOPMENT LOG <table style="width:100%;"> <tr> <td>Method: <u>PUMP</u> Bailer: _____</td> <td>SURGE BLOCK: _____ OTHER: _____</td> </tr> <tr> <td>Total Depth of Well (BTOC): <u>39.08</u></td> <td>ft. Screen Length: <u>34.08</u> to <u>39.08</u> ft bgs <u>See pump 36.58 ft bgs</u></td> </tr> <tr> <td>Depth to Static Water (BTOC): <u>27.68</u></td> <td>ft. Calculated Casing Vol.: <u>1.90</u> gal</td> </tr> <tr> <td>Depth to Product (BTOC): _____</td> <td>ft. _____</td> </tr> <tr> <td>Length of Water Column (h): <u>11.40</u></td> <td>ft. <u>Purge Vol. Calculation (one casing vol. = 0.041 * d² * h)</u></td> </tr> </table>				Method: <u>PUMP</u> Bailer: _____	SURGE BLOCK: _____ OTHER: _____	Total Depth of Well (BTOC): <u>39.08</u>	ft. Screen Length: <u>34.08</u> to <u>39.08</u> ft bgs <u>See pump 36.58 ft bgs</u>	Depth to Static Water (BTOC): <u>27.68</u>	ft. Calculated Casing Vol.: <u>1.90</u> gal	Depth to Product (BTOC): _____	ft. _____	Length of Water Column (h): <u>11.40</u>	ft. <u>Purge Vol. Calculation (one casing vol. = 0.041 * d² * h)</u>																																																																																																																																																																																														
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<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Time</th> <th>Flow Rate (gpm)</th> <th>DTW (ft. BTOC)</th> <th>Cum. Water Removed (gal)</th> <th>pH</th> <th>Temp (°C)</th> <th>Cond. (mS/cm)</th> <th>ORP (mV)</th> <th>DO (mg/L)</th> <th>Turbidity (NTU)</th> <th>Other</th> <th>Comments</th> </tr> </thead> <tbody> <tr><td>1020</td><td>100</td><td>28.01</td><td>0.0</td><td>7.65</td><td>30.34</td><td>7.38</td><td>206</td><td>0.82</td><td>7.80</td><td></td><td>1.07 no Y57</td></tr> <tr><td>1025</td><td>100</td><td>28.01</td><td>300</td><td>7.58</td><td>30.10</td><td>7.41</td><td>201</td><td>0.25</td><td>36.5</td><td></td><td>0.89</td></tr> <tr><td>1030</td><td>100</td><td>28.01</td><td>1000</td><td>7.64</td><td>30.02</td><td>7.42</td><td>199</td><td>0.09</td><td>24.6</td><td></td><td>0.90</td></tr> <tr><td>1035</td><td>100</td><td>28.01</td><td>1500</td><td>7.65</td><td>30.10</td><td>7.43</td><td>188</td><td>0.02</td><td>17.8</td><td></td><td>0.69</td></tr> <tr><td>1040</td><td>100</td><td>28.01</td><td>2000</td><td>7.67</td><td>30.18</td><td>7.43</td><td>183</td><td>0.00</td><td>11.9</td><td></td><td>0.62</td></tr> <tr><td>1045</td><td>100</td><td>28.01</td><td>2500</td><td>7.66</td><td>30.30</td><td>7.44</td><td>187</td><td>0.00</td><td>7.0</td><td></td><td>0.62 0.63</td></tr> <tr><td>1050</td><td>100</td><td>28.01</td><td>3000</td><td>7.63</td><td>30.46</td><td>7.45</td><td>181</td><td>0.00</td><td>3.5</td><td></td><td>0.66</td></tr> <tr><td>1055</td><td>100</td><td>28.01</td><td>3500</td><td>7.64</td><td>30.49</td><td>7.45</td><td>179</td><td>0.00</td><td>1.8</td><td></td><td>0.64</td></tr> <tr><td>1100</td><td>100</td><td>28.01</td><td>4000</td><td>7.60</td><td>32.60</td><td>7.45</td><td>180</td><td>0.00</td><td>1.1</td><td></td><td>0.65</td></tr> <tr> <td colspan="11"> State collected sample WFMW-027-20160810 </td> <td>DTW=28.01</td> </tr> <tr> <td colspan="11"> 7.78 29.12 6.63 211 5.44 After sampling </td> <td>DTW=27.87</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>												Time	Flow Rate (gpm)	DTW (ft. BTOC)	Cum. Water Removed (gal)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments	1020	100	28.01	0.0	7.65	30.34	7.38	206	0.82	7.80		1.07 no Y57	1025	100	28.01	300	7.58	30.10	7.41	201	0.25	36.5		0.89	1030	100	28.01	1000	7.64	30.02	7.42	199	0.09	24.6		0.90	1035	100	28.01	1500	7.65	30.10	7.43	188	0.02	17.8		0.69	1040	100	28.01	2000	7.67	30.18	7.43	183	0.00	11.9		0.62	1045	100	28.01	2500	7.66	30.30	7.44	187	0.00	7.0		0.62 0.63	1050	100	28.01	3000	7.63	30.46	7.45	181	0.00	3.5		0.66	1055	100	28.01	3500	7.64	30.49	7.45	179	0.00	1.8		0.64	1100	100	28.01	4000	7.60	32.60	7.45	180	0.00	1.1		0.65	State collected sample WFMW-027-20160810											DTW=28.01	7.78 29.12 6.63 211 5.44 After sampling											DTW=27.87																																																
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1100	100	28.01	4000	7.60	32.60	7.45	180	0.00	1.1		0.65																																																																																																																																																																																																
State collected sample WFMW-027-20160810											DTW=28.01																																																																																																																																																																																																
7.78 29.12 6.63 211 5.44 After sampling											DTW=27.87																																																																																																																																																																																																
4. SAMPLING DATA Method(s): <u>Low Flow</u> Materials: Pump / Bailer: <u>Bladder</u> Materials: Tubing / Rope: <u>LDP</u> DTW at Time of Sampling: <u>28.01</u> Sample ID: <u>WFMW-027</u> Duplicate Sample ID: _____								Analyte: <input type="checkbox"/> VOCs <input type="checkbox"/> SVOCs <input type="checkbox"/> Metals <input type="checkbox"/> TPH <input type="checkbox"/> See COC Method: 8260B 8270 6010B / 7000 Series 8015B Field Filtered: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO																																																																																																																																																																																																			
5. COMMENTS <u>GED SETTING CPM6 5.0/5.0/165/ 30psi</u>																																																																																																																																																																																																											

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature: _____

Hand 2h



WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION

Project Number: 144-87600008 Task Number: 02.01 WELL ID: UFW-02D

Client: NERT Date: 8-10-16 Time: 0630

Project Location: Henderson, NV Personnel: Hao 8.

Weather: Sunny, 82°F

2. WELL DEVELOPMENT LOG

Method: PUMP BAILER _____ SURGE BLOCK _____ OTHER _____

Total Depth of Well (BTOC): 44.08 ft. Screen Length: 44.08 to 44.08 ft bgs see pump @ 44.58 ft bgs

Depth to Static Water (BTOC): 27.74 ft. Calculated Casing Vol.: 3.56 gal

Depth to Product (BTOC): _____ ft.

Length of Water Column (h): 21.34 ft. Purge Vol. Calculation (one casing vol. = $0.041 \cdot d^2 \cdot h$)

3. DEVELOPMENT DATA

Purge Method: _____

Materials: Pump / Bailer _____

Materials: Tubing / Rope _____

Was well purged dry? YES NO

Development Criteria: _____

EQUIPMENT MODELS

1. _____

2. _____

3. _____

4. _____

Time	Flow Rate (gpm) mL/min	DTW (ft. BTOC)	Cum. Water Removed Total (gal)	pH ±0.1	Temp °F ±0.5	Cond. (mS/cm) ±3%	ORP (mV) ±10	±10% DO (mg/L) Hanna	±10% Turbidity (NTU)	Other	±10% Comments
0816	100	28.05	0	7.81	29.73	8.05	206	0.51	42.1		1.04 DO from YSZ
0821	100	28.05	500	7.76	29.38	8.04	207	0.16	25.6		0.91 DO from YSZ
0826	100	28.05	1000	7.82	29.30	8.03	196	0.00	18.7		0.68
0831	100	28.05	1500	7.78	29.20	8.02	194	0.00	13.8		0.73
0836	100	28.05	2000	7.78	29.21	8.02	190	0.00	14.3		0.69
0841	100	28.05	2500	7.76	29.28	8.02	187	0.00	10.4		0.64
0846	100	28.05	3000	7.77	29.34	8.02	181	0.00	7.2		0.61
0851	100	28.05	3500	7.81	29.40	8.01	174	0.00	6.9		0.60
0856	100	28.05	4000	7.81	29.39	8.02	171	0.00	5.6		0.57
0901	100	28.05	4500	7.79	29.39	8.02	171	0.00	5.5		0.58
Stable, collect sample UFW-02D											DTW=28.05
											DTW=27.85
											after finishing sampling

4. SAMPLING DATA

Method(s): Low flow

Materials: Pump / Bailer

Materials: Bladder

Materials: Tubing / Rope

DTW at Time of Sampling: 28.05

Sample ID: UFW-02D-20160810 Level 4 fms/mo

Duplicate Sample ID: _____

Field Filtered: YES NO

Analyte

☐ VOCs 8260B

☐ SVOCs 8270

☐ Metals 6010B / 7000 Series

☐ TPH 8015B

☐ see COC

5. COMMENTS

Calibrated Water Quality Monitor Hanna HI-52 with outfall solution

cal reading pH=4.0 (4.0), conductivity=4.42 (4.49 mS/cm), NTU=2.0 (0.0), 7.51 mg/L DO, 10.0% DO

ORP=4.0 (26.0 mV), YSZ 5.5 cal=94.0 (93.0) set altitude=18, salinity=4; first reading 7.21 mg/L @ 27.5

then returned casing 50/50 (16.5) 30.5

Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft

Signature: Hao 2h



WELL DEVELOPMENT LOG DATA SHEET

4-inch well = 0.667 gal/ft

Signature

WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION Project Number: <u>174-8760008</u> Task Number: <u>02.01</u> Client: <u>MERT</u> Project Location: <u>Henderson, NV</u>		WELL ID: <u>UFMW-031</u> Date: <u>8-8-16</u> Time: <u>1300</u> Personnel: <u>Hao B.</u> Weather: <u>Sunny, ~100°F</u>	
2. WELL DEVELOPMENT LOG Method: PUMP <u>40.30</u> BAILER _____ SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOC): _____ ft. Screen Length: <u>30.30</u> to <u>40.30</u> ft bgs Set <u>35.0</u> ft bgs Depth to Static Water (BTOC): <u>27.04</u> ft. Calculated Casing Vol.: <u>221</u> gal Depth to Product (BTOC): _____ ft. Length of Water Column (h): <u>13.26</u> ft. Purge Vol. Calculation (one casing vol. = 0.041*d²*h)			
3. DEVELOPMENT DATA Purge Method: _____ Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ Was well purged dry? YES NO Development Criteria: _____		EQUIPMENT MODELS 1. _____ 2. _____ 3. _____ 4. _____	

Time	Flow Rate (gpm) ml/min	DTW (ft. BTOC)	Cum. Water Removed (gallons)	pH	3% Temp (°C)	3% Cond. (mS/cm)	±10 ORP (mV)	10% DO (mg/L)	10% Turbidity (NTU)	Other	Comments
1414	700	27.15	0.0	7.66	36.47	6.76	176	422	1.2		0.62 DO from 151
1419	100	27.15	500	7.66	34.80	6.80	169	3.39	1.7		0.76
1424	100	27.18	1000	7.61	34.17	6.81	167	2.89	3.3		1.07
1429	100	27.18	1500	7.61	33.97	6.79	166	2.75	3.0		0.86
1434	100	27.18	2000	7.62	33.53	6.82	162	2.33	1.9		0.82
1439	100	27.18	2500	7.64	33.58	6.84	158	1.57	0.6		0.78
1444	100	27.18	3000	7.63	33.49	6.85	156	1.72	0.7		0.76
1449	100	27.18	3500	7.62	33.36	6.83	156	1.65	0.4		0.67
1454	100	27.18	4000	7.61	33.42	6.84	155	1.51	0.0		0.61
1459	100	27.18	4500	7.64	33.48	6.85	152	1.50	0.0		0.58
Stable, collected sample UFMW-031 @ 1510											

4. SAMPLING DATA Method(s): <u>Low Flow</u> Materials: Pump/Bailer <u>Bladder</u> Materials: Tubing/Rope <u>LAP tubing</u> DTW at Time of Sampling: <u>27.18</u> Sample ID: <u>UFMW-031</u> Duplicate Sample ID: _____		Field Filtered: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<table border="0"> <tr> <th>Analyte</th> <th>Method</th> </tr> <tr> <td><input type="checkbox"/> VOCs</td> <td>8260B</td> </tr> <tr> <td><input type="checkbox"/> SVOCs</td> <td>8270</td> </tr> <tr> <td><input type="checkbox"/> Metals</td> <td>6010B / 7000 Series</td> </tr> <tr> <td><input type="checkbox"/> TPH</td> <td>8015B</td> </tr> <tr> <td><input type="checkbox"/> see 20°C</td> <td></td> </tr> </table>	Analyte	Method	<input type="checkbox"/> VOCs	8260B	<input type="checkbox"/> SVOCs	8270	<input type="checkbox"/> Metals	6010B / 7000 Series	<input type="checkbox"/> TPH	8015B	<input type="checkbox"/> see 20°C	
Analyte	Method														
<input type="checkbox"/> VOCs	8260B														
<input type="checkbox"/> SVOCs	8270														
<input type="checkbox"/> Metals	6010B / 7000 Series														
<input type="checkbox"/> TPH	8015B														
<input type="checkbox"/> see 20°C															

5. COMMENTS <u>DED setting CPM 6 5.0/5.0 (165) 25 PSI</u> <u>43 Hz</u>

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature: Hao B.



WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION

Project Number: 64-8760008
Project Location: Henderson, NV

WELL ID: UFMW-030
Date: 8-8-2016
Time: 0830

Client: MERT
Personnel: Hao &

Surge Block: _____
Other: _____

Weather: Sunny, ~95°F

2. WELL DEVELOPMENT LOG

Method: PUMP
Bailer: _____

Total Depth of Well (BTOC): 50.40
ft.

Depth to Static Water (BTOC): 27.09
ft.

Depth to Product (BTOC): _____
ft.

Length of Water Column (h): 23.31
ft.

Surge Block: _____
Other: _____

Screen Length: 45 to 50
ft.

Calculated Casing Vol.: 3.89
gal

Purge Vol. Calculation (one casing vol. = 0.041 * d² * h)

3. DEVELOPMENT DATA

Purge Method: _____

Materials: Pump / Bailer _____

Materials: Tubing / Rope _____

Was well purged dry? YES NO

Development Criteria: _____

EQUIPMENT MODELS

1. _____

2. _____

3. _____

4. _____

Time	Flow Rate (gpm)	DTW (ft. BTOC)	Cum. Water Removed (gal)	±0.1 pH	3% Temp (°C)	3% Cond. (mS/cm)	±10 ORP (mV)	10% DO (mg/L)	10% Turbidity (NTU)	Other	Comments
10:42	100	27.11	0	7.75	32.26	7.24	197	2.29	11.8		1.25 from Horiba
10:47	100	27.12	500	7.73	31.42	7.29	189	1.82	0.0		1.40 -
10:52	100	27.12	1000	7.77	31.20	7.31	182	2.34	0.0		1.47
10:57	100	27.12	1500	7.74	31.03	7.34	181	2.28	0.0		1.56
11:02	100	27.12	2000	7.76	30.90	7.34	175	2.48	0.0		1.74
11:07	100	27.12	2500	7.76	31.02	7.37	172	2.51	0.0		1.86
11:12	100	27.12	3000	7.77	30.70	7.33	170	2.56	0.0		1.95
11:17	100	27.12	3500	7.75	30.65	7.36	169	2.52	0.0		2.08
Stable	Collect sample	UFMW-030					1125				DTW=27.16

4. SAMPLING DATA

Method(s): LOW FLOW

Materials: Pump / Bailer

Materials: Tubing / Rope

DTW at Time of Sampling: 27.12

Sample ID: UFMW-030

Duplicate Sample ID: _____

Field Filtered: YES NO

Analyte

☐ VOCs
☐ SVOCs
☐ Metals
☐ TPH
☐ see COC

Method

8260B
8270
6010B / 7000 Series
8015B

5. COMMENTS

Calibrated Horiba M-52 water quality monitor with acetate solution.

pH = 4.02 (4.0) Cond = 4.53 (4.49 mS/cm) NTU = 0.0 (0.0) TSS = 0.0 (0.0) DO = 2.26 (2.26) ORP = 24

DO reading from Horiba in comments

DO setting: 0.06 (0.06) 5.0 (5.0) 11.5 (11.5) 50 psf

Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft



WELL DEVELOPMENT LOG DATA SHEET

1. **PROJECT INFORMATION**
 Project Number: 194-57600008 Task Number: 02.01 WELL ID: UFMW-045
 Client: NERT Date: 08/19/14 Time: 0825
 Project Location: West of AP-5 pond Personnel: _____
 Weather: cloudy

2. **WELL DEVELOPMENT LOG**
 Method: PUMP _____ BAILER X SURGE BLOCK _____ OTHER _____
 Total Depth of Well (BTOC): 29.46 ft. Screen Length: 29.46 to 29.46 ft bgs
 Depth to Static Water (BTOC): 27.75 ft. Calculated Casing Vol.: 28 gal
 Depth to Product (BTOC): _____ ft.
 Length of Water Column (h): 1.21 ft. Purge Vol. Calculation (one casing vol. = $0.041 \cdot d^2 \cdot h$)

3. **DEVELOPMENT DATA**
 Purge Method: bail
 Materials: Pump / bail
 Materials: Tubing / twine
 Was well purged dry? YES NO
 Development Criteria: _____

EQUIPMENT MODELS
 1. Horseba 52
 2. Solinst WSM
 3. _____
 4. _____

Time	Flow Rate (gpm)	DTW (ft. BTOC)	Cum. Water Removed (gal)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments
0900	—	27.75	—	8.18	26.04	4.99	111	1.88	41.0		
0907	—	—	—	8.05	25.87	5.04	124	1.34	193		
0914	—	—	—	7.93	25.88	4.89	129	0.74	185		
0921	—	—	—	7.86	26.00	4.81	128	0.84	175		
0928	—	28.00	21.0	7.91	25.96	4.82	133	0.96	196		3 WELL CASING REMOVED
<p>32 8-14-16</p>											

4. **SAMPLING DATA**
 Method(s): SEE ABOVE
 Materials: Pump / Bail
 Materials: Tubing / Rope
 DTW at Time of Sampling: _____
 Sample ID: UFMW-045-20160819
 Duplicate Sample ID: _____ Field Filtered: YES NO
 Analyte: ☐ VOCs 8260B
☐ SVOCs 8270
☐ Metals 6010B / 7000 Series
☐ TPH 8015B
☒ SEE COC

5. **COMMENTS**

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



TETRA TECH

UFMV-04I

WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION Project Number: <u>194-S2600008</u> Task Number: <u>02-01</u> Client: <u>NER</u> Project Location: <u>WR & UF AA-3 POND</u>		WELL ID: <u>UFMV-04I</u> Date: <u>8-18-16</u> Time: <u>0855</u> Personnel: _____ Weather: _____	
2. WELL DEVELOPMENT LOG Method: PUMP <input checked="" type="checkbox"/> BAILER _____ SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOC): <u>39.45</u> ft. Screen Length: <u>~34.45</u> to <u>~39.45</u> ft bgs Depth to Static Water (BTOC): <u>27.76</u> ft. Calculated Casing Vol.: <u>1.95</u> gal Depth to Product (BTOC): _____ ft. Length of Water Column (h): <u>11.69</u> ft. Purge Vol. Calculation (one casing vol. = 0.041 * d ² * h)			
3. DEVELOPMENT DATA Purge Method: <u>LOW FLOW</u> Materials: Pump / Bailer <u>BL+DDER PUMP PRO</u> Materials: Tubing / Rope <u>LDPE</u> Was well purged dry? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Development Criteria: _____		EQUIPMENT MODELS 1. <u>HORIBA U-52</u> 2. <u>GED MP50</u> 3. <u>SOLINST 217</u> 4. <u>34T-35</u>	

Time	Flow Rate (gpm) ML/min	DTW (ft. BTOC)	Cum. Water Removed (gal) L	10.1 pH ✓	37% Temp (°C) ✓	37% Cond. (mS/cm) ✓	110.0 ORP (mV) ✓	90% DO (mg/L) ✓	10% Turbidity (NTU) ✓	Other	Comments
0903	100	27.88	500	7.58	29.59	4.24	164	1.77	38.3		BATTERY REPLACEMENT
0910	100	27.88	1000	7.67	29.32	4.26	149	1.46	24.5		
0915	100	27.90	1500	7.74	29.06	4.27	141	1.71	17.8		
0920	100	27.89	2000	7.76	29.05	4.27	138	2.01	18.9		
0925	100	27.89	2500	7.79	29.10	4.27	131	1.93	11.7		
0930	100	27.90	3000	7.79	29.14	4.27	131	2.00	11.9		
0935	100	27.88	3500	7.80	29.04	4.28	125	2.05	11.1		
0940	100	27.90	4000	7.84	29.16	4.28	125	2.12	12.0		STABILIZED AFTER PUMP
1020	—	27.76	—	—	—	—	—	—	—		

4. SAMPLING DATA

Method(s): SEE ABOVE

Materials: Pump / Bailer _____

Materials: Tubing / Rope _____

DTW at Time of Sampling: _____

Sample ID: UFMV-04I-20160818

Duplicate Sample ID: UFMV-04I-20160818-1

Filter: ☒ YES ☐ NO

Analyte	Method
<input type="checkbox"/> VOCs	8260B
<input type="checkbox"/> SVOCs	8270
<input type="checkbox"/> Metals	6010B / 7000 Series
<input type="checkbox"/> TPH	8015B
<input checked="" type="checkbox"/> SEE CUG	

5. COMMENTS
GED CIMS 6/6 (0.9) 20 Fr

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature: _____



WELL DEVELOPMENT LOG DATA SHEET

1. PROJECT INFORMATION Project Number: <u>194-FZC00008</u> Task Number: <u>02.01</u> Client: <u>NERI</u> Project Location: <u>WEST OF A-5 RWA</u>		WELL ID: <u>UFMW-04A</u> Date: <u>8-18-11</u> Time: <u>0720</u> Personnel: <u>J. LAGARRE</u> Weather: <u>CLOUDY 90°F SLIGHT WIND</u>	
2. WELL DEVELOPMENT LOG Method: PUMP <u>X</u> BAILER _____ SURGE BLOCK _____ OTHER _____ Total Depth of Well (BTOC): <u>44.80</u> ft. Screen Length: <u>~44.60</u> to <u>~44.60</u> ft bgs Depth to Static Water (BTOC): <u>27.83</u> ft. Calculated Casing Vol.: <u>3.65</u> gal Depth to Product (BTOC): _____ ft. Length of Water Column (h): <u>21.87</u> ft. Purge Vol. Calculation (one casing vol. = 0.041 * d ² * h)			
3. DEVELOPMENT DATA Purge Method: <u>LOW FLOW</u> Materials: <u>PUMP / Bailer</u> Materials: <u>Tubing / Rope</u> Was well purged dry? <u>YES</u> <u>NO</u> <u>(X)</u> Development Criteria: <u>—</u>		EQUIPMENT MODELS 1. <u>H1210A U-52</u> 2. <u>GED MFS</u> 3. <u>MINS WLM</u> 4. <u>20E-35</u>	

Time	ML/min Flow Rate (gpm)	DTW (ft. BTOC)	Cum. Water Removed (gal)	±0.1 pH	370 Temp (°C)	3% Cond. (mS/cm)	±10.0 ORP (mV)	10% DO (mg/L)	10% Turbidity (NTU)	Other	Comments
0742	100	27.83	500	7.42	27.24	5.02	169	1.54	29.5		
0746	100	27.85	1000	7.37	27.25	5.05	151	1.08	13.1		
0752	100	27.85	1500	7.36	27.44	5.04	140	0.81	6.4		
0758	100	27.85	2000	7.31	27.69	5.03	134	0.88	4.0		
0801	100	27.85	2500	7.37	27.95	5.06	129	0.93	3.0		
0806	100	27.85	3000	7.39	28.01	5.04	130	0.95	0.1		STABILIZED
0828	—	27.83	—	—	—	—	—	—	—		AFTER PUMP

4. SAMPLING DATA Method(s): <u>SEE ABOVE</u> Materials: <u>PUMP / Bailer</u> Materials: <u>Tubing / Rope</u> DTW at Time of Sampling: <u>27.85</u> Sample ID: <u>UFMW-04A-20110818</u> Duplicate Sample ID: _____ Field Filtered: <u>YES</u> <u>NO</u>		<table border="0"> <tr> <th>Analyte</th> <th>Method</th> </tr> <tr> <td><input type="checkbox"/> VOCs</td> <td>8260B</td> </tr> <tr> <td><input type="checkbox"/> SVOCs</td> <td>8270</td> </tr> <tr> <td><input type="checkbox"/> Metals</td> <td>6010B / 7000 Series</td> </tr> <tr> <td><input type="checkbox"/> TPH</td> <td>8015B</td> </tr> <tr> <td><input checked="" type="checkbox"/> SEE CUS</td> <td></td> </tr> </table>	Analyte	Method	<input type="checkbox"/> VOCs	8260B	<input type="checkbox"/> SVOCs	8270	<input type="checkbox"/> Metals	6010B / 7000 Series	<input type="checkbox"/> TPH	8015B	<input checked="" type="checkbox"/> SEE CUS	
Analyte	Method													
<input type="checkbox"/> VOCs	8260B													
<input type="checkbox"/> SVOCs	8270													
<input type="checkbox"/> Metals	6010B / 7000 Series													
<input type="checkbox"/> TPH	8015B													
<input checked="" type="checkbox"/> SEE CUS														

5. COMMENTS <u>BLEED SETTING, CIMS 6/6 (24) 90°F</u> <u>CALIBRATION 3.93 pH, 4.52 mS/cm, 7.61 mg/L, 10390.00</u>	
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Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



LFMW-055
casing vol:-
.32 gal x 3

$$D_{T|u} = 27.40 \text{ FT BLV} \quad T_D = 29.81 \text{ FT BGW}$$

Project Number: 194-27600008

Task Number: 02.01

WELL ID: UEMU-055

Date: 08/19/16

Time: 09.30

Client: NERT

Personnel: M. Farmer

Project Location: West of Ap-5 Pond

Weather: Cloudy

Signature: _____



WELL DEVELOPMENT LOG DATA SHEET (CONT.)

DTW = 27.56 FT AGI TO = 27.80 WATER COLUMN = 2.24 FT

1. PROJECT INFORMATION

Project Number: 194-87600008

Task Number: 02-01

WELL ID: UFMW-065

Date: 08/19/2016

Time: 1300

Client: NERT

Personnel: M. Farmer

Project Location: West of AP-9 Pond

Weather: Cloudy, 95°

Time	Flow Rate (gpm)	DTW (ft. BTOC)	Cum. Water Removed (gal)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments
1309	100mL	27.65	500mL	7.55	28.90	5.34	104	1.36	19.3		
1314	100mL	27.65	1000mL	7.55	29.22	5.34	103	0.73	75.5		
1320	100mL	27.65	1500mL	7.54	29.49	5.34	100	0.44	29.2		
1328	100mL	27.65	2000mL	7.51	29.61	5.34	96	1.07	18.0		switched to 451 for DO
1333	100mL	27.65	2500mL	7.56	29.53	5.34	92	0.91	9.2		
1338	100mL	27.65	3000mL	7.54	29.54	5.38	88	0.87	7.8		
1343	100mL	27.65	3500	7.54	29.64	5.33	90	0.85	6.7		
1348	100mL	27.65	4000	7.57	29.50	5.34	89	0.85	5.7		
1353	100mL	27.65	4500	7.53	29.56	5.32	90	0.86	5.7		
1358	100mL	27.65	5000	7.57	29.61	5.32	88	0.85	5.4		

2. COMMENTS

Signature: M. Farmer



TETRA TECH

GROUNDWATER PURGE AND SAMPLING FIELD DATA SHEET

1. PROJECT INFORMATION Project Number: <u>194-8760008</u> Task Number: <u>K01</u> Client: <u>NERT</u> Project Location: <u>Henderson, NV</u>		WELL ID: <u>UFMW-06D</u> Date: <u>8-22-16</u> Time: <u>0930</u> Personnel: <u>E. Peirce, D. Keady</u> Weather: <u>Sunny, 100°F, windy</u>																				
2. WELL DATA Casing Diameter: <u>2</u> in. Slot Size: <u>0.020</u> in. Total Depth of Well (BTOC): <u>49.91</u> ft. Depth to Static Water (BTOC): <u>27.56</u> ft. Depth to Product (BTOC): <u>N/A</u> ft. Length of Water Column (h): <u>22.35</u> ft. Type of Casing: <u>PVC</u> Type of Screen: <u>PVC</u> Screen Length: <u>44.91</u> to <u>49.91</u> ft bgs Calculated Casing Vol.: _____ gal Purge Vol. Calculation (one casing vol. = $0.041 \cdot d^2 \cdot h$)																						
3. PURGE DATA Purge Method: <u>Low Flow</u> Materials: <u>Pump</u> / Bailer Materials: <u>Tubing</u> / Rope Pumping Rate: <u>100</u> mL/min Was well purged dry? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		EQUIPMENT MODELS 1. <u>Horiba U-52</u> 2. <u>YS 55</u> 3. <u>Solinst 104</u> 4. <u>MP 50</u> 5. _____																				
Time	DTW (ft. BTOC)	Cum. Water Removed (mL)	±0.1 pH	3% Temp (°C)	3% Cond. (mS/cm)	±10 ORP (mV)	10% DO (mg/L)	10% Turbidity (NTU)	10% Other <u>YSDO</u>	Comments												
1010	27.91	0	7.77	29.62	6.65	144	6.06	11.2	3.32													
1015	27.91	500	7.78	29.52	6.60	141	3.92	8.7	2.87	Horiba DO still unreliable;												
1020	27.92	1000	7.79	29.28	6.60	139	2.58	5.5	2.77	relying on YSDO												
1025	27.92	1500	7.78	29.20	6.62	138	—	4.3	2.58													
1030	27.93	2000	7.78	29.30	6.62	136	—	6.0	2.40													
1035	27.93	2500	7.78	29.37	6.61	135	—	4.4	2.37													
1040	27.94	3000	7.78	29.47	6.60	135	—	5.2	2.45													
1045	27.94	3500	7.79	29.58	6.59	133	—	5.3	2.48													
1050	27.95	4000	7.78	29.67	6.61	134	—	5.2	2.46	STABLE												
<div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-size: 2em; opacity: 0.5;"> 8-22-16 </div>																						
4. SAMPLING DATA Method(s): <u>Same as above</u> Materials: Pump / Bailer <u>1"</u> Materials: Tubing / Rope <u>1"</u> DTW at Time of Sampling: <u>27.95</u> Sample ID: <u>UFMW-06D-20K0822 1100</u> Duplicate Sample ID: <u>N/A</u> Field Filtered: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>							<table border="0"> <tr> <th>Analyte</th> <th>Method</th> </tr> <tr> <td><input type="checkbox"/> VOCs</td> <td>8260B</td> </tr> <tr> <td><input type="checkbox"/> SVOCs</td> <td>8270</td> </tr> <tr> <td><input type="checkbox"/> Metals</td> <td>6010B / 7000 Series</td> </tr> <tr> <td><input type="checkbox"/> TPH</td> <td>8015B</td> </tr> <tr> <td><input checked="" type="checkbox"/> SEE LOC</td> <td></td> </tr> </table>				Analyte	Method	<input type="checkbox"/> VOCs	8260B	<input type="checkbox"/> SVOCs	8270	<input type="checkbox"/> Metals	6010B / 7000 Series	<input type="checkbox"/> TPH	8015B	<input checked="" type="checkbox"/> SEE LOC	
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<input type="checkbox"/> TPH	8015B																					
<input checked="" type="checkbox"/> SEE LOC																						
5. COMMENTS <div style="height: 40px; border: 1px solid black;"></div>																						

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



GROUNDWATER PURGE AND SAMPLING FIELD DATA SHEET

Signature:

GROUNDWATER PURGE AND SAMPLING FIELD DATA SHEET

[illegible]

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



TETRA TECH

GROUNDWATER PURGE AND SAMPLING FIELD DATA SHEET

1. PROJECT INFORMATION Project Number: <u>194-87600008</u> Task Number: <u>K01</u> Client: <u>NERT</u> Project Location: <u>Henders, NV</u>					WELL ID: <u>WFIW-083</u> Date: <u>27 Jan 17</u> Time: <u>1055</u> Personnel: <u>J. L. Luyke</u> Weather: <u>Cloudy - Windy 35°F</u>																					
2. WELL DATA Casing Diameter: <u>2</u> in. Slot Size: <u>0.010</u> in. Total Depth of Well (BTOC): <u>30.01</u> ft. Depth to Static Water (BTOC): <u>26.54</u> ft. Depth to Product (BTOC): <u>-</u> ft. Length of Water Column (h): <u>3.47</u> ft.										Type of Casing: <u>PVC</u> Type of Screen: <u>PVC</u> Screen Length: <u>25</u> to <u>30</u> ft bgs Calculated Casing Vol.: <u>0.569</u> gal <u>30.01 - 26.54 = 3.47</u> Purge Vol. Calculation (one casing vol. = 0.041 * d ² * h)																
3. PURGE DATA Purge Method: <u>Bail</u> Materials: Pump / Bailor: <u>-</u> Materials: Tubing / Rope: <u>-</u> Pumping Rate: <u>-</u> mL/min Was well purged dry? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>					EQUIPMENT MODELS 1. <u>Humira W-52</u> 2. <u>-</u> 3. <u>-</u> 4. <u>-</u> 5. <u>-</u>																					
Time	DTW (ft. BTOC)	Cum. Water Removed (mL)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments																
1055	-	-	-	-	-	-	-	-	-	Beg m. Bail																
1115	-	2.74	-	-	-	-	-	-	-	End 3rd Bail																
1400	26.50	2.12 g	-	-	-	-	-	-	-	sample																
			6.83	16.79	6.28	-100	3.09	200	-																	
4. SAMPLING DATA Method(s): <u>see above</u> Materials: Pump / Bailor: <u>-</u> Materials: Tubing / Rope: <u>-</u> DTW at Time of Sampling: <u>26.50</u> Sample ID: <u>WFIW-083-20170126</u> Duplicate Sample ID: <u>-</u> Field Filtered: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>											<table border="0"> <tr> <th>Analyte</th> <th>Method</th> </tr> <tr> <td><input type="checkbox"/> VOCs</td> <td>8260B</td> </tr> <tr> <td><input type="checkbox"/> SVOCs</td> <td>8270</td> </tr> <tr> <td><input type="checkbox"/> Metals</td> <td>6010B / 7000 Series</td> </tr> <tr> <td><input type="checkbox"/> TPH</td> <td>8015B</td> </tr> <tr> <td><input checked="" type="checkbox"/> <u>Perth</u></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> <u>Hex Co</u></td> <td></td> </tr> </table>		Analyte	Method	<input type="checkbox"/> VOCs	8260B	<input type="checkbox"/> SVOCs	8270	<input type="checkbox"/> Metals	6010B / 7000 Series	<input type="checkbox"/> TPH	8015B	<input checked="" type="checkbox"/> <u>Perth</u>		<input checked="" type="checkbox"/> <u>Hex Co</u>	
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<input checked="" type="checkbox"/> <u>Perth</u>																										
<input checked="" type="checkbox"/> <u>Hex Co</u>																										
5. COMMENTS <u>Pink Fluid</u>																										

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



TETRA TECH

GROUNDWATER PURGE AND SAMPLING FIELD DATA SHEET

1. PROJECT INFORMATION Project Number: <u>194-87600008</u> Task Number: <u>K01</u> Client: <u>NERT</u> Project Location: <u>Henders, NV</u>		WELL ID: <u>UFMW-015</u> Date: <u>1/26/17</u> Time: <u>1128</u> Personnel: <u>Jesse Brunkers</u> Weather: <u>cold, clear</u>												
2. WELL DATA Casing Diameter: <u>2</u> in. Slot Size: <u>0.010</u> in. Total Depth of Well (BTOC): <u>24.30</u> ft. Depth to Static Water (BTOC): <u>20.65</u> ft. Depth to Product (BTOC): <u>-</u> ft. Length of Water Column (h): <u>0.63</u> ft.														
Type of Casing: <u>Pro</u> Type of Screen: <u>Pro</u> Screen Length: <u>24</u> to <u>29</u> ft bgs Calculated Casing Vol.: <u>0.1066</u> gal <u>SWV = 0.3148 gal</u> Purge Vol. Calculation (one casing vol. = 0.041 * d * h)														
3. PURGE DATA Purge Method: <u>Gril</u> Materials: Pump / <u>Bailer</u> Materials: Tubing / <u>Rope</u> Pumping Rate: _____ mL/min Was well purged dry? YES <u>NO</u>		EQUIPMENT MODELS <u>Hanin U-52</u> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____												
Time	DTW (ft. BTOC)	Cum. Water Removed (mL)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments				
1128	28.60	0.5 gal	5.97	16.59	3.77	1.208	6.94	370		Sample				
<u>SL</u> <u>VI-26-17</u>														
4. SAMPLING DATA Method(s): <u>see above</u> Materials: Pump / Bailer _____ Materials: Tubing / Rope _____ DTW at Time of Sampling: <u>28.60</u> Sample ID: <u>UFMW-015-20170126</u> Duplicate Sample ID: _____ Field Filtered: <u>YES</u> NO														
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> Analyte <input type="checkbox"/> VOCs <input type="checkbox"/> SVOCs <input type="checkbox"/> Metals <input type="checkbox"/> TPH </td> <td style="width: 50%; vertical-align: top;"> Method 8260B 8270 6010B / 7000 Series 8015B </td> </tr> <tr> <td style="vertical-align: top;"> <input checked="" type="checkbox"/> Perch <input checked="" type="checkbox"/> Hex Co </td> <td></td> </tr> </table>											Analyte <input type="checkbox"/> VOCs <input type="checkbox"/> SVOCs <input type="checkbox"/> Metals <input type="checkbox"/> TPH	Method 8260B 8270 6010B / 7000 Series 8015B	<input checked="" type="checkbox"/> Perch <input checked="" type="checkbox"/> Hex Co	
Analyte <input type="checkbox"/> VOCs <input type="checkbox"/> SVOCs <input type="checkbox"/> Metals <input type="checkbox"/> TPH	Method 8260B 8270 6010B / 7000 Series 8015B													
<input checked="" type="checkbox"/> Perch <input checked="" type="checkbox"/> Hex Co														
5. COMMENTS <u>No logs</u>														

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



GROUNDWATER PURGE AND SAMPLING FIELD DATA SHEET

Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft

Signature:



GROUNDWATER PURGE AND SAMPLING FIELD DATA SHEET

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:

GROUNDWATER PURGE AND SAMPLING FIELD DATA SHEET

1. PROJECT INFORMATION

Project Number: 194-87600008 Task Number: K01

Client: NERT

Project Location: Henders, NV

WELL ID: AFMW-055

Date: 27 Jun 17

Time: 1155

Personnel: J Lagarde

Weather: Sunny-Windy 95°F

2. WELL DATA

Casing Diameter: 2 in.

Slot Size: 0.010 in.

Total Depth of Well (BTOC): 20.15 ft.

Depth to Static Water (BTOC): 26.96 ft.

Depth to Product (BTOC): - ft.

Length of Water Column (h): 3.14 ft.

Type of Casing: PVC

Type of Screen: PVC

Screen Length: 28 to 30 ft bgs

Calculated Casing Vol.: 0.523 gal

3WV = 1.57 gal

Purge Vol. Calculation (one casing vol. = 0.041 * d² * h)

3. PURGE DATA

Purge Method: Bail

Materials: Pump / Bail

Materials: Tubing / Rope

Pumping Rate: - mL/min

Was well purged dry? YES NO

EQUIPMENT MODELS

Hamilton U-52

Time	DTW (ft. BTOC)	Cum. Water Removed (mL)	pH	Temp (°C)	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Other	Comments
1153										Begin Bail
1205		20 gal								End 3WV Bail
1440	27.00	2.164	7.25	16.35	596	26	1.11	545	-	Sample
<div>3L</div> <div>01-27-16</div>										

4. SAMPLING DATA

Method(s): See above

Materials: Pump / Bail

Materials: Tubing / Rope

DTW at Time of Sampling: 27.00

Sample ID: AFMW-055 LV4

Duplicate Sample ID: -

Field Filtered: YES NO

Analyte

VOCs 8260B

SVOCs 8270

Metals 6010B / 7000 Series

TPH 8015B

Pentach

Hex Ca

5. COMMENTS

No log

4 inch well = 0.667 gal/ft

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:



GROUNDWATER PURGE AND SAMPLING FIELD DATA SHEET

Note: 2-inch well = 0.167 gal/ft

4-inch well = 0.667 gal/ft

Signature:

Soil Flushing IRM - Daily/Bi-Weekly GW Gauging Form

Project Name: NERT Task K01 - Soil Flushing IRM

Date: 4/10/17

Address: 510 S. 4th Street, Henderson, NV 89015

Gate Access Code: 6932

Technician: Jacob Souza

Weather: 67°F Sunny

Monitoring Wells

Well ID	Depth to Water (ft btoc)	Total Depth of Well (ft btoc)	Notes (well condition, etc.)
PLOT 1 (NORTH)			
Injection Wells			
UFIW-01S	26.78		0955
UFIW-01I	27.00		0956
UFIW-01D	27.38		0957
UFIW-02S	26.08		0959
UFIW-02I	26.15		0959
UFIW-02D	26.30		1002
UFIW-03S	25.93		1003
UFIW-03I	25.97		1005
UFIW-03D	26.35		1006
UFIW-04S	26.29		1008
UFIW-04I	26.26		1010
UFIW-04D	26.43		1011
Monitoring Wells			
UFMW-01S	28.61		0928
UFMW-01I	28.54		0929
UFMW-01D	28.72		0930
UFMW-02S	27.79		0932
UFMW-02I	28.65		0933
UFMW-02D	28.84		0934
UFMW-03S	DRY		0936
UFMW-03I	26.50		0937
UFMW-03D	26.79		0938
Extraction Wells			
E1-1	42.76		0915
E1-2	36.13		0917
E1-3	43.67		0919
PLOT 2 (SOUTH)			
Injection Wells			
UFIW-05S			
UFIW-05I			
UFIW-05D			
UFIW-06S			
UFIW-06I			
UFIW-06D			
UFIW-07S			
UFIW-07I			
UFIW-07D			
UFIW-08S			
UFIW-08I			
UFIW-08D			
Monitoring Wells			
UFMW-04S	26.68		1034
UFMW-04I	26.71		1035
UFMW-04D	26.66		1036
UFMW-05S	26.91		1038
UFMW-05I	26.78		1039
UFMW-05D	26.67		1040
UFMW-06S	26.69		1041
UFMW-06I	26.62		1042
UFMW-06D	26.59		1044
Extraction Wells			
E2-1	25.89		1023
E2-2	26.10		1025
E2-3	26.40		1027
E2-4	26.57		1029
E2-5	26.89		1031



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

 Page 1 of 1
 NERT, Henderson, Nevada

 Task Name: AP Area Treatability Study Task Manager: A. Aygün Well ID: UFW-015
 Field Samplers: J. Ingole Task No.: Date: 11 Apr 17

PURGING DATA

 MP Distance AGS (ft): — Well Depth (ft BGS): — Well Depth (ft BMP) 28.25 Nominal Well Pipe Size (in): 2
 MP Description: TUC PID/FID Readings Beneath Inner Cap (parts per million above known background): —
 Screen Top: — (ft BGS) = — (ft BMP) Screen Bottom: — (ft BGS) = — (ft BMP) Well Riser Capacity* (gal/ft): —
 Depth to Water Before Pump Installation (ft BMP): 28.60 Time: 1125 Pump and Tubing Type: Roller
 1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = 0.29 x 0.27 Pump Intake Depth (ft BMP) —
 Equipment Decon Method: 3 Rinse Groundwater Disposal: GW-11 Pond


Time Start (hrs)	Measurement Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
1120	1145	~2.0	~2.0								
1500						4.94	22.44	488	199	10.96	-80

3wv

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

 Sampling Method(s): — Sampling Initiated (hrs): — Sampling Ended (hrs): —
 Field Decontamination: Y N Field Filtered: Y N QA Duplicate: Y N COG Time: 500
 Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify) COC Number: —
 Sample ID UFW-015-20170411 Duplicate ID: — QA/QC Samples/ID: —

Sample Container Specification				Intended Analysis and/or Method	Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)
No.	Material	Volume	Preserv. Used		
	Code				
AP Area Sampling Set —					Subside: overplan Signature(s): 

 BGS - Below Ground Surface
 BMP - Below Measuring Point
 C - Centigrade

 COC - Chain of Custody
 Cond - Specific Conductivity
 GS - Ground Surface

 min - Minute
 mg/L - milligram/Liter
 mV - milli Volts

 MP - Measuring Point
 NTU - Nephelometric Units
 QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

Page 1 of 1

NERT, Henderson, Nevada

Task Name: AP Area Treatability StudyTask Manager: A. AggarwalWell ID: WFW-01EField Samplers: J. LagadeTask No.: 015Date: 12 Apr 17

PURGING DATA

MP Distance AGS (ft): -Well Depth (ft BGS): -Well Depth (ft BMP): 38.8Nominal Well Pipe Size (in): 2MP Description: TUCPID/FID Readings Beneath Inner Cap (parts per million above known background): -Screen Top: - (ft BGS) = - (ft BMP)Screen Bottom: - (ft BGS) = - (ft BMP)Well Riser Capacity* (gal/ft): -Depth to Water Before Pump Installation (ft BMP): 26.79Time: 0825Pump and Tubing Type: Perkin1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = 1.79 x 5.93Pump Intake Depth (ft BMP): -Equipment Decon Method: 3 RinseGroundwater Disposal: GW-11 Pond3WV
SAMPLE

Time Start (hrs)	Measure-ment Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
0820	0850	~6.0	~6.0	-	-	-	-	-	-	-	-
1040	1040	~0.25	~6.25	-	28.80	5.93	25.15	9.13	52.3	2.65	-71

OL
4-12-17

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): SurberSampling Initiated (hrs): 0840Sampling Ended (hrs): -Field Decontamination: ☒ NField Filtered: ☒ N

QA Duplicate: Y N

COC Time: -

Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify)

COC Number: -Sample ID WFW-01E-20170412 Duplicate ID: -

QA/QC Samples/ID -

Sample Container Specification

No.	Material Code	Volume	Preserv. Used	Intended Analysis and/or Method

Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)

Subsides: overflow

Signature(s):

BGS - Below Ground Surface
BMP - Below Measuring Point
C - Centigrade

COC - Chain of Custody
Cond - Specific Conductivity
GS - Ground Surface

min - Minute
mg/L - milligram/Liter
mV - milli Volts

MP - Measuring Point
NTU - Nephelometric Units
QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

Page 1 of 1

NERT, Henderson, Nevada

Task Name: AP Area Treatability StudyTask Manager: Arul AyyanarWell ID: WFW-025Field Samplers: D. KeadyTask No.: M13Date: 4-12-17

PURGING DATA

MP Distance AGS (ft): — Well Depth (ft BGS): — Well Depth (ft BMP) 28.31 Nominal Well Pipe Size (in): 2

MP Description: TOC PID/FID Readings Beneath Inner Cap (parts per million above known background): —

Screen Top: — (ft BGS) = — (ft BMP) Screen Bottom: — (ft BGS) = — (ft BMP) Well Riser Capacity* (gal/ft): —

Depth to Water Before Pump Installation (ft BMP): 26.05 Time: — Pump and Tubing Type: Bail

Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = 1.17 Pump Intake Depth (ft BMP) —

Equipment Decon Method: 3 bucket rinse Groundwater Disposal: GW-11 Pond

Time Start (hrs)	Measurement Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	ms/cm Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
0730	—	1.17	1.17	—	26.05	—	—	—	—	—	—
1020	1020	0.25	1.42	—	26.05	6.10	21.92	7.09	145	150	-151

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): Bailer Sampling Initiated (hrs): — Sampling Ended (hrs): —

Field Decontamination: Y N Field Filtered: Y N QA Duplicate: Y N COC Time: —

Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify) COC Number: —

Sample ID WFW-025-20170412 Duplicate ID: WFW-025-20170412-FDQA/QC Samples/ID

Sample Container Specification

No.	Material Code	Volume	Preserv. Used	Intended Analysis and/or Method
<u>AP Area TS Sampling Set</u>				

Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)

Sulfide: overflow
+ out

Signature(s): [Signature]

BGS - Below Ground Surface
BMP - Below Measuring Point
C - Centigrade

COC - Chain of Custody
Cond - Specific Conductivity
GS - Ground Surface

min - Minute
mg/L - milligram/Liter
mV - milli Volts

MP - Measuring Point
NTU - Nephelometric Units
QA/QC - Quality Assurance/Quality Control

300V
SAMPLE



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

Page 1 of 1

NERT, Henderson, Nevada

Task Name: AP Area Treatability Study

Task Manager: A. Aggarwal

Well ID: WFIW-021

Field Samplers: J. Lagude

Task No.: 014

Date: 12 Apr 17

PURGING DATA

MP Distance AGS (ft): - Well Depth (ft BGS): - Well Depth (ft BMP) 41.00 Nominal Well Pipe Size (in): 2
 MP Description: TUC PID/FID Readings Beneath Inner Cap (parts per million above known background): -
 Screen Top: - (ft BGS) = - (ft BMP) Screen Bottom: - (ft BGS) = - (ft BMP) Well Riser Capacity* (gal/ft): -
 Depth to Water Before Pump Installation (ft BMP): 25.92 Time: 0907 Pump and Tubing Type: Raiser
 1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = 2.63 x 7.89 Pump Intake Depth (ft BMP) -
 Equipment Decon Method: 3 Rinse Groundwater Disposal: GW-11 DUMP

34V
Sample

Time Start (hrs)	Measurement Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	(µS/cm) Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
0910	0945	~8.0	~8.0	-	-	-	-	-	-	-	-
1120	1120	~0.25	~8.25	-	25.93	5.84	22.81	11.3	61.2	2.12	-50

JL
4-12-17

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): Bail Sampling Initiated (hrs): 1120 Sampling Ended (hrs): -
 Field Decontamination: ☒ N Field Filtered: ☒ N QA Duplicate: Y ☒ N COC Time: -
 Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify) COC Number: -

Sample ID WFIW-021-20170412

Duplicate ID: -

QA/QC Samples/ID -

Sample Container Specification				Intended Analysis and/or Method
No.	Material Code	Volume	Preserv. Used	
AP Area Sampling Set				

Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)

Sulphide; overflow

Signature(s):

BGS - Below Ground Surface
 BMP - Below Measuring Point
 C - Centigrade

COC - Chain of Custody
 Cond - Specific Conductivity
 GS - Ground Surface

min - Minute
 mg/L - milligram/Liter
 mV - milli Volts

MP - Measuring Point
 NTU - Nephelometric Units
 QA/QC - Quality Assurance/Quality Control

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>Arul Appan</u>	Well ID: <u>UFW-035</u>
Field Samplers: <u>D. Keady</u>	Task No.: <u>M13</u>	Date: <u>4-12-17</u>

PURGING DATA

MP Distance AGS (ft): <u> </u>		Well Depth (ft BGS): <u> </u>	Well Depth (ft BMP) <u>30.04</u>	Nominal Well Pipe Size (in): <u>2</u>
MP Description: <u>TOC</u>		PID/FID Readings Beneath Inner Cap (parts per million above known background): <u> </u>		
Screen Top: <u> </u> (ft BGS) = <u> </u> (ft BMP)	Screen Bottom: <u> </u> (ft BGS) = <u> </u> (ft BMP)	Well Riser Capacity* (gal/ft): <u> </u>		
Depth to Water Before Pump Installation (ft BMP): <u>25.95</u>		Time: <u> </u>	Pump and Tubing Type: <u>Barker</u>	
Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = <u>2.13</u>			Pump Intake Depth (ft BMP) <u> </u>	
Equipment Decon Method: <u>3 bucket rinse</u>		Groundwater Disposal: <u>GW-11 Pond</u>		

Time Start (hrs)	Measurement Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
0750	—	~2.13	~2.13	—	25.95						
	1055					5.71	21.68	5.81	467	8.94	-61

Handwritten notes on the graph area:

- 145
- 4-12-17

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): <u>Baker</u>		Sampling Initiated (hrs): <u>1055</u>		Sampling Ended (hrs): <u>1120</u>	
Field Decontamination: <u>Y</u> <u>N</u>		Field Filtered: <u>Y</u> <u>N</u>		QA Duplicate: <u>Y</u> <u>N</u>	
Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify)				COC Time: <u>1055</u>	
Sample ID: <u>11574-1055</u>				COC Number: <u>11574</u>	

Sample ID VFIW-035-20170412 Duplicate ID:

QA/QC Samples/ID

Sample Container Specification				Intended Analysis and/or Method	Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)
No.	Material Code	Volume	Preserv. Used		
AP Area Treating Study Sampling Set					Sulfide: overflow Signature(s): <i>[Signature]</i>

BGS - Below Ground Surface
BMP - Below Measuring Point
C - Centigrade

COC - Chain of Custody
Cond - Specific Conductivity
GS - Ground Surface

min - Minute
mg/L - milligram/Liter
mV - milli Volts

MP - Measuring Point
NTU - Nephelometric Units
QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

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NERT, Henderson, Nevada

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>Arul Arayappan</u>	Well ID: <u>UFIW-03I</u>
Field Samplers: <u>D. Keady</u>	Task No.: <u>M13</u>	Date: <u>4-12-17</u>

PURGING DATA

MP Distance AGS (ft): <u>—</u>	Well Depth (ft BGS): <u>—</u>	Well Depth (ft BMP) <u>40.59</u>	Nominal Well Pipe Size (in): <u>2</u>
MP Description: <u>TOC</u>	PID/FID Readings Beneath Inner Cap (parts per million above known background): <u>—</u>		
Screen Top: <u>—</u> (ft BGS) = <u>—</u> (ft BMP)	Screen Bottom: <u>—</u> (ft BGS) = <u>—</u> (ft BMP)	Well Riser Capacity* (gal/ft): <u>—</u>	
Depth to Water Before Pump Installation (ft BMP): <u>26.12</u>		Time: <u>—</u>	Pump and Tubing Type: <u>Bailer</u>
Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = <u>7.56</u>		Pump Intake Depth (ft BMP): <u>—</u>	
Equipment Decon Method: <u>3 bucket rxn</u>		Groundwater Disposal: <u>GW-11 Pond</u>	

Time Start (hrs)	Measure-ment Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	Specific Cond. μ S/cm	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
0950	—	~7.56	~7.56	—	26.12	—	—	—	—	—	—
	1210	—	—	—	—	6.07	29.07	7.14	52.2	8.43	-58
154E 4.12.17											

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): <u>Bailer</u>	Sampling Initiated (hrs): <u>1210</u>	Sampling Ended (hrs): <u>1230</u>
Field Decontamination: <u>Y</u> <u>N</u>	Field Filtered: <u>Y</u> <u>N</u>	QA Duplicate: <u>Y</u> <u>N</u>
Material Codes: VOA=40 ml glass vial, AG=Amber Glass, CG=Clear Glass, PE=polyethylene; O=Other (Specify)		COC Time: <u>1210</u>
Sample ID: <u>UFIW-03I-20170412</u>	Duplicate ID: <u>—</u>	COC Number: <u>—</u>

QA/QC Samples/ID

Sample Container Specification				Intended Analysis and/or Method
No.	Material Code	Volume	Preserv. Used	
AP Area TJ Sampling Set —				

Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)

Sulfide: overflow

Signature(s): [Signature]

BGS - Below Ground Surface
BMP - Below Measuring Point
C - Centigrade

COC - Chain of Custody
Cond - Specific Conductivity
GS - Ground Surface

min - Minute
mg/L - milligram/Liter
mV - milli Volts

MP - Measuring Point
NTU - Nephelometric Units
QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

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NERT, Henderson, Nevada

Task Name: AP Area Treatability StudyTask Manager: Arul AyyanarWell ID: UFW-045Field Samplers: D. KeadyTask No.: M13Date: 4-12-17

PURGING DATA

MP Distance AGS (ft): Well Depth (ft BGS): Well Depth (ft BMP) 28.37 Nominal Well Pipe Size (in): 2
 MP Description: TOC PID/FID Readings Beneath Inner Cap (parts per million above known background):
 Screen Top: (ft BGS) = (ft BMP) Screen Bottom: (ft BGS) = (ft BMP) Well Riser Capacity* (gal/ft):
 Depth to Water Before Pump Installation (ft BMP): 26.33 Time: Pump and Tubing Type: Bailer
 * Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = 1.08 Pump Intake Depth (ft BMP)
 Equipment Decon Method: 3 bucket m/c Groundwater Disposal: GW-11 Pond

Time Start (hrs)	Measure-ment Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
0815	1125	~1.08	~1.08			5.98	22.79	4.22	135	9.78	-89
<u>1125 4-12-17</u>											

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): Bailer Sampling Initiated (hrs): 1125 Sampling Ended (hrs): 1145
 Field Decontamination: Y N Field Filtered: Y N QA Duplicate: Y N COC Time: 1125
 Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify) COC Number:

Sample ID

Duplicate ID:

QA/QC Samples/ID

Sample Container Specification				Intended Analysis and/or Method
No.	Material	Volume	Preserv. Used	
	Code			
AP Area TS Sampling Set				

Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)

Surface: overflow

Signature(s):

BGS - Below Ground Surface
 BMP - Below Measuring Point
 C - Centigrade

COC - Chain of Custody
 Cond - Specific Conductivity
 GS - Ground Surface

min - Minute
 mg/L - milligram/Liter
 mV - milli Volts

MP - Measuring Point
 NTU - Nephelometric Units
 QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

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NERT, Henderson, Nevada

Task Name: AP Treatability Study Task Manager: Arul Aravamudan Well ID: VFIW-04E
 Field Samplers: D. Keady Task No.: M/3 Date: 4-12-17

PURGING DATA

MP Distance AGS (ft): — Well Depth (ft BGS): — Well Depth (ft BMP) 38.70 Nominal Well Pipe Size (in): 2
 MP Description: Toc PID/FID Readings Beneath Inner Cap (parts per million above known background): —
 Screen Top: — (ft BGS) = — (ft BMP) Screen Bottom: — (ft BGS) = — (ft BMP) Well Riser Capacity* (gal/ft): —
 Depth to Water Before Pump Installation (ft BMP): 26.39 Time: — Pump and Tubing Type: Bailer
 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = 6.45 Pump Intake Depth (ft BMP) —
 Equipment Decon Method: 3 bucket rinse Groundwater Disposal: GW-11 Pond

Time Start (hrs)	Measurement Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
1030	—	~6.45	~6.45	—	26.39	—	—	—	—	—	—
1240	1240	~0.25	~6.70	—	26.34	6.11	21.61	6.62	15.6	6.63	-181

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): Bailer Sampling Initiated (hrs): — Sampling Ended (hrs): —
 Field Decontamination: Y N Field Filtered: Y N QA Duplicate: Y N COC Time: —
 Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify) COC Number: —
 Sample ID VFIW-04E-20170412 Duplicate ID: — QA/QC Samples/ID —

Sample Container Specification				Intended Analysis and/or Method
No.	Material Code	Volume	Preserv. Used	
AP Area TS Sampling Set				

Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)

Su Hide: overflow
Level 4

Signature(s):

BGS - Below Ground Surface
 BMP - Below Measuring Point
 C - Centigrade

COC - Chain of Custody
 Cond - Specific Conductivity
 GS - Ground Surface

min - Minute
 mg/L - milligram/Liter
 mV - milli Volts

MP - Measuring Point
 NTU - Nephelometric Units
 QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

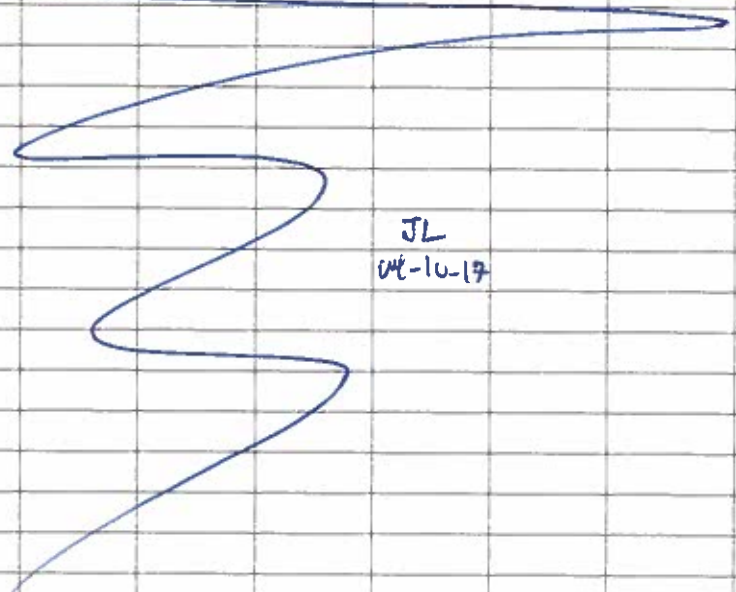
Page 1 of 1

NERT, Henderson, Nevada

Task Name: AP Area Remediation Study Task Manager: Ami Aggarwal Well ID: UFIW-055
 Field Samplers: J. Long Task No.: M13 Date: 10 April 97

PURGING DATA

MP Distance AGS (ft): - Well Depth (ft BGS): - Well Depth (ft BMP): 29.37 Nominal Well Pipe Size (in): 2
 MP Description: TOL PID/FID Readings Beneath Inner Cap (parts per million above known background): -
 Screen Top: - (ft BGS) = - (ft BMP) Screen Bottom: - (ft BGS) = - (ft BMP) Well Riser Capacity* (gal/ft): -
 Depth to Water Before Pump Installation (ft BMP): 26.71 Time: 0907 Pump and Tubing Type: Bailer
 1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = 0.46 + 1.38 Pump Intake Depth (ft BMP): -
 Equipment Decon Method: 3 rwe Groundwater Disposal: GW-11 Pond


Time Start (hrs)	Measure-ment Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	(µS/cm) Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
0410	0935	~2-gal	~2-gal	-	-	-	-	-	-	-	-
1350	1350	~0.25	~2.25	-	26.20	8.64	26.54	5.57	25.4	0.87	-170
											

JL
04-10-97

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): Bail Sampling Initiated (hrs): - Sampling Ended (hrs): -
 Field Decontamination: Y N Field Filtered: Y N QA Duplicate: Y N COC Time: 1350
 Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify) COC Number: -
 Sample ID UFIW-055-201346 Duplicate ID: - QA/QC Samples/ID: -

Sample Container Specification				Intended Analysis and/or Method	Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)
No.	Material	Volume	Preserv.		
	Code		Used		
AP Area TS Sampling Suite					Sulfide: overflow 
					Signature(s):

BGS - Below Ground Surface
 BMP - Below Measuring Point
 C - Centigrade

COC - Chain of Custody
 Cond - Specific Conductivity
 GS - Ground Surface

min - Minute
 mg/L - milligram/Liter
 mV - milli Volts

MP - Measuring Point
 NTU - Nephelometric Units
 QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG
(Purge Volume Method)

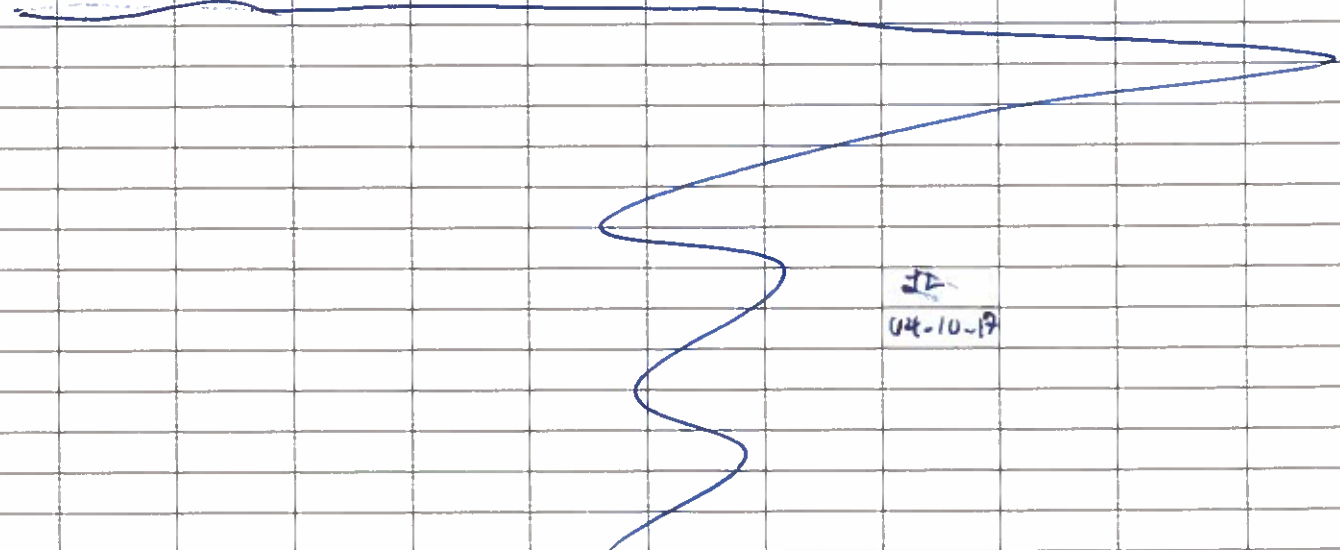
Page 1 of 1

NERT, Henderson, Nevada

Task Name: AP Area Treatability Study Task Manager: A. Aygarar Well ID: uFlw-051
Field Samplers: J. Logade Task No.: M03 Date: 10 Apr 17

PURGING DATA

MP Distance AGS (ft): - Well Depth (ft BGS): - Well Depth (ft BMP): 29.25 Nominal Well Pipe Size (in): 2
MP Description: TUE PID/FID Readings Beneath Inner Cap (parts per million above known background): -
Screen Top: - (ft BGS) = - (ft BMP) Screen Bottom: - (ft BGS) = - (ft BMP) Well Riser Capacity* (gal/ft): -
Depth to Water Before Pump Installation (ft BMP): 26.79 Time: 1145 Pump and Tubing Type: 3/4" I
1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = 2.17 x 5.51 Pump Intake Depth (ft BMP): -
Equipment Decon Method: 3 Rinse Groundwater Disposal: GW-11 Pond

Time Start (hrs)	Measurement Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	ns/cm Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
1150	1230	~7.0	~7.0	-	-	-	-	-	-	-	-
1435	1435	~0.25	~7.25	-	26.81	7.18	27.36	4.00	245	1.98	-149
											

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): - Sampling Initiated (hrs): - Sampling Ended (hrs): -
Field Decontamination: Y N Field Filtered: Y N QA Duplicate: Y N COC Time: 1425
Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify) COC Number: -

Sample ID <u>VFIW-05I-2070410</u>				Duplicate ID: _____		QA/QC Samples/ID	
Sample Container Specification				Intended Analysis and/or Method	Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)		
No.	Material Code	Volume	Preserv. Used				
<u>AP Area II Sampling Suite</u>							
					<u>Suite: over-flow</u>		
					<u>D-06</u>		
					Signature(s): _____		

BGS - Below Ground Surface
BMP - Below Measuring Point
C - Centigrade

COC - Chain of Custody
Cond - Specific Conductivity
GS - Ground Surface

min - Minute
mg/L - milligram/Liter
mV - milli Volts

MP - Measuring Point
NTU - Nephelometric Units
QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

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NERT, Henderson, Nevada

Task Name: AP Area Treatability Study

Task Manager: A. Aggarwal

Well ID: UFIW-065

Field Samplers: J. Lagade

Task No.: M13

Date: 10 Apr 17

PURGING DATA

MP Distance AGS (ft): -	Well Depth (ft BGS): -	Well Depth (ft BMP) 31.70	Nominal Well Pipe Size (in): 2
MP Description: TUC	PID/FID Readings Beneath Inner Cap (parts per million above known background): -		
Screen Top: - (ft BGS) = - (ft BMP)	Screen Bottom: - (ft BGS) = 27.7 (ft BMP)	Well Riser Capacity* (gal/ft): -	
Depth to Water Before Pump Installation (ft BMP): 27.02		Time: 0941	Pump and Tubing Type: -
1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = 0.81 x 2.43		Pump Intake Depth (ft BMP) -	
Equipment Decon Method: 3 Rinse		Groundwater Disposal: GW-11 pond	

Time Start (hrs)	Measurement Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
0945	1005	~2.5	~2.5	-	-	-	-	-	-	-	-
1450	1450	~0.25	~2.75	-	27.10	6.69	25.17	4.58	1000	2.53	-209

3WV sample

Handwritten graph showing depth to water over time, with a label "JL 04-10-17" near the curve.

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s):		Sampling Initiated (hrs):		Sampling Ended (hrs):	
Field Decontamination: Y N	Field Filtered: Y N	QA Duplicate: Y N	COC Time: 180		
Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify)				COC Number:	
Sample ID UFIW-065-2017046		Duplicate ID:		QA/QC Samples/ID	
Sample Container Specification			Intended Analysis and/or Method		
No.	Material Code	Volume	Preserv. Used		
AP Area TS Sampling 8/2e					
Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)					
Sulfide: overflow					
Signature(s): [Signature]					

BGS - Below Ground Surface
BMP - Below Measuring Point
C - Centigrade

COC - Chain of Custody
Cond - Specific Conductivity
GS - Ground Surface

min - Minute
mg/L - milligram/Liter
mV - milli Volts

MP - Measuring Point
NTU - Nephelometric Units
QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG
(Purge Volume Method)

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NERT, Henderson, Nevada

Task Name: AP Area Troubability Study Task Manager: A. Aggarwal Well ID: UFIW-06I-20170411
Field Samplers: Task No.: Date: 11 Apr 17

PURGING DATA

MP Distance AGS (ft): - Well Depth (ft BGS): - Well Depth (ft BMP): 44.87 Nominal Well Pipe Size (in): 2
MP Description: T06 PID/FID Readings Beneath Inner Cap (parts per million above known background): -
Screen Top: - (ft BGS) = - (ft BMP) Screen Bottom: - (ft BGS) = - (ft BMP) Well Riser Capacity* (gal/ft): -
Depth to Water Before Pump Installation (ft BMP): 26.83 Time: 0822 Pump and Tubing Type: 4.1/1.0
1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = 3.14 x 7.42 Pump Intake Depth (ft BMP): -
Equipment Decon Method: 3 runs Groundwater Disposal: GW-11 Pond

Time Start (hrs)	Measurement Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	(mS/cm) Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
1230	0905	~9.5	~1.5	-	-	-	-	-	-	-	-
1335	1335	10.25	~9.75	-	26.83	5.61	26.73	8.91	32.4	1.05	-194

2WV Sample

Handwritten squiggle across the table

Handwritten: JV 4-11-17

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): Sampling Initiated (hrs): 1335 Sampling Ended (hrs):
Field Decontamination: (Y) N Field Filtered: (Y) N QA Duplicate: Y (N) COC Time: -
Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify) COC Number: -
Sample ID UFIW-06I-20170411 Duplicate ID: - QA/QC Samples/ID: -

Sample Container Specification				Intended Analysis and/or Method	Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)
No.	Material	Volume	Preserv. Used		
	Code				
AP Area Sampling Set					Sulfide: Overflow

BGS - Below Ground Surface
BMP - Below Measuring Point
C - Centigrade

COC - Chain of Custody
Cond - Specific Conductivity
GS - Ground Surface

min - Minute
mg/L - milligram/Liter
mV - milli Volts

MP - Measuring Point
NTU - Nephelometric Units
QA/QC - Quality Assurance/Quality Control

Task Name: <i>AP Area Treatability Study</i>	Task Manager: <i>A. Aggarwal</i>	Well ID: <i>UFU-075</i>
Field Samplers: <i>J. Lagarde</i>	Task No.: <i>413</i>	Date: <i>10 Apr 17</i>

PURGING DATA

MP Distance AGS (ft): <u>—</u>	Well Depth (ft BGS): <u>—</u>	Well Depth (ft BMP) <u>30.88</u>	Nominal Well Pipe Size (in): <u>2</u>
MP Description: <u>TOC</u>	PID/FID Readings Beneath Inner Cap (parts per million above known background): <u>—</u>		
Screen Top: <u>—</u> (ft BGS) = <u>25.88</u> (ft BMP)	Screen Bottom: <u>—</u> (ft BGS) = <u>30.88</u> (ft BMP)	Well Riser Capacity* (gal/ft): <u>—</u>	
Depth to Water Before Pump Installation (ft BMP): <u>27.01</u>	Time: <u>10:34</u>	Pump and Tubing Type: <u>Subj</u>	
1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = <u>0.67-12.01</u>		Pump Intake Depth (ft BMP) <u>—</u>	
Equipment Decon Method: <u>BJ Curve</u>	Groundwater Disposal: <u>GW-11 Pond</u>		

Time Start (hrs)	Measurement Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
1037	1055	2.25	2.25								
	1425					7.34	30.59	612	16.4	7.03/1.38	-152


Handwritten notes on the graph:

- 1037
- 1055
- 2.25
- 2.25
- 7.34
- 30.59
- 612
- 16.4
- 7.03/1.38
- 152
- 4-10-17

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s):		Sampling Initiated (hrs): 1425		Sampling Ended (hrs): 1445	
Field Decontamination: Y N		Field Filtered: Y N		QA Duplicate: Y N	
Material Codes: VO=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify)				COC Time: 1425	
Sample ID: 125 TW-035-2017		Duplicate ID:		COC Number: —	
				QA/QC Samples/ID: —	

Sample Container Specification				Intended Analysis and/or Method	Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)
No.	Material Code	Volume	Preserv. Used		
AP Area TS Analysis Sinter					Sulfide: overflow  Signature(s):

BGS - Below Ground Surface
BMP - Below Measuring Point
C - Centigrade

COC - Chain of Custody
Cond - Specific Conductivity
GS - Ground Surface

min - Minute
mg/L - milligram/Liter
mV - milli Volts

MP - Measuring Point
NTU - Nephelometric Units
QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

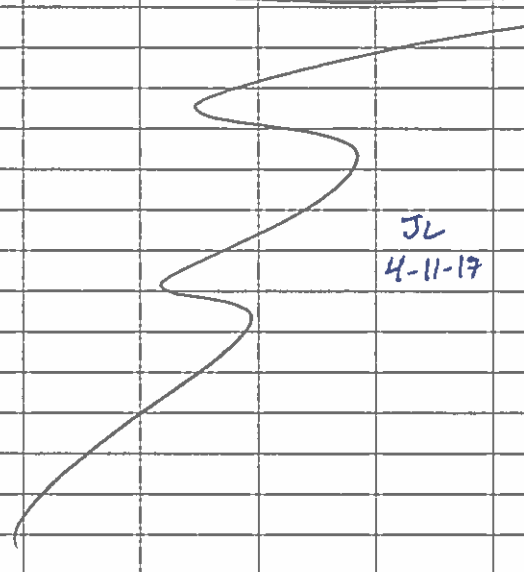
Page 1 of 1

NERT, Henderson, Nevada

Task Name: At Area Treatability Study Task Manager: D. Appurani Well ID: UFIW-07I
Field Samplers: J. LeGrady Task No.: M13 Date: 6/1 Apr 19

PURGING DATA


MP Distance AGS (ft): — Well Depth (ft BGS): — Well Depth (ft BMP): 41.27 Nominal Well Pipe Size (in): 2
MP Description: TOC PID/FID Readings Beneath Inner Cap (parts per million above known background): —
Screen Top: — (ft BGS) = — (ft BMP) Screen Bottom: — (ft BGS) = — (ft BMP) Well Riser Capacity* (gal/ft): —
Depth to Water Before Pump Installation (ft BMP): 26.84 Time: 0920 Pump and Tubing Type: Bailer
1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = 2.52 + 7.56 Pump Intake Depth (ft BMP): —
Equipment Decon Method: 1 min Groundwater Disposal: GW-11 End

Time Start (hrs)	Measure-ment Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	W/cm Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
0920	0955	~8.00	~8.00	—	—	—	—	—	—	—	—
1010	1110	~0.25	~8.25	—	26.84	5.73	25.54	8.46	40.8	1.82	-201
											

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): Bail Sampling Initiated (hrs): 1110 Sampling Ended (hrs): —
Field Decontamination: (Y) N Field Filtered: (Y) N QA Duplicate: Y (N) COC Time: —
Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify) COC Number: —
Sample ID UFIW-07I-20190411 Duplicate ID: — QA/QC Samples/ID: —

Sample Container Specification				Intended Analysis and/or Method	Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)
No.	Material Code	Volume	Preserv. Used		
1	AP Area Sampling	Self	—	—	<u>Sulphide creation</u> 

BGS - Below Ground Surface
BMP - Below Measuring Point
C - Centigrade

COC - Chain of Custody
Cond - Specific Conductivity
GS - Ground Surface

min - Minute
mg/L - milligram/Liter
mV - milli Volts

MP - Measuring Point
NTU - Nephelometric Units
QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

Page 1 of 1

NERT, Henderson, Nevada

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>A. Aggarwal</u>	Well ID: <u>UFIW-085</u>
Field Samplers: <u>J. Lagade</u>	Task No.: <u>713</u>	Date: <u>10 Apr 17</u>

PURGING DATA

MP Distance AGS (ft): <u>-</u>	Well Depth (ft BGS): <u>-</u>	Well Depth (ft BMP): <u>29.67</u>	Nominal Well Pipe Size (in): <u>2</u>
MP Description: <u>TDC</u>	PID/FID Readings Beneath Inner Cap (parts per million above known background): <u>-</u>		
Screen Top: <u>-</u> (ft BGS) = <u>24.67</u> (ft BMP)	Screen Bottom: <u>-</u> (ft BGS) = <u>29.67</u> (ft BMP)	Well Riser Capacity* (gal/ft): <u>-</u>	
Depth to Water Before Pump Installation (ft BMP): <u>26.95</u>	Time: <u>1107</u>	Pump and Tubing Type: <u>4.62</u>	
1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = <u>0.47 x 1.41</u>		Pump Intake Depth (ft BMP): <u>-</u>	
Equipment Decon Method: <u>3 Rinse</u>		Groundwater Disposal: <u>GW-11 Pond</u>	

Time Start (hrs)	Measurement Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
1110	1130	11.50	-1.5								
1246	1345					7.28	31.09	5.54	25.2	8.02/148	-110

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): <u>Hand</u>				Sampling Initiated (hrs): <u>1345</u>	Sampling Ended (hrs): <u>1415</u>
Field Decontamination: <u>Y</u> <u>N</u>		Field Filtered: <u>Y</u> <u>N</u>		QA Duplicate: <u>Y</u> <u>N</u>	COC Time: <u>1345</u>
Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify)					COC Number: <u>1345</u>
Sample ID: <u>UFIW-085-20170410</u>			Duplicate ID: <u>-</u>		QA/QC Samples/ID: <u>-</u>
Sample Container Specification				Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)	
No.	Material Code	Volume	Preserv. Used		
<u>AP Area TS Sampling Suite</u> ✓					Sulfide: overflow Signature(s): <u>[Signature]</u>

BGS - Below Ground Surface
BMP - Below Measuring Point
C - Centigrade

COC - Chain of Custody
Cond - Specific Conductivity
GS - Ground Surface

min - Minute
mg/L - milligram/Liter
mV - milli Volts

MP - Measuring Point
NTU - Nephelometric Units
QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

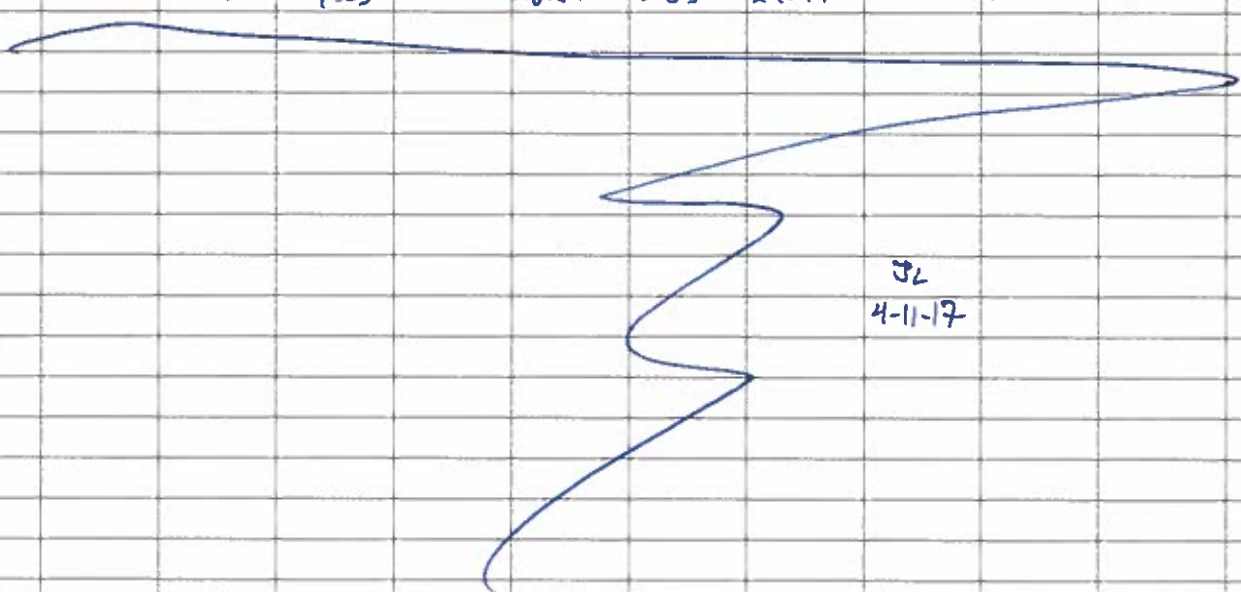
Page 2 of 1

NERT, Henderson, Nevada

Task Name: AP Area Treatability Study Task Manager: A. Ayres Well ID: UFIW-08I
Field Samplers: J. Lugo Task No.: 113 Date: 11 Apr 17

PURGING DATA


MP Distance AGS (ft): - Well Depth (ft BGS): - Well Depth (ft BMP): 39.89 Nominal Well Pipe Size (in): 2
MP Description: TUC PID/FID Readings Beneath Inner Cap (parts per million above known background): -
Screen Top: - (ft BGS) = - (ft BMP) Screen Bottom: - (ft BGS) = - (ft BMP) Well Riser Capacity* (gal/ft): -
Depth to Water Before Pump Installation (ft BMP): 28.81 Time: 1020 Pump and Tubing Type: Bailer
1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = 2.28 x 5.84 Pump Intake Depth (ft BMP): -
Equipment Decon Method: 5 Rinse Groundwater Disposal: GW-11 100%

Time Start (hrs)	Measure-ment Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	MP/CM Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
1026	1105	~7.0	~7.0	-	-	-	-	-	-	-	-
1435	1435	~0.25	~7.25	-	26.81	5.85	24.47	9.73	+1000	3.30	-213
											

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): Ry 11 Sampling Initiated (hrs): 1435 Sampling Ended (hrs): -
Field Decontamination: (Y) N Field Filtered: (Y) N QA Duplicate: Y (N) COC Time: -
Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify) COC Number: -
Sample ID UFIW-08I-2070411 Duplicate ID: - QA/QC Samples/ID -

Sample Container Specification				Intended Analysis and/or Method	Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)
No.	Material	Volume	Preserv. Used		
	Code				
					SWADE: Overplow  Signature(s):
AP Area Sampling Set					

BGS - Below Ground Surface
BMP - Below Measuring Point
C - Centigrade

COC - Chain of Custody
Cond - Specific Conductivity
GS - Ground Surface

min - Minute
mg/L - milligram/Liter
mV - milli Volts

MP - Measuring Point
NTU - Nephelometric Units
QA/QC - Quality Assurance/Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

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NERT, Henderson, Nevada

Task Name: AP Area Treatability StudyTask Manager: Arul AyyanarWell ID: UFMW-015Field Samplers: D. KeadyTask No.: MBDate: 4-12-17

PURGING DATA

MP Distance AGS (ft): — Well Depth (ft BGS): 29 Well Depth (ft BMP): — Nominal Well Pipe Size (in): 2
 MP Description: TOC PID/FID Readings Beneath Inner Cap (parts per million above known background): —
 Screen Top: — (ft BGS) = — (ft BMP) Screen Bottom: — (ft BGS) = — (ft BMP) Well Riser Capacity* (gal/ft): —
 Depth to Water Before Pump Installation (ft BMP): 28.61 Time: — Pump and Tubing Type: —
 1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = — Pump Intake Depth (ft BMP): —
 Equipment Decon Method: — Groundwater Disposal: —

Time Start (hrs)	Measure-ment Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
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LESS THAN 1" OF WATER OBSERVED IN WELL; UNABLE TO SAMPLE.

WOK 4.12.17

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): — Sampling Initiated (hrs): — Sampling Ended (hrs): —
 Field Decontamination: Y N Field Filtered: Y N QA Duplicate: Y N COC Time: —
 Material Codes: VOA=40 mL glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify) COC Number: —

Sample ID

Duplicate ID:

QA/QC Samples/ID

Sample Container Specification				Intended Analysis and/or Method
No.	Material Code	Volume	Preserv. Used	

Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)

INSUFFICIENT AMOUNT OF WATER IN WELL TO SAMPLE.

Signature(s): D. Keady

BGS - Below Ground Surface
 BMP - Below Measuring Point
 C - Centigrade

COC - Chain of Custody
 Cond - Specific Conductivity
 GS - Ground Surface

min - Minute
 mg/L - milligram/Liter
 mV - milli Volts

MP - Measuring Point
 NTU - Nephelometric Units
 QA/QC - Quality Assurance/Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

Page 1 of 1

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>Arul Aravamudan</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-01I</u>
Field Samplers: <u>D. Keady</u>	Recorded by: <u>D. Keady</u>	Date: <u>4-11-17</u>	
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>38</u>	Screened/Open Interval Top: <u>—</u>
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>—</u>	
Pump and Tubing Type: <u>Dedicated plastic pump; poly tubing</u>	Pump Intake Depth: <u>36.5</u>	(ft BGS)	(ft BMP)
Equipment Decon. Method: <u>3 bucket rinse (down at dedicated pump)</u>	Depth to Water Before Pump Installation (ft BMP): <u>28.54</u>	Time: <u>0845</u>	MP Description: <u>TOC</u>
			GW Disposal: <u>GW-11</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0907	X		24.48		7.56		4.97		1.33/4.80		83		0.0		100	28.68	0
0912	X		25.57		7.58		4.85		0.48/3.32		88		0.0		100	28.68	500
0917	X		25.95		7.63		4.83		0.24/2.50		88		0.0		100	28.68	1000
0922	X		26.23		7.65		4.83		0.13/1.94		89		0.0		100	28.68	1500
0927	X		26.48		7.65		4.83		0.03/1.83		89		0.0		100	28.68	2000
0932	X		26.56		7.65		4.83		0.01/1.78		89		0.0		100	28.69	2500
0937	X		26.68		7.67		4.82		0.00/1.75		88		0.0		100	28.69	3000
0945	X		STABILIZATION														

Sample ID: UFMW-01I-20170411Duplicate ID: —QA/QC Samples/ID: —COC Time: 0945

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: Y N	Field Filtered: Y N	COC Number: <u>—</u>
Comments: <u>Sulfide: 0.00 mg/L</u>		
Signature(s): <u>[Signature]</u>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

Page 1 of 1

NERT, Henderson, Nevada

Task Name: *AT Area Treatability Study*Task Manager: *A. Aggarwal*Well ID: *UFMW-025*Field Samplers: *J. Lugade*Task No.: *M13*Date: *12 Apr 17*

PURGING DATA

MP Distance AGS (ft): *—* Well Depth (ft BGS): *—* Well Depth (ft BMP): *29.25* Nominal Well Pipe Size (in): *2*
 MP Description: *TUC* PID/FID Readings Beneath Inner Cap (parts per million above known background): *—*
 Screen Top: *—* (ft BGS) = *—* (ft BMP) Screen Bottom: *—* (ft BGS) = *—* (ft BMP) Well Riser Capacity* (gal/ft): *—*
 Depth to Water Before Pump Installation (ft BMP): *27.44* Time: *0806* Pump and Tubing Type: *Rollon*
 1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = *0.32 x 0.96* Pump Intake Depth (ft BMP): *—*
 Equipment Decon Method: *3 Rinse* Groundwater Disposal: *GW-11 Pit*

3WV
SAMPLE

Time Start (hrs)	Measure-ment Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	ns/cm Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
0808	0808	~1.0	~1.0	—	—	—	—	—	—	—	—
1210	1210	~0.25	~1.25	—	27.44	6.30	26.61	6.50	2.11	2.95	12

SL
4-12-17

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): *Purifier*Sampling Initiated (hrs): *1210*Sampling Ended (hrs): *—*Field Decontamination: ☒ Y ☐ NField Filtered: ☒ Y ☐ NQA Duplicate: ☒ Y ☐ N

COC Time:

Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify)

COC Number:

Sample ID *UFMW-025*Duplicate ID: *—*QA/QC Samples/ID *—*

Sample Container Specification

No.	Material Code	Volume	Preserv. Used	Intended Analysis and/or Method

Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)

Sample - 0.60 mg/L

Signature(s): *[Signature]*

BGS - Below Ground Surface
 BMP - Below Measuring Point
 C - Centigrade

COC - Chain of Custody
 Cond - Specific Conductivity
 GS - Ground Surface

min - Minute
 mg/L - milligram/Liter
 mV - milli Volts

MP - Measuring Point
 NTU - Nephelometric Units
 QA/QC - Quality Assurance/Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

Page 1 of 1

NERT, Henderson, NV Project

Task Name: <u>AP Area Tricentality Study</u>	Task Manager: <u>Arul Arayaswami</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-02I</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>4-11-17</u>
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>39</u>	Screened/Open Interval Top: <u>—</u> (ft BGS) <u>34</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>—</u>	(ft BGS) <u>37</u> (ft BMP)
Pump and Tubing Type: <u>Dedicated plastic pump; dedicated ply</u>	Pump Intake Depth: <u>36.5</u> (ft BGS) <u>BMP</u> (ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>3 bucket rinse; no decon for dedicated</u>	Depth to Water Before Pump Installation (ft BMP): <u>28.65</u>	Time: <u>1015</u>	GW Disposal: <u>GW-1 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity $\mu\text{S/cm}$		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1026	X		29.08		7.55		5.98		2.02/3.98		105		59.3		100	28.77	
1031	X		29.17		7.76		5.22		1.02/2.41		94		24.5		100	28.78	
1036	X		29.20		7.83		5.04		0.66/2.32		90		12.8		100	28.79	
1041	X		29.20		7.83		4.90		0.31/1.73		89		5.9		100	28.80	
1046	X		29.23		7.82		4.75		0.11/1.69		88		0.0		100	28.80	
1051	X		29.26		7.84		4.75		0.09/1.68		86		0.0		100	28.80	
1056	X		29.59	✓	7.82	✓	4.73	✓	0.04/1.66	✓	86	✓	0.0	✓	100	28.80	
1105	X	STABILIZATION															

Sample ID: UFMW-02I-20170411Duplicate ID: —QA/QC Samples/ID: —COC Time: 1105

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
<u>AP Area Sampling Site</u>				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number: —

Comments:

Sulfide: 0.00 mg/LSignature(s): [Signature]

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

GROUNDWATER SAMPLING LOG

(Purge Volume Method)

Page 1 of 1

NERT, Henderson, Nevada

Task Name: AP Area Treatability Study

Task Manager: Arul Aruparam

Well ID: UFMW-035

Field Samplers: D. Kody

Task No.: M13

Date: 4-12-17

PURGING DATA

MP Distance AGS (ft): ☒ Well Depth (ft BGS): ☒ Well Depth (ft BMP): ☒ Nominal Well Pipe Size (in): 2

MP Description: TOC PID/FID Readings Beneath Inner Cap (parts per million above known background): ☒

Screen Top: ☒ (ft BGS) = ☒ (ft BMP) Screen Bottom: ☒ (ft BGS) = ☒ (ft BMP) Well Riser Capacity* (gal/ft): ☒

Depth to Water Before Pump Installation (ft BMP): DRY Time: ☒ Pump and Tubing Type: ☒

1 Well Volume (gal) = (Total Well Depth - Depth to Water) x Well Capacity = ☒ Pump Intake Depth (ft BMP) ☒

Equipment Decon Method: ☒ Groundwater Disposal: ☒

Time Start (hrs)	Measure-ment Time (hrs)	Volume Purged (gal)	Cumul. Volume Purged (gal)	Purge Rate (gpm)	Depth to Water (ft BMP)	pH (pH Units)	Temp (°C)	Specific Cond. (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Redox Poten. ORP (mV)
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WELL OBSERVED TO BE DRY; UNABLE TO SAMPLE

HSE 4-12-17

* Well Capacity (Gal/ft) for PVC Sch 40 Nominal Pipe Sizes: 0.75" = 0.026; 1" = 0.043; 1.5" = 0.103; 2" = 0.171; 4" = 0.652; 6" = 1.484; 12" = 5.766

SAMPLING DATA

Sampling Method(s): ☒ Field Decontamination: Y N Field Filtered: Y N Sampling Initiated (hrs): ☒ Sampling Ended (hrs): ☒

QA Duplicate: Y N COC Time: ☒

Material Codes: VOA=40 ml glass vial; AG=Amber Glass; CG=Clear Glass; PE=polyethylene; O=Other (Specify) COC Number: ☒

Sample ID

Duplicate ID:

QA/QC Samples/ID

Sample Container Specification

No.	Material Code	Volume	Preserv. Used	Intended Analysis and/or Method
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Remarks: (color, odor, sand & silt content, factors possibly affecting samples; condition of vault, wellhead, sampling apparatus, etc.)

DRY; UNABLE TO SAMPLE

Signature(s):

BGS - Below Ground Surface
BMP - Below Measuring Point
C - Centigrade

COC - Chain of Custody
Cond - Specific Conductivity
GS - Ground Surface

min - Minute
mg/L - milligram/Liter
mV - milli Volts

MP - Measuring Point
NTU - Nephelometric Units
QA/QC - Quality Assurance/Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

Page 1 of 1

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>Arul Arivanram</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-03E</u>
Field Samplers: <u>D. Keady</u>	Recorded by: <u>D. Keady</u>	Date: <u>4-11-17</u>	
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>40</u>	Screened/Open Interval Top: <u>30</u> (ft BGS) <u>—</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>40</u> (ft BGS) <u>—</u> (ft BMP)	
Pump and Tubing Type: <u>Dedicated plastic pump; dedicated poly tubing</u>	Pump Intake Depth: <u>35</u> (ft BGS)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>3 bucket rinse; no decon for dedicated</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.50</u>	Time: <u>1315</u>	GW Disposal: <u>GW11 Pond</u>

Time	PURGING X	SAMPLING X	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1324	X		35.12		7.77		3.66		2.44/3.35		108		3.4		100	26.43	
1329	X		31.52		7.81		3.29		2.25/2.80		106		0.6		100	26.43	
1334	X		29.99		7.80		3.26		1.81/2.10		104		0.0		100	26.43	
1339	X		29.27		7.81		3.26		1.27/1.45		100		0.0		100	26.43	
1344	X		28.78		7.87		3.25		1.12/1.37		95		0.0		100		
1349	X		28.73		7.88		3.29		0.98/1.36		94		0.0				
1400	X		Stabilization														

Sample ID: UFMW-03E-20170411 Duplicate ID: —QA/QC Samples/UP: NIS/INSDCOC Time: 1400

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area TS Sampling Set —				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: Y N	Field Filtered: Y N	COC Number:
Comments: <u>Sulfide: 0.00 mg/L</u>		
Signature(s): <u>[Signature]</u>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: <u>AP AREA Treatability Study</u>	Task Manager: <u>Arul Ayyaswami</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-045</u>
Field Samplers: <u>Jacob Souza</u>	Recorded by: <u>Jacob Souza</u>	Date: <u>4/7/17</u>	
Well Depth (ft BGS): <u>2</u>	MP Distance AGS (ft): <u>29.69</u>	Well Depth (ft BMP): <u>29.69</u>	Screened/Open Interval Top: <u>24.00</u> (ft BGS) <u>24.00</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>26.50</u>	Screened/Open Interval Bottom: <u>26.50</u>	(ft BGS) <u>29.00</u> (ft BMP)
Pump and Tubing Type: <u>QED Sample Pro/poly tubing</u>	Pump Intake Depth: <u>26.50</u> (ft BGS) <u>26.50</u> (ft BMP)	MP Description: <u>T.O.C.</u>	
Equipment Decon. Method: <u>Liquinox & water (x3)</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.79</u>	Time: <u>0755</u>	GW Disposal: <u>GW-11 pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0850			25.84		7.21		4500		2.11		150		3.5		105	26.50	0
0855			26.31		7.38		4490		1.63		142		0.0		105	26.50	525
0900			26.76		7.47		4490		1.77		136		0.0		105	26.50	1050
0905			26.58		7.47		4400		3.69		135		18.00		105	27.02	1575
0910			26.56		7.43		4540		1.85		129		10.3		105	27.04	2100
0915			26.98		7.52		4470		1.35		129		0.00		105	27.06	2625
0920			26.96		7.52		4470		1.23		129		0.00		105	27.05	3150
0925			26.96		7.51		4470		1.13		131		0.00		105	27.07	3675
0930			26.99		7.51		4470		1.10		128		0.00		105	27.07	4200
0935			26.97		7.51		4480		1.12		128		0.00		105	27.07	4725

Sample ID: UFMW-045-20170407 Duplicate ID: NAQA/QC Samples/ID: NACOC Time: 0940

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
<u>Ap Area sampling set</u>				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

Sulfide = 0.02 mg/L
* at 0905, adjusted pump to 27.50 ft due to loss of flow.

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: <u>AP AREA Treatability Study</u>	Task Manager: <u>Arul Ayyaswami</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-04I</u>
Field Samplers: <u>Jacob Souza</u>	Recorded by: <u>Jacob Souza</u>	Date: <u>4/6/17</u>	
Well Depth (ft BGS): <u>✓</u>	MP Distance AGS (ft): <u>✓</u>	Well Depth (ft BMP): <u>39.79</u>	Screened/Open Interval Top: <u>✓</u> (ft BGS) <u>34.00</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>✓</u>	Screened/Open Interval Bottom: <u>✓</u> (ft BGS) <u>39.00</u> (ft BMP)	
Pump and Tubing Type: <u>QED Sample Pro/poly tubing</u>	Pump Intake Depth: <u>✓</u> (ft BGS) <u>36.50</u> (ft BMP)	MP Description: <u>T.O.C.</u>	
Equipment Decon. Method: <u>Iguinox & water (x3)</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.79</u>	Time: <u>1429</u>	GW Disposal: <u>GW-11 pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1459			32.31		7.61		4240		1.20		118		19.8		120	26.85	0
1503			31.21		7.70		4280		1.03		116		23.4		120	26.85	480
1507			30.34		7.69		4350		0.87		116		17.6		120	26.85	960
1511			29.97		7.74		4410		1.29		119		15.2		120	26.85	1440
1515			29.91		7.73		4430		0.92		123		13.1		120	26.85	1920
1519			30.23		7.74		4470		1.05		117		10.0		120	26.85	2400
1523			30.76		7.74		4520		0.92		113		7.7		120	26.85	2880
1527			30.85		7.74		4530		1.16		113		6.1		120	26.85	3360
1531			30.81		7.74		4520		1.10		110		6.3		120	26.85	3840
1535			30.76		7.74		4520		1.08		112		5.8		120	26.85	4320

Sample ID: UFMW-04I-20170406

Duplicate ID: NA

QA/QC Samples/ID: NA

COC Time: 1540

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)
 Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

Sulfide = 0.00 mg/L

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
 BMP - Below Measuring Point

C - Centigrade
 COC - Chain of Custody

GS - Ground Surface
 ID - Identification

mg/L - milligram/Liter
 mV - milli Volts

min - Minute
 ml - milliliter

MP - Measuring Point
 NTU - Nephelometric Units

QA - Quality Assurance
 QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>Arul Aravamudan</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-065</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>4-10-17</u>
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>30.02</u>	Screened/Open Interval Top: <u>25.02</u> (ft BGS) <u>BMP</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>30.02</u> (ft BGS) <u>BMP</u> (ft BMP)	
Pump and Tubing Type: <u>QED SamplePo; poly tubing</u>	Pump Intake Depth: <u>—</u> (ft BGS)	<u>27.52</u> (ft BMP)	MP Description: <u>TOC</u>
Equipment Decon. Method: <u>3 bucket m.f.c.</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.69</u>	Time: <u>0806</u>	GW Disposal: <u>GW-11 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0908	X		24.73		7.38		5.70		6.80/1.93		127		550		100	26.70	0
0913	X		25.49		7.43		5.68		6.42/1.63		131		149		100	26.71	500
0918	X		25.86		7.46		5.68		6.16/1.66		131		33.6		100	26.71	1000
0923	X		26.11		7.44		5.68		5.88/1.58		132		9.1		100	26.71	1500
0928	X		26.19		7.46		5.68		5.78/1.55		133		1.0		100	26.71	2000
0933	X		26.24	✓	7.46	✓	5.67	✓	5.73/1.53	✓	134	✓	0.0	J(5)	100	26.71	2500
0940	X		STABILIZATION														

Sample ID: UFMW-065-20170410Duplicate ID: —QA/QC Samples/ID: —COC Time: 0940

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
<u>AP Area 15 Sampling Site</u>				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

Sulfide: 0.00 mg/L

Signature(s): D. Keady

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>Arul Ayyaswami</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-06I</u>
Field Samplers: <u>D. Feady</u>	Recorded by: <u>D. Feady</u>	Date: <u>7-10-17</u>	
Well Depth (ft BGS): <u>40.21</u>	PMP Distance AGS (ft): <u> </u>	Well Depth (ft BMP): <u>40.21</u>	Screened/Open Interval Top: <u>35.21</u> (ft BGS) <u>BMP</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u> </u>	Screened/Open Interval Bottom: <u>40.21</u> (ft BGS) <u>BMP</u> (ft BMP)	
Pump and Tubing Type: <u>QED SamplePro</u>	Pump Intake Depth: <u> </u> (ft BGS)	<u>37.71</u> (ft BMP)	MP Description: <u>TOC</u>
Equipment Decon. Method: <u>3 bucket rinse</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.62</u>	Time: <u>0808</u>	GW Disposal: <u>GW-11 Pond</u>

Time	PURGING X SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity μ (S/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1042	X	27.03		7.80		5.44		1.02/1.56		147		46.6		100	26.64	0
1053	X	27.18		7.74		5.45		0.44/1.58		147		23.9		100	26.66	500
1058	X	27.32		7.75		5.45		0.16/0.99		143		5.2		100	26.66	1000
1103	X	27.39		7.70		5.46		0.14/1.00		144		0.0		100	26.66	1500
1108	X	27.45	✓	7.76	✓	5.46	✓	0.00/0.98	✓	140	✓	0.0	✓ (<5)	100	26.66	2000
1115	X	STABILIZATION														

Sample ID: UFMW-06I-20170410Duplicate ID: UFMW-06I-20170410-FDQA/QC Samples/ID: COC Time: 1115

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
<u>AP Area TS Sampling Suite</u>				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

Sulfide: 0.01 mg/L

Signature(s): D. Feady

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control

Soil Flushing IRM - Daily/Bi-Weekly GW Gauging Form

Project Name: NERT Task K01 - Soil Flushing IRM

Date: 6/19/17

Address: 510 S. 4th Street, Henderson, NV 89015

Gate Access Code: 6932

Technician: Jesse Bunkers

Weather: 100°F clear

Monitoring Wells

Well ID	Depth to Water (ft btoc)	Total Depth of Time Well (ft btoc)	Notes (well condition, etc.)
PLOT 1 (NORTH)			
Injection Wells			
UFIW-01S	26.75	0752	*
UFIW-01I	27.26	0753	*
UFIW-01D	27.21	0754	
UFIW-02S	26.24	0756	*
UFIW-02I	26.31	0757	*
UFIW-02D	26.30	0758	
UFIW-03S	26.32	0759	*
UFIW-03I	26.39	0800	*
UFIW-03D	26.44	0801	
UFIW-04S	26.67	0803	*
UFIW-04I	26.61	0804	*
UFIW-04D	26.54	0805	*
Monitoring Wells			
UFMW-01S	28.08	0720	
UFMW-01I	28.55	0725	
UFMW-01D	28.91	0733	
UFMW-02S	27.55	0827	
UFMW-02I	28.50	0825	
UFMW-02D	28.58	0826	
UFMW-03S	dry	0743	
UFMW-03I	26.50	0745	
UFMW-03D	26.78	0744	
Extraction Wells			
E1-1	42.71	0739	
E1-2	33.85	0740	
E1-3	43.66	0741	
PLOT 2 (SOUTH)			
Injection Wells			
UFIW-05S			
UFIW-05I			
UFIW-05D			
UFIW-06S			
UFIW-06I			
UFIW-06D			
UFIW-07S			
UFIW-07I			
UFIW-07D			
UFIW-08S			
UFIW-08I			
UFIW-08D			
Monitoring Wells			
UFMW-04S	26.70	0814	
UFMW-04I	26.73	0815	
UFMW-04D	26.70	0816	
UFMW-05S	26.94	0817	
UFMW-05I	26.83	0818	
UFMW-05D	26.72	0819	
UFMW-06S	26.67	0820	
UFMW-06I	26.60	0821	
UFMW-06D	26.65	0822	
Extraction Wells			
E2-1	25.85	0807	
E2-2	26.09	0808	
E2-3	26.40	0809	
E2-4	26.58	0810	
E2-5	26.42	0811	

* MP = Top of Coupling



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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-015</u>
Field Samplers: <u>D. Keady</u>	Recorded by: <u>D. Keady</u>	Date: <u>6-19-17</u>	
Well Depth (ft BGS): <u>2</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>29.56</u>	Screened/Open Interval Top: <u>24</u> (ft BGS) (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>27</u> (ft BGS) (ft BMP)	
Pump and Tubing Type: <u>QED Sample Pro (bladder) : poly tubing</u>	Pump Intake Depth: <u>—</u> (ft BGS) <u>26.5</u> (ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>3 bucket rinse w/ Equinox</u>	Depth to Water Before Pump Installation (ft BMP): <u>28.08</u>	Time: <u>0720</u>	GW Disposal: <u>GW-11 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0823	X		30.13		6.97		3.61		1.39/1.48		192		4.66		100	28.14	0
0828	X		27.97		7.10		3.57		1.77/1.54		172		1.77		100	28.22	500
0833	X		27.20		7.13		3.53		0.42/0.53		167		1.84		100	28.25	1000
0838	X		27.02		7.15		3.53		0.29/0.33		164		1.28		100	28.27	2000
0843	X		26.98		7.16		3.55		0.27/0.34		163		0.75		100	28.28	2500
0848	X		26.96	✓	7.16	✓	3.55	✓	0.26/0.32	✓	163	✓	0.48	✓	100	28.28	3000
0850	X	Stabilization															

Sample ID: UFMW-015-20170619Duplicate ID: —QA/QC Samples/ID: —COC Time: 0850

Sample Container			Preservative	Intended Analysis and/or Method
	Material			
Number	Code	Volume		
AP Area T.S. Sample Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

color: clearSignature(s): D. Keady

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-01I</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>6-19-17</u>
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>39.52</u>	Screened/Open Interval Top: <u>34</u> (ft BGS) <u>—</u> (ft BMP)
Well Diameter (in): <u>2 dedicated</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>39</u> (ft BGS) <u>—</u> (ft BMP)	
Pump and Tubing Type: <u>dedicated pump (bladder) ; poly tubing</u>	Pump Intake Depth: <u>—</u> (ft BGS) <u>36.5</u> (ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>dedicated pump + tubing</u>	Depth to Water Before Pump Installation (ft BMP): <u>28.55</u>	Time: <u>0725</u>	GW Disposal: <u>GW-11 Pond</u>

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity $\mu\text{S/cm}$		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0925	X	31.23		7.45		4.03		0.97/3.25		154		9.39		100	28.53	0
0930	X	28.99		7.47		4.01		0.62/1.86		149		6.59		100	28.57	500
0935	X	27.97		7.48		4.01		0.32/0.97		146		4.26		100	28.51	1000
0940	X	27.91		7.48		3.99		0.20/0.43		143		2.69		100	28.60	1500
0945	X	28.08		7.49		3.99		0.25/0.38		142		1.48		100	28.60	2000
0950	X	28.35		7.49		3.99		0.27/0.36		142		0.80		100	28.60	2500
0955	X	28.38	✓	7.49	✓	4.00	✓	0.28/0.38	✓	142	✓	0.69	✓	100	28.60	3000
1000	X	STABILIZATION														

Sample ID: UFMW-01I-20170619Duplicate ID: —QA/QC Samples/ID: —COC Time: 1000

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number: —

Comments:

color: clear

Signature(s): [Signature]

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UPMW-01D</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>6-19-17</u>
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>49.25</u>	Screened/Open Interval Top: <u>34</u> (ft BGS) <u>—</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>47</u> (ft BGS) <u>—</u> (ft BMP)	
Pump and Tubing Type: <u>Dedicated bladder pump + poly tubing</u>	Pump Intake Depth: <u>36.5</u> (ft BGS) <u>—</u> (ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>Dedicated pump + tubing</u>	Depth to Water Before Pump Installation (ft BMP): <u>28.91</u>	Time: <u>0733</u>	GW Disposal: <u>GW/1 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity $\mu\text{S/cm}$		Dissolved Oxygen mg/L		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1023	X		34.52		7.51		5.64		2.45/3.62		145		4.93		100	28.84	0
1028	X		29.69		7.53		5.39		0.74/1.41		148		0.15		100	28.85	500
1033	X		28.93		7.55		5.35		0.50/0.91		148		0.32		100	28.85	1000
1038	X		28.82		7.56		5.33		0.39/0.72		148		0.00		100	28.85	1500
1043	X		28.68		7.55		5.33		0.34/0.63		149		0.00		100	28.85	2000
1048	X		31.15		7.56		5.15		0.31/0.54		147		0.00		100	28.85	2500
1053	X		29.96	✓	7.54	✓	5.37	✓	0.30/0.50	✓	148	✓	0.00	✓	100	28.85	3000
1058	X		29.91		7.54		5.36		0.29/0.45		148		0.00		100	28.85	3500
1100	X		STABILIZATION														

Sample ID: UPMW-01D-20170619Duplicate ID: —QA/QC Samples/ID: —COC Time: 1100

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
NERT AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

color: clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-025</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>6-19-17</u>
Well Depth (ft BGS): <u>2</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>29.19</u>	Screened/Open Interval Top: <u>29</u> (ft BGS) <u>—</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>29</u> (ft BGS) <u>—</u> (ft BMP)	
Pump and Tubing Type: <u>QED Simplex (bladder); poly tubing</u>	Pump Intake Depth: <u>26.5</u> (ft BGS) <u>—</u> (ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>3 bucket rinse w/ Liquinox</u>	Depth to Water Before Pump Installation (ft BMP): <u>27.55</u>	Time: <u>0827</u>	GW Disposal: <u>GW-11 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1157	X		37.89		7.33		2.58		2.09		153		34.3		100	27.64	0
1202	X		32.44		7.29		2.64		1.19		161		14.8		100	27.65	500
1207	X		AIR COMPRESSOR DIED.														
1218	X		AIR COMPRESSOR WORKING AGAIN.														
1220	X		32.15		7.30		2.55		0.81		166		2.95		100	27.65	1000
1225	X		29.96		7.32		2.52		0.72		166		1.02		100	27.66	1500
1230	X		28.76		7.30		2.53		0.29		168		0.00		100	27.66	2000
1235	X		27.44		7.33		2.52		0.27		169		0.00		100	27.67	2500
1240	X		27.13	✓	7.32	✓	2.52	✓	0.25	✓	169	✓	0.00	✓	100	27.67	3000
1245	X		STABILIZATION														

Sample ID: UFMW-025-20170619Duplicate ID: —QA/QC Samples/ID: —COC Time: 1245

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
NERT AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

color: clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-02I</u>
Field Samplers: <u>D. Keady</u>	Recorded by: <u>D. Keady</u>	Date: <u>6-19-17</u>	
Well Depth (ft BGS): <u>31</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>—</u>	Screened/Open Interval Top: <u>34</u> (ft BGS) <u>—</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>39</u> (ft BGS) <u>—</u> (ft BMP)	
Pump and Tubing Type: <u>Dedicated bladder pump + poly tubing</u>	Pump Intake Depth: <u>—</u> (ft BGS) <u>36.5</u> (ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>Dedicated pump + tubing</u>	Depth to Water Before Pump Installation (ft BMP): <u>28.50</u>	Time: <u>0825</u>	GW Disposal: <u>GW-11 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1324	X		44.26		7.38		4.08		4.07/6.23		147		605		100	28.56	0
1329	X		44.24		7.33		4.77		0.53/2.12		148		719		100	28.58	500
1334	X		43.27		7.36		4.78		0.50/1.08		146		830		100	28.60	1000
1339	X		44.19		7.35		4.76		0.56/0.76		146		704		100	28.62	1500
1344	X		43.72		7.34		4.75		0.65/0.59		148		461		100	28.62	2000
1349	X		43.29		7.37		4.77		0.72/0.62		149		299		100	28.63	2500
1354	X		43.31		7.36		4.76		0.77/0.66		151		163		100	28.63	3000
1359	X		44.58		7.36		4.77		0.82/0.71		152		110		100	28.63	3500
1404	X		43.84		7.37		4.77		0.86/0.73		153		90.1		100	28.63	4000
1409	X		43.21		7.37		4.77		0.87/0.77		155		58.9		100	28.63	4500
1414	X		43.08		7.38		4.75		0.89/0.79		156		39.8		100	28.63	5000
1419	X		43.67		7.37		4.77		0.87/0.80		157		36.3		100	28.63	5500
1424	X		43.11	✓	7.37	✓	4.77	✓	0.84/0.81	✓	159	✓	34.3	✓	100	28.63	6000
1430	X		STABILIZATION														

Sample ID: UFMW-02I-20170619Duplicate ID: —QA/QC Samples/ID: —COC Time: 1430

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
NERT AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

color: cloudy, whitish

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
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NTU - Nephelometric UnitsQA - Quality Assurance
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LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-02D</u>
Field Samplers: <u>D. Keady</u>	Recorded by: <u>D. Keady</u>	Date: <u>6.20.17</u>	
Well Depth (ft BGS): <u>49</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>—</u>	Screened/Open Interval Top: <u>49</u> (ft BGS) <u>—</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>49</u> (ft BGS) <u>—</u> (ft BMP)	
Pump and Tubing Type: <u>Dedicated bladder pump + poly tubing</u>	Pump Intake Depth: <u>—</u> (ft BGS) <u>44.5</u> (ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>Dedicated pump + tubing</u>	Depth to Water Before Pump Installation (ft BMP): <u>28.68</u>	Time: <u>0825 (17-12)</u>	GW Disposal: <u>GW-1 Pond</u>

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity <u>mg</u> (µS/cm)		Dissolved Oxygen <u>mg</u> (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0735	X	33.45		7.65		6.99		4.24/4.68		150		38.7		100	29.10	0
0740	X	31.18		7.55		6.20		0.96/2.22		149		12.0		100	29.13	500
0745	X	30.57		7.54		5.94		0.45/2.06		149		1.13		100	29.16	1000
0750	X	30.69		7.54		5.89		0.28/1.86		149		0.00		100	29.17	1500
0755	X	30.89		7.54		5.87		0.22/1.46		149		0.00		100	29.17	2000
0800	X	30.88		7.54		5.87		0.16/0.86		148		0.00		100	29.17	2500
0805	X	31.09		7.53		5.86		0.18/0.82		149		0.00		100	29.17	3000
0810	X	31.34	✓	7.52	✓	5.86	✓	0.18/0.78	✓	149	✓	0.00	✓	100	29.17	3500
0815	X	STABILIZATION														

Sample ID: UFMW-02D-20170620Duplicate ID: —QA/QC Samples/ID: —COC Time: 0815

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N

Field Filtered: Y N

COC Number:

Comments:

color: clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



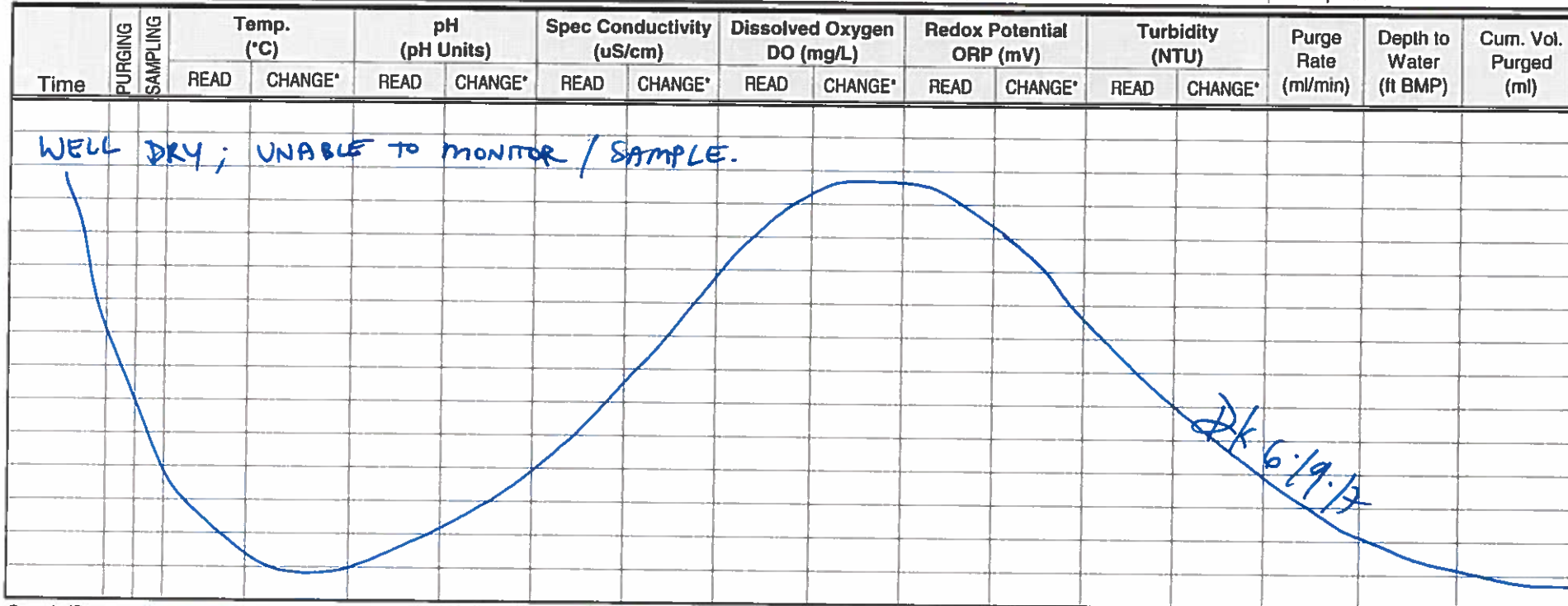
TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-035</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>6.19.17</u>
Well Depth (ft BGS): <u> </u>	MP Distance AGS (ft): <u> </u>	Well Depth (ft BMP): <u> </u>	Screened/Open Interval Top: <u> </u> (ft BGS) <u> </u> (ft BMP)
Well Diameter (in): <u> </u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u> </u>	Screened/Open Interval Bottom: <u> </u>	(ft BGS) <u> </u> (ft BMP)
Pump and Tubing Type: <u> </u>	Pump Intake Depth: <u> </u> (ft BGS) <u> </u> (ft BMP)	MP Description: <u> </u>	
Equipment Decon. Method: <u> </u>	Depth to Water Before Pump Installation (ft BMP): <u> </u>	Time: <u> </u>	GW Disposal: <u> </u>



Sample ID: Duplicate ID: QA/QC Samples/ID: COC Time:

Sample Container			Preservative	Intended Analysis and/or Method
Number	Code	Volume		
<u>11/26/17</u>				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: Y N	Field Filtered: Y N	COC Number: <u> </u>
Comments: <u>DRY</u>		
Signature(s): <u>[Signature]</u>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-03E</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>6-19-17</u>
Well Depth (ft BGS): <u>40</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>—</u>	Screened/Open Interval Top: <u>30</u> (ft BGS) <u>—</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>		Screened/Open Interval Bottom: <u>40</u> (ft BGS) <u>—</u> (ft BMP)
Pump and Tubing Type: <u>Dedicated bladder pump; poly tubing</u>	Pump Intake Depth: <u>35</u> (ft BGS) <u>—</u> (ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>Dedicated Pump & tubing</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.50</u>	Time: <u>0745 (6:45)</u>	GW Disposal: <u>GW-11 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity μ (S/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0449	X		27.88		7.54		3.39		12.21/10.31		116		191		100	26.53	0
0454	X		25.33		7.55		3.43		10.15/9.12		124		54.1		100	26.55	500
0459	X		24.61		7.58		3.62		2.22/4.34		125		18.7		100	26.54	1000
0504	X		24.01		7.60		3.71		1.56/2.02		125		9.25		100	26.56	1500
0509	X		23.82		7.62		3.74		1.47/1.98		125		4.07		100	26.56	2000
0514	X		23.51	✓	7.61	✓	3.76	✓	1.32/1.95	✓	126	✓	1.91	✓	100	26.56	2500
0520	X		STABILIZATION														

Sample ID: UFMW-03E-20170620Duplicate ID: —QA/QC Samples/ID: —COC Time: 0520

Sample Container				
Number	Code	Volume	Preservative	Intended Analysis and/or Method
NERT AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

color: cloudy / clear

Signature(s): D. Keady

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study Task Manager: G. Roemer Task No: M13 Well ID: UPMW-03D
 Field Samplers: D. Keady Recorded by: D. Keady Date: 6-20-17
 Well Depth (ft BGS): 50 MP Distance AGS (ft): — Well Depth (ft BMP): — Screened/Open Interval Top: 45 (ft BGS) (ft BMP)
 Well Diameter (in): 2 PID/FID Readings Beneath Inner Cap (ppm cge akb): — Screened/Open Interval Bottom: 50 (ft BGS) (ft BMP)
 Pump and Tubing Type: Dedicated bladder pump; poly tubing Pump Intake Depth: 42.5 (ft BGS) (ft BMP) MP Description: TOC
 Equipment Decon. Method: Dedicated pump & tubing Depth to Water Before Pump Installation (ft BMP): 26.71 Time: 0744-196 GW Disposal: Gravel Pit

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity M μ S/cm		Dissolved Oxygen mg/L		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0558	X	24.99		7.74		4.80		1.66/1.87		150		9.36		100	27.15	0
0603	X	24.18		7.75		4.78		0.48/1.02		151		1.78		100	27.15	500
0608	X	24.15		7.75		4.78		0.19/0.41		151		0.33		100	27.15	1000
0613	X	ON HOLD TO TALK TO LOGISTICAL SOLUTIONS														
0637	X	RESUMED PURGING														
0642	X	26.99		7.70		4.80		1.20/1.43		142		0.04		100	27.25	1500
0647	X	26.03	✓	7.73	✓	4.82	✓	0.35/0.61	✓	142	✓	0.00	✓	100	27.12	2000
0652	X	25.86	✓	7.73	✓	4.79	✓	0.18/0.56	✓	143	✓	0.00	✓	100	27.15	2500
0700	X	STABILIZATION														

Sample ID: UPMW-03D-20170620 Duplicate ID: —QA/QC Samples/ID: —COC Time: —

Sample Container				
Number	Code	Volume	Preservative	Intended Analysis and/or Method
NERT AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number: —

Comments:

color: clear

Signature(s): D. Keady

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-045</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>6.20.17</u>
Well Depth (ft BGS): <u>29</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>—</u>	Screened/Open Interval Top: <u>24</u> (ft BGS) <u>—</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>		Screened/Open Interval Bottom: <u>29</u> (ft BGS) <u>—</u> (ft BMP)
Pump and Tubing Type: <u>QEP Sample Pro (bladder); poly tubing</u>	Pump Intake Depth: <u>26.5</u> (ft BGS) <u>—</u> (ft BMP)		MP Description: <u>TOC</u>
Equipment Decon. Method: <u>3 bucket rinse w/ Lysol</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.70</u>	Time: <u>0814 (6:14)</u>	GW Disposal: <u>GW-11 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity μ S/cm		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0933	X		31.63		7.50		4.67		1.67/1.81		149		23.6		100	26.74	0
0938	X		28.98		7.44		4.51		0.69/1.02		156		9.36		100	26.80	500
0943	X		28.14		7.44		4.37		0.41/0.73		158		3.58		100	26.86	1000
0948	X		27.86		7.44		4.28		0.28/0.51		159		1.48		100	26.92	1500
0953	X		27.31		7.44		4.24		0.26/0.49		159		0.00		100	26.94	2000
0958	X		27.63	✓	7.43	✓	4.22	✓	0.24/0.46	✓	160	✓	0.00	✓	100	26.95	2500
1000	X		STABILIZATION														

Sample ID: UFMW-045-20170620Duplicate ID: —QA/QC Samples/ID: —COC Time: 1000

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
NERT AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

Color: clear

Signature(s): D. Keady

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-04I</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>6-20-17</u>
Well Depth (ft BGS): <u>39</u>	MP Distance AGS (ft): <u> </u>	Well Depth (ft BMP): <u> </u>	Screened/Open Interval Top: <u>34</u> (ft BGS) <u> </u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u> </u>	Screened/Open Interval Bottom: <u>39</u> (ft BGS) <u> </u> (ft BMP)	
Pump and Tubing Type: <u>QED Sample Pro (bladder); poly tubing</u>	Pump Intake Depth: <u>36.5</u> (ft BGS) <u> </u> (ft BMP)	MP Description: <u>JO C</u>	
Equipment Decon. Method: <u>3 bucket rinse w/ Liquinox</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.73</u>	Time: <u>0815 (LHR)</u>	GW Disposal: <u>GW-11 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity $\mu\text{S/cm}$		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1031	X		32.29		7.57		4.48		1.75/1.11		159		429		100	26.84	0
1036	X		29.84		7.61		4.68		0.73/1.02		161		425		100	26.85	500
1041	X		29.27		7.63		4.73		0.35/0.81		160		298		100	26.85	1000
1046	X		29.01		7.64		4.74		0.19/0.63		160		175		100	26.85	1500
1051	X		28.97		7.64		4.73		0.17/0.41		159		114		100	26.85	2000
1056	X		28.82		7.64		4.71		0.16/0.40		158		75.3		100	26.86	2500
1101	X		29.02		7.64		4.68		0.14/0.57		157		47.9		100	26.86	3000
1106	X		29.02		7.63		4.67		0.12/0.36		157		26.8		100	26.86	3500
1111	X		29.07		7.62		4.64		0.11/0.35		157		16.2		100	26.86	4000
1116	X		29.00		7.62		4.63		0.09/0.31		155		10.3		100	26.86	4500
1121	X		29.20		7.63		4.60		0.08/0.29		153		7.5		100	26.86	5000
1126	X		29.31	✓	7.63	✓	4.61	✓	0.06/0.27	✓	153	✓	4.6	✓	100	26.86	5500
1130	X		STABILIZATION														

Sample ID: UFMW-04I-20170620Duplicate ID: UFMW-04I-20170620-PBQA/QC Samples/ID: COC Time: 1130

Sample Container			Preservative	Intended Analysis and/or Method
Number	Code	Volume		

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

color: cloudy, clear

Signature(s): D. Keady

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>		Task Manager: <u>G. Roemer</u>		Task No: <u>M13</u>		Well ID: <u>UFMW-04D</u>	
Field Samplers: <u>D. Keady</u>				Recorded by: <u>D. Keady</u>		Date: <u>6-21-17</u>	
Well Depth (ft BGS): <u>50</u>	MP Distance AGS (ft): <u> </u>	Well Depth (ft BMP): <u> </u>	Screened/Open Interval Top: <u>45</u>		(ft BGS) <u> </u>	(ft BMP) <u> </u>	
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u> </u>		Screened/Open Interval Bottom: <u>50</u>		(ft BGS) <u> </u>	(ft BMP) <u> </u>	
Pump and Tubing Type: <u>QED Sample Pro (bladder) poly tubing</u>		Pump Intake Depth: <u>47.5</u>	(ft BGS) <u> </u>	(ft BMP) <u> </u>	MP Description: <u>TOC</u>		
Equipment Decon. Method: <u>3 bucket rinse w/ ligand</u>		Depth to Water Before Pump Installation (ft BMP): <u>24.70</u>		Time: <u>0816 G.A.B.</u>	GW Disposal: <u>GW-11 Pond</u>		

Time	PURGING	SAMPLING	Temp. ('C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0450	X		31.13		7.51		5.33		3.32/2.13		117		>1000		100	26.74	0
0455	X		28.93		7.67		5.35		2.67/1.91		115		465		100	26.83	500
0500	X		27.89		7.70		5.29		2.36/1.64		116		240		100	26.85	1000
0505	X		27.49		7.71		5.27		1.99/1.23		116		124		100	26.86	1500
0510	X		27.27		7.71		5.24		1.74/1.21		116		83.7		100	26.86	2000
0515	X		27.15		7.71		5.22		1.54/1.17		115		38.9		100	26.86	2500
0520	X		27.16		7.70		5.21		1.45/1.14		115		29.4		100	26.86	3000
0525	X		27.04		7.70		5.20		1.20/1.11		114		21.4		100	26.86	3500
0530	X		26.89		7.68		5.19		1.39/1.10		114		11.1		100	26.86	4000
0535	X		26.94		7.70		5.18		1.31/1.09		113		7.41		100	26.86	4500
0540	X		26.96	✓	7.70	✓	5.17	✓	1.29/1.08	✓	113	✓	4.98	✓	100	26.86	5000
0545	X	STABILIZATION															

G.21.17

Sample ID: UFMW-04D-20170621

Duplicate ID:

QA/QC Samples/ID: _____

COC Time: 0545

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
NERT AP Area			T.S.	Sampling Set

Material Codes: VOA = 40 ml glass vial; AG =Amber Glass; CG =Clear Glass; PE=polyethylene; O=Other (Specify)

Field Decontamination:	Y	N	Field Filtered:	Y	N	COC Number:
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Comments:

Color: Cloudy (clear)

Signature(s):

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatment Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-055</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>6.21.17</u>
Well Depth (ft BGS): <u>30</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>—</u>	Screened/Open Interval Top: <u>25</u> (ft BGS) <u>—</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>		Screened/Open Interval Bottom: <u>30</u> (ft BGS) <u>—</u> (ft BMP)
Pump and Tubing Type: <u>QED Sample Pro (Walker); poly tubing</u>	Pump Intake Depth: <u>27.5</u> (ft BGS)		MP Description: <u>TOC</u>
Equipment Decon. Method: <u>3 bucket rinse w/ Liquinox</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.94</u>	Time: <u>0817/6/17</u>	W Disposal: <u>GW-11 And</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0634	X		27.33		7.19		7.41		2.00/1.23		161		294		100	26.99	0
0639	X		26.97		7.23		7.22		0.52/1.14		162		141		100	27.09	500
0644	X		26.86		7.23		7.09		0.31/1.09		162		56.7		100	27.14	1000
0649	X		26.91		7.22		7.05		0.35/1.09		162		28.9		100	27.20	1500
0654	X		26.94		7.22		7.03		0.32/1.05		161		16.2		100	27.24	2000
0659	X		26.95		7.22		6.99		0.27/1.09		160		7.3		100	27.27	2500
0704	X		27.03	✓	7.23	✓	6.93	✓	0.28/1.09	✓	159	✓	3.6	✓	100	27.30	3000
0710	X		STABILIZATION														

Sample ID: UFMW-055-2070621Duplicate ID: —QA/QC Samples/ID: —COC Time: 0710

Sample Container				
Number	Code	Volume	Preservative	Intended Analysis and/or Method
NERT AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number: —

Comments:

color: clear

Signature(s): D. Keady

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface

C - Centigrade

GS - Ground Surface

mg/L - milligram/Liter

min - Minute

MP - Measuring Point

QA - Quality Assurance

BMP - Below Measuring Point

COC - Chain of Custody

ID - Identification

mV - milli Volts

ml - milliliter

NTU - Nephelometric Units

QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

Page 1 of 1

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMU-05I</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>6.21.17</u>
Well Depth (ft BGS): <u>40</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>—</u>	Screened/Open Interval Top: <u>35</u> (ft BGS) <u>—</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>40</u> (ft BGS) <u>—</u> (ft BMP)	
Pump and Tubing Type: <u>OED Sample Pro (bladder); polythene</u>	Pump Intake Depth: <u>37.5</u> (ft BGS) <u>—</u> (ft BMP)	MP Description: <u>TDC</u>	
Equipment Decon. Method: <u>3 bucket rinse w/ Lysol</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.83</u>	Time: <u>0818/1717</u>	GW Disposal: <u>GW-11 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0739	X		27.98		7.66		5.08		1.53/1.11		153		662		100	27.08	0
0744	X		27.93		7.68		5.10		0.42/1.20		152		409		100	27.00	500
0749	X		27.94		7.68		5.10		0.28/1.06		151		273		100	27.00	1000
0754	X		27.94		7.67		5.09		0.12/1.21		150		133		100	27.00	1500
0759	X		27.97		7.68		5.08		0.09/1.11		150		103		100	27.00	2000
0804	X		27.99		7.68		5.08		0.13/1.01		149		55.5		100	27.00	2500
0809	X		28.03		7.68		5.08		0.11/0.97		148		28.8		100	27.00	3000
0814	X		28.17		7.67		5.07		0.10/0.97		148		27.0		100	27.00	3500
0819	X		28.15		7.66		5.06		0.09/0.94		147		14.5		100	27.00	4000
0824	X		28.23		7.66		5.04		0.08/0.87		146		9.29		100	27.00	4500
0829	X		28.34		7.65		5.03		0.07/0.85		146		4.49		100	27.00	5000
0835	X		STABILIZATION														

Sample ID: UFMU-05I-20170621Duplicate ID: —QA/QC Samples/ID: —COC Time: 0835

Sample Container				
Number	Code	Volume	Preservative	Intended Analysis and/or Method
NERT AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: Y N	Field Filtered: Y N	COC Number: <u>—</u>
Comments: <u>color: clear</u>		
Signature(s): <u>[Signature]</u>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-05D</u>
Field Samplers: <u>D. Keaty</u>	Recorded by: <u>D. Keaty</u>	Date: <u>6-21-17</u>	
Well Depth (ft BGS): <u>50</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>—</u>	Screened/Open Interval Top: <u>45</u> (ft BGS) <u>—</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>50</u> (ft BGS) <u>—</u> (ft BMP)	
Pump and Tubing Type: <u>QED SamplePro (bladder) ; poly tubing</u>	Pump Intake Depth: <u>47.5</u> (ft BGS) <u>—</u> (ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>3 bucket rinse w/ Lysol</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.72</u>	Time: <u>0817/6.11.17</u>	GW Disposal: <u>GW/1 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity $\mu\text{S/cm}$		Dissolved Oxygen mg/L		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0910	X		33.85		7.44		6.27		1.44/1.61		142		216		100	26.86	0
0915	X		31.01		7.49		6.58		0.47/1.41		124		198		100	26.87	500
0920	X		29.96		7.52		6.66		0.17/1.22		115		124		100	26.87	1000
0925	X		29.72		7.54		6.68		0.09/1.09		111		77.2		100	26.87	1500
0930	X		29.61		7.56		6.69		0.07/1.01		110		45.6		100	26.87	2000
0935	X		29.66		7.57		6.67		0.02/0.91		111		26.2		100	26.87	2500
0940	X		29.64		7.57		6.65		0.01/0.88		111		19.2		100	26.87	3000
0945	X		29.61		7.58		6.64		0.00/0.86		112		13.0		100	26.87	3500
0950	X		29.75		7.57		6.63		0.00/0.84		113		7.23		100	26.87	4000
0955	X		30.00	✓	7.57	✓	6.61	✓	0.00/0.82	✓	113	✓	4.75	✓	100	26.87	4500
1005	X		STABILIZATION														

Sample ID: UFMW-05D-20170621Duplicate ID: —QA/QC Samples/ID: M5/M5DCOC Time: 1005

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method

NERT AP Area T.S. Sampling Set

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: Y N	Field Filtered: Y N	COC Number:
Comments:		
<u>color = cloudy / clear</u>		
Signature(s): <u>[Signature]</u>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-065</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>6.21.17</u>
Well Depth (ft BGS): <u>30</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>—</u>	Screened/Open Interval Top: <u>25</u> (ft BGS) <u>—</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>30</u> (ft BGS) <u>—</u> (ft BMP)	
Pump and Tubing Type: <u>QED Sample Pro (bladder) / poly tubing</u>	Pump Intake Depth: <u>27.5</u> (ft BGS) <u>—</u> (ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>3 bucket rinse w/ Liquinox</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.67</u>	Time: <u>0720 (6:19 AM)</u>	GW Disposal: <u>6W-11 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1101	X		37.59		7.22		5.51		1.41/1.98		135		624		100	26.75	0
1106	X		32.67		7.23		5.77		0.51/1.72		142		535		100	26.78	500
1111	X		31.83		7.25		5.76		0.32/1.60		144		249		100	26.80	1000
1116	X		31.39		7.27		5.77		0.19/1.52		143		90.6		100	26.80	1500
1121	X		31.14		7.30		5.77		0.08/1.43		143		54.6		100	26.80	2000
1126	X		31.10		7.30		5.77		0.02/1.36		142		24.6		100	26.80	2500
1131	X		31.09		7.30		5.77		0.00/1.33		142		17.7		100	26.80	3000
1136	X		31.22		7.31		5.77		0.00/1.30		141		12.9		100	26.80	3500
1141	X		30.94		7.30		5.78		0.00/1.28		142		7.16		100	26.80	4000
1146	X		30.88		7.30		5.77		0.00/1.25		141		3.23		100	26.80	4500
1150	X		STABILIZATION														

Sample ID: UFMW-065-20170621 Duplicate ID: — QA/QC Samples/ID: — COC Time: 11:50

Sample Container				
Number	Code	Volume	Preservative	Intended Analysis and/or Method
NERT AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

color: cloudy/clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

Page 1 of 1

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-06I</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>6-22-17</u>
Well Depth (ft BGS): <u>40</u>	MP Distance AGS (ft): <u> </u>	Well Depth (ft BMP): <u> </u>	Screened/Open Interval Top: <u>35</u> (ft BGS) <u> </u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u> </u>	Screened/Open Interval Bottom: <u>90</u> (ft BGS) <u> </u> (ft BMP)	
Pump and Tubing Type: <u>GED Sample Pro (bladder); poly tubing</u>	Pump Intake Depth: <u>37.5</u> (ft BGS) <u> </u> (ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>3 bucket rinse w/ L. gumax</u>	Depth to Water Before Pump Installation (ft BMP): <u>26.60</u>	Time: <u>0821 (6/19/17)</u>	GW Disposal: <u>GW-11 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0631	X		31.46		7.43		5.46		1.46/1.51		122		113		100	26.72	0
0636	X		29.65		7.46		5.53		0.54/1.32		126		79.4		100	26.73	580
0641	X		29.10		7.51		5.53		0.27/1.18		126		65.9		100	26.73	1000
0646	X		28.73		7.52		5.50		0.17/1.10		127		45.7		100	26.73	1500
0651	X		28.49		7.53		5.48		0.10/1.03		129		40.2		100	26.73	2000
0656	X		28.30		7.54		5.48		0.06/0.91		129		30.3		100	26.73	2500
0701	X		28.75		7.54		5.48		0.03/0.91		128		23.0		100	26.73	3000
0706	X		28.50		7.56		5.52		0.01/0.91		127		17.3		100	26.73	3500
0711	X		28.21		7.56		5.53		0.00/0.91		128		12.1		100	26.73	4000
0716	X		28.20		7.56		5.51		0.00/0.89		129		8.40		100	26.73	4500
0721	X		28.09	✓	7.57	✓	5.51	✓	0.00/0.88	✓	130	✓	4.73	✓	100	26.73	5000
0730	X		STABILIZATION														

Sample ID: UFMW-06I-20170622Duplicate ID: QA/QC Samples/ID: COC Time: 0730

Sample Container				
Number	Code	Volume	Preservative	Intended Analysis and/or Method

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: Y N	Field Filtered: Y N	COC Number: <u> </u>
Comments:		
<u>color: clear</u> <u>DEY</u>		
Signature(s): <u> </u>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0803	X		30.15		7.65		6.51		1.41/1.57		150		>1000		100	26.99	0
0808	X		28.62		7.69		6.77		0.57/1.40		149		>1000		100	27.05	500
0813	X		28.16		7.72		6.75		0.29/1.31		147		832		100	27.06	1000
0818	X		28.04		7.72		6.65		0.17/1.25		145		756		100	27.06	1500
0823	X		27.91		7.73		6.58		0.07/1.14		143		535		100	27.06	2000
0828	X		27.82		7.73		6.54		0.03/1.07		141		376		100	27.06	2500
0833	X		27.76		7.73		6.51		0.01/1.00		140		322		100	27.06	3000
0838	X		27.77		7.73		6.49		0.00/0.99		138		266		100	27.06	3500
0843	X		27.75		7.74		6.49		0.00/0.96		137		188		100	27.06	4000
0848	X		27.49		7.74		6.48		0.00/0.94		136		169		100	27.06	4500
0853	X		27.36		7.74		6.48		0.00/0.92		135		153		100	27.06	5000
0858	X		27.27		7.74		6.47		0.00/0.90		134		141		100	27.06	5500
0903	X		27.31		7.74		6.47		0.00/0.89		134		129		100	27.06	6000
0910	X	STABILIZATION															

DF 622-17

Sample ID: VFMW-06D-20170622

Duplicate ID:

QA/QC Samples/ID:

COC Time: 07:40

Sample Container			Preservative	Intended Analysis and/or Method
Number	Code	Volume		
NERT AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG =Amber Glass; CG =Clear Glass; PE=polyethylene; O=Other (Specify)

Field Decontamination:	Y	N	Field Filtered:	Y	N	COC Number:
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Comments:

Color: cloudy (clear)

Signature(s):

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control

Soil Flushing IRM - Daily/Bi-Weekly GW Gauging Form

Project Name: NERT Task K01 - Soil Flushing IRM

Date: 8/14/17

Address: 510 S. 4th Street, Henderson, NV 89015

Gate Access Code: 6932

Technician: Jacob Souza

Weather: 94°F

Monitoring Wells

Well ID	Depth to Water (ft btoc)	Total Depth of Well (ft btoc)	Notes (well condition, etc.)
PLOT 1 (NORTH)			
Injection Wells			
UFIW-01S	27.02	1155	
UFIW-01I	27.19	1156	
UFIW-01D	27.60	1157	
UFIW-02S	26.88	1159	
UFIW-02I	26.92	1201	
UFIW-02D	27.09	1202	
UFIW-03S	26.95	1204	
UFIW-03I	27.04	1203	
UFIW-03D	27.34	1206	
UFIW-04S	27.30	1208	
UFIW-04I	27.30	1209	
UFIW-04D	27.45	1210	
Monitoring Wells			
UFMW-01S	28.24	1144	
UFMW-01I	27.86	1145	
UFMW-01D	27.99	1146	
UFMW-02S	DRY	1148	
UFMW-02I	28.96	1149	
UFMW-02D	28.93	1150	
UFMW-03S	DRY	1152	
UFMW-03I	27.54	1163	
UFMW-03D	27.67	1154	
Extraction Wells			
E1-1	27.21	1100	
E1-2	38.69	1102	
E1-3	41.39	1104	
PLOT 2 (SOUTH)			
Injection Wells			
UFIW-05S			
UFIW-05I			
UFIW-05D			
UFIW-06S			
UFIW-06I			
UFIW-06D			
UFIW-07S			
UFIW-07I			
UFIW-07D			
UFIW-08S			
UFIW-08I			
UFIW-08D			
Monitoring Wells			
UFMW-04S	26.57	1217	
UFMW-04I	26.55	1218	
UFMW-04D	26.49	1220	
UFMW-05S	26.94	1222	
UFMW-05I	26.77	1223	
UFMW-05D	26.59	1224	
UFMW-06S	26.72	1226	
UFMW-06I	26.63	1227	
UFMW-06D	26.65	1228	
Extraction Wells			
E2-1	27.61	1031	
E2-2	25.71	0333	
E2-3	28.75	029	
E2-4	26.34	035	
E2-5	38.67	027	



LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-01D	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 8/16/17	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 49.25		Screened/Open Interval Top: (ft BGS) 34 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 49 (ft BMP)			
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 42.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 27.52		Time: 0619	
						GW Disposal: GW-11 Pond	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0950	X		25.94		7.44		5.04		6.21		123		80.4		200	27.52	0
0955	X		25.40		7.39		5.08		4.73		110		5.2		200	27.70	1L
1000	X		25.30		7.35		5.09		3.65		97		1.0		200	27.73	2L
1005	X		25.24		7.29		5.11		2.11		84		0.3		200	27.72	3L
1010	X		25.28		7.21		5.12		1.30		79		0.1		200	27.70	4L
1015	X		25.27		7.20		5.14		0.81		72		0.2		200	27.72	5L
1020	X		25.23		7.20		5.16		0.79		69		0.1		200	27.73	6L
1025	X		25.23		7.19		5.18		0.74		65		0.1		200	27.72	7L
1030	X		25.29		7.23		5.20		0.69		61		2.1		200	27.71	8L

Sample ID: UFMW-01D-20170816

Duplicate ID: N/A

QA/QC Samples/ID: N/A

COC Time: 1030

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG =Amber Glass; CG =Clear Glass; PE=polyethylene; O=Other (Specify)

Field Decontamination: ☒ Y ☐ N Field Filtered: ☒ Y ☐ N COC Number:

Comments:

Groundwater Color is

Signature(s):

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-02S	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 8/17/17	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 29.19		Screened/Open Interval Top: (ft BGS) 24 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 29 (ft BMP)			
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 26.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 29.19		Time: 0622	
						GW Disposal: GW-11 Pond	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
			Well Dry No Sample Collected														
			JR 8/17/17														

Sample ID: N/A Duplicate ID: N/A QA/QC Samples/ID: N/A COC Time: N/A

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: Y N	Field Filtered: Y N	COC Number:
Comments: well Dry		
Groundwater Color is		
Signature(s): [Signature]		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-02I	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 8/17/17	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 39		Screened/Open Interval Top: (ft BGS) 34 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 39 (ft BMP)			
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 36.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 27.83		Time: 0624	
						GW Disposal: GW-11 Pond	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1015	X		24.67		7.49		4.64		1.58		123		509		200	29.83	0 L
1020	X		24.53		7.46		4.88		0.54		120		255		200	29.97	1 L
1025	X		24.50		7.44		4.79		0.28		115		14.0		200	29.99	2 L
1030	X		24.49		7.37		4.75		0.00		104		5.7		200	29.98	3 L
1035	X		24.48		7.33		4.75		0.00		98		1.4		200	29.98	4 L
1040	X		24.48		7.31		4.74		0.00		93		0.9		200	29.99	5 L
1045	X		24.52		7.39		4.74		0.00		90		2.7		200	30.00	6 L

Sample ID: UFMW-02I-20170817 Duplicate ID: N/A

QA/QC Samples/ID: N/A

COC Time: 1045

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: ☒ Y ☐ N Field Filtered: ☒ Y ☐ N COC Number:

Comments:

Groundwater Color is

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-03S	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date:	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 26.03		Screened/Open Interval Top: (ft BGS) 24 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 29 (ft BMP)		MP Description: TOC	
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) (ft BMP)		GW Disposal: GW-11 Pond	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 26.02		Time:	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
			Well Dry No Sample Collected														
			Total Depth = 26.03														
			DTW = 26.02														

Sample ID: N/A Duplicate ID: N/A QA/QC Samples/ID: N/A COC Time: N/A

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

Groundwater Color is

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-03I	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 8/17/17	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 40		Screened/Open Interval Top: (ft BGS) 30 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 40 (ft BMP)		MP Description: TOC	
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 35 (ft BMP)		GW Disposal: GW-11 Pond	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 27.40		Time: 0629	

Time	PURGING X	SAMPLING X	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0655	X	X	20.67		7.30		4.03		0.00		93		17.2		200	27.40	0L
0700	X	X	21.01		7.29		4.03		0.00		74		4.4		200	27.63	1L
0705	X	X	21.37		7.28		4.04		0.00		61		3.7		200	27.60	2L
0710	X	X	21.39		7.29		4.04		0.00		54		2.2		200	27.61	3L
0715	X	X	21.45		7.29		4.04		0.00		46		1.4		200	27.58	4L
0720	X	X	21.46		7.29		4.03		0.00		42		1.4		200	27.57	5L
0725	X	X	21.41		7.33		4.03		0.00		38		1.4		200	27.56	6L
0730	X	X	21.37		7.32		4.02		0.00		38		1.3		200	27.57	7L
0730	X		parameters stabilized Collect sample UFMW-03I-20170817 + UFMW-03I-20170817-FD														

Sample ID: UFMW-03I-20170817

Duplicate ID: UFMW-03I-20170817-FD

QA/QC Samples/ID: N/A

COC Time:

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: (Y) N Field Filtered: (Y) N COC Number:

Comments:

A = 0.983
B = 7.722

Groundwater Color is

Clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-04S	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 8/16/17	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 29		Screened/Open Interval Top: (ft BGS) 24 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 29 (ft BMP)			
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 27.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 26.79		Time: 0611	
						GW Disposal: GW-11 Pond	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0825	X		27.45		7.35		4.08		1.50		160		49.9		100	26.79	0
0830	X		27.40		7.30		4.83		0.89		163		32.7		100	26.89	500
0835	X		27.30		7.27		4.66		0.22		150		0.00		100	26.92	1L
0840	X		27.20		7.24		4.65		0.21		151		0.00		100	26.94	1.5L
0845	X		27.09		7.22		4.62		0.20		152		0.00		100	26.94	2L
0850	X		27.00		7.20		4.60		0.18		150		0.00		100	26.94	2.5L
0850	X		parameters stabilized Collect sample UFMW-04S-20170816														

Sample ID: ~~UFMW-04S-20170816~~ Duplicate ID: N/A

QA/QC Samples/ID: N/A

COC Time: 0850

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: (Y) N Field Filtered: (Y) N COC Number:

Comments:

Groundwater Color is

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

±0.1 for pH: ±3% for Specific Conductivity and Temperature: ±10 mv for Redox Potential: ±10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-04I	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 8/16/17	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 39		Screened/Open Interval Top: (ft BGS) 34 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 39 (ft BMP)			
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 37.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 26.81		Time: 0613	
GW Disposal: GW-11 Pond							

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0740	X		26.70		7.44		4.31		1.77		130		480		200	26.81	0
0745	X		26.69		7.42		4.55		0.72		119		154		200	27.01	1L
0750	X		26.69		7.40		4.57		0.21		102		12.4		200	27.00	2L
0755	X		26.70		7.37		4.59		0.00		85		3.6		200	27.01	3L
0800	X		26.70		7.24		4.63		0.00		83		3.3		200	27.02	4L
0805	X		26.69		7.23		4.63		0.00		78		3.0		200	27.03	5L
0810	X		26.65		7.28		4.66		0.00		73		2.8		200	27.02	6L
0815	X		26.65		7.32		4.67		0.00		68		2.5		200	27.03	7L
0815	X		parameters achieved stabilization Collect sample UFMW-04I-20170816														

Sample ID: UFMW-04I-20170816 Duplicate ID: QA/QC Samples/ID: COC Time: 0815

Sample Container					Intended Analysis and/or Method	Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)	Field Decontamination: <input checked="" type="radio"/> Y <input type="radio"/> N	Field Filtered: <input checked="" type="radio"/> Y <input type="radio"/> N	COC Number:
Number	Material Code	Volume	Preservative						
AP Area Treatability Study Sampling Bottle Set						Comments: A = 1.003 B = 8.941			
					Groundwater Color is clear	Signature(s): <i>[Signature]</i>			

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ±0.1 for pH: ±3% for Specific Conductivity and Temperature: ±10 mv for Redox Potential: ±10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface C - Centigrade GS - Ground Surface mg/L - milligram/Liter min - Minute MP - Measuring Point QA - Quality Assurance
 BMP - Below Measuring Point COC - Chain of Custody ID - Identification mV - milli Volts ml - milliliter NTU - Nephelometric Units QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-04D	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 8/16/17	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 50		Screened/Open Interval Top: (ft BGS) 45 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 50 (ft BMP)			
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 47.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 26.78		Time: 0613	
						GW Disposal: GW-11 Pond	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0630	X		26.40		7.17		5.06		1.39		154		2.41		200	26.78	0
0635	X		26.61		7.23		5.10		0.16		138		6.0		200	26.99	1L
0640	X		26.64		7.24		5.11		0.04		130		3.6		200	27.03	2L
0645	X		26.66		7.26		5.11		0.00		115		2.7		200	27.02	3L
0650	X		26.69		7.45		5.12		0.00		86		2.2		200	27.00	4L
0655	X		26.68		7.44		5.12		0.00		82		1.9		200	27.02	5L
0700	X		26.69		7.42		5.12		0.00		79		1.7		200	27.03	6L
0705	X		26.69		7.42		5.12		0.00		75		1.8		200	27.02	7L
0705	X		parameters achieved stabilization collect sample UFMW-04D-20170816														

Sample ID: UFMW-04D-20170816			Duplicate ID: N/A			QA/QC Samples/ID: N/A			COC Time:			
Sample Container					Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)							
Field Decontamination: (Y) N					Field Filtered: (Y) N					COC Number:		
Comments:					A = 1.342 B = 5.770							
Groundwater Color is Clear					Signature(s): J R R							

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
 BMP - Below Measuring Point

C - Centigrade
 COC - Chain of Custody

GS - Ground Surface
 ID - Identification

mg/L - milligram/Liter
 mV - milli Volts

min - Minute
 ml - milliliter

MP - Measuring Point
 NTU - Nephelometric Units

QA - Quality Assurance
 QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-05S	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date:	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 30		Screened/Open Interval Top: (ft BGS) 25 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 30 (ft BMP)			
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 27.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 27.19		Time: 0605	
						GW Disposal: GW-11 Pond	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0530	X		27.40		7.17		6.95		1.45		150		156		100	27.19	0L
0535	X		27.30		7.18		6.90		0.75		148		191		100	27.25	50
0540	X		27.27		7.18		6.80		0.40		146		75.3		100	27.30	1L
0545	X		27.20		7.19		6.75		0.35		145		8.4		100	27.32	1.5L
0550	X		27.17		7.19		6.72		0.33		144		7.2		100	27.34	2L
0555	X		27.14		7.20		6.72		0.31		145		6.8		100	27.35	2.5L
0600	X		27.13		7.21		6.72		0.30		145		6.4		100	27.35	3L
0600	X		parameters achieved stabilization collect sample UFMW-055-20170816														

Sample ID: UFMW-055-20170816 Duplicate ID: N/A QA/QC Samples/ID: N/A COC Time: 0600

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: (Y) N	Field Filtered: (Y) N	COC Number:
Comments:		
Groundwater Color is clear		
Signature(s): <i>[Signature]</i>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
 BMP - Below Measuring Point

C - Centigrade
 COC - Chain of Custody

GS - Ground Surface
 ID - Identification

mg/L - milligram/Liter
 mV - milli Volts

min - Minute
 ml - milliliter

MP - Measuring Point
 NTU - Nephelometric Units

QA - Quality Assurance
 QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-05I	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 8/16/17	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 40		Screened/Open Interval Top: (ft BGS) 35 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 40 (ft BMP)			
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 37.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 27.07		Time: 0606	
						GW Disposal: GW-11 Pond	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0420	X		26.67		7.36		5.12		1.29		36		230		200	27.07	0
0425	X		26.79		7.35		5.15		0.71		13		74.9		200	27.19	1L
0430	X		26.73		7.24		5.09		2.34		11		5.9		200	27.25	2L
0435	X		26.71		7.21		5.08		0.26		12		3.6		200	27.29	3L
0440	X		26.75		7.20		5.09		0.17		13		3.0		200	27.31	4L
0445	X		26.79		7.18		5.10		0.03		12		3.4		200	27.32	5L
0450	X		26.81		7.18		5.09		0.02		11		3.6		200	27.31	6L
0455	X		26.79		7.19		5.08		0.01		11		3.3		200	27.32	7L
0500	X		26.77		7.18		5.08		0.00		12		2.9		200	27.33	8L
0500	X		parameters stabilized (3 consecutive readings) collect sample UFMW-05I-20170816														

Sample ID: UFMW-05I-20170816 Duplicate ID: N/A

QA/QC Samples/ID: N/A

COC Time: 0500

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: ☒ N Field Filtered: ☒ N COC Number:

Comments:

A = 0.616
B = 4.420
Groundwater Color is clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-05D	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date:	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 50		Screened/Open Interval Top: (ft BGS) 45 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 50 (ft BMP)			
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 47.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 26.86		Time: 0607	
GW Disposal: GW-11 Pond							

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1255	X		28.01		7.23		6.17		1.70		154		82.0		200	26.86	0
1300	X		27.64		7.21		6.55		0.25		155		8.9		200	27.05	1L
1305	X		27.56		7.18		6.54		0.05		150		1.5		200	27.10	2L
1310	X		27.48		7.17		6.52		0.00		138		0.9		200	27.12	3L
1315	X		27.51		7.15		6.52		0.00		130		0.5		200	27.12	4L
1320	X		27.51		7.16		6.48		0.00		124		0.4		200	27.13	5L
1325	X		27.49		7.20		6.47		0.00		116		0.5		200	27.13	6L
1325	X		parameters stabilized (3 consecutive readings) collect sample UFMW-05D-20170815														

Sample ID: UFMW-05D-20170815 Duplicate ID: N/A

QA/QC Samples/ID: N/A COC Time: 1325

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: (Y) N Field Filtered: (Y) N COC Number:

Comments:

A = 0.795

B = 2.316

Groundwater Color is

Clear

Signature(s):

J R R

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-06S	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 8/15/17	
Well Depth (ft BGS):	MP Distance AGS (ft):	Well Depth (ft BMP): 30		Screened/Open Interval Top:		(ft BGS) 25	(ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge aka):		Screened/Open Interval Bottom:		(ft BGS) 30	(ft BMP)	
Pump and Tubing Type: QED Sample Pro with Poly Tubing		Pump Intake Depth:		(ft BGS) 27.5	(ft BMP)	MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox		Depth to Water Before Pump Installation (ft BMP): 26.87		Time:		GW Disposal: GW-11 Pond	

Time	PURGING X	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1115	X		31.67		6.92		5.46		1.75		235		0.0		100	26.87	0
1120	X		29.94		6.91		5.49		0.80		217		516		100	27.03	500
1125	X		29.46		6.91		5.47		0.57		205		205		100	27.12	1L
1130	X		29.17		6.91		5.48		0.27		193		87.7		100	27.12	1.5L
1135	X		29.12		6.92		5.48		0.14		185		61.5		100	27.12	2L
1140	X		29.07		6.95		5.47		0.03		181		43.1		100	27.11	2.5L
1145	X		29.07		6.99		5.47		0.00		181		36.4		100	27.11	3L
1150	X		29.05		7.02		5.45		0.00		182		28.3		100	27.11	3.5L
1155	X		29.09		7.05		5.46		0.00		182		25.9		100	27.12	4L
1200	X		29.11		7.06		5.46		0.00		183		24.6		100	27.12	4.5L
1205	X		29.11		7.07				0.00		182		23.1		100	27.12	5L
1205	X		parameters stabilized (3 consecutive readings) collect sample UFMW-06S-20170815														

Sample ID: UFMW-06S-20170815 Duplicate ID: N/A QA/QC Samples/ID: N/A COC Time: 1205

Sample Container					Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method	Field Decontamination: <input checked="" type="radio"/> Y <input type="radio"/> N	Field Filtered: <input checked="" type="radio"/> Y <input type="radio"/> N	COC Number:
AP Area Treatability Study Sampling Bottle Set					Comments: A = 1.139 B = 0.879		
					Groundwater Color is Clear		
Signature(s):							

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-06I	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 8/15/17	
Well Depth (ft BGS):	MP Distance AGS (ft):	Well Depth (ft BMP): 40		Screened/Open Interval Top:		(ft BGS) 35	(ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb):			Screened/Open Interval Bottom:		(ft BGS) 40	(ft BMP)
Pump and Tubing Type: QED Sample Pro with Poly Tubing			Pump Intake Depth:		(ft BGS) 37.5	(ft BMP)	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox			Depth to Water Before Pump Installation (ft BMP): 26.89		Time: 0557		MP Description: TOC
							GW Disposal: GW-11 Pond

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0915	X		27.26		6.98		5.78		1.50		283		15.3		200	26.89	0
0920	X		26.88		7.22		5.67		1.00		241		0.6		200	27.02	1L
0925	X		26.79		7.24		5.67		0.74		220		0.0		200	27.04	2L
0930	X		26.91		7.25		5.69		0.62		200		0.0		200	27.04	3L
0935	X		26.35		7.23		5.74		0.57		195		0.0		200	27.03	4L
0940	X		26.25		7.18		5.73		0.54		190		0.0		200	27.05	5L
0945	X		26.65		7.18		5.71		0.51		185		0.0		200	27.06	6L
0945	X		parameters stabilized (3 consecutive readings) collect sample UFMW-06I-20170815 + UFMW-06I-20170815-FD														

Sample ID: UFMW-06I-20170815 Duplicate ID: UFMW-06I-20170815-FD QA/QC Samples ID: N/A COC Time: 0945

Sample Container					Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method	Field Decontamination: (Y) N	Field Filtered: (Y) N	COC Number:
AP Area Treatability Study Sampling Bottle Set					Comments:		
					Groundwater Color is clear		
					Signature(s): <i>[Signature]</i>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-06D	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 8/15/17	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 50		Screened/Open Interval Top: (ft BGS) 45 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 50 (ft BMP)			
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 47.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 27.23		Time: 0600	
						GW Disposal: GW-11 Pond	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0755	X		27.80		7.22		6.39		1.52		183		170		200	27.23	0
0800	X		27.08		7.26		6.45		0.70		180		17.5		200	27.39	1L
0805	X		26.98		7.28		6.47		0.72		178		5.3		200	27.40	2L
0810	X		26.71		7.27		6.50		0.70		177		1.9		200	27.38	3L
0815	X		26.61		7.27		6.52		0.71		178		1.1		200	27.39	4L
0815	X		Parameters achieved stabilization. Collect sample UFMW-06D-20170815														

Sample ID: UFMW-06D-20170815 Duplicate ID:

QA/QC Samples/ID: MS/MSD

COC Time: 0815

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: (Y) N Field Filtered: (Y) N COC Number:

Comments:

Rhodamine (A) 1.031

Groundwater Color is

clear Fluorimetry (B) = 0.923

Signature(s):

[Signature]

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control

Soil Flushing IRM - Daily/Bi-Weekly GW Gauging Form

Project Name: NERT Task K01 - Soil Flushing IRM

Date: 10/2/17

Address: 510 S. 4th Street, Henderson, NV 89015

Gate Access Code: 6932

Technician: K. Hansen

Weather: Sunny & 75°

Monitoring Wells

Well ID	Depth to Water (ft btoc)	Total Depth of Well (ft btoc)	Notes (well condition, etc.)
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PLOT 1 (NORTH)

Injection Wells

UFIW-01S			
UFIW-01I			
UFIW-01D			
UFIW-02S			
UFIW-02I			
UFIW-02D			
UFIW-03S			
UFIW-03I			
UFIW-03D			
UFIW-04S			
UFIW-04I			
UFIW-04D			

Monitoring Wells

UFMW-01S	Dry	1105	
UFMW-01I	29.38	1106	
UFMW-01D	29.53	1107	
UFMW-02S	Dry	1110	
UFMW-02I	30.21	1111	
UFMW-02D	30.24	1112	
UFMW-03S	Dry	1114	
UFMW-03I	28.73	1115	
UFMW-03D	28.77	1116	

Extraction Wells

E1-1	29.68	0825	
E1-2	41.22	0828	
E1-3	39.50	0832	

PLOT 2 (SOUTH)

Injection Wells

UFIW-05S			
UFIW-05I			
UFIW-05D			
UFIW-06S			
UFIW-06I			
UFIW-06D			
UFIW-07S			
UFIW-07I			
UFIW-07D			
UFIW-08S			
UFIW-08I			
UFIW-08D			

Monitoring Wells

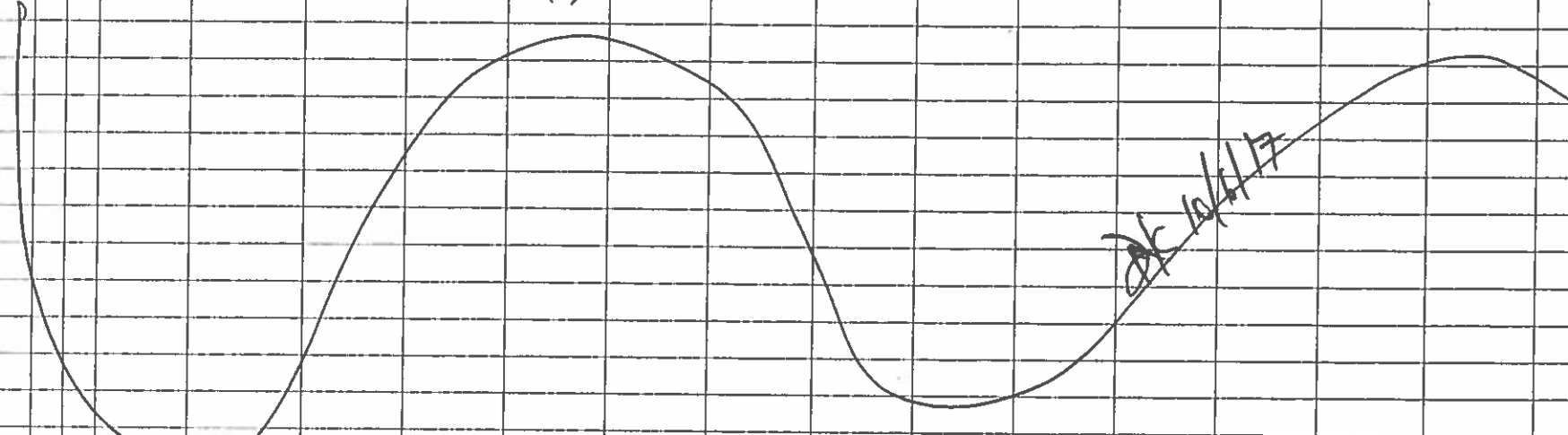
UFMW-04S	28.37	1053	
UFMW-04I	28.49	1054	
UFMW-04D	28.57	1055	
UFMW-05S	29.01	1056	
UFMW-05I	28.90	1057	
UFMW-05D	28.70	1058	
UFMW-06S	28.38	1059	
UFMW-06I	28.46	1100	
UFMW-06D	28.75	1101	

Extraction Wells

E2-1	42.57	0928	
E2-2	40.70	0945	
E2-3	39.74	0954	
E2-4	40.36	1007	
E2-5	43.44	1017	



Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M/3		Well ID: UFMN-015	
Field Samplers: D. Keady				Recorded by: D. Keady		Date: 10/6/17	
Well Depth (ft BGS): —		MP Distance AGS (ft): —		Well Depth (ft BMP): 29		Screened/Open Interval Top: — (ft BGS) 24 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb): —		Screened/Open Interval Bottom: —		(ft BGS) 29 (ft BMP)	
Pump and Tubing Type: —			Pump Intake Depth: — (ft BGS)		— (ft BMP)		MP Description: TOC
Equipment Decon. Method: —			Depth to Water Before Pump Installation (ft BMP): DRY		Time: 1105 (12/17)		GW Disposal: —

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
WELL OBSERVED TO BE DRY; UNABLE TO SAMPLE.																	
																	

Sample ID: _____			Duplicate ID: _____		QA/QC Samples/ID: _____		COC Time: _____	
Sample Container					Material Codes: VOA = 40 ml glass vial; AG =Amber Glass; CG =Clear Glass; PE=polyethylene; O=Other (Specify)			
Number	Material Code	Volume			Preservative	Intended Analysis and/or Method		
					<div style="border: 1px solid black; padding: 5px; min-height: 100px;"> Comments: <div style="font-size: 1.5em; margin-top: 10px;">Well dry.</div> <div style="font-size: 1.5em; margin-top: 10px;">DO 11</div> </div>			
*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity								

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



TRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

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Task Name: <u>AP Area Treatability Study</u>		Task Manager: <u>G. Roemer</u>		Task No: <u>M13</u>		Well ID: <u>UFMW-01I</u>	
Field Samplers: <u>D. Keady</u>				Recorded by: <u>D. Keady</u>		Date: <u>10/6/17</u>	
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>39</u>		Screened/Open Interval Top: <u>—</u>		(ft BGS) <u>34</u> (ft BMP)	
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>		Screened/Open Interval Bottom: <u>—</u>		(ft BGS) <u>39</u>		(ft BMP)
Pump and Tubing Type: <u>RED Bladder and poly tubing</u>		Pump Intake Depth: <u>—</u>		(ft BGS) <u>36.5</u>		(ft BMP)	
Equipment Decon. Method: <u>3 bucket rinse w/ LiquiBox</u>		Depth to Water Before Pump Installation (ft BMP): <u>29.38</u>		Time: <u>11/10/10/21</u>		MP Description: <u>TOC</u>	
						GW Disposal: <u>GW-11 pond</u>	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity $\mu\text{mhos/cm}$		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0714	X		22.63		7.12		2.98		0.00/0.35		208		3.3		200	29.97	
0719	X		22.90		7.34		2.98		0.00/0.32		169		0.0		200	29.97	
0724	X		22.94		7.37		2.98		0.00/0.29		145		0.0		200	29.97	
0729	X		22.98		7.38		2.98		0.00/0.27		130		0.0		200	29.97	
0734	X		22.93		7.39		2.98		0.00/0.25		120		0.0		200	29.97	
0739	X		22.95	✓	7.40	✓	2.98	✓	0.00/0.24	✓	110	✓	0.0	✓	200	29.97	
0745	X		STABILIZATION														

Sample ID: UFMW-01I-20171006Duplicate ID: —QA/QC Samples/ID: —COC Time: 0745

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

groundwater
color : clear

Signature(s): D. Keady

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

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Task Name: <u>AP Area Treatability Study</u>		Task Manager: <u>G. Roemer</u>		Task No: <u>M13</u>		Well ID: <u>UFMW-01D</u>	
Field Samplers: <u>D. Keady</u>				Recorded by: <u>D. Keady</u>		Date: <u>10/5/17</u>	
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>49</u>	Screened/Open Interval Top: <u>—</u>		(ft BGS) <u>49</u>	(ft BMP)	
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>		Screened/Open Interval Bottom: <u>—</u>		(ft BGS) <u>49</u>	(ft BMP)	
Pump and Tubing Type: <u>QED Bladder Pump w/ poly tubing</u>		Pump Intake Depth: <u>—</u>		(ft BGS) <u>46.5</u>	(ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>3 bucket rinse w/ ligator</u>		Depth to Water Before Pump Installation (ft BMP): <u>29.53</u>		Time: <u>1107/102/17</u>		GW Disposal: <u>GW-11</u>	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1419	X		26.84		7.42		4.55		1.26/0.26		164		27.3		200	30.15	0
1424	X		26.02		7.43		4.57		0.30/0.22		162		116		200	30.12	1000
1429	X		25.65		7.44		4.57		0.10/0.19		159		38.2		200	30.10	2000
1434	X		25.52		7.44		4.57		0.01/0.19		158		18.6		200	30.10	3000
1439	X		25.42		7.44		4.58		0.20/0.18		156		6.4		200	30.10	4000
1444	X		25.31	✓	7.44	✓	4.58	✓	0.20/0.18	✓	154	✓	0.0	✓ (15)	200	30.10	5000
1450	X		STABILIZATION														

Sample ID: UFMW-01D-20171005 Duplicate ID: — QA/QC Samples/ID: — COC Time: 1450

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG =Amber Glass; CG =Clear Glass; PE=polyethylene; O=Other (Specify)		
Field Decontamination: Y N	Field Filtered: Y N	COC Number:
Comments:		
groundwater color: clear		
Signature(s): <u>[Signature]</u>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

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BMP - Below Measuring Point

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COC - Chain of Custody

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ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



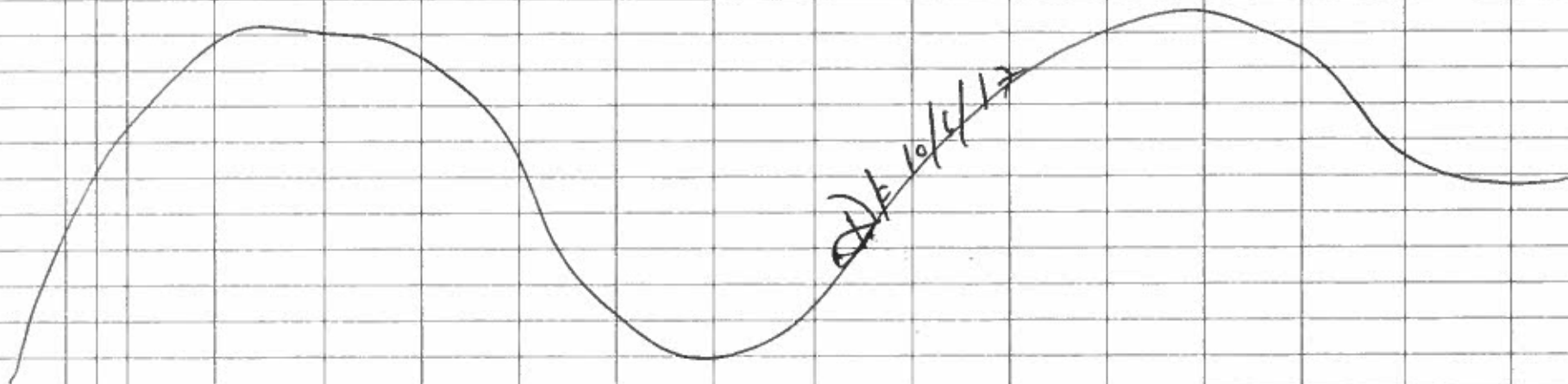
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LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>MB</u>	Well ID: <u>UFW-025</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>10/6/17</u>
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>29</u>	Screened/Open Interval Top: <u>—</u> (ft BGS) <u>24</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>—</u>	(ft BGS) <u>29</u> (ft BMP)
Pump and Tubing Type: <u>—</u>	Pump Intake Depth: <u>—</u> (ft BGS)	(ft BMP)	MP Description: <u>TOC</u>
Equipment Decon. Method: <u>—</u>	Depth to Water Before Pump Installation (ft BMP): <u>DRY</u>	Time: <u>1110 (10/2/17)</u>	GW Disposal: <u>—</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
WELL OBSERVED TO BE DRY; UNABLE TO SAMPLE.																	
																	

Sample ID: — Duplicate ID: — QA/QC Samples/ID: — COC Time: —

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: Y N	Field Filtered: Y N	COC Number: <u> </u>
Comments: <u>Well dry.</u>		
Signature(s): <u>[Signature]</u>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

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BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

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mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
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QC - Quality Control



LOW FLOW GROUNDWATER SAMPLING LOG

Task Name: <u>AP Area Treatability Study</u>		Task Manager: <u>G. Roemer</u>		Task No: <u>M13</u>		Well ID: <u>UFMW-02I</u>	
Field Samplers: <u>D. Keady</u>				Recorded by: <u>D. Keady</u>		Date: <u>10/6/17</u>	
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>39</u>	Screened/Open Interval Top: <u>—</u>		(ft BGS) <u>39</u>	(ft BMP)	
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>		Screened/Open Interval Bottom: <u>—</u>		(ft BGS) <u>37</u>	(ft BMP)	
Pump and Tubing Type: <u>GED Bladder Pump and poly tubing</u>		Pump Intake Depth: <u>—</u>	(ft BGS)	<u>36.5</u>	(ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>3 bucket RMC w/ Lig-Max</u>		Depth to Water Before Pump Installation (ft BMP): <u>30.21</u>		Time: <u>1111/10/2/17</u>		GW Disposal: <u>GW-11 Pond</u>	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity μ S/cm		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0920	X		23.93		7.50		3.94		0.84/0.30		172		711		200	30.90	0
0925	X		23.88		7.51		4.01		0.07/0.24		178		178		200	30.91	1000
0930	X		23.87		7.52		4.03		0.00/0.24		164		79.5		200	30.92	2000
0935	X		23.87		7.52		4.06		0.00/0.22		161		36.8		200	30.94	3000
0940	X		23.85	✓	7.52	✓	4.07	✓	0.00/0.20	✓	158	✓	5.6	✓	200	30.95	4000
0945	X		23.86		7.52		4.08		0.00/0.19		156		0.0	(15)	200	30.95	5000
0950	X	STABILIZATION															

Sample ID: UFMW-02I-20171006 Duplicate ID: — QA/QC Samples/ID: — COC Time: 0950

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: Y N	Field Filtered: Y N	COC Number:
Comments: <u>groundwater color = clear</u>		
Signature(s): <u>[Signature]</u>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
 BMP - Below Measuring Point

C - Centigrade
 COC - Chain of Custody

GS - Ground Surface
 ID - Identification

mg/L - milligram/Liter
 mV - milli Volts

min - Minute
 ml - milliliter

MP - Measuring Point
 NTU - Nephelometric Units

QA - Quality Assurance
 QC - Quality Control



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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

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Task Name: <u>AP Area Treatability Study</u>		Task Manager: <u>G. Roemer</u>		Task No: <u>M13</u>		Well ID: <u>UFMW-02D</u>	
Field Samplers: <u>D. Keady</u>				Recorded by: <u>D. Keady</u>		Date: <u>10/6/17</u>	
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>49</u>		Screened/Open Interval Top: <u>—</u>		(ft BGS) <u>49</u> (ft BMP)	
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>		Screened/Open Interval Bottom: <u>—</u>		(ft BGS) <u>49</u>		(ft BMP)
Pump and Tubing Type: <u>QED Bladder Pump and poly tubing</u>		Pump Intake Depth: <u>—</u>		(ft BGS) <u>46.5</u>		MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>3 bucket rinse w/ Liquefix</u>		Depth to Water Before Pump Installation (ft BMP): <u>30.24</u>		Time: <u>1112/10/2/17</u>		GW Disposal: <u>GW-11 Pond</u>	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0822	X		24.11		7.47		5.17		0.87/0.23		181		25.6		200	31.09	0
0827	X		24.40		7.49		5.17		0.14/0.27		174		75.4		200	31.01	1000
0832	X		24.45		7.49		5.18		0.00/0.27		170		8.8		200	30.98	2000
0837	X		24.50	✓	7.50	✓	5.18	✓	0.00/0.25		166		0.0	✓	200	30.92	3000
0842	X		24.56	✓	7.50	✓	5.18	✓	0.00/0.23	✓	162	✓	0.0	✓ (cr)	200	30.92	4000
0845		X	STABILIZATION														

Sample ID: UFMW-02D-20171006 Duplicate ID: — QA/QC Samples/ID: — COC Time: 0845

Sample Container					Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)	
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method	Field Decontamination: Y N	Field Filtered: Y N
					COC Number:	
AP Area T-S Sampling Set					Comments:	
					groundwater color: clear	
Signature(s): <u>D. Keady</u>						

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
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AP Area

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: In-Situ Chromium Treatability Study	Task Manager: Anil Appaswami G. Roemer	Task No: M12 M13	Well ID: CTMW-008 UFMW-035
Field Samplers: Jeff Richeson D. Keady	Recorded by: Jeff Richeson D. Keady	Date: 10/6/17	
Well Depth (ft BGS): —	MP Distance AGS (ft): —	Well Depth (ft BMP): 54.25 26	Screened/Open Interval Top: — (ft BGS) 26 26 (ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb): —	Screened/Open Interval Bottom: —	(ft BGS) 26 26 (ft BMP)
Pump and Tubing Type: QED Sample Pro (bladder) with poly tubing	Pump Intake Depth: — (ft BGS)	— (ft BMP)	MP Description: TOC
Equipment Decon. Method: 3 Bucket Rinse with Liquinox	Depth to Water Before Pump Installation (ft BMP): DRY	Time: 1114/10/2/17	GW Disposal: GW-TT Pond

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
WELL OBSERVED TO BE DRY; UNABLE TO SAMPLE.																	

Sample ID: _____ Duplicate ID: _____ QA/QC Samples/ID: _____ COC Time: _____

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
In-Situ Chromium Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number: _____

Comments:

Ferrous Iron: _____

Sulfide: _____

Groundwater Color is _____

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area T.S.		Task Manager: Arut Appaswami		Task No: M13	Well ID: UFMW-03I
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson	Date: 10/6/17
Well Depth (ft BGS): 2	MP Distance AGS (ft): —	Well Depth (ft BMP): 40	Screened/Open Interval Top: —	(ft BGS) 30	(ft BMP)
Well Diameter (in): 2"	PID/FID Readings Beneath Inner Cap (ppm cge akb): —	Screened/Open Interval Bottom: —	(ft BGS) 40	(ft BMP)	
Pump and Tubing Type: QED Bladder w/ poly tubing	Pump Intake Depth: —	(ft BGS) 35	(ft BMP)	MP Description: TOC	
Equipment Decon. Method: 3 Bucket rinse	Depth to Water Before Pump Installation (ft BMP): 28.70	Time: 0825	GW Disposal: GW-11 Pond		

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0830	X		21.70		7.29		3.89		2.79/4.02		101		231		200	28.70	0
0835	X		21.12		7.22		3.89		1.56/3.24		101		53.4		200	28.81	1L
0840	X		20.99		7.22		3.89		1.52/2.56		100		9.2		200	28.74	2L
0845	X		20.98		7.22		3.89		1.55/2.89		100		0.0		200	28.72	3L
0850	X		20.97		7.21		3.90		1.60/3.05		100		0.0		200	28.74	4L
0855	X		20.92	✓	7.21	✓	3.90	✓	1.59/3.06	✓	100	✓	0.0	✓	200	28.73	5L

2/19/6/17

Sample ID: UFMW-03T-20171006

Duplicate ID: N/A

QA/QC Samples/ID: 217

COC Time: 0855

[illegible]

Material Codes: VOA = 40 ml glass vial; AG =Amber Glass; CG =Clear Glass; PE=polyethylene; O=Other (Specify)

Field Decontamination: <input checked="" type="radio"/> Y <input type="radio"/> N	Field Filtered: <input checked="" type="radio"/> Y <input type="radio"/> N	COC Number:
---	--	-------------

Comments:

an color is clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



TRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-045</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>10/5/17</u>
Well Depth (ft BGS): <u>2</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>29</u>	Screened/Open Interval Top: <u>—</u> (ft BGS) <u>29</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>—</u>	(ft BGS) <u>29</u> (ft BMP)
Pump and Tubing Type: <u>AED Bladder Pump and poly tubing</u>	Pump Intake Depth: <u>—</u> (ft BGS) <u>26.5</u> (ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>3 bucket rinse w/ liquor</u>	Depth to Water Before Pump Installation (ft BMP): <u>28.37</u>	Time: <u>10:10/17</u>	GW Disposal: <u>GW-11 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0939	X		25.71		7.30		4.44		0.94		162		0.0		100	NM	0
0944	X		26.41		7.27		4.26		0.42		157		0.0		100	NM	500
0949	X		26.99		7.27		4.19		0.32		154		0.0		100	NM	1000
0954	X		26.67		7.30		4.24		0.21		158		0.0		100	NM	1500
0959	X		26.52	✓	7.30	✓	4.25	✓	0.19	✓	161	✓	0.0	✓	100	NM	2000
1000	X		STABILIZATION														

Sample ID: UFMW-045-20171005Duplicate ID: —QA/QC Samples/ID: —COC Time: 1000

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area T-5 Sampling Site				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

groundwater color = clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface

C - Centigrade

GS - Ground Surface

mg/L - milligram/Liter

min - Minute

MP - Measuring Point

QA - Quality Assurance

BMP - Below Measuring Point

COC - Chain of Custody

ID - Identification

mV - milli Volts

ml - milliliter

NTU - Nephelometric Units

QC - Quality Control



TRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study Task Manager: G. Roemer Task No: M13 Well ID: UFMW-04I

Field Samplers: D. Keady Recorded by: D. Keady Date: 10/5/17

Well Depth (ft BGS): — MP Distance AGS (ft): — Well Depth (ft BMP): 39 Screened/Open Interval Top: — (ft BGS) 34 (ft BMP)

Well Diameter (in): 2 PID/FID Readings Beneath Inner Cap (ppm cge akb): — Screened/Open Interval Bottom: — (ft BGS) 39 (ft BMP)

Pump and Tubing Type: QED Bladder pump and poly tubing Pump Intake Depth: — (ft BGS) 36.5 (ft BMP) MP Description: TDC

Equipment Decon. Method: 3 bucket rinse w/ Liquinox Depth to Water Before Pump Installation (ft BMP): 28.99 Time: 1054/1021 RW Disposal: GW-11 Pond

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity μ (S/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0825	X		24.63		7.29		3.96		1.02/0.24		171		35.4		200	28.60	0
0830	X		25.91		7.29		3.99		0.23/0.16		164		0.0		200	28.60	1000
0835	X		26.22		7.30		4.01		0.00/0.12		158		0.0		200	28.60	2000
0840	X		26.27		7.30		4.02		0.00/0.11		156		0.0		200	28.60	3000
0845	X		26.37	✓	7.31	✓	4.02	✓	0.00/0.10	✓	153	✓	0.0	✓	200	28.60	4000
0850	X		STABILIZATION														

Sample ID: UFMW-04I-2071005 Duplicate ID: —QA/QC Samples/ID: —COC Time: 0850

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number: —

Comments:

groundwater:
color: clear

Signature(s):

D. Keady

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



LOW FLOW GROUNDWATER SAMPLING LOG

Task Name: <u>AP Area Treatability Study</u>		Task Manager: <u>G. Roemer</u>		Task No: <u>M13</u>		Well ID: <u>UFMW-04D</u>	
Field Samplers: <u>D. Keady</u>				Recorded by: <u>D. Keady</u>		Date: <u>10/5/17</u>	
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>49</u>		Screened/Open Interval Top: <u>—</u>		(ft BGS) <u>49</u> (ft BMP)	
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>		Screened/Open Interval Bottom: <u>—</u>		(ft BGS) <u>49</u> (ft BMP)		
Pump and Tubing Type: <u>QED Bladder pump and poly tubing</u>		Pump Intake Depth: <u>—</u>		(ft BGS) <u>46.5</u>		(ft BMP)	
Equipment Decon. Method: <u>3 bucket rinse w/ Ligno-X</u>		Depth to Water Before Pump Installation (ft BMP): <u>28.57</u>		Time: <u>10:55/10:21/17</u>		MP Description: <u>TOC</u>	
						GW Disposal: <u>GW-11 Pond</u>	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0719	X		22.49		6.77		4.99		0.56/0.23		231		730		200	28.83	0
0724	X		23.76		7.32		4.95		0.01/0.20		201		98.0		200	28.84	1000
0729	X		24.02		7.38		4.92		0.00/0.18		189		18.2		200	28.84	2000
0734	X		24.26		7.40		4.92		0.00/0.17		180		0.0		200	28.84	3000
0739	X		24.43	✓	7.41	✓	4.92	✓	0.00/0.17	✓	173	✓	0.0	✓ (<5)	200	28.84	4000
0745	X		STABILIZATION														

Sample ID: UFMW-04D-20171005 Duplicate ID: UFMW-04D-20171005-FD QA/QC Samples/ID: — COC Time: 0745

Sample Container					Preservative	Intended Analysis and/or Method
Number	Material Code	Volume				
AP Area T.S. Sampling Set						
Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)						
Field Decontamination: Y N Field Filtered: Y N COC Number:						
Comments: groundwater color = clear						
Signature(s): <u>[Signature]</u>						

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



QA - Quality Assurance
QC - Quality Control



TRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-05I</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>10/9/17</u>
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>40</u>	Screened/Open Interval Top: <u>—</u> (ft BGS) <u>35</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>—</u>	(ft BGS) <u>40</u> (ft BMP)
Pump and Tubing Type: <u>QED Bladder pump and poly tubing</u>	Pump Intake Depth: <u>—</u> (ft BGS)	<u>37.5</u> (ft BMP)	MP Description: <u>70C</u>
Equipment Decon. Method: <u>3 bucket rinse w/ Lignox</u>	Depth to Water Before Pump Installation (ft BMP): <u>28.90</u>	Time: <u>1057/10/2/17</u>	GW Disposal: <u>Can - 11 Pond</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity μ (S/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1349	X		27.77		7.09		5.29		0.94/0.82		125		228		200	29.12	0
1354	X		27.68		7.10		5.33		0.66/0.62		117		73.5		200	29.13	1000
1359	X		27.63		7.12		5.34		0.59/0.58		112		36.3		200	29.13	2000
1404	X		27.63		7.12		5.35		0.59/0.57		110		24.2		200	29.13	3000
1409	X		27.59		7.12		5.36		0.49/0.53		109		11.7		200	29.13	4000
1414	X		27.50	✓	7.13	✓	5.39	✓	0.48/0.51	✓	109	✓	3.8	✓(45)	200	29.13	5000
1420	X	STABILIZATION															

Sample ID: UFMW-05I-20171004Duplicate ID: —QA/QC Samples/ID: —COC Time: 1420

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area T.S. Sampling Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)
 Field Decontamination: Y N Field Filtered: Y N COC Number: —

Comments:

groundwater
color: clear

Signature(s):

[Signature]

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



TRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task Manager: <u>G. Roemer</u>	Task No: <u>M13</u>	Well ID: <u>UFMW-05D</u>
Field Samplers: <u>D. Keady</u>		Recorded by: <u>D. Keady</u>	Date: <u>10/4/17</u>
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>50</u>	Screened/Open Interval Top: <u>—</u> (ft BGS) <u>45</u> (ft BMP)
Well Diameter (in): <u>2</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>	Screened/Open Interval Bottom: <u>—</u>	(ft BGS) <u>50</u> (ft BMP)
Pump and Tubing Type: <u>GED Bladder pump and poly tubing</u>	Pump Intake Depth: <u>—</u> (ft BGS)	<u>47.5</u> (ft BMP)	MP Description: <u>TOC</u>
Equipment Decon. Method: <u>3 bucket rinse w/ 10% bleach</u>	Depth to Water Before Pump Installation (ft BMP): <u>28.70</u>	Time: <u>1058/10/4/17</u>	SW Disposal: <u>GW-11/Bnd</u>

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity m (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1234	X		28.52		7.16		5.86		1.00/0.64		114		287		200	28.93	0
1239	X		27.75		7.16		5.89		0.87/0.47		112		148		200	28.95	1000
1244	X		27.55		7.15		5.91		0.97/0.38		111		80.5		200	28.96	2000
1249	X		27.44		7.15		5.93		0.88/0.23		111		54.9		200	28.96	3000
1254	X		27.48		7.15		5.89		0.86/0.24		112		34.7		200	28.96	4000
1259	X		27.44		7.15		5.87		0.82/0.25		112		24.9		200	28.96	5000
1304	X		27.39		7.15		5.89		0.85/0.27		114		15.8		200	28.96	6000
1309	X		27.40		7.15		5.90		0.84/0.28		114		9.7		200	28.96	7000
1314	X		27.38	✓	7.14	✓	5.90	✓	0.81/0.30	✓	115	✓	4.3	✓ (15)	200	28.96	8000
1320	X		STABILIZATION														

Sample ID: UFMW-05D-20171004Duplicate ID: —QA/QC Samples/ID: —COC Time: 1320

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

groundwater color: clear

Signature(s):

D. Keady

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

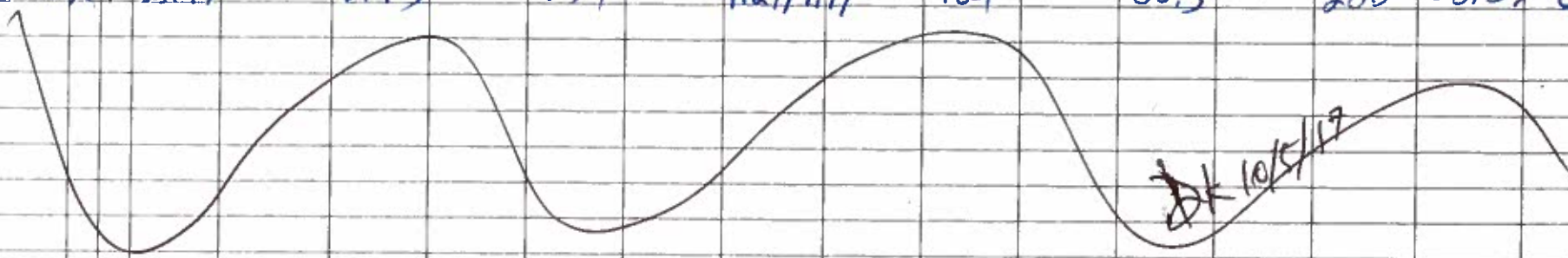
± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



Task Name: <u>AP Area T.S.</u>		Task Manager: <u>Arul Appaswamy</u>		Task No: <u>m13</u>	Well ID: <u>UFMW-065</u>
Field Samplers: <u>Jeff Richeson</u>				Recorded by: <u>J. Richeson</u>	Date: <u>10/5/17</u>
Well Depth (ft BGS): <u>—</u>	MP Distance AGS (ft): <u>—</u>	Well Depth (ft BMP): <u>30</u>	Screened/Open Interval Top: <u>—</u>	(ft BGS) <u>25</u>	(ft BMP)
Well Diameter (in): <u>2"</u>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <u>—</u>		Screened/Open Interval Bottom: <u>—</u>	(ft BGS) <u>30</u>	(ft BMP)
Pump and Tubing Type: <u>RED bladder w/ poly tubing</u>	Pump Intake Depth: <u>—</u>	(ft BGS) <u>27.5</u>	(ft BMP)	MP Description: <u>TOC</u>	
Equipment Decon. Method: <u>3 bucket rinse</u>	Depth to Water Before Pump Installation (ft BMP): <u>28.38</u>	Time: <u>1059/1020</u>	GW Disposal: <u>GW-11 pond</u>		

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0725	X		22.53		6.71		6.53		4.01/7.87		143		465		200	28.45	0
0730	X		23.13		6.13		6.44		1.75/2.42		157		182		200	28.56	1L
0735	X		23.50		6.07		6.39		1.51/2.29		158		98.0		200	28.58	2L
0740	X		23.81		6.02		6.36		1.34/2.18		160		54.1		200	28.56	3L
0745	X		23.99		5.98		6.36		1.32/2.11		161		56.3		200	28.58	4L
0750	X		23.99		5.94		6.34		1.28/2.04		163		58.2		200	28.58	5L
0755	X	X	23.97	✓	5.93	✓	6.34	✓	1.24/1.99	✓	164	✓	60.3	✓	200	28.57	6L



 DK 10/5/17
 msl/USD

Sample ID: UFMW-065-20171005 Duplicate ID: N/A

QA/QC Samples/ID: UFMW-065-2017/2005 COC Time: 0755

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area T.S. Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG =Amber Glass; CG =Clear Glass; PE=polyethylene; O=Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

GW color is clear (silty)

Signature(s):

INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: ~~Leach Chromium~~ Treatability Study Task Manager: ~~Arul Araswami~~ G. Roemer Task No: ~~M12~~ M13 Well ID: ~~UFMW-06I~~ UFMW-06I
 Field Samplers: Jeff Richeson Recorded by: Jeff Richeson Date: 10/4/17
 Well Depth (ft BGS): — MP Distance AGS (ft): — Well Depth (ft BMP): ~~28~~ 40 Screened/Open Interval Top: — (ft BGS) 35 ~~X~~ (ft BMP)
 Well Diameter (in): 2 PID/FID Readings Beneath Inner Cap (ppm cge akb): — Screened/Open Interval Bottom: — (ft BGS) 40 ~~X~~ (ft BMP)
 Pump and Tubing Type: QED Sample Pro (bladder) with poly tubing Pump Intake Depth: — (ft BGS) 37.5 ~~X~~ (ft BMP) MP Description: TOC
 Equipment Decon. Method: 3 Bucket Rinse with Liquinox Depth to Water Before Pump Installation (ft BMP): 28.46 Time: 11:01 GW Disposal: GW-11 Pond

Time	PURGING X SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1405	X	27.83		7.15		6.24		1.51/0.93		88		81.4		200	25.50	0
1410	X	26.78		7.19		6.57		0.58/0.74		83		25.3		200	28.69	1L
1415	X	26.54		7.27		6.65		0.54/0.68		76		18.9		200	28.70	2L
1420	X	25.86		7.27		6.72		0.43/0.64		74		3.0		200	28.70	3L
1425	X	25.78		7.26		6.74		0.41/0.63		74		0.1		200	28.70	4L
1430	X	25.67		7.26		6.76		0.38/0.61		72		0.0		200	28.70	5L
1435	X	25.59	✓	7.24	✓	6.80	✓	0.39/0.61	✓	71	✓	0.0	✓	200	28.69	6L

Sample ID: UFMW-06I-20171004 Duplicate ID: N/A QA/QC Samples/ID: N/A COC Time: 1435

Sample Container		Material Code	Volume	Preservative	Intended Analysis and/or Method
Number					
Leach Chromium Treatability Study Sampling Bottle Set					
AP	Arka				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)
 Field Decontamination: (Y) N Field Filtered: (Y) N COC Number:
 Comments:
 Ferrous Iron: N/A
 Groundwater color is clear.
 Signature(s): [Signature]

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
 BMP - Below Measuring Point

C - Centigrade
 COC - Chain of Custody

GS - Ground Surface
 ID - Identification

mg/L - milligram/Liter
 mV - milli Volts

min - Minute
 ml - milliliter

MP - Measuring Point
 NTU - Nephelometric Units

QA - Quality Assurance
 QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: In Situ Chemical Treatability Study <i>AP Area</i>		Task Manager: Anil Appaswami <i>G. Roemer</i>		Task No: 442 <i>M13</i>	Well ID: CFMW-06D <i>UFMW-06D</i>
Field Samplers: Jeff Richeson		Recorded by: Jeff Richeson		Date: <i>10/4/17</i>	
Well Depth (ft BGS): <i>50</i>	MP Distance AGS (ft): <i>—</i>	Well Depth (ft BMP): <i>23.78</i>	Screened/Open Interval Top: <i>—</i>		(ft BGS) <i>45</i> (ft BMP) <i>—</i>
Well Diameter (in): <i>2</i>	PID/FID Readings Beneath Inner Cap (ppm cge akb): <i>—</i>		Screened/Open Interval Bottom: <i>—</i>		(ft BGS) <i>50</i> (ft BMP) <i>—</i>
Pump and Tubing Type: Mega Masson Pump with Poly Tubing <i>- Bladder Pump</i>		Pump Intake Depth: <i>47.5</i>	(ft BGS)	(ft BMP)	MP Description: TOC
Equipment Decon. Method: 3 Bucket Rinse with Liquinox		Depth to Water Before Pump Installation (ft BMP): <i>28.75</i>		Time: <i>1100</i>	GW Disposal: GW-11 Pond

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1235	X		26.97		7.52		5.92		1.98/1.54		61		801		200	28.87	0
1240	X		26.97		7.33		5.90		1.14/0.95		73		340		200	29.10	1L
1245	X		26.80		7.31		5.91		0.79/0.81		73		194		200	29.11	2L
1250	X		26.78		7.36		5.91		0.70/0.75		68		111		200	29.10	3L
1255	X		26.80		7.44		5.93		0.59/0.19		62		70.0		200	29.08	4L
1300	X		26.85		7.49		5.94		0.56/0.67		60		63.1		200	29.10	5L
1305	X		26.86		7.50		5.96		0.59/0.68		57		28.2		200	29.08	6L
1310	X		26.76		7.52		5.97		0.48/0.64		54		18.6		200	29.10	7L
1315	X		26.77		7.52		5.97		0.44/0.62		51		13.2		200	29.07	8L
1320	X		26.73		7.52		5.97		0.41/0.62		50		9.9		200	29.07	9L
1325	X		26.72		7.51		5.97		0.42/0.63		49		9.7		200	29.09	10L
1330	X		26.76		7.51		5.97		0.44/0.62		49		9.0		200	29.10	11L

Sample ID: *UFMW-06D-20171004*Duplicate ID: *—*QA/QC Samples/ID: *N/A*COC Time: *1330*

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
In Situ Chemical Treatability Study Sampling Bottle Set				
	<i>AP Area</i>			

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: ☒ N Field Filtered: ☒ N COC Number: *—*

Comments:

Ferrous Iron = *—*Soluble = *—*Groundwater color is *Clear*Signature(s): *[Signature]*

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

WELL WATER LEVEL
MEASUREMENT LOG

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NERT, Henderson, NV Project

Task Name: <u>AP Area Treatability Study</u>	Task No: <u>M13</u>	Date: <u>1/25/18</u>
Task Manager: <u>G. Roemer</u>	Field Sampler(s): <u>J. Richardson, D. Keady</u>	Recorded by: <u>J. Richardson, D. Keady</u>
Equipment Model/Type: <u>Heron WLM</u>	Serial Number: <u>Pine Rental</u>	Last Calibration Date: <u>N/A</u>

Well Identification	Measuring Point (MP)	Time (hrs)	Depth to Static Water Level (ft BMP)	Well Sounding Depth (ft BMP)	Condition of Well and Well Seal
UFMW-01S	TOC	0740	Dry		
UFMW-01I		0741	30.51		
UFMW-01D		0742	30.83		
UFMW-02S		0743	Dry		
UFMW-02I		0744	30.99		
UFMW-02D		0745	31.02		
UFMW-03S		0746	Dry		
UFMW-03I		0747	28.81		
UFMW-03D		0748	28.96		
UFMW-04S		0756	28.66		
UFMW-04I		0757	28.90		
UFMW-04D		0758	29.01		
UFMW-05S		0753	28.98		
UFMW-05I		0754	29.02		
UFMW-05D		0755	28.79		
UFMW-06S		0749	28.02		
UFMW-06I		0750	28.19		
UFMW-06D		0752	28.53		



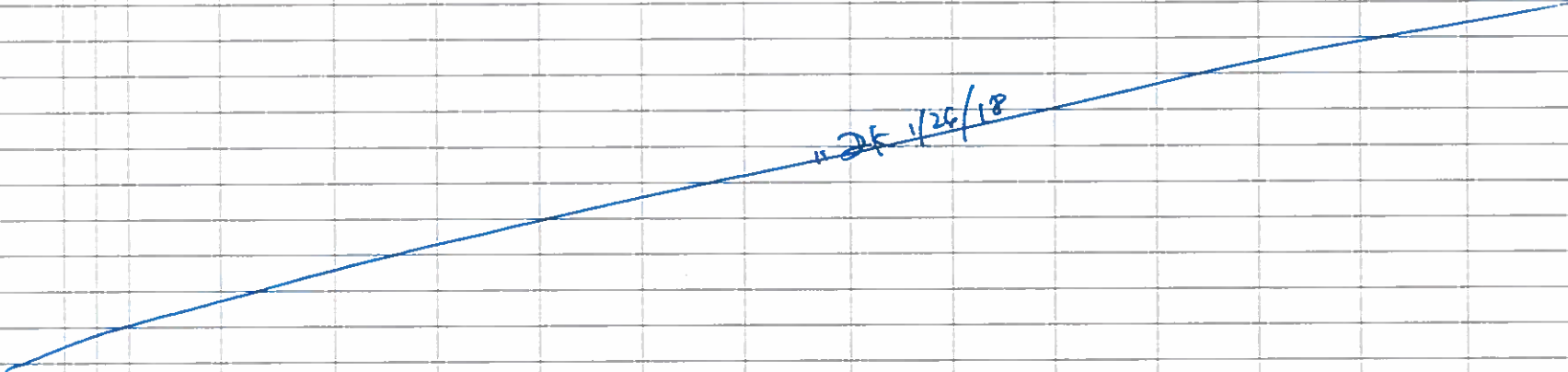
TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-01S	
Field Samplers: Jeff Richeson, Daniel Keady		Recorded by: Jeff Richeson, Daniel Keady		Date: 1/26/18			
Well Depth (ft BGS): —	MP Distance AGS (ft): —	Well Depth (ft BMP): 29.56	Screened/Open Interval Top: —	(ft BGS) 24	(ft BMP)		
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb): —	Screened/Open Interval Bottom: —	(ft BGS) 29	(ft BMP)			
Pump and Tubing Type: QED Sample Pro with Poly Tubing		Pump Intake Depth: —	(ft BGS) —	(ft BMP) 28.5	MP Description: TOC		
Equipment Decon. Method: 3 Bucket Rinse with Liquinox		Depth to Water Before Pump Installation (ft BMP): Dry	Time: —	GW Disposal: GW-11 Pond			

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
WELL DRY; UNABLE TO SAMPLE.																
																

Sample ID: Duplicate ID: QA/QC Samples/ID: COC Time:

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG =Amber Glass; CG =Clear Glass; PE=polyethylene; O=Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments: well dry

Groundwater Color is N/A

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-011	
Field Samplers: Jeff Richeson, Daniel Keady				Recorded by: Jeff Richeson, Daniel Keady		Date: 1/26/18	
Well Depth (ft BGS): —	MP Distance AGS (ft): —	Well Depth (ft BMP): 39.52		Screened/Open Interval Top: —	(ft BGS)	34	(ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb): —		Screened/Open Interval Bottom: —	(ft BGS)	39	(ft BMP)	
Pump and Tubing Type: QED Sample Pro with Poly Tubing		Pump Intake Depth: —	(ft BGS)	36.5	(ft BMP)	MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox		Depth to Water Before Pump Installation (ft BMP): 30.51		Time: 0741(1-26-18)	GW Disposal: GW-11 Pond		

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity M (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0807	X	13.33		6.55		3.75		1.01/1.35		221		95.1		200	30.83	0
0808	X	14.80		7.71		3.72		0.62/1.14		182		68.5		200	30.83	1000
0817	X	15.50		8.00		3.49		0.07/0.88		167		41.6		200	30.83	2000
0822	X	15.70		8.09		3.72		0.00/0.86		159		19.8		200	30.83	3000
0827	X	15.84		8.16		3.77		0.00/0.82		151		9.1		200	30.83	4000
0832	X	16.01		8.21		3.71		0.00/0.79		144		7.0		200	30.83	5000
0837	X	16.26	✓	8.24	✓	3.69	✓	0.00/0.75	✓	138	✓	3.2	✓(≤5)	200	30.83	6000
0840	X	STABILIZATION; COLLECT SAMPLE.														

Sample ID: UFMW-011-20180126

Duplicate ID: —

QA/QC Samples/ID: —

COC Time: 0840

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments: A: 1.632
B: 8.112

Groundwater Color is clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

Page 1 of 1

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-01D	
Field Samplers: Jeff Richeson, Daniel Keady				Recorded by: Jeff Richeson, Daniel Keady			
Well Depth (ft BGS): -		MP Distance AGS (ft): -		Well Depth (ft BMP): 49.25		Date: 1-26-18	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb): -		Screened/Open Interval Top: -		(ft BGS) 34 (ft BMP)	
Pump and Tubing Type: QED Sample Pro with Poly Tubing		Pump Intake Depth: -		(ft BGS) 42.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 30.83		Time: 0742/125.4	
						GW Disposal: GW-11 Pond	

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity M (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0911	X	16.83		8.22		4.55		1.46/0.15		135		326		200	31.05	0
0916	X	18.15		8.23		4.73		0.62/0.13		129		221		200	31.05	1000
0921	X	18.54		8.24		4.97		0.11/0.12		125		104		200	31.05	2000
0926	X	18.70		8.27		4.88		0.00/0.12		122		73.4		200	31.05	3000
0931	X	18.72		8.25		4.98		0.00/0.13		119		30.7		200	31.05	4000
0936	X	18.75		8.22		4.98		0.00/0.14		117		17.1		200	31.05	5000
0941	X	18.82		8.20		5.01		0.00/0.15		116		6.2		200	31.05	6000
0946	X	18.85	✓	8.16	✓	4.97	✓	0.00/0.16	✓	116	✓	0.4	✓ (c)	200	31.05	7000
0950	X	STABILIZATION; COLLECT SAMPLE.														

Sample ID: UFMW-01D-20180126-M5

Duplicate ID: -

QA/QC Samples/ID: UFMW-01D-20180126-M5D COC Time: 0950

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments:

M5/M5D

A: 1.638

B: 6.904

Groundwater Color is clear

Signature(s):

DRY

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control




LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-02S	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 1/26/18	
Well Depth (ft BGS): _____		MP Distance AGS (ft): _____		Well Depth (ft BMP): 29.19		Screened/Open Interval Top: _____ (ft BGS) 24 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb): _____		Screened/Open Interval Bottom: _____		(ft BGS) 29 (ft BMP)	
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: _____ (ft BGS) 20.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 0.4		Time: _____ GW Disposal: GW-11 Pond	

[illegible]

Well Dry
Unable to collect sample

Sample ID:			Duplicate ID:		QA/QC Samples/ID:		COC Time:	
Sample Container			Preservative	Intended Analysis and/or Method	Material Codes: VOA = 40 ml glass vial; AG =Amber Glass; CG =Clear Glass; PE=polyethylene; O=Other (Specify)			
Number	Material Code	Volume			Field Decontamination: Y N	Field Filtered: Y N	COC Number:	
					Comments: Well dry			
AP Area Treatability Study Sampling Bottle Set					Groundwater Color is N/A			
					Signature(s): 			

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-02I	
Field Samplers: Jeff Richeson, Daniel Keady				Recorded by: Jeff Richeson, Daniel Keady		Date: 1/26/18	
Well Depth (ft BGS): —	MP Distance AGS (ft): —	Well Depth (ft BMP): 39		Screened/Open Interval Top: —		(ft BGS) 34	(ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb): —			Screened/Open Interval Bottom: —		(ft BGS) 39	(ft BMP)
Pump and Tubing Type: QED Sample Pro with Poly Tubing		Pump Intake Depth: —		(ft BGS)	36.5	(ft BMP)	MP Description: TOC
Equipment Decon. Method: 3 Bucket Rinse with Liquinox		Depth to Water Before Pump Installation (ft BMP): 30.99		Time: 0744(1-25-18)		GW Disposal: GW-11 Pond	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1049	X		19.56		8.22		4.62		0.99/1.86		119		793		100	31.52	0
1054	X		19.80		8.20		4.51		2.51/2.94		117		809		100	31.56	500
1059	X		19.86		8.22		4.53		3.07/3.29		115		299		100	31.58	1000
1104	X		19.96		8.22		4.53		2.97/3.18		116		125		100	31.58	1500
1109	X		20.06		8.21		4.48		2.91/3.07		117		99.4		100	31.58	2000
1114	X		20.17		8.21		4.44		2.82/3.01		117		90.1		100	31.58	2500
1119	X		20.13	✓	8.20	✓	4.50	✓	2.71/2.98	✓	117	✓	82.1	✓	100	31.58	3000
1130	X	STABILIZED; COLLECT SAMPLE															

Sample ID: UFMW-02I-20180126 Duplicate ID: — QA/QC Samples/ID: — COC Time: 1130

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments: A = 1.089
B = 5.937

Groundwater Color is clear, slightly cloudy

Signature(s): *[Signature]*

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-02D	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 1/26/18	
Well Depth (ft BGS): —	MP Distance AGS (ft): —	Well Depth (ft BMP): 49		Screened/Open Interval Top: —		(ft BGS) 44	(ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb): —			Screened/Open Interval Bottom: —		(ft BGS) 49	(ft BMP)
Pump and Tubing Type: QED Sample Pro with Poly Tubing			Pump Intake Depth: —	(ft BGS) 46.5	MP Description: TOC		
Equipment Decon. Method: 3 Bucket Rinse with Liquinox			Depth to Water Before Pump Installation (ft BMP): 31.02		Time: 11:51/18	GW Disposal: GW-11 Pond	

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity µS/cm		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1025	X	21.02		7.49		4.91		7.32/0.56		23		103		200	31.02	—
1030	X	21.33		7.53		4.97		5.75/1.30		22		83.8		200	31.15	1 liter
1035	X	21.64		7.56		4.98		6.65/1.42		24		66.6		200	31.22	2.4 L
1040	X	21.86		7.57		4.97		7.48/2.49		25		54.3		200	31.20	3 L
1045	X	22.07		7.59		4.97		7.41/2.37		27		43.4		200	31.17	4 L
1050	X	22.17		7.59		4.97		7.28/2.45		27		41.3		200	31.19	5 L
1055	X	22.28		7.61		4.97		7.35/2.53		26		38.8		200	31.23	6 L

Sample ID: UFMW-02D-20180126

Duplicate ID: N/A

QA/QC Samples/ID: N/A

COC Time: 1055

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: (Y) N Field Filtered: (Y) N COC Number:

Comments: A: 1.232

B: 5.911

Groundwater Color is clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-03S	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 1/26/18	
Well Depth (ft BGS):	MP Distance AGS (ft):	Well Depth (ft BMP): 49		Screened/Open Interval Top:		(ft BGS) 24	(ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom:		(ft BGS) 29	(ft BMP)	
Pump and Tubing Type: QED Sample Pro with Poly Tubing		Pump Intake Depth:		(ft BGS)	(ft BMP)	MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox		Depth to Water Before Pump Installation (ft BMP):		Dry	Time: 11:25/18	GW Disposal: GW-11 Pond	

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
Well Dry No Sample Collected																

Sample ID:		Duplicate ID:		QA/QC Samples/ID:		COC Time:	
Sample Container							
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method			
AP Area Treatability Study Sampling Bottle Set							

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: Y N	Field Filtered: Y N	COC Number:
Comments: Well dry.		
Groundwater Color is N/A		
Signature(s): <i>[Signature]</i>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
 BMP - Below Measuring Point

C - Centigrade
 COC - Chain of Custody

GS - Ground Surface
 ID - Identification

mg/L - milligram/Liter
 mV - milli Volts

min - Minute
 ml - milliliter

MP - Measuring Point
 NTU - Nephelometric Units

QA - Quality Assurance
 QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-031	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 1/26/18	
Well Depth (ft BGS):	MP Distance AGS (ft):	Well Depth (ft BMP): 40		Screened/Open Interval Top:		(ft BGS) 30	(ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom:		(ft BGS) 40	(ft BMP)	
Pump and Tubing Type: QED Sample Pro with Poly Tubing			Pump Intake Depth:		(ft BGS) 35	(ft BMP)	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox			Depth to Water Before Pump Installation (ft BMP): 28.8		Time: 1:57/18	MP Description: TOC	
				2747		GW Disposal: GW-11 Pond	

Time	PURGING	SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (uS/cm)		Dissolved Oxygen (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0915	X		18.56		7.37		4.58		0.22/0.00		32		87.1		200	28.81	—
0920	X		19.11		7.18		4.63		0.19/0.00		25		9.7		200	29.02	1L
0925	X		19.18		7.15		4.63		0.17/0.00		23		5.8		200	29.05	2L
0930	X		19.22		7.15		4.63		0.16/0.00		20		4.3		200	29.03	3L
0935	X		19.27	✓	7.11	↓	4.63	✓	0.16/0.00	✓	17	✓	3.7	✓	200	29.02	4L

Sample ID: UFMW-031-20180126 Duplicate ID: N/A

QA/QC Samples/ID: N/A

COC Time: 0935

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: (Y) N Field Filtered: (Y) N COC Number:

Comments:

A: 7011
B: 6.998

Groundwater Color is

Clear

Signature(s):

[Signature]

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-03D	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 11/26/18	
Well Depth (ft BGS):	MP Distance AGS (ft):	Well Depth (ft BMP): 50		Screened/Open Interval Top:	(ft BGS)	45	(ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom:	(ft BGS)	50	(ft BMP)	
Pump and Tubing Type: QED Sample Pro with Poly Tubing		Pump Intake Depth:	(ft BGS)	47.5	(ft BMP)	MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox		Depth to Water Before Pump Installation (ft BMP):		28.96	Time: 11/25/18	GW Disposal: GW-11 Pond	

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity mS/cm		Dissolved Oxygen mg/L		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0800	X	16.24		7.45		4.55		2.23/0.00		16		240		200	28.96	
0805	X	18.67		7.51		4.49		2.56/0.00		11		62.7		200	29.13	1L
0810	X	19.22		7.56		4.49		2.46/0.00		7		24.4		200	29.17	2L
0815	X	19.60		7.59		4.49		2.55/0.00		6		14.5		200	29.18	3L
0820	X	19.66		7.58		4.49		2.59/0.00		5		12.8		200	29.18	4L
0825	X	19.81	✓	7.59	✓	4.50	✓	2.63/0.00	✓	5	✓	11.4	✓	200	29.18	5L

Sample ID: UFMW-03D-20180126 Duplicate ID: UFMW-03D-20180126-FD QA/QC Samples/ID: COC Time: 0825

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: (Y) N	Field Filtered: (Y) N	COC Number:
Comments: A = 1.741 B = 7.032		
Groundwater Color is Clear		
Signature(s): [Signature]		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
 BMP - Below Measuring Point

C - Centigrade
 COC - Chain of Custody

GS - Ground Surface
 ID - Identification

mg/L - milligram/Liter
 mV - milli Volts

min - Minute
 ml - milliliter

MP - Measuring Point
 NTU - Nephelometric Units

QA - Quality Assurance
 QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-04S	
Field Samplers: Jeff Richeson, Daniel Keady				Recorded by: Jeff Richeson, Daniel Keady			
Well Depth (ft BGS): —		MP Distance AGS (ft): —		Well Depth (ft BMP): 29		Screened/Open Interval Top: — (ft BGS) 24 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb): —		Screened/Open Interval Bottom: —		(ft BGS) 29 (ft BMP)	
Pump and Tubing Type: QED Sample Pro with Poly Tubing Bailor				Pump Intake Depth: — (ft BGS) —27.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 2-Bucket Rinse with Liquinox Disposable				Depth to Water Before Pump Installation (ft BMP): 28.66		Time: 0756	
						GW Disposal: GW-11 Pond	

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0857		LESS THAN 1' OF WATER; BAIL INSTEAD OF PUMP.														
1026	X	BAILED 3 WELL VOLUMES (~0.18 gallons); WAIT TO RECHARGE.														
1115	X	>90% RECOVERY; COLLECT SAMPLE.														
1115	X	16.77		7.23		3.96		10.08		85		36.3		—	—	0.2 gal

Sample ID: UFMW-04S-20180125

Duplicate ID: —

QA/QC Samples/ID: —

COC Time: 1115

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments: A: 2.011
B: 7.312

Groundwater Color is clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-041	
Field Samplers: Jeff Richeson, Daniel Keady				Recorded by: Jeff Richeson, Daniel Keady		Date: 1/25/18	
Well Depth (ft BGS): —		MP Distance AGS (ft): —		Well Depth (ft BMP): 39		Screened/Open Interval Top: — (ft BGS) 34 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb): —		Screened/Open Interval Bottom: —		(ft BGS) 39 (ft BMP)	
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: — (ft BGS) 37.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 28.90		Time: 0757	
						GW Disposal: GW-11 Pond	

Time	PURGING X	SAMPLING X	Temp. (°C)		pH (pH Units)		Spec Conductivity μ S/cm		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0851	X		13.49		6.02		4.25		1.06/1.30		247		>1000		200	28.96	0
0856	X		16.26		6.96		4.16		0.52/1.20		192		420		200	28.97	1000
0901	X		17.40		7.33		4.12		0.11/1.05		161		132		200	28.97	2000
0906	X		17.92		7.47		4.10		0.00/0.91		144		31.0		200	28.97	3000
0911	X		18.12		7.55		4.09		0.00/0.45		136		12.2		200	28.97	4000
0916	X		18.28	✓	7.59	✓	4.08	✓	0.00/0.78	✓	129	✓	4.6	✓ (<5)	200	28.97	5000
0920	X		STABILIZED; COLLECT SAMPLE														

Sample ID: UFMW-041-20180125

Duplicate ID: —

QA/QC Samples/ID: —

COC Time: 0920

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments: A: 0.996
B: 6.325

Groundwater Color is clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-04D	
Field Samplers: Jeff Richeson, Daniel Keady				Recorded by: Jeff Richeson, Daniel Keady		Date: 1-25-18	
Well Depth (ft BGS): —	MP Distance AGS (ft): —	Well Depth (ft BMP): 50		Screened/Open Interval Top: —		(ft BGS) 45	(ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb): —			Screened/Open Interval Bottom: —		(ft BGS) 50	(ft BMP)
Pump and Tubing Type: QED Sample Pro with Poly Tubing		Pump Intake Depth: —		(ft BGS) 47.5	(ft BMP)	MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox		Depth to Water Before Pump Installation (ft BMP): 29.01		Time: 0758		GW Disposal: GW-11 Pond	

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1012	X	18.28		7.69		4.45		1.32/0.14		157		142		200	29.18	0
1017	X	20.30		7.80		4.58		0.20/0.15		144		70.8		200	29.18	1000
1022	X	21.00		7.81		4.58		0.00/0.12		132		26.9		200	29.18	2000
1027	X	21.22		7.84		4.58		0.00/0.09		123		3.9		200	29.18	3000
1032	X	21.26		7.86		4.58		0.00/0.09		115		0.0		200	29.18	4000
1037	X	21.28		7.86		4.57		0.00/0.08		108		0.0		200	29.18	5000
1040	X STABILIZED; COLLECT SAMPLE.															

Sample ID: UFMW-04D-20180125 Duplicate ID: QA/QC Samples/ID: COC Time: 1040

Sample Container			Preservative	Intended Analysis and/or Method	Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)
Number	Material Code	Volume			
AP Area Treatability Study Sampling Bottle Set					Field Decontamination: Y N Field Filtered: Y N COC Number:
					Comments: A = 1.646 B = 7.110
					Groundwater Color is clear
Signature(s): [Signature]					

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
 BMP - Below Measuring Point

C - Centigrade
 COC - Chain of Custody

GS - Ground Surface
 ID - Identification

mg/L - milligram/Liter
 mV - milli Volts

min - Minute
 ml - milliliter

MP - Measuring Point
 NTU - Nephelometric Units

QA - Quality Assurance
 QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-05S	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 1/25/18	
Well Depth (ft BGS): —	MP Distance AGS (ft): —	Well Depth (ft BMP): 30		Screened/Open Interval Top: —	(ft BGS) 25	(ft BMP)	
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb): —		Screened/Open Interval Bottom: —	(ft BGS) 30	(ft BMP)		
Pump and Tubing Type: QED Sample Pro with Poly Tubing		Bailed		Pump Intake Depth: —	(ft BGS) 27.5	(ft BMP)	
Equipment Decon. Method: 2-Bucket Rinse with Liquinox		Disposale		Depth to Water Before Pump Installation (ft BMP): 28.98	Time: 0753	GW Disposal: GW-11 Pond	

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity mS/cm		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1401	X	~1' OF WATER IN WELL. BAIL INSTEAD OF PUMP.														
1432	X	BAILED 3 WELL VOLUMES (~0.54 gallons); COLLECT SAMPLE. WAIT TO RECHARGE.														
1500	X	>90% RECOVERY; COLLECT SAMPLE.														
1500	X	12.75		8.07		6.01		6.92		113		620		-	-	0.5 gal.

DK 1/25/18

Sample ID: UFMW-05S-2018-0125

Duplicate ID: —

QA/QC Samples/ID: —

COC Time: 1500

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number: —

Comments: A: 0.545
B: 4.321

Groundwater Color is clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-051	
Field Samplers: Jeff Richeson, Daniel Keady				Recorded by: Jeff Richeson, Daniel Keady		Date: 1-25-18	
Well Depth (ft BGS): —		MP Distance AGS (ft): —		Well Depth (ft BMP): 40		Screened/Open Interval Top: — (ft BGS) 35 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb): —		Screened/Open Interval Bottom: —		(ft BGS) 40 (ft BMP)	
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 37.5 (ft BMP)		MP Description: TOC	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 29.02		Time: 0754	
						GW Disposal: GW-11 Pond	

Time	PURGING X	SAMPLING X	Temp. (°C)		pH (pH Units)		Spec Conductivity μ S/cm		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1406	X	X	20.80		8.02		5.05		1.31/2.02		124		248		200	29.41	0
1411	X	X	20.70		8.00		5.06		0.44/1.91		85		134		200	29.41	1000
1416	X	X	20.68		7.98		4.92		0.00/1.71		51		70.9		200	29.41	2000
1421	X	X	20.65		7.98		4.85		0.00/1.61		37		46.9		200	29.41	3000
1426	X	X	20.61		7.98		4.75		0.00/1.38		29		31.7		200	29.41	4000
1431	X	X	20.61		7.98		4.72		0.00/1.33		26		26.3		200	29.41	5000
1436	X	X	20.57		8.00		4.69		0.00/1.31		23		24.5		200	29.41	6000
1441	X	X	20.55		8.00		4.68		0.00/1.28		22		22.3		200	29.41	7000
1446	X	X	20.55	✓	8.01	✓	4.68	✓	0.00/1.25	✓	22	✓	20.9	✓	200	29.41	8000
1450	X	X	STABILIZED; COLLECT SAMPLE.														

Sample ID: UFMW-051-2018025 Duplicate ID: QA/QC Samples/ID: COC Time: 1450

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments: A = 0.988
B = 5.136

Groundwater Color is Clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface C - Centigrade GS - Ground Surface mg/L - milligram/Liter min - Minute MP - Measuring Point QA - Quality Assurance
 BMP - Below Measuring Point COC - Chain of Custody ID - Identification mV - milli Volts ml - milliliter NTU - Nephelometric Units QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

Page 1 of 1

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-05D	
Field Samplers: Jeff Richeson, Daniel Keady				Recorded by: Jeff Richeson, Daniel Keady		Date: 1-25-18	
Well Depth (ft BGS):	MP Distance AGS (ft):	Well Depth (ft BMP): 50		Screened/Open Interval Top:		45 (ft BGS)	(ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom:		50 (ft BGS)	(ft BMP)	
Pump and Tubing Type: QED Sample Pro with Poly Tubing		Pump Intake Depth:		47.5 (ft BMP)	MP Description: TOC		
Equipment Decon. Method: 3 Bucket Rinse with Liquinox		Depth to Water Before Pump Installation (ft BMP): 28.71		Time: 095		GW Disposal: GW-11 Pond	

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1210	X	21.03		7.90		6.01		1.75/0.12		125		350		200	28.94	0
1215	X	21.24		7.80		6.24		0.56/0.09		116		194		200	28.94	1000
1220	X	21.24		7.80		6.18		0.04/0.07		108		60.7		200	28.94	2000
1225	X	21.12		7.81		6.13		0.00/0.06		102		16.3		200	28.94	3000
1230	X	21.08		7.81		6.10		0.00/0.06		97		9.4		200	28.94	4000
1235	X	21.02	✓	7.81	✓	6.07	✓	0.00/0.05	✓	93	✓	9.4	✓ (✓)	200	28.94	5000
1240	X	STABILIZED; COLLECT SAMPLE.														

Sample ID: UFMW-05D-20180125

Duplicate ID: -

QA/QC Samples/ID: -

COC Time: 1240

Sample Container				
Number	Material Code	Volume	Preservative	Intended Analysis and/or Method
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)

Field Decontamination: Y N Field Filtered: Y N COC Number:

Comments: A: 1.463

B: 6.817

Groundwater Color is clear

Signature(s):

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring PointC - Centigrade
COC - Chain of CustodyGS - Ground Surface
ID - Identificationmg/L - milligram/Liter
mV - milli Voltsmin - Minute
ml - milliliterMP - Measuring Point
NTU - Nephelometric UnitsQA - Quality Assurance
QC - Quality Control

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-06S	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 1/25/18	
Well Depth (ft BGS):	MP Distance AGS (ft):	Well Depth (ft BMP): 30		Screened/Open Interval Top:		(ft BGS) 25	(ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom:		(ft BGS) 30	(ft BMP)	
Pump and Tubing Type: QED Sample Pre with Poly Tubing		Bailer		Pump Intake Depth:	(ft BGS) 27.5	(ft BMP)	MP Description: TOC
Equipment Decon. Method: 3 Bucket Rinse with Liquinox		Disinfectant		Depth to Water Before Pump Installation (ft BMP): 28.02		Time: 0749 1/25/18	
GW Disposal: GW-11 Pond							

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity (µS/cm)		Dissolved Oxygen (mg/L)		Redox Potential (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1215	X	21.39		7.06		3.48		0.00		9		727		—	—	0.5 gal
Insufficient water to pump. Bail 3 casing volumes (~1.5 gallons). Allow recharge to 28.05' btoC. Collect sample w/ Bailer at 1245																

Sample ID: UFMW-06S-20170125 Duplicate ID: N/A QA/QC Samples/ID: N/A COC Time: 1245

Sample Container			Preservative	Intended Analysis and/or Method
Number	Material Code	Volume		
AP Area Treatability Study Sampling Bottle Set				

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: (Y) N	Field Filtered: (Y) N	COC Number:
Comments: A: 1.985 B: 8.132		
Groundwater Color is Brown (turbid)		
Signature(s): <i>[Signature]</i>		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
BMP - Below Measuring Point

C - Centigrade
COC - Chain of Custody

GS - Ground Surface
ID - Identification

mg/L - milligram/Liter
mV - milli Volts

min - Minute
ml - milliliter

MP - Measuring Point
NTU - Nephelometric Units

QA - Quality Assurance
QC - Quality Control



TETRA TECH

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LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-061	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 1/25/18	
Well Depth (ft BGS):	MP Distance AGS (ft):	Well Depth (ft BMP): 40		Screened/Open Interval Top:		(ft BGS) 35	(ft BMP)
Well Diameter (in): 2	PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom:		(ft BGS) 40	(ft BMP)	
Pump and Tubing Type: QED Sample Pro with Poly Tubing		Pump Intake Depth:		(ft BGS) 37.5	(ft BMP)	MP Description: TOC	
Equipment Decon. Method: 3-Bucket Rinse with Liquinox		Depth to Water Before Pump Installation (ft BMP): 28.19		Time: 0750 1/25/18		GW Disposal: GW-11 Pond	

Time	PURGING SAMPLING	Temp. (°C)		pH (pH Units)		Spec Conductivity mS/cm		Dissolved Oxygen mg/L		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
		READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
1055	X	21.15		7.43		4.11		0.71/0.00		31		71000		200	28.19	—
1100	X	21.35		7.43		4.08		0.71/0.00		30		800		200	28.22	1L
1105	X	21.73		7.42		4.06		1.10/0.00		23		601		200	28.20	2L
1110	X	22.03		7.41		4.05		1.26/0.00		19		500		200	28.19	3L
1115	X	22.24		7.49		4.05		0.92/0.00		16		215		200	28.20	4L
1120	X	22.38		7.45		4.04		0.93/0.00		13		199		200	28.20	5L
1125	X	22.53		7.43		4.03		0.90/0.00		11		83.7		200	28.22	6L
1130	X	22.60		7.44		4.03		0.89/0.00		9		78.5		200	28.23	7L
1135	X	22.66	✓	7.46	✓	4.02	✓	0.88/0.00	✓	7	✓	74.9	✓	200	28.24	8L

Sample ID: UFMW-061-20170125 Duplicate ID: N/A QA/QC Samples/ID: N/A COC Time: 1135

Sample Container					Preservative	Intended Analysis and/or Method
Number	Material Code	Volume				
AP Area Treatability Study Sampling Bottle Set						

Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)		
Field Decontamination: (Y) N	Field Filtered: (Y) N	COC Number:
Comments: A = 1.465 B = 8.09 Groundwater Color is Clear		
Signature(s): [Signature]		

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
 BMP - Below Measuring Point

C - Centigrade
 COC - Chain of Custody

GS - Ground Surface
 ID - Identification

mg/L - milligram/Liter
 mV - milli Volts

min - Minute
 ml - milliliter

MP - Measuring Point
 NTU - Nephelometric Units

QA - Quality Assurance
 QC - Quality Control



TETRA TECH

LOW FLOW GROUNDWATER SAMPLING LOG

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NERT, Henderson, NV Project

Task Name: AP Area Treatability Study		Task Manager: G. Roemer		Task No: M13		Well ID: UFMW-06D	
Field Samplers: Jeff Richeson				Recorded by: Jeff Richeson		Date: 1/25/18	
Well Depth (ft BGS):		MP Distance AGS (ft):		Well Depth (ft BMP): 50		Screened/Open Interval Top: (ft BGS) 45 (ft BMP)	
Well Diameter (in): 2		PID/FID Readings Beneath Inner Cap (ppm cge akb):		Screened/Open Interval Bottom: (ft BGS) 50 (ft BMP)		MP Description: TOC	
Pump and Tubing Type: QED Sample Pro with Poly Tubing				Pump Intake Depth: (ft BGS) 47.5 (ft BMP)		GW Disposal: GW-11 Pond	
Equipment Decon. Method: 3 Bucket Rinse with Liquinox				Depth to Water Before Pump Installation (ft BMP): 28.53		Time: 0758/18	

Time	PURGING X	SAMPLING X	Temp. (°C)		pH (pH Units)		Spec Conductivity $\mu S/cm$		Dissolved Oxygen DO (mg/L)		Redox Potential ORP (mV)		Turbidity (NTU)		Purge Rate (ml/min)	Depth to Water (ft BMP)	Cum. Vol. Purged (ml)
			READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*			
0905	X		19.88		7.32		5.59		0.35/0.00		87		71000		200	28.53	0
0910	X		21.03		7.33		5.56		0.35/0.00		92		732		200	28.80	1 L
0915	X		21.57		7.18		5.55		0.34/0.00		74		547		200	28.81	2 L
0920	X		21.85		7.29		5.56		0.33/0.00		52		435		200	28.80	3 L
0925	X		22.16		7.21		5.56		0.31/0.00		32		372		200	28.82	4 L
0930	X		22.32		7.28		5.58		0.30/0.00		19		241		200	28.79	5 L
0935	X		22.37		7.33		5.58		0.30/0.00		1		143		200	28.78	6 L
0940	X		22.69		7.33		5.58		0.29/0.00		-5		137		200	28.81	7 L
0945	X		22.70		7.37		5.57		0.30/0.00		-10		125		200	28.80	8 L
0950	X		22.91		7.33		5.57		0.29/0.00		-13		115		200	28.80	9 L

Sample ID: UFMW-06D-20170125 Duplicate ID: UFMW-06D-20170125-FD QA/QC Samples/ID: N/A COC Time: 0950

Sample Container			Preservative	Intended Analysis and/or Method	Material Codes: VOA = 40 ml glass vial; AG = Amber Glass; CG = Clear Glass; PE = polyethylene; O = Other (Specify)
Number	Material Code	Volume			
AP Area Treatability Study Sampling Bottle Set					Field Decontamination: (Y) N Field Filtered: (Y) N COC Number:
Comments:					
A: 0.987 B: 7.394					
Groundwater Color is clear					
Signature(s): [Signature]					

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:
 ± 0.1 for pH: ± 3% for Specific Conductivity and Temperature: ± 10 mv for Redox Potential: ± 10% for Dissolved Oxygen and Turbidity

BGS - Below Ground Surface
 BMP - Below Measuring Point

C - Centigrade
 COC - Chain of Custody

GS - Ground Surface
 ID - Identification

mg/L - milligram/Liter
 mV - milli Volts

min - Minute
 ml - milliliter

MP - Measuring Point
 NTU - Nephelometric Units

QA - Quality Assurance
 QC - Quality Control

Appendix E

Aquifer Testing Results

Technical Memorandum

To: Arul Ayyaswami, Tetra Tech

Cc: Carl Lenker and Mike Crews, Tetra Tech

From: Sonya Cadle, Chris Gutmann, and Ellyn Swenson, Tetra Tech

Date: October 26, 2017

Subject: Aquifer Testing Results – AP Area Treatability Study

1.0 INTRODUCTION

This technical memorandum presents the results of the aquifer slug testing and specific capacity tests performed as part of the NERT AP Area Treatability Study hydrogeological evaluation. The slug tests were conducted in the intermediate (“I”) and deep (“D”) wells, since there was insufficient water in the shallow (“S”) wells to permit slug testing. Specific capacity tests were conducted in primarily shallow wells and used to estimate aquifer parameters; one intermediate well was also tested in a similar way to allow direct comparison to slug testing results.

The locations of the wells are shown below. The objective of the aquifer slug and pump testing was to estimate aquifer hydraulic conductivity (K) in the study area before injection testing. Because the shallow alluvial wells had extremely small saturated thicknesses (often less than a foot), the aquifer parameter estimates were extremely dependent on the exact saturated thickness. Hence, these estimates were not considered representative of the overall K of the alluvium but proved useful in estimating potential injection rates.

2.0 SLUG TESTS

Slug testing was performed in August/September 2016, April 2017, and October/November 2017. Well construction information is provided in Table 1. The tests consisted of monitoring water level displacements caused by the insertion or removal of a solid slug from a well. Water level displacement was measured using a Solinst Levellogger Gold M5 pressure transducer, which was programmed to collect data at one-half second time intervals. When the rate of recovery allowed multiple tests, several tests were performed at each well. The size of the slug was selected to be consistent with the diameter of the well.

The slug test data were downloaded from the transducer and the drawdown was calculated from the downloaded data. Several slug tests were selected for analysis from each well. Slug test analysis was performed using the

commercially-available AQTESOLV software (HydroSOLVE 2007). The Bouwer and Rice (1976) method for analyzing slug tests in an unconfined aquifer was used to estimate hydraulic conductivity. The AQTESOLV interpretation plots are provided as Attachment A. Table 2 summarizes the results of the slug test analysis; the K values provided for each well represent a mean of the K estimates obtained from individual tests at that well. Water levels measured during the testing events are summarized in Table 3.

All tested wells were screened in the Upper Muddy Creek Formation (UMCf). The estimated Ks are generally consistent with the logged lithology of the screened interval of the wells, which was primarily silty sand to sandy silt. Prior estimates of the hydraulic conductivity for the UMCf have ranged from less than 0.01 feet per day (ft/day) to more than 10 ft/day. The estimates from the AP Area slug tests ranged from 0.1 to 15 ft/day, which is consistent with the previous range. In addition, data from the injection testing in the AP Area confirmed that many of the wells were capable of sustaining injection rates of 1-3 gallons per minute each. This injection rate would be consistent with the hydraulic conductivity range estimated from slug testing.

In some of the wells tested, the screened interval included both coarser- and finer-grained zones. Because the lithology at the tested wells was logged by collecting 1.5 feet of core for every 5 feet of hole, it is also possible that coarser-grained zones were present in other wells but were not encountered in the sampled material. In cases where both zones of fine- and coarse-grained material were present, the coarser zones would be expected to be the primary flow zones and to dominate the K estimates.

Many factors can affect slug test results. In considering whether the K from a slug test is representative of the overall formation K, the values estimated from slug tests are strongly influenced by factors such as a low-K well skin, drilling-induced disturbances, highly anisotropic formations, and the quality of well development (Butler 1998, Hyder and Butler 1995). Other possible factors could include non-instantaneous or incomplete slug removal, accidental transducer or slug movement after the test began, and others. However, in general, the individual slug tests analyzed were very consistent within each well.

3.0 SPECIFIC CAPACITY TESTS

Specific capacity tests were performed in several shallow wells with saturated thicknesses that were too thin to test using a solid slug. In addition, a specific capacity test was performed in one intermediate well for comparison with the slug test results. Each well was pumped for 20-30 minutes and then allowed to recover. Because of pump limitations, the pumping rate varied somewhat during the test. Table 4 provides a summary of specific capacity test analytical results, and the AQTESOLV printouts are provided in Attachment A.

The specific capacity test performed in intermediate well UFIW-06I was analyzed using the Theis (1935) method for the drawdown and the Hantush (1960) leaky aquifer solution for recovery. Comparison between Tables 2 and 4 shows that the values of K obtained from the specific capacity tests and slug tests at this location were similar.

Most specific capacity tests were analyzed using the Theis (1935) method, Hantush (1960) leaky aquifer solution, or Cooper-Jacob (1946) unconfined solution. The very low saturated thickness at these locations means that the resulting K estimates only apply to the small saturated zone of alluvium immediately overlying the UMCf; they are not likely to be representative of the overall K of the alluvium. In fact, at one well (UFIW-04S) the saturated thickness was so small that the water level drew down to the pump intake within the first couple seconds and then sustained that level with a tiny flow rate for the next 30 minutes. The resulting data could not be analyzed because there were only a couple data points documenting the drawdown and recovery.

4.0 COMPARISON BEFORE AND AFTER INJECTIONS

Treatability study-related injections began after the August/September 2016 aquifer testing event was completed. Several wells were tested in April and October/November 2017 after all injections were completed in order to

assess whether the injections had potentially influenced K. The K estimates from the pre-injection (August/September 2016) and post-injection (April and October/November 2017) tests are provided in Table 2.

Based on the data collected before and after injection, a decrease in K occurred in several injection wells tested:

- UFIW-01I and UFIW-04I showed a decrease in K of about an order of magnitude.
- UFIW-05I and UFIW-08I showed a small potential decrease in K, but by less than an order of magnitude.

However, monitoring wells tested before and after injection showed no significant changes in the estimated K; in fact, the K estimates were nearly identical in many cases. Thus, any decrease in K associated with injection testing was very likely limited to the immediate vicinity of the injection wells.

5.0 REFERENCES

- Bouwer, H. and Rice, R.C., 1976. A slug test method for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells. *Water Resources Research*, vol. 12, no. 3, pp. 423-428.
- Butler, James J. Jr., 1998. *The Design, Performance, and Analysis of Slug Tests.*, CRC Press LLC, 252 pages.
- Cooper, H.H. and C.E. Jacob, 1946. A generalized graphical method for evaluating formation constants and summarizing well field history, *Am. Geophys. Union Trans.*, vol. 27, pp. 526-534.
- Hantush, M.S., 1960. Modification of the theory of leaky aquifers, *Jour. of Geophys. Res.*, vol. 65, no. 11, pp. 3713-3725.
- Hantush, M.S. and C.E. Jacob, 1955. Non-steady radial flow in an infinite leaky aquifer, *Am. Geophys. Union Trans.*, vol. 36, pp. 95-100.
- Hyder, Z. and Butler, J.J. Jr., 1995. Slug tests in unconfined formations: an assessment of the Bouwer and Rice technique, *Ground Water*, vol. 33, no. 1, pp. 16-22.
- HydroSOLVE, Inc., 2007. AQTESOLV version 4.50 – Professional. Developed by Glenn M. Duffield
- Theis, C.V., 1935. The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using groundwater storage, *Am. Geophys. Union Trans.*, vol. 16, pp. 519-524

Table 1: Well Construction Information AP Area Treatability Study, Henderson, Nevada

Well ID	UMCf Contact (feet bgs)	Screened Interval (feet bgs)	Top of Casing (feet amsl)	Well Diameter (inches)	Slug Dimensions	
					Diameter (inches)	Length (feet)
UFIW-01S	28	23 - 28	1,755.11	2	--	--
UFIW-01I	28	33 - 38	1,755.08	2	1.66	5
UFIW-01D	28	43 - 48	1,755.21	2	1.66	5
UFIW-02S	28	23 - 28	1,754.97	2	--	--
UFIW-02I	28	31 - 41	1,754.85	2	1.66	5
UFIW-02D	28	43 - 48	1,755.01	2	1.66	5
UFIW-03S	30	25 - 30	1,755.22	2	--	--
UFIW-03I	30	35 - 40	1,754.89	2	1.66	5
UFIW-03D	30	45 - 50	1,755.38	2	1.66	5
UFIW-04S	28	23 - 28	1,755.28	2	--	--
UFIW-04I	28	33 - 38	1,755.33	2	1.66	5
UFIW-04D	28	43 - 48	1,755.39	2	1.66	5
UFIW-05S	29.5	24.5 - 29.5	1,759.63	2	--	--
UFIW-05I	29.5	34.5 - 39.5	1,759.71	2	1.66	5
UFIW-05D	29.5	44.5 - 49.5	1,759.78	2	1.66	5
UFIW-06S	32	27 - 32	1,759.76	2	--	--
UFIW-06I	32	35 - 45	1,759.71	2	1.66	5
UFIW-06D	32	47 - 52	1,759.85	2	1.66	5
UFIW-07S	31	26 - 31	1,759.76	2	--	--
UFIW-07I	31	36 - 41	1,759.63	2	1.66	5
UFIW-07D	31	46 - 51	1,759.79	2	1.66	5
UFIW-08S	30	25 - 30	1,759.60	2	--	--
UFIW-08I	30	35 - 40	1,759.61	2	1.66	5
UFIW-08D	30	46-51	1,759.77	2	1.66	5
UFMW-01S	29	24 - 29	1,755.07	2	--	--
UFMW-01I	29	34 - 39	1,755.03	2	1.66	5
UFMW-01D	29	44 - 49	1,755.12	2	1.66	5
UFMW-02S	29	24 - 29	1,755.02	2	--	--
UFMW-02I	29	34 - 39	1,755.05	2	1.66	5
UFMW-02D	29	44 - 49	1,755.02	2	1.66	5
UFMW-03S	26	21 - 26	1,754.68	2	--	--
UFMW-03I	26	30 - 40	1,754.70	2	1.66	5
UFMW-03D	26	45 - 50	1,754.77	2	1.66	5
UFMW-04S	29	24 - 29	1,758.79	2	--	--
UFMW-04I	29	34 - 39	1,758.84	2	1.66	5
UFMW-04D	29	44 - 49	1,758.83	2	1.66	5
UFMW-05S	30	25 - 30	1,758.94	2	--	--
UFMW-05I	30	35 -40	1,758.92	2	1.66	5
UFMW-05D	30	45 - 50	1,758.91	2	1.66	5
UFMW-06S	30	25 - 30	1,758.74	2	--	--
UFMW-06I	30	35 -40	1,758.71	2	1.66	5
UFMW-06D	30	45 - 50	1,758.76	2	1.66	5
E1-1	27	22 - 47	1,754.43	6	4.5	6.3
E1-2	27.5	22.5 - 47.5	1,754.46	6	4.5	6.3
E1-3	27	22 - 47	1,754.62	6	4.5	6.3
E2-1	31	26 - 51	1,757.32	6	4.5	6.3
E2-2	33	28 - 53	1,757.62	6	4.5	6.3
E2-3	32	27 - 52	1,758.05	6	4.5	6.3
E2-4	29	24 - 49	1,758.11	6	4.5	6.3
E2-5	34	28 - 53	1,758.12	6	4.5	6.3

Notes:

Shallow "S" wells were not tested because the saturated thickness was too small to support slug testing.

bgs - below ground surface

amsl - above mean sea level

UMCf - Upper Muddy Creek Formation

Table 2: Slug Test Results AP Treatability Study, Henderson, Nevada

Well	Date	Mean Hydraulic Conductivity		Logged Lithology of Screened Interval
		(feet/day)	(cm/sec)	
UFIW-01I	8/16/2016	9.7	3.43E-03	Sandy silt, fine to medium sand
	4/11/2017	0.3	1.15E-04	Sandy silt, fine to medium sand
	11/2/2017	1.4	5.01E-04	Sandy silt, fine to medium sand
UFIW-01D	8/16/2016	1.9	6.61E-04	Sandy silt, fine sand, small caliche nodules
UFIW-02I	8/17/2016	1.0	3.40E-04	Sandy silt, fine sand, silt nodule
UFIW-02D	8/16/2016	1.4	4.81E-04	Sandy silt, fine sand
UFIW-03I	8/17/2016	11.3	3.97E-03	Sandy silt, fine sand
UFIW-03D	8/17/2016	7.3	2.58E-03	Sandy silt, fine sand
UFIW-04I	8/17/2016	12.9	4.54E-03	Sandy silt, fine sand
	4/11/2017	1.3	4.41E-04	Sandy silt, fine sand
	11/2/2017	1.9	6.80E-04	Sandy silt, fine sand
UFIW-04D	8/17/2016	4.6	1.62E-03	Sandy silt, fine sand
UFIW-05I	8/18/2016	4.9	1.72E-03	Sandy silt, fine sand
	4/11/2017	2.2	7.61E-04	Sandy silt, fine sand
	11/2/2017	0.9	3.10E-04	Sandy silt, fine sand
UFIW-05D	8/18/2016	0.5	1.75E-04	Silt with clay, some sand
UFIW-06I	8/18/2016	2.5	8.96E-04	Sandy silt, fine sand
UFIW-06D	8/18/2016	0.9	3.31E-04	Silt with sand, very fine sand
UFIW-07I	8/18/2016	3.7	1.31E-03	Silt with sand, fine grained sand
UFIW-07D	8/18/2016	2.1	7.23E-04	Silt with sand, fine sand
UFIW-08I	8/18/2016	2.7	9.39E-04	Silty sand, fine sand, some small caliche chunks
	4/11/2017	0.4	1.54E-04	Silty sand, fine sand, some small caliche chunks
	11/2/2017	0.3	1.19E-04	Silty sand, fine sand, some small caliche chunks
UFIW-08D	8/29/2016	1.2	4.06E-04	Silt with sand and caliche; silt
UFMW-01I	8/17/2016	1.3	4.53E-04	Sandy silt, fine sand
	4/11/2017	1.9	6.70E-04	Sandy silt, fine sand
	10/6/2017	1.9	6.78E-04	Sandy silt, fine sand
UFMW-01D	8/17/2016	1.8	6.46E-04	Sandy silt, fine sand
	10/6/2017	3.0	1.04E-03	Sandy silt, fine sand
UFMW-02I	8/17/2016	1.0	3.57E-04	Sandy silt, fine sand
	10/6/2017	1.1	3.98E-04	Sandy silt, fine sand
UFMW-02D	8/17/2016	1.1	3.83E-04	Sandy silt, increasing sand content
	10/6/2017	1.4	4.78E-04	Sandy silt, increasing sand content
UFMW-03I	8/17/2016	1.8	6.31E-04	Sandy silt, fine sand
	4/11/2017	1.6	5.79E-04	Sandy silt, fine sand
	10/6/2017	1.8	6.32E-04	Sandy silt, fine sand
UFMW-03D	8/17/2016	1.5	5.17E-04	Sandy silt, fine sand
	10/6/2017	1.8	6.18E-04	Sandy silt, fine sand
UFMW-04I	8/29/2016	2.6	9.30E-04	Silty sand, fine sand
	4/11/2017	3.4	1.20E-03	Silty sand, fine sand
	10/5/2017	4.8	1.69E-03	Silty sand, fine sand
UFMW-04D	8/29/2016	4.6	1.63E-03	Silty sand, fine sand, caliche nodules
	10/5/2017	5.4	1.92E-03	Silty sand, fine sand, caliche nodules
UFMW-05I	8/29/2016	1.1	3.97E-04	Sandy silt, fine sand, little caliche nodules
	10/6/2017	1.9	6.78E-04	Sandy silt, fine sand, little caliche nodules
UFMW-05D	8/19/2016	4.3	1.51E-03	Sandy silt, fine sand
	10/6/2017	5.1	1.80E-03	Sandy silt, fine sand
UFMW-06I	8/29/2016	3.2	1.12E-03	Sandy silt, fine sand
	4/11/2017	3.1	1.11E-03	Sandy silt, fine sand
	10/5/2017	4.8	1.70E-03	Sandy silt, fine sand
UFMW-06D	8/29/2016	1.2	4.20E-04	Sandy silt, fine sand
	10/5/2017	1.0	3.40E-04	Sandy silt, fine sand
E1-1	8/30/2016	2.0	7.09E-04	Sand and sand with gravel (4 ft); sandy silt (21 ft)
E1-2	8/30/2016	0.5	1.92E-04	Sand and sand with gravel (5 ft); sandy silt (20 ft)
E1-3	8/30/2016	0.4	1.57E-04	Silty sand (5 ft); sandy silt (20 ft)
E2-1	8/30/2016	2.0	6.97E-04	Silty sand (5 ft); silt (20 ft)
E2-2	8/30/2016	2.3	8.24E-04	Silty sand (5 ft); silt to sandy silt (20 ft)
E2-3	8/30/2016	3.7	1.31E-03	Silty sand (5 ft); silt (19 ft); sand (1 ft)
E2-4	8/30/2016	2.7	9.61E-04	Silty sand (5 ft); silt (20 ft)
E2-5	8/30/2016	0.7	2.50E-04	Silty sand (5 ft); silt (20 ft)

Notes:

cm/sec - centimeters per second

**Table 3: Water Levels AP Area Treatability Study,
Henderson, Nevada**

Well ID	Date	Total Depth (feet btoc)	Water Level (feet btoc)
UFIW-01I	8/16/2016	36.00	27.54
	4/11/2017	38.15	27.2
	11/2/2017	38.15	29.23
UFIW-01D	8/16/2016	48.09	27.83
UFIW-02I	8/17/2016	41.1	27.18
UFIW-02D	8/16/2016	48.55	27.45
UFIW-03I	8/17/2016	40	27.00
UFIW-03D	8/17/2016	50.35	27.43
UFIW-04I	8/17/2016	38.21	27.44
	4/11/2017	38.4	26.49
	11/2/2017	38.4	28.79
UFIW-04D	8/17/2016	47.97	27.49
UFIW-05I	8/18/2016	39.13	28.07
	4/11/2017	39.31	27.11
	11/2/2017	39.31	28.27
UFIW-05D	8/18/2016	49.47	28.48
UFIW-06I	8/18/2016	44.73	28.15
UFIW-06D	8/18/2016	51.55	28.70
UFIW-07I	8/18/2016	41.12	28.03
UFIW-07D	8/18/2016	51.20	28.38
UFIW-08I	8/18/2016	39.75	28.05
	4/11/2017	40	27.17
	11/2/2017	40	28.18
UFIW-08D	8/29/2016	50	28.27
UFMW-01I	8/17/2016	39.24	27.81
	4/11/2017	39.3	28.43
	10/6/2017	--	29.57
UFMW-01D	8/17/2016	49.00	28.08
	10/6/2017	--	29.7
UFMW-02I	8/17/2016	38.99	27.75
	10/6/2017	--	30.41
UFMW-02D	8/17/2016	48.96	27.98
	10/6/2017	--	30.47
UFMW-03I	8/17/2016	40.27	27.05
	4/11/2017	40.25	26.39
	10/6/2017	--	28.75
UFMW-03D	8/17/2016	50.36	27.32
	10/6/2017	--	28.77
UFMW-04I	8/29/2016	39.51	27.74
	4/11/2017	39.6	26.7
	10/5/2017	--	28.61
UFMW-04D	8/29/2016	49.55	27.77
	10/5/2017	--	28.75
UFMW-05I	8/29/2016	39.69	27.85
	10/6/2017	--	29.03
UFMW-05D	8/19/2016	49.67	27.75
	10/6/2017	--	28.83
UFMW-06I	8/29/2016	39.82	27.49
	4/1/2017	39.9	26.56
	10/5/2017	--	28.57
UFMW-06D	8/29/2016	49.81	27.76
	10/5/2107	--	28.95
E1-1	8/30/2016	45.56	27.7
E1-2	8/30/2016	47.52	27.61
E1-3	8/30/2016	46.72	27.64
E2-1	8/30/2016	51.58	26.93
E2-2	8/30/2016	52.12	26.98
E2-3	8/30/2016	49.12	27.32
E2-4	8/30/2016	48.43	27.4
E2-5	8/30/2016	55.25	27.71

Notes:

btoc - below top of casing

Table 4: Specific Capacity Test Results, AP Area Treatability Study, Henderson, Nevada


Well	Date	Analysis Type	Estimated Hydraulic Conductivity			Logged Lithology of Screened Interval
			Saturated Thickness (ft)	(feet/day)	(cm/sec)	
UFIW-06S	9/15/2016	Theis, Unconfined	3.41	11	4.03E-03	Sand with gravel and silt
	9/15/2016	Theis, Unconfined	3.41	4.5	1.59E-03	Sand with gravel and silt
UFIW-06I	9/15/2016	Hantush-Jacob, Leaky	11	1.0	3.64E-04	Sandy silt, fine sand
	9/15/2016	Theis, Unconfined	11	0.6	2.01E-04	Sandy silt, fine sand
UFMW-05S	10/10/2017	Cooper-Jacob, Unconfined	1.22	16.8	5.93E-03	Silty sand within screened interval, some variance between silty sand with gravel and silty sand with fine sand
UFMW-06S	10/10/2017	Cooper-Jacob, Unconfined	1.71	15.6	5.50E-03	Silty sand with interbedded sand

Notes:

cm/sec - centimeters per second

J:\GEO\S05\ES1\GEO\VOL1\PROJECTS\DATA\NERT\M02\FEBRUARY MEETING\FIGURES\MXD\REV\FIGURE01 SITE LOCATION.MXD



<div>TETRA TECH www.tetrattech.com 150 S. 4th Street, Unit A Henderson, Nevada 89015 PHONE: (702) 854-2293</div>	NEVADA ENVIRONMENTAL RESPONSE TRUST SITE		Project No.: 117-7502017
	AP AREA SLUG AND SPECIFIC CAPACITY TESTS HENDERSON, NEVADA		Date: OCTOBER 26, 2017
	WELL LOCATIONS		Designed By: ES
			Figure No. 1

E1-1 SLUG OUT 1

Data Set: T:\...\E1-1_slugout_1.aqt

Date: 05/04/17

Time: 09:19:10

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E1-1

Test Date: 8/30/2016

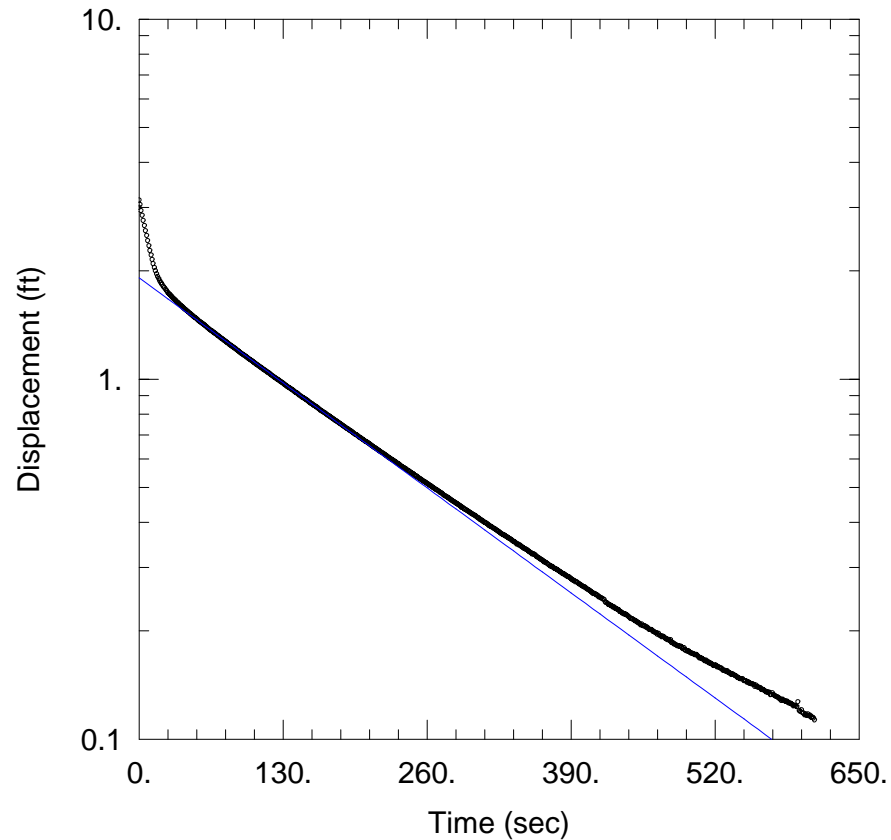
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 2.011$ ft/day

$y_0 = 1.911$ ft



AQUIFER DATA

Saturated Thickness: 19.3 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (E1-1)

Initial Displacement: 3. ft

Total Well Penetration Depth: 19.3 ft

Casing Radius: 0.25 ft

Static Water Column Height: 17.9 ft

Screen Length: 19.3 ft

Well Radius: 0.5 ft

E1-1 SLUG OUT 2

Data Set: T:\...\E1-1_slugout_2.aqt

Date: 05/04/17

Time: 09:19:25

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E1-1

Test Date: 8/30/2016

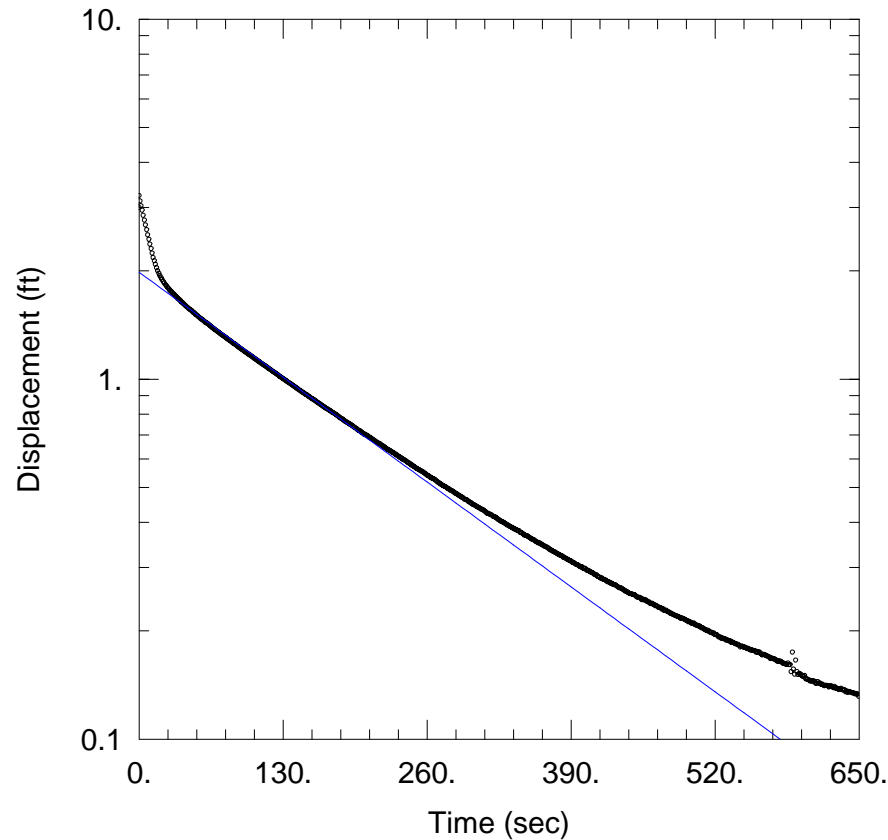
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 2.009$ ft/day

$y_0 = 1.981$ ft



AQUIFER DATA

Saturated Thickness: 19.3 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (E1-1)

Initial Displacement: 3. ft

Total Well Penetration Depth: 19.3 ft

Casing Radius: 0.25 ft

Static Water Column Height: 17.9 ft

Screen Length: 19.3 ft

Well Radius: 0.5 ft

E1-2 SLUG OUT 1

Data Set: T:\...\E1-2_slugout_1.aqt

Date: 05/04/17

Time: 09:19:35

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E1-2

Test Date: 8/30/2016

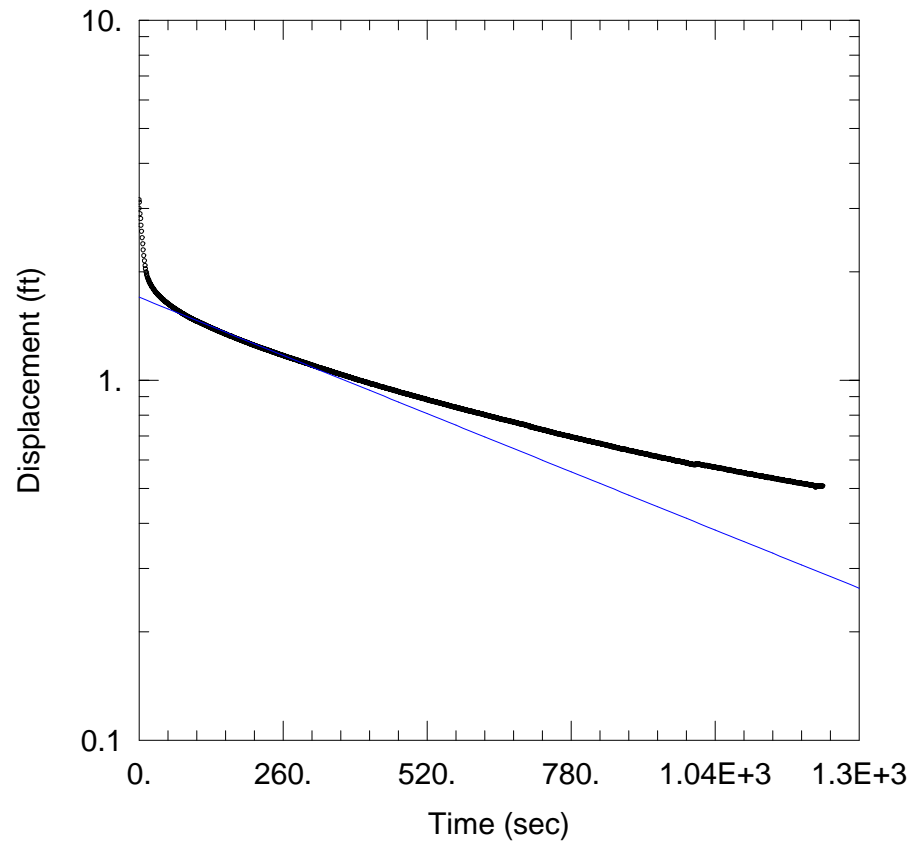
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.5456 ft/day

y0 = 1.7 ft



AQUIFER DATA

Saturated Thickness: 19.89 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (E1-2)

Initial Displacement: 3. ft

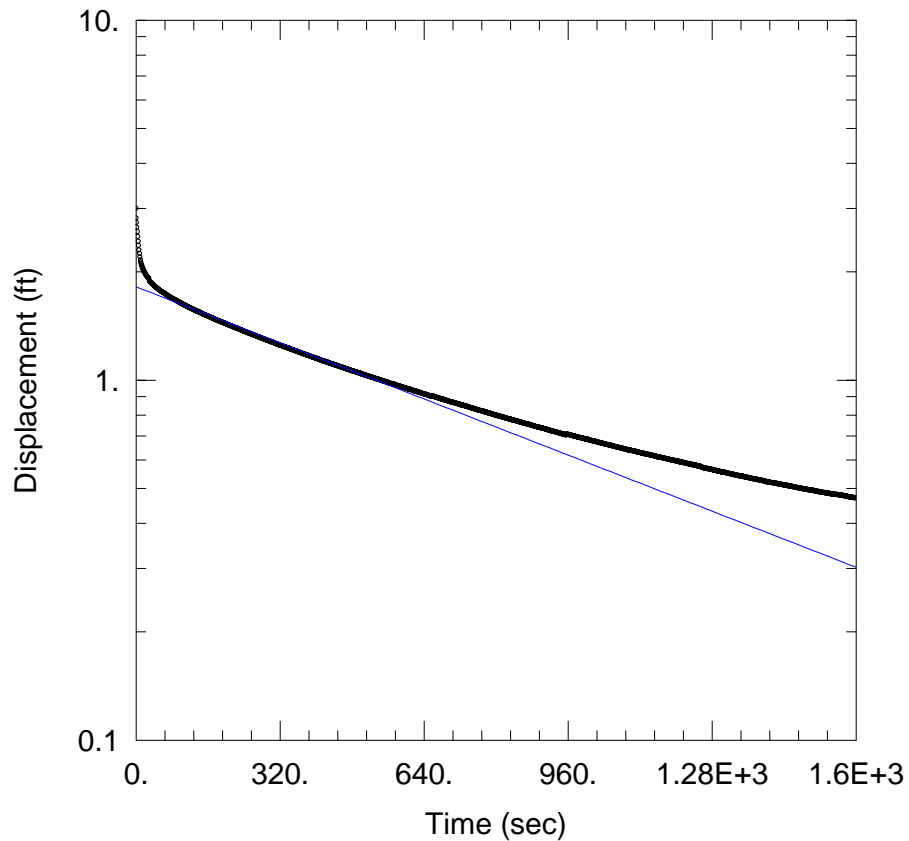
Total Well Penetration Depth: 19.89 ft

Casing Radius: 0.25 ft

Static Water Column Height: 19.9 ft

Screen Length: 19.89 ft

Well Radius: 0.5 ft



E1-3 SLUG OUT 1

Data Set: T:\...\E1-3_slugout_1.aqt

Date: 05/04/17

Time: 09:19:43

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E1-3

Test Date: 8/30/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.4355 ft/day

y0 = 1.817 ft

AQUIFER DATA

Saturated Thickness: 19.36 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (E1-3)

Initial Displacement: 3. ft

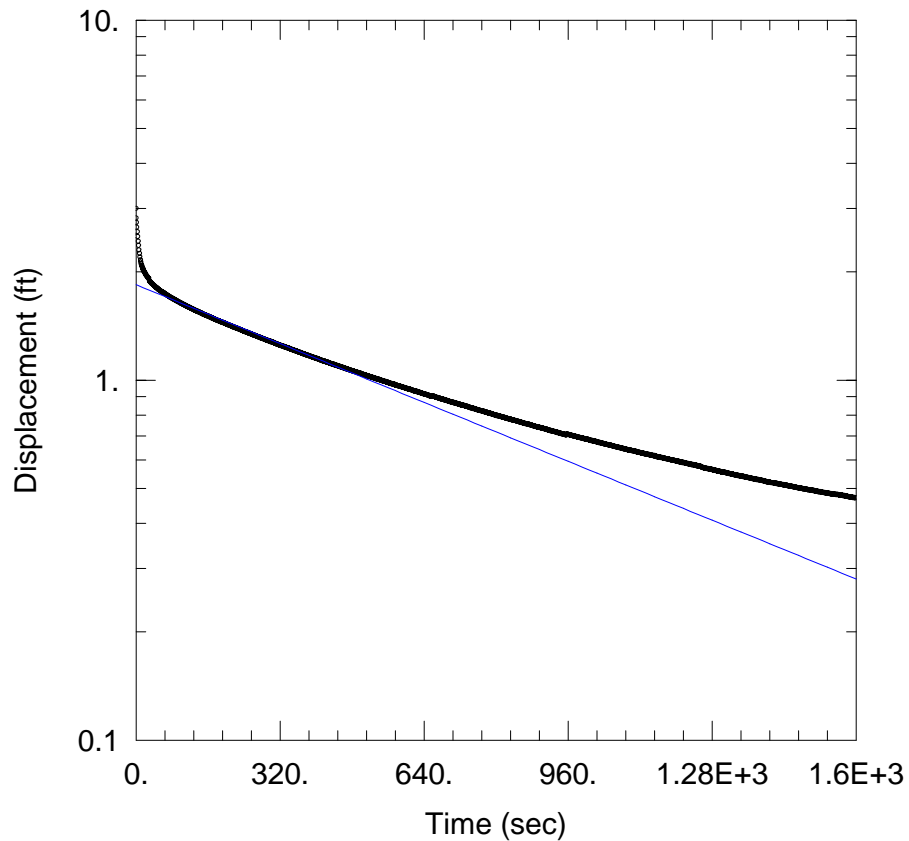
Total Well Penetration Depth: 19.36 ft

Casing Radius: 0.25 ft

Static Water Column Height: 19.1 ft

Screen Length: 19.36 ft

Well Radius: 0.5 ft



E1-3 SLUG OUT 1

Data Set: T:\...\E1-3_slugout_2.aqt

Date: 05/04/17

Time: 09:19:52

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E1-3

Test Date: 8/30/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.457 ft/day

y0 = 1.841 ft

AQUIFER DATA

Saturated Thickness: 19.36 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (E1-3)

Initial Displacement: 3. ft

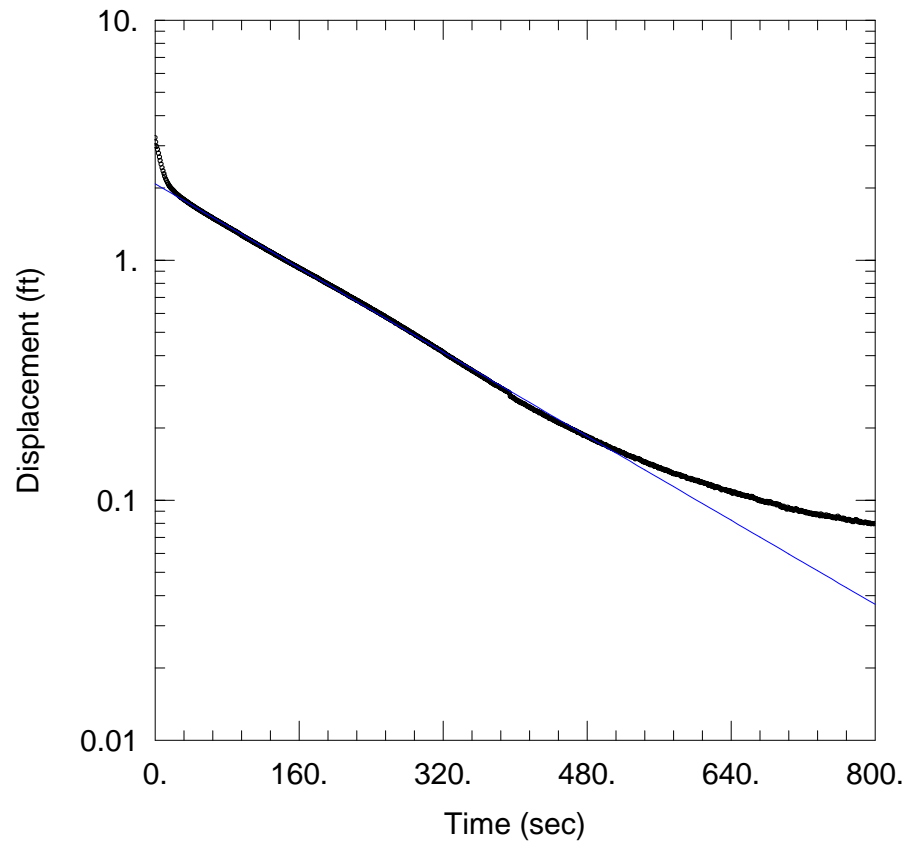
Total Well Penetration Depth: 19.36 ft

Casing Radius: 0.25 ft

Static Water Column Height: 19.1 ft

Screen Length: 19.36 ft

Well Radius: 0.5 ft



E2-1 SLUG OUT 1

Data Set: T:\...\E2-1_slugout_1.aqt

Date: 05/04/17

Time: 09:20:01

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E2-1

Test Date: 8/30/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.318 ft/day

y0 = 2.081 ft

AQUIFER DATA

Saturated Thickness: 24.1 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (E2-1)

Initial Displacement: 3. ft

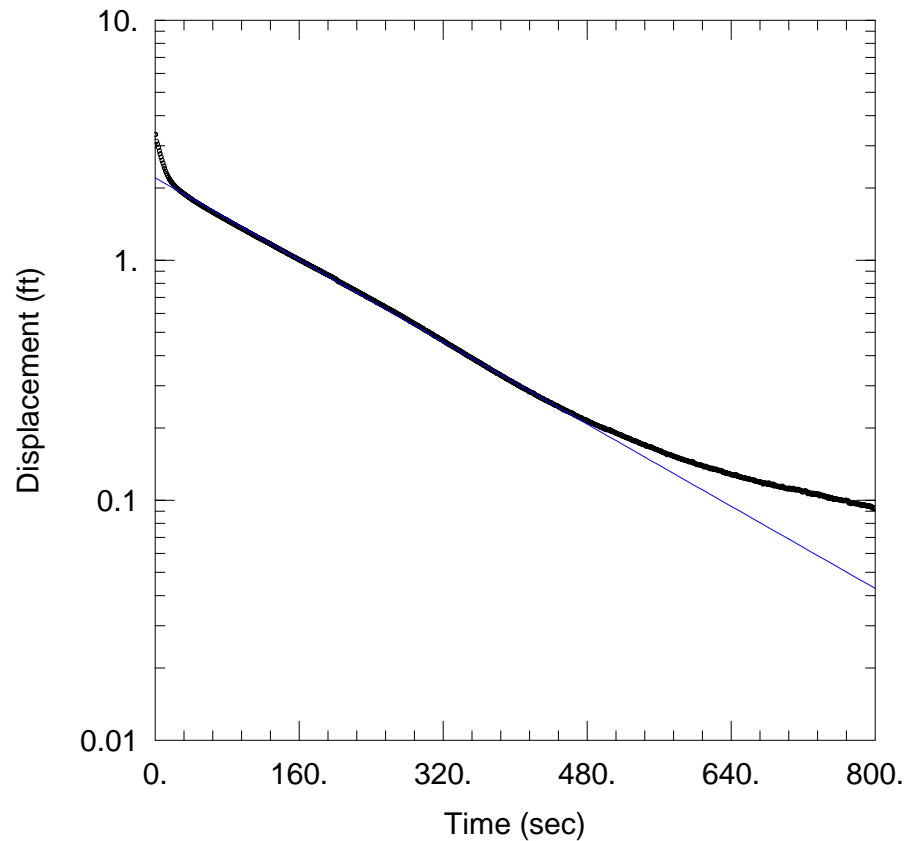
Total Well Penetration Depth: 24.07 ft

Casing Radius: 0.25 ft

Static Water Column Height: 24.7 ft

Screen Length: 24.07 ft

Well Radius: 0.5 ft



E2-1 SLUG OUT 2

Data Set: T:\...\E2-1_slugout_2.aqt

Date: 05/04/17

Time: 09:20:15

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E2-1

Test Date: 8/30/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.636$ ft/day

$y_0 = 2.201$ ft

AQUIFER DATA

Saturated Thickness: 24.07 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (E2-1)

Initial Displacement: 3. ft

Total Well Penetration Depth: 24.07 ft

Casing Radius: 0.25 ft

Static Water Column Height: 24.7 ft

Screen Length: 24.07 ft

Well Radius: 0.5 ft

E2-2 SLUG IN 1

Data Set: T:\...\E2-2_slugin_1.aqt

Date: 05/04/17

Time: 09:20:29

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E2-2

Test Date: 8/30/2016

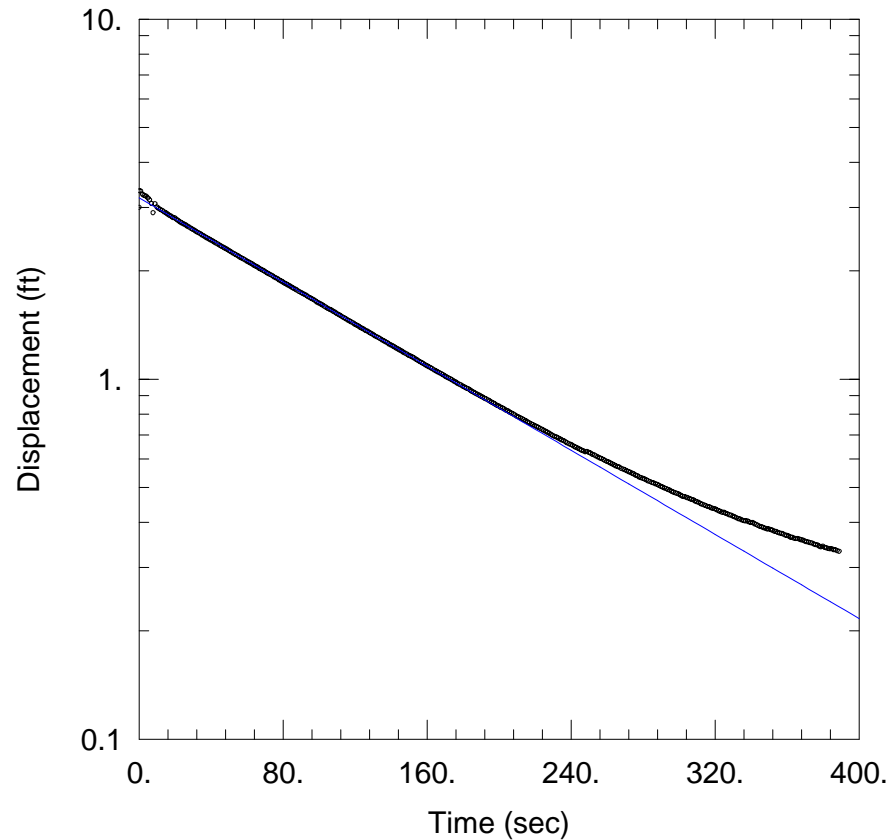
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.869 ft/day

y0 = 3.19 ft



AQUIFER DATA

Saturated Thickness: 26.02 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (E2-2)

Initial Displacement: 3. ft

Total Well Penetration Depth: 26.02 ft

Casing Radius: 0.25 ft

Static Water Column Height: 25.1 ft

Screen Length: 25. ft

Well Radius: 0.5 ft

E2-2 SLUG OUT 1

Data Set: T:\...\E2-2_slugout_1.aqt

Date: 05/04/17

Time: 09:20:40

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E2-2

Test Date: 8/30/2016

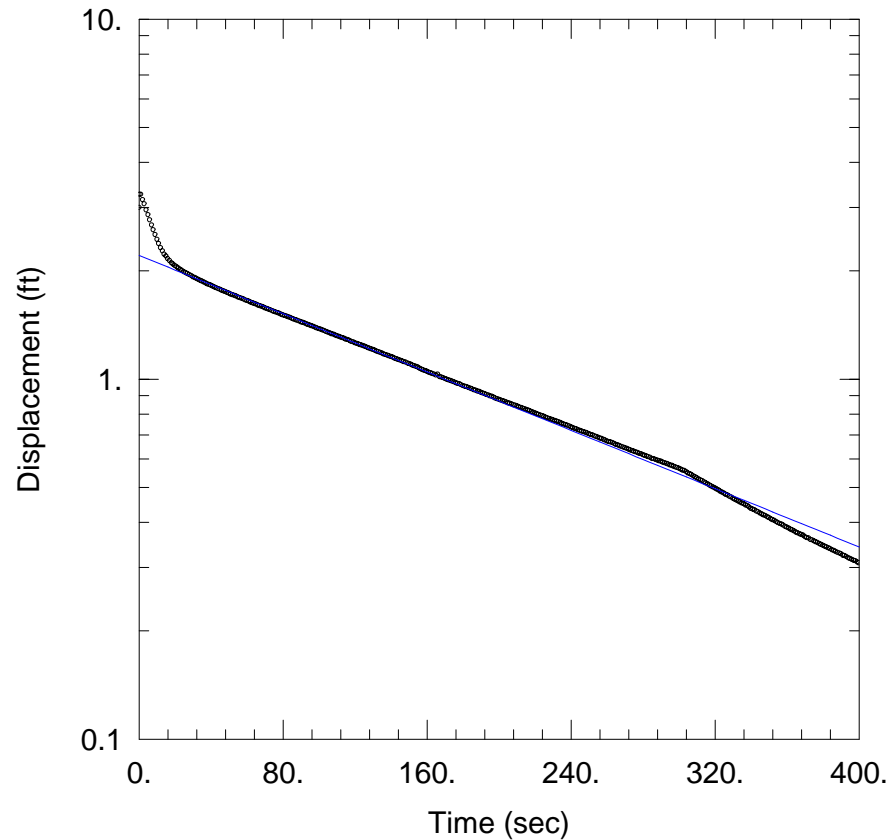
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.988$ ft/day

$y_0 = 2.206$ ft



AQUIFER DATA

Saturated Thickness: 26.02 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (E2-2)

Initial Displacement: 3. ft

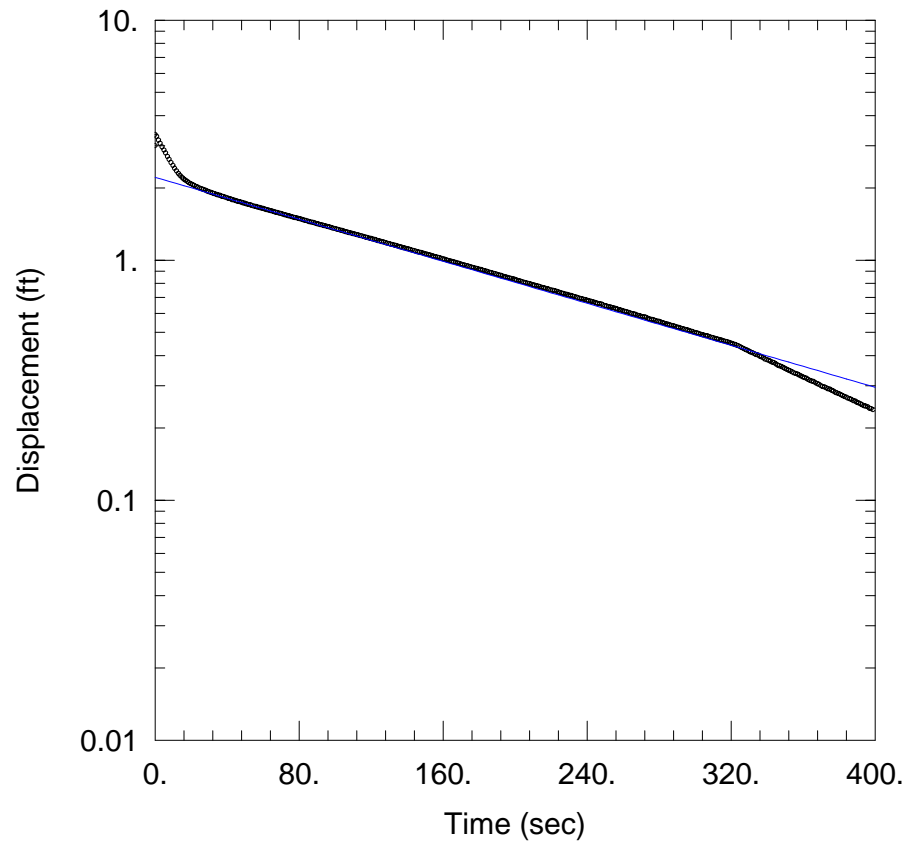
Total Well Penetration Depth: 26.02 ft

Casing Radius: 0.25 ft

Static Water Column Height: 25.1 ft

Screen Length: 25. ft

Well Radius: 0.5 ft



E2-2 SLUG OUT 2

Data Set: T:\...\E2-2_slugout_2.aqt

Date: 05/04/17

Time: 09:20:52

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E2-2

Test Date: 8/30/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.148 ft/day

y0 = 2.214 ft

AQUIFER DATA

Saturated Thickness: 26.02 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (E2-2)

Initial Displacement: 3. ft

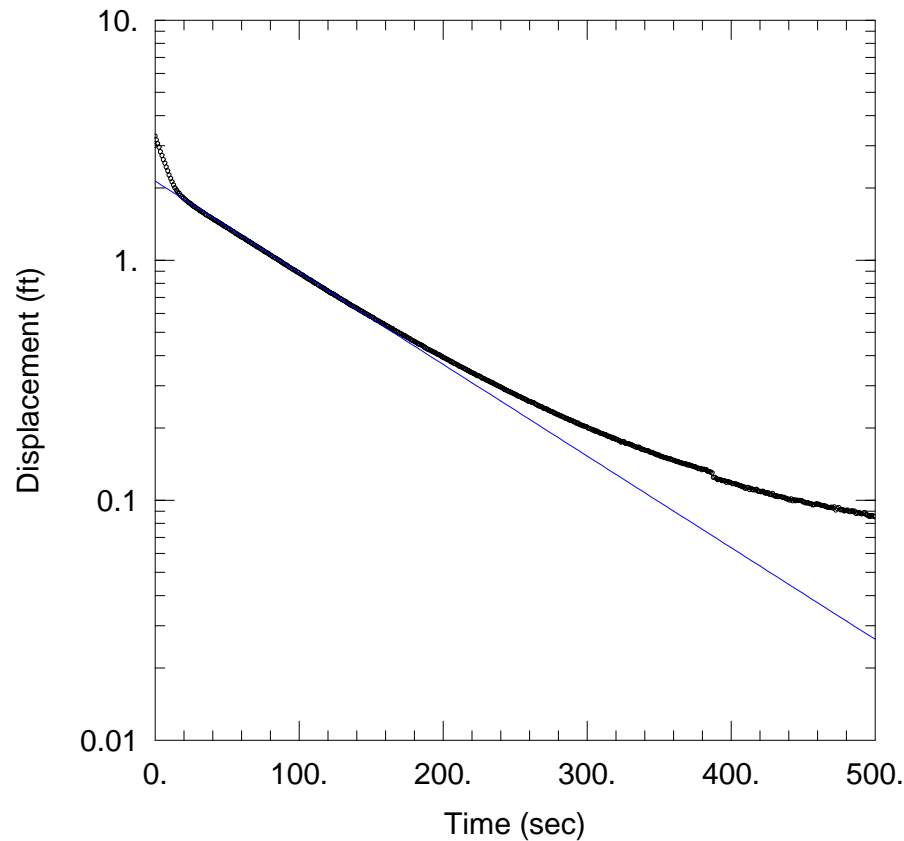
Total Well Penetration Depth: 26.02 ft

Casing Radius: 0.25 ft

Static Water Column Height: 25.1 ft

Screen Length: 25. ft

Well Radius: 0.5 ft



E2-3 SLUG OUT 1

Data Set: T:\...\E2-3_slugout_1.aqt

Date: 05/04/17

Time: 09:34:15

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E2-3

Test Date: 8/30/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 3.855 ft/day

y0 = 2.135 ft

AQUIFER DATA

Saturated Thickness: 24.7 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (E2-3)

Initial Displacement: 3. ft

Total Well Penetration Depth: 24.6 ft

Casing Radius: 0.25 ft

Static Water Column Height: 21.8 ft

Screen Length: 24.6 ft

Well Radius: 0.5 ft

E2-3 SLUG OUT 2

Data Set: T:\...\E2-3_slugout_2.aqt

Date: 05/04/17

Time: 09:34:30

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E2-3

Test Date: 8/30/2016

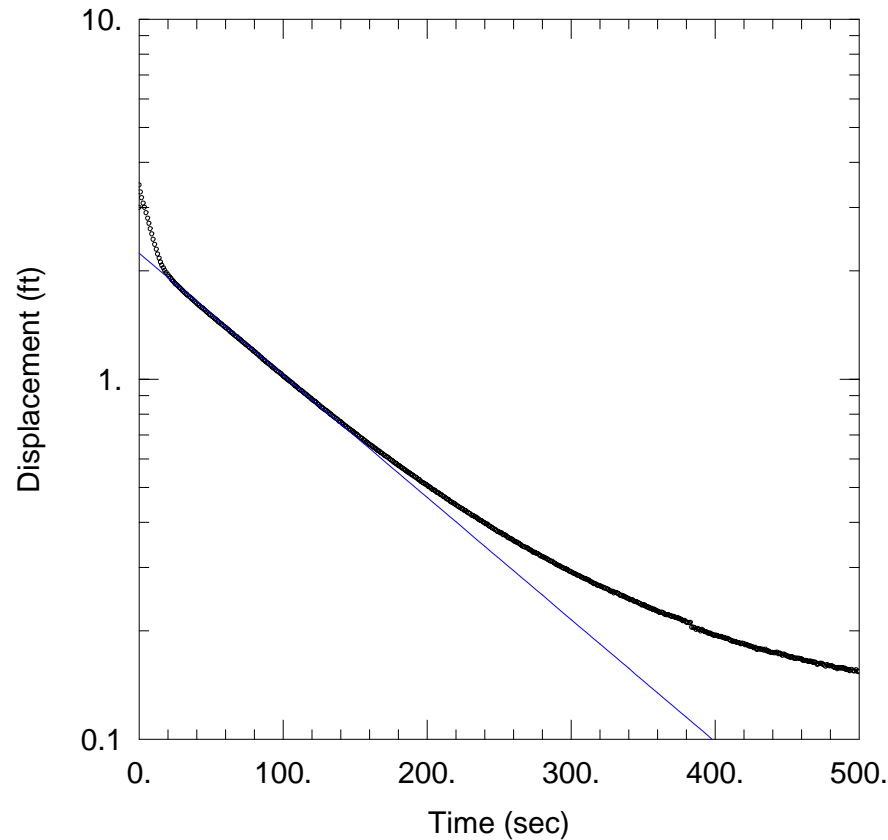
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 3.559$ ft/day

$y_0 = 2.239$ ft



AQUIFER DATA

Saturated Thickness: 24.7 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (E2-3)

Initial Displacement: 3. ft

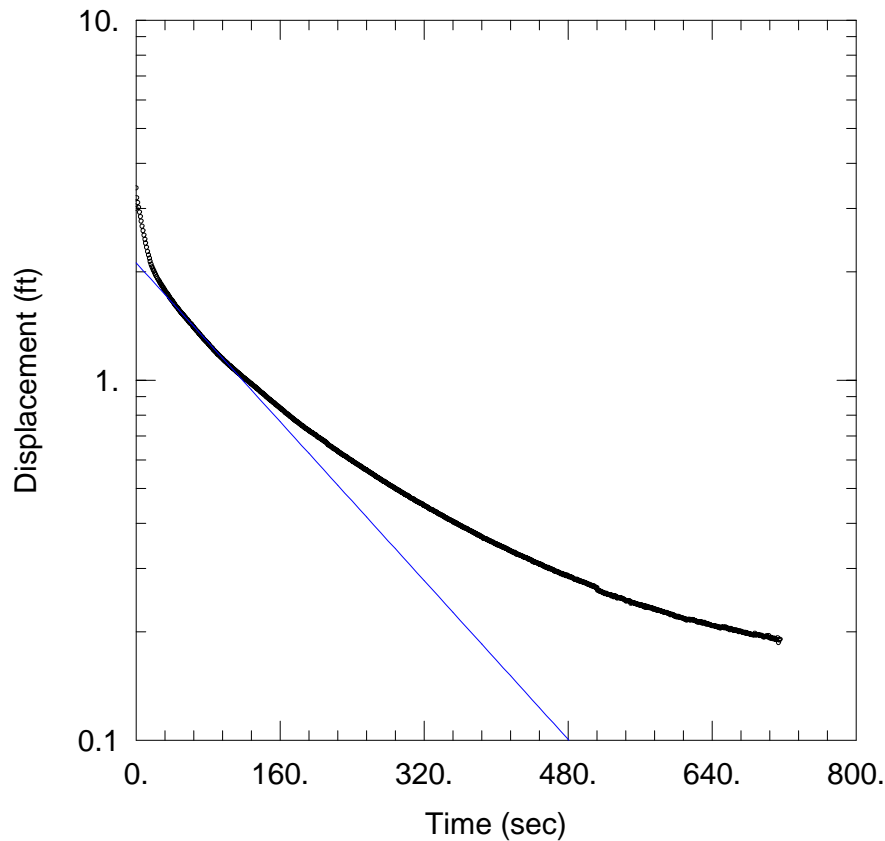
Total Well Penetration Depth: 24.68 ft

Casing Radius: 0.25 ft

Static Water Column Height: 21.8 ft

Screen Length: 24.68 ft

Well Radius: 0.5 ft



E2-4 SLUG OUT 1

Data Set: T:\...\E2-4_slugout_1.aqt

Date: 05/04/17

Time: 09:34:43

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E2-4

Test Date: 8/30/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 3.001$ ft/day

$y_0 = 2.118$ ft

AQUIFER DATA

Saturated Thickness: 21.6 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (E2-4)

Initial Displacement: 3. ft

Total Well Penetration Depth: 21. ft

Casing Radius: 0.25 ft

Static Water Column Height: 21. ft

Screen Length: 21. ft

Well Radius: 0.5 ft

E2-4 SLUG OUT 2

Data Set: T:\...\E2-4_slugout_2.aqt

Date: 05/04/17

Time: 09:34:52

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E2-4

Test Date: 8/30/2016

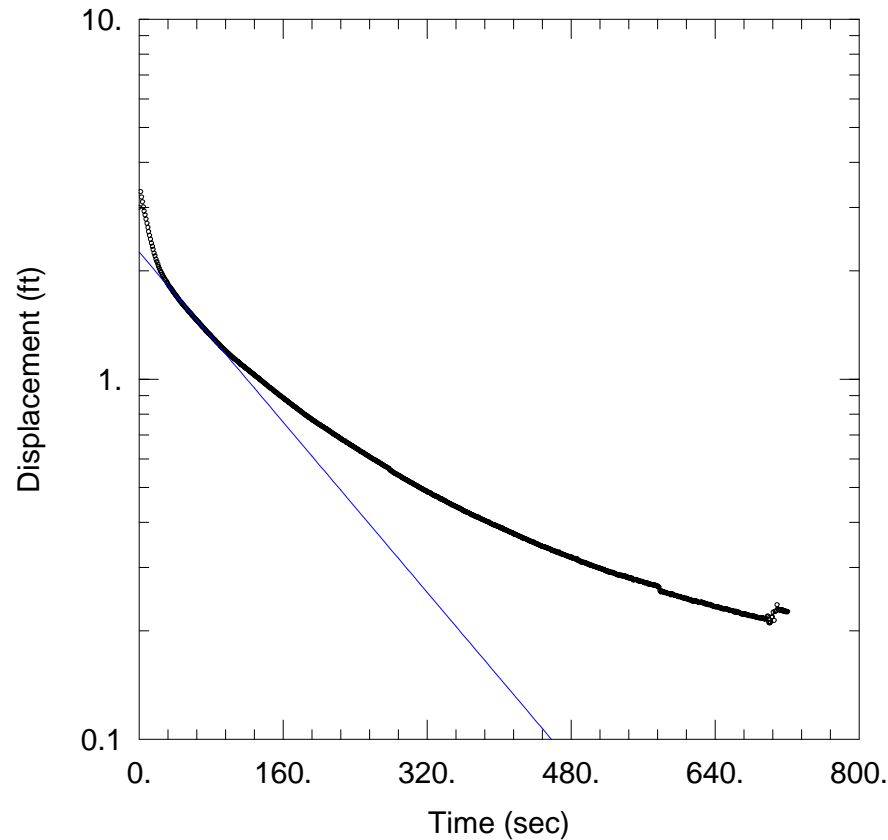
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 2.446$ ft/day

$y_0 = 2.257$ ft



AQUIFER DATA

Saturated Thickness: 21.6 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (E2-4)

Initial Displacement: 3. ft

Total Well Penetration Depth: 21.6 ft

Casing Radius: 0.25 ft

Static Water Column Height: 21. ft

Screen Length: 21.6 ft

Well Radius: 0.5 ft

E2-5 SLUG OUT 1

Data Set: T:\...\E2-5_slugout_1.aqt

Date: 05/04/17

Time: 09:35:03

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E2-5

Test Date: 8/30/2016

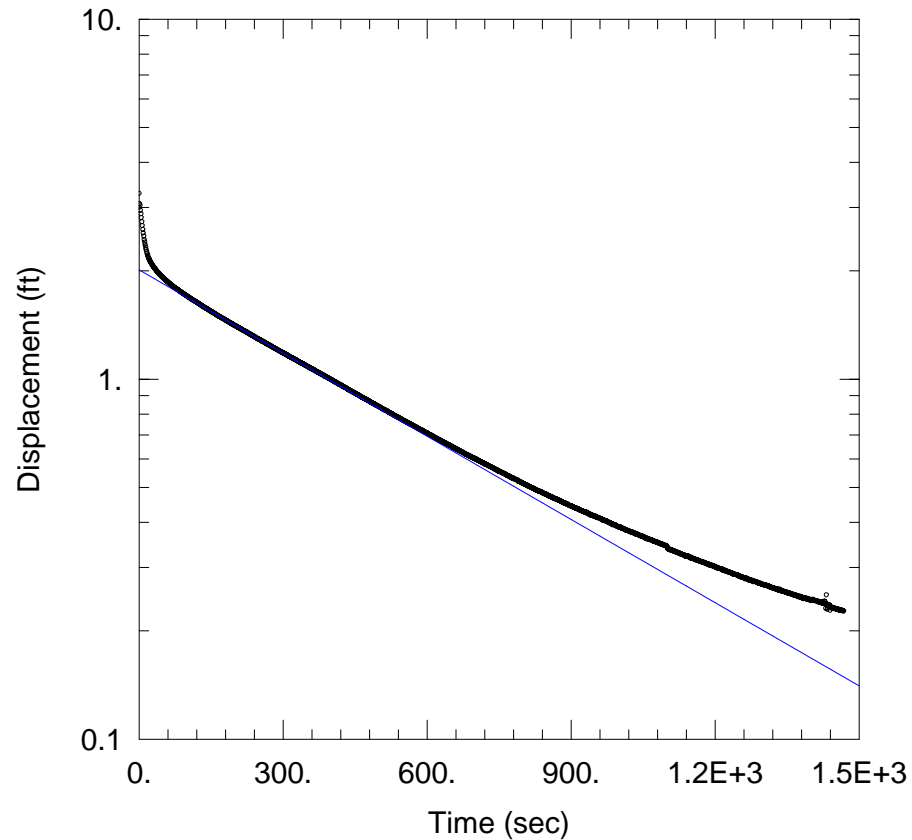
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 0.7526$ ft/day

$y_0 = 2.01$ ft



AQUIFER DATA

Saturated Thickness: 25.3 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (E2-5)

Initial Displacement: 3. ft

Total Well Penetration Depth: 25.3 ft

Casing Radius: 0.25 ft

Static Water Column Height: 27.5 ft

Screen Length: 25. ft

Well Radius: 0.5 ft

E2-5 SLUG OUT 2

Data Set: T:\...\E2-5_slugout_2.aqt

Date: 05/04/17

Time: 09:35:13

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: E2-5

Test Date: 8/30/2016

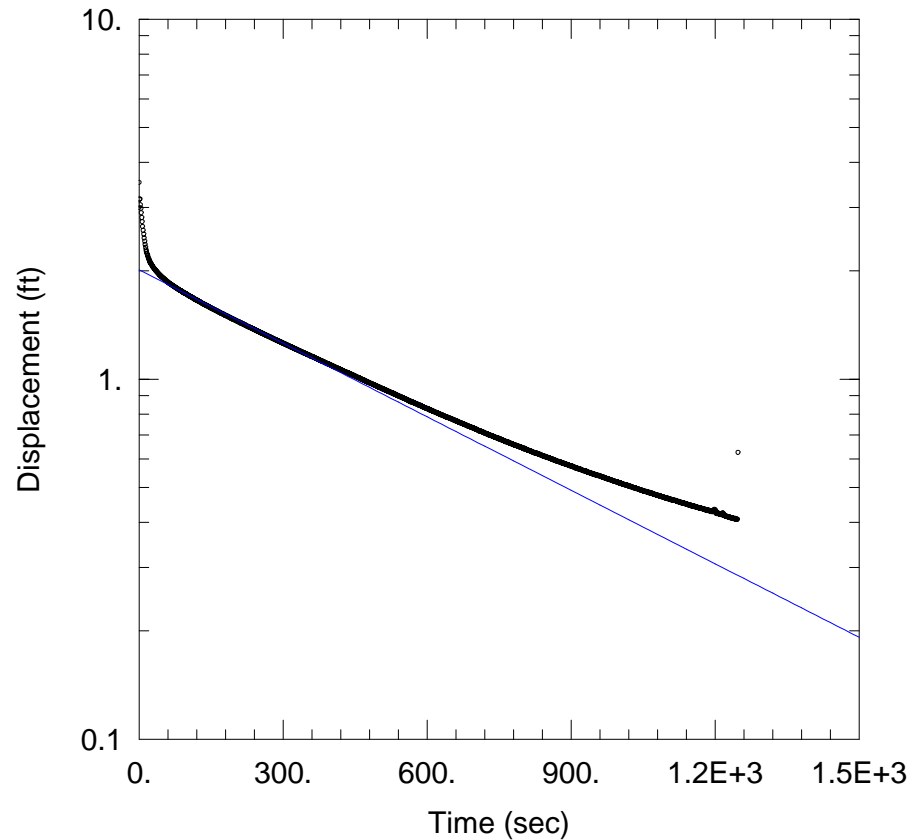
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.6653 ft/day

y0 = 2.013 ft



AQUIFER DATA

Saturated Thickness: 25.29 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (E2-5)

Initial Displacement: 3. ft

Total Well Penetration Depth: 25.3 ft

Casing Radius: 0.25 ft

Static Water Column Height: 27.5 ft

Screen Length: 25. ft

Well Radius: 0.5 ft

UFIW-01D SLUG IN 1

Data Set: T:\...\UFIW-01D_slugin_1.aqt

Date: 05/04/17

Time: 09:37:23

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-01D

Test Date: 8/16/2016

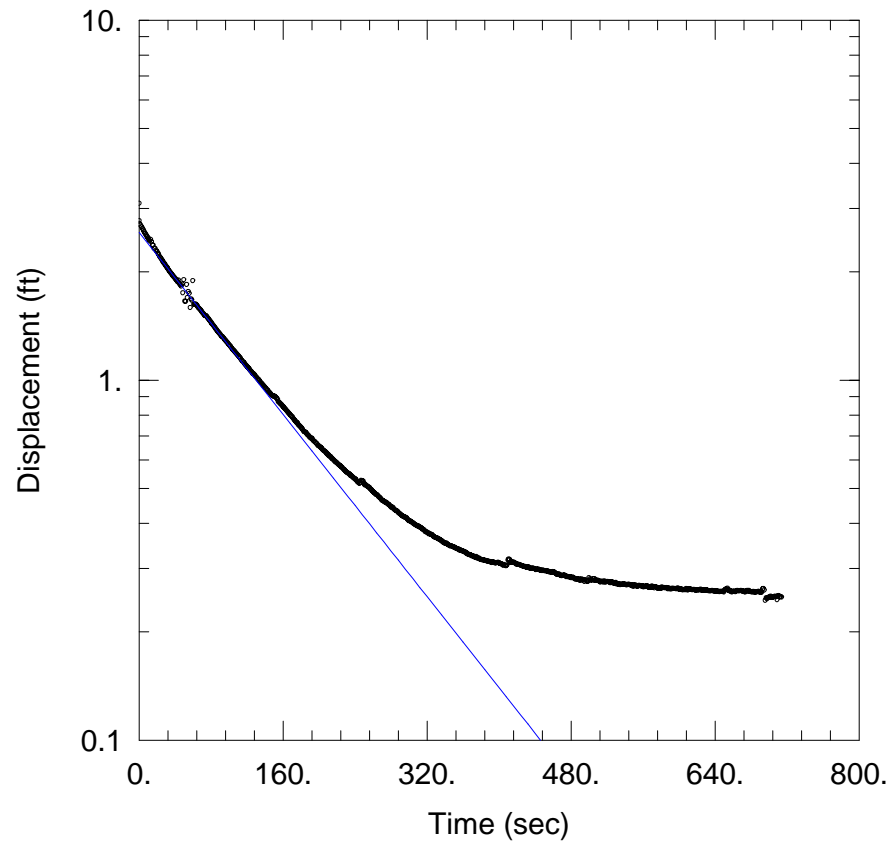
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.649$ ft/day

$y_0 = 2.574$ ft



AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-01D)

Initial Displacement: 3.1 ft

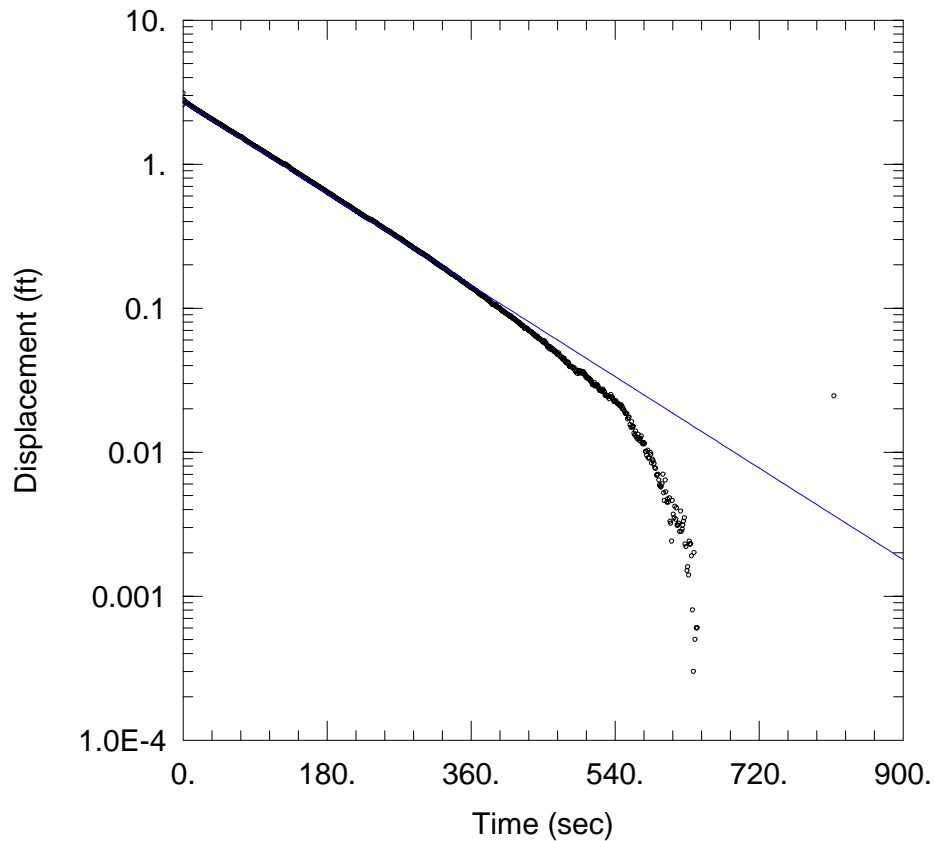
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 20.3 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-01D SLUG IN 2

Data Set: T:\...\UFIW-01D_slugin_2.aqt

Date: 05/04/17

Time: 09:39:17

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-01D

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.839$ ft/day

$y_0 = 2.688$ ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-01D)

Initial Displacement: 3.1 ft

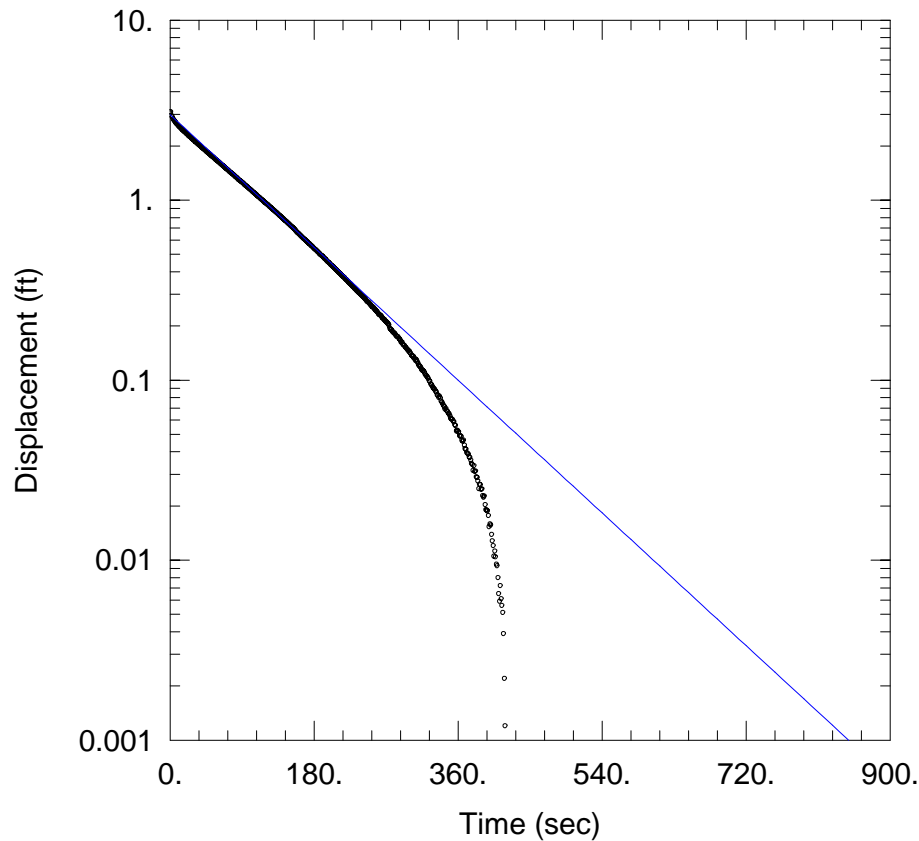
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 20.3 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-01D SLUG OUT 1

Data Set: T:\...\UFIW-01D_slugout_1.aqt
 Date: 05/04/17 Time: 09:40:57

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-01D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 2.136$ ft/day
 $y_0 = 2.985$ ft

AQUIFER DATA

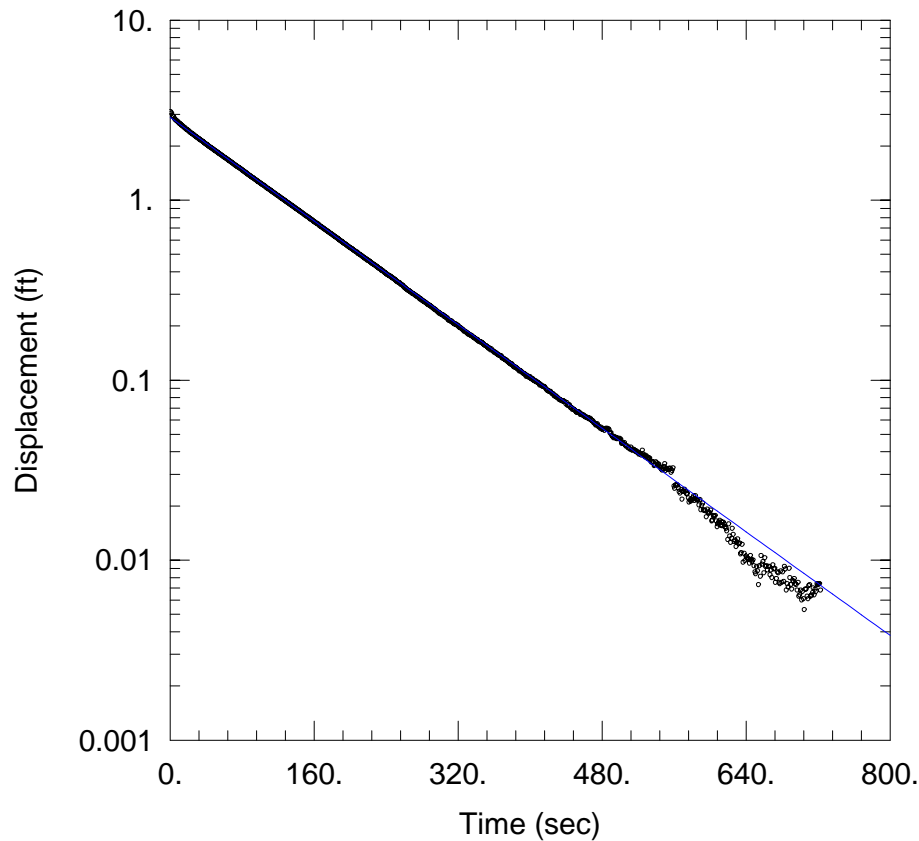
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-01D)

Initial Displacement: 3.1 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 20.3 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-01D SLUG OUT 2

Data Set: T:\...\UFIW-01D_slugout_2.aqt
 Date: 05/04/17 Time: 09:41:08

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-01D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.876$ ft/day
 $y_0 = 2.884$ ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-01D)

Initial Displacement: 3.1 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 20.3 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft

UFIW-01I SLUG IN 1

Data Set: T:\...\UFIW-01I_slugin_1_MBQC.aqt

Date: 05/04/17

Time: 09:41:48

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-01I

Test Date: 8/16/2016

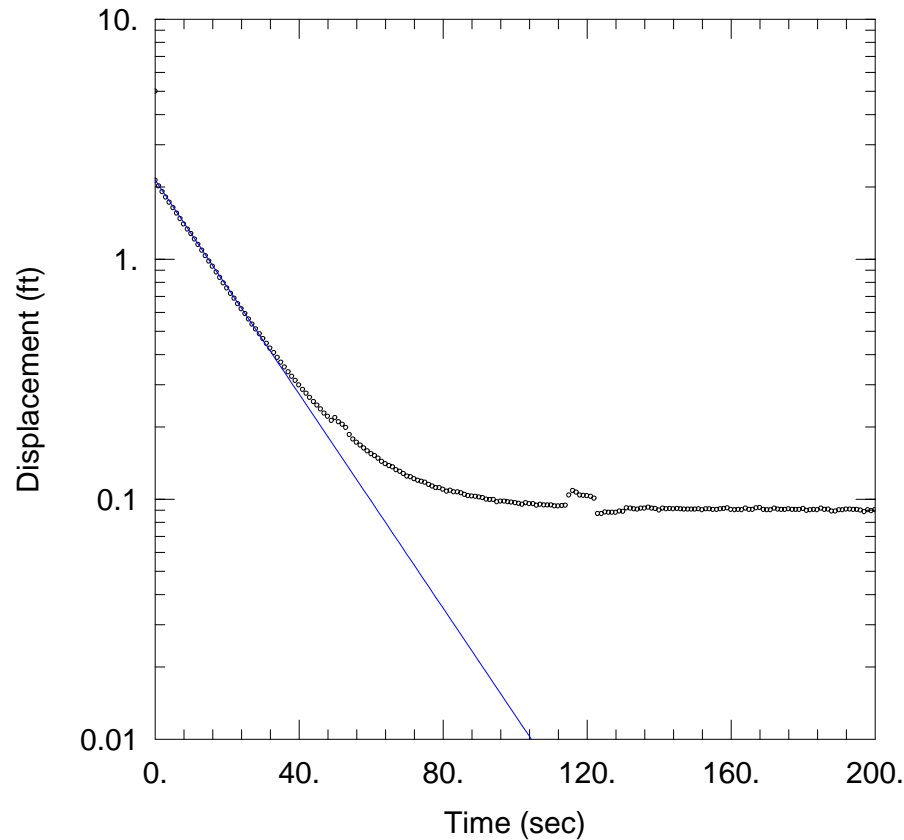
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 10.37$ ft/day

$y_0 = 2.139$ ft



AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-01I)

Initial Displacement: 5. ft

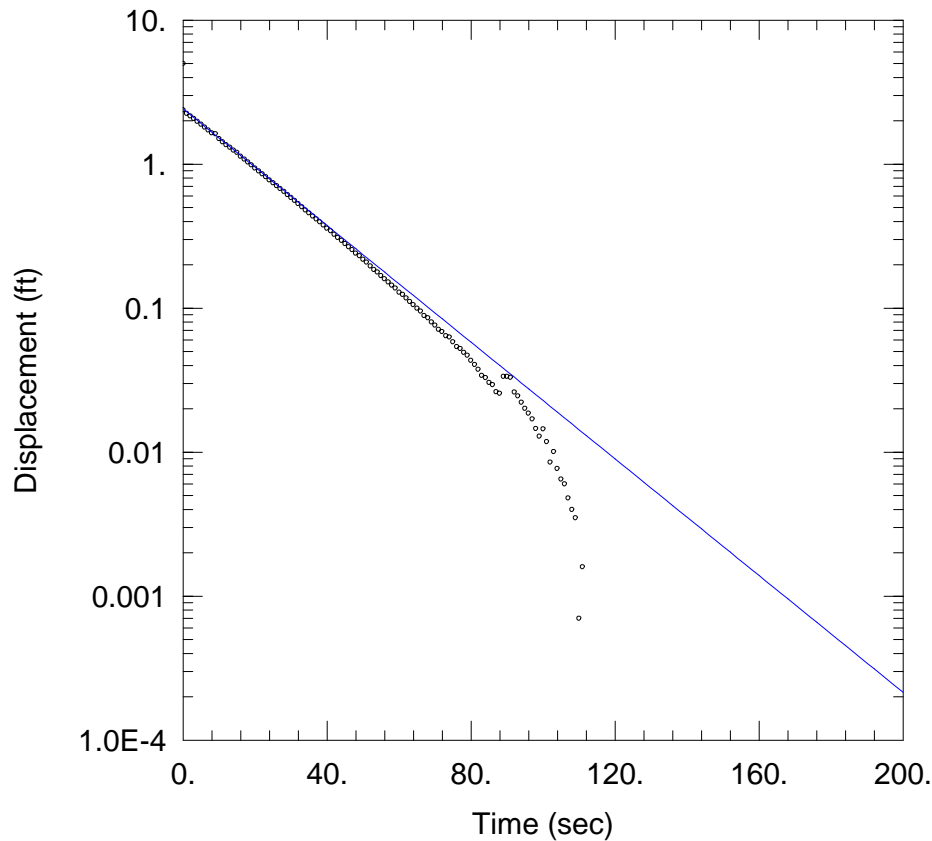
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 8.46 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-01I SLUG IN 2

Data Set: T:\...\UFIW-01I_slugin_2_MBQC.aqt

Date: 05/04/17

Time: 09:41:57

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-01I

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 9.421 ft/day

y0 = 2.419 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-01I)

Initial Displacement: 5. ft

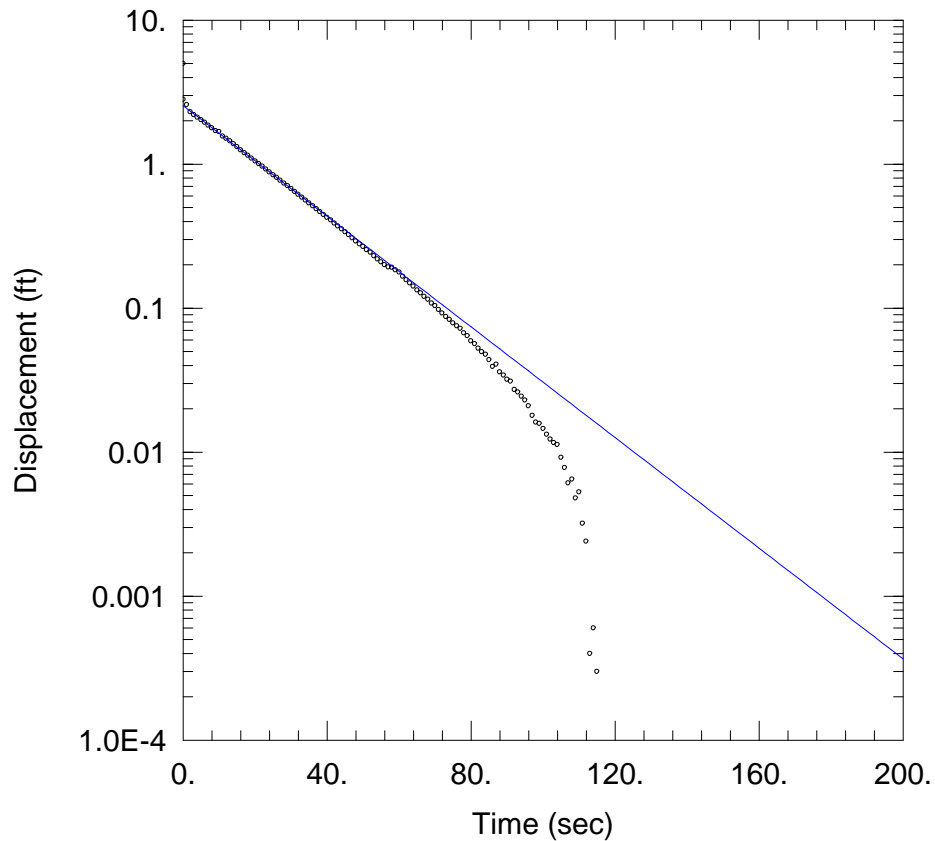
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 8.46 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-01I SLUG IN 3

Data Set: T:\...\UFIW-01I_slugin_3_MBQC.aqt

Date: 05/04/17

Time: 09:42:11

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-01I

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 8.935 ft/day

y0 = 2.55 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-01I)

Initial Displacement: 5. ft

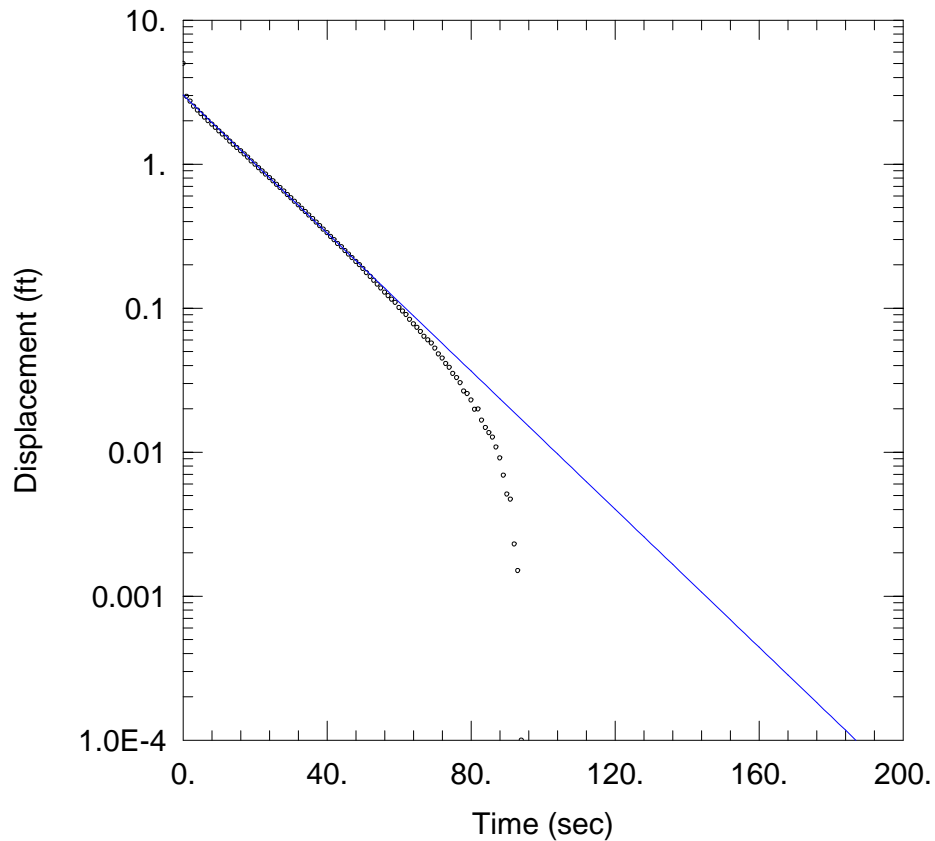
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 8.46 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-01I SLUG OUT 1

Data Set: T:\...\UFIW-01I_slugout_1_MBQC.aqt
 Date: 05/04/17 Time: 09:42:20

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-01I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 11.15$ ft/day
 $y_0 = 3.024$ ft

AQUIFER DATA

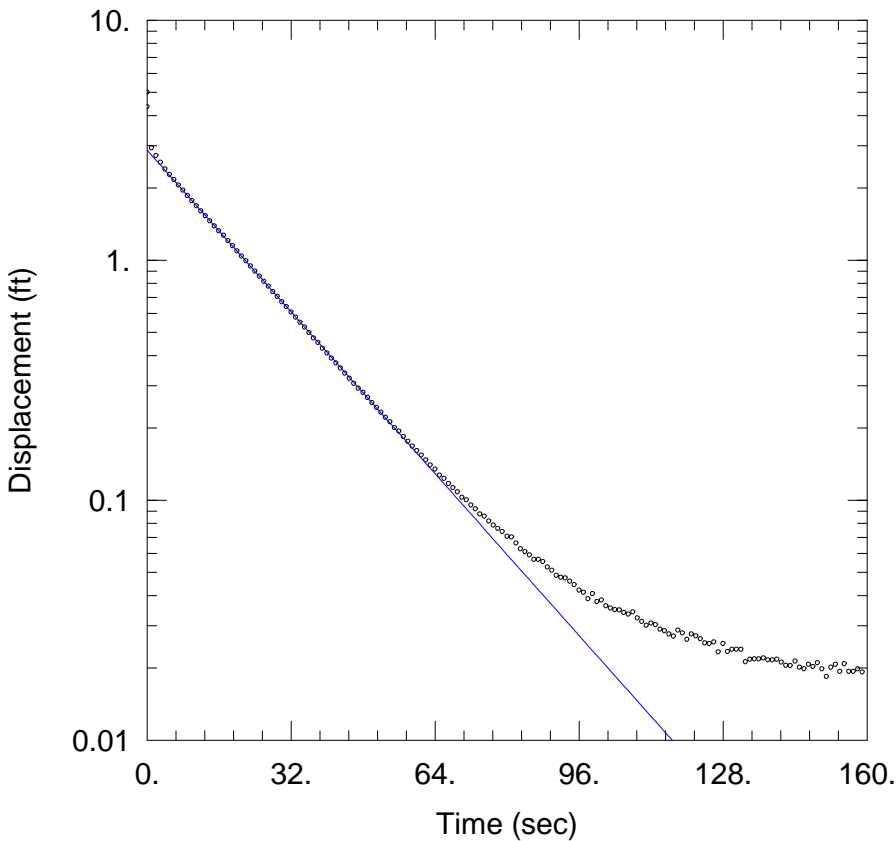
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-01I)

Initial Displacement: 5. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 8.46 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-01I SLUG OUT 2

Data Set: T:\...\UFIW-01I_slugout_2_MBQC.aqt
 Date: 05/04/17 Time: 09:42:30

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-01I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 9.795$ ft/day
 $y_0 = 2.872$ ft

AQUIFER DATA

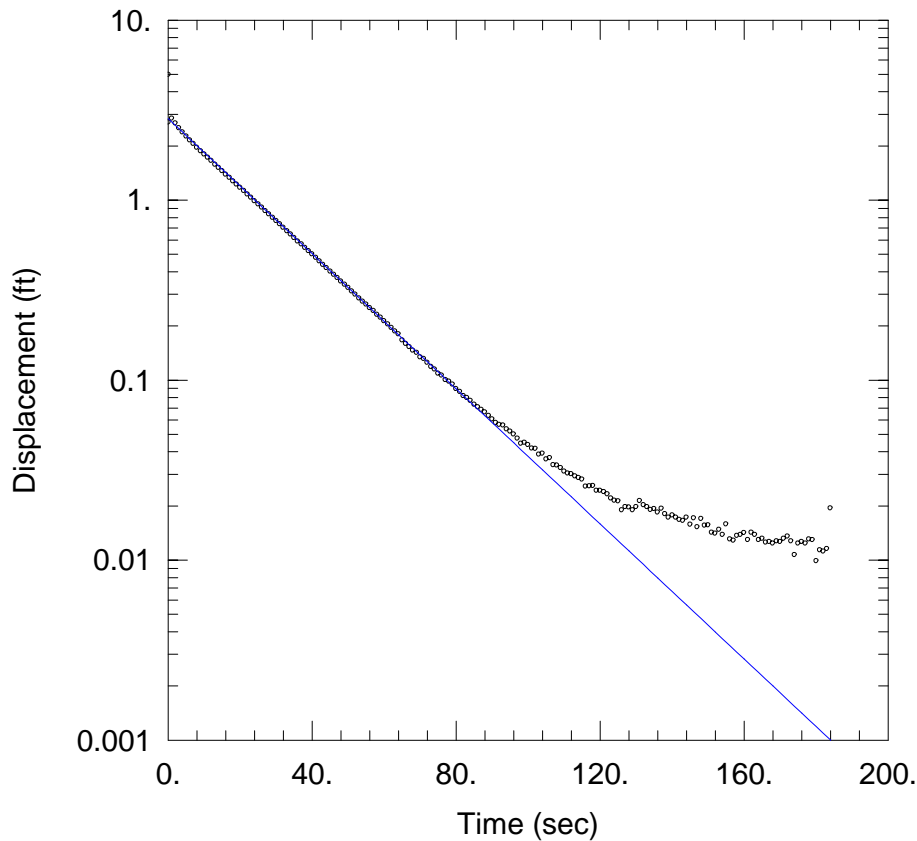
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-01I)

Initial Displacement: 5. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 8.46 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-01I SLUG OUT 3

Data Set: T:\...\UFIW-01I_slugout_3_MBQC.aqt
Date: 05/04/17 Time: 09:42:44

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFIW-01I
Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 8.726$ ft/day
 $y_0 = 2.837$ ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-01I)

Initial Displacement: 5. ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.083 ft

Static Water Column Height: 8.46 ft
Screen Length: 5. ft
Well Radius: 0.33 ft

UFIW-02D SLUG IN 1

Data Set: T:\...\UFIW-02D_slugin_1.aqt

Date: 05/04/17

Time: 09:42:54

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-01I

Test Date: 8/16/2016

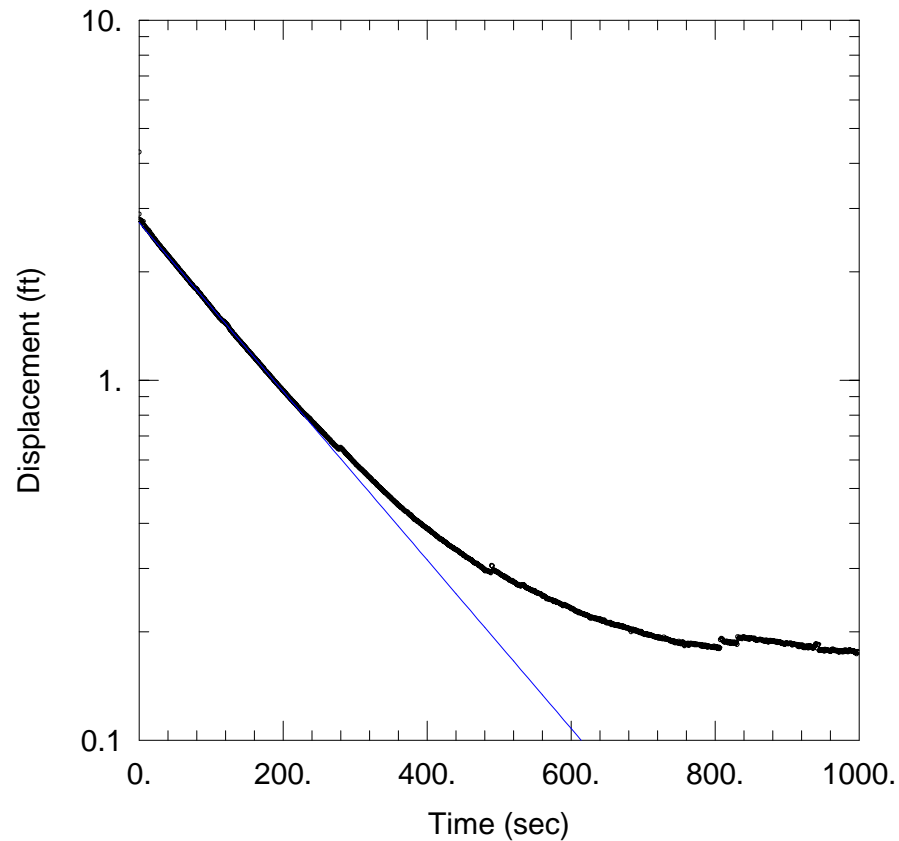
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.221 ft/day

y0 = 2.739 ft



AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-02D)

Initial Displacement: 4.3 ft

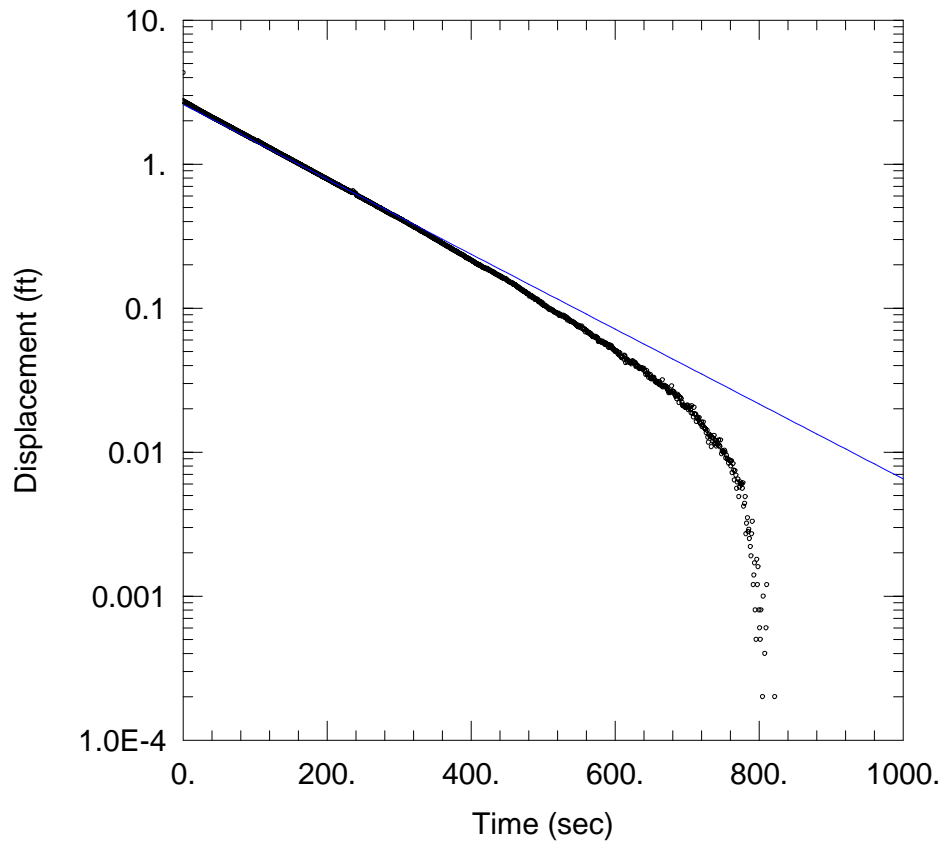
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.1 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-02D SLUG IN 2

Data Set: T:\...\UFIW-02D_slugin_2.aqt

Date: 05/04/17

Time: 09:43:03

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-01I

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.356 ft/day

y0 = 2.599 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-02D)

Initial Displacement: 4.3 ft

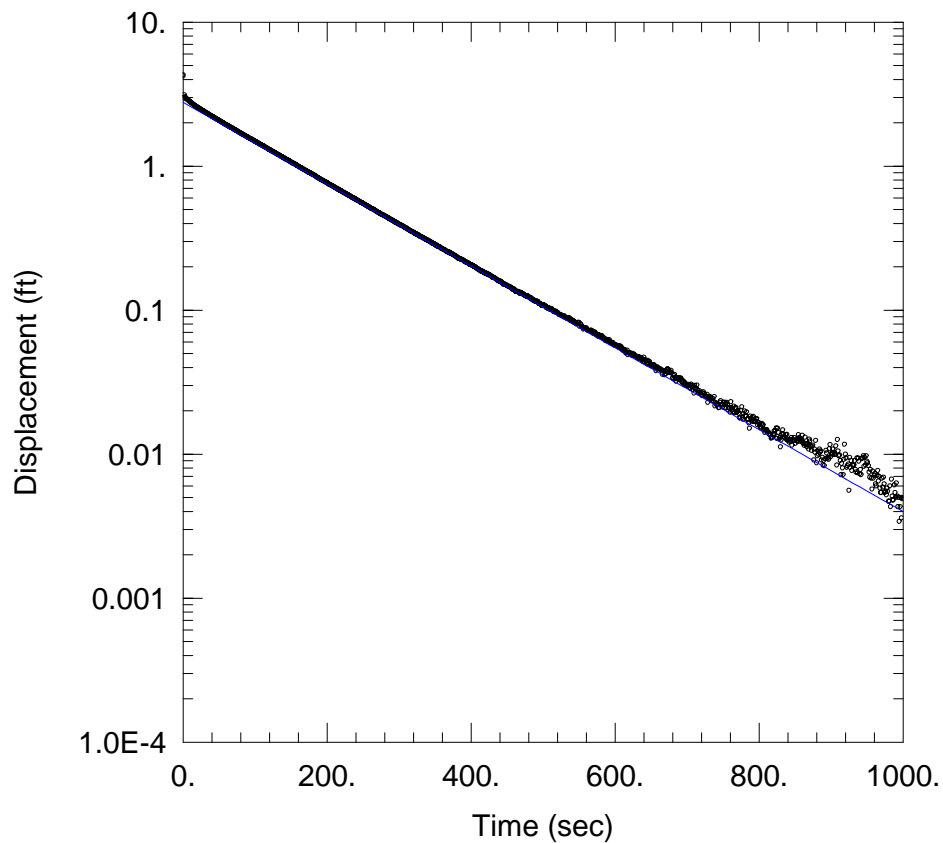
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.1 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-02D SLUG OUT 1

Data Set: T:\...\UFIW-02D_slugout_1.aqt
Date: 05/04/17 Time: 09:43:14

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFIW-01I
Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 1.482$ ft/day
 $y_0 = 2.775$ ft

AQUIFER DATA

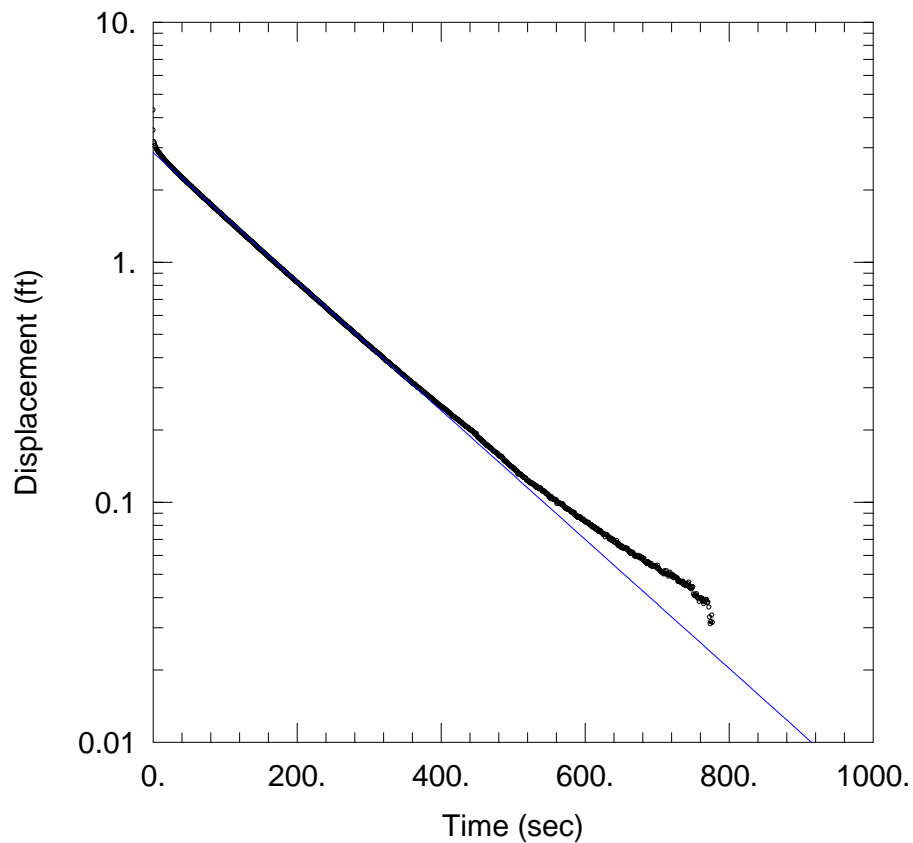
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-02D)

Initial Displacement: 4.3 ft
Total Well Penetration Depth: 20. ft
Casing Radius: 0.083 ft

Static Water Column Height: 21.1 ft
Screen Length: 5. ft
Well Radius: 0.33 ft



UFIW-02D SLUG OUT 2

Data Set: T:\...\UFIW-02D_slugout_2.aqt
 Date: 05/04/17 Time: 09:43:23

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-02D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.401$ ft/day
 $y_0 = 2.866$ ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-02D)

Initial Displacement: 4.3 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 21.1 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft

UFIW-02I SLUG IN 1

Data Set: T:\...\UFIW-02I_slugin_1.aqt

Date: 05/04/17

Time: 09:43:32

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-02I

Test Date: 8/16/2016

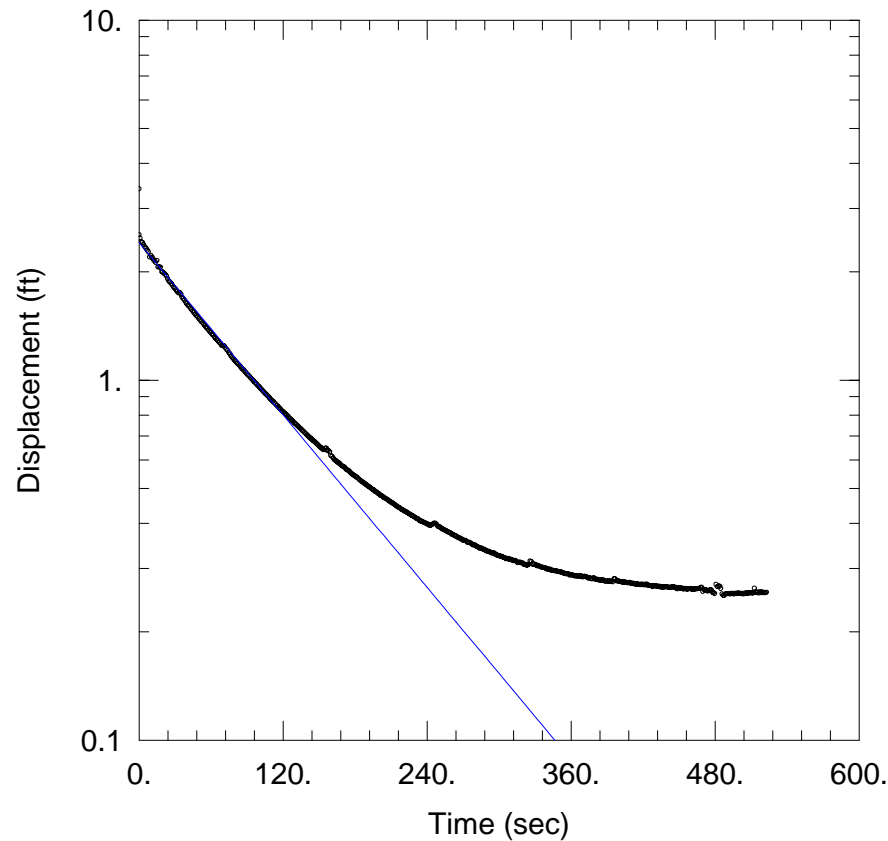
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.006 ft/day

y0 = 2.409 ft



AQUIFER DATA

Saturated Thickness: 12. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-02I)

Initial Displacement: 3.4 ft

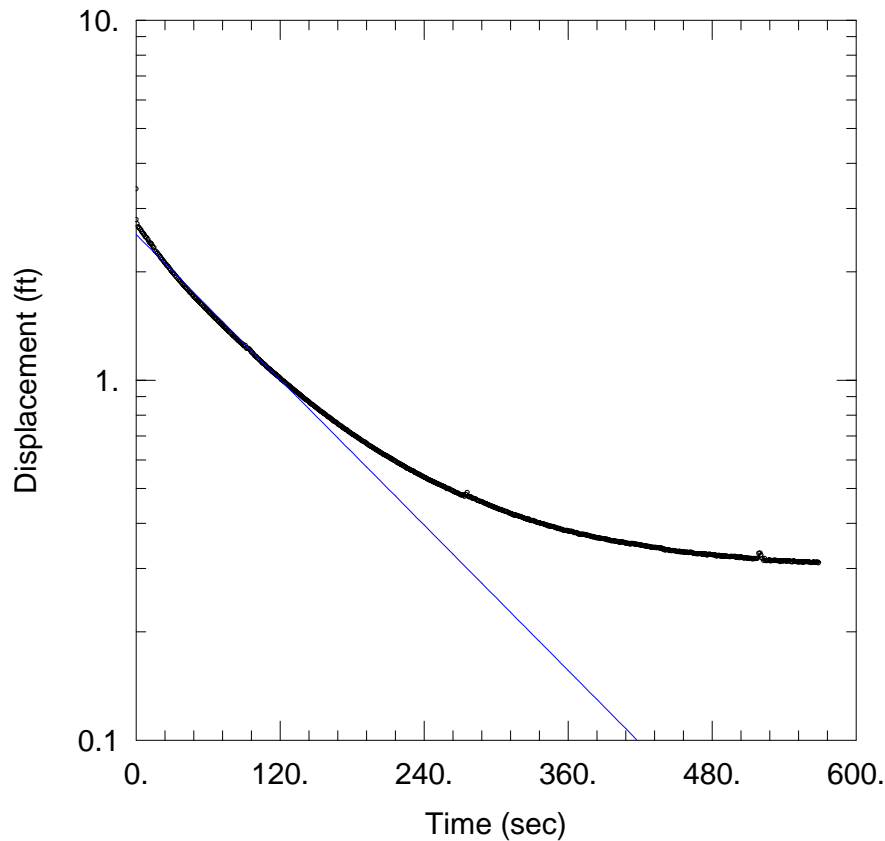
Total Well Penetration Depth: 13. ft

Casing Radius: 0.083 ft

Static Water Column Height: 13.92 ft

Screen Length: 10. ft

Well Radius: 0.33 ft



UFIW-02I SLUG IN 2

Data Set: T:\...\UFIW-02I_slugin_2.aqt

Date: 05/04/17

Time: 09:43:45

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-02I

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.8483 ft/day

y0 = 2.541 ft

AQUIFER DATA

Saturated Thickness: 12. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-02I)

Initial Displacement: 3.4 ft

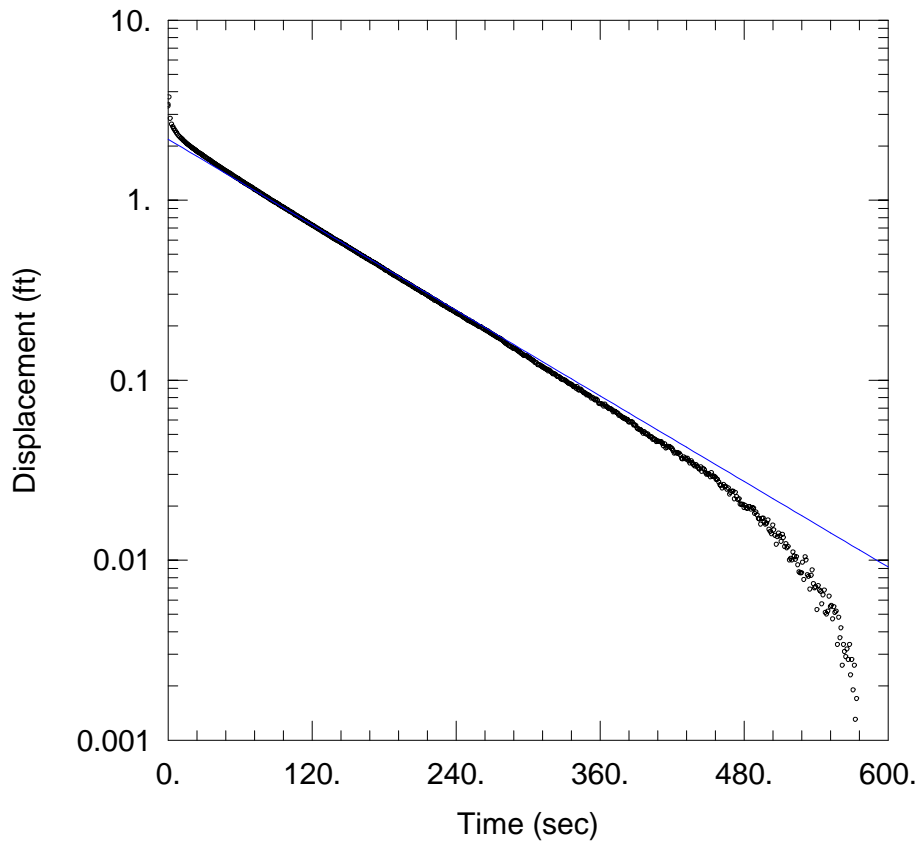
Total Well Penetration Depth: 13. ft

Casing Radius: 0.083 ft

Static Water Column Height: 13.82 ft

Screen Length: 10. ft

Well Radius: 0.33 ft



UFIW-02I SLUG OUT 1

Data Set: T:\...\UFIW-02I_slugout_1.aqt
 Date: 05/04/17 Time: 09:43:55

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-02I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 0.9988$ ft/day
 $y_0 = 2.18$ ft

AQUIFER DATA

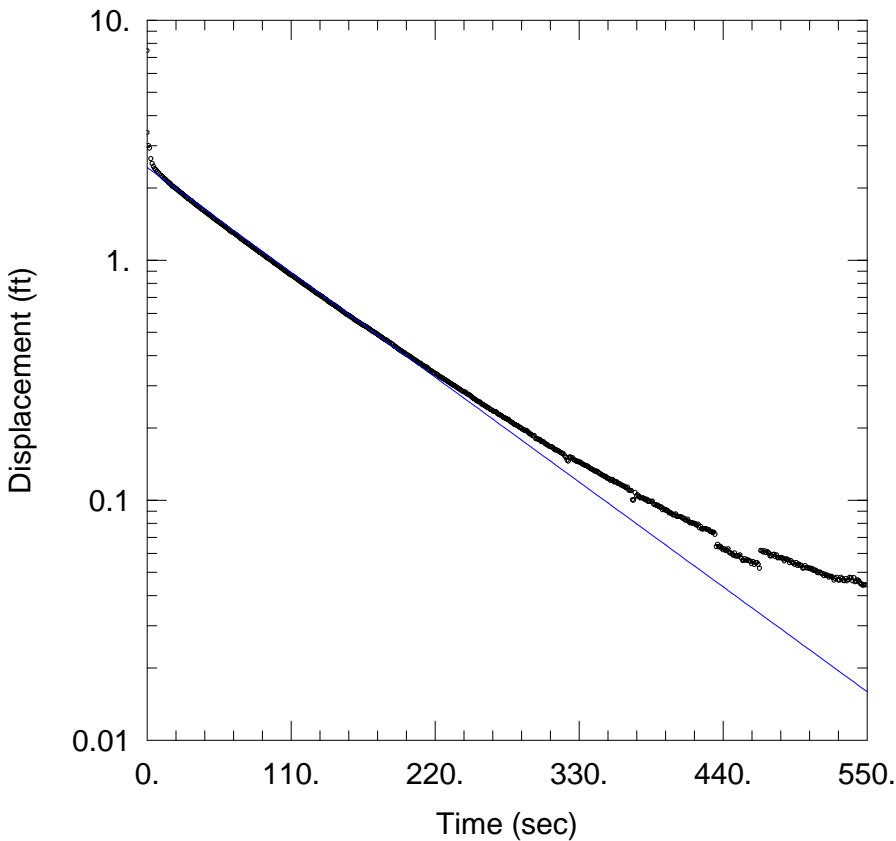
Saturated Thickness: 12. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-02I)

Initial Displacement: 3.4 ft
 Total Well Penetration Depth: 13. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 13.82 ft
 Screen Length: 10. ft
 Well Radius: 0.33 ft



UFIW-02I SLUG OUT 2

Data Set: T:\...\UFIW-02I_slugout_2.aqt
 Date: 05/04/17 Time: 09:44:05

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-02I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.001$ ft/day
 $y_0 = 2.432$ ft

AQUIFER DATA

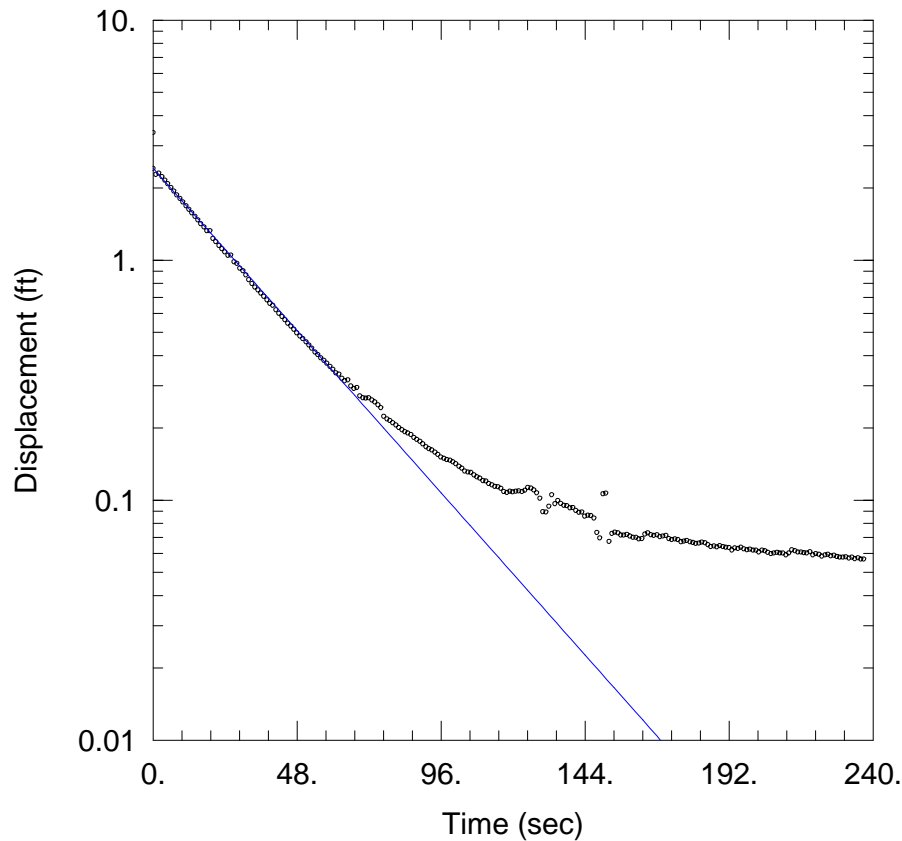
Saturated Thickness: 12. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-02I)

Initial Displacement: 3.4 ft
 Total Well Penetration Depth: 13. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 13.82 ft
 Screen Length: 10. ft
 Well Radius: 0.33 ft



UFIW-03D SLUG IN 1

Data Set: T:\...\UFIW-03D_slugin_1.aqt
Date: 05/04/17 Time: 09:44:16

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFIW-03D
Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 7.343$ ft/day
 $y_0 = 2.414$ ft

AQUIFER DATA

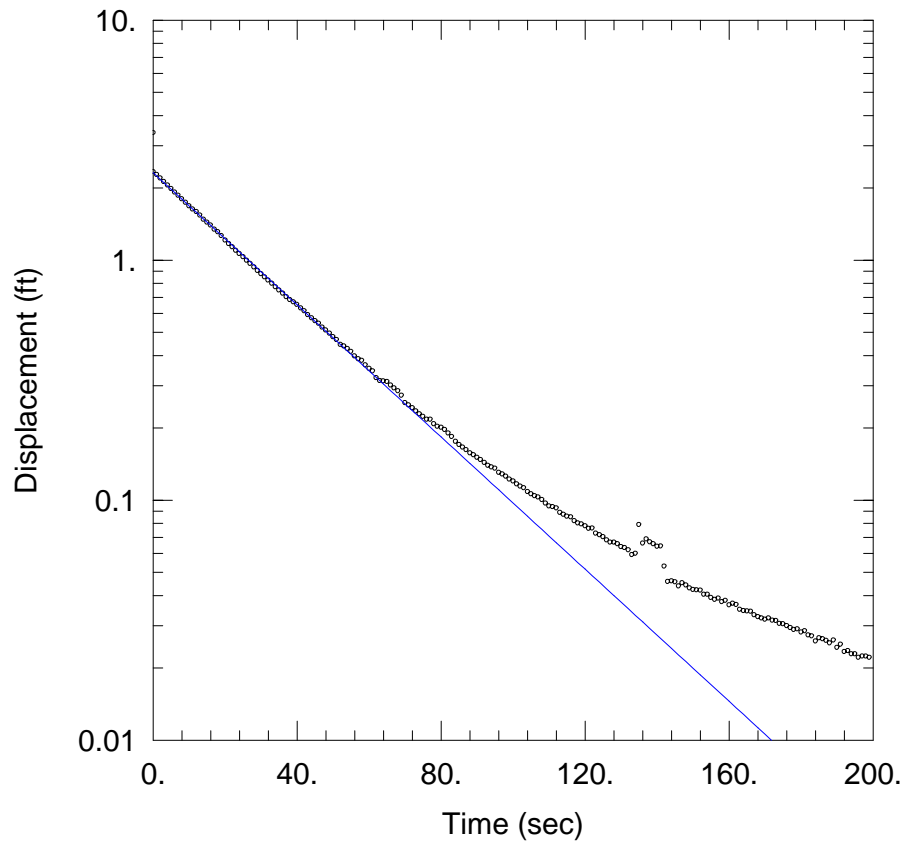
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-03D)

Initial Displacement: 3.4 ft
Total Well Penetration Depth: 20. ft
Casing Radius: 0.083 ft

Static Water Column Height: 22.9 ft
Screen Length: 5. ft
Well Radius: 0.33 ft



UFIW-03D SLUG IN 2

Data Set: T:\...\UFIW-03D_slugin_2.aqt
 Date: 05/04/17 Time: 09:44:26

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-03D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 7.176$ ft/day
 $y_0 = 2.314$ ft

AQUIFER DATA

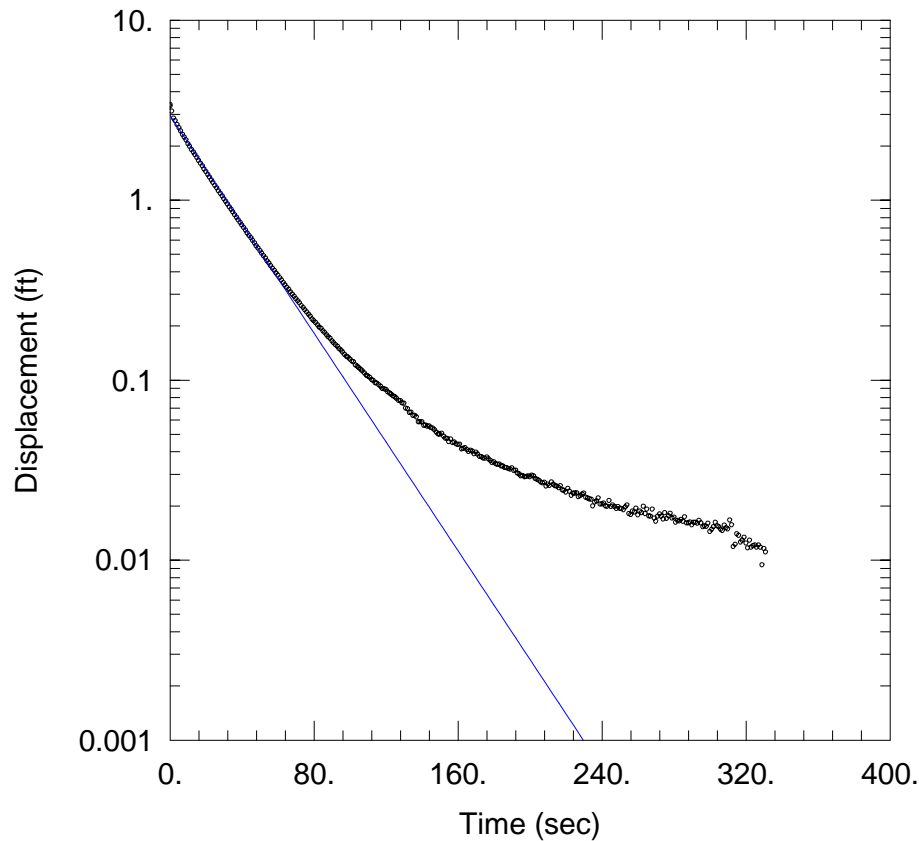
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-03D)

Initial Displacement: 3.4 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 22.9 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-03D SLUG OUT 1

Data Set: T:\...\UFIW-03D_slugout_1.aqt
 Date: 05/04/17 Time: 09:44:34

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-03D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 7.875$ ft/day
 $y_0 = 2.942$ ft

AQUIFER DATA

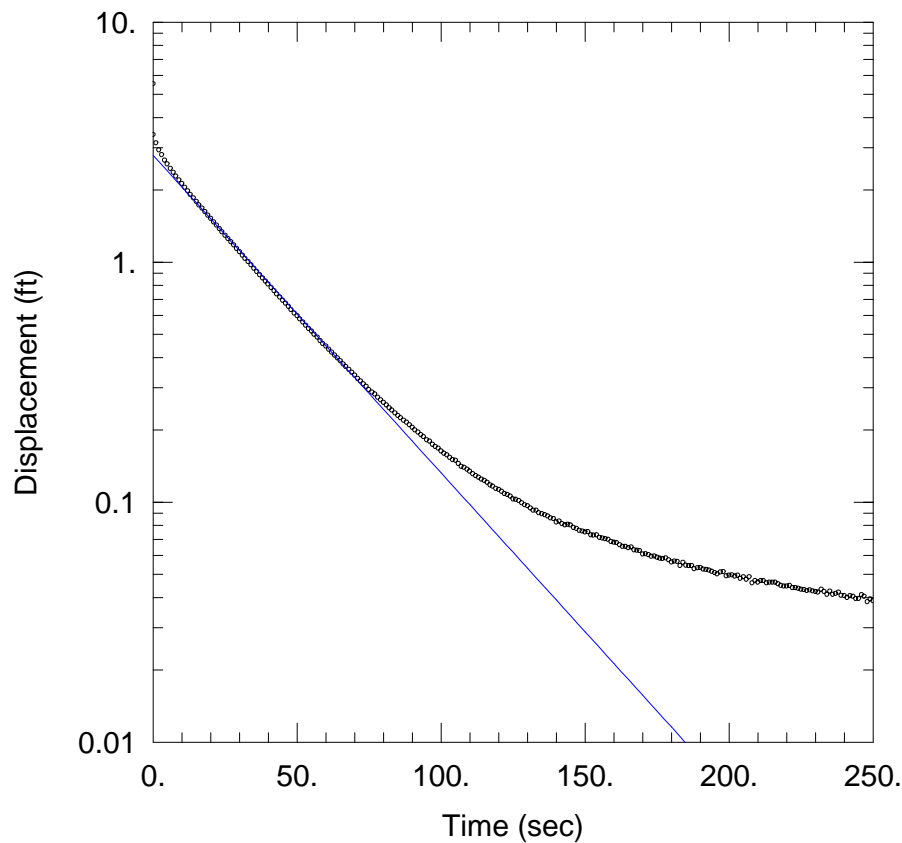
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-03D)

Initial Displacement: 3.4 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 22.9 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-03D SLUG OUT 2

Data Set: T:\...\UFIW-03D_slugout_2.aqt
 Date: 05/04/17 Time: 09:44:43

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-03D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 6.9$ ft/day
 $y_0 = 2.788$ ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-03D)

Initial Displacement: 3.4 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 22.9 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft

UFIW-03I SLUG IN 1

Data Set: T:\...\UFIW-03I_slugin_1.aqt

Date: 05/04/17

Time: 09:44:52

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-03I

Test Date: 8/16/2016

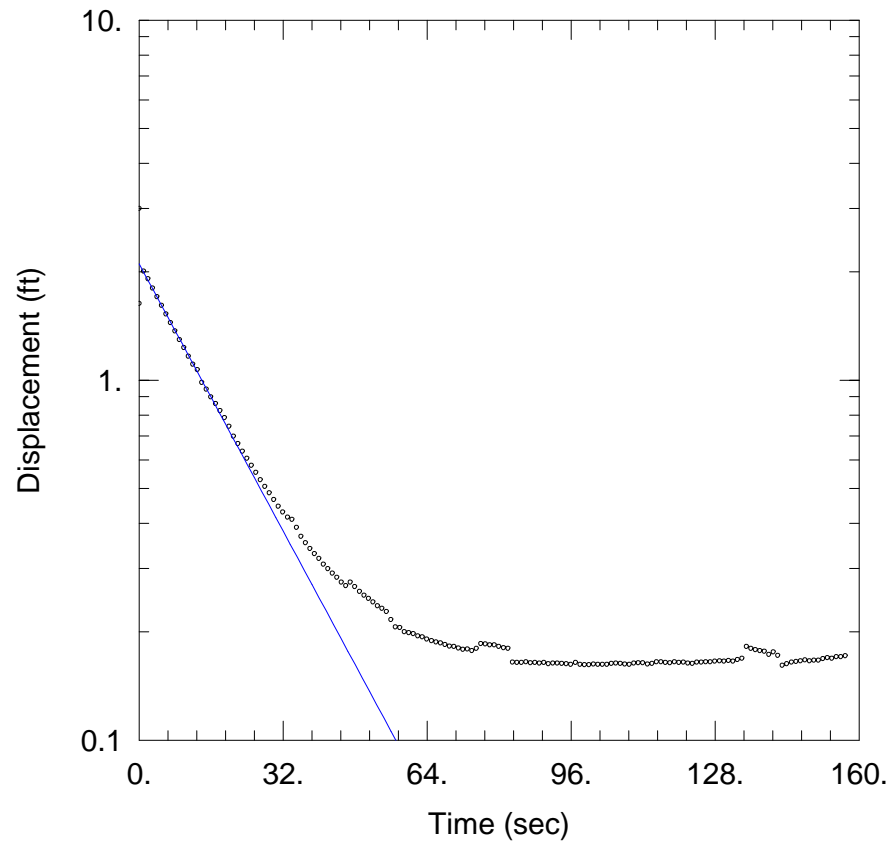
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 10.79 ft/day

y0 = 2.105 ft



AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-03I)

Initial Displacement: 3. ft

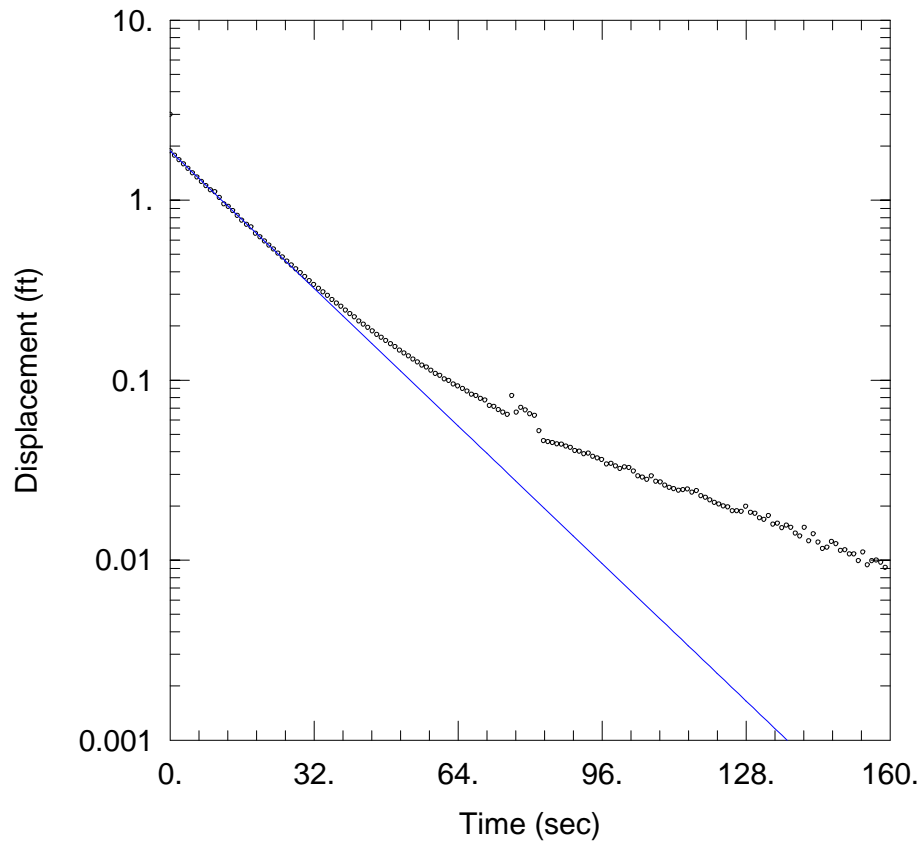
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 13. ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-03I SLUG IN 2

Data Set: T:\...\UFIW-03I_slugin_2.aqt

Date: 05/04/17

Time: 09:45:02

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-03I

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 11.1 ft/day

y0 = 1.876 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-03I)

Initial Displacement: 3. ft

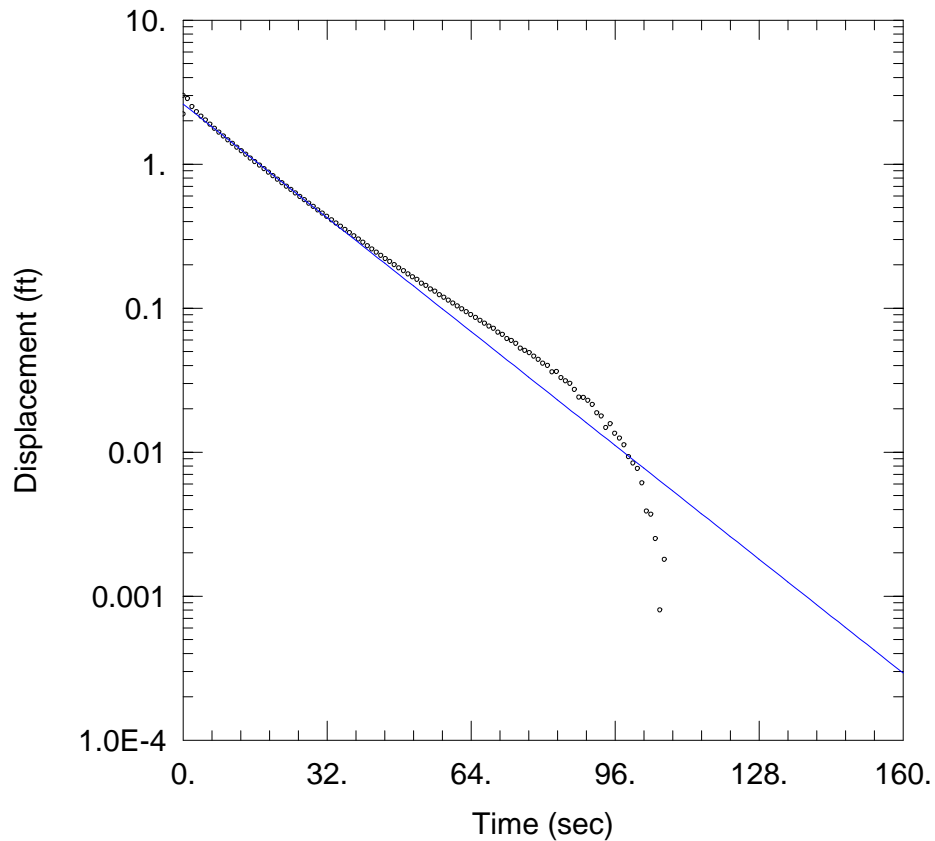
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 13. ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-03I SLUG OUT 1

Data Set: T:\...\UFIW-03I_slugout_1.aqt
Date: 05/04/17 Time: 09:55:25

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFIW-03I
Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 11.48$ ft/day
 $y_0 = 2.617$ ft

AQUIFER DATA

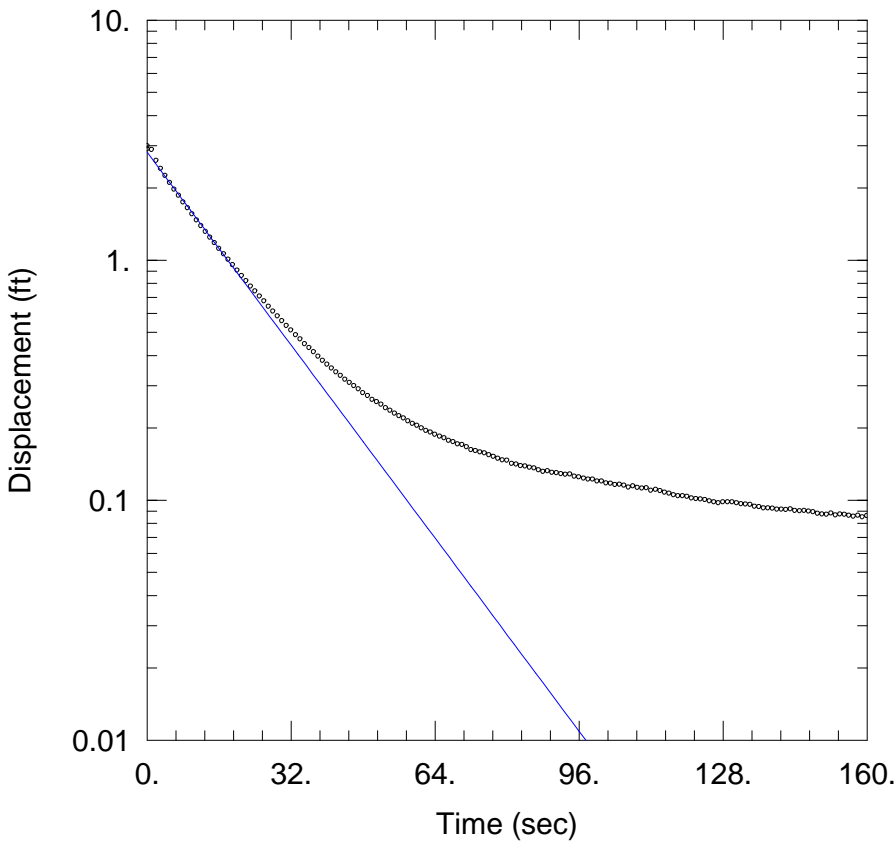
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-03I)

Initial Displacement: 3. ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.083 ft

Static Water Column Height: 13. ft
Screen Length: 5. ft
Well Radius: 0.33 ft



UFIW-03I SLUG OUT 2

Data Set: T:\...\UFIW-03I_slugout_2.aqt
 Date: 05/04/17 Time: 09:55:36

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-03I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 11.68$ ft/day
 $y_0 = 2.816$ ft

AQUIFER DATA

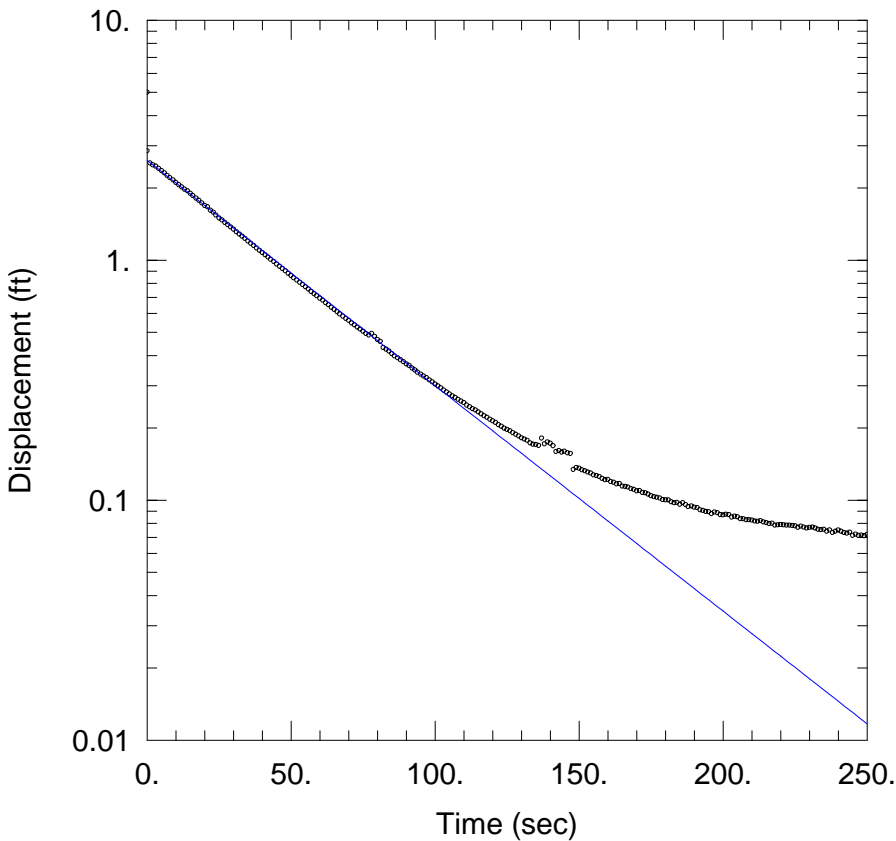
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-03I)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 13. ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-04D SLUG IN 1

Data Set: T:\...\UFIW-04D_slugin_1.aqt
 Date: 05/04/17 Time: 09:55:44

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-04D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 4.895$ ft/day
 $y_0 = 2.603$ ft

AQUIFER DATA

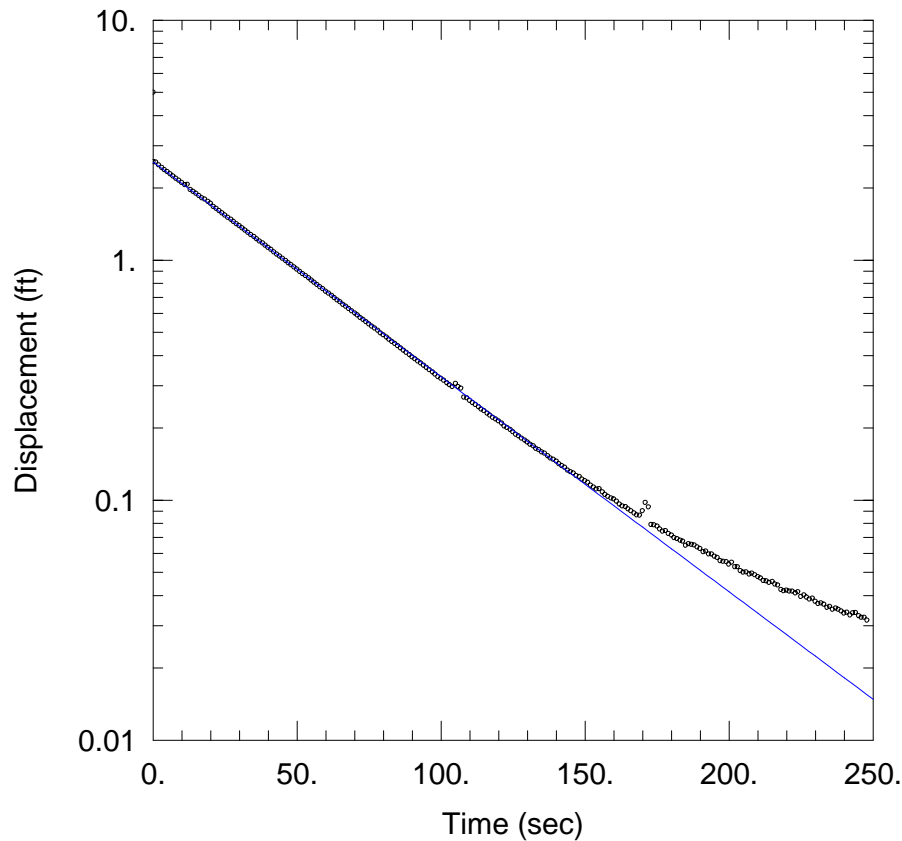
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-04D)

Initial Displacement: 5. ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 20.48 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-04D SLUG IN 2

Data Set: T:\...\UFIW-04D_slugin_2.aqt

Date: 05/04/17

Time: 09:55:54

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-04D

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 4.669$ ft/day

$y_0 = 2.566$ ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-04D)

Initial Displacement: 5. ft

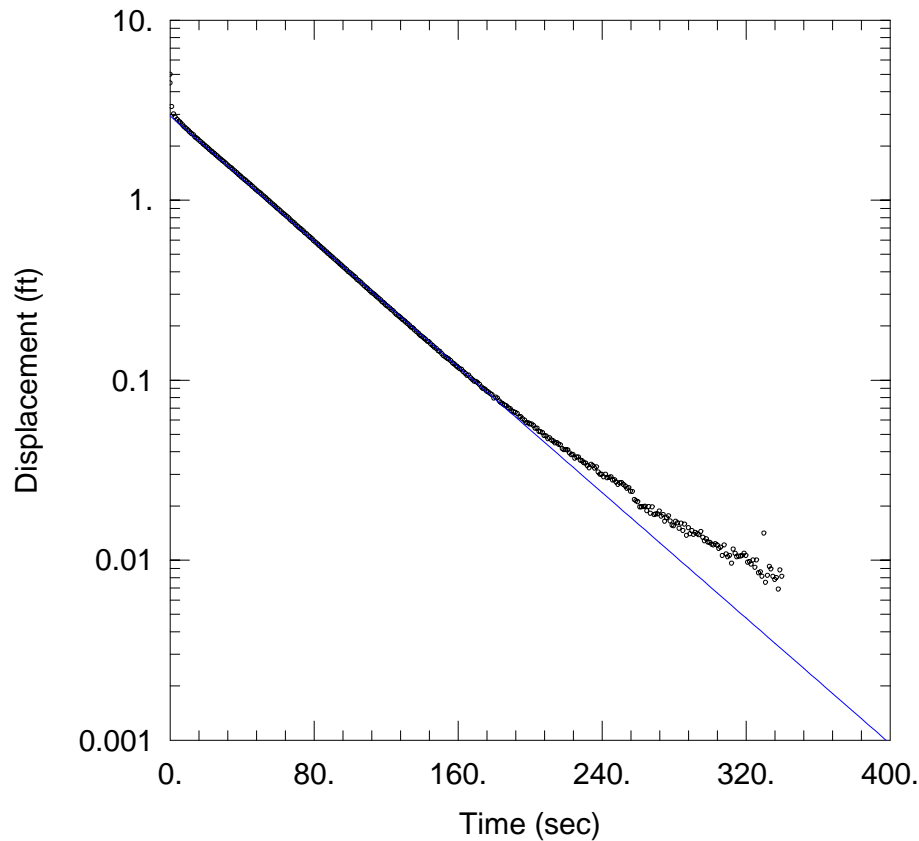
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 20.48 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-04D SLUG OUT 1

Data Set: T:\...\UFIW-04D_slugout_1.aqt
 Date: 05/04/17 Time: 09:56:03

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-04D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 4.546$ ft/day
 $y_0 = 2.939$ ft

AQUIFER DATA

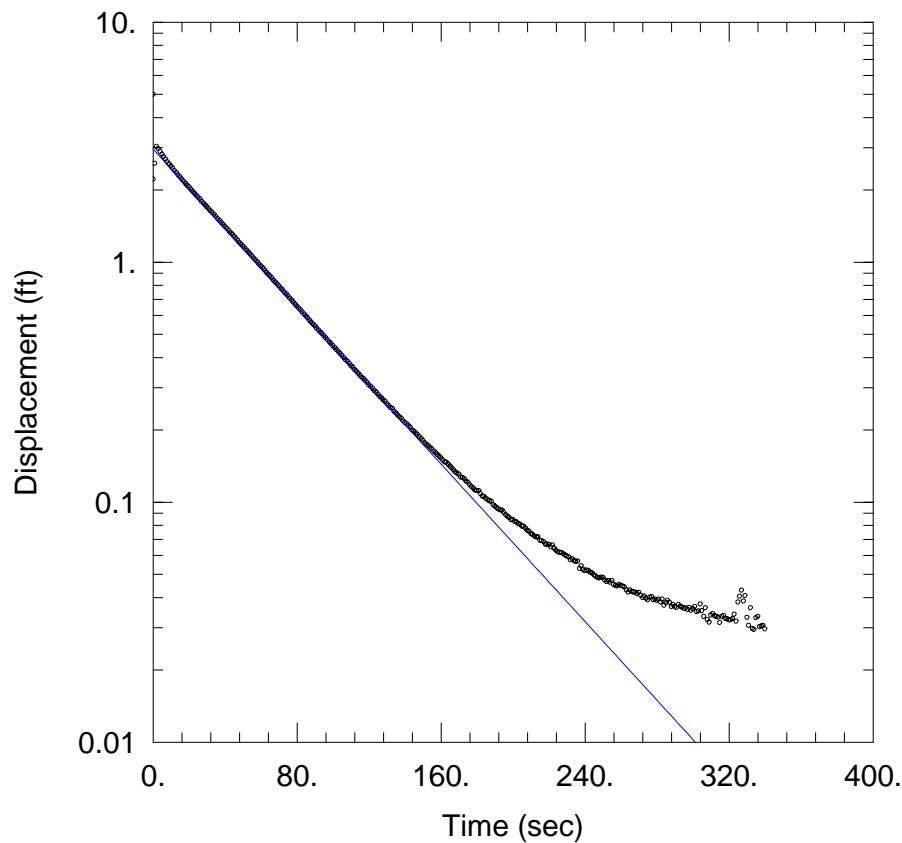
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-04D)

Initial Displacement: 5. ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 20.48 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-04D SLUG OUT 2

Data Set: T:\...\UFIW-04D_slugout_2.aqt
 Date: 05/04/17 Time: 09:56:12

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-04D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 4.276$ ft/day
 $y_0 = 2.956$ ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-04D)

Initial Displacement: 5. ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 20.48 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft

UFIW-04I SLUG IN 1

Data Set: T:\...\UFIW-04I_slugin_1.aqt

Date: 05/04/17

Time: 09:56:39

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-04I

Test Date: 8/16/2016

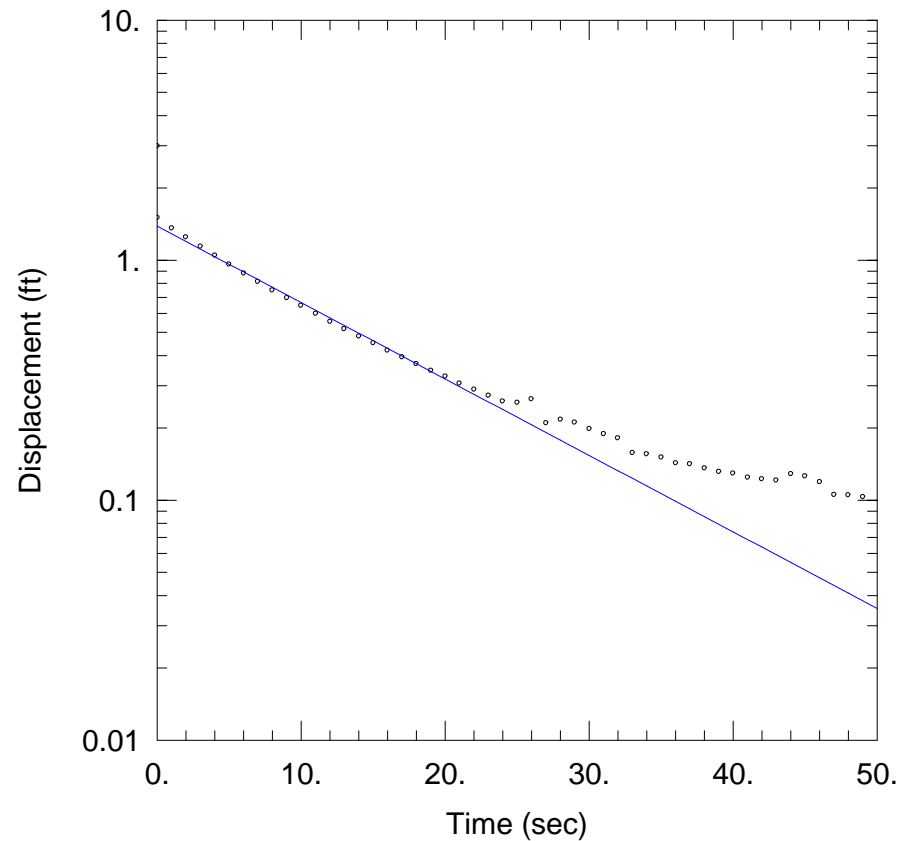
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 14.81 ft/day

y0 = 1.386 ft



AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-04I)

Initial Displacement: 3. ft

Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 10.77 ft

Screen Length: 5. ft

Well Radius: 0.33 ft

UFIW-04I SLUG IN 1

Data Set: T:\...\UFIW-04I_slugin_2.aqt

Date: 05/04/17

Time: 09:56:47

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-04I

Test Date: 8/16/2016

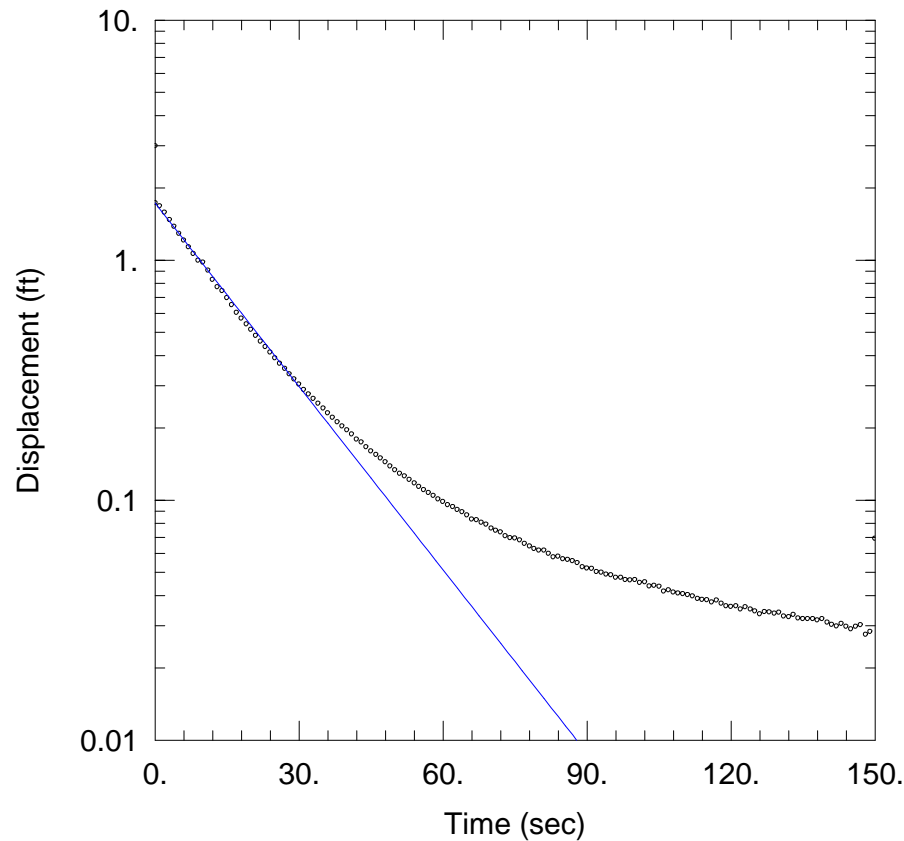
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 11.85 ft/day

y0 = 1.727 ft



AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-04I)

Initial Displacement: 3. ft

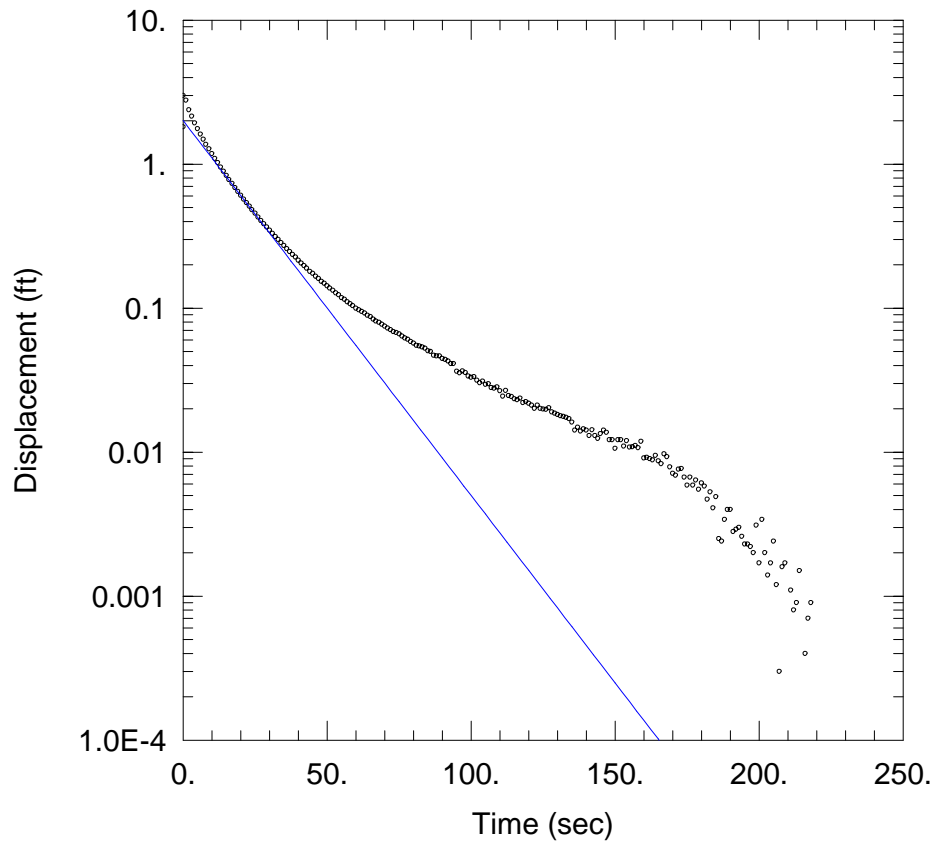
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 10.77 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-04I SLUG OUT 1

Data Set: T:\...\UFIW-04I_slugout_1.aqt
 Date: 05/04/17 Time: 09:56:56

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-04I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 12.11$ ft/day
 $y_0 = 2.008$ ft

AQUIFER DATA

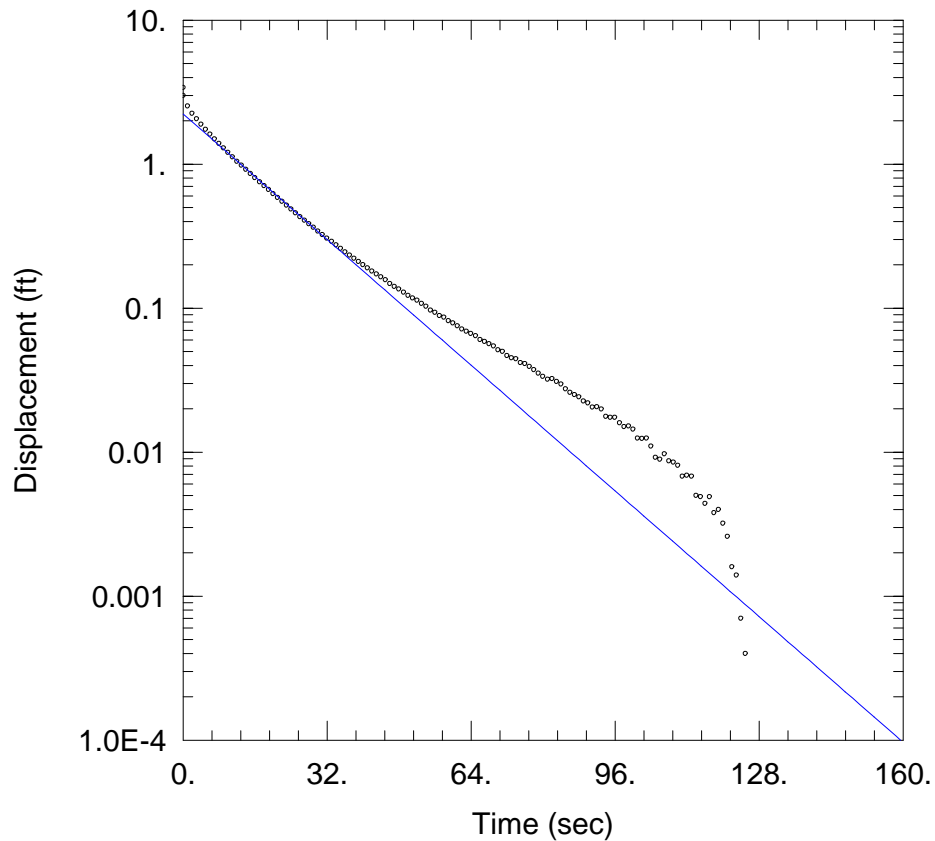
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-04I)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 10.77 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-04I SLUG OUT 2

Data Set: T:\...\UFIW-04I_slugout_2.aqt
 Date: 05/04/17 Time: 09:57:05

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-04I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 12.68$ ft/day
 $y_0 = 2.232$ ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-04I)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 10.77 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft

UFIW-05D SLUG IN 1

Data Set: T:\...\UFIW-05D_slugin_1.aqt

Date: 05/04/17

Time: 09:57:14

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-05D

Test Date: 8/16/2016

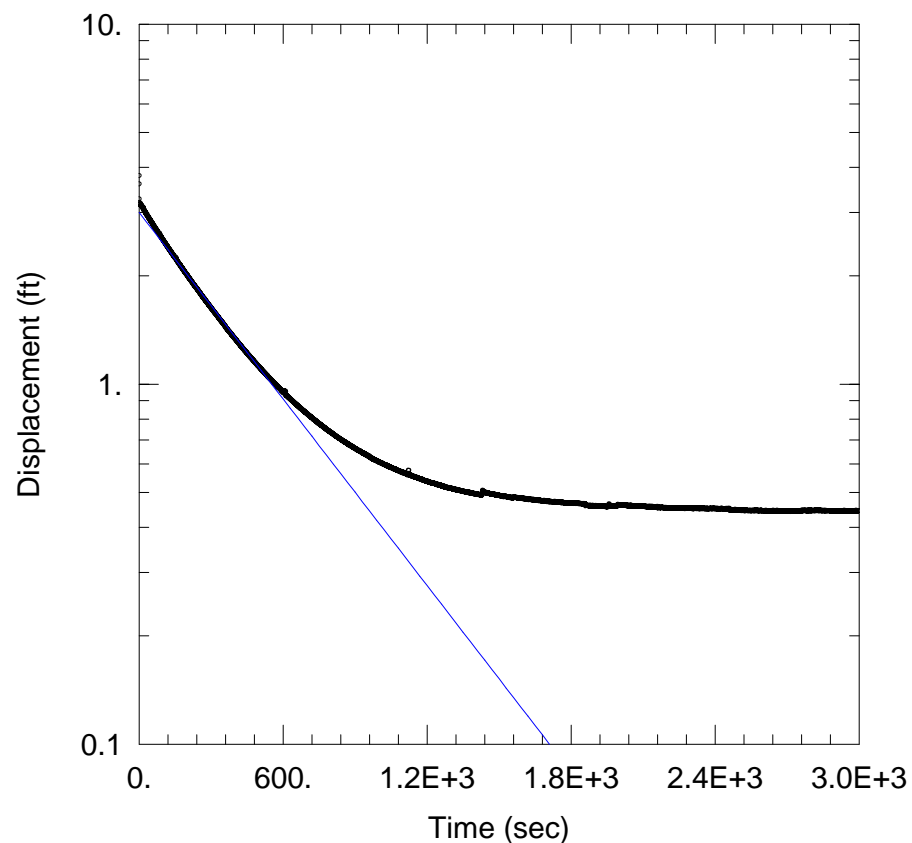
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.4503 ft/day

y0 = 3. ft



AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-05D)

Initial Displacement: 3.6 ft

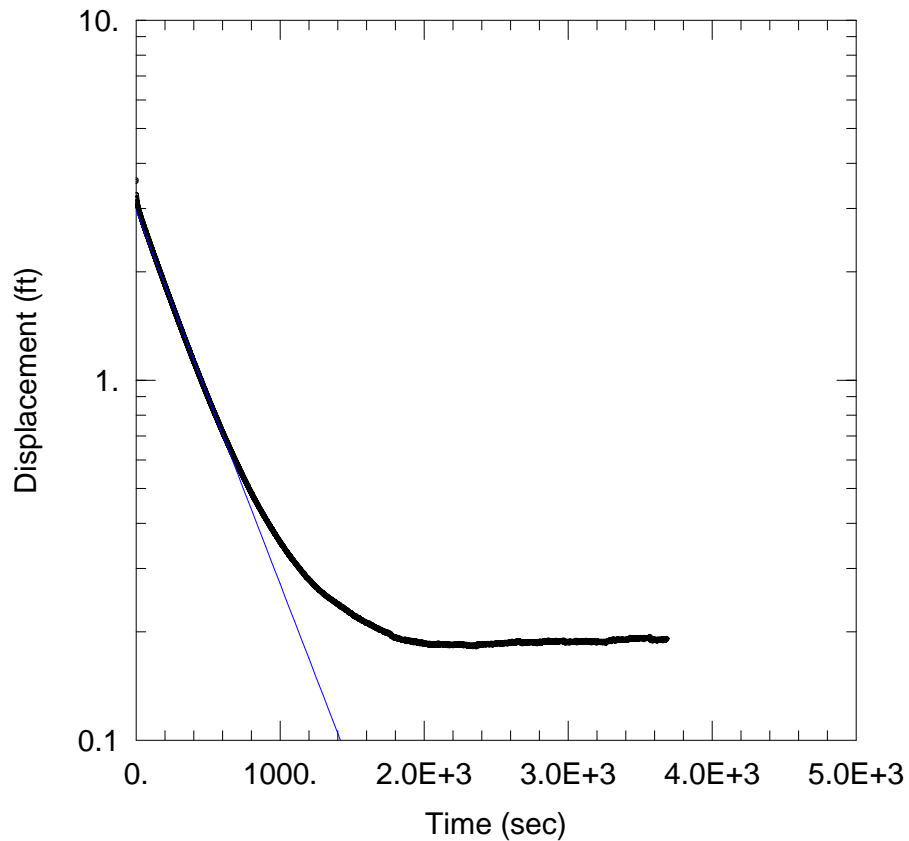
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 20.99 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-05D SLUG OUT 1

Data Set: T:\...\UFIW-05D_slugout_1.aqt
 Date: 05/04/17 Time: 09:57:23

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-05D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 0.5404$ ft/day
 $y_0 = 2.955$ ft

AQUIFER DATA

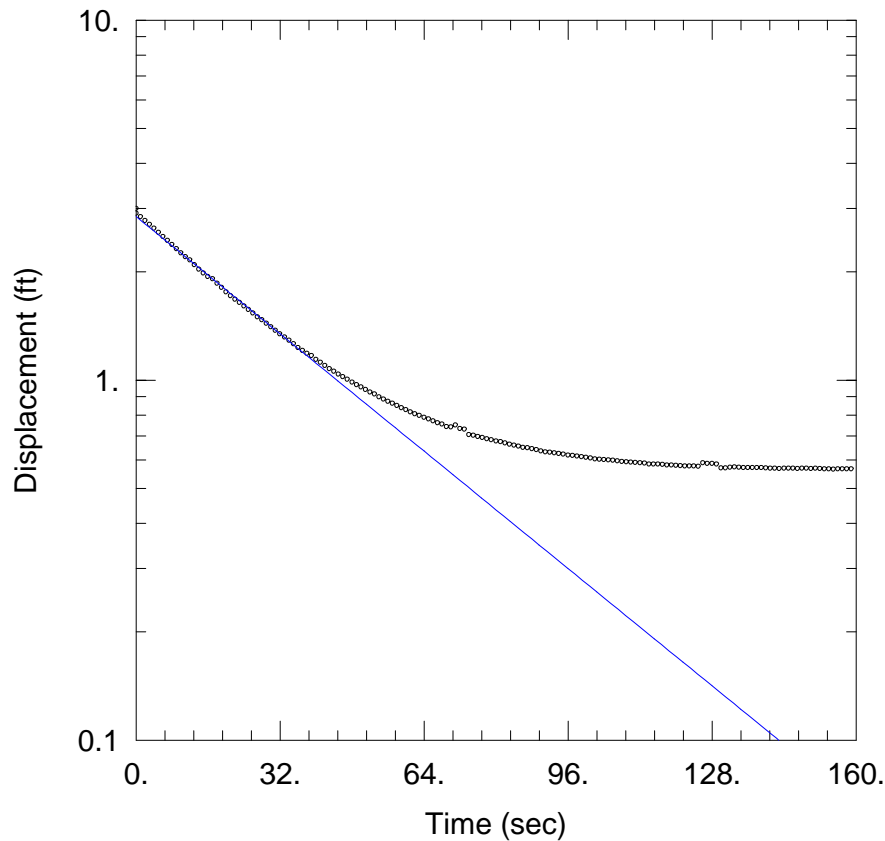
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-05D)

Initial Displacement: 3.6 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 20.99 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-05I SLUG IN 1

Data Set: T:\...\UFIW-05I_slugin_1.aqt

Date: 05/04/17

Time: 09:57:32

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-05I

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 4.735 ft/day

y0 = 2.846 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-05I)

Initial Displacement: 3. ft

Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.06 ft

Screen Length: 5. ft

Well Radius: 0.33 ft

UFIW-05I SLUG IN 2

Data Set: T:\...\UFIW-05I_slugin_2.aqt

Date: 05/04/17

Time: 09:57:40

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-05I

Test Date: 8/16/2016

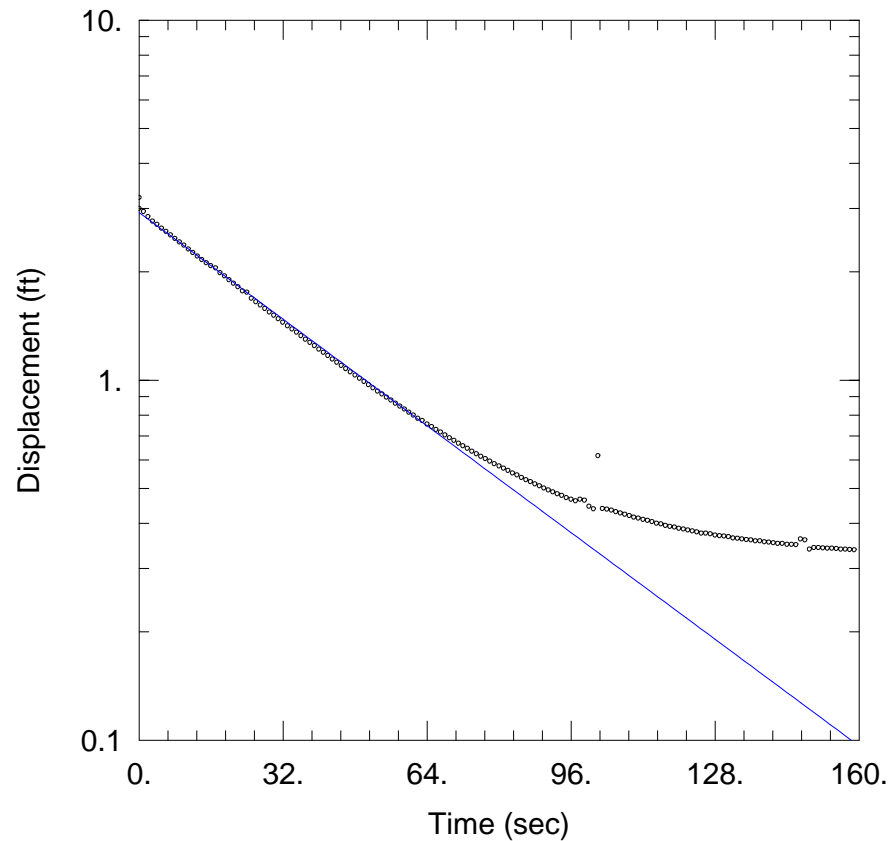
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 4.306$ ft/day

$y_0 = 2.921$ ft



AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-05I)

Initial Displacement: 3. ft

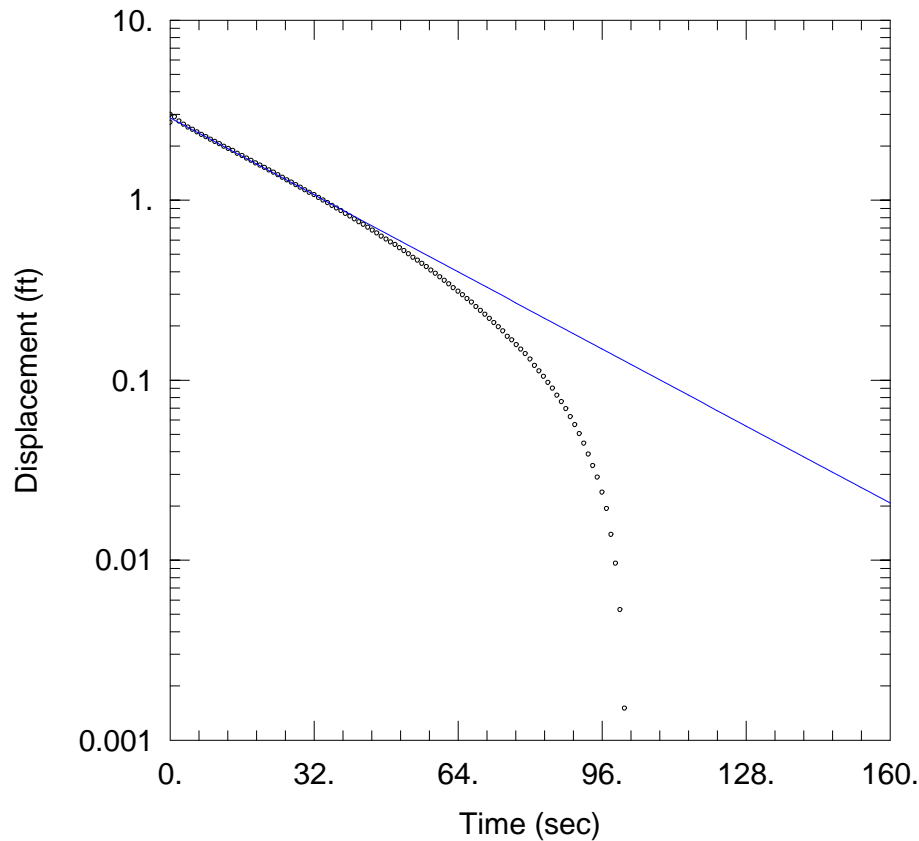
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.06 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-05I SLUG OUT 1

Data Set: T:\...\UFIW-05I_slugout_1.aqt
 Date: 05/04/17 Time: 09:57:48

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-05I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 6.22$ ft/day
 $y_0 = 2.867$ ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-05I)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.06 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft

UFIW-05I SLUG OUT 2

Data Set: T:\...\UFIW-05I_slugout_2.aqt

Date: 05/04/17

Time: 09:58:02

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-05I

Test Date: 8/16/2016

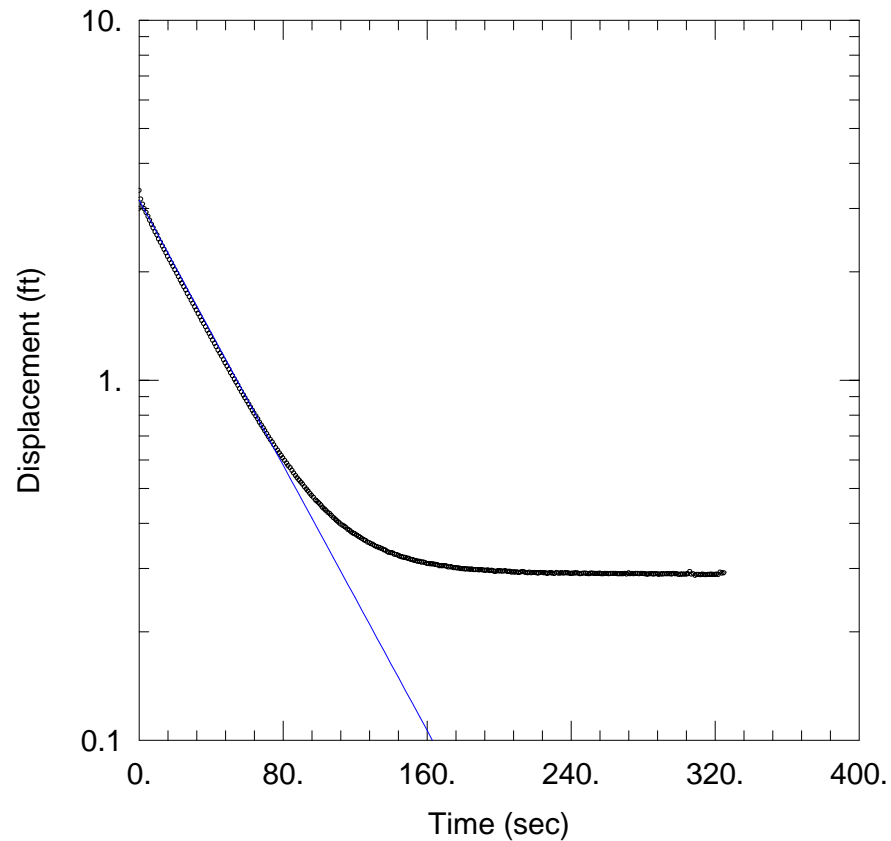
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 4.282$ ft/day

$y_0 = 3.165$ ft



AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-05I)

Initial Displacement: 3. ft

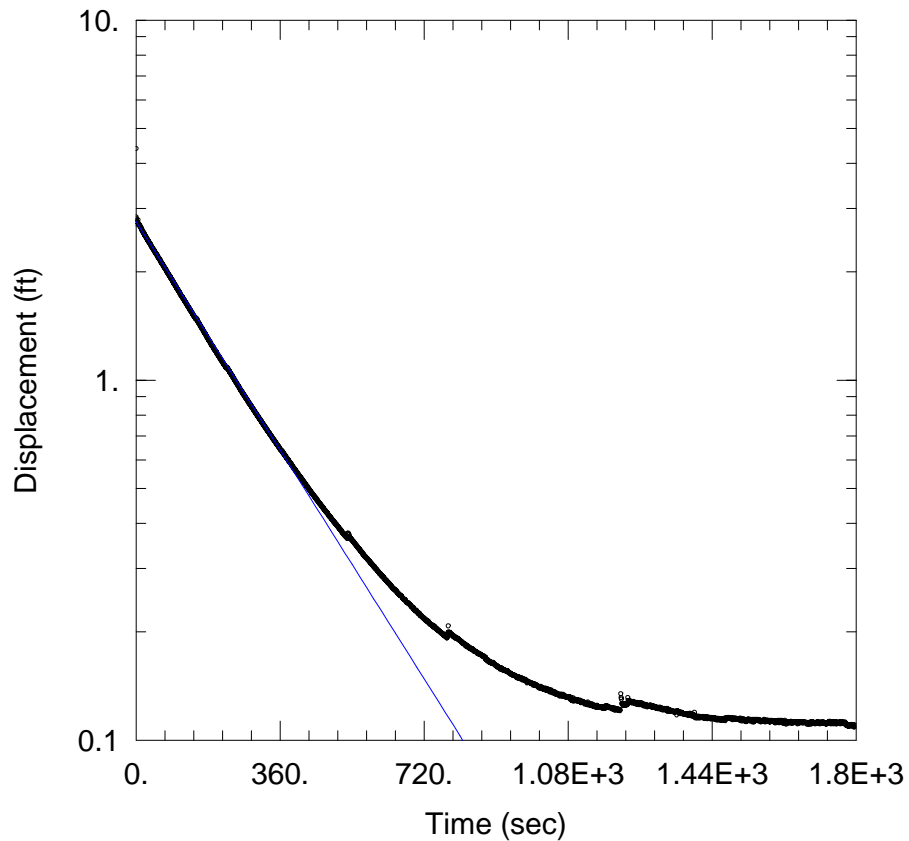
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.06 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-06D SLUG IN 1

Data Set: T:\...\UFIW-06D_slugin_1.aqt

Date: 05/04/17

Time: 09:58:10

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-06D

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.9196 ft/day

y0 = 2.758 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-06D)

Initial Displacement: 4.4 ft

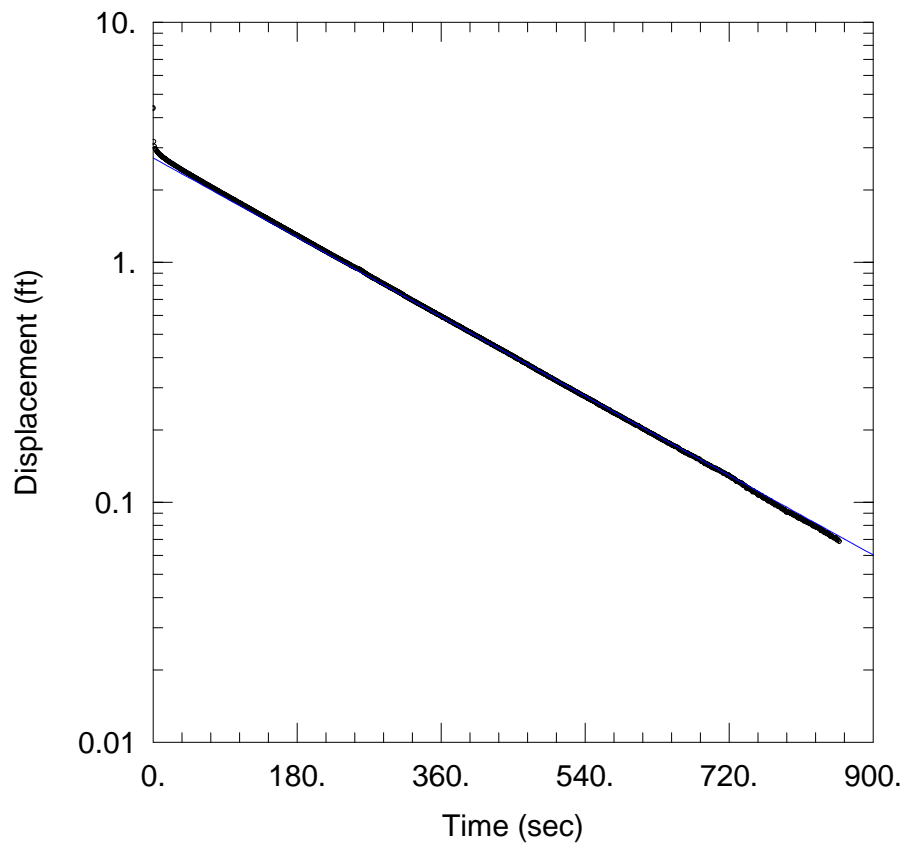
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 22.85 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-06D SLUG OUT 1

Data Set: T:\...\UFIW-06D_slugout_1.aqt
Date: 05/04/17 Time: 09:58:19

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFIW-06D
Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 0.9579$ ft/day
 $y_0 = 2.716$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-06D)

Initial Displacement: 4.4 ft
Total Well Penetration Depth: 20. ft
Casing Radius: 0.083 ft

Static Water Column Height: 22.85 ft
Screen Length: 5. ft
Well Radius: 0.33 ft

UFIW-06I SLUG IN 1

Data Set: T:\...\UFIW-06I_slugin_1.aqt

Date: 05/04/17

Time: 12:01:51

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-06I

Test Date: 8/16/2016

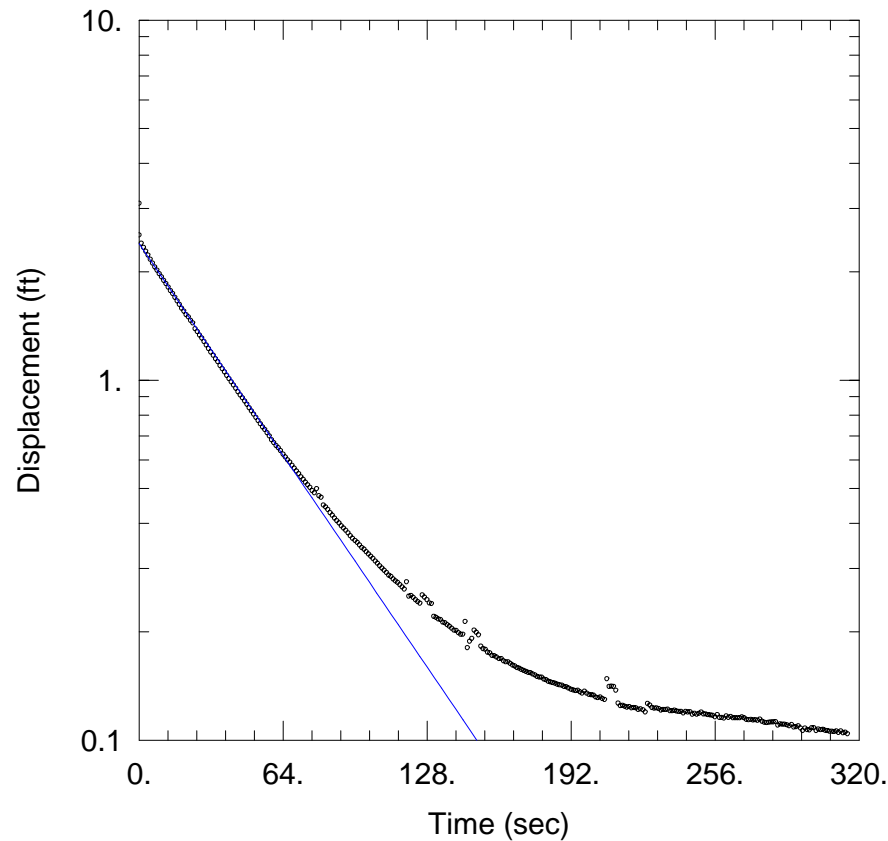
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.317 ft/day

y0 = 2.394 ft



AQUIFER DATA

Saturated Thickness: 11. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-06I)

Initial Displacement: 3.1 ft

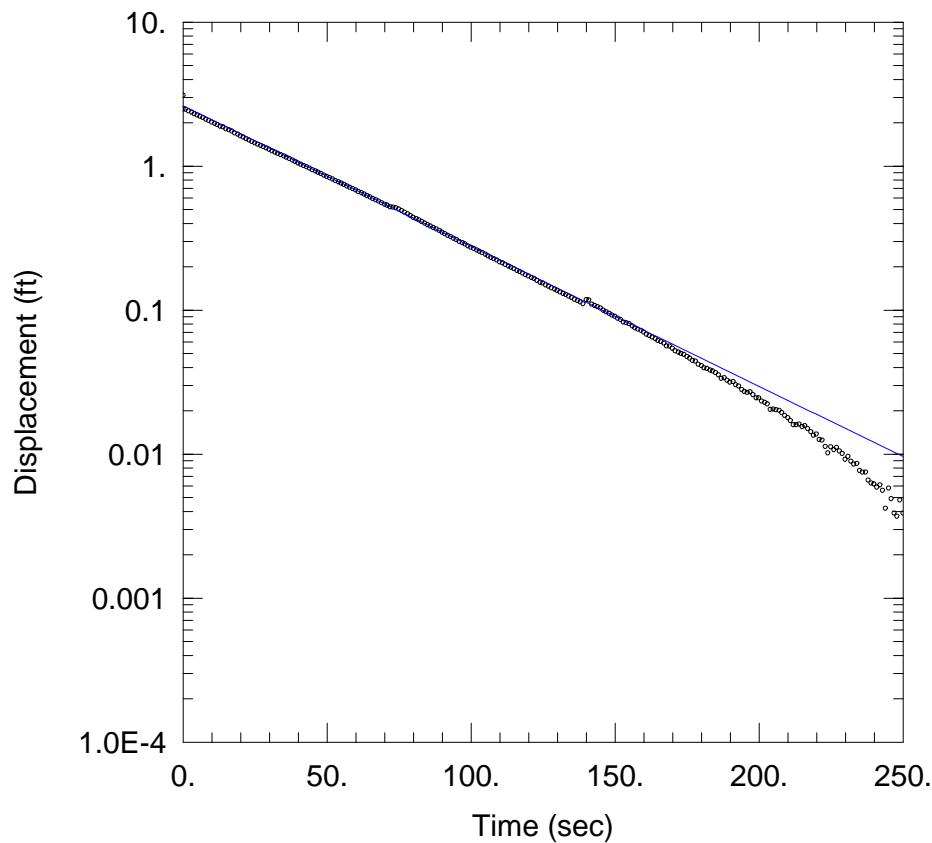
Total Well Penetration Depth: 13. ft

Casing Radius: 0.083 ft

Static Water Column Height: 16.58 ft

Screen Length: 10. ft

Well Radius: 0.33 ft



UFIW-06I SLUG IN 2

Data Set: T:\...\UFIW-06I_slugin_2.aqt

Date: 05/04/17

Time: 12:02:07

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-06I

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.455 ft/day

y0 = 2.617 ft

AQUIFER DATA

Saturated Thickness: 11. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-06I)

Initial Displacement: 3.1 ft

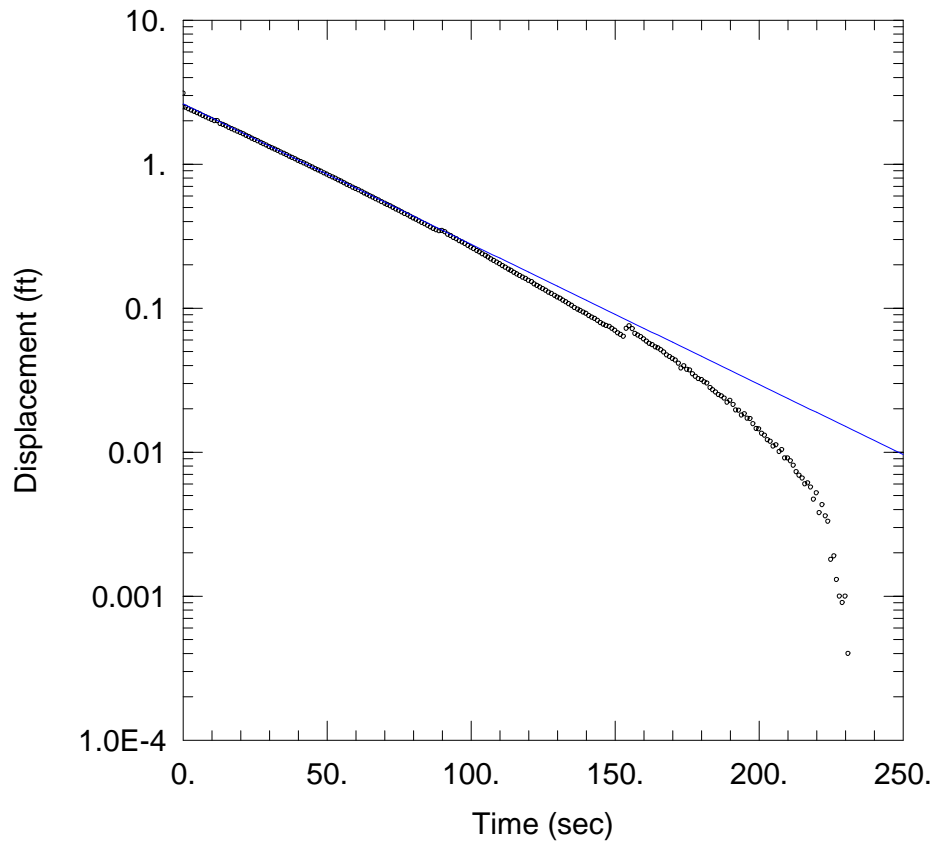
Total Well Penetration Depth: 13. ft

Casing Radius: 0.083 ft

Static Water Column Height: 16.58 ft

Screen Length: 10. ft

Well Radius: 0.33 ft



UFIW-06I SLUG IN 3

Data Set: T:\...\UFIW-06I_slugin_3.aqt

Date: 05/04/17

Time: 12:02:19

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-06I

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.455 ft/day

y0 = 2.617 ft

AQUIFER DATA

Saturated Thickness: 12. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-06I)

Initial Displacement: 3.1 ft

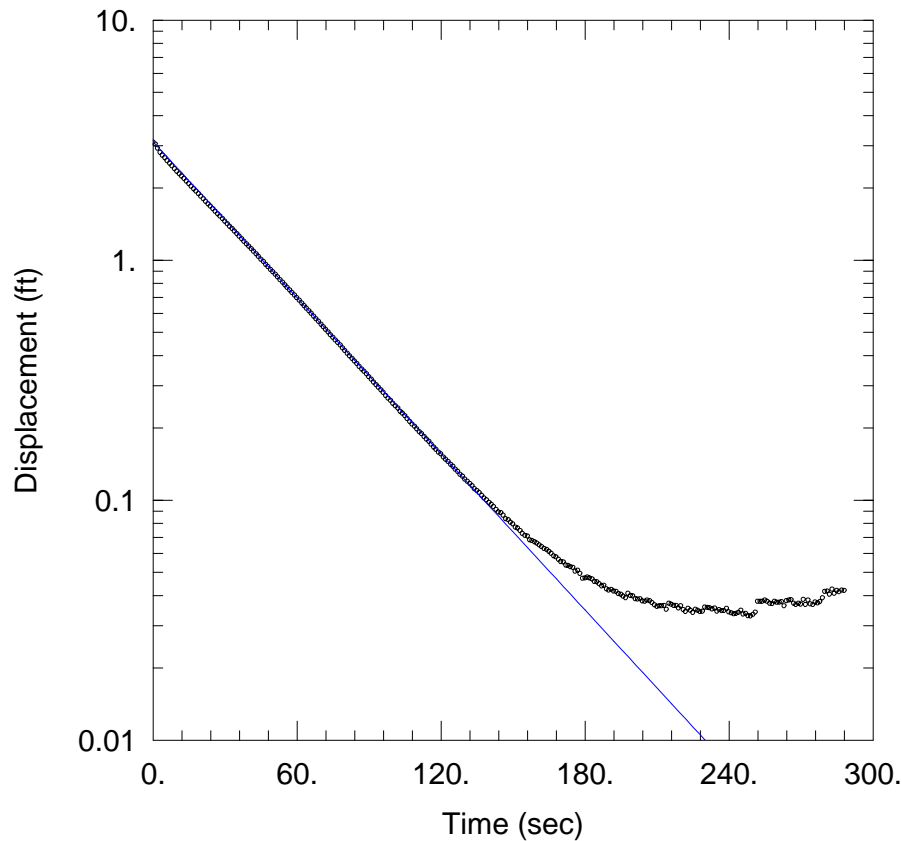
Total Well Penetration Depth: 13. ft

Casing Radius: 0.083 ft

Static Water Column Height: 16.58 ft

Screen Length: 10. ft

Well Radius: 0.33 ft



UFIW-06I SLUG OUT 1

Data Set: T:\...\UFIW-06I_slugout_1.aqt
Date: 05/04/17 Time: 12:02:29

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFIW-06I
Test Date: 8/30/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 2.733$ ft/day
 $y_0 = 3.113$ ft

AQUIFER DATA

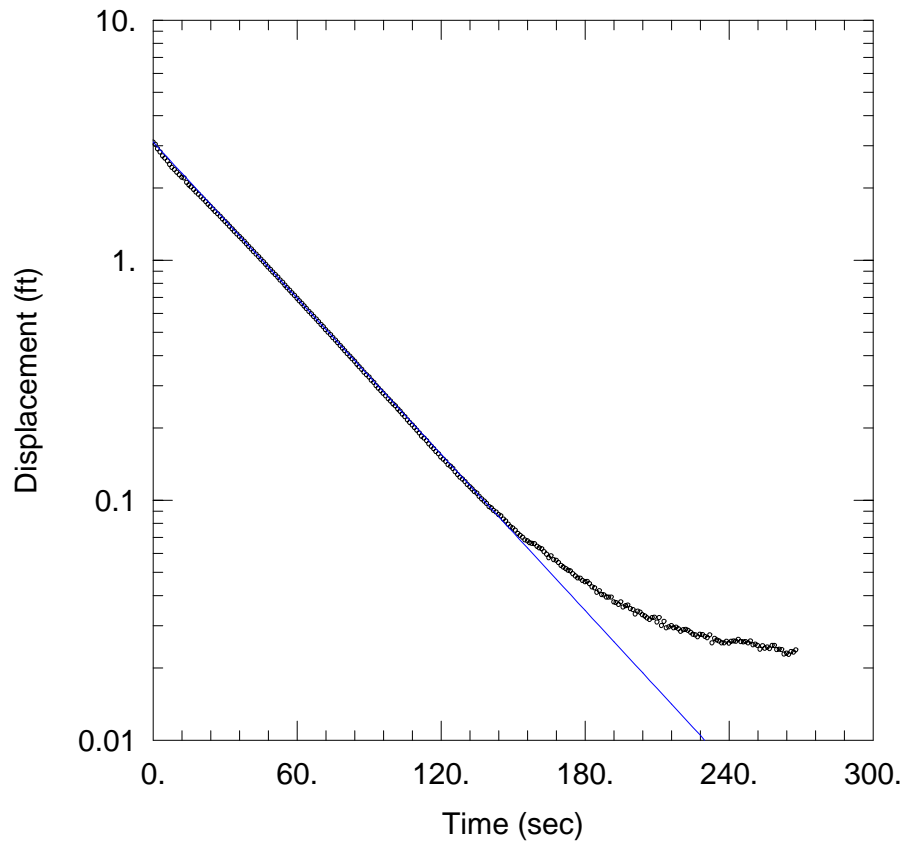
Saturated Thickness: 11. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-06I)

Initial Displacement: 3.1 ft
Total Well Penetration Depth: 13. ft
Casing Radius: 0.083 ft

Static Water Column Height: 16.58 ft
Screen Length: 10. ft
Well Radius: 0.33 ft



UFIW-06I SLUG OUT 2

Data Set: T:\...\UFIW-06I_slugout_2.aqt
 Date: 05/04/17 Time: 12:02:41

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-06I
 Test Date: 8/30/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 2.734$ ft/day
 $y_0 = 3.105$ ft

AQUIFER DATA

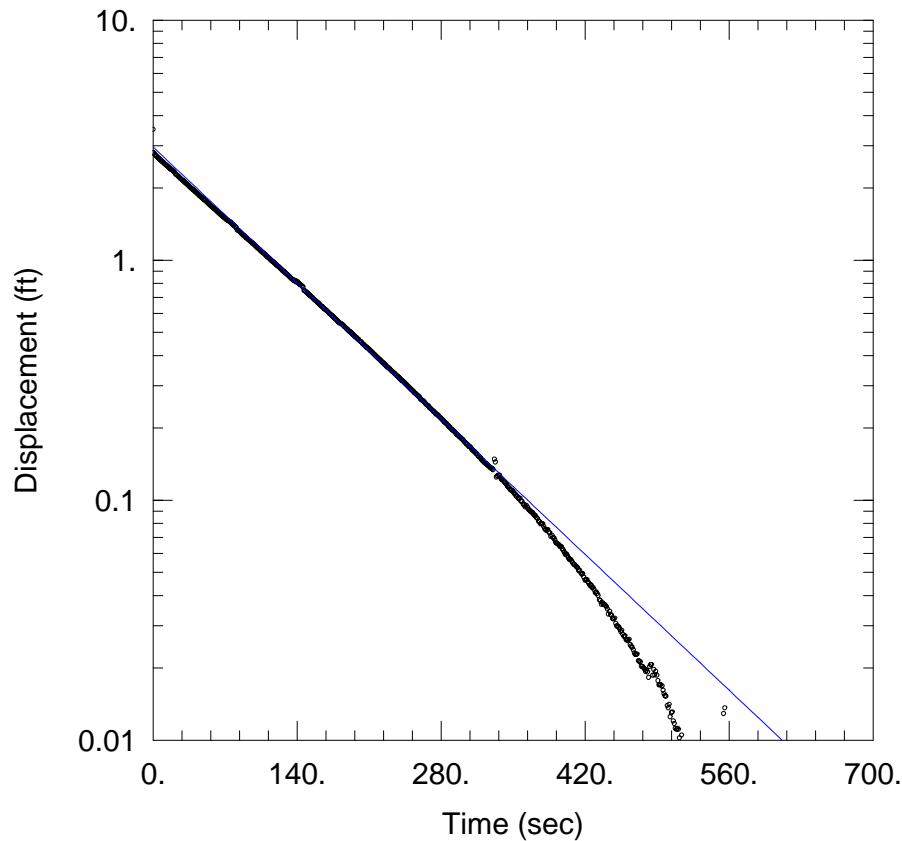
Saturated Thickness: 11. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-06I)

Initial Displacement: 3.1 ft
 Total Well Penetration Depth: 13. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 16.58 ft
 Screen Length: 10. ft
 Well Radius: 0.33 ft



UFIW-07D SLUG IN 1

Data Set: T:\...\UFIW-07D_slugin_1.aqt

Date: 05/04/17

Time: 09:58:35

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-07D

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.107 ft/day

y0 = 2.959 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-07D)

Initial Displacement: 3.5 ft

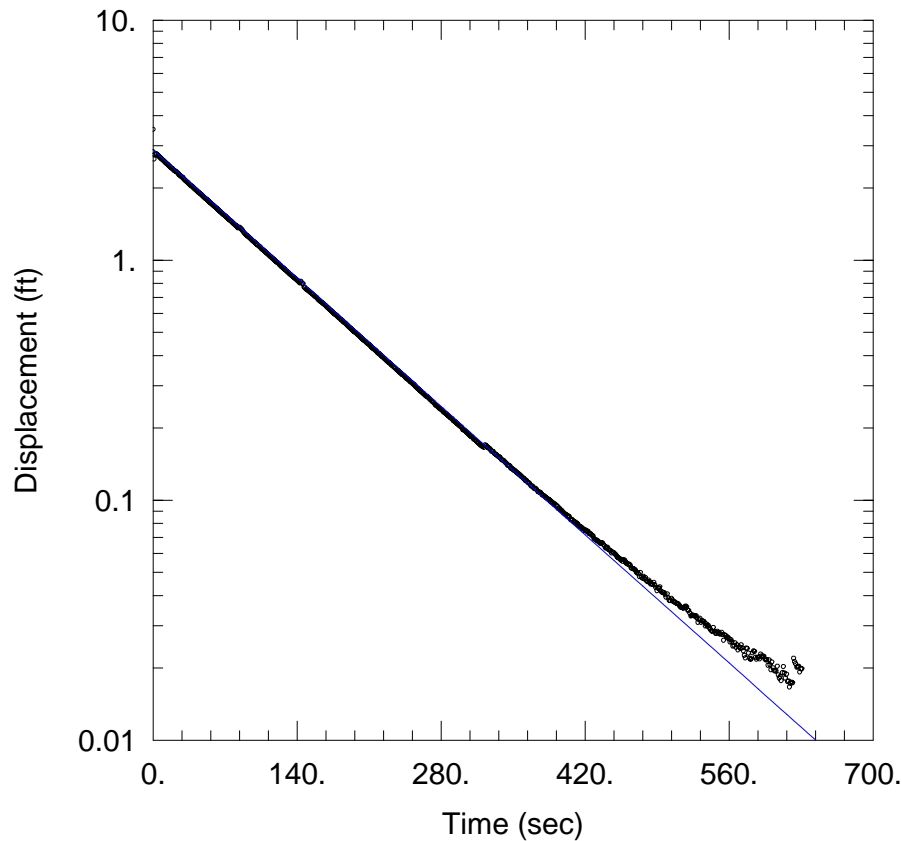
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 22.82 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-07D SLUG IN 2

Data Set: T:\...\UFIW-07D_slugin_2.aqt

Date: 05/04/17

Time: 09:58:45

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-07D

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.989 ft/day

y0 = 2.873 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-07D)

Initial Displacement: 3.5 ft

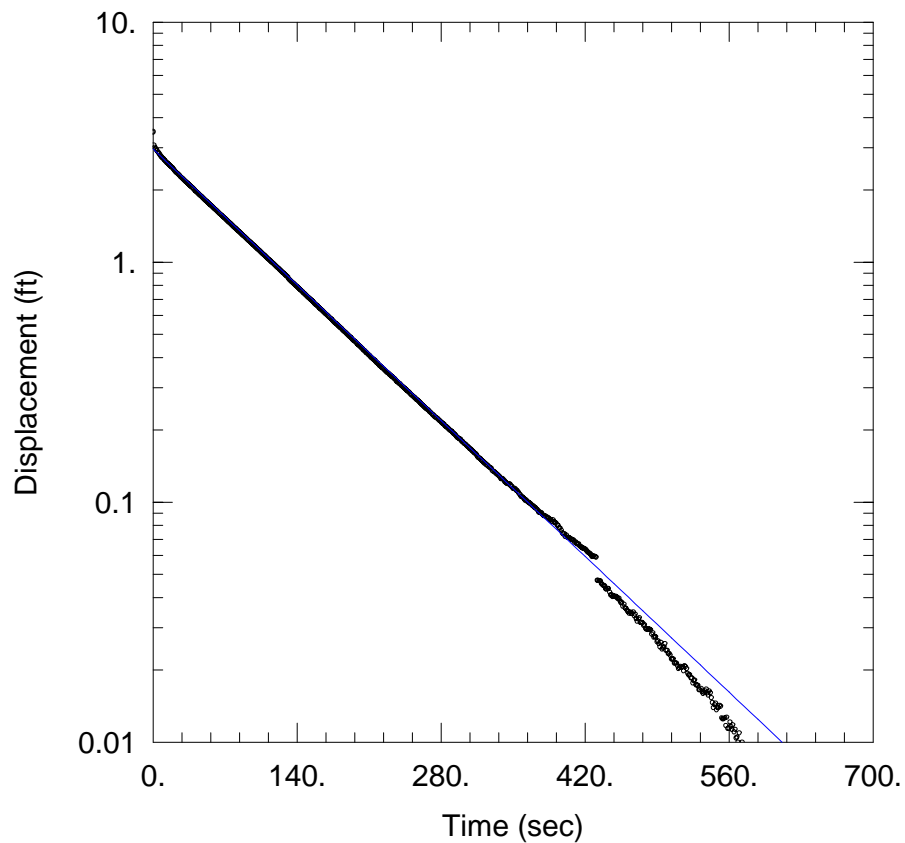
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 22.82 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-07D SLUG OUT 1

Data Set: T:\...\UFIW-07D_slugout_1.aqt
 Date: 05/04/17 Time: 09:58:54

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-07D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 2.107$ ft/day
 $y_0 = 2.959$ ft

AQUIFER DATA

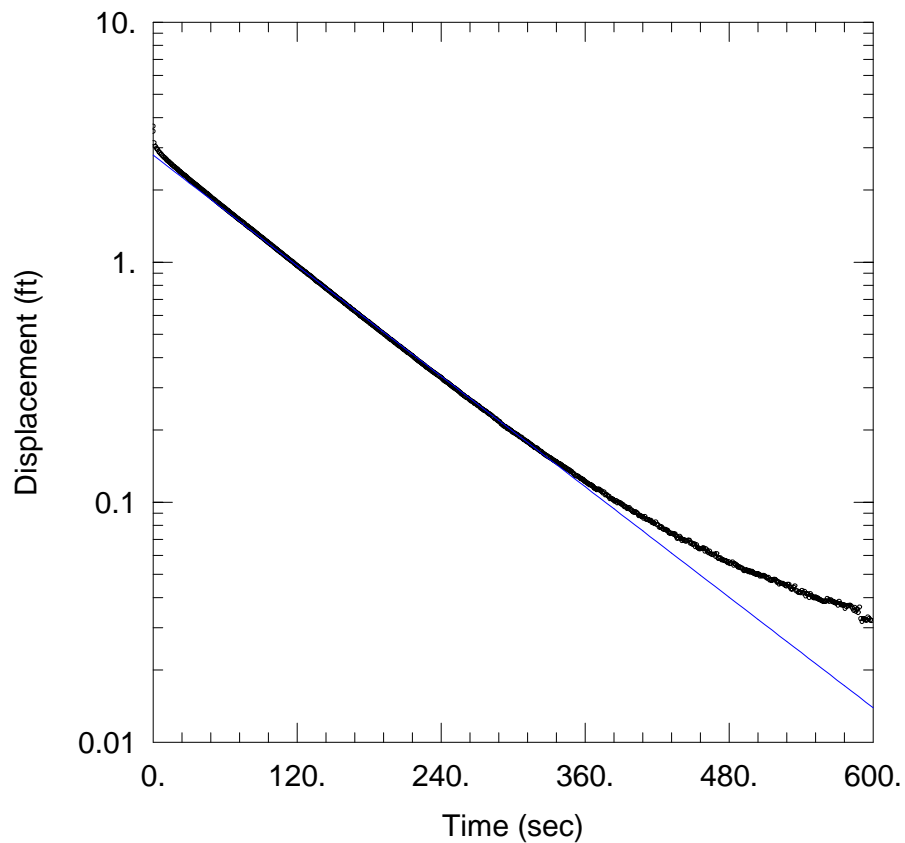
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-07D)

Initial Displacement: 3.5 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 22.82 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-07D SLUG OUT 2

Data Set: T:\...\UFIW-07D_slugout_2.aqt
 Date: 05/04/17 Time: 09:59:02

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-07D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 2.001$ ft/day
 $y_0 = 2.791$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-07D)

Initial Displacement: 3.5 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 22.82 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft

UFIW-07I SLUG IN 1

Data Set: T:\...\UFIW-07I_slugin_1.aqt

Date: 05/04/17

Time: 09:59:10

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-07I

Test Date: 8/16/2016

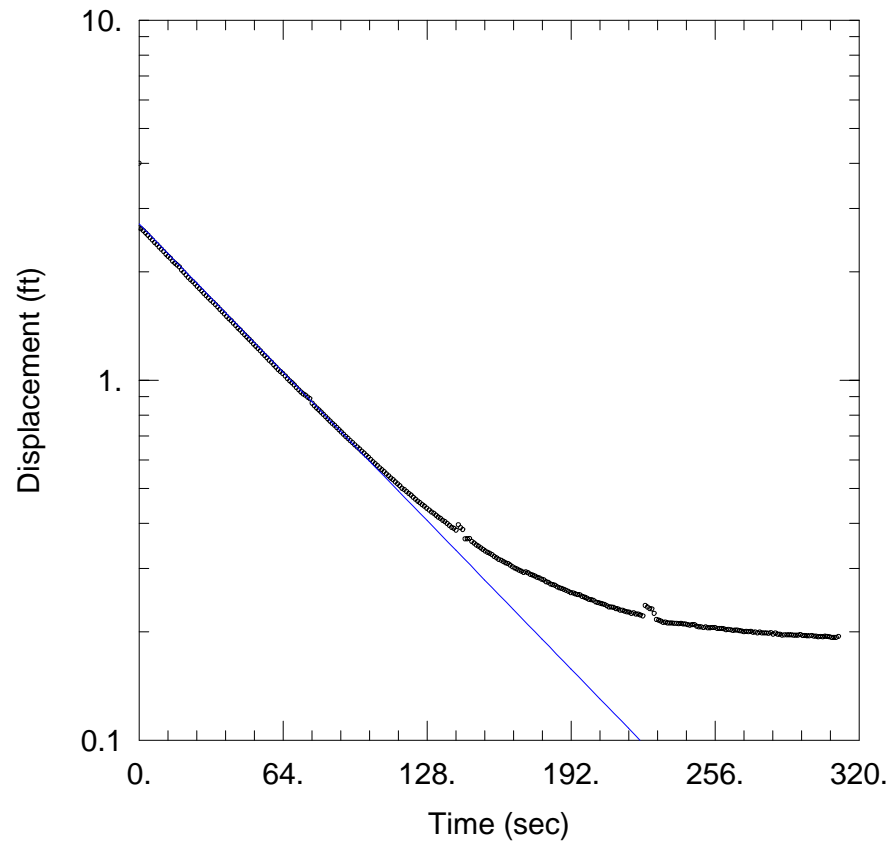
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.995 ft/day

y0 = 2.719 ft



AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-07I)

Initial Displacement: 4. ft

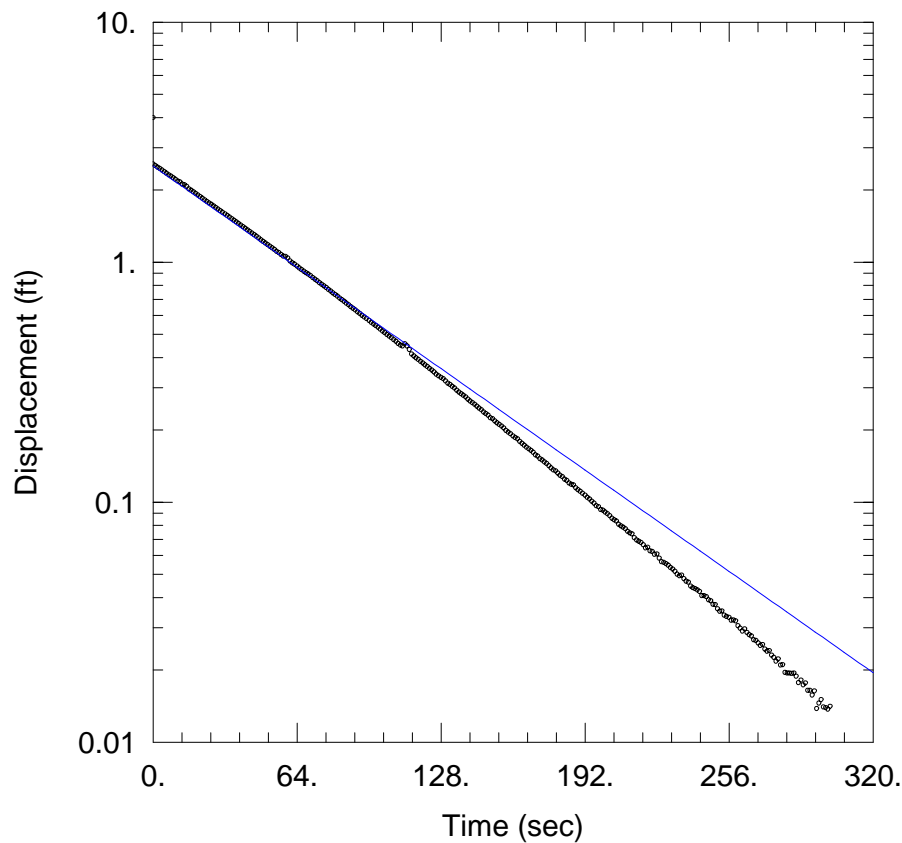
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 13.09 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-07I SLUG IN 2

Data Set: T:\...\UFIW-07I_slugin_2.aqt

Date: 05/04/17

Time: 09:59:18

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-07I

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 3.068 ft/day

y0 = 2.515 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-07I)

Initial Displacement: 4. ft

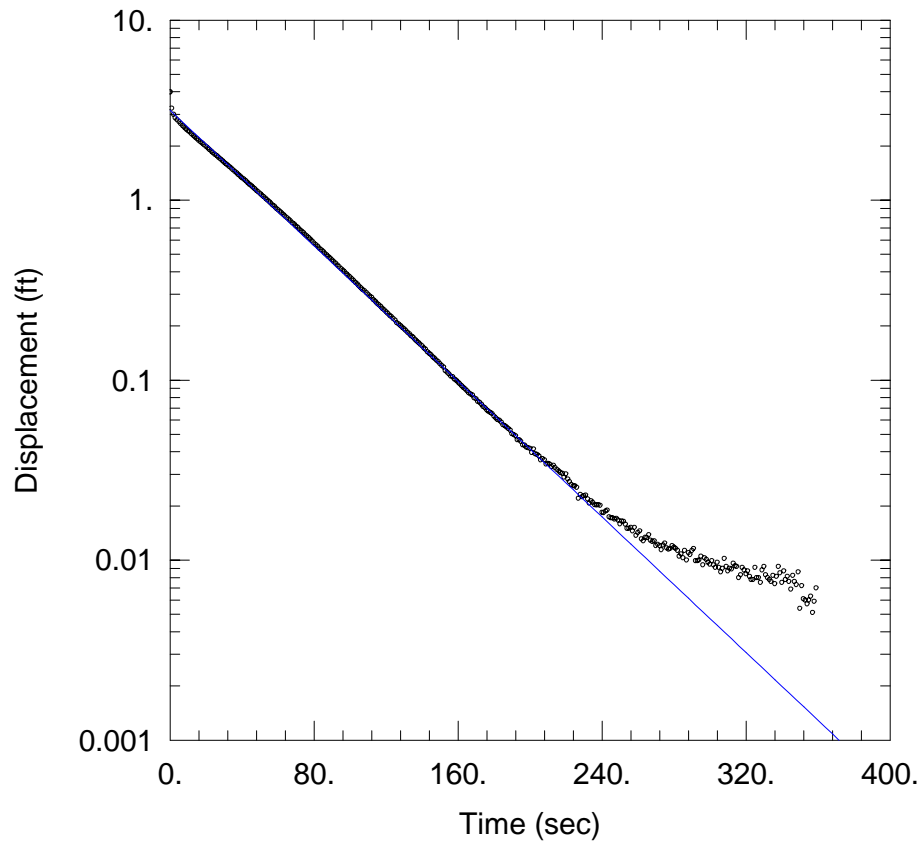
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 13.09 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-07I SLUG OUT 1

Data Set: T:\...\UFIW-07I_slugout_1.aqt
 Date: 05/04/17 Time: 09:59:27

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-07I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 4.378$ ft/day
 $y_0 = 3.154$ ft

AQUIFER DATA

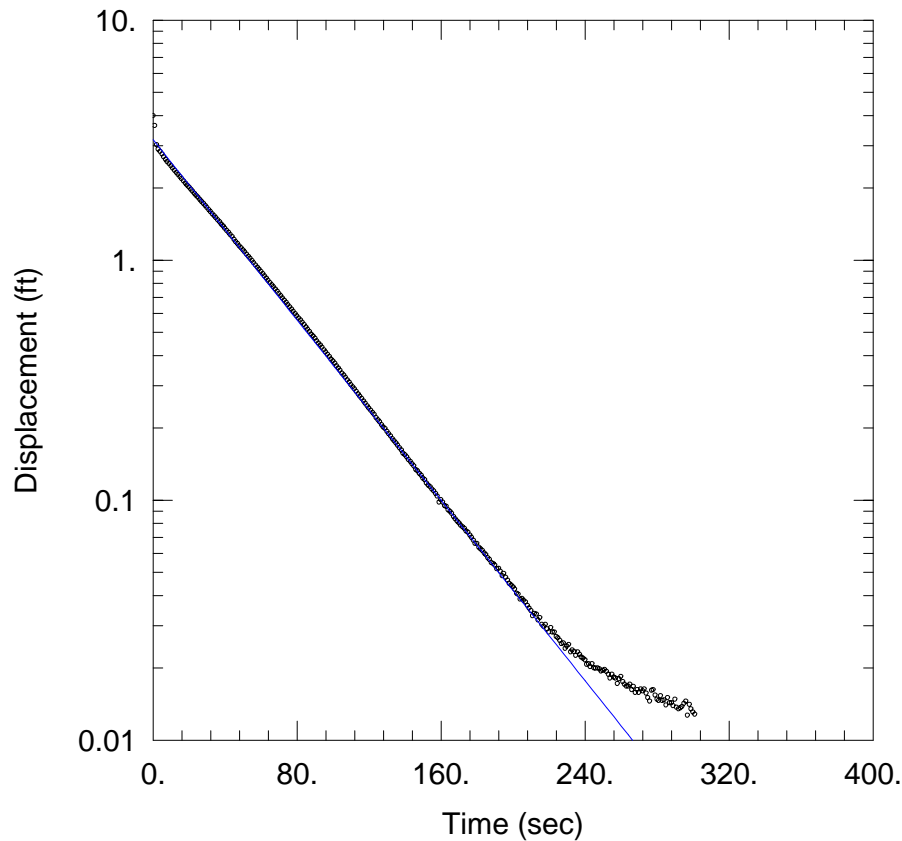
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-07I)

Initial Displacement: 4. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 13.09 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-07I SLUG OUT 2

Data Set: T:\...\UFIW-07I_slugout_2.aqt
 Date: 05/04/17 Time: 09:59:35

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-07I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 4.368$ ft/day
 $y_0 = 3.175$ ft

AQUIFER DATA

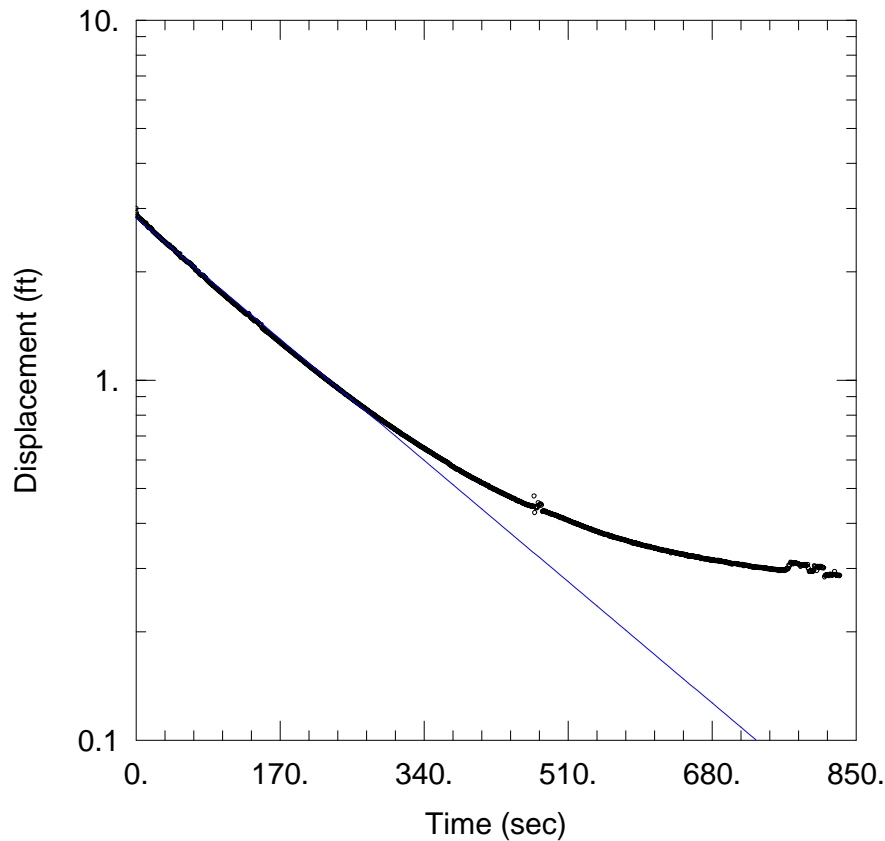
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-07I)

Initial Displacement: 4. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 13.09 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-08D SLUG IN 1

Data Set: T:\...\UFIW-08D_slugin_1.aqt
 Date: 05/04/17 Time: 09:59:45

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-08D
 Test Date: 8/29/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.033$ ft/day
 $y_0 = 2.826$ ft

AQUIFER DATA

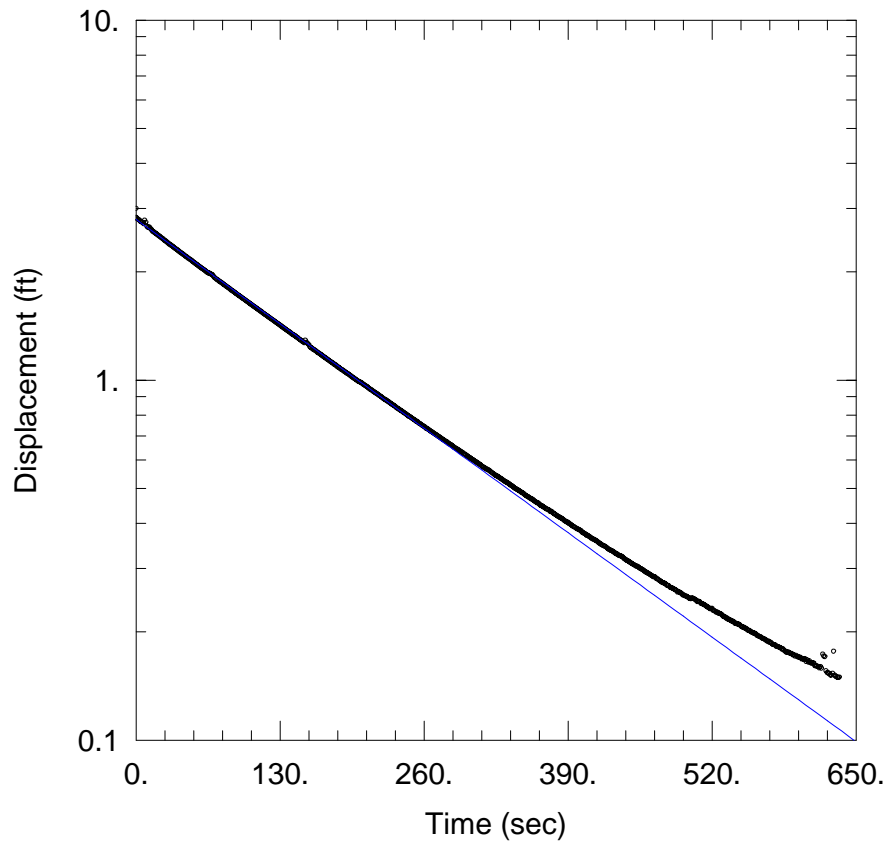
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-08D)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 21.73 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-08D SLUG IN 2

Data Set: T:\...\UFIW-08D_slugin_2.aqt

Date: 05/04/17

Time: 09:59:54

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-08D

Test Date: 8/29/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.163 ft/day

y0 = 2.795 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-08D)

Initial Displacement: 3. ft

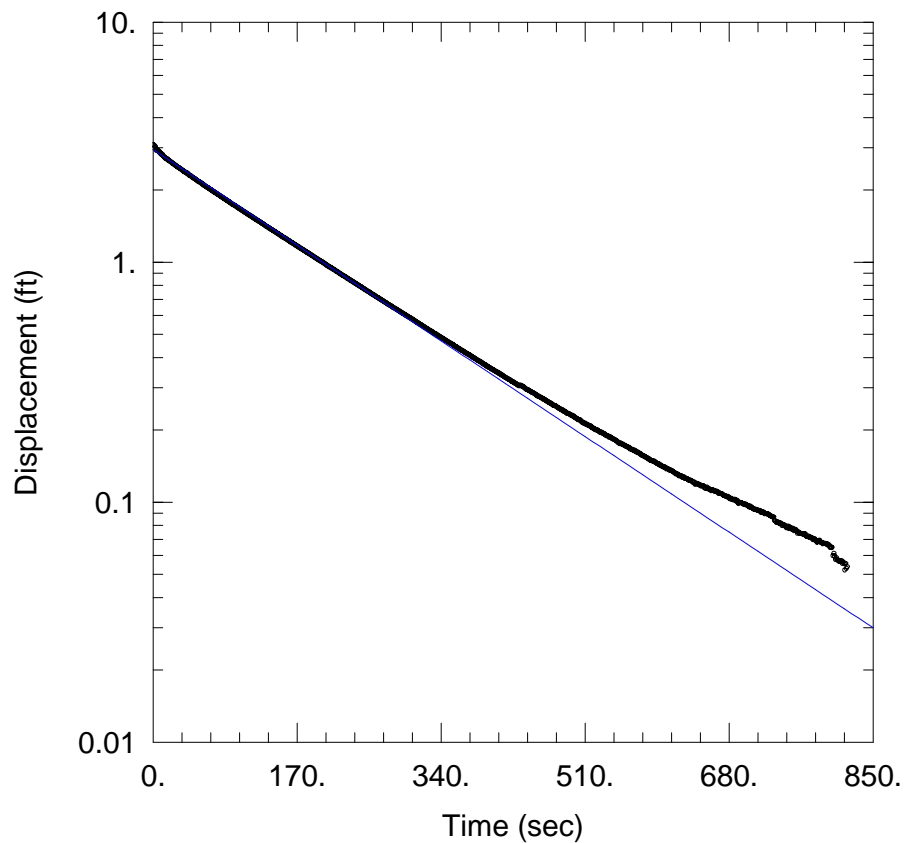
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.73 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-08D SLUG OUT 1

Data Set: T:\...\UFIW-08D_slugout_1.aqt
 Date: 05/04/17 Time: 10:00:01

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-08D
 Test Date: 8/29/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.222$ ft/day
 $y_0 = 2.943$ ft

AQUIFER DATA

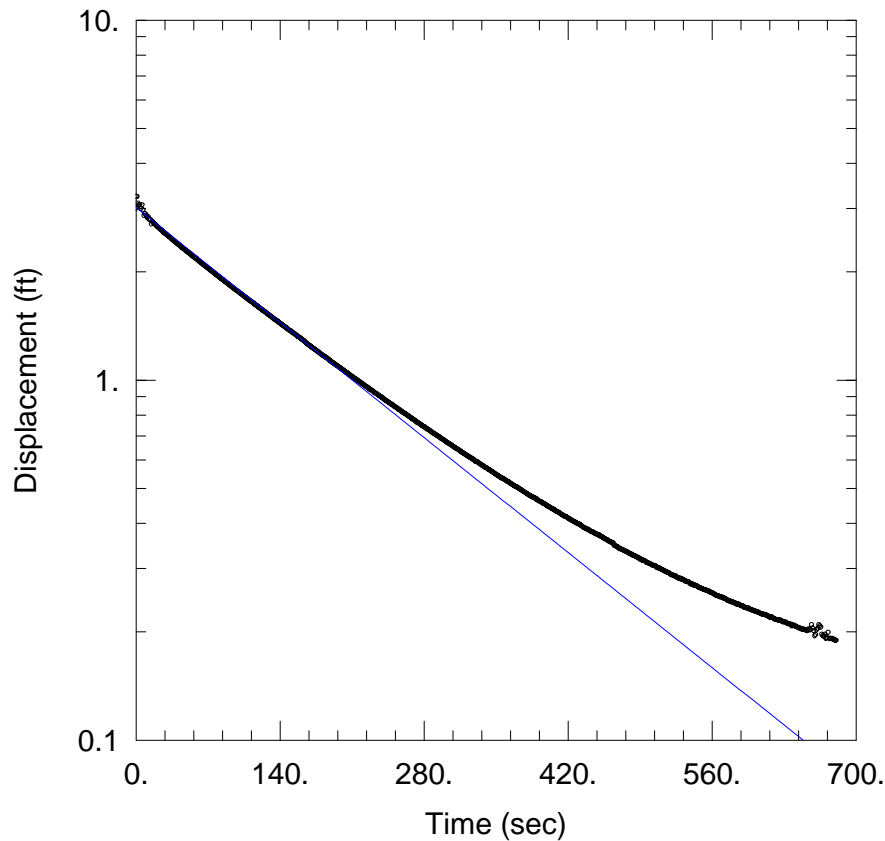
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-08D)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 21.73 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW-08D SLUG OUT 2

Data Set: T:\...\UFIW-08D_slugout_2.aqt
 Date: 05/04/17 Time: 10:00:12

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW-08D
 Test Date: 8/29/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.19$ ft/day
 $y_0 = 3.016$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-08D)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 21.73 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft

UFIW-08I SLUG IN 1

Data Set: T:\...\UFIW-08I_slugin_1.aqt

Date: 05/04/17

Time: 10:00:19

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-08I

Test Date: 8/16/2016

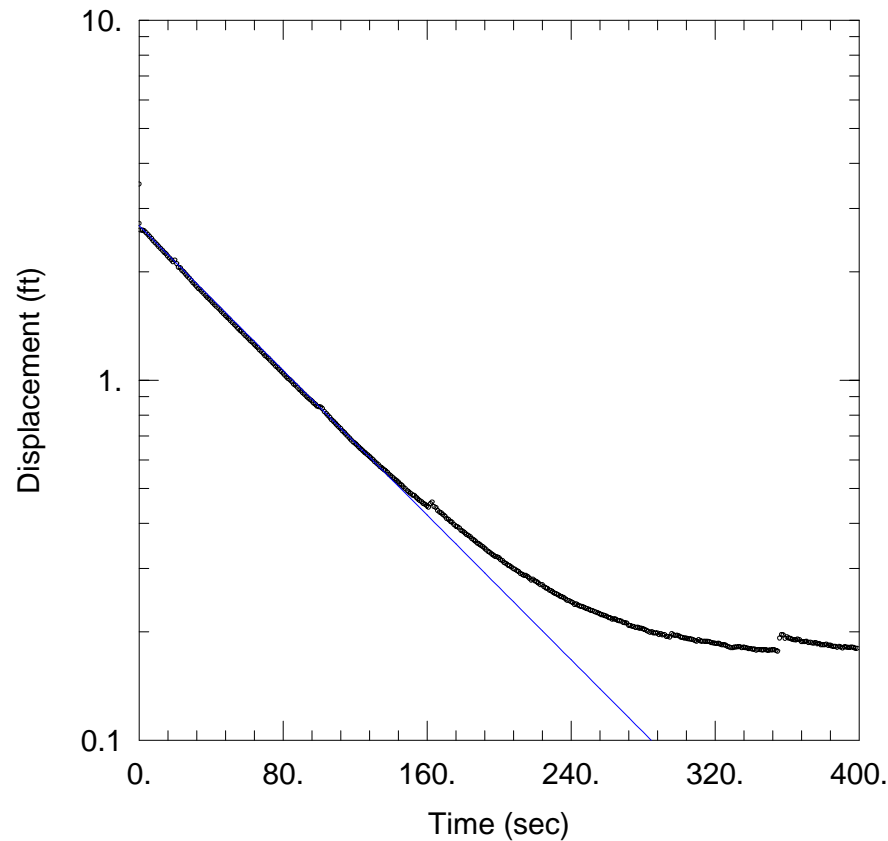
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 2.337$ ft/day

$y_0 = 2.686$ ft



AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-08I)

Initial Displacement: 3.5 ft

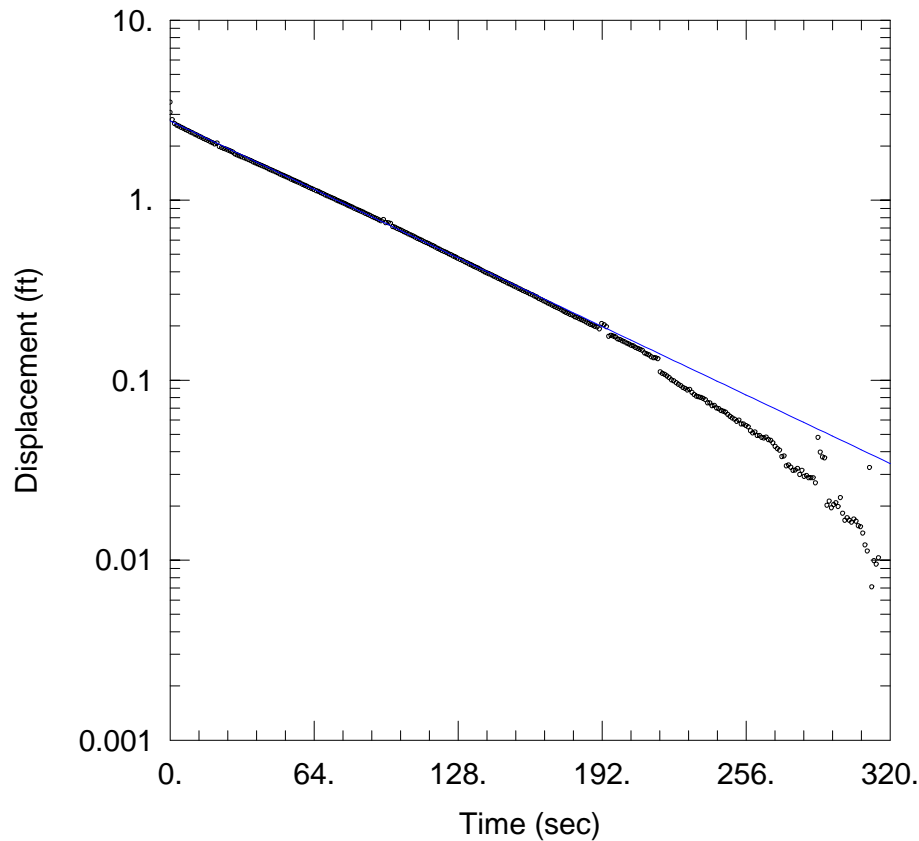
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.7 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-08I SLUG IN 2

Data Set: T:\...\UFIW-08I_slugin_2.aqt

Date: 05/04/17

Time: 10:00:28

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-08I

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.765 ft/day

y0 = 2.756 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-08I)

Initial Displacement: 3.5 ft

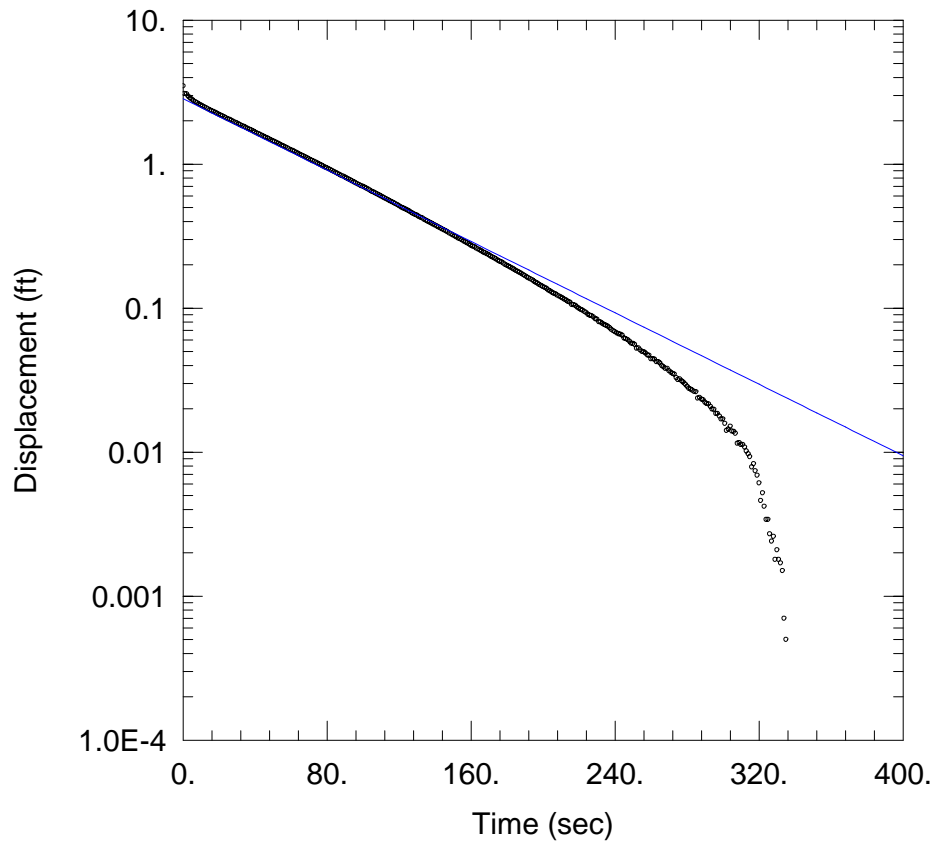
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.7 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-08I SLUG OUT 1

Data Set: T:\...\UFIW-08I_slugout_1.aqt
Date: 05/04/17 Time: 10:00:38

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFIW-08I
Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 2.883$ ft/day
 $y_0 = 2.849$ ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-08I)

Initial Displacement: 3.5 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.083 ft

Static Water Column Height: 11.7 ft
Screen Length: 5. ft
Well Radius: 0.33 ft

UFMW-01D SLUG IN 1

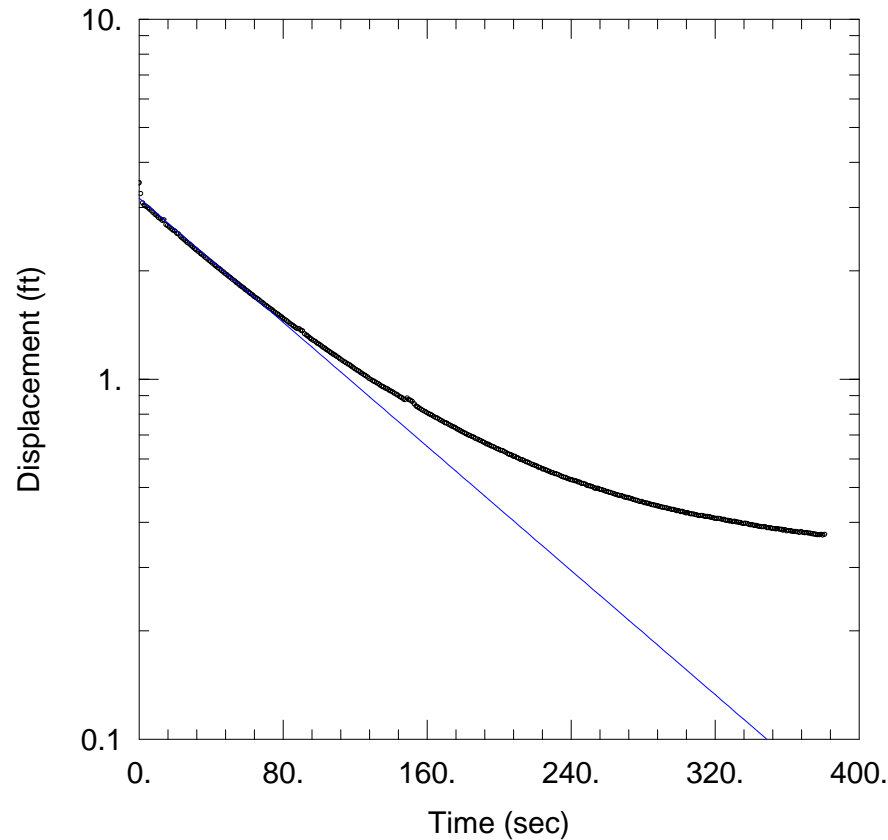
Data Set: T:\...\UFMW-01D_slugin_1.aqt
Date: 05/04/17 Time: 10:00:46

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFMW-01D
Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 2.028$ ft/day
 $y_0 = 3.182$ ft



AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-01D)

Initial Displacement: 3.5 ft
Total Well Penetration Depth: 20. ft
Casing Radius: 0.083 ft

Static Water Column Height: 20.92 ft
Screen Length: 5. ft
Well Radius: 0.5 ft

UFMW-01D SLUG IN 2

Data Set: T:\...\UFMW-01D_slugin_2.aqt

Date: 05/04/17

Time: 10:00:55

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-01D

Test Date: 8/16/2016

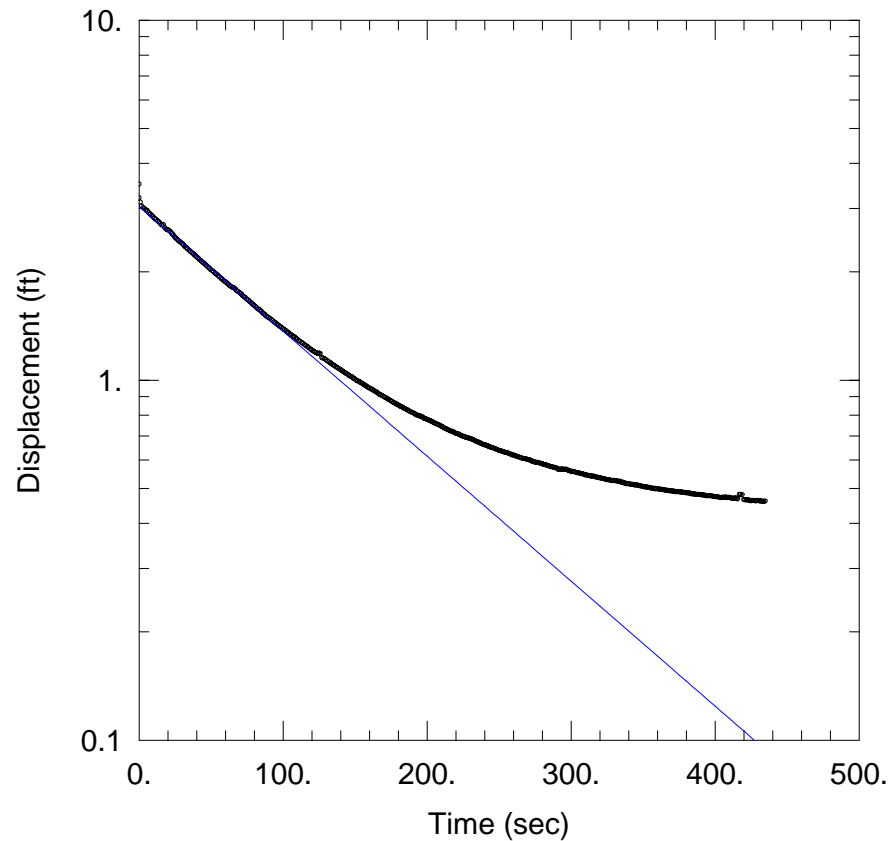
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.634$ ft/day

$y_0 = 3.041$ ft



AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-01D)

Initial Displacement: 3.5 ft

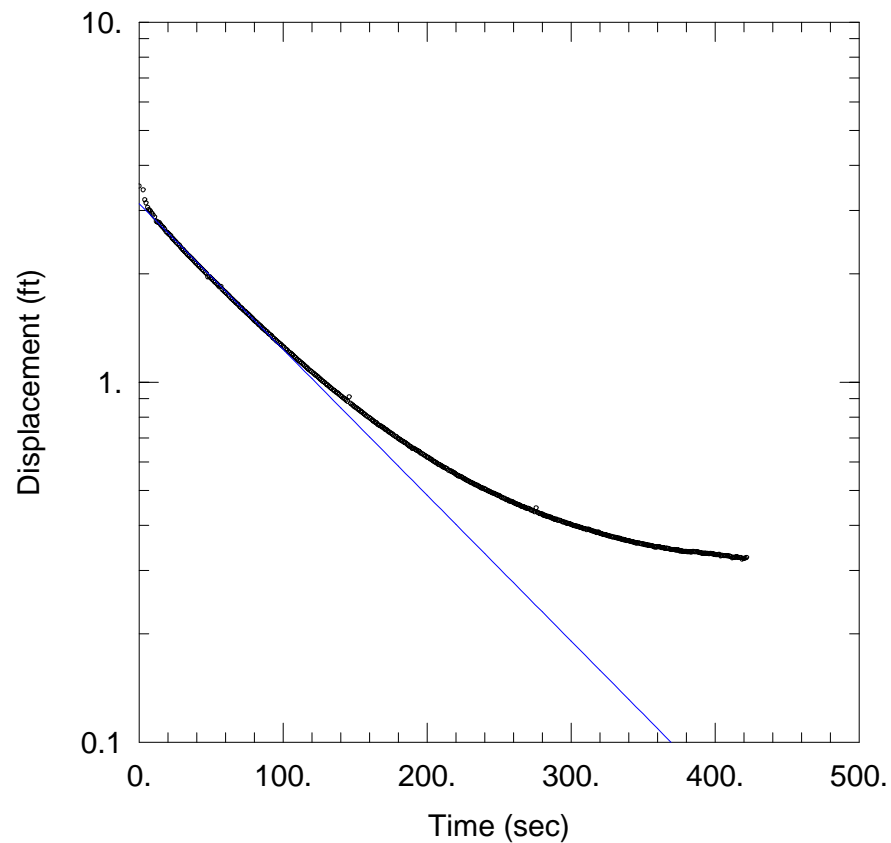
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 20.92 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-01D SLUG OUT 1

Data Set: T:\...\UFMW-01D_slugout_1.aqt
 Date: 05/04/17 Time: 10:01:04

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-01D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.906$ ft/day
 $y_0 = 3.132$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-01D)

Initial Displacement: 3.5 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 20.92 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft

UFMW-01D SLUG OUT 2

Data Set: T:\...\UFMW-01D_slugout_2.aqt

Date: 05/04/17

Time: 10:01:13

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-01D

Test Date: 8/16/2016

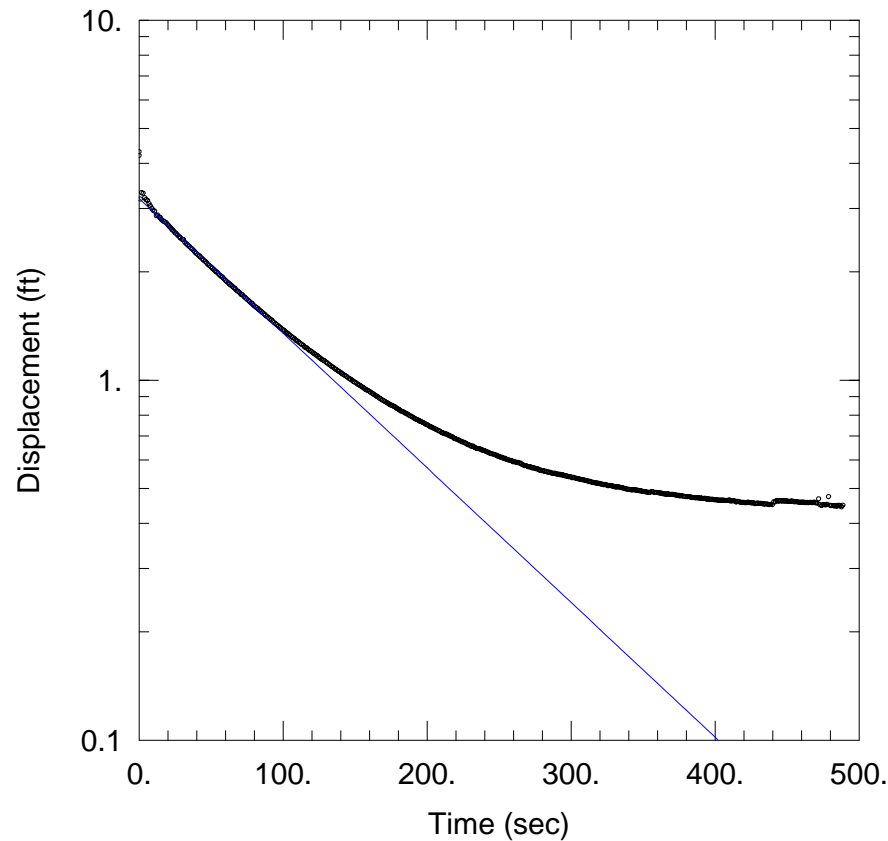
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.761 ft/day

y0 = 3.196 ft



AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-01D)

Initial Displacement: 4.2 ft

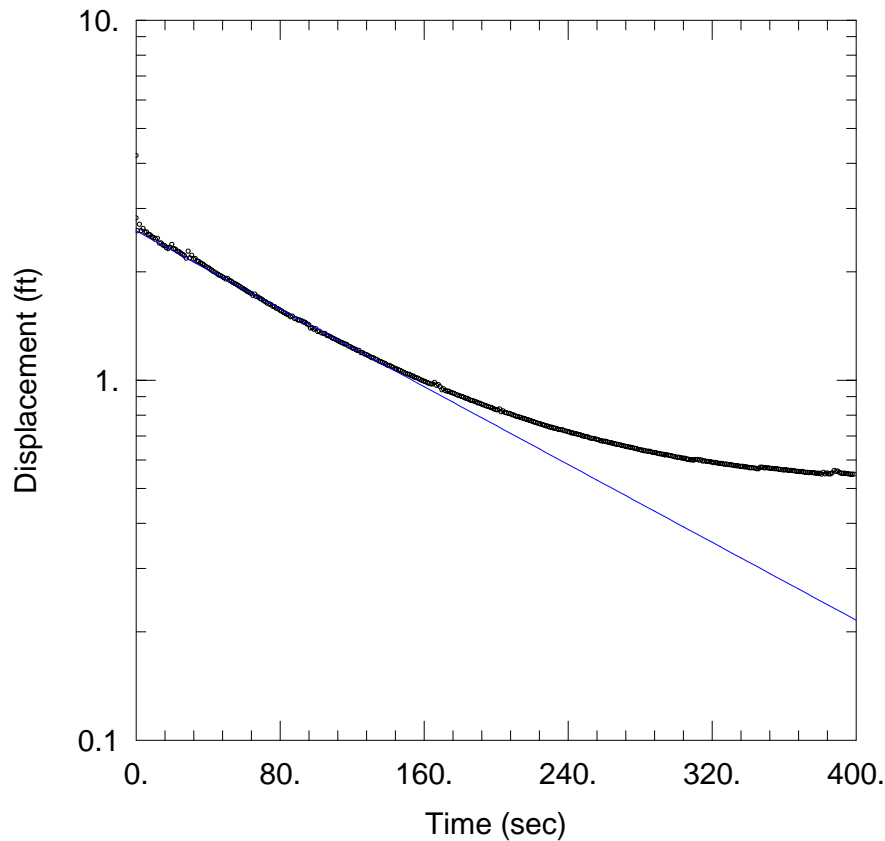
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 20.92 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-01I SLUG IN 1

Data Set: T:\...\UFMW-01I_slugin_1.aqt
 Date: 05/04/17 Time: 10:01:21

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-01I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.126$ ft/day
 $y_0 = 2.597$ ft

AQUIFER DATA

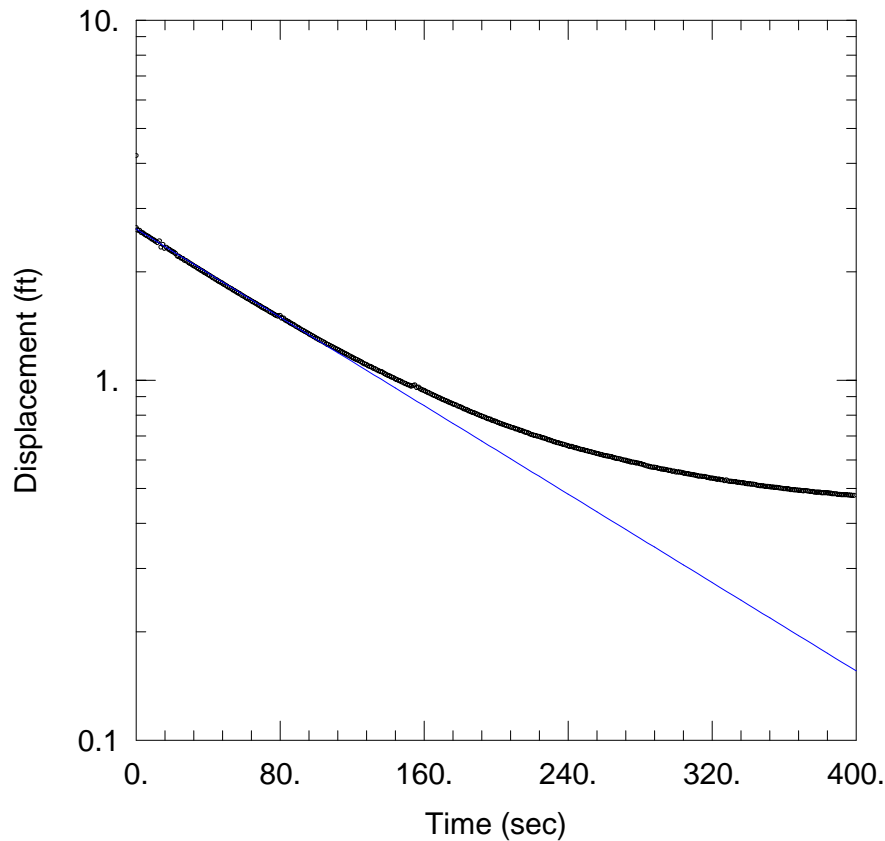
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-01I)

Initial Displacement: 4.2 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.43 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-01I SLUG IN 2

Data Set: T:\...\UFMW-01I_slugin_2.aqt
 Date: 05/04/17 Time: 10:01:29

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-01I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.278$ ft/day
 $y_0 = 2.632$ ft

AQUIFER DATA

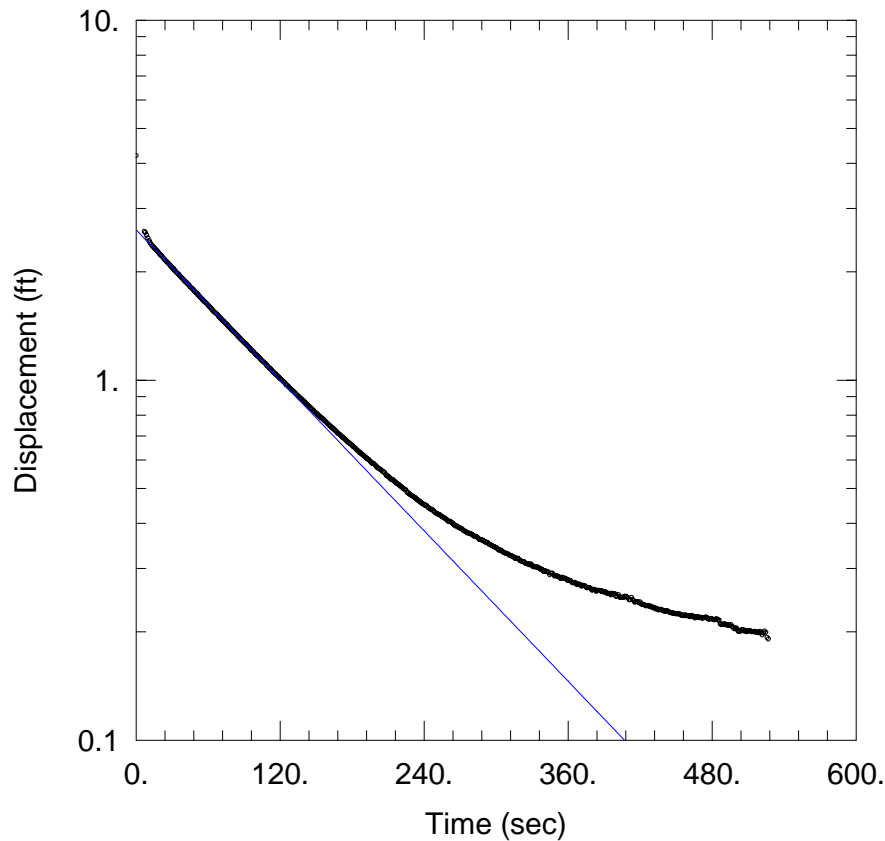
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-01I)

Initial Displacement: 4.2 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.43 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-01I SLUG OUT 1

Data Set: T:\...\UFMW-01I_slugout_1.aqt
 Date: 05/04/17 Time: 10:01:38

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-01I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.451$ ft/day
 $y_0 = 2.617$ ft

AQUIFER DATA

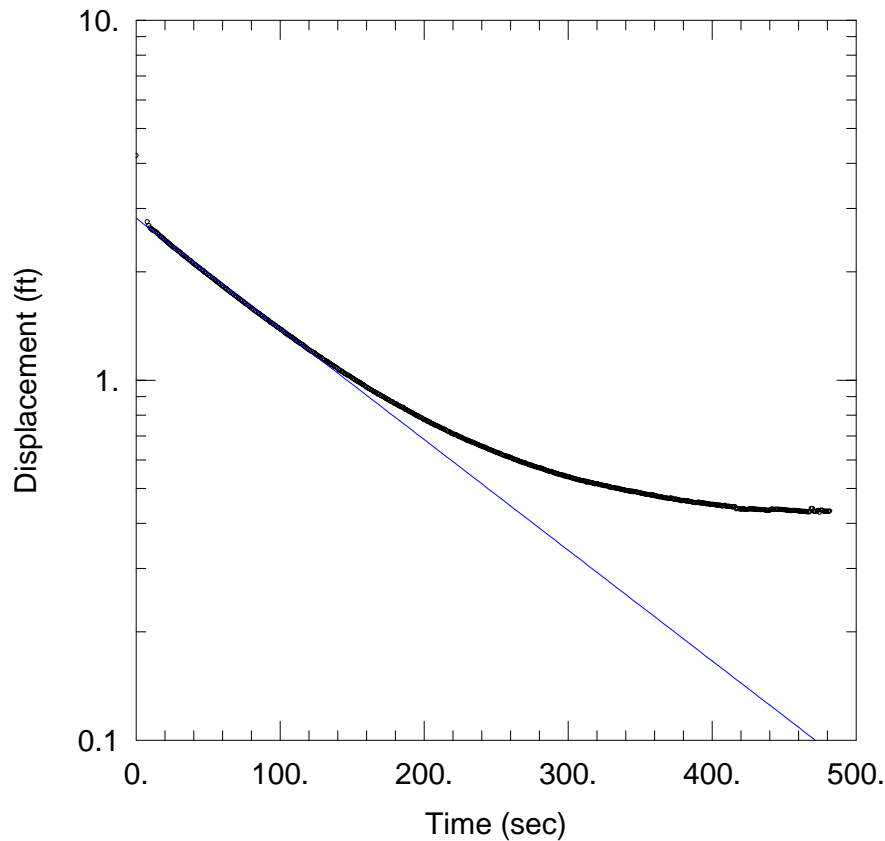
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-01I)

Initial Displacement: 4.2 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.43 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-01I SLUG OUT 2

Data Set: T:\...\UFMW-01I_slugout_2.aqt
Date: 05/04/17 Time: 10:01:46

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFMW-01I
Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 1.28$ ft/day
 $y_0 = 2.819$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-01I)

Initial Displacement: 4.2 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.083 ft

Static Water Column Height: 11.43 ft
Screen Length: 5. ft
Well Radius: 0.5 ft

UFMW-02D SLUG IN 1

Data Set: T:\...\UFMW-02D_slugin_1.aqt

Date: 05/04/17

Time: 10:01:54

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-02D

Test Date: 8/16/2016

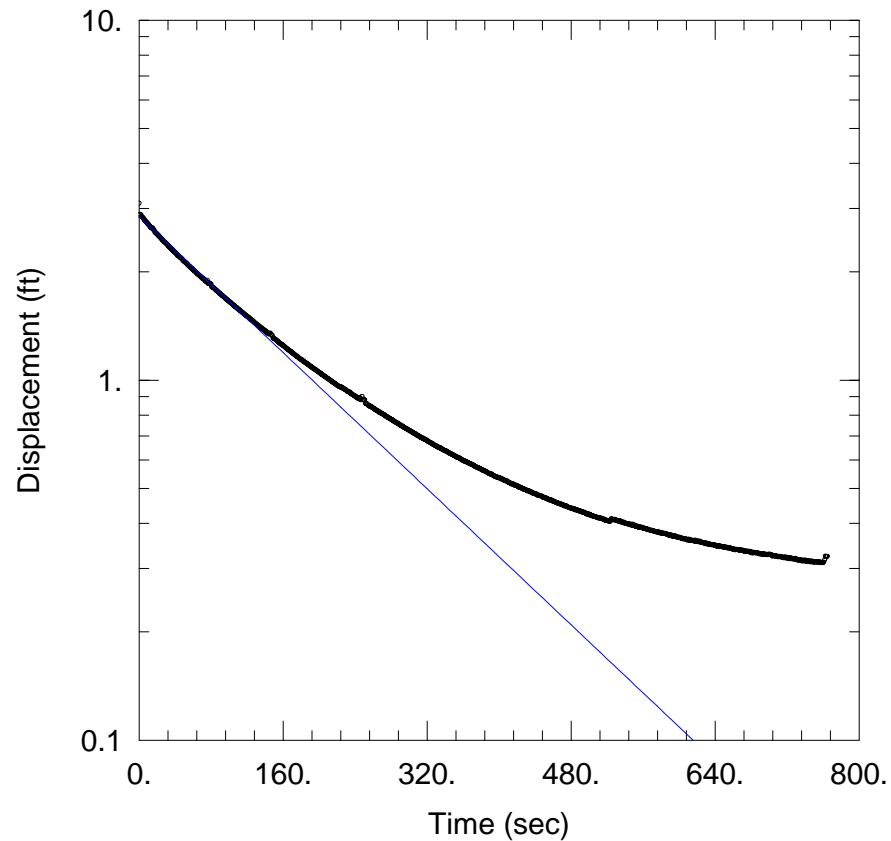
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.112$ ft/day

$y_0 = 2.849$ ft



AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-02D)

Initial Displacement: 3.1 ft

Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 20.98 ft

Screen Length: 5. ft

Well Radius: 0.5 ft

UFMW-02D SLUG IN 2

Data Set: T:\...\UFMW-02D_slugin_2.aqt

Date: 05/04/17

Time: 10:02:03

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-02D

Test Date: 8/16/2016

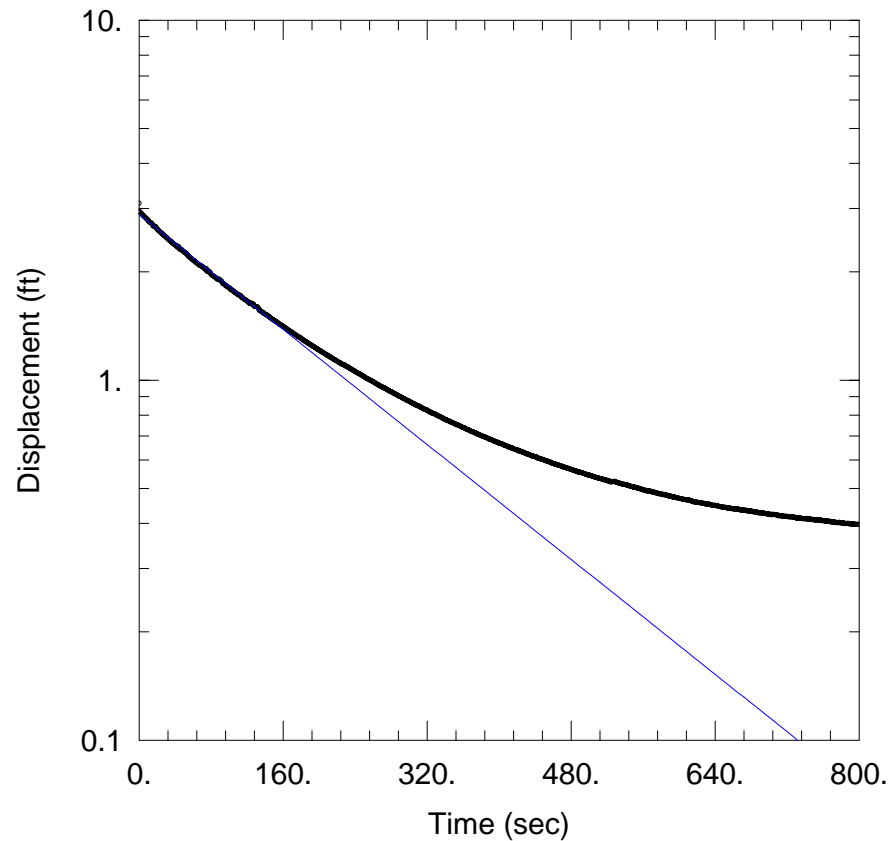
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.9389 ft/day

y0 = 2.881 ft



AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-02D)

Initial Displacement: 3.1 ft

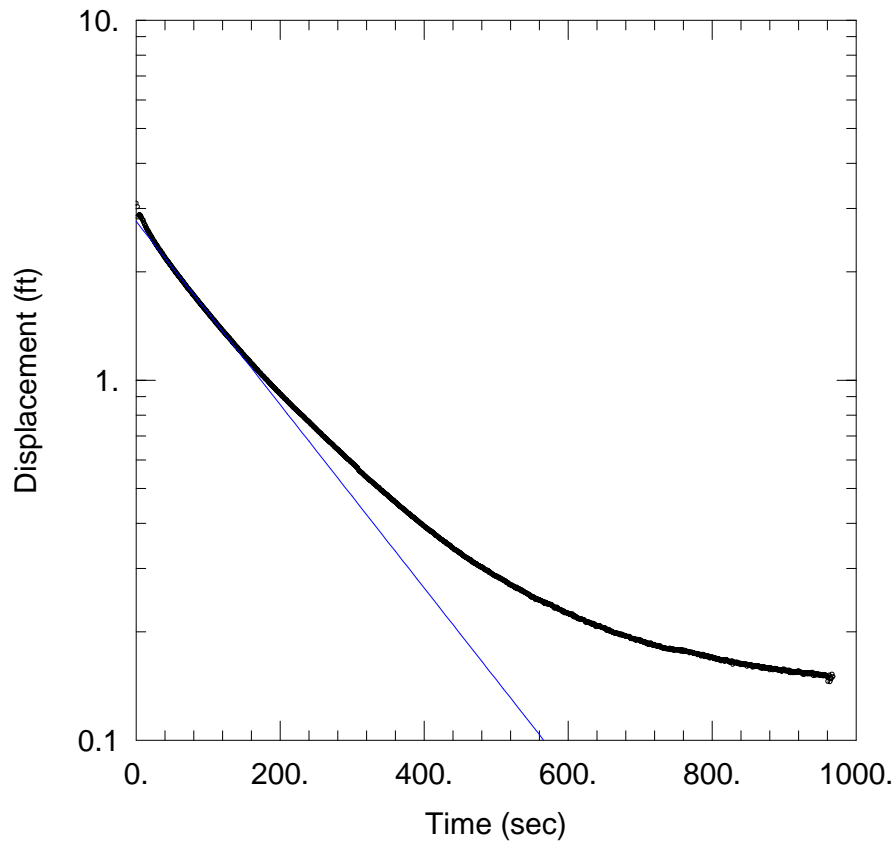
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 20.98 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-02D SLUG OUT 1

Data Set: T:\...\UFMW-02D_slugout_1.aqt
 Date: 05/04/17 Time: 10:02:10

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-02D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.198$ ft/day
 $y_0 = 2.762$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-02D)

Initial Displacement: 3.1 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 20.98 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft

UFMW-02D SLUG OUT 2

Data Set: T:\...\UFMW-02D_slugout_2.aqt

Date: 05/04/17

Time: 10:02:18

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-02D

Test Date: 8/16/2016

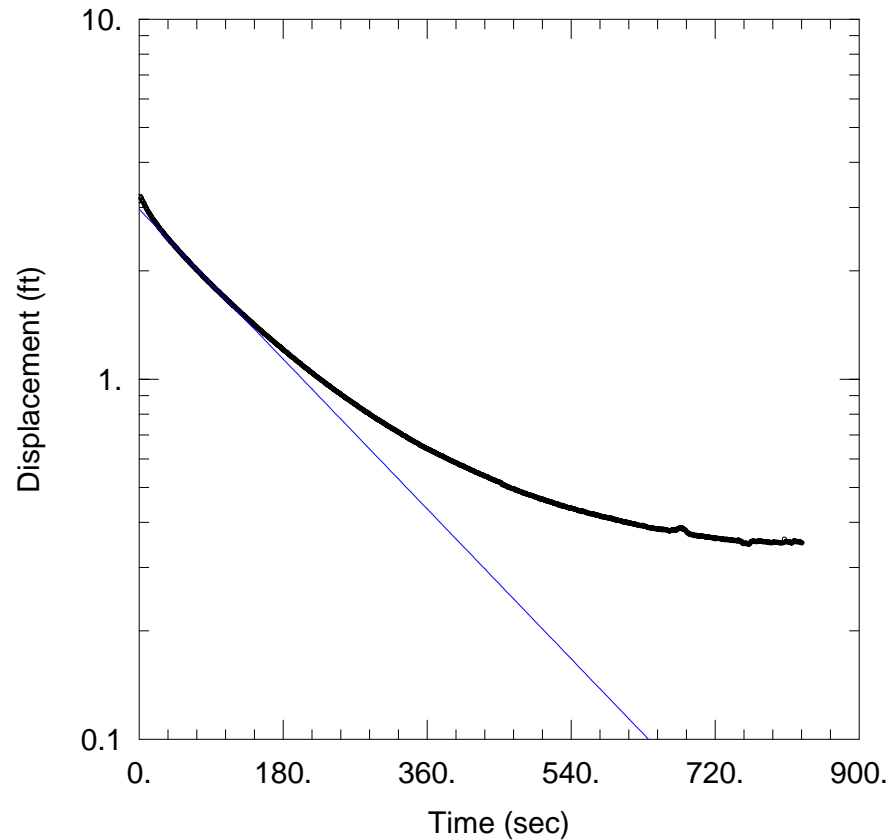
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.089$ ft/day

$y_0 = 2.966$ ft



AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-02D)

Initial Displacement: 3.2 ft

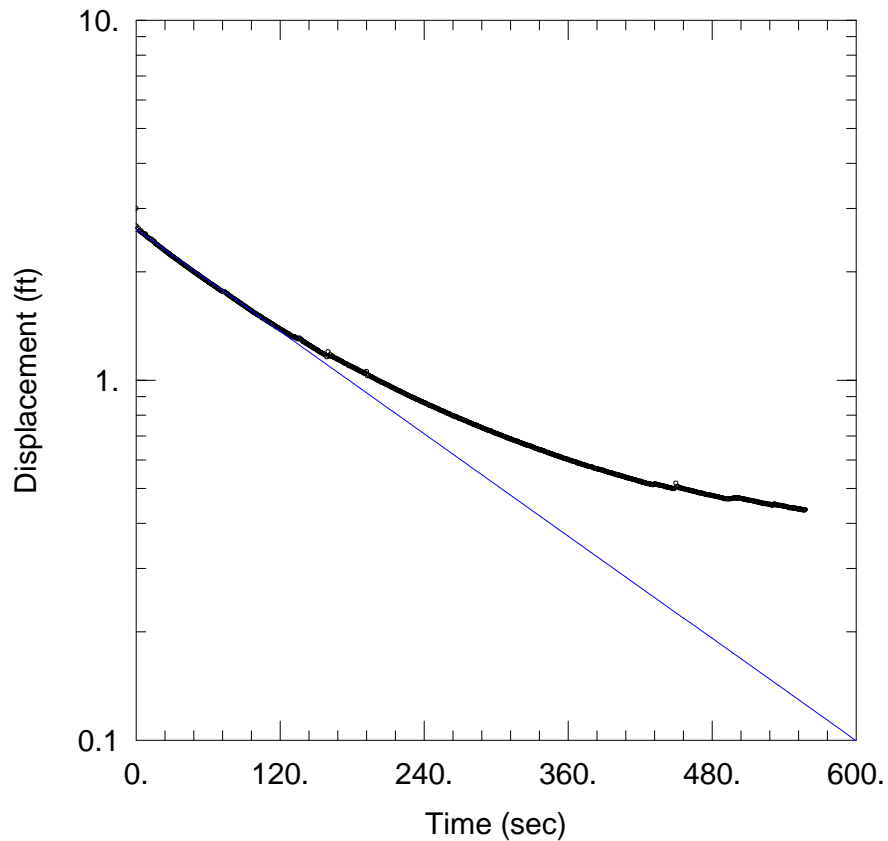
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 20.98 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-02I SLUG IN 1

Data Set: T:\...\UFMW-02I_slugin_1.aqt
 Date: 05/04/17 Time: 10:02:33

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-02I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 0.986$ ft/day
 $y_0 = 2.626$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-02I)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.24 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft

UFMW-02I SLUG IN 2

Data Set: T:\...\UFMW-02I_slugin_2.aqt

Date: 05/04/17

Time: 10:02:42

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-02I

Test Date: 8/16/2016

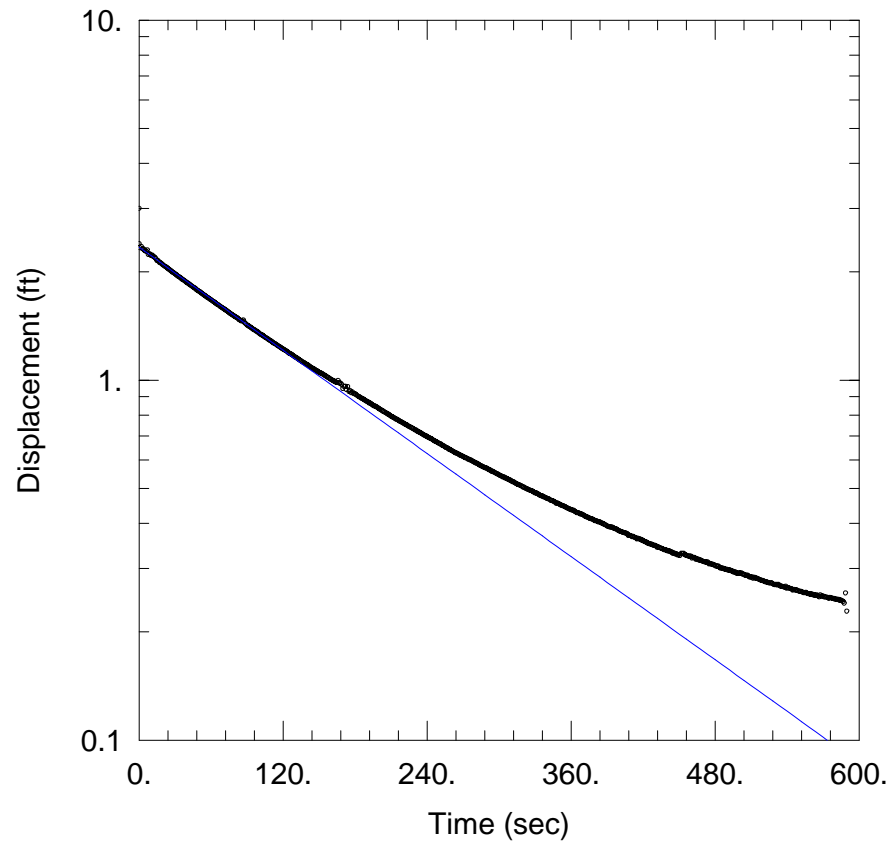
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 0.994$ ft/day

$y_0 = 2.34$ ft



AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-02I)

Initial Displacement: 3. ft

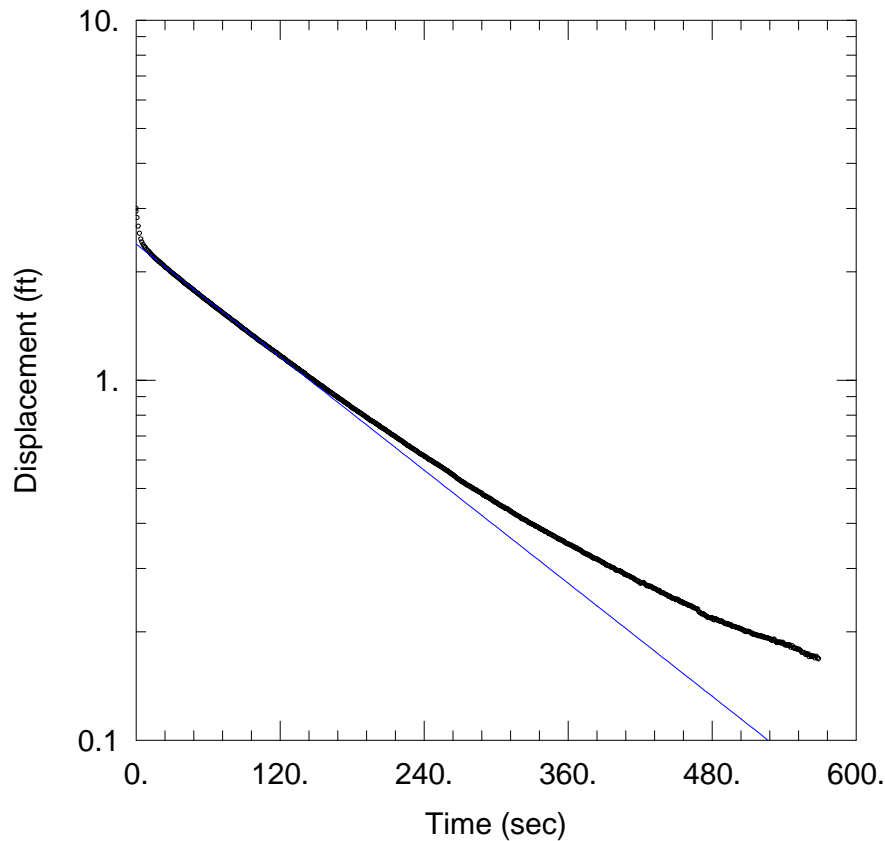
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.24 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-02I SLUG OUT 1

Data Set: T:\...\UFMW-02I_slugout_1.aqt
 Date: 05/04/17 Time: 10:02:50

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-02I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.09$ ft/day
 $y_0 = 2.389$ ft

AQUIFER DATA

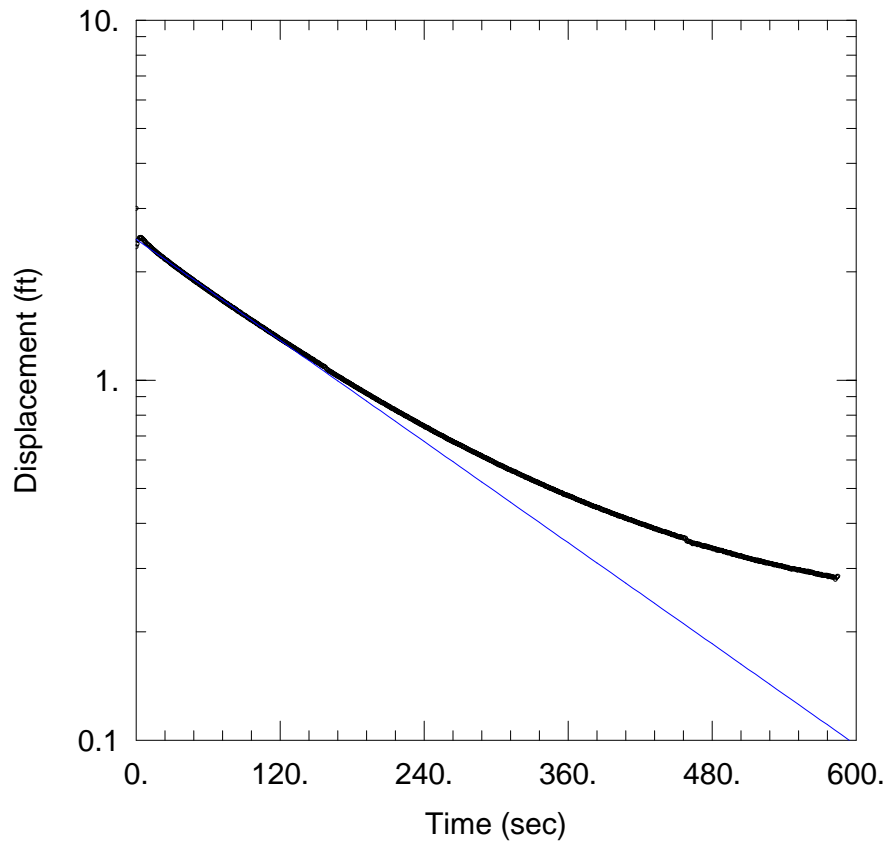
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-02I)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.24 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-02I SLUG OUT 2

Data Set: T:\...\UFMW-02I_slugout_2.aqt
 Date: 05/04/17 Time: 10:02:58

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-02I
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 0.975$ ft/day
 $y_0 = 2.464$ ft

AQUIFER DATA

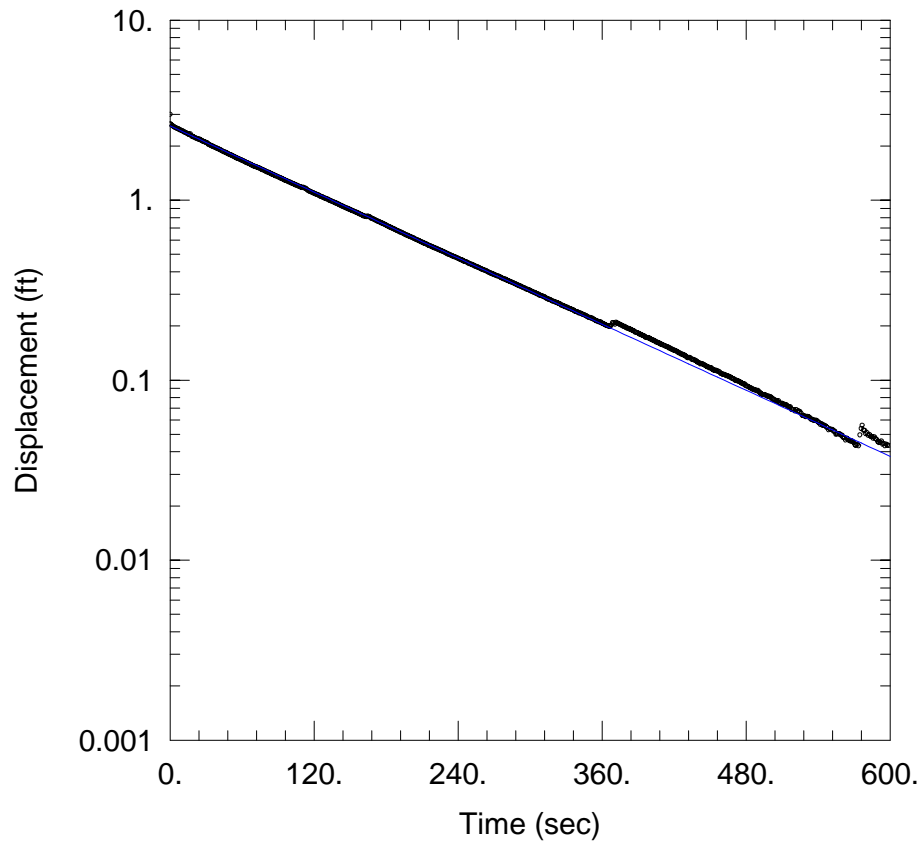
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-02I)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.24 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-03D SLUG IN 1

Data Set: T:\...\UFMW-03D_slugin_1.aqt
 Date: 05/04/17 Time: 10:03:06

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-03D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.482$ ft/day
 $y_0 = 2.584$ ft

AQUIFER DATA

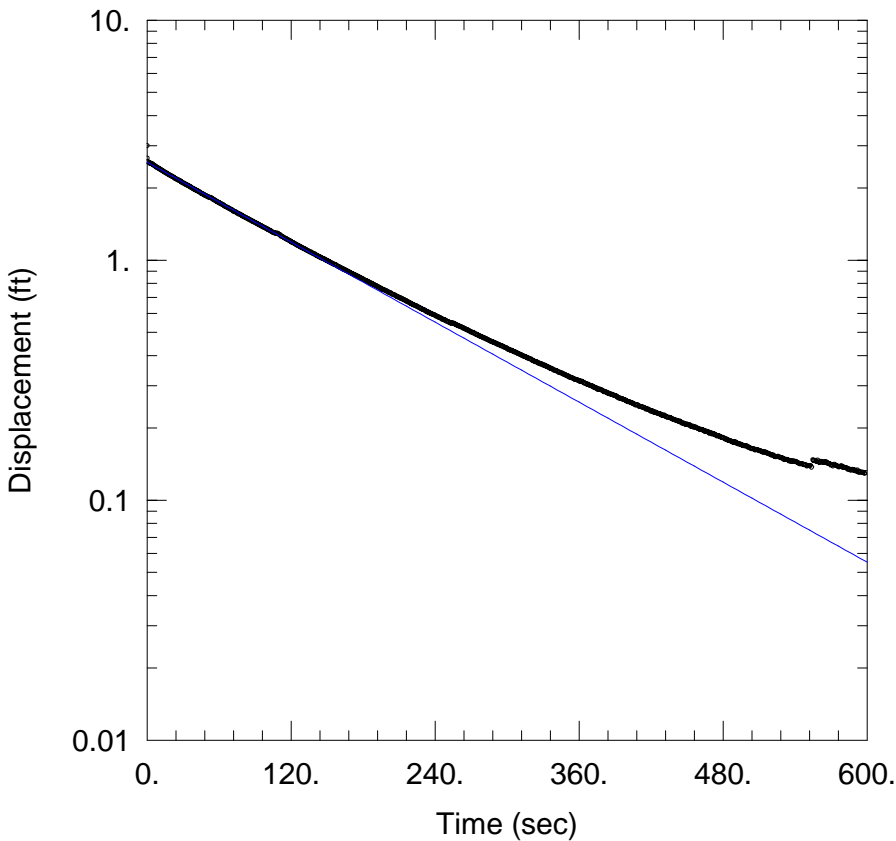
Saturated Thickness: 5.5 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-03D)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 24. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 23.04 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-03D SLUG IN 2

Data Set: T:\...\UFMW-03D_slugin_2.aqt
 Date: 05/04/17 Time: 10:03:15

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-03D
 Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.346$ ft/day
 $y_0 = 2.561$ ft

AQUIFER DATA

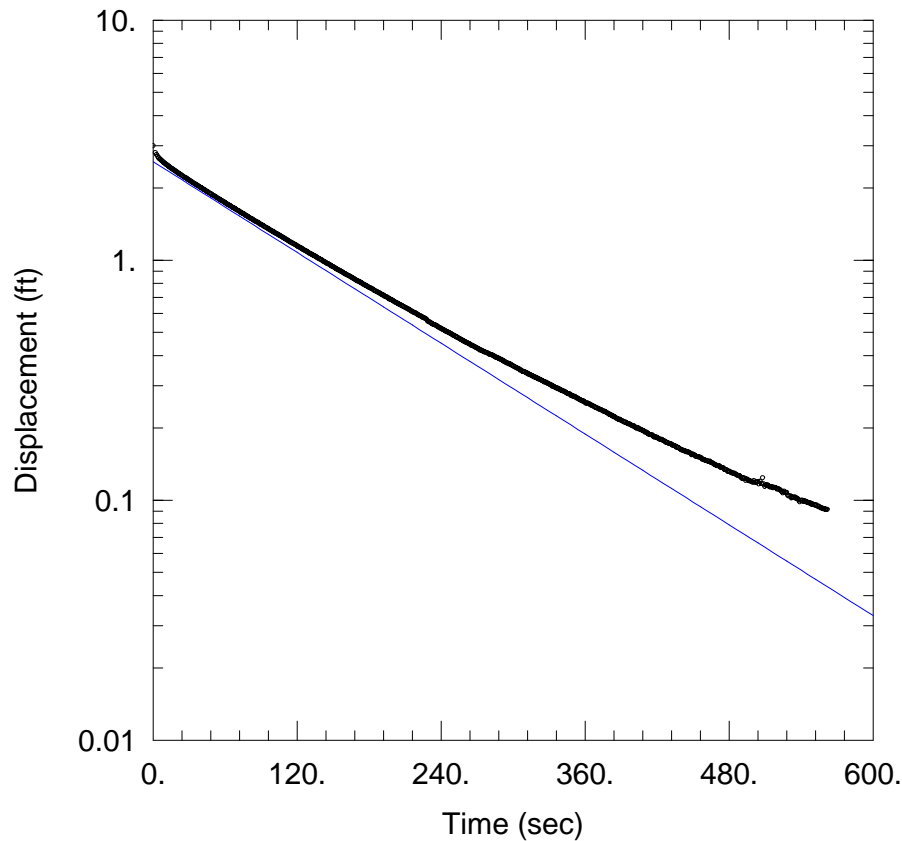
Saturated Thickness: 5.5 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-03D)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 24. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 23.04 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-03D SLUG OUT 1

Data Set: T:\...\UFMW-03D_slugout_1.aqt

Date: 05/04/17

Time: 10:03:23

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-03D

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.527$ ft/day

$y_0 = 2.572$ ft

AQUIFER DATA

Saturated Thickness: 5.5 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-03D)

Initial Displacement: 3. ft

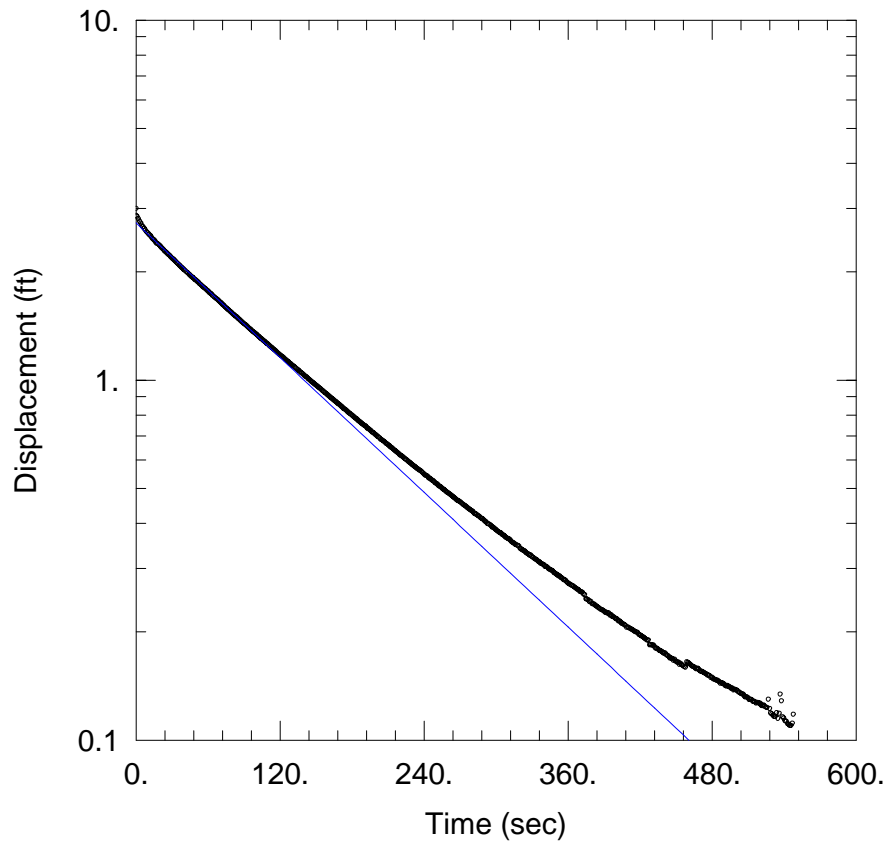
Total Well Penetration Depth: 24. ft

Casing Radius: 0.083 ft

Static Water Column Height: 23.04 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-03D SLUG OUT 2

Data Set: T:\...\UFMW-03D_slugout_2.aqt

Date: 05/04/17

Time: 10:04:51

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-03D

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.51 ft/day

y0 = 2.732 ft

AQUIFER DATA

Saturated Thickness: 5.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-03D)

Initial Displacement: 3. ft

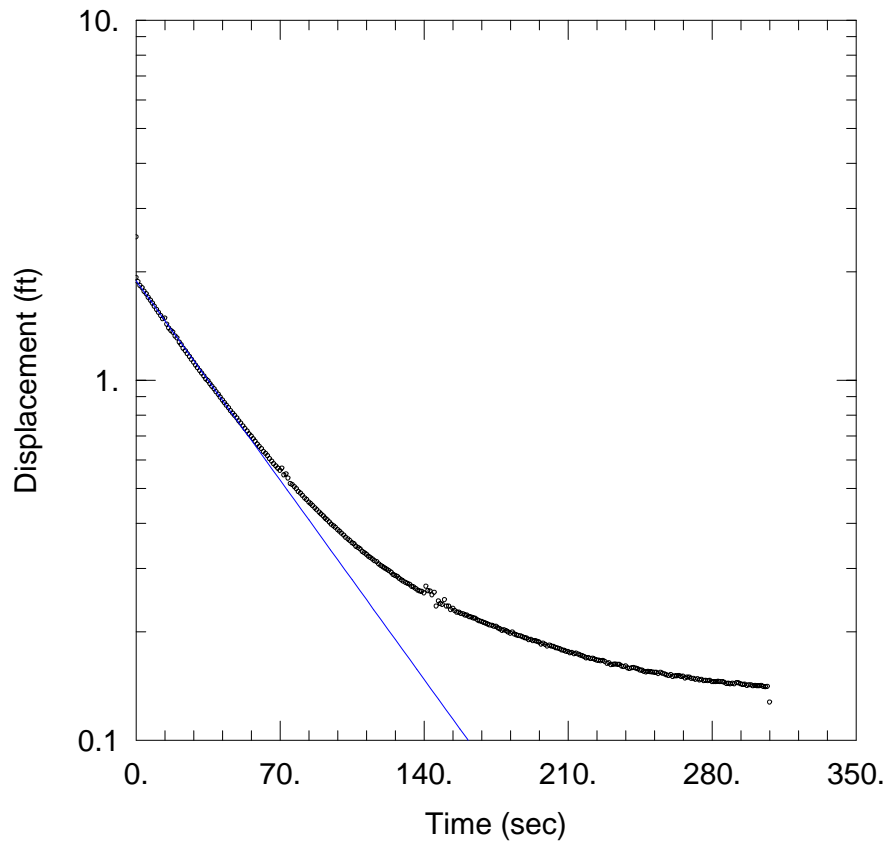
Total Well Penetration Depth: 24. ft

Casing Radius: 0.083 ft

Static Water Column Height: 23.04 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-03I SLUG IN 1

Data Set: T:\...\UFMW-03I_slugin_1.aqt
Date: 05/04/17 Time: 10:04:59

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFMW-03I
Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 1.841$ ft/day
 $y_0 = 1.888$ ft

AQUIFER DATA

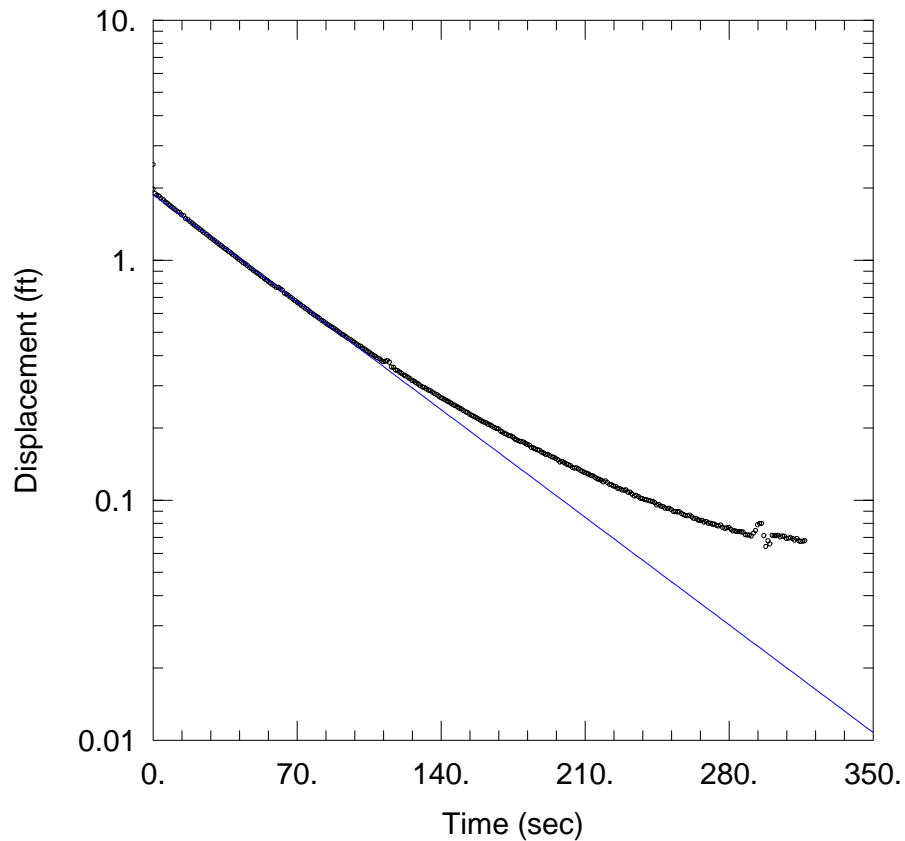
Saturated Thickness: 10.5 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-03I)

Initial Displacement: 2.5 ft
Total Well Penetration Depth: 14. ft
Casing Radius: 0.083 ft

Static Water Column Height: 13.22 ft
Screen Length: 10. ft
Well Radius: 0.5 ft



UFMW-03I SLUG IN 2

Data Set: T:\...\UFMW-03I_slugin_2.aqt

Date: 05/04/17

Time: 10:05:07

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-03I

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.491 ft/day

y0 = 1.878 ft

AQUIFER DATA

Saturated Thickness: 10.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-03I)

Initial Displacement: 2.5 ft

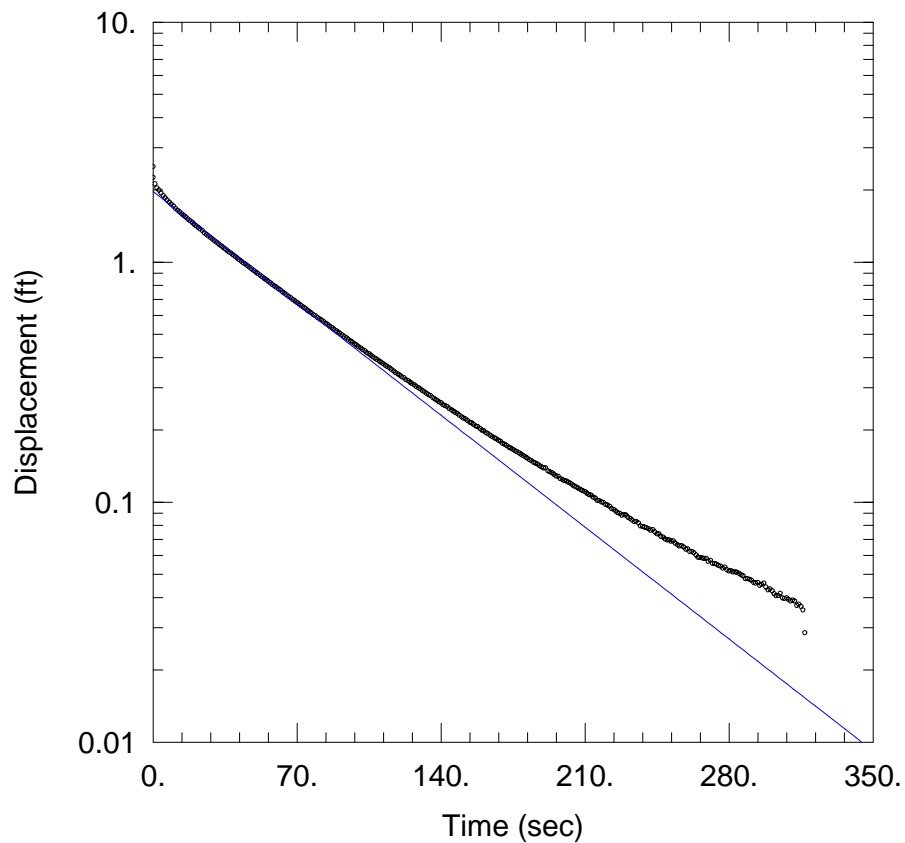
Total Well Penetration Depth: 14. ft

Casing Radius: 0.083 ft

Static Water Column Height: 13.22 ft

Screen Length: 10. ft

Well Radius: 0.5 ft



UFMW-03I SLUG OUT 1

Data Set: T:\...\UFMW-03I_slugout_1.aqt
Date: 05/04/17 Time: 10:05:14

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFMW-03I
Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 1.55$ ft/day
 $y_0 = 1.968$ ft

AQUIFER DATA

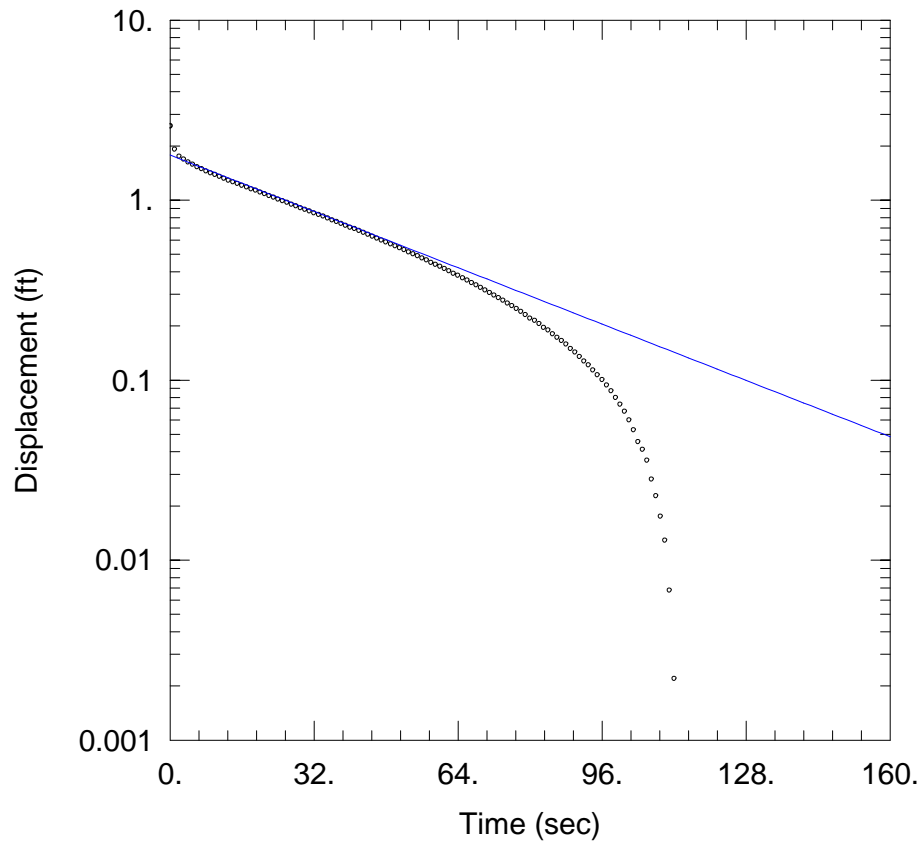
Saturated Thickness: 10.5 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-03I)

Initial Displacement: 2.5 ft
Total Well Penetration Depth: 14. ft
Casing Radius: 0.083 ft

Static Water Column Height: 13.22 ft
Screen Length: 10. ft
Well Radius: 0.5 ft



UFMW-03I SLUG OUT 2

Data Set: T:\...\UFMW-03I_slugout_2.aqt
Date: 05/04/17 Time: 10:05:22

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFMW-03I
Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 2.275$ ft/day
 $y_0 = 1.778$ ft

AQUIFER DATA

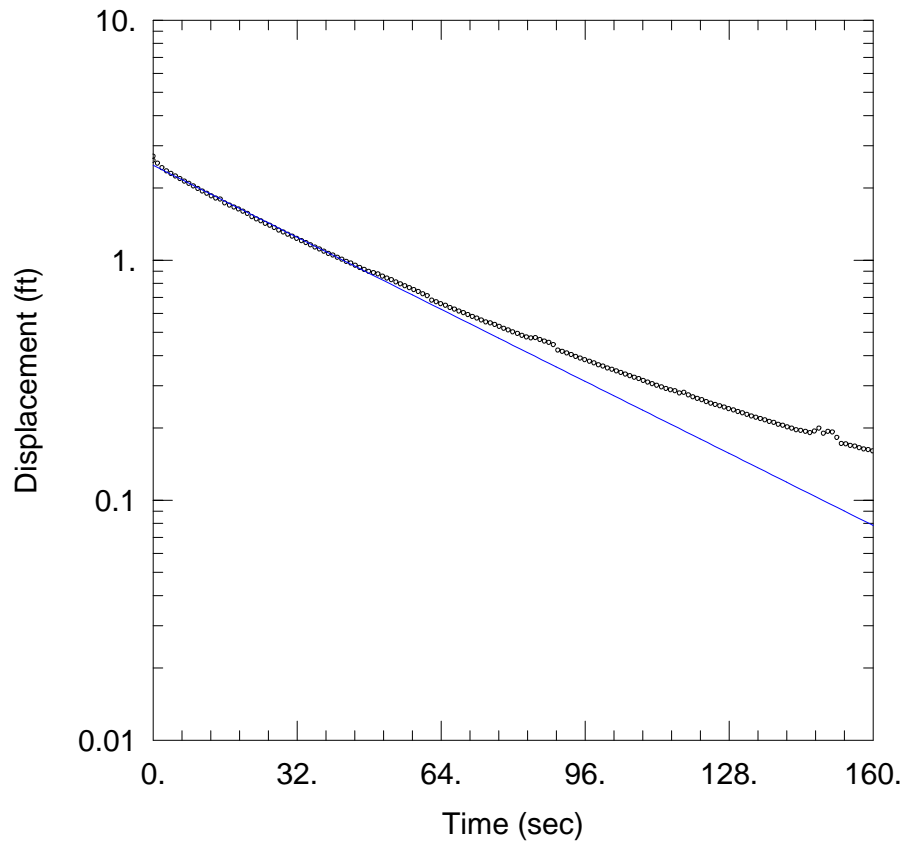
Saturated Thickness: 10.5 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-03I)

Initial Displacement: 2.6 ft
Total Well Penetration Depth: 14. ft
Casing Radius: 0.083 ft

Static Water Column Height: 13.22 ft
Screen Length: 10. ft
Well Radius: 0.5 ft



UFMW-04D SLUG IN 1

Data Set: T:\...\UFMW-04D_slugin_1.aqt
 Date: 05/04/17 Time: 10:05:30

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-04D
 Test Date: 8/17/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 4.414$ ft/day
 $y_0 = 2.484$ ft

AQUIFER DATA

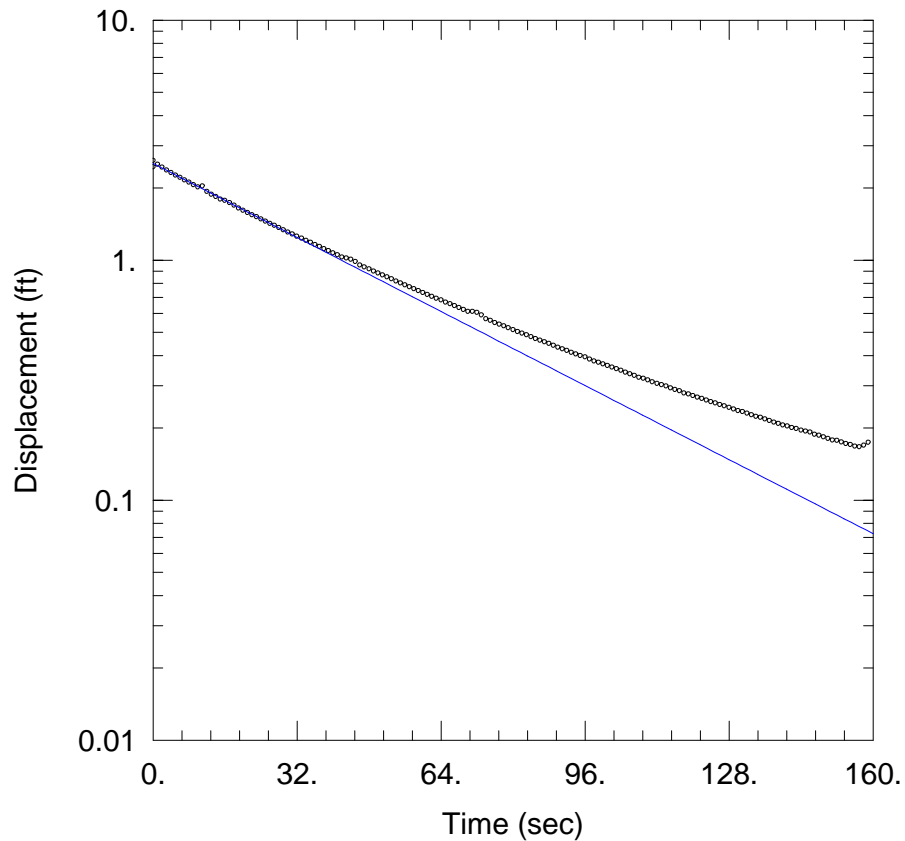
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-04D)

Initial Displacement: 2.6 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 21.8 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-04D SLUG IN 2

Data Set: T:\...\UFMW-04D_slugin_2.aqt
 Date: 05/04/17 Time: 10:05:55

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-04D
 Test Date: 8/17/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 4.537$ ft/day
 $y_0 = 2.529$ ft

AQUIFER DATA

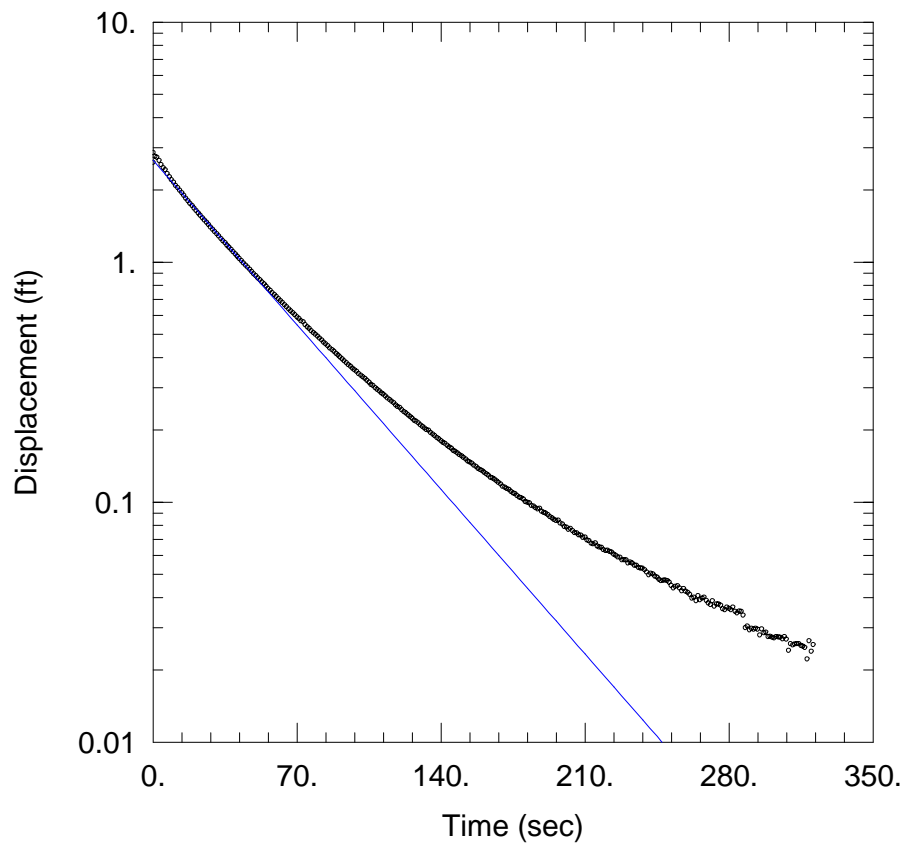
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-04D)

Initial Displacement: 2.6 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 21.8 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-04D SLUG OUT 1

Data Set: T:\...\UFMW-04D_slugout_1.aqt

Date: 05/04/17

Time: 10:06:02

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-04D

Test Date: 8/17/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 4.612$ ft/day

$y_0 = 2.658$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-04D)

Initial Displacement: 2.6 ft

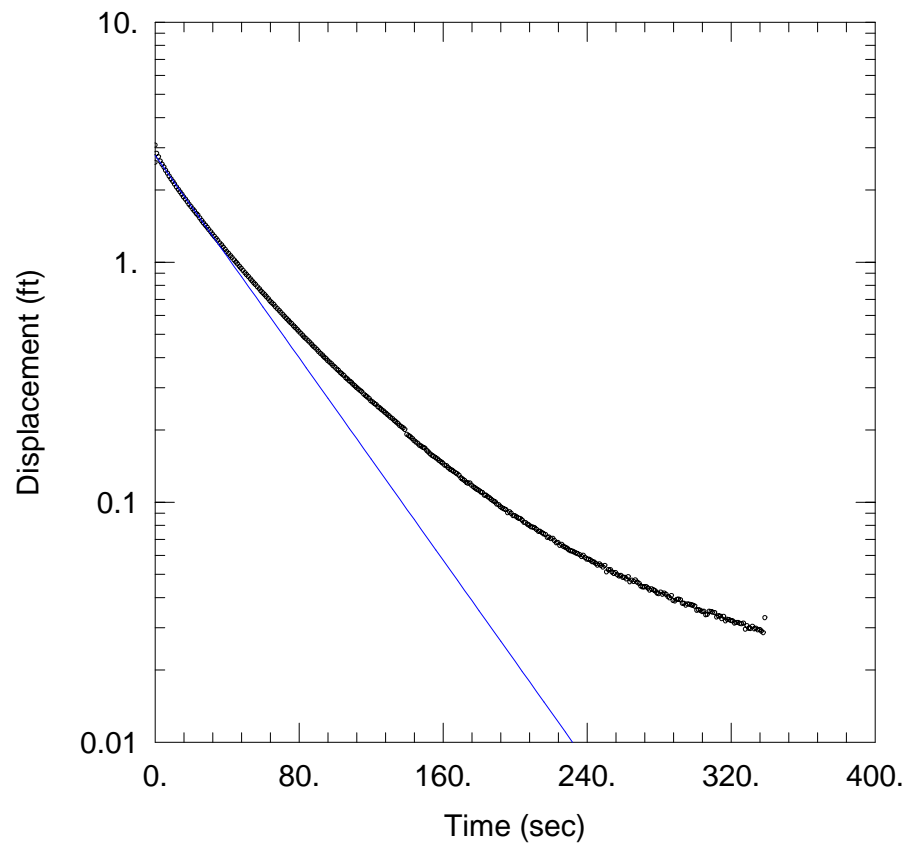
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.8 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-04D SLUG OUT 2

Data Set: T:\...\UFMW-04D_slugout_2.aqt

Date: 05/04/17

Time: 10:06:11

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-04D

Test Date: 8/16/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 4.962$ ft/day

$y_0 = 2.786$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-04D)

Initial Displacement: 2.6 ft

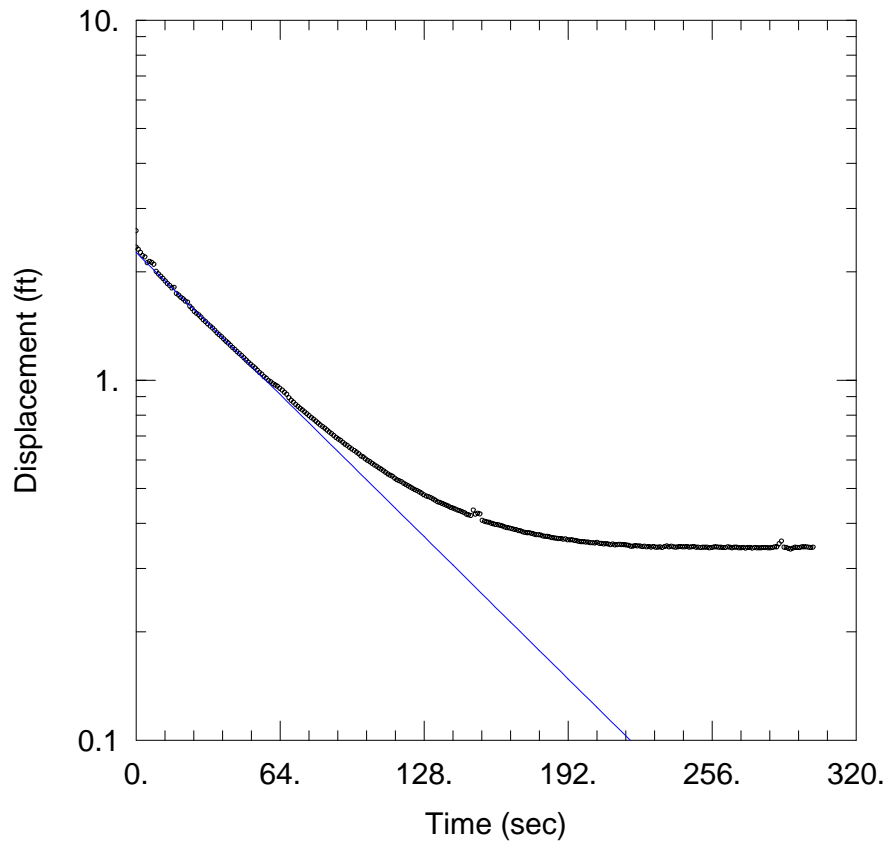
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.8 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-04I SLUG IN 1

Data Set: T:\...\UFMW-04I_slugin_1.aqt
 Date: 05/04/17 Time: 10:06:18

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-04I
 Test Date: 8/17/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 2.568$ ft/day
 $y_0 = 2.264$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-04D)

Initial Displacement: 2.6 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.8 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft

UFMW-04I SLUG IN 2

Data Set: T:\...\UFMW-04I_slugin_2.aqt

Date: 05/04/17

Time: 10:06:26

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-04I

Test Date: 8/17/2016

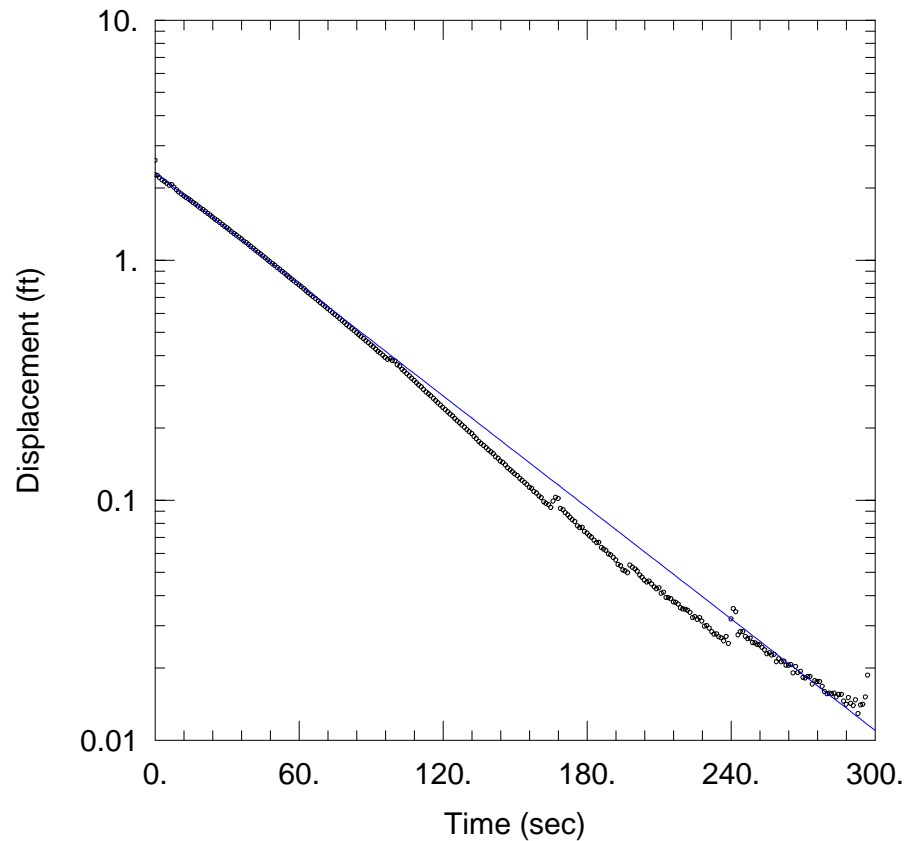
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 3.224 ft/day

y0 = 2.31 ft



AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-04I)

Initial Displacement: 2.6 ft

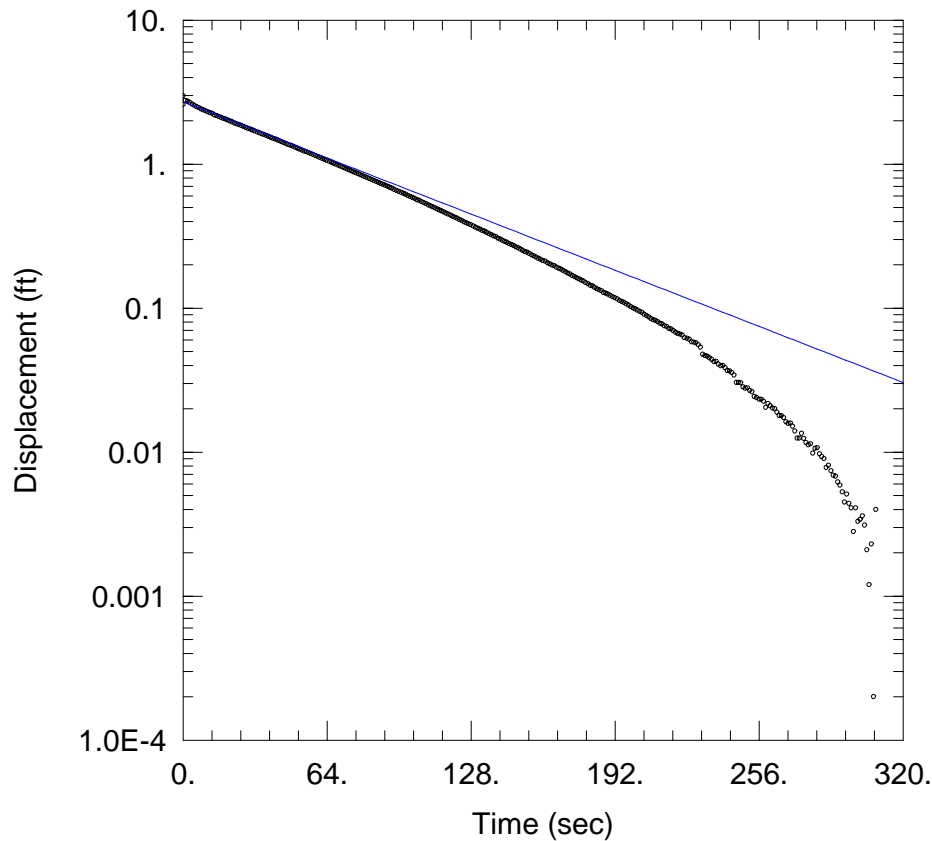
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.8 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-04I SLUG OUT 1

Data Set: T:\...\UFMW-04I_slugout_1.aqt
 Date: 05/04/17 Time: 10:06:34

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-04I
 Test Date: 8/17/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 2.535$ ft/day
 $y_0 = 2.705$ ft

AQUIFER DATA

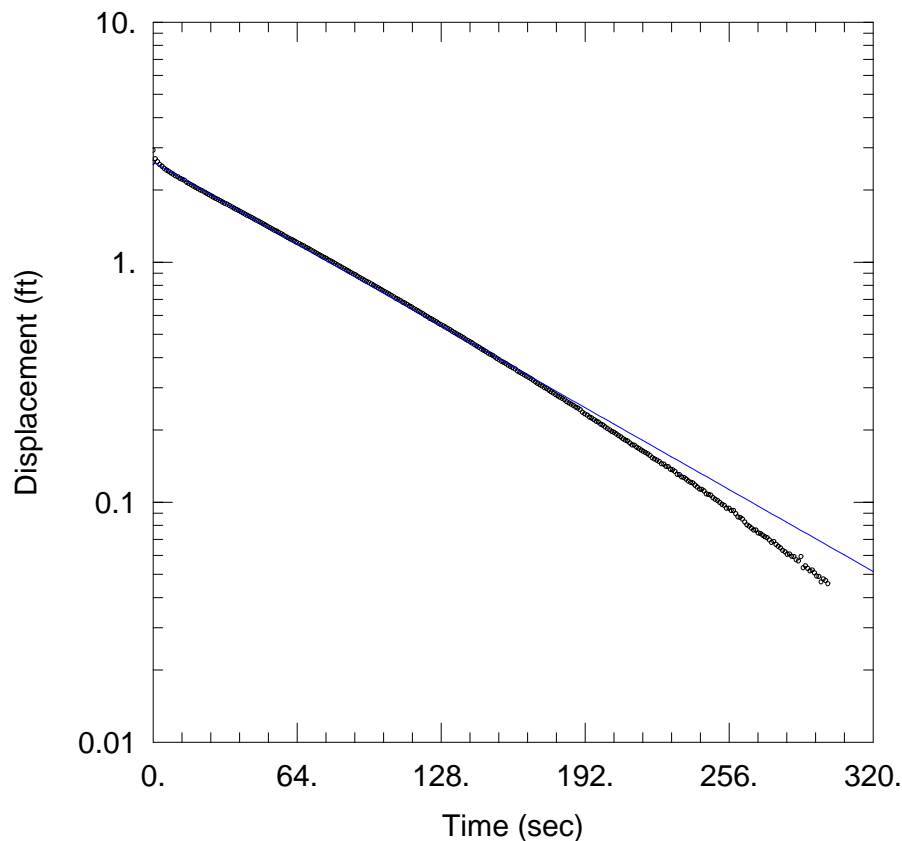
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-04I)

Initial Displacement: 2.6 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.8 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-04I SLUG OUT 2

Data Set: T:\...\UFMW-04I_slugout_2.aqt
 Date: 05/04/17 Time: 10:06:41

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-04I
 Test Date: 8/17/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 2.218$ ft/day
 $y_0 = 2.611$ ft

AQUIFER DATA

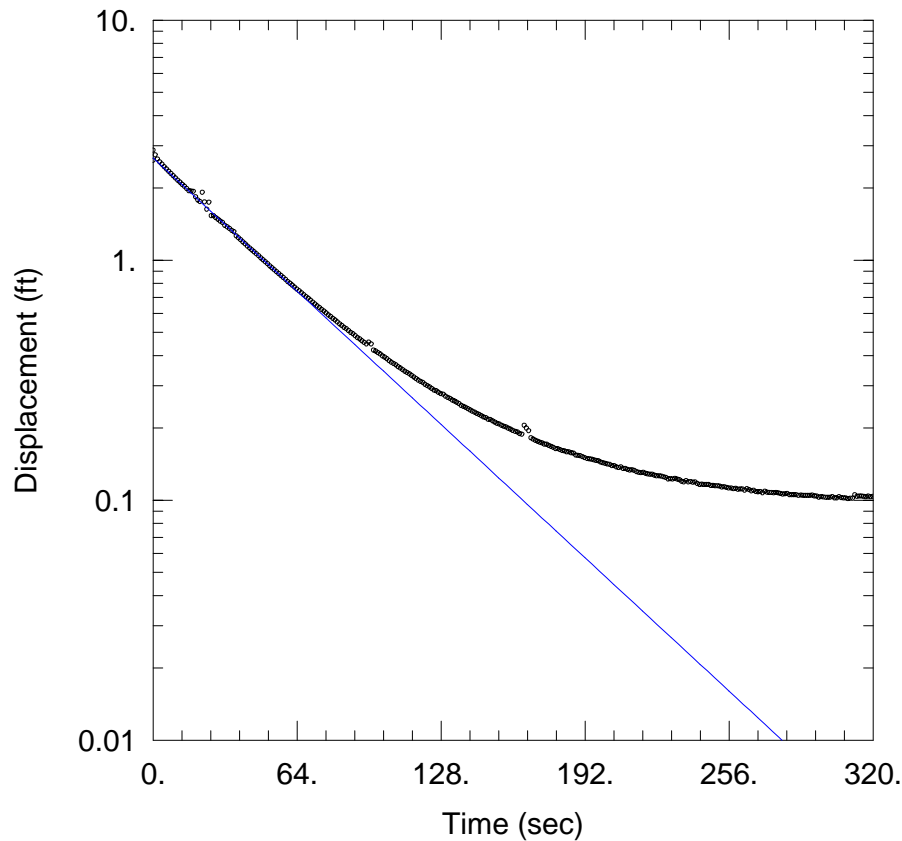
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-04I)

Initial Displacement: 2.6 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.8 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-05D SLUG IN 1

Data Set: T:\...\UFMW-05D_slugin_1.aqt
 Date: 05/04/17 Time: 10:06:49

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-05D
 Test Date: 8/18/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 4.084$ ft/day
 $y_0 = 2.665$ ft

AQUIFER DATA

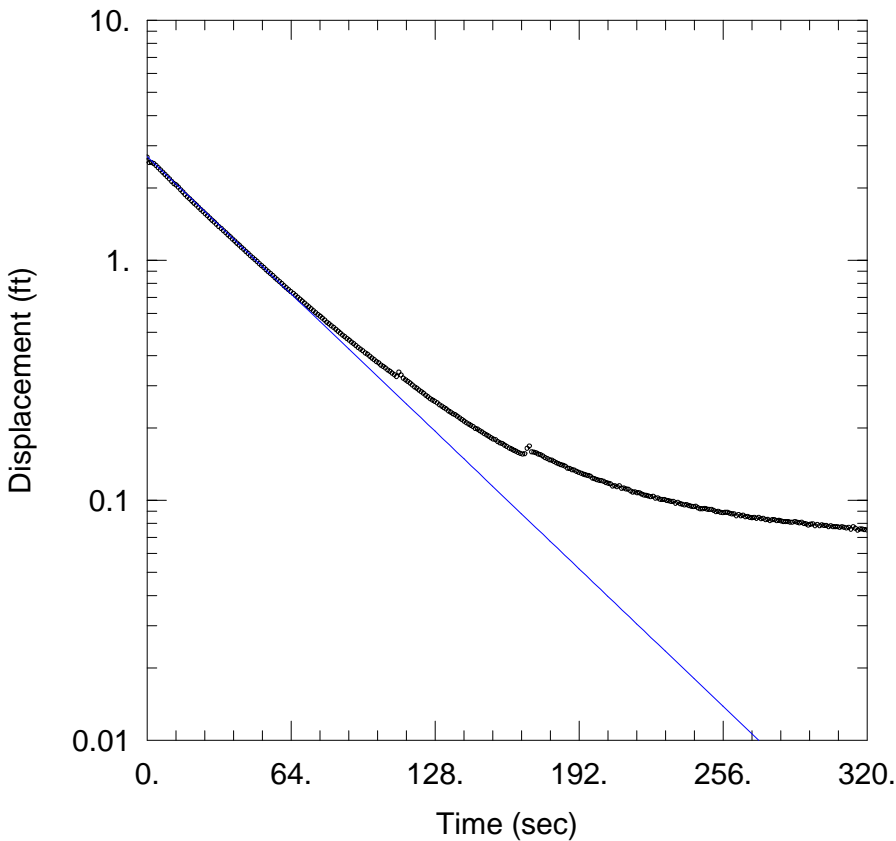
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-05D)

Initial Displacement: 2.6 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 21.9 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-05D SLUG IN 2

Data Set: T:\...\UFMW-05D_slugin_2.aqt
 Date: 05/04/17 Time: 10:06:58

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-05D
 Test Date: 8/18/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 4.211$ ft/day
 $y_0 = 2.703$ ft

AQUIFER DATA

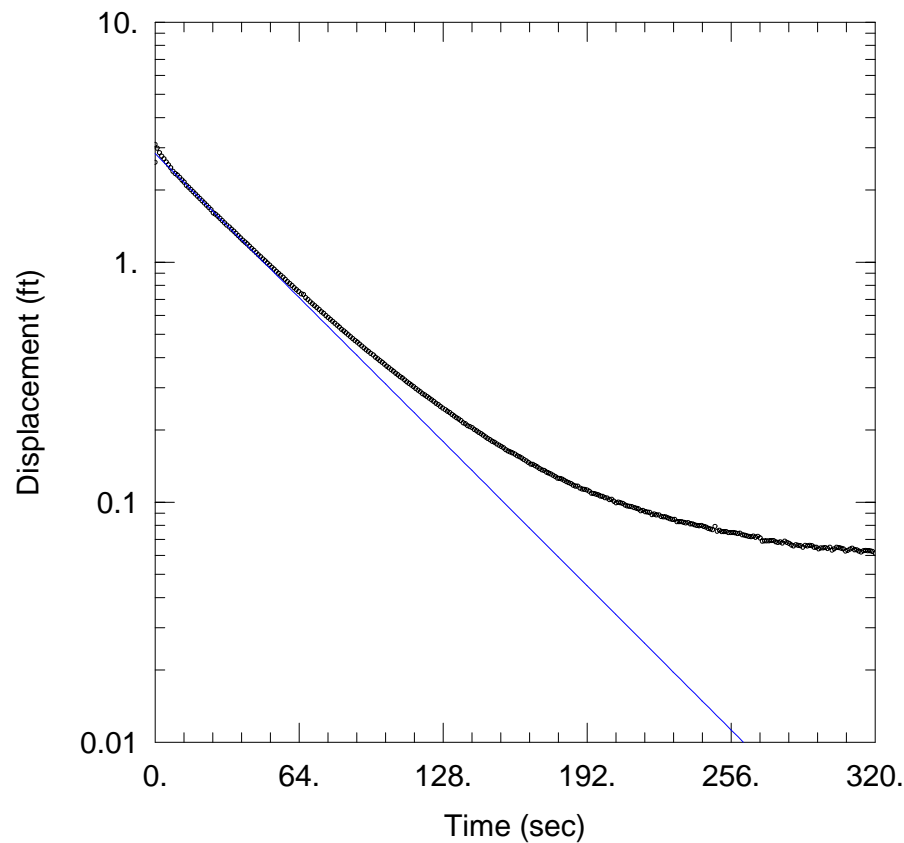
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-05D)

Initial Displacement: 2.6 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 21.9 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-05D SLUG OUT 1

Data Set: T:\...\UFMW-05D_slugout_1.aqt

Date: 05/04/17

Time: 10:07:05

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-05D

Test Date: 8/18/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 4.414 ft/day

y0 = 2.834 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-05D)

Initial Displacement: 2.6 ft

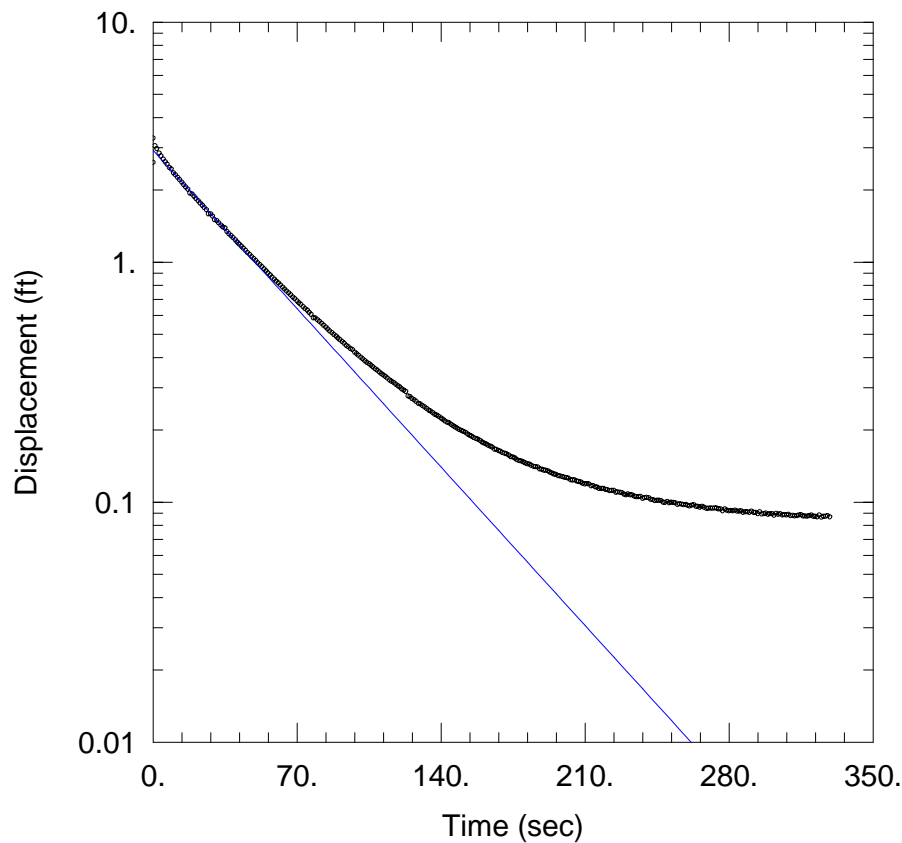
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.9 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-05D SLUG OUT 2

Data Set: T:\...\UFMW-05D_slugout_2.aqt

Date: 05/04/17

Time: 10:07:15

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-05D

Test Date: 8/18/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 4.439$ ft/day

$y_0 = 2.925$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-05D)

Initial Displacement: 2.6 ft

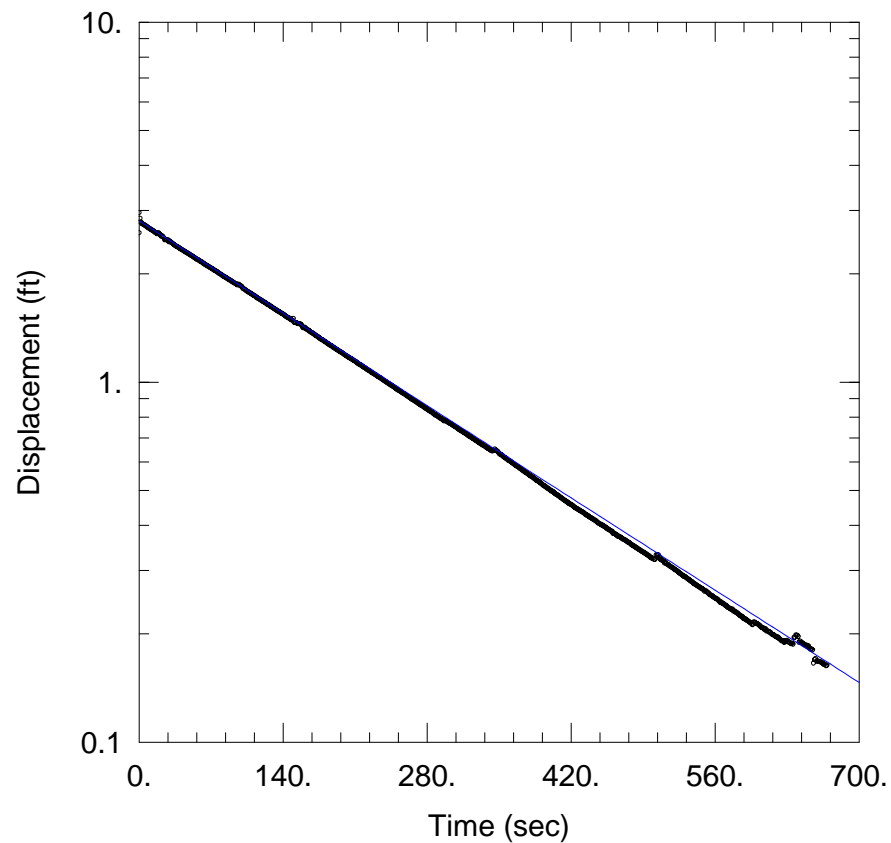
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.9 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-05I SLUG IN 1

Data Set: T:\...\UFMW-05I_slugin_1.aqt
Date: 05/04/17 Time: 10:07:24

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFMW-05I
Test Date: 8/18/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 0.7624$ ft/day
 $y_0 = 2.802$ ft

AQUIFER DATA

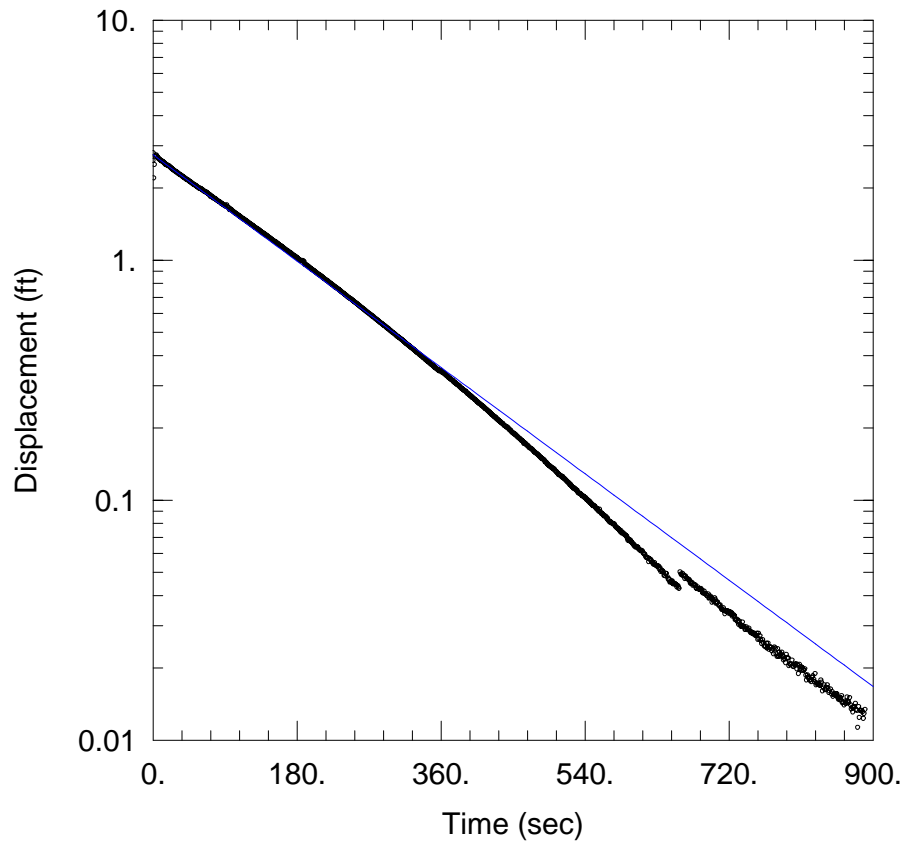
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-05I)

Initial Displacement: 2.6 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.083 ft

Static Water Column Height: 11.8 ft
Screen Length: 5. ft
Well Radius: 0.5 ft



UFMW-05I SLUG IN 2

Data Set: T:\...\UFMW-05I_slugin_2.aqt

Date: 05/04/17

Time: 10:07:32

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-05I

Test Date: 8/18/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.025$ ft/day

$y_0 = 2.747$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-05I)

Initial Displacement: 2.6 ft

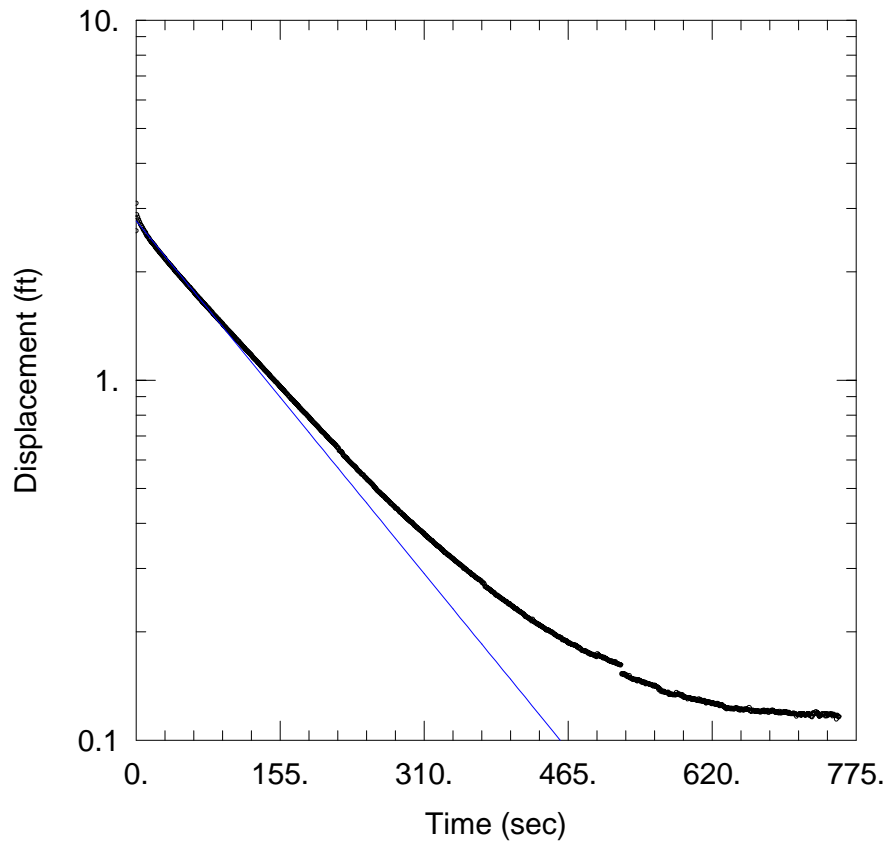
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.8 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-05I SLUG OUT 1

Data Set: T:\...\UFMW-05I_slugout_1.aqt
 Date: 05/04/17 Time: 10:07:40

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-05I
 Test Date: 8/18/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.316$ ft/day
 $y_0 = 2.769$ ft

AQUIFER DATA

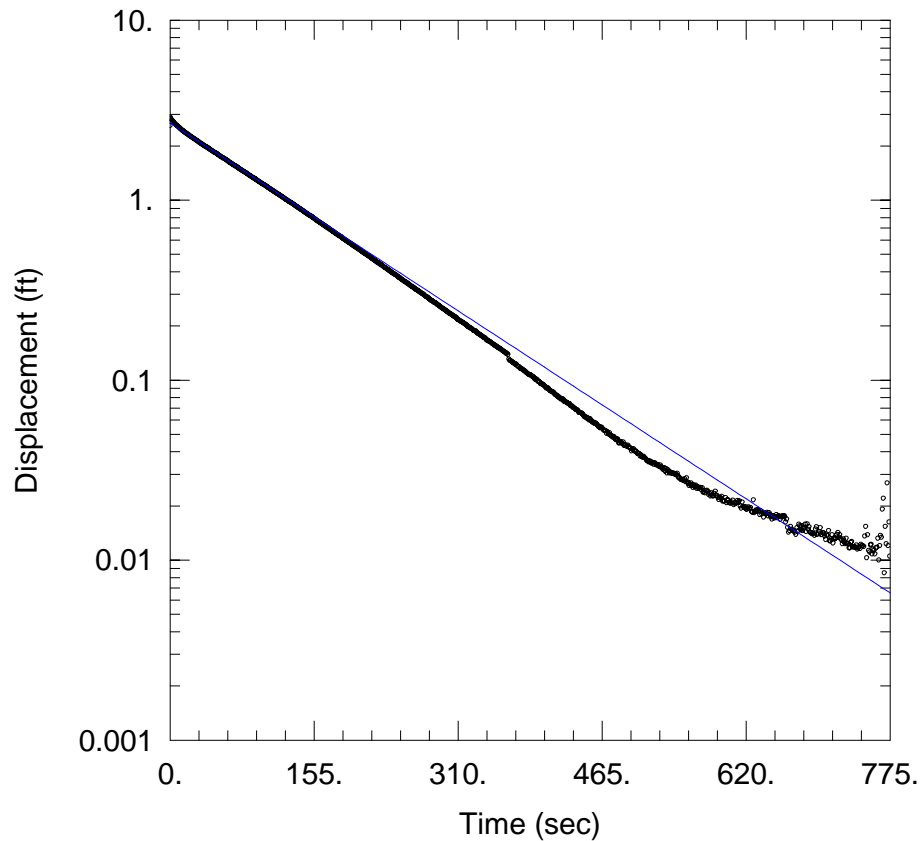
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-05I)

Initial Displacement: 2.6 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.8 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-05I SLUG OUT 2

Data Set: T:\...\UFMW-05I_slugout_2.aqt
 Date: 05/04/17 Time: 10:07:48

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-05I
 Test Date: 8/18/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.403$ ft/day
 $y_0 = 2.69$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-05I)

Initial Displacement: 2.6 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.8 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft

UFMW-06D SLUG IN 1

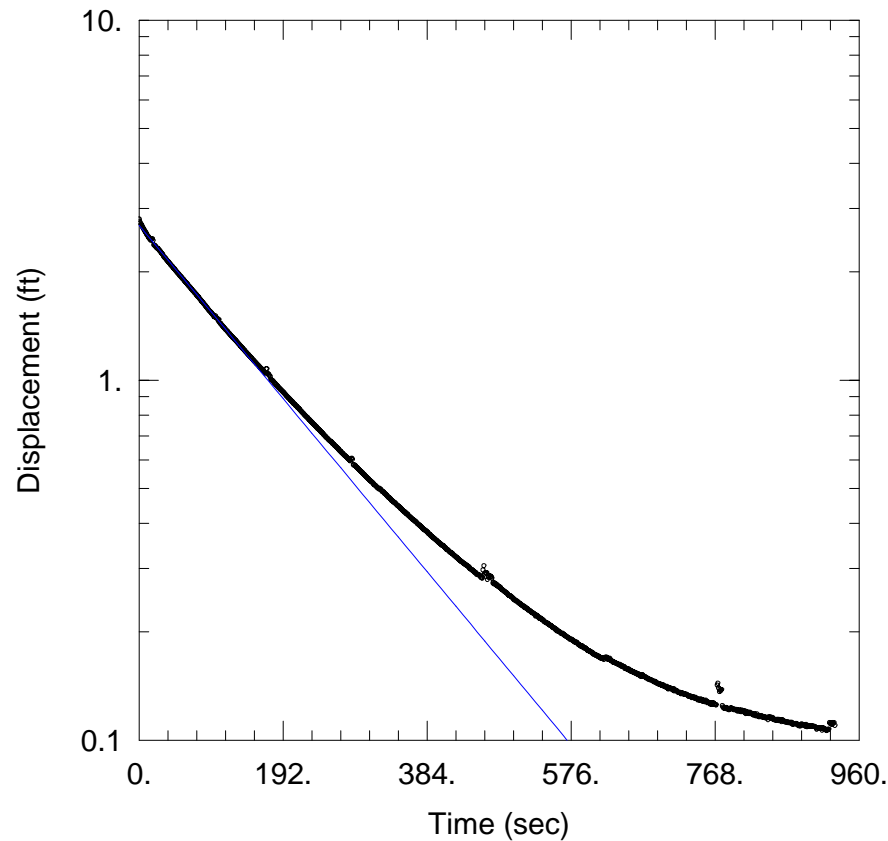
Data Set: T:\...\UFMW-06D_slugin_1.aqt
Date: 05/04/17 Time: 10:07:56

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFMW-06D
Test Date: 8/18/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 1.179$ ft/day
 $y_0 = 2.691$ ft



AQUIFER DATA

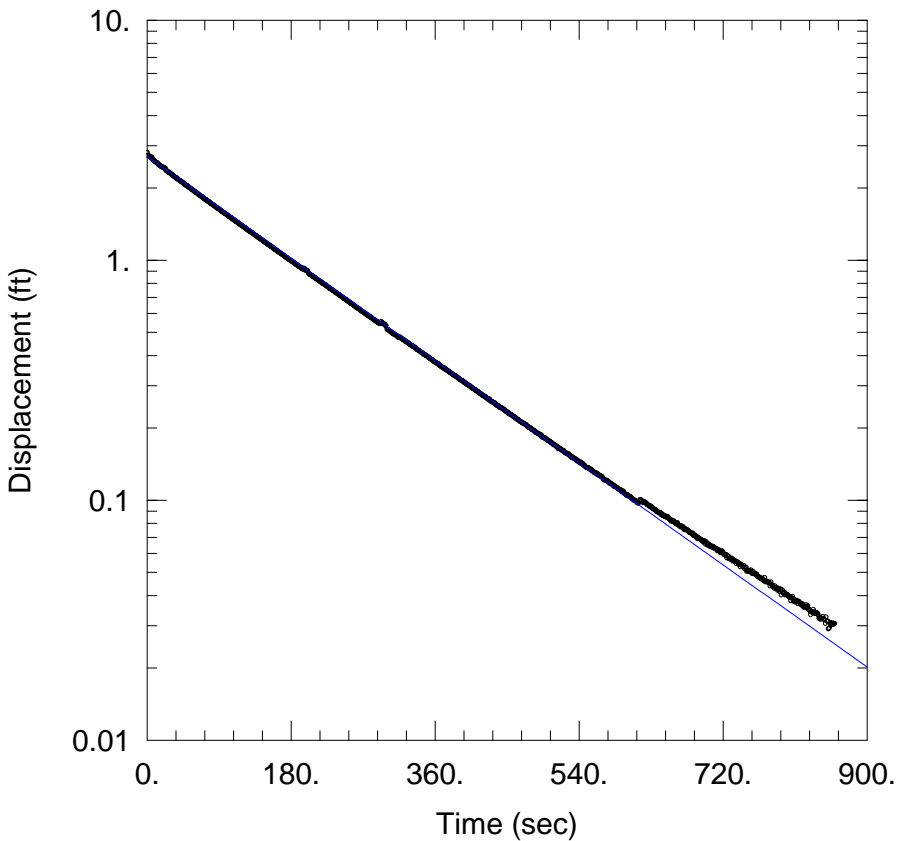
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-06D)

Initial Displacement: 2.8 ft
Total Well Penetration Depth: 20. ft
Casing Radius: 0.083 ft

Static Water Column Height: 22.1 ft
Screen Length: 5. ft
Well Radius: 0.5 ft



UFMW-06D SLUG IN 2

Data Set: T:\...\UFMW-06D_slugin_2.aqt
 Date: 05/04/17 Time: 10:08:05

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-06D
 Test Date: 8/18/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.113$ ft/day
 $y_0 = 2.71$ ft

AQUIFER DATA

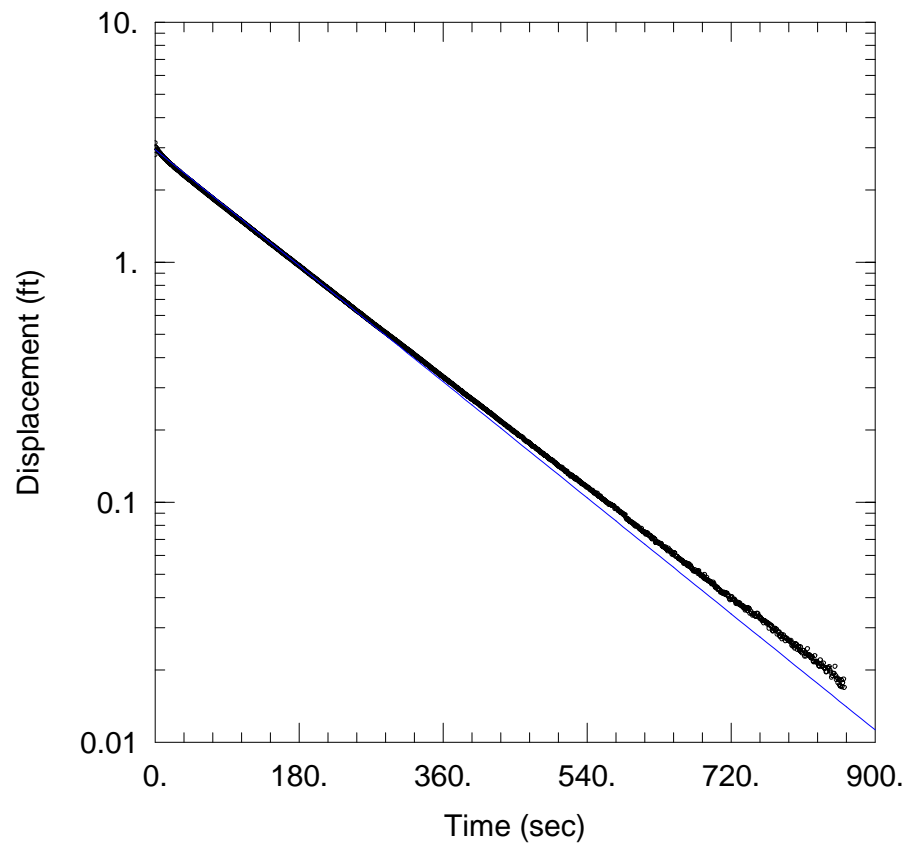
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-06D)

Initial Displacement: 2.8 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 22.1 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-06D SLUG OUT 1

Data Set: T:\...\UFMW-06D_slugout_1.aqt
 Date: 05/04/17 Time: 10:08:13

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-06D
 Test Date: 8/18/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.265$ ft/day
 $y_0 = 2.944$ ft

AQUIFER DATA

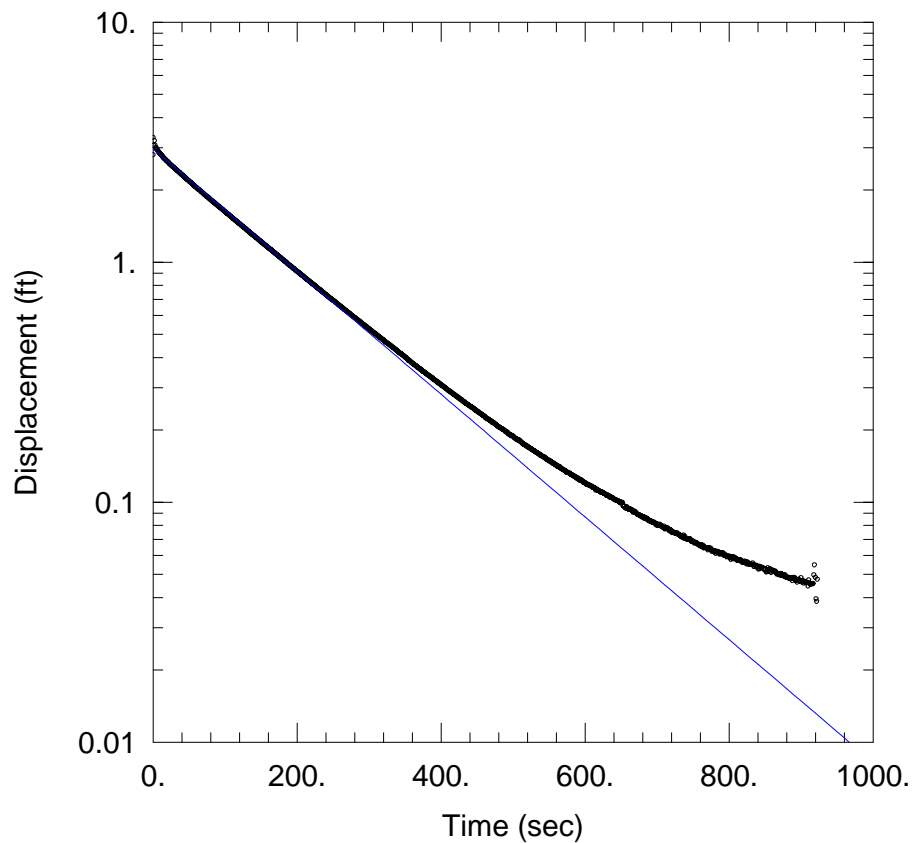
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-06D)

Initial Displacement: 2.8 ft
 Total Well Penetration Depth: 20. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 22.1 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-06D SLUG OUT 2

Data Set: T:\...\UFMW-06D_slugout_2.aqt

Date: 05/04/17

Time: 10:08:21

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-06D

Test Date: 8/18/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.203$ ft/day

$y_0 = 2.963$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-06D)

Initial Displacement: 2.8 ft

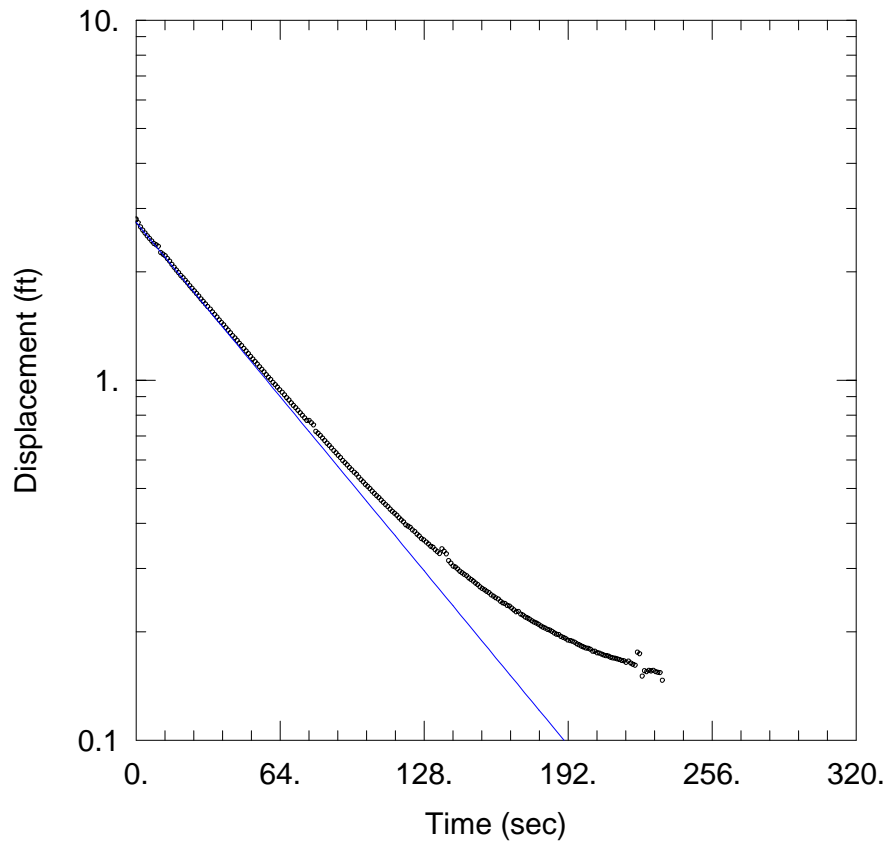
Total Well Penetration Depth: 20. ft

Casing Radius: 0.083 ft

Static Water Column Height: 22.1 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-06I SLUG IN 1

Data Set: T:\...\UFMW-06I_slugin_1.aqt
 Date: 05/04/17 Time: 10:08:59

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-06I
 Test Date: 8/29/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 3.149$ ft/day
 $y_0 = 2.744$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-06I)

Initial Displacement: 2.8 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 12.3 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft

UFMW-06I SLUG IN 2

Data Set: T:\...\UFMW-06I_slugin_2.aqt

Date: 05/04/17

Time: 10:09:08

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-06I

Test Date: 8/29/2016

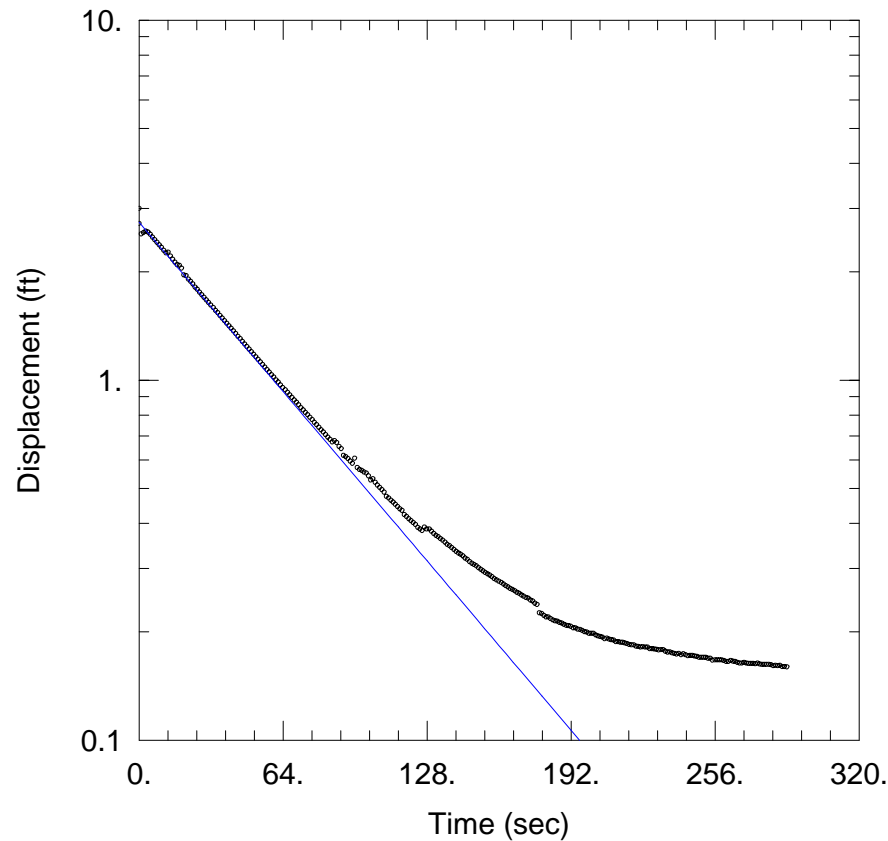
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 3.059$ ft/day

$y_0 = 2.744$ ft



AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-06I)

Initial Displacement: 3. ft

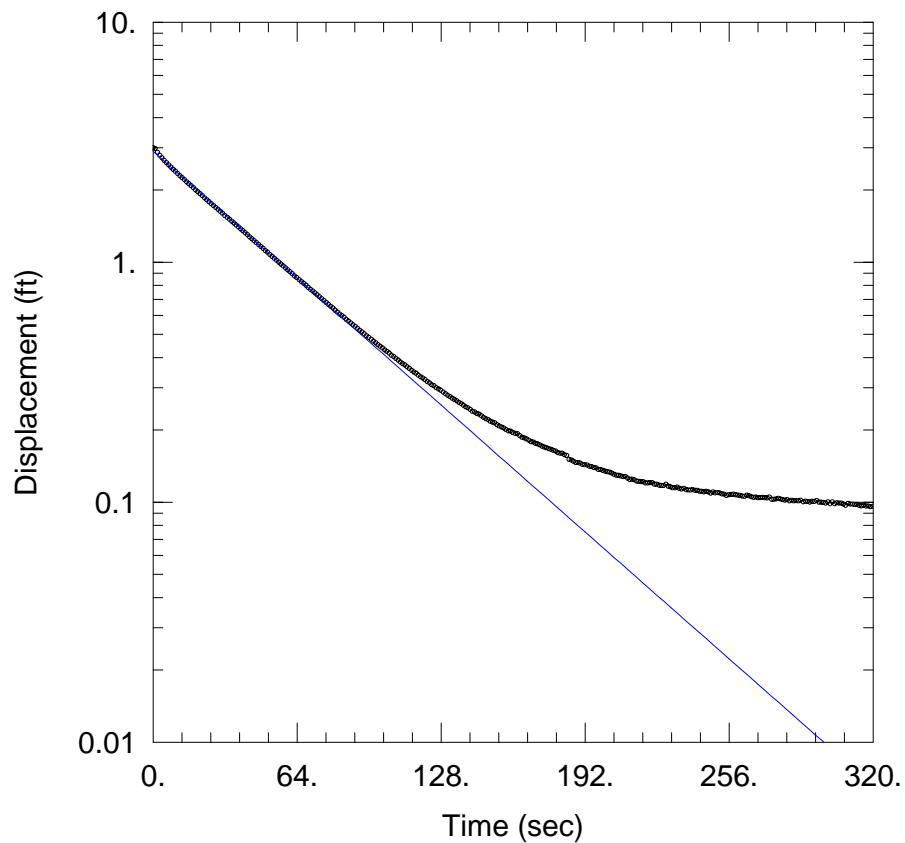
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 12.3 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-06I SLUG OUT 1

Data Set: T:\...\UFMW-06I_slugout_1.aqt
 Date: 05/04/17 Time: 10:09:16

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-06I
 Test Date: 8/29/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 3.438$ ft/day
 $y_0 = 2.894$ ft

AQUIFER DATA

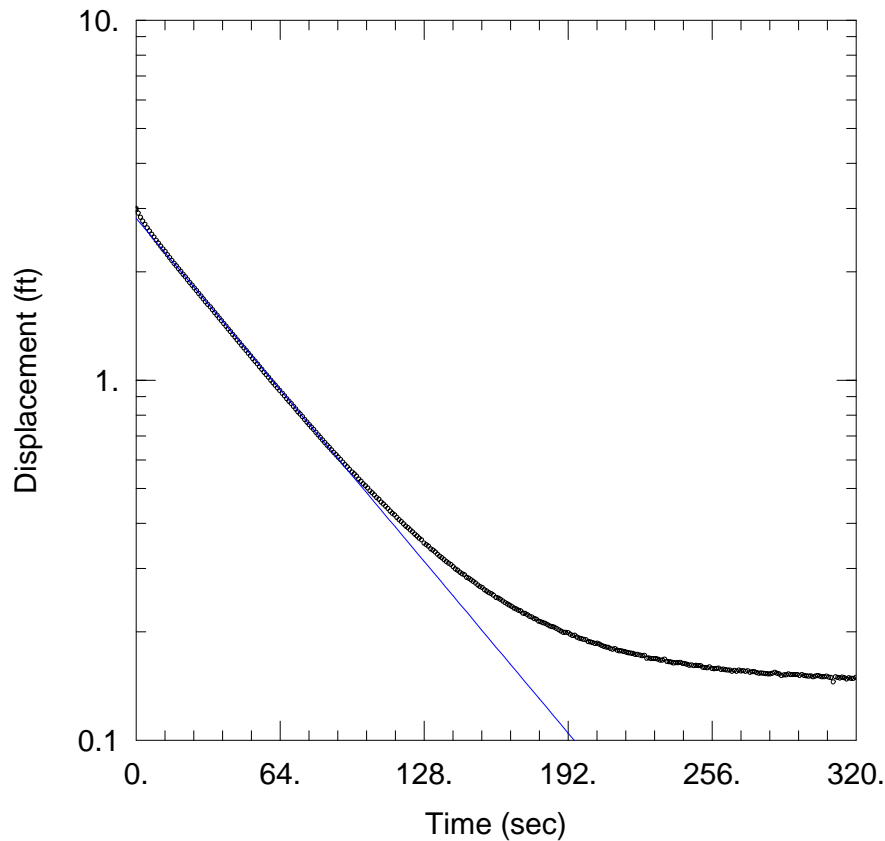
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-06I)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 12.3 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW-06I SLUG OUT 2

Data Set: T:\...\UFMW-06I_slugout_2.aqt
 Date: 05/04/17 Time: 10:09:25

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-06I
 Test Date: 8/29/2016

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 3.1$ ft/day
 $y_0 = 2.817$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-06I)

Initial Displacement: 3. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 12.3 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft

UFIW-06I SHORT-TERM PUMPING TEST

Data Set: T:\...\UFIW-06I_PTddn.aqt

Date: 05/10/17

Time: 15:49:33

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-06I

Test Date: 9/15/2016

SOLUTION

Aquifer Model: Leaky

Solution Method: Hantush

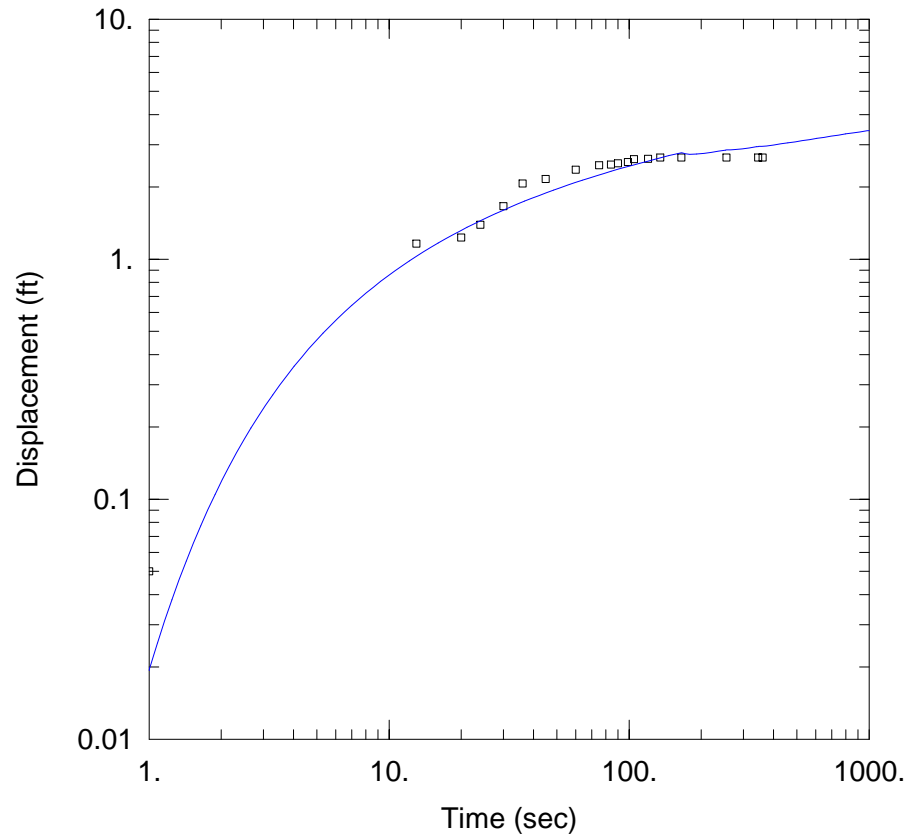
T = 11.35 ft²/day

S = 0.01228

β = 0.1

Kz/Kr = 0.1

b = 11. ft



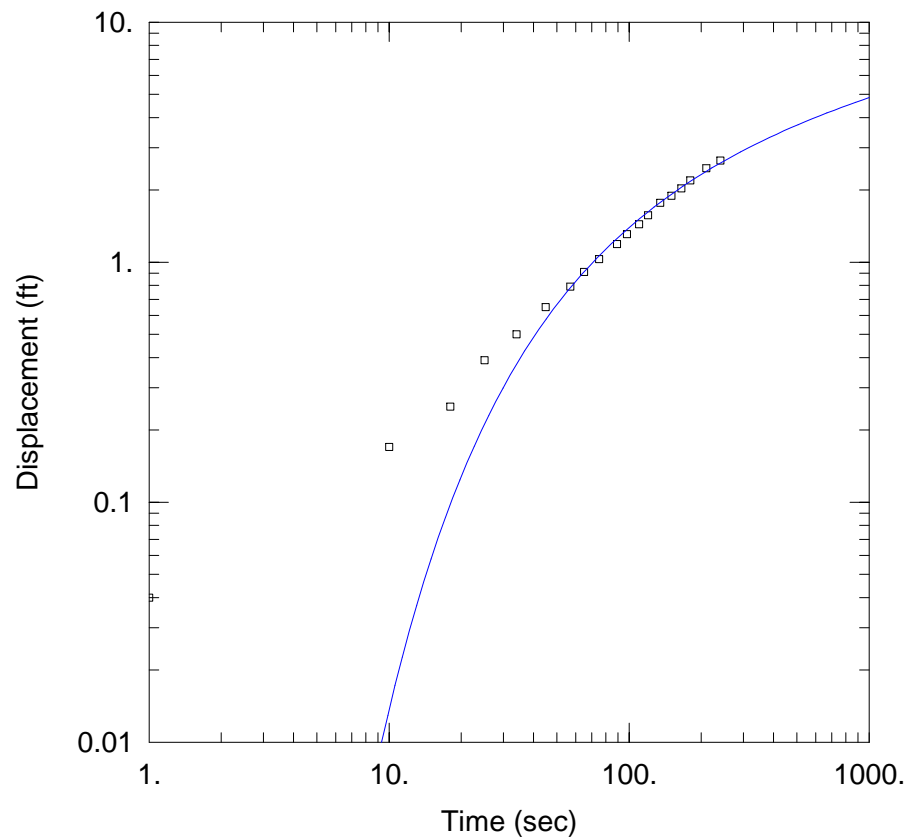
WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
UFIW-06I	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ UFIW-06I	0	0



UFIW-06I SHORT-TERM PUMPING TEST - RECOVERY

Data Set: T:\...\UFIW-06I_PTrec.aqt

Date: 05/10/17

Time: 15:48:47

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-06I

Test Date: 9/15/2016

SOLUTION

Aquifer Model: Confined

Solution Method: Theis

T = 6.277 ft²/day

S = 0.08885

Kz/Kr = 0.1

b = 11. ft

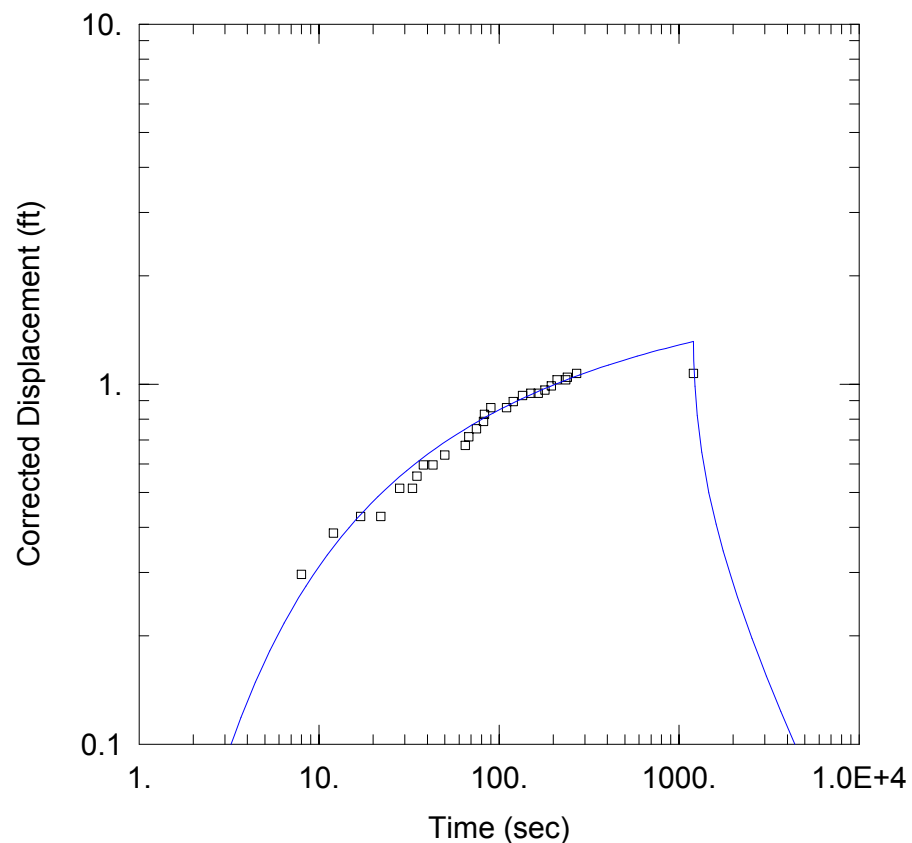
WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
UFIW-06I	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ UFIW-06I	0	0



UFIW-06S SHORT-TERM PUMPING TEST

Data Set: C:\...\UFIW-06S_PTddn.aqt

Date: 11/18/16

Time: 13:57:30

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-06S

Test Date: 9/15/2016

SOLUTION

Aquifer Model: Unconfined

Solution Method: Theis

T = 39. ft²/day

S = 0.0415

Kz/Kr = 0.1

b = 3.41 ft

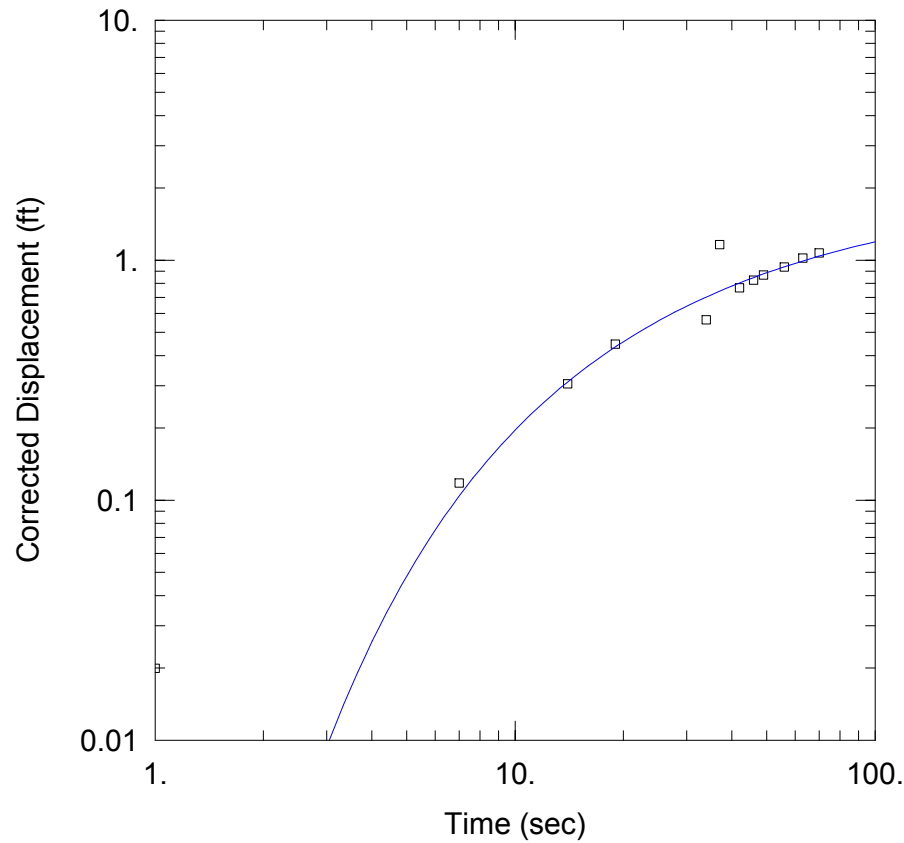
WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
UFIW-06S	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ UFIW-06S	0	0



UFIW-06S SHORT-TERM PUMPING TEST - RECOVERY

Data Set: C:\...\UFIW-06S_PTrec.aqt

Date: 11/18/16

Time: 13:27:32

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-06S

Test Date: 9/15/2016

SOLUTION

Aquifer Model: Unconfined

Solution Method: Theis

T = 15.21 ft²/day

S = 0.05898

Kz/Kr = 0.1

b = 3.41 ft

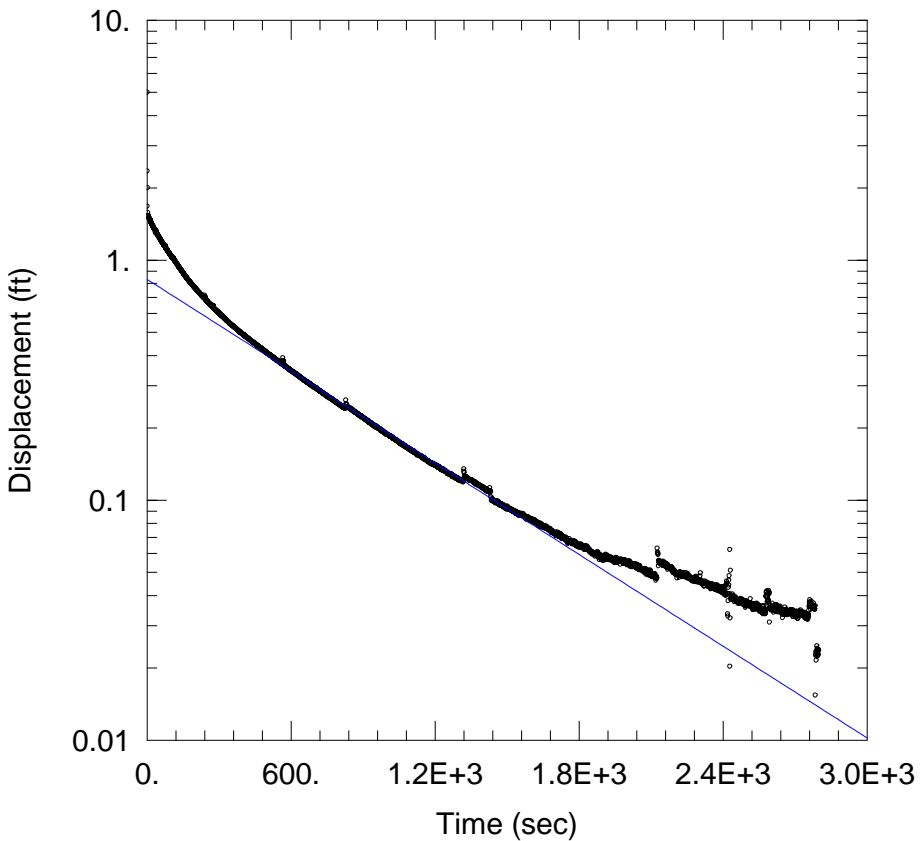
WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
UFIW-06S	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ UFIW-06S	0	0



UFIW_01I_SLUGIN_1

Data Set: T:\...\UFIW_01I_slugin_1_MBQC.aqt
 Date: 05/10/17 Time: 14:31:43

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW_01I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 0.2961$ ft/day
 $y_0 = 0.8309$ ft

AQUIFER DATA

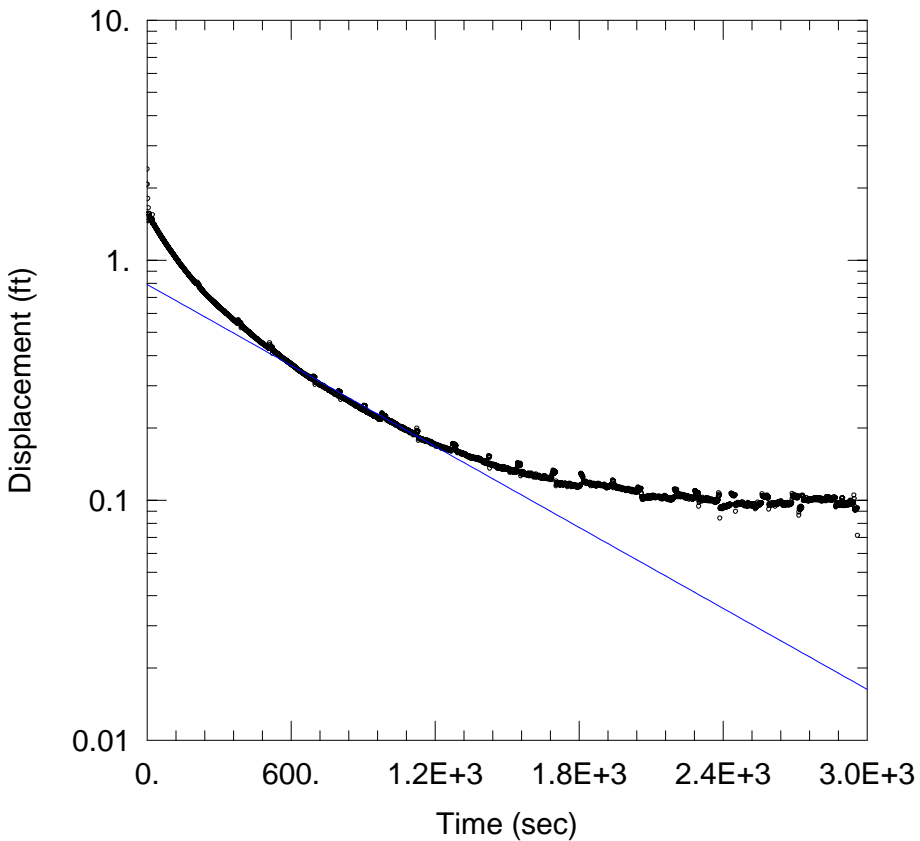
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW_01I)

Initial Displacement: 5. ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 10.95 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW_01I_SLUGIN_2

Data Set: T:\...\UFIW_01I_slugin_2_MBQC.aqt
 Date: 05/10/17 Time: 14:32:07

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW_01I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 0.2615$ ft/day
 $y_0 = 0.7919$ ft

AQUIFER DATA

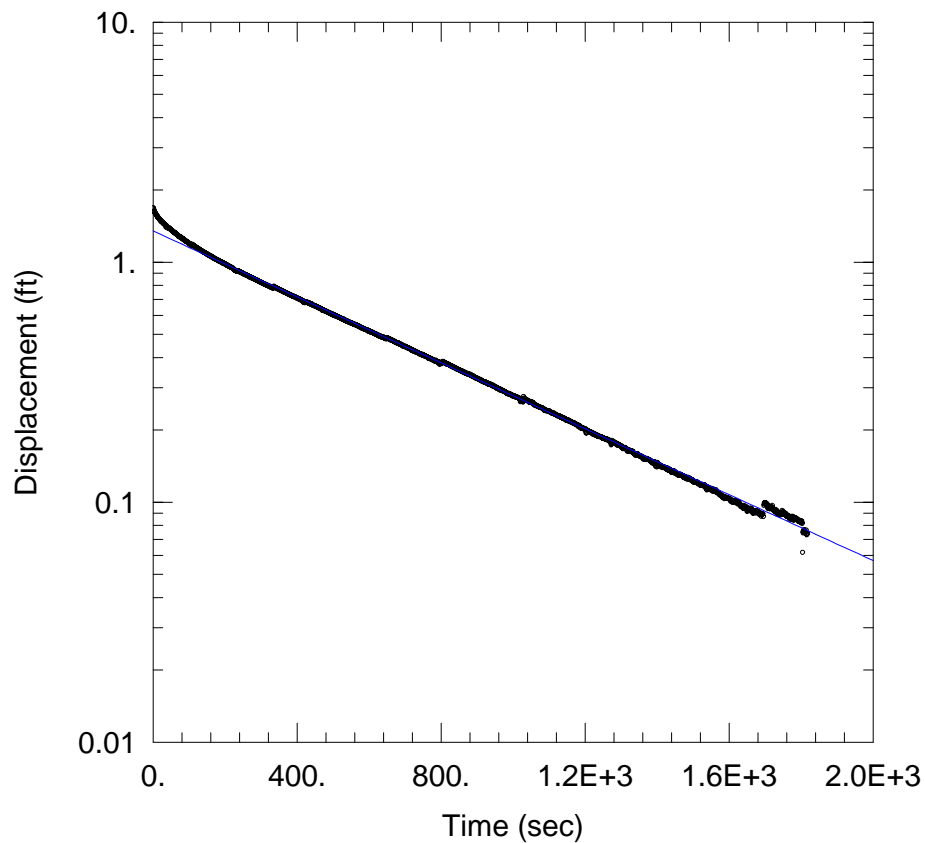
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW_01I)

Initial Displacement: 2.07 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 10.95 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW_01I_SLUGOUT_1

Data Set: T:\...\UFIW_01I_slugout_1_MBQC.aqt
 Date: 05/10/17 Time: 14:32:38

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW_01I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 0.3194$ ft/day
 $y_0 = 1.349$ ft

AQUIFER DATA

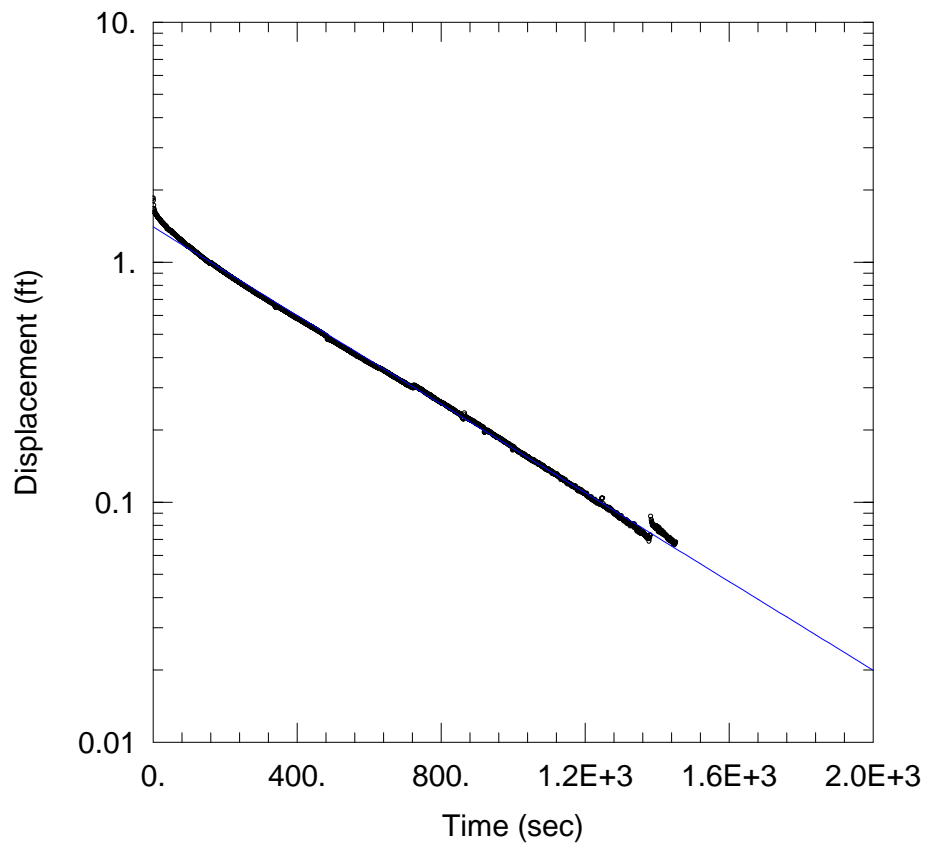
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW_01I)

Initial Displacement: 1.685 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 10.95 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW_01I_SLUGOUT_2

Data Set: T:\...\UFIW_01I_slugout_2_MBQC.aqt
 Date: 05/10/17 Time: 14:33:02

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW_01I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 0.4295$ ft/day
 $y_0 = 1.402$ ft

AQUIFER DATA

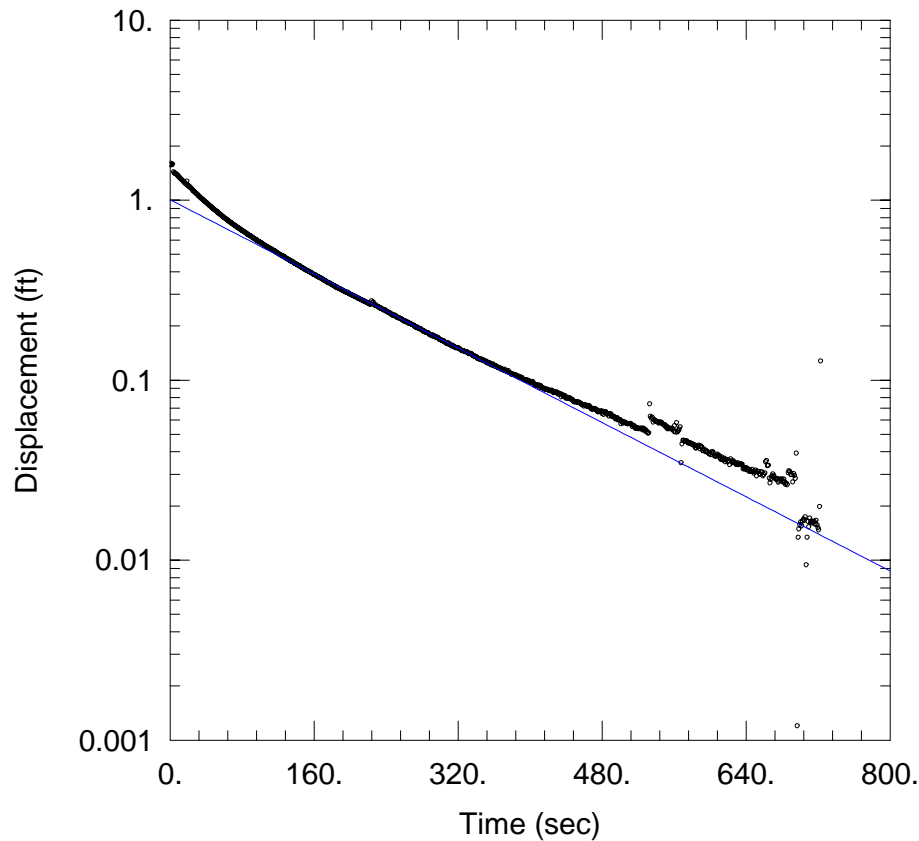
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW_01I)

Initial Displacement: 1.84 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 10.95 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW_04I_SLUGIN_1

Data Set: T:\...\UFIW_04I_slugin_1.aqt

Date: 05/10/17

Time: 14:37:43

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW_04I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.199 ft/day

y0 = 1.005 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW_04I)

Initial Displacement: 1.57 ft

Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.91 ft

Screen Length: 5. ft

Well Radius: 0.33 ft

UFIW_04I_SLUGIN_2

Data Set: T:\...\UFIW_04I_slugin_2.aqt

Date: 05/10/17

Time: 14:38:10

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW_04I

Test Date: 4/11/2017

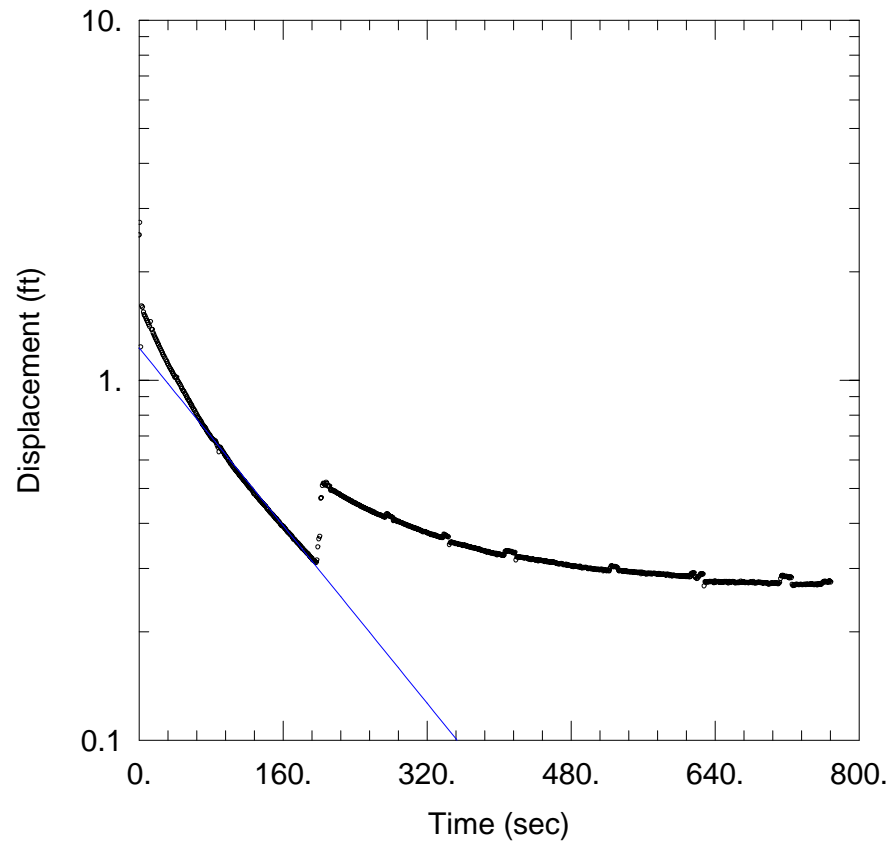
SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.431 ft/day

y0 = 1.229 ft



AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW_04I)

Initial Displacement: 2.53 ft

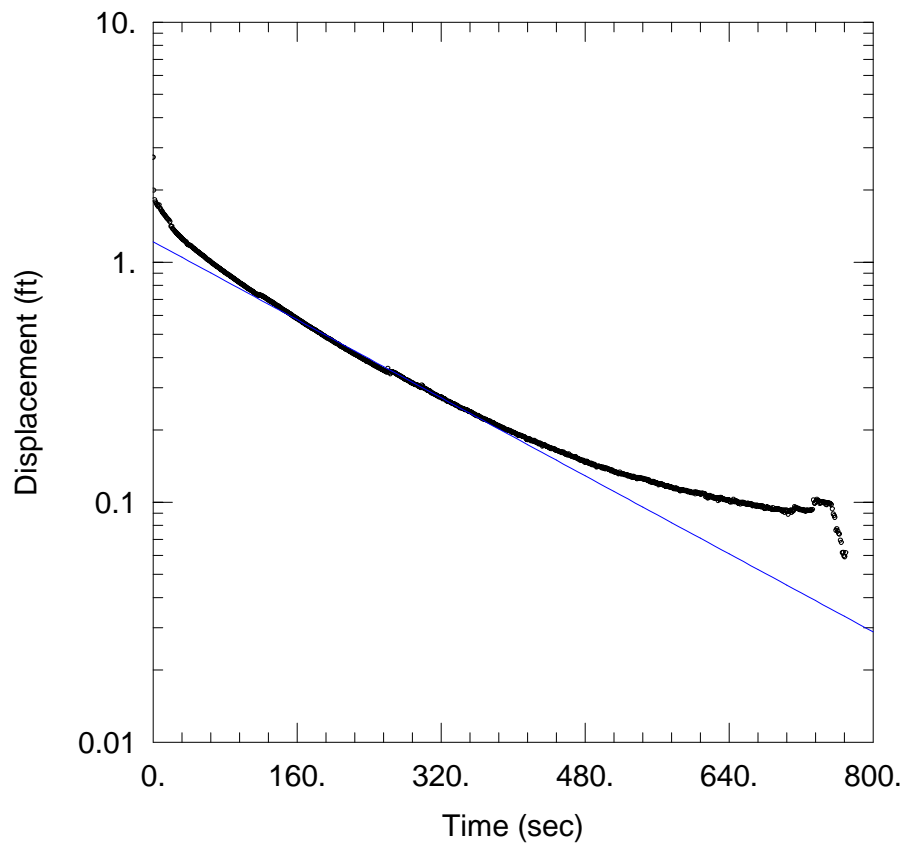
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.91 ft

Screen Length: 5. ft

Well Radius: 0.333 ft



UFIW_04I_SLUGOUT_1

Data Set: T:\...\UFIW_04I_slugout_1.aqt
 Date: 05/10/17 Time: 14:38:36

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW_04I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 0.9451$ ft/day
 $y_0 = 1.217$ ft

AQUIFER DATA

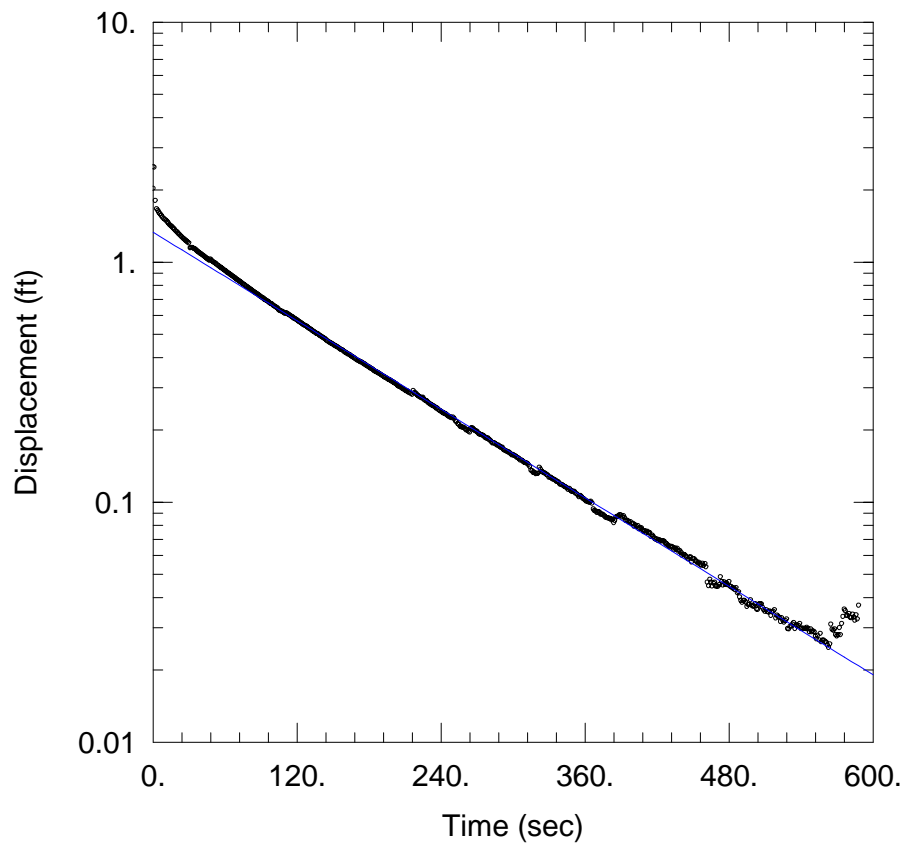
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW_04I)

Initial Displacement: 2.73 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.91 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW_04I_SLUGOUT_2

Data Set: T:\...\UFIW_04I_slugout_2.aqt
 Date: 05/10/17 Time: 14:38:56

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW_04I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.429$ ft/day
 $y_0 = 1.332$ ft

AQUIFER DATA

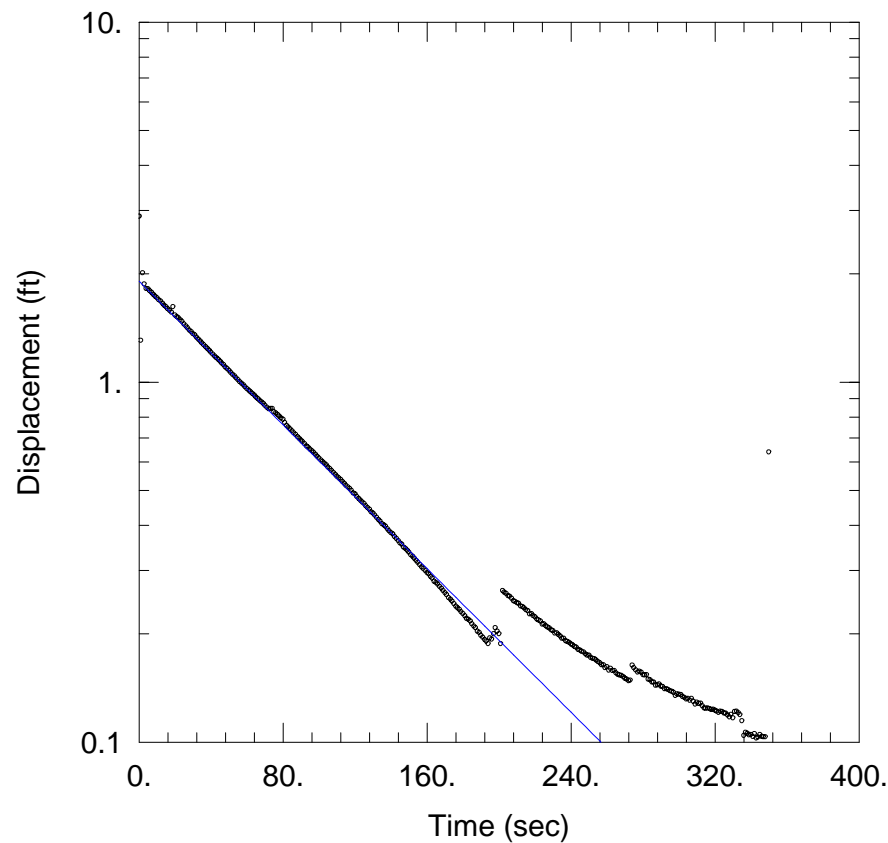
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW_04I)

Initial Displacement: 2.5 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 11.91 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW_05I_SLUGIN_1

Data Set: T:\...\UFIW_05I_slugin_1.aqt

Date: 05/10/17

Time: 14:40:35

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW_05I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.32 ft/day

y0 = 1.906 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW_05I)

Initial Displacement: 2.89 ft

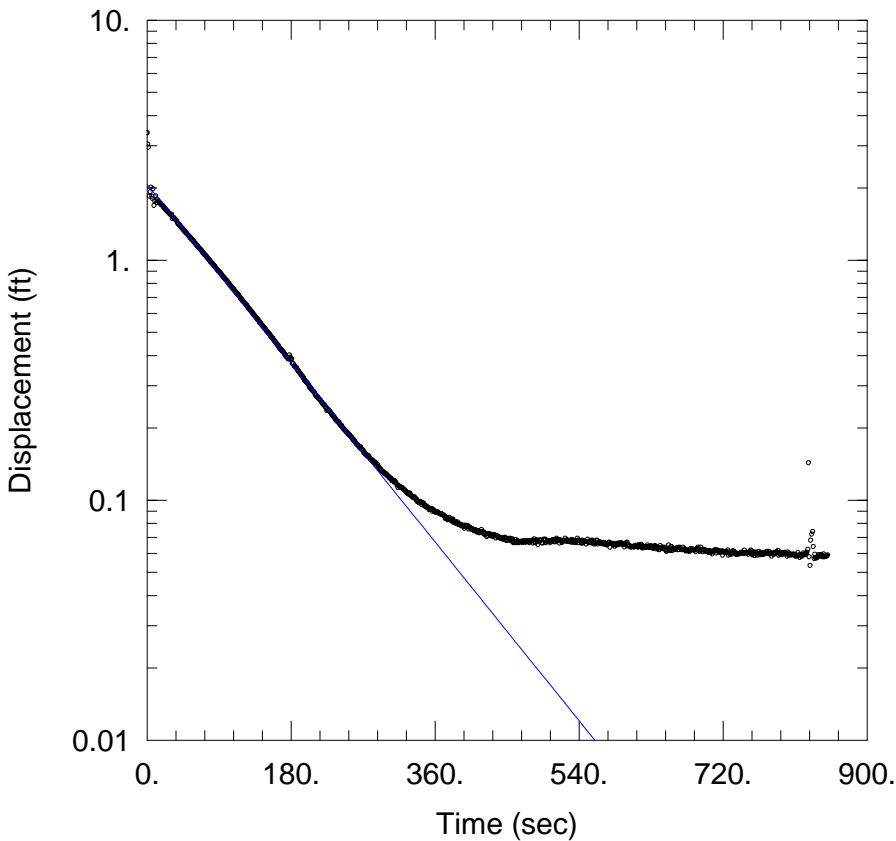
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 12.2 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW_05I_SLUGIN_2

Data Set: T:\...\UFIW_05I_slugin_2.aqt

Date: 05/10/17

Time: 14:41:16

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW_05I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.925 ft/day

y0 = 2.068 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW_05I)

Initial Displacement: 3.39 ft

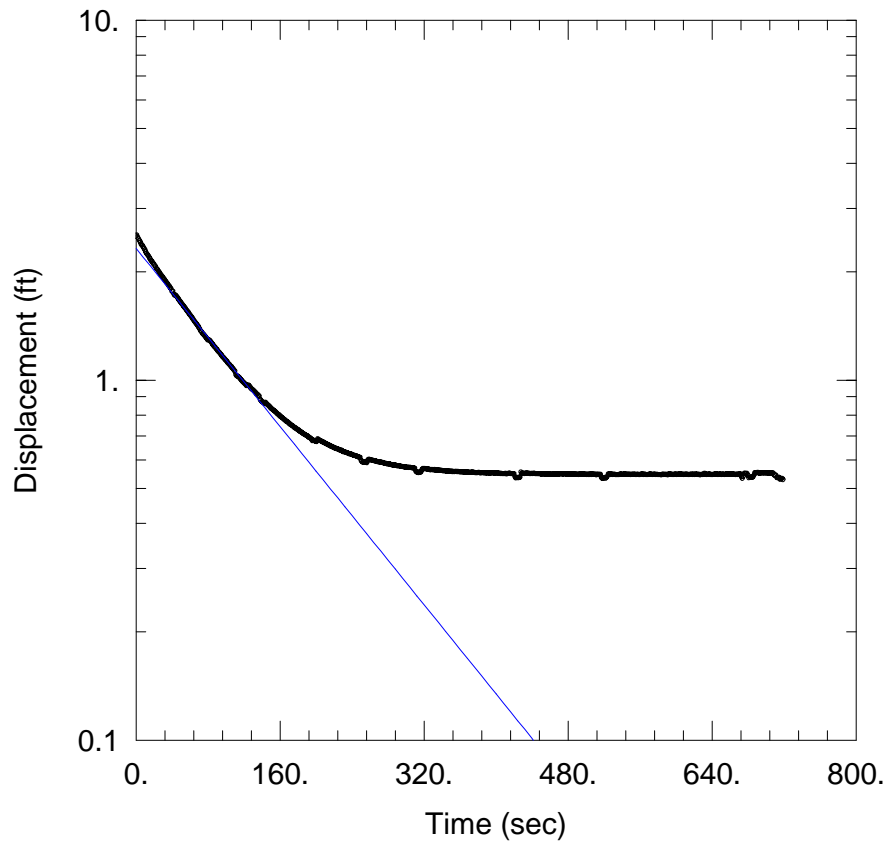
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 12.2 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW_05I_SLUGOUT_1

Data Set: T:\...\UFIW_05I_slugout_1.aqt

Date: 05/10/17

Time: 14:42:10

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW_05I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.439 ft/day

y0 = 2.323 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW_05I)

Initial Displacement: 2.51 ft

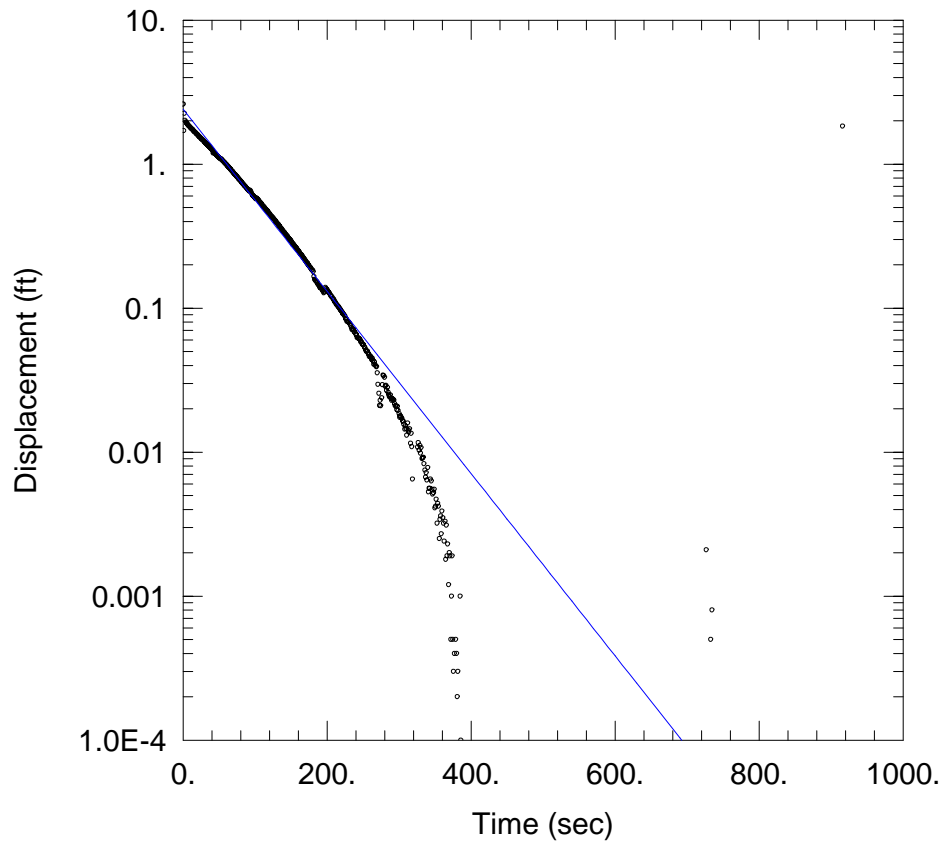
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 12.2 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW_05I_SLUGOUT_2

Data Set: T:\...\UFIW_05I_slugout_2.aqt
 Date: 05/10/17 Time: 14:43:12

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW_05I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 2.943$ ft/day
 $y_0 = 2.41$ ft

AQUIFER DATA

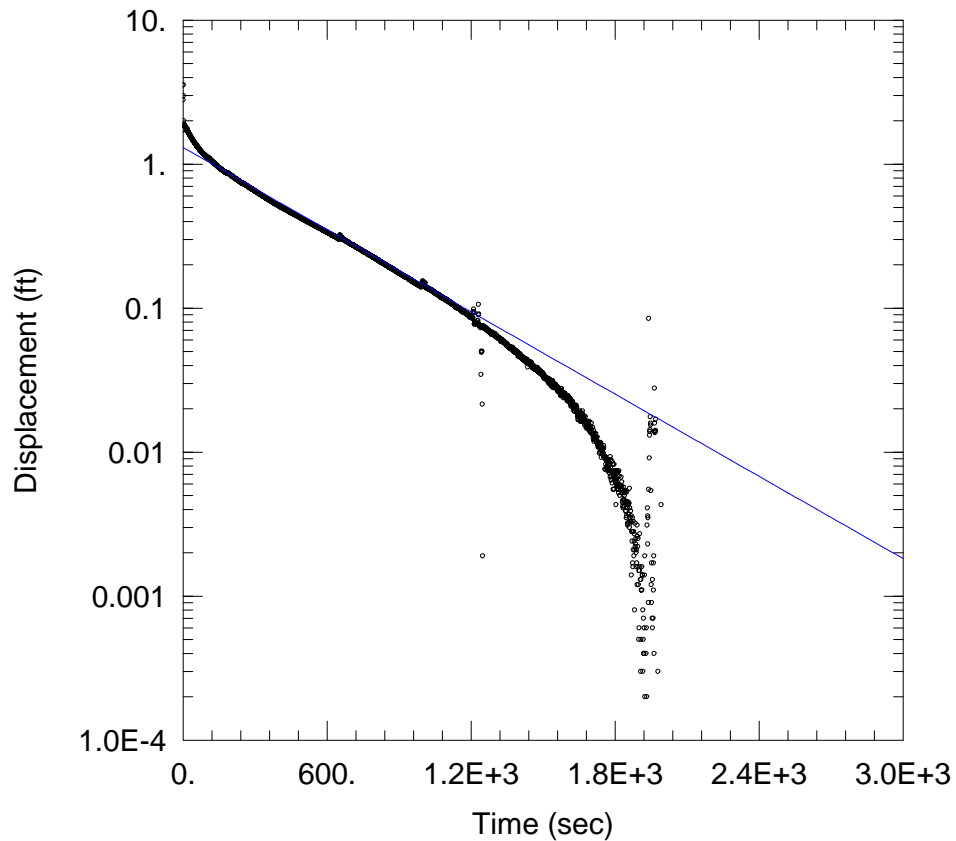
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW_05I)

Initial Displacement: 2.61 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 12.2 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFIW_08I_SLUGIN_1

Data Set: T:\...\UFIW_08I_slugin_1.aqt

Date: 05/10/17

Time: 14:48:28

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW_08I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.4426 ft/day

y0 = 1.305 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW_08I)

Initial Displacement: 3.55 ft

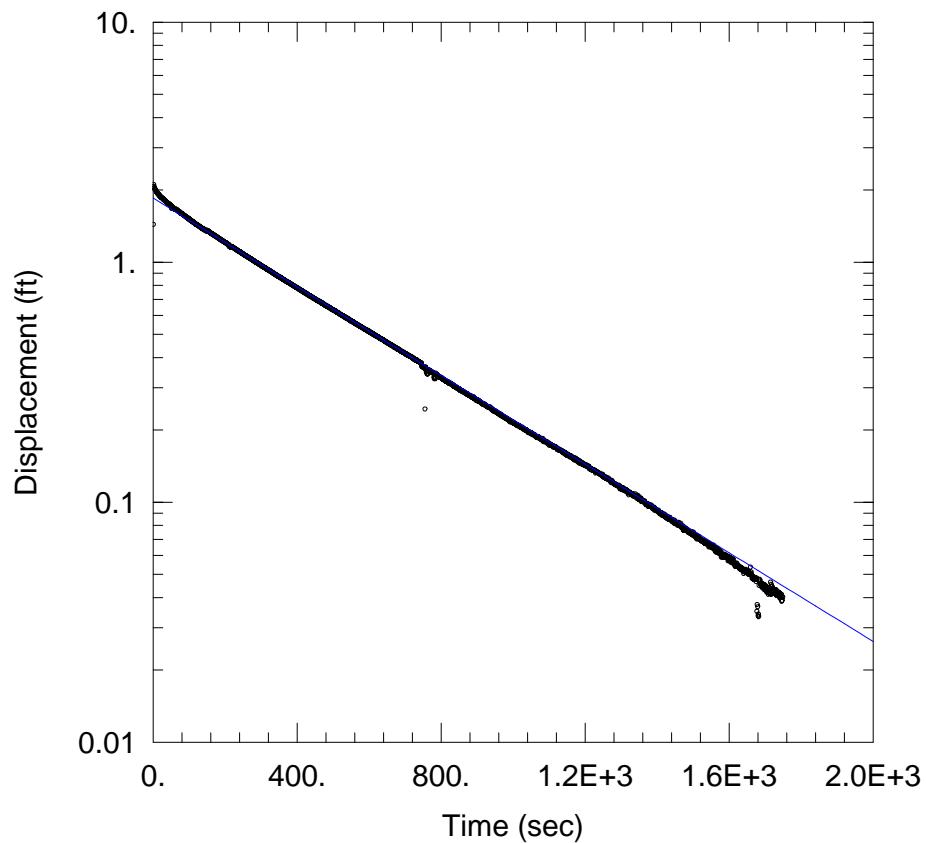
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 12.83 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW_08I_SLUGOUT_1

Data Set: T:\...\UFIW_08I_slugout_1.aqt
 Date: 05/10/17 Time: 14:49:38

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFIW_08I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 0.4295$ ft/day
 $y_0 = 1.848$ ft

AQUIFER DATA

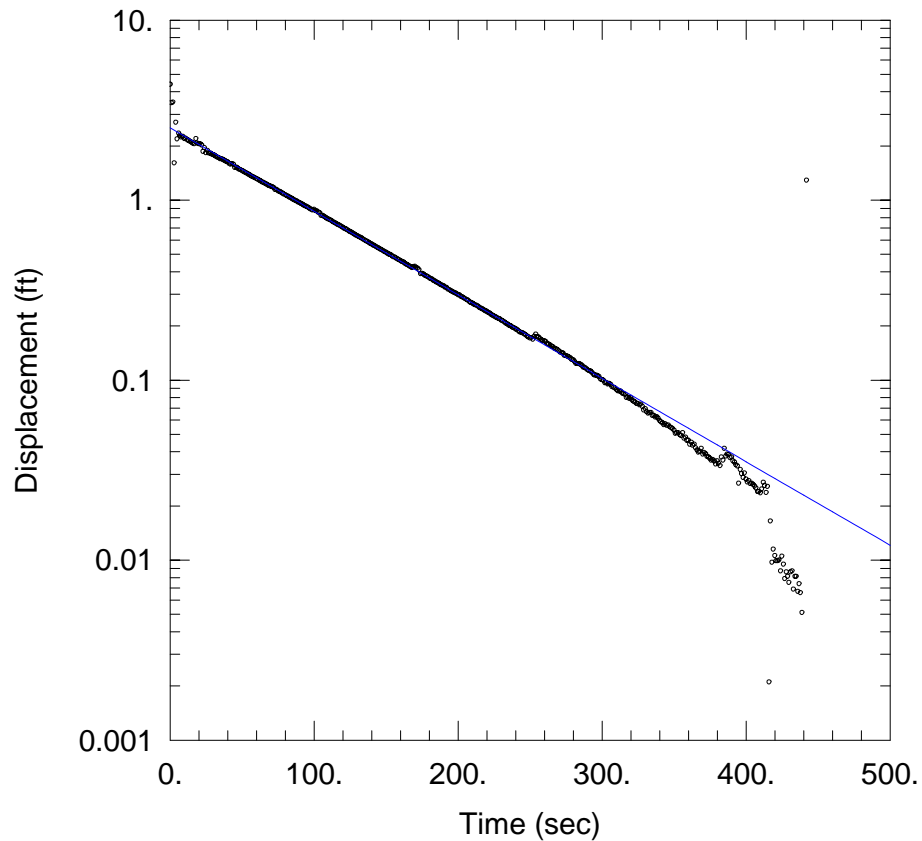
Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW_08I)

Initial Displacement: 2.06 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 12.83 ft
 Screen Length: 5. ft
 Well Radius: 0.33 ft



UFMW_01I_SLUGIN_1

Data Set: T:\...\UFMW_01I_slugin_1.aqt
Date: 04/27/17 Time: 10:27:22

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFMW_01I
Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 2.301$ ft/day
 $y_0 = 2.527$ ft

AQUIFER DATA

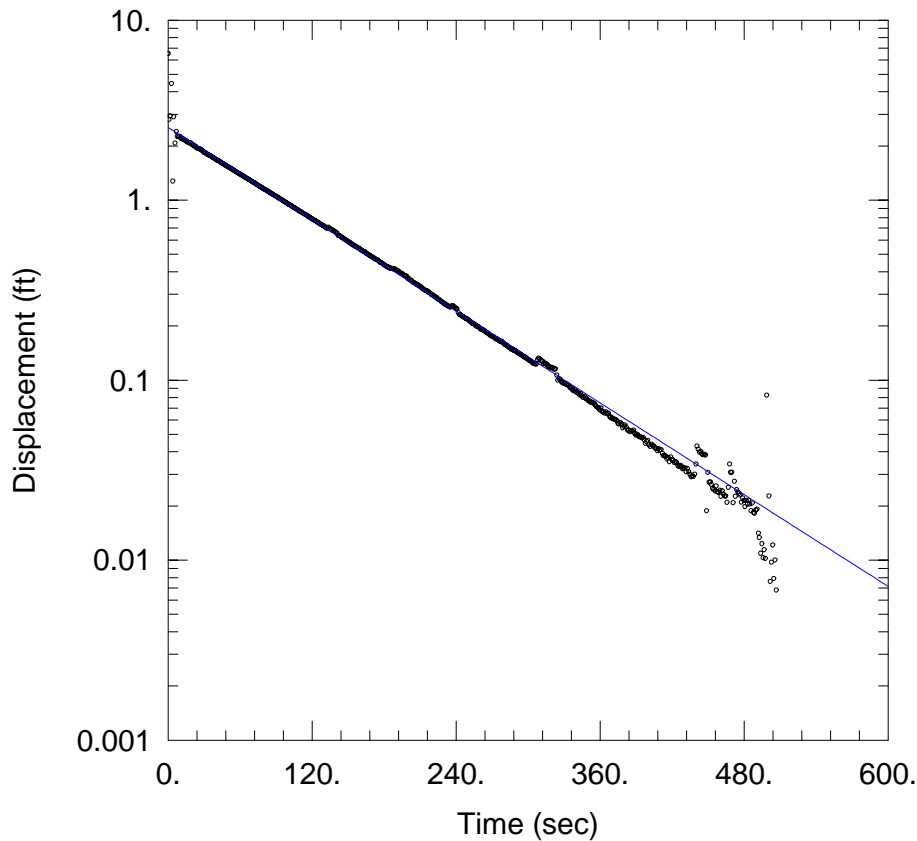
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW_01I)

Initial Displacement: 4.4 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.083 ft

Static Water Column Height: 10.87 ft
Screen Length: 5. ft
Well Radius: 0.25 ft



UFMW_01I_SLUGIN_2

Data Set: T:\...\UFMW_01I_slugin_2.aqt
 Date: 05/10/17 Time: 14:52:38

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW_01I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.769$ ft/day
 $y_0 = 2.531$ ft

AQUIFER DATA

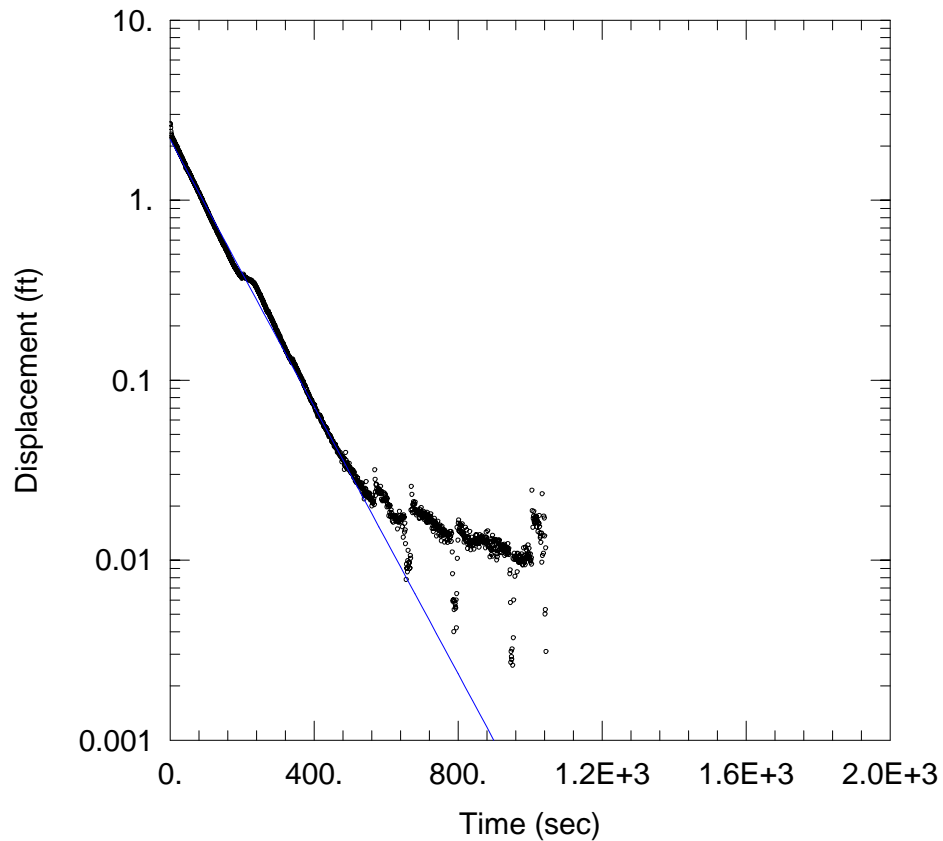
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW_01I)

Initial Displacement: 6.52 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 10.87 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW_01I_SLUGOUT_1

Data Set: T:\...\UFMW_01I_slugout_1.aqt

Date: 05/10/17

Time: 14:53:30

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW_01I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.841 ft/day

y0 = 2.176 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW_01I)

Initial Displacement: 2.66 ft

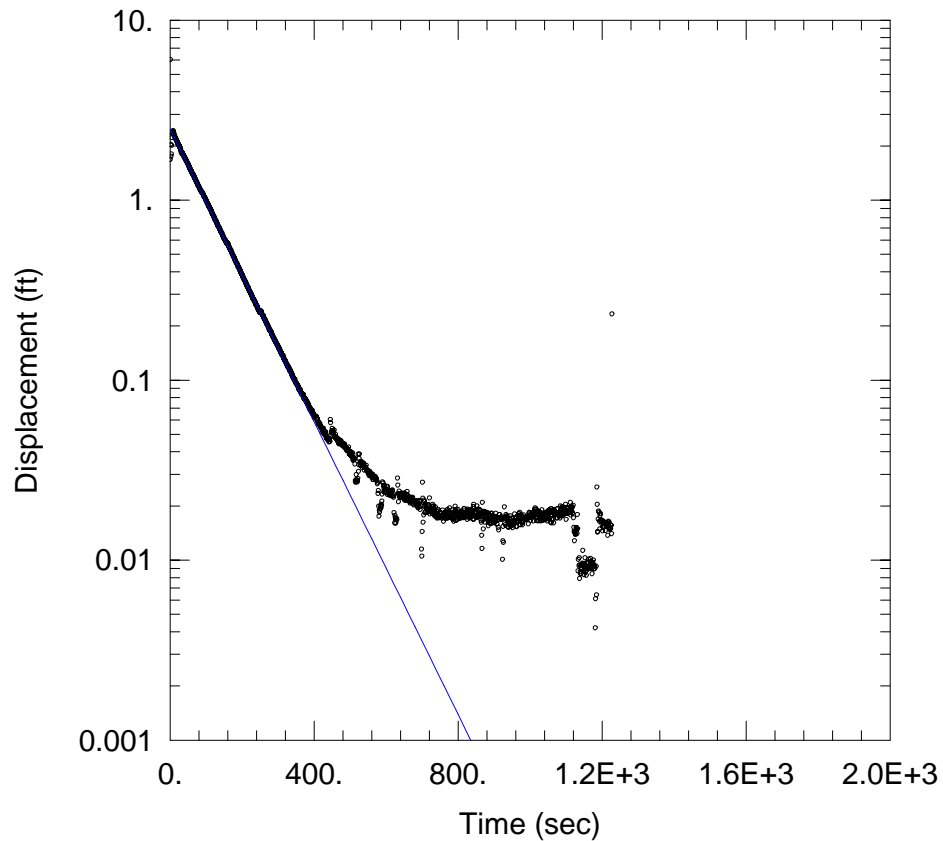
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 10.87 ft

Screen Length: 5. ft

Well Radius: 0.25 ft



UFMW_01I_SLUGOUT_2

Data Set: T:\...\UFMW_01I_slugout_2.aqt

Date: 05/10/17

Time: 14:54:11

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW_01I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.692 ft/day

y0 = 2.482 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW_01I)

Initial Displacement: 1.68 ft

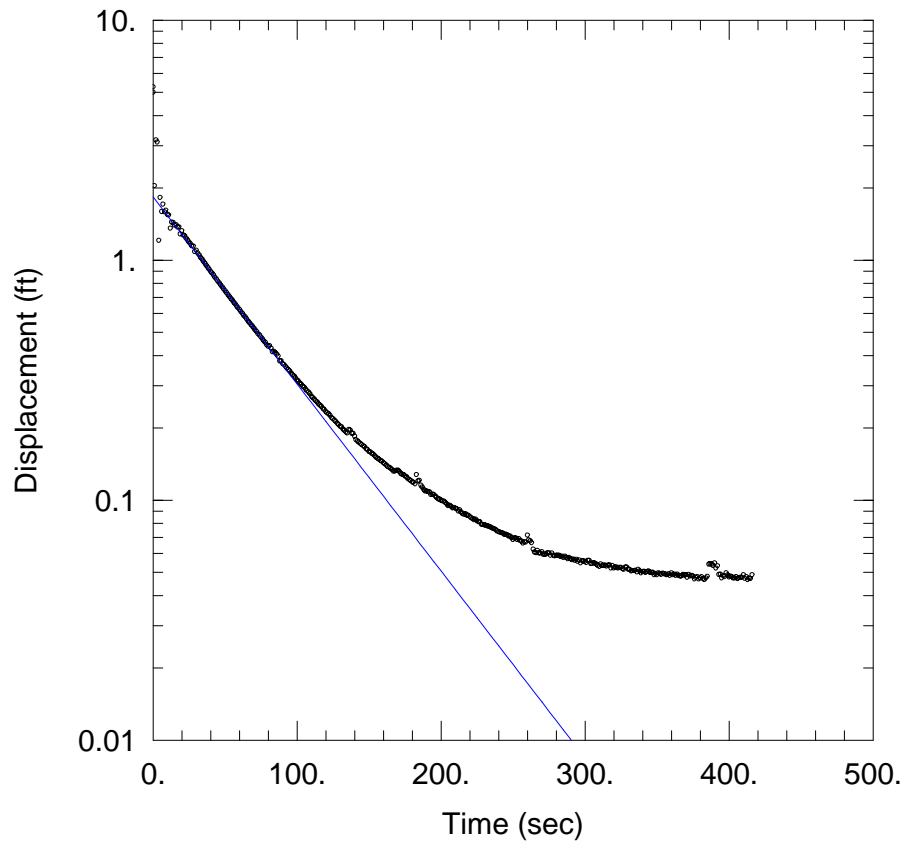
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 10.87 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW_03I_SLUGIN_1

Data Set: T:\...\UFMW_03I_slugin_1.aqt
 Date: 05/10/17 Time: 14:55:57

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-03I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.814$ ft/day
 $y_0 = 1.833$ ft

AQUIFER DATA

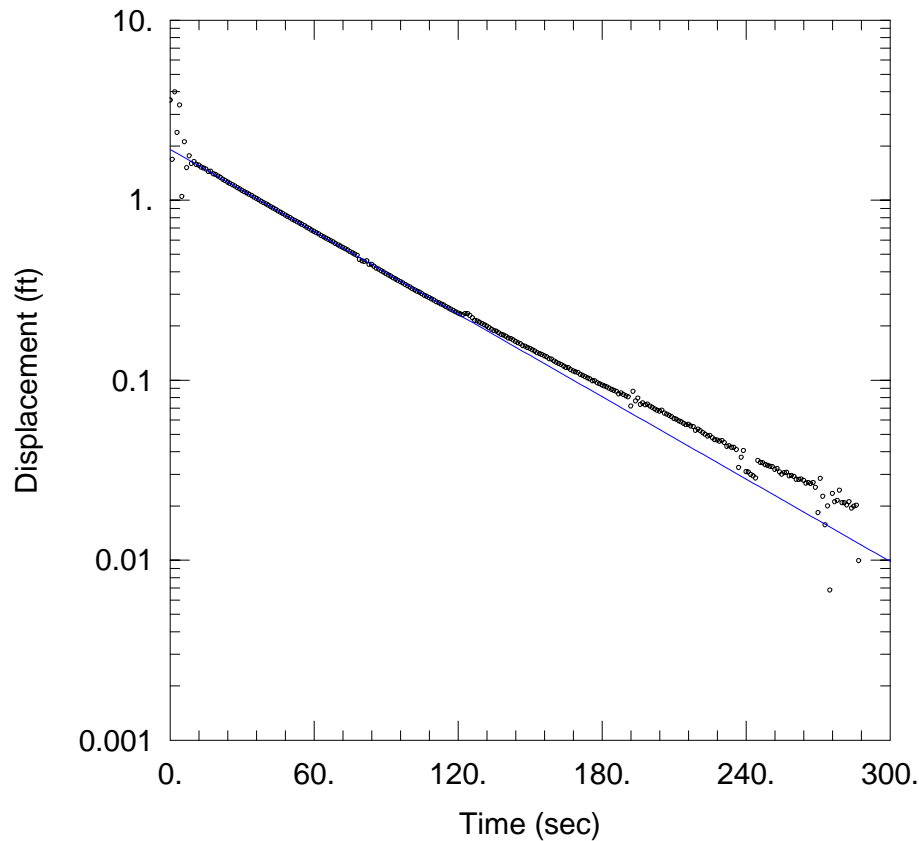
Saturated Thickness: 10.5 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-03I)

Initial Displacement: 5. ft
 Total Well Penetration Depth: 14. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 13.86 ft
 Screen Length: 10. ft
 Well Radius: 0.5 ft



UFMW_03I_SLUGIN_2

Data Set: T:\...\UFMW_03I_slugin_2.aqt
Date: 04/27/17 Time: 10:43:12

PROJECT INFORMATION

Company: Tetra Tech
Client: NERT
Location: Henderson, NV
Test Well: UFMW-03I
Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
 $K = 1.581$ ft/day
 $y_0 = 1.913$ ft

AQUIFER DATA

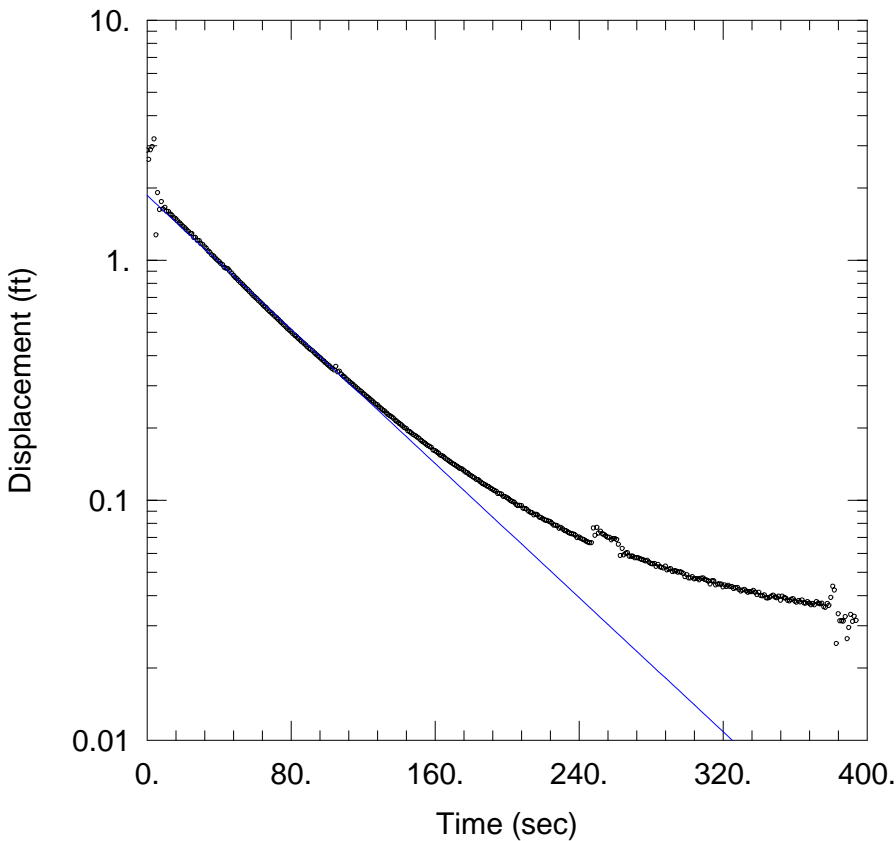
Saturated Thickness: 10. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-03I)

Initial Displacement: 3.6 ft
Total Well Penetration Depth: 14. ft
Casing Radius: 0.083 ft

Static Water Column Height: 13.86 ft
Screen Length: 10. ft
Well Radius: 0.25 ft



UFMW_03I_SLUGIN_3

Data Set: T:\...\UFMW_03I_slugin_3.aqt
 Date: 05/10/17 Time: 14:57:08

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-03I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 1.626$ ft/day
 $y_0 = 1.863$ ft

AQUIFER DATA

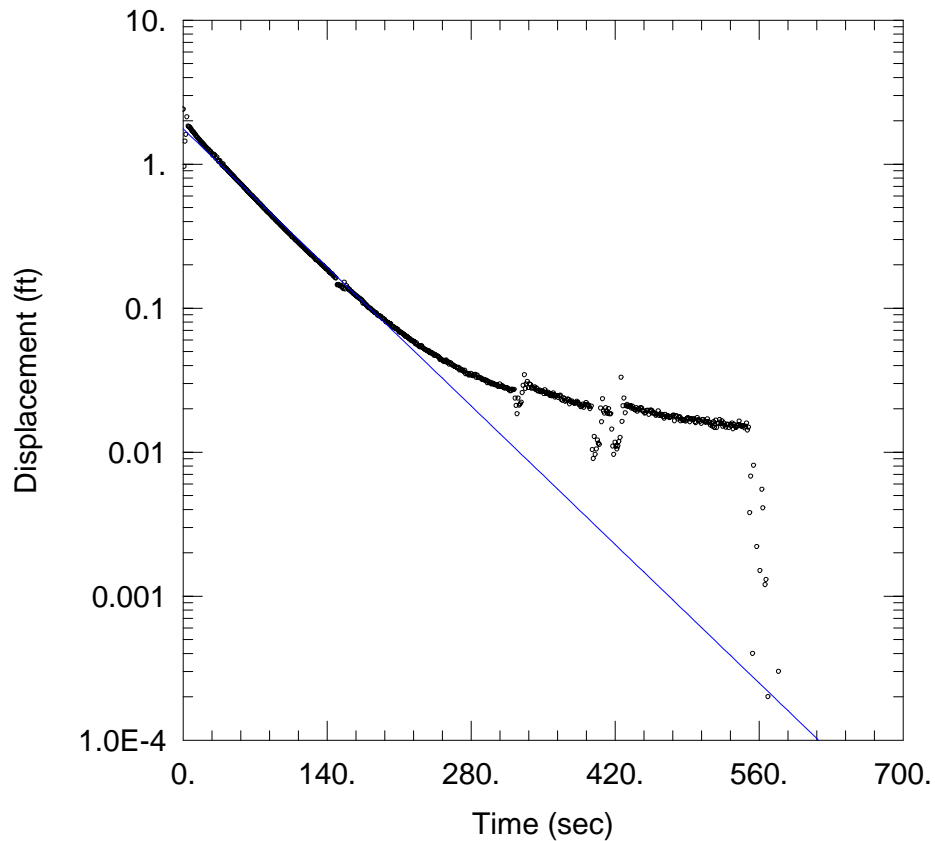
Saturated Thickness: 10.5 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-03I)

Initial Displacement: 2.87 ft
 Total Well Penetration Depth: 14. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 13.86 ft
 Screen Length: 10. ft
 Well Radius: 0.5 ft



UFMW_03I_SLUGOUT_1

Data Set: T:\...\UFMW_03I_slugout_1.aqt

Date: 05/10/17

Time: 14:58:13

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-03I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.599 ft/day

y0 = 1.759 ft

AQUIFER DATA

Saturated Thickness: 10.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-03I)

Initial Displacement: 2.4 ft

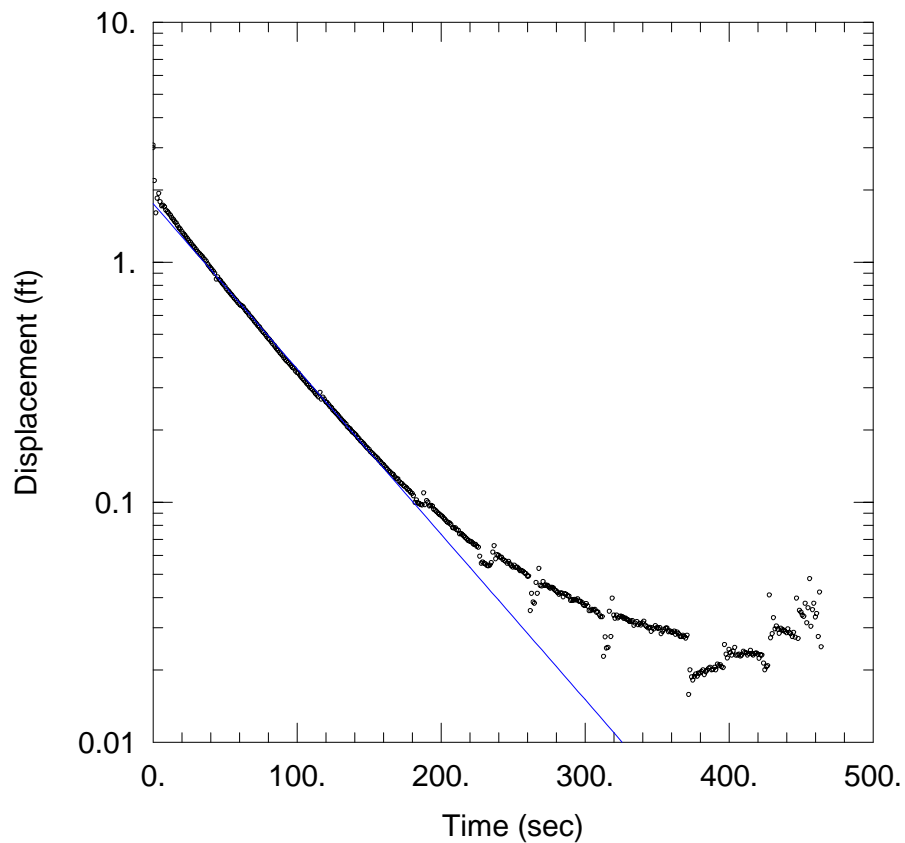
Total Well Penetration Depth: 14. ft

Casing Radius: 0.083 ft

Static Water Column Height: 13.86 ft

Screen Length: 10. ft

Well Radius: 0.5 ft



UFMW_03I_SLUGOUT_2

Data Set: T:\...\UFMW_03I_slugout_2.aqt

Date: 05/10/17

Time: 15:03:34

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-03I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.603$ ft/day

$y_0 = 1.753$ ft

AQUIFER DATA

Saturated Thickness: 10.5 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-03I)

Initial Displacement: 3. ft

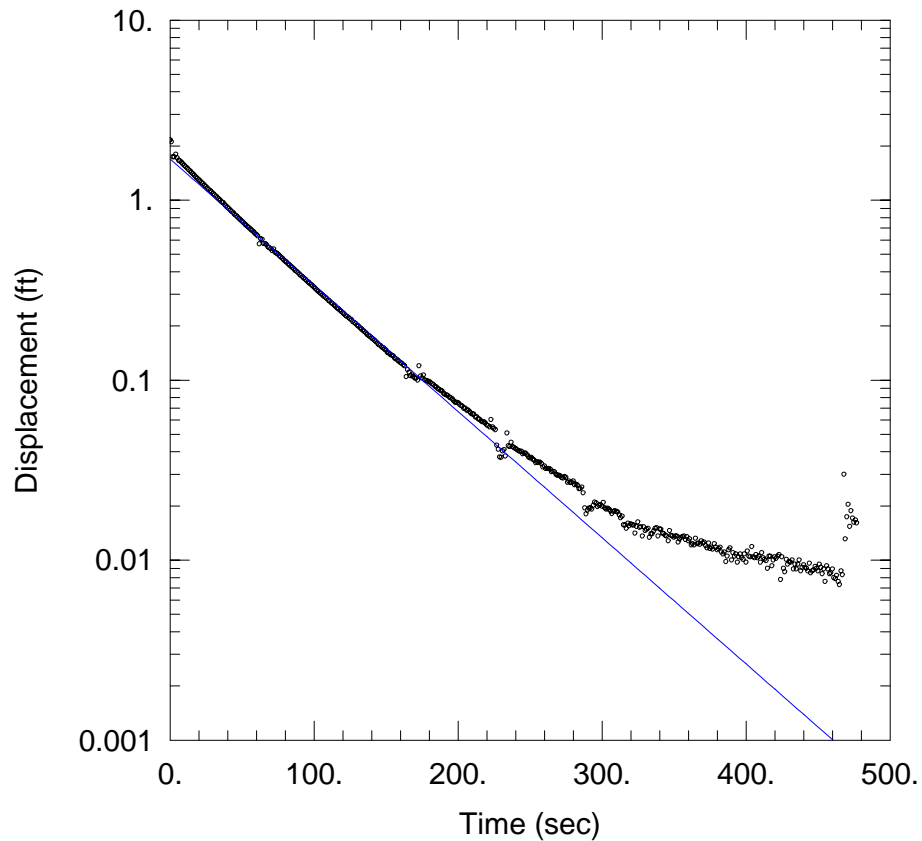
Total Well Penetration Depth: 14. ft

Casing Radius: 0.083 ft

Static Water Column Height: 13.86 ft

Screen Length: 10. ft

Well Radius: 0.5 ft



UFMW_03I_SLUGOUT_3

Data Set: T:\...\UFMW_03I_slugout_3.aqt

Date: 05/10/17

Time: 15:04:08

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-03I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.632 ft/day

y0 = 1.691 ft

AQUIFER DATA

Saturated Thickness: 10.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-03I)

Initial Displacement: 2.16 ft

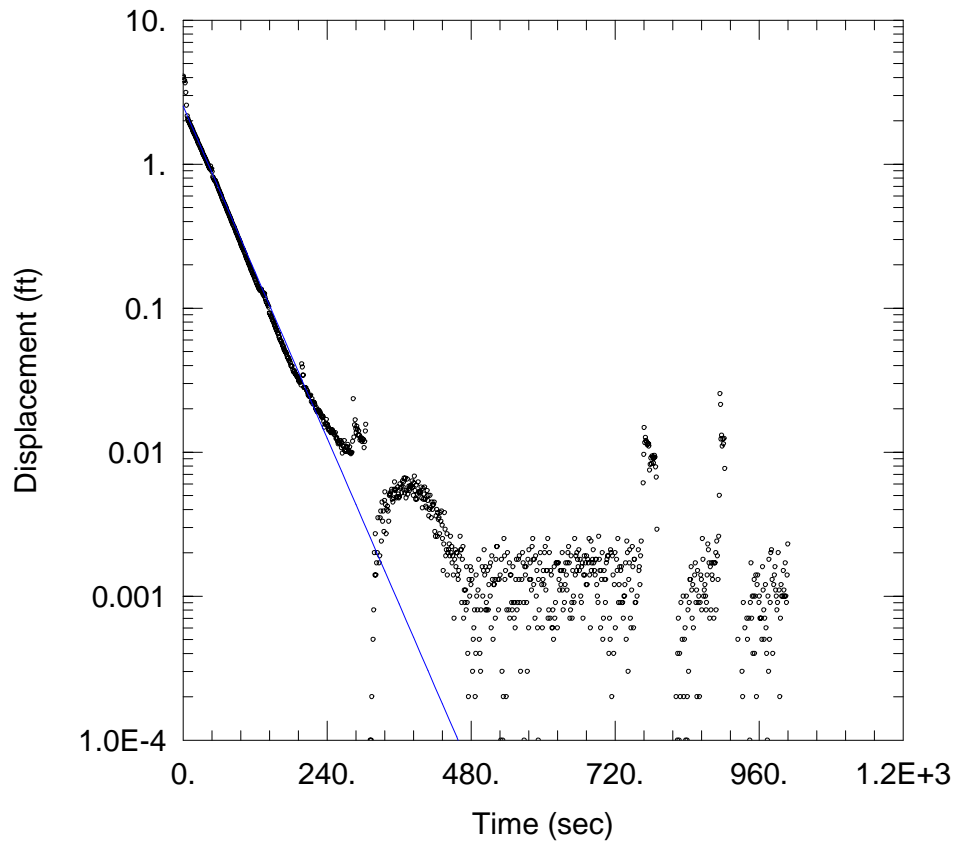
Total Well Penetration Depth: 14. ft

Casing Radius: 0.083 ft

Static Water Column Height: 13.86 ft

Screen Length: 10. ft

Well Radius: 0.5 ft



UFMW_04I_SLUGIN_1

Data Set: T:\...\UFMW_04I_slugin_1.aqt
 Date: 05/10/17 Time: 15:06:10

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-04I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 4$ ft/day
 $y_0 = 2.53$ ft

AQUIFER DATA

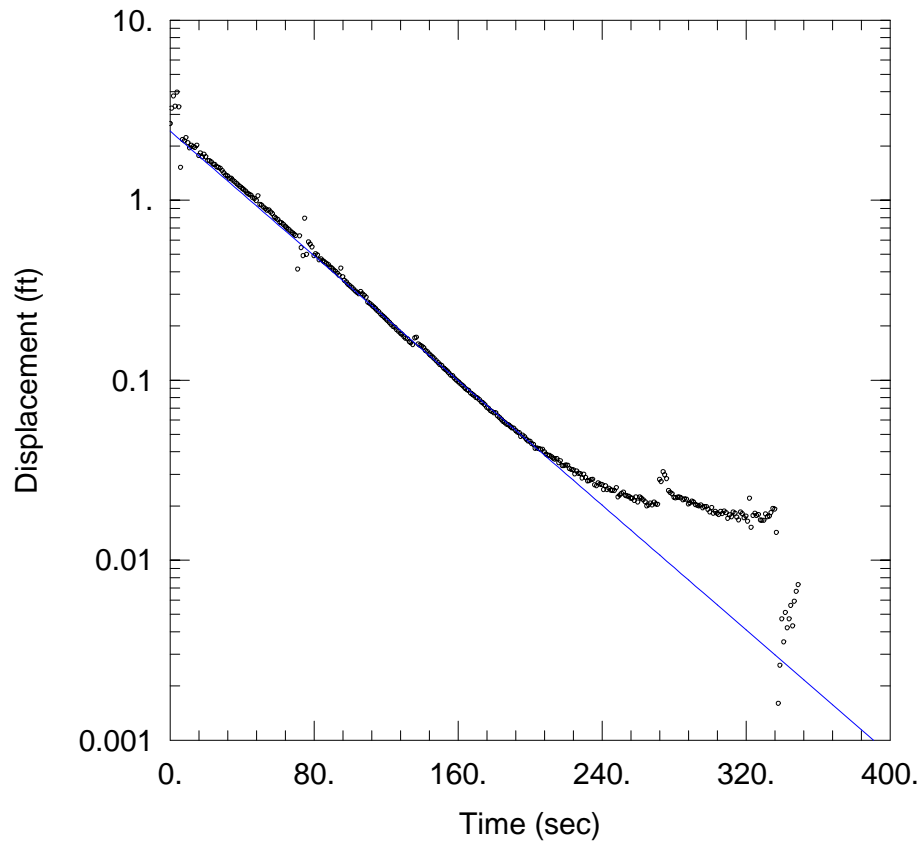
Saturated Thickness: 6 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-04I)

Initial Displacement: 4 ft
 Total Well Penetration Depth: 10 ft
 Casing Radius: 0.083 ft

Static Water Column Height: 12.9 ft
 Screen Length: 5 ft
 Well Radius: 0.5 ft



UFMW_04I_SLUGIN_2

Data Set: T:\...\UFMW_04I_slugin_2.aqt
 Date: 05/10/17 Time: 15:06:51

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-04I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 3.605$ ft/day
 $y_0 = 2.418$ ft

AQUIFER DATA

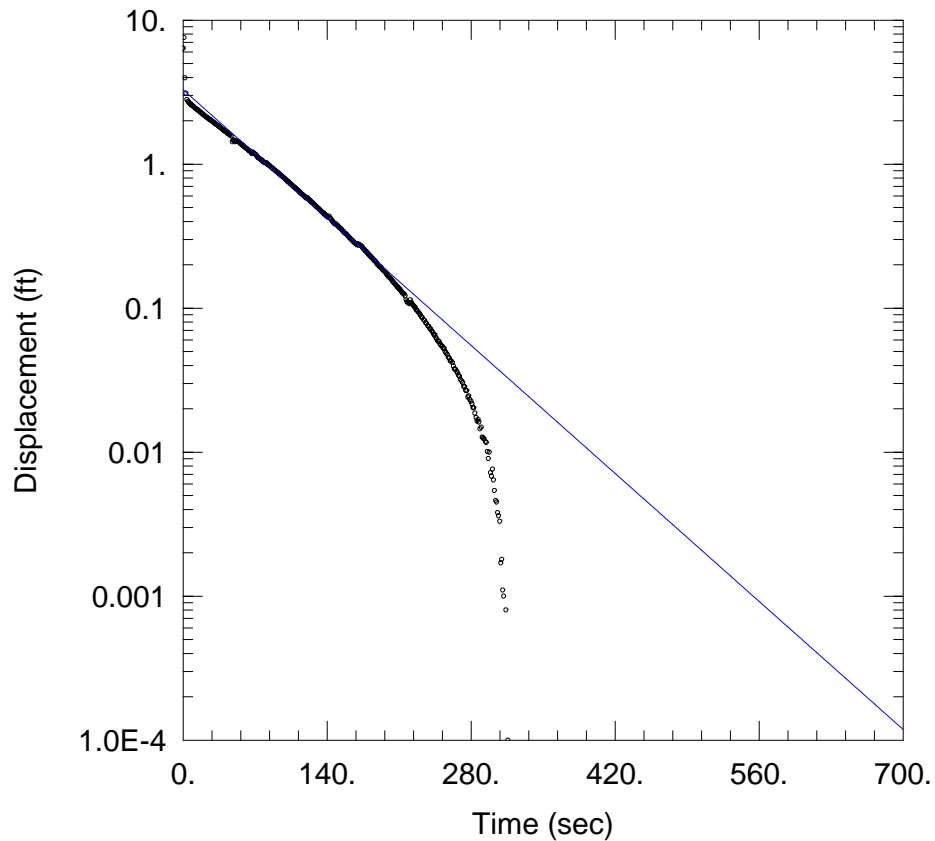
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-04I)

Initial Displacement: 2.66 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 12.9 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW_04I_SLUGOUT_1

Data Set: T:\...\UFMW_04I_slugout_1.aqt

Date: 05/10/17

Time: 15:07:35

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-04I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.643 ft/day

y0 = 3.291 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-04I)

Initial Displacement: 6.37 ft

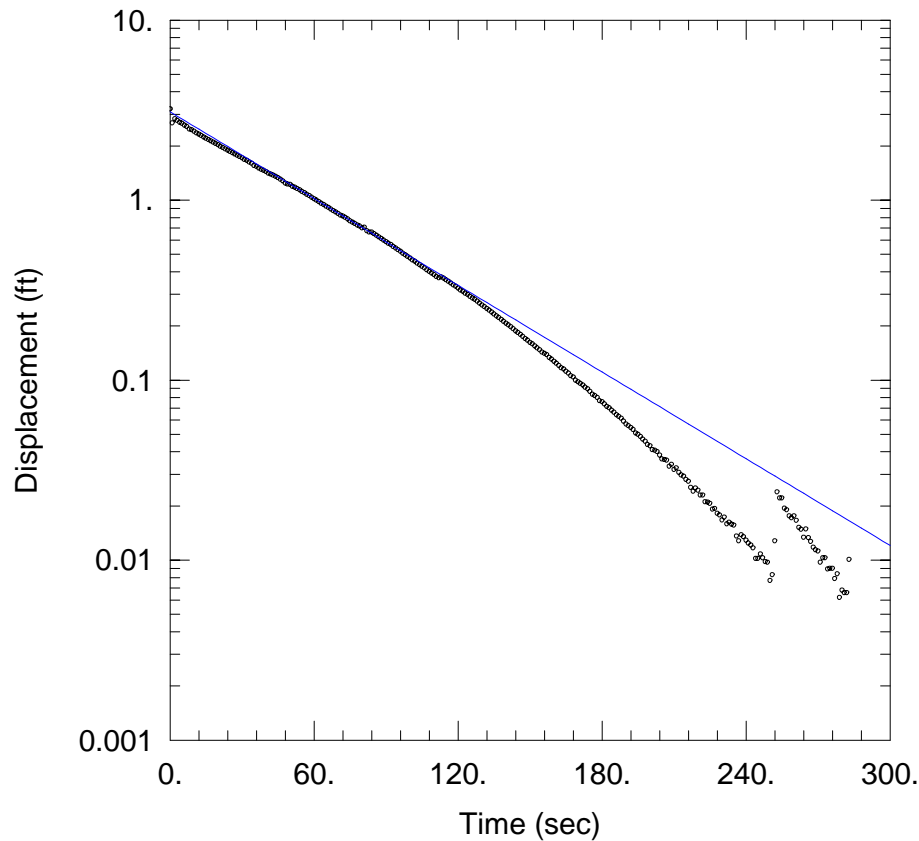
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 12.9 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW_04I_SLUGOUT_2

Data Set: T:\...\UFMW_04I_slugout_2.aqt

Date: 05/10/17

Time: 15:08:16

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-04I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 3.344 ft/day

y0 = 3.095 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-04I)

Initial Displacement: 3.21 ft

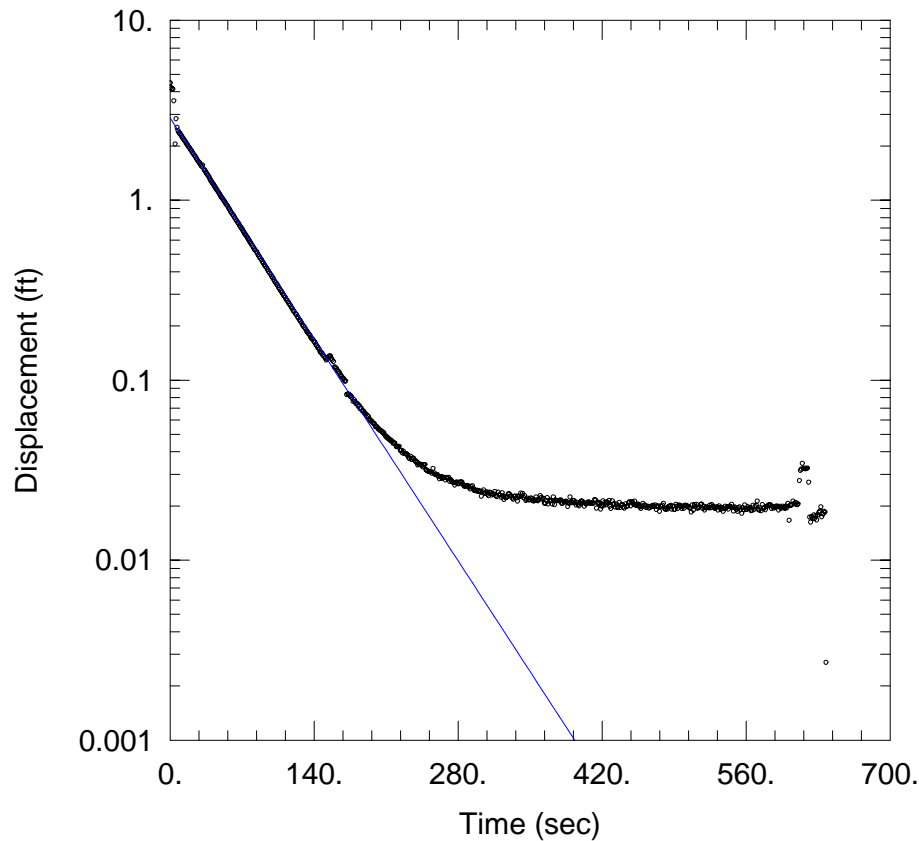
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 12.9 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW_06I_SLUGIN_1

Data Set: T:\...\UFMW_06I_slugin_1_MBQC.aqt
 Date: 05/10/17 Time: 15:09:19

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-06I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 3.659$ ft/day
 $y_0 = 2.862$ ft

AQUIFER DATA

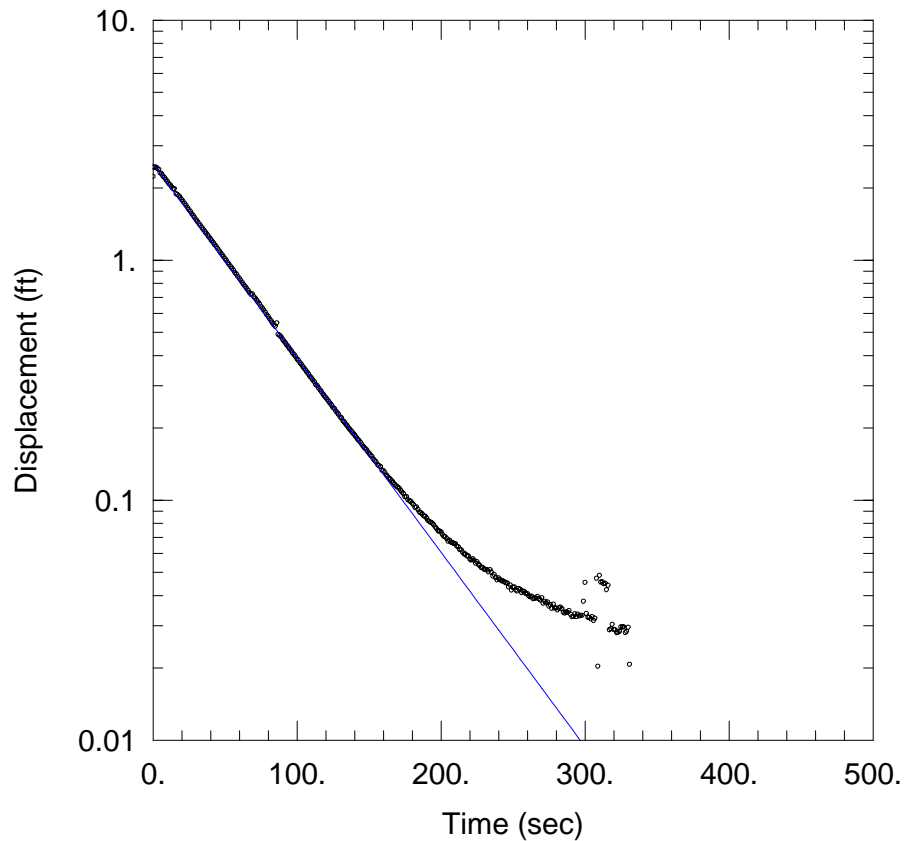
Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-06I)

Initial Displacement: 4.47 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 13.34 ft
 Screen Length: 5. ft
 Well Radius: 0.5 ft



UFMW_06I_SLUGIN_2

Data Set: T:\...\UFMW_06I_slugin_2.aqt
 Date: 04/27/17 Time: 11:01:24

PROJECT INFORMATION

Company: Tetra Tech
 Client: NERT
 Location: Henderson, NV
 Test Well: UFMW-06I
 Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined
 Solution Method: Bouwer-Rice
 $K = 2.167$ ft/day
 $y_0 = 2.522$ ft

AQUIFER DATA

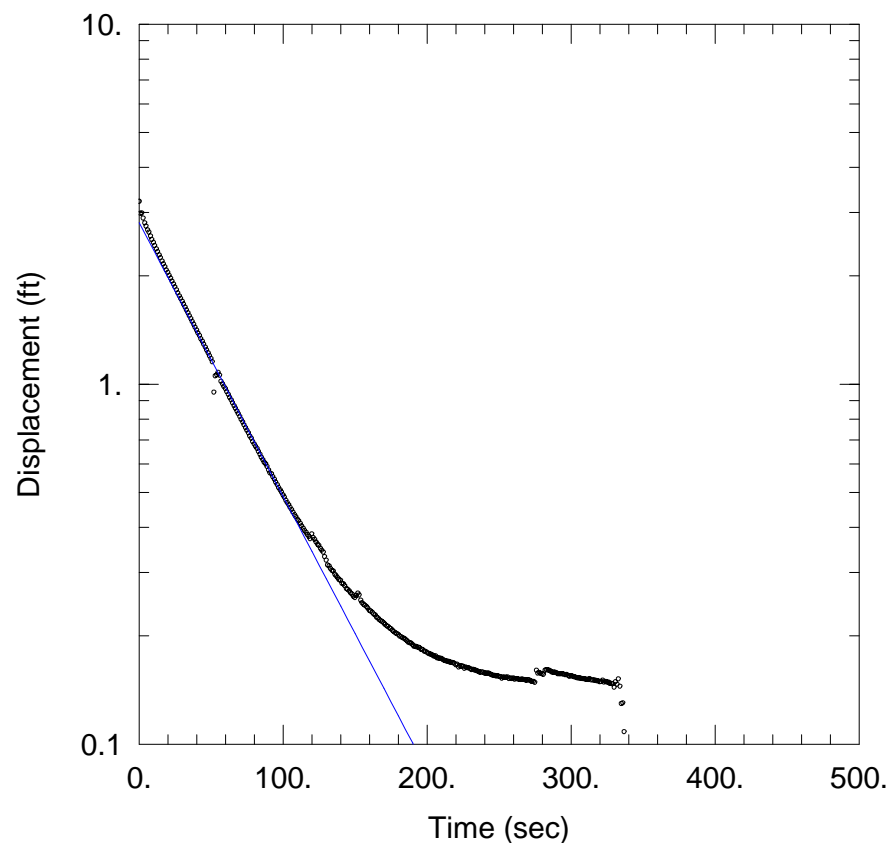
Saturated Thickness: 11. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-06I)

Initial Displacement: 2.44 ft
 Total Well Penetration Depth: 13. ft
 Casing Radius: 0.083 ft

Static Water Column Height: 13.34 ft
 Screen Length: 10. ft
 Well Radius: 0.25 ft



UFMW_06I_SLUGOUT_1

Data Set: T:\...\UFMW_06I_slugout_1.aqt

Date: 05/10/17

Time: 15:10:04

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-06I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 3.169 ft/day

y0 = 2.811 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-06I)

Initial Displacement: 3.22 ft

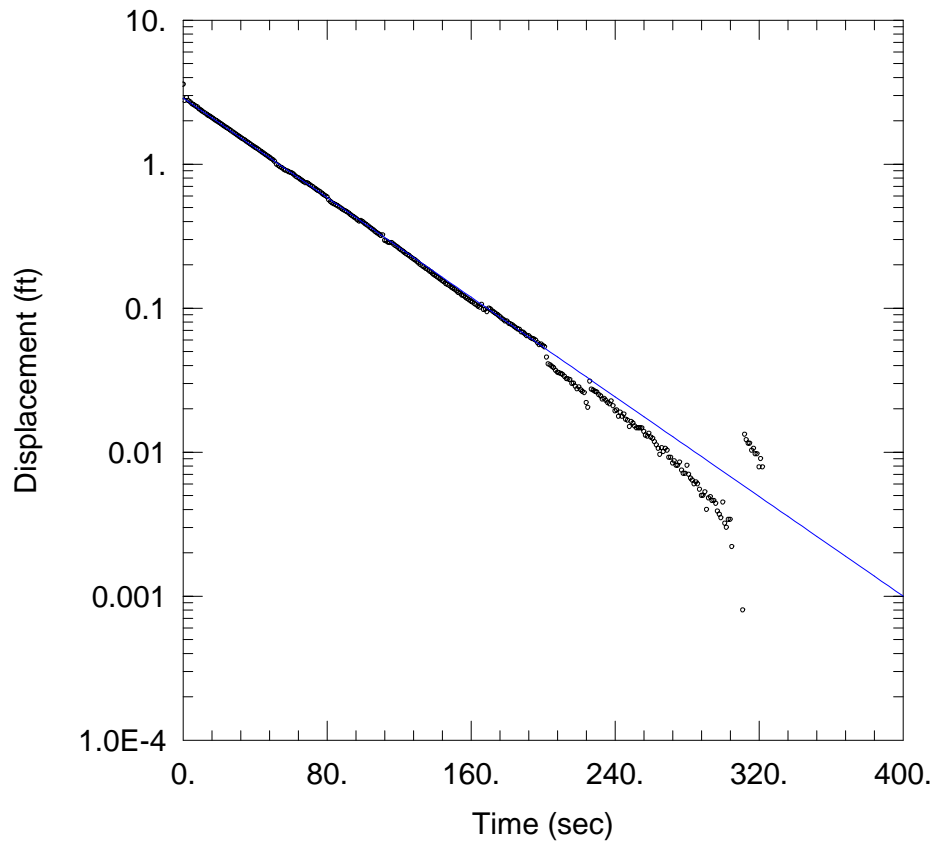
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 13.34 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW_06I_SLUGOUT_2

Data Set: T:\...\UFMW_06I_slugout_2.aqt

Date: 05/10/17

Time: 15:10:33

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-06I

Test Date: 4/11/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 3.601 ft/day

y0 = 2.882 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-06I)

Initial Displacement: 3.58 ft

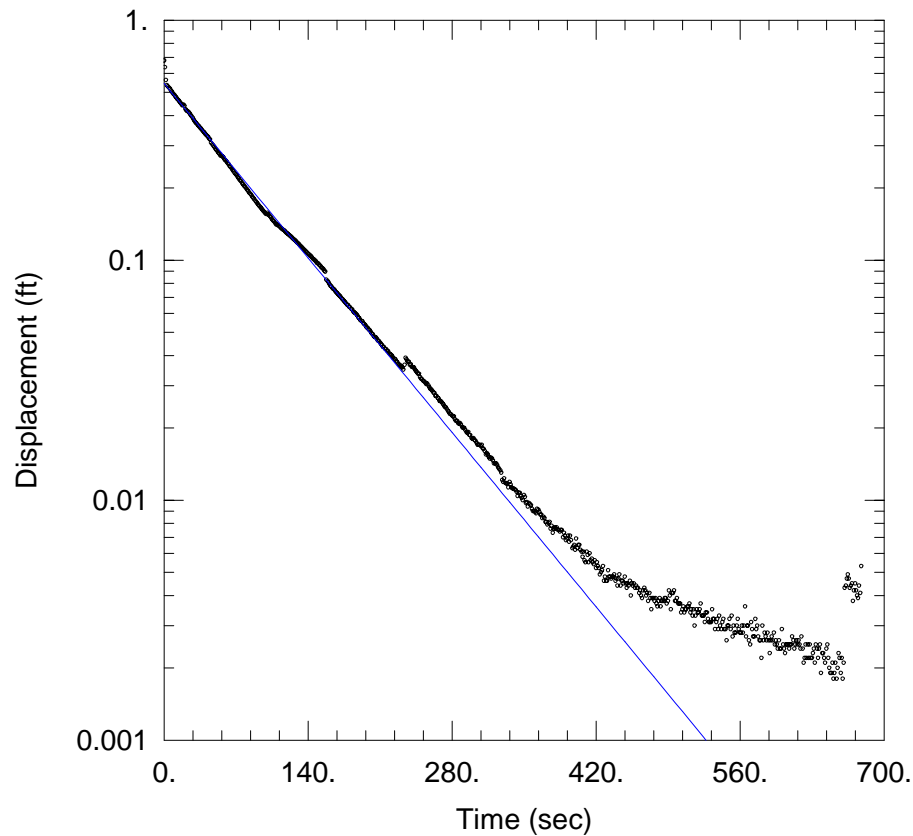
Total Well Penetration Depth: 10. ft

Casing Radius: 0.083 ft

Static Water Column Height: 13.34 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-01D SLUG IN

Data Set: \...\UFMW_01D_slugin_1.aqt

Date: 10/25/17

Time: 10:46:16

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-01D

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 2.409$ ft/day

$y_0 = 0.5446$ ft

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-01D)

Initial Displacement: 0.68 ft

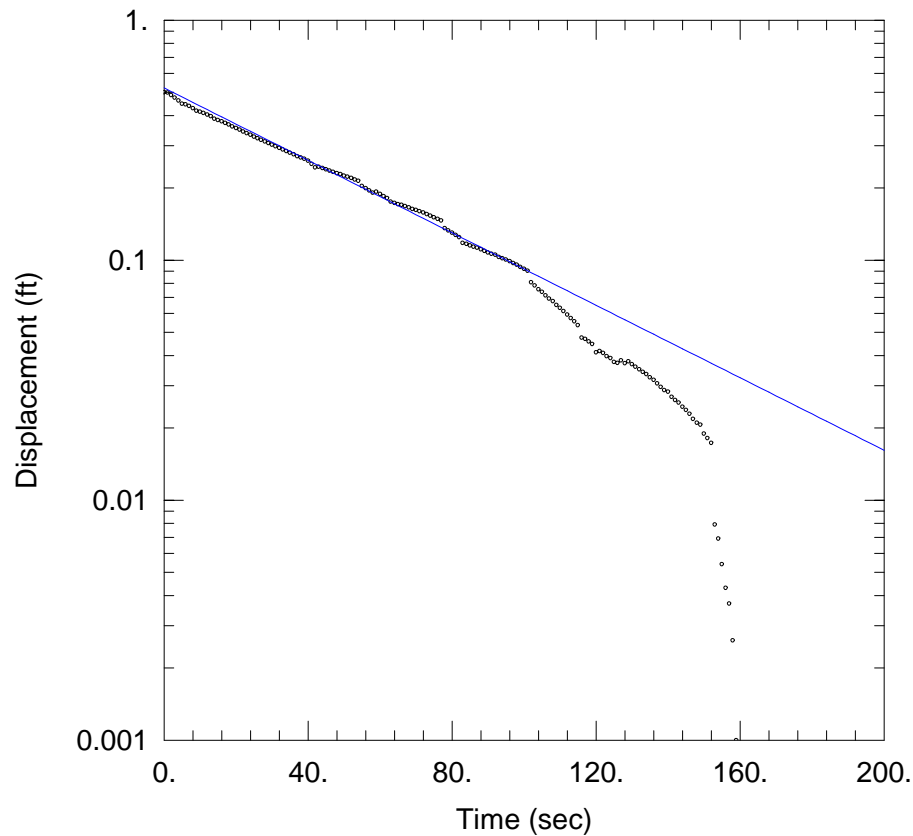
Total Well Penetration Depth: 18.3 ft

Casing Radius: 0.083 ft

Static Water Column Height: 18.3 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-01D SLUG OUT

Data Set: \...\UFMW_01D_slugout_1.aqt

Date: 10/25/17

Time: 10:46:28

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-01D

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 3.502 ft/day

y0 = 0.5219 ft

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-01D)

Initial Displacement: 0.4997 ft

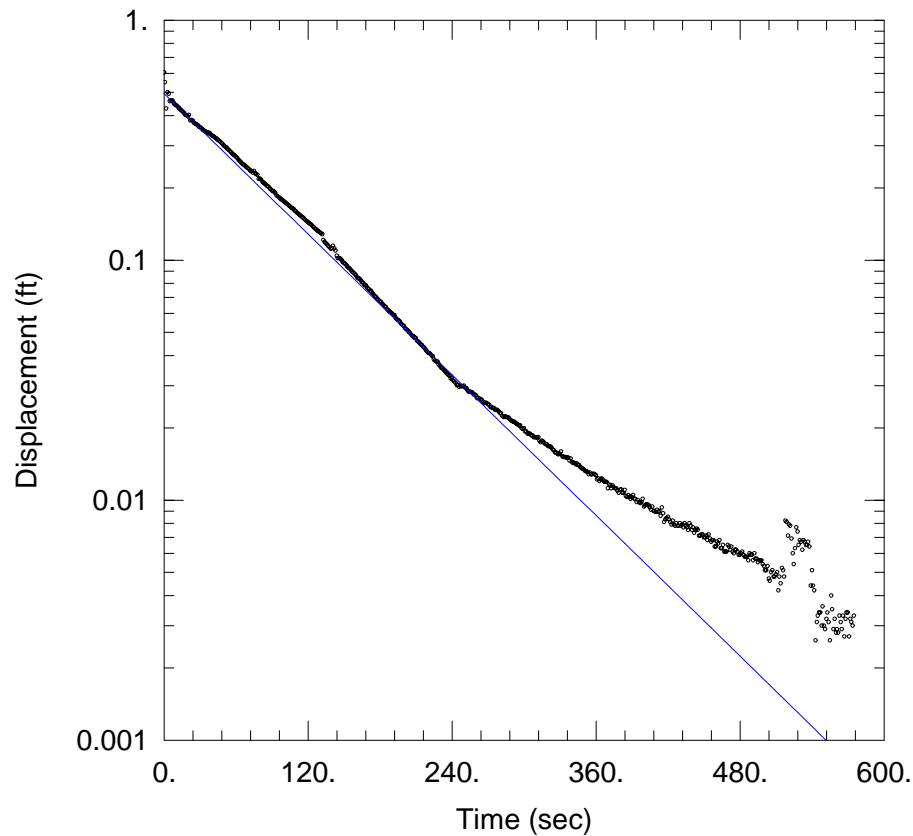
Total Well Penetration Depth: 18.3 ft

Casing Radius: 0.083 ft

Static Water Column Height: 18.3 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-01I SLUG IN

Data Set: \...\UFMW_01I_slugin_1.aqt

Date: 10/25/17

Time: 10:46:41

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-01I

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.97 ft/day

y0 = 0.4944 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-01I)

Initial Displacement: 0.6053 ft

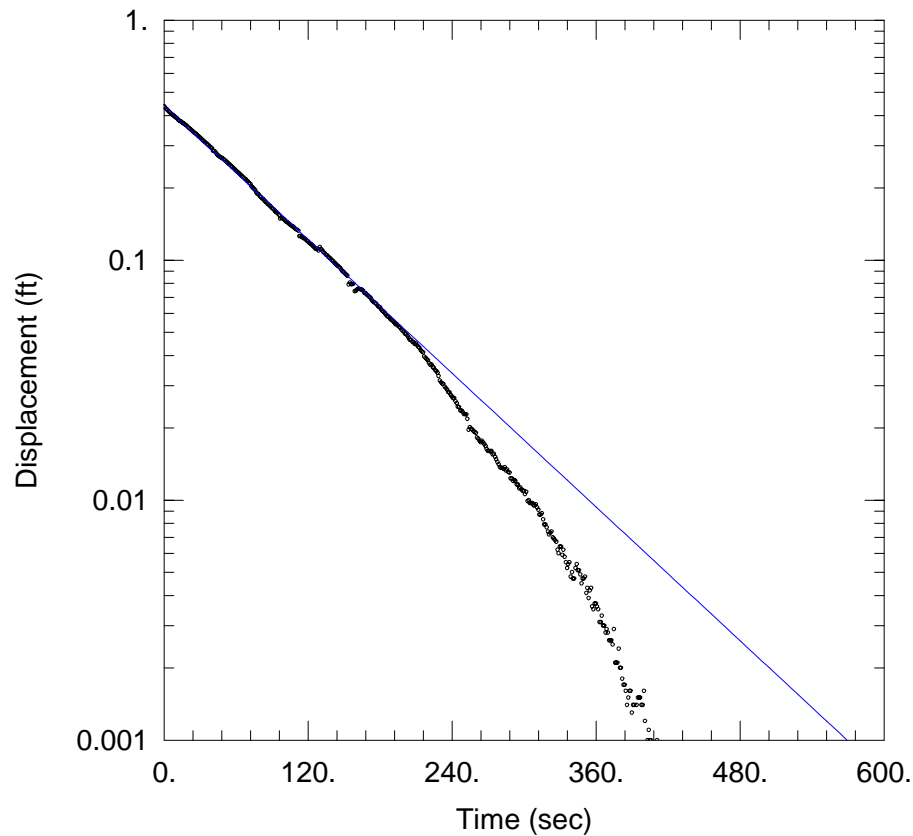
Total Well Penetration Depth: 8.53 ft

Casing Radius: 0.083 ft

Static Water Column Height: 8.53 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-01I SLUG IN

Data Set: \...\UFMW_01I_slugout_1.aqt

Date: 10/25/17

Time: 10:46:52

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-01I

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.873$ ft/day

$y_0 = 0.4397$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-01I)

Initial Displacement: 0.4369 ft

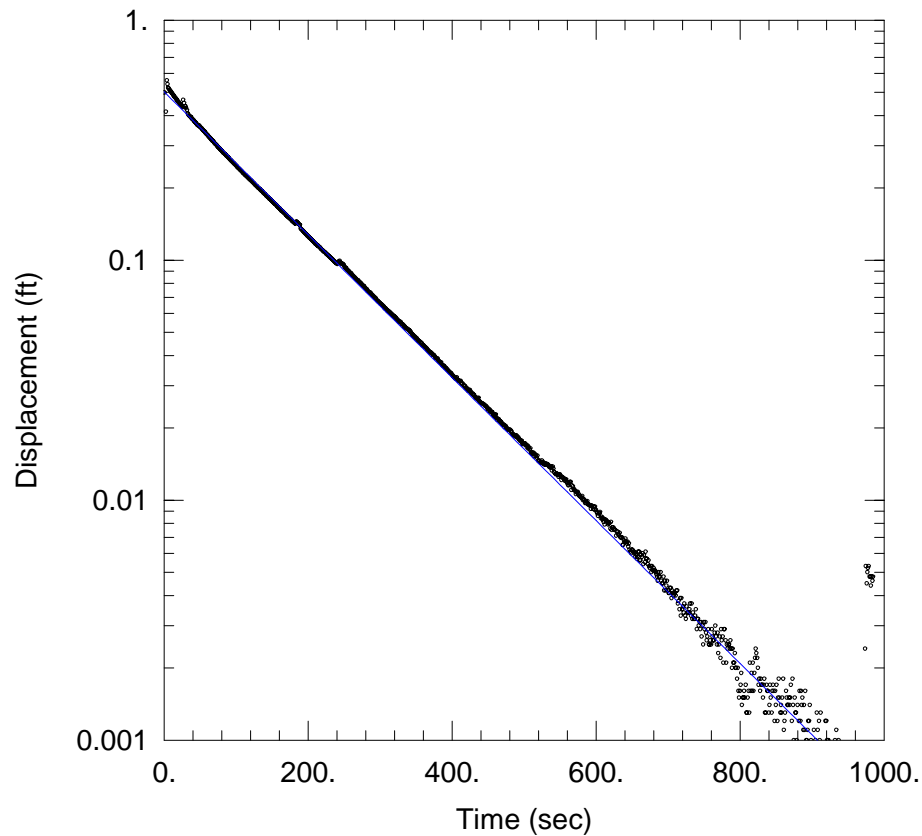
Total Well Penetration Depth: 8.53 ft

Casing Radius: 0.083 ft

Static Water Column Height: 8.53 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-02D SLUG IN

Data Set: \...\UFMW_02D_slugin_1.aqt

Date: 10/25/17

Time: 10:47:06

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-02D

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.371 ft/day

y0 = 0.5029 ft

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-02D)

Initial Displacement: 0.4994 ft

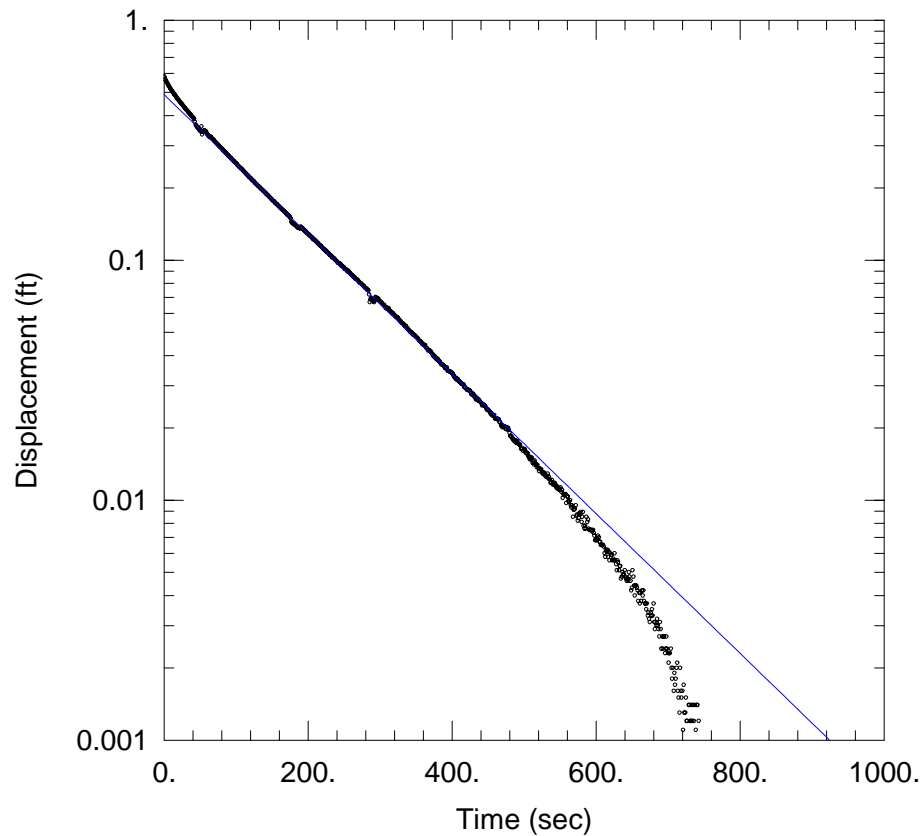
Total Well Penetration Depth: 17.53 ft

Casing Radius: 0.083 ft

Static Water Column Height: 17.53 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-02D SLUG OUT

Data Set: \...\UFMW_02D_slugout_1.aqt

Date: 10/25/17

Time: 10:47:18

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-02D

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.341$ ft/day

$y_0 = 0.4899$ ft

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-02D)

Initial Displacement: 0.5823 ft

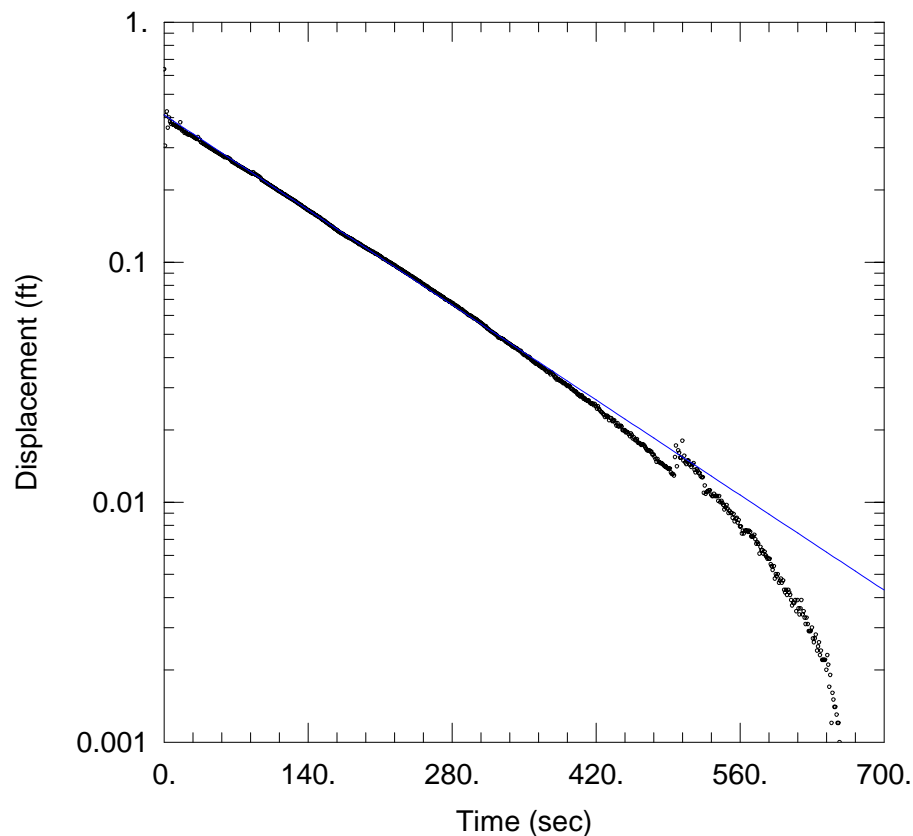
Total Well Penetration Depth: 17.53 ft

Casing Radius: 0.083 ft

Static Water Column Height: 17.53 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-02I SLUG IN

Data Set: \...\UFMW_02I_slugin_1.aqt

Date: 10/25/17

Time: 10:47:34

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-02I

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.193 ft/day

y0 = 0.411 ft

AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-02I)

Initial Displacement: 0.6363 ft

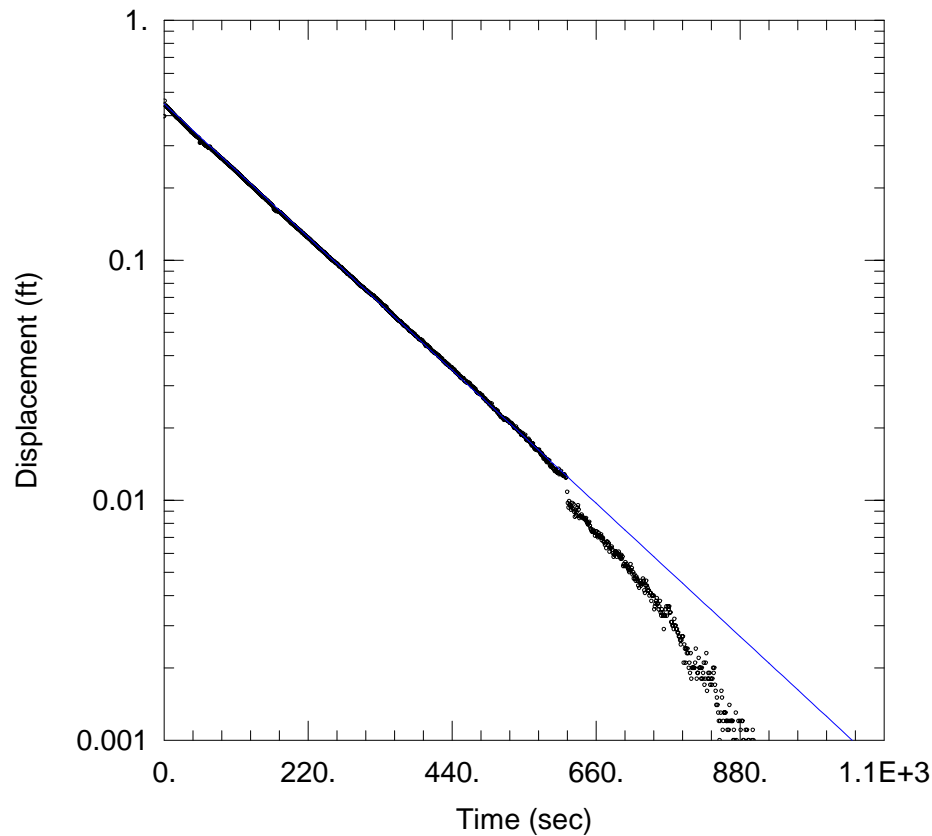
Total Well Penetration Depth: 10.69 ft

Casing Radius: 0.083 ft

Static Water Column Height: 10.69 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-02I SLUG OUT

Data Set: \...\UFMW_02I_slugout_1.aqt

Date: 10/25/17

Time: 10:47:45

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-02I

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.064 ft/day

y0 = 0.4485 ft

AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-02I)

Initial Displacement: 0.3977 ft

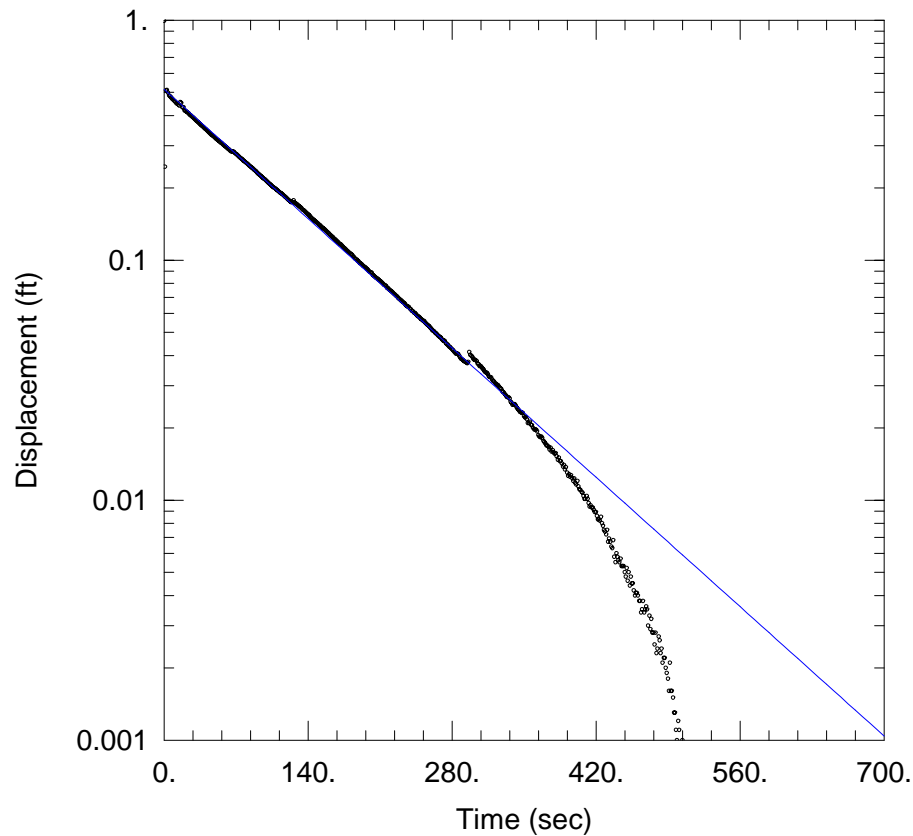
Total Well Penetration Depth: 10.69 ft

Casing Radius: 0.083 ft

Static Water Column Height: 10.69 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-03D SLUG IN

Data Set: \...\UFMW_03D_slugin_1.aqt

Date: 10/25/17

Time: 10:47:58

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-03D

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.829 ft/day

y0 = 0.5149 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-03D)

Initial Displacement: 0.9933 ft

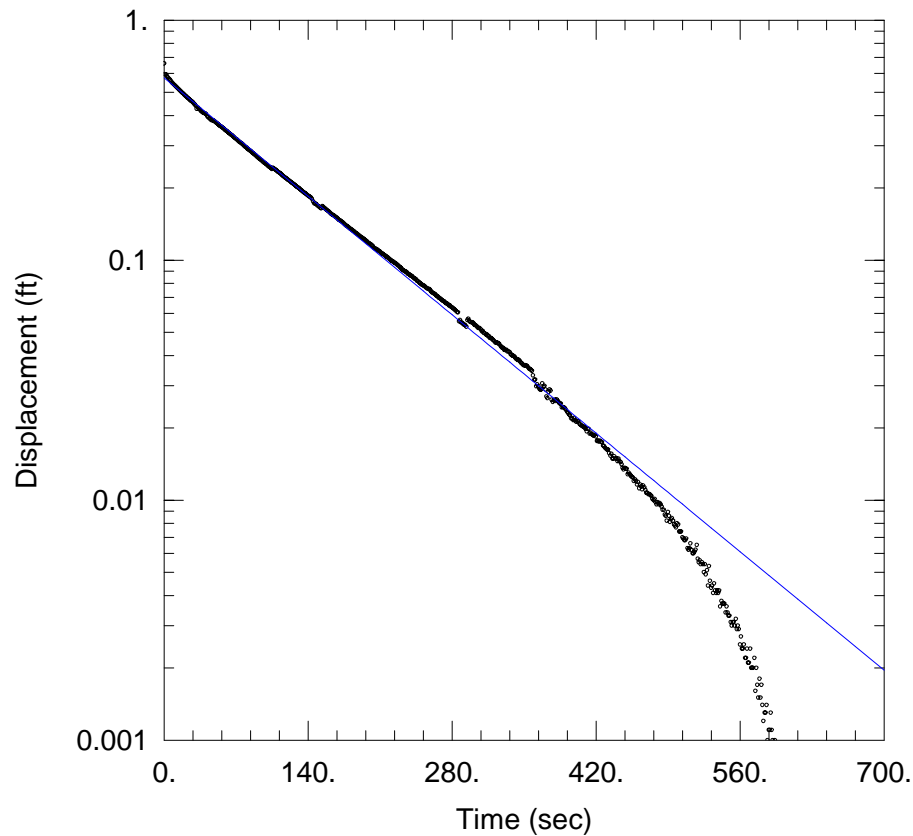
Total Well Penetration Depth: 21.23 ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.23 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-03D SLUG OUT

Data Set: \...\UFMW_03D_slugout_1.aqt

Date: 10/25/17

Time: 10:53:33

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-03D

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.676$ ft/day

$y_0 = 0.5754$ ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-03D)

Initial Displacement: 0.6606 ft

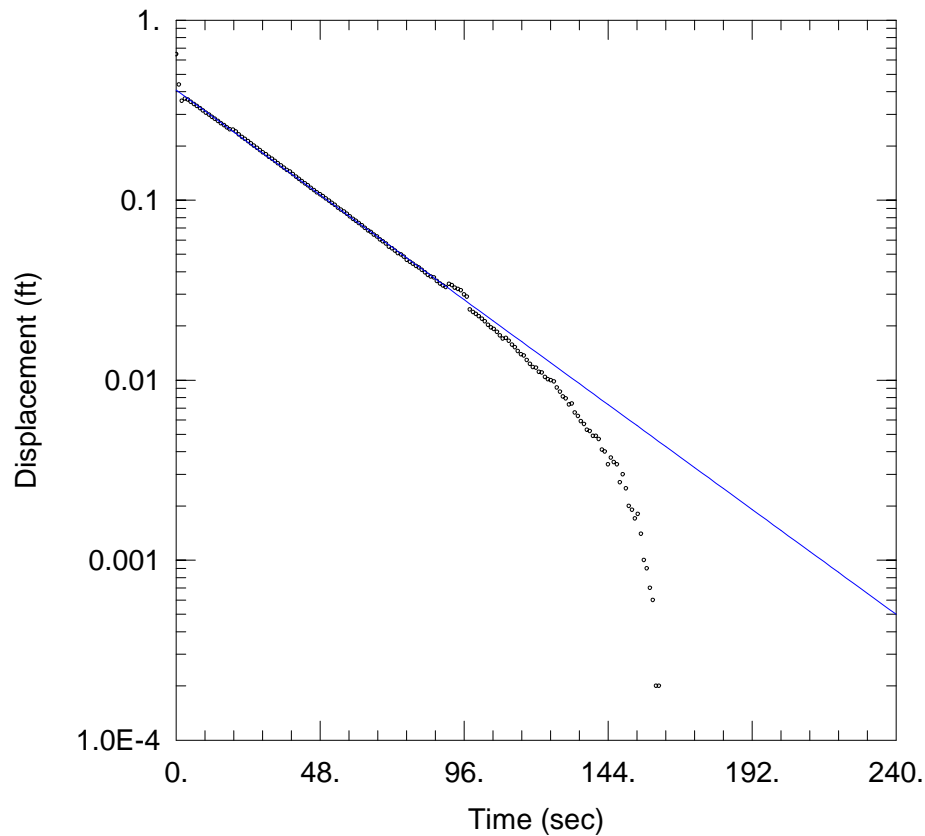
Total Well Penetration Depth: 21.23 ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.23 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-03I SLUG IN

Data Set: \...\UFMW_03I_slugin_1.aqt

Date: 10/25/17

Time: 10:48:22

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-03I

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.906 ft/day

y0 = 0.409 ft

AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-03I)

Initial Displacement: 0.6461 ft

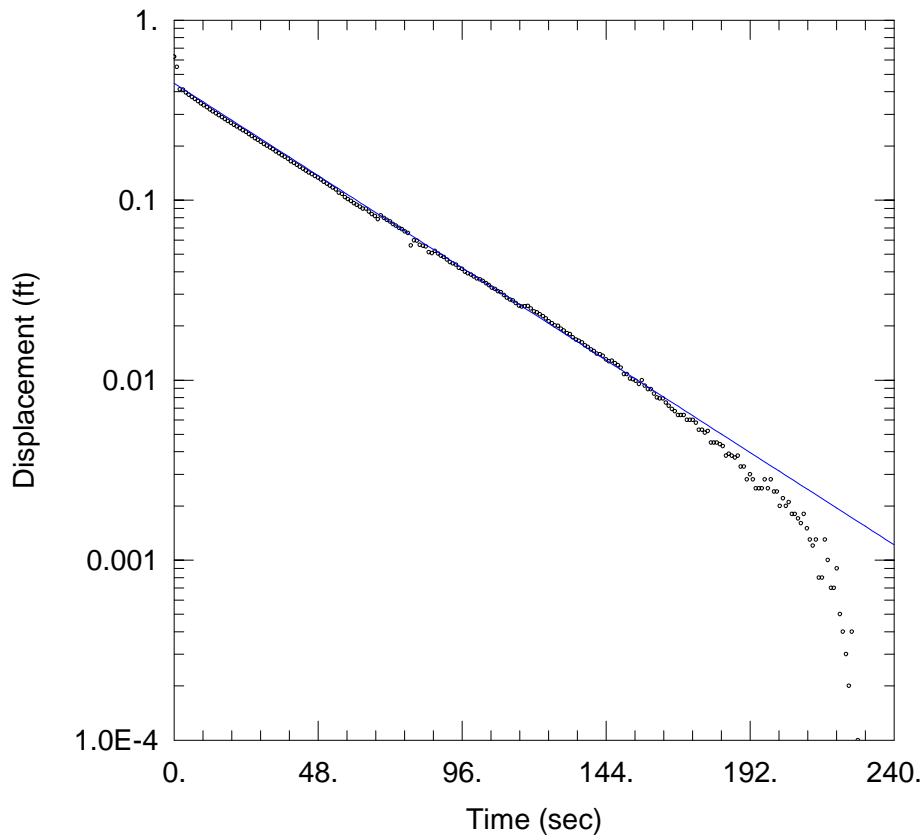
Total Well Penetration Depth: 11.25 ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.25 ft

Screen Length: 10. ft

Well Radius: 0.5 ft



UFMW-03I SLUG OUT

Data Set: \...\UFMW_03I_slugout_1.aqt

Date: 10/25/17

Time: 10:48:35

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-03I

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.678 ft/day

y0 = 0.4461 ft

AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-03I)

Initial Displacement: 0.6268 ft

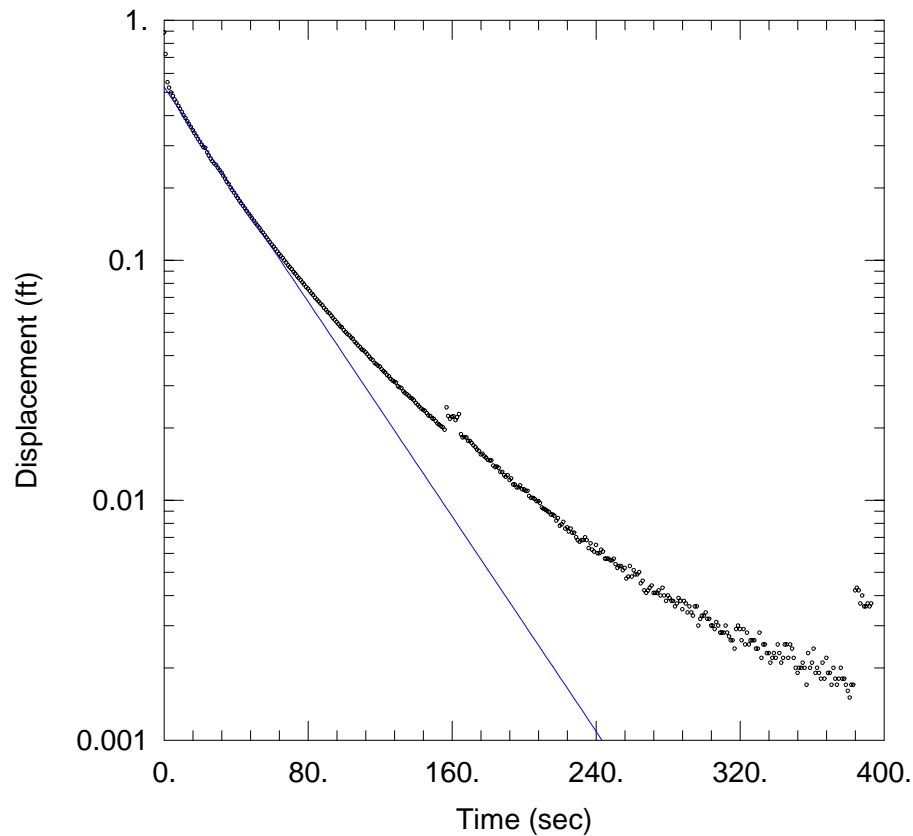
Total Well Penetration Depth: 11.25 ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.25 ft

Screen Length: 10. ft

Well Radius: 0.5 ft



UFMW-04D SLUG IN

Data Set: \...\UFMW_04D_slugin_1.aqt

Date: 10/25/17

Time: 10:48:47

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-04D

Test Date: 10/5/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 5.237 ft/day

y0 = 0.5271 ft

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-04D)

Initial Displacement: 0.8879 ft

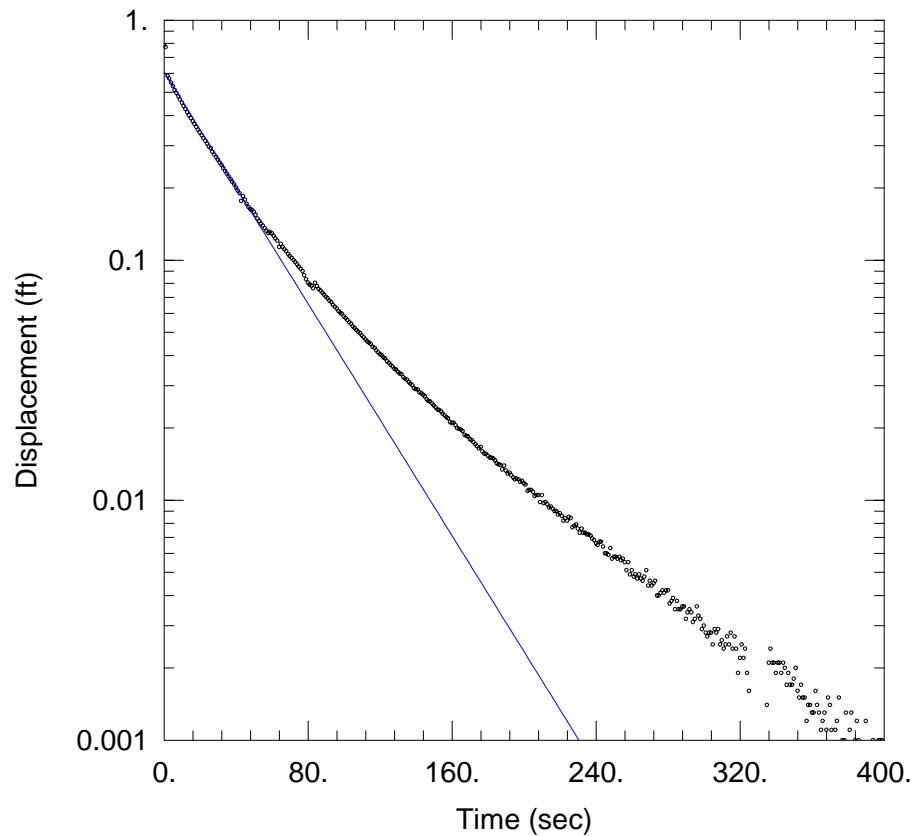
Total Well Penetration Depth: 19.35 ft

Casing Radius: 0.083 ft

Static Water Column Height: 19.35 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-04D SLUG OUT

Data Set: \...\UFMW_04D_slugout_1.aqt

Date: 10/25/17

Time: 10:48:57

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-04D

Test Date: 10/5/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 5.658$ ft/day

$y_0 = 0.6099$ ft

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-04D)

Initial Displacement: 0.7861 ft

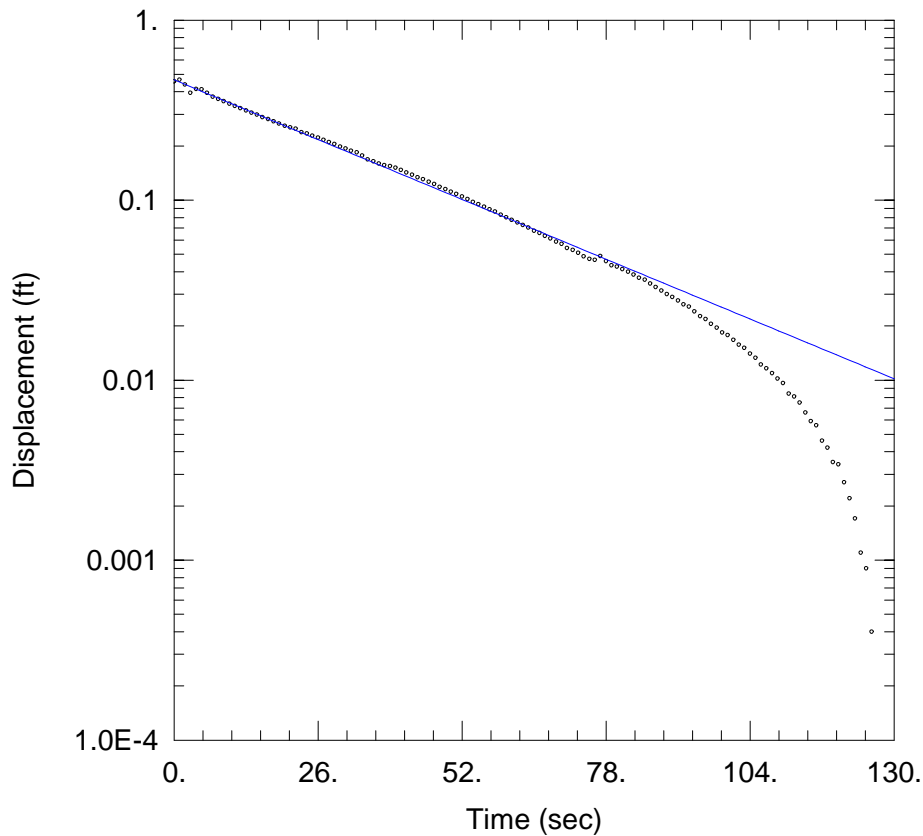
Total Well Penetration Depth: 19.35 ft

Casing Radius: 0.083 ft

Static Water Column Height: 19.35 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-04I SLUG IN

Data Set: \...\UFMW_04I_slugin_1.aqt

Date: 10/25/17

Time: 10:49:11

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-04I

Test Date: 10/5/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 5.253 ft/day

y0 = 0.4658 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-04I)

Initial Displacement: 0.4568 ft

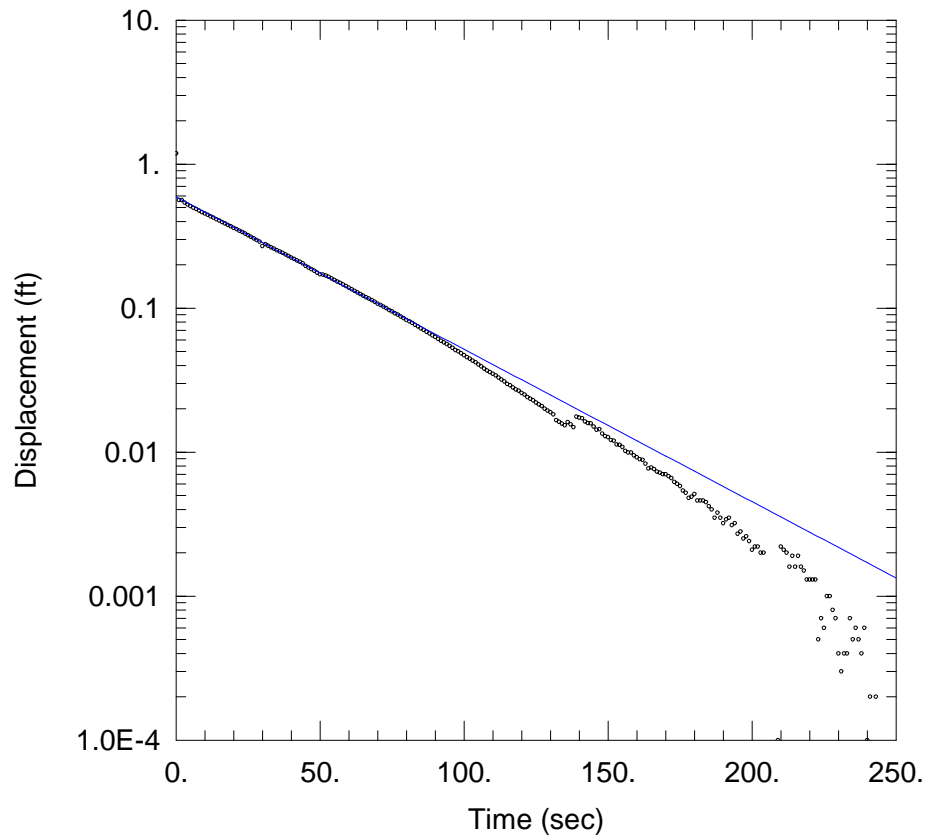
Total Well Penetration Depth: 9.39 ft

Casing Radius: 0.083 ft

Static Water Column Height: 9.39 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-04I SLUG OUT

Data Set: \...\UFMW_04I_slugout_1.aqt

Date: 10/25/17

Time: 10:49:21

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-04I

Test Date: 10/5/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 4.352$ ft/day

$y_0 = 0.5918$ ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-04I)

Initial Displacement: 1.189 ft

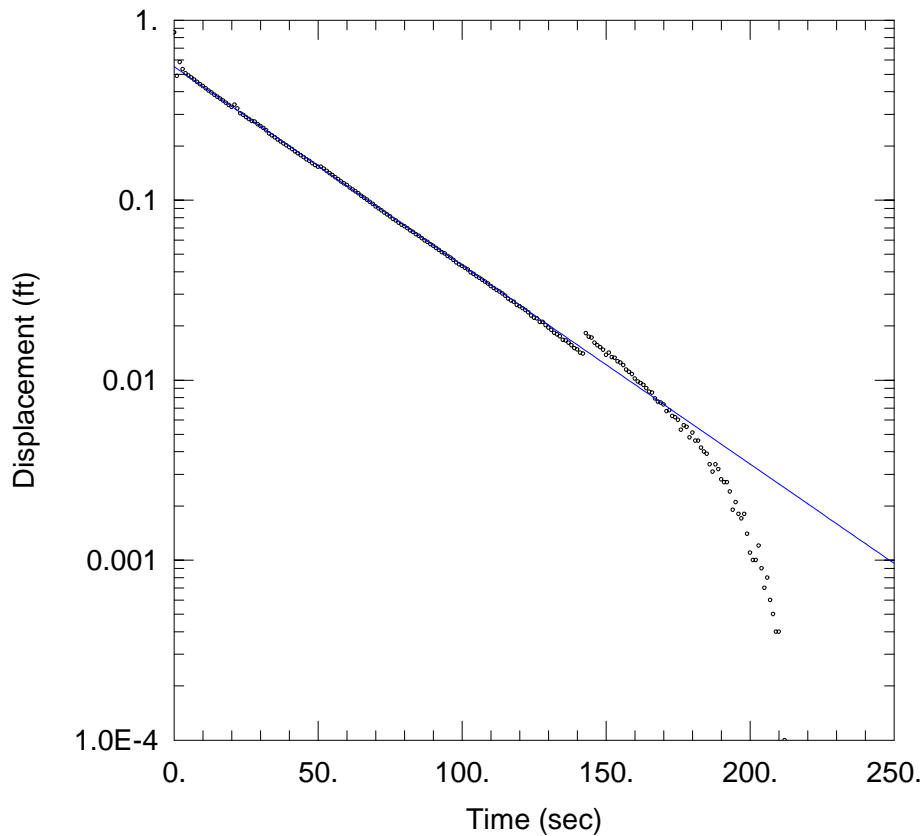
Total Well Penetration Depth: 9.39 ft

Casing Radius: 0.083 ft

Static Water Column Height: 9.39 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-05D SLUG IN

Data Set: \...\UFMW_05D_slugin_1.aqt

Date: 10/25/17

Time: 10:49:34

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-05D

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 5.24 ft/day

y0 = 0.5516 ft

AQUIFER DATA

Saturated Thickness: 7.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-05D)

Initial Displacement: 0.8559 ft

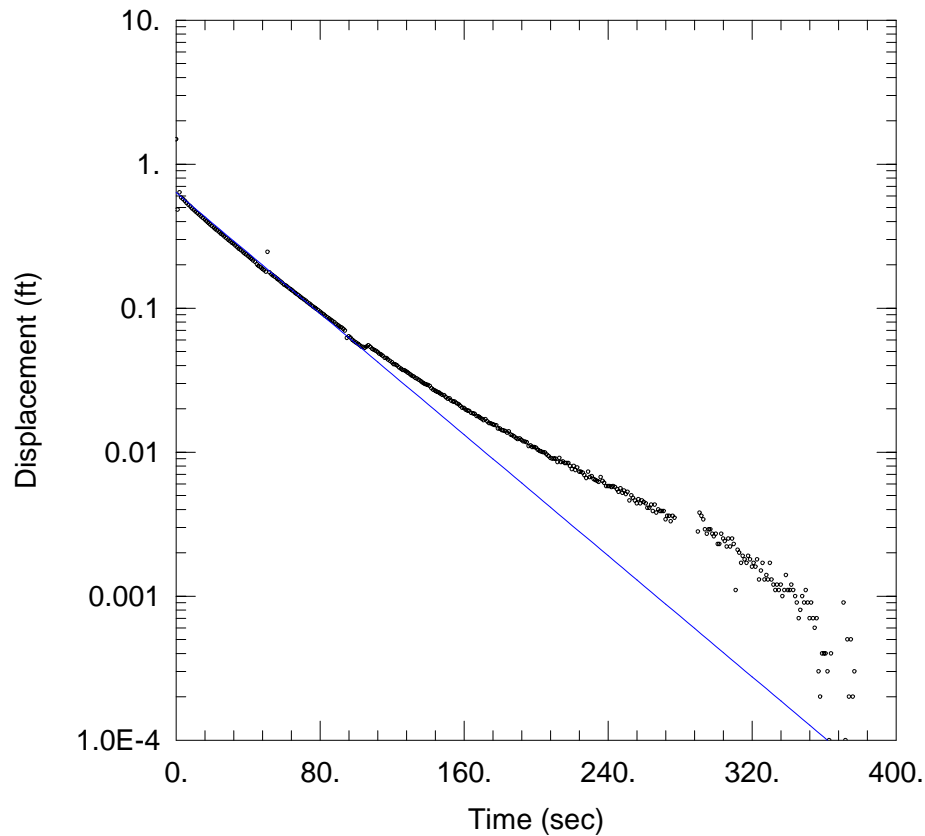
Total Well Penetration Depth: 21.07 ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.07 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-05D SLUG OUT

Data Set: \...\UFMW_05D_slugout_1.aqt

Date: 10/25/17

Time: 10:49:44

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-05D

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 4.988 ft/day

y0 = 0.635 ft

AQUIFER DATA

Saturated Thickness: 7.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-05D)

Initial Displacement: 1.484 ft

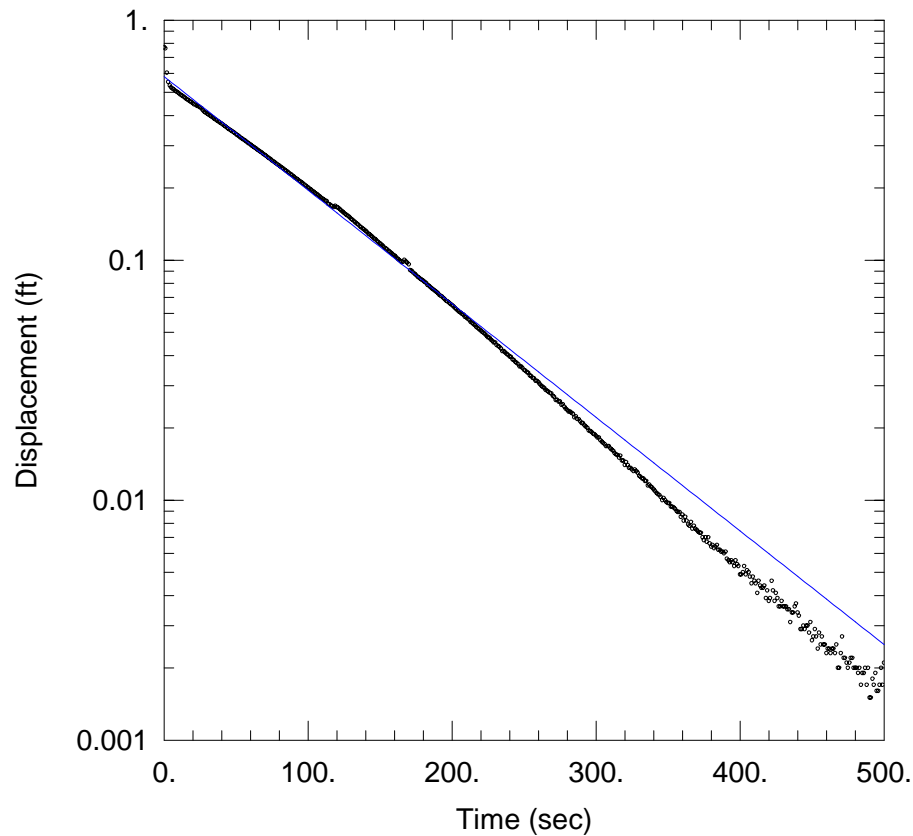
Total Well Penetration Depth: 21.07 ft

Casing Radius: 0.083 ft

Static Water Column Height: 21.07 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-05I SLUG IN

Data Set: \...\UFMW_05I_slugin_1.aqt

Date: 10/25/17

Time: 10:49:57

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-05I

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.006 ft/day

y0 = 0.5817 ft

AQUIFER DATA

Saturated Thickness: 7.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-05I)

Initial Displacement: 0.7705 ft

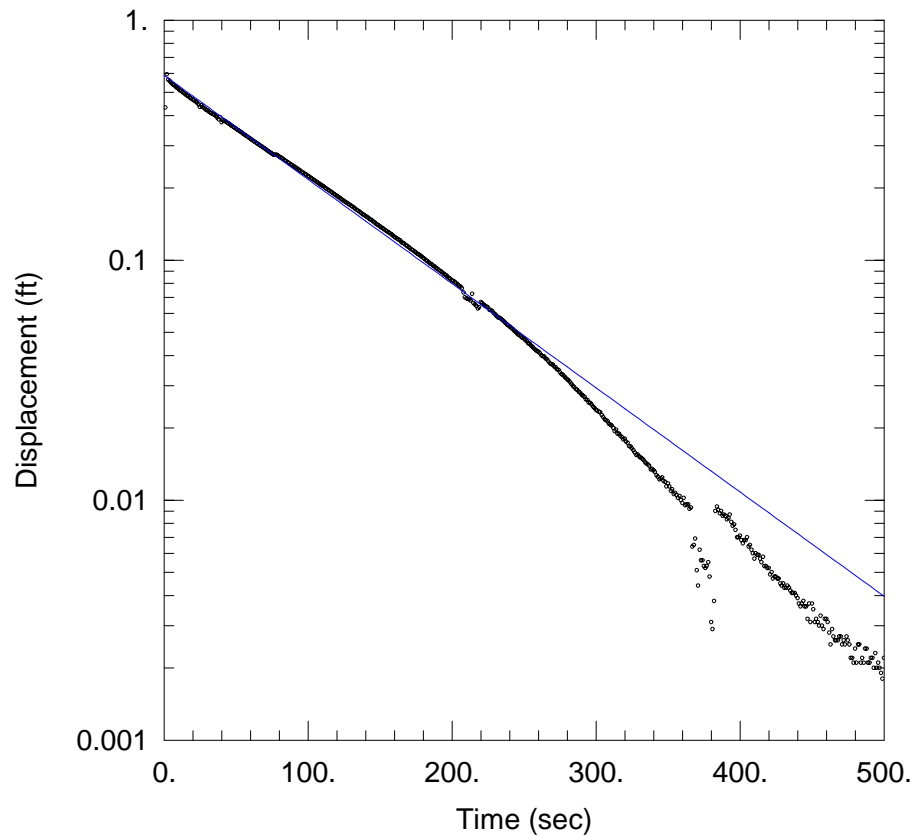
Total Well Penetration Depth: 10.97 ft

Casing Radius: 0.083 ft

Static Water Column Height: 10.97 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-05I SLUG OUT

Data Set: \...\UFMW_05I_slugout_1.aqt

Date: 10/25/17

Time: 10:50:09

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-05I

Test Date: 10/6/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.84 ft/day

y0 = 0.5894 ft

AQUIFER DATA

Saturated Thickness: 7.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-05I)

Initial Displacement: 1.102 ft

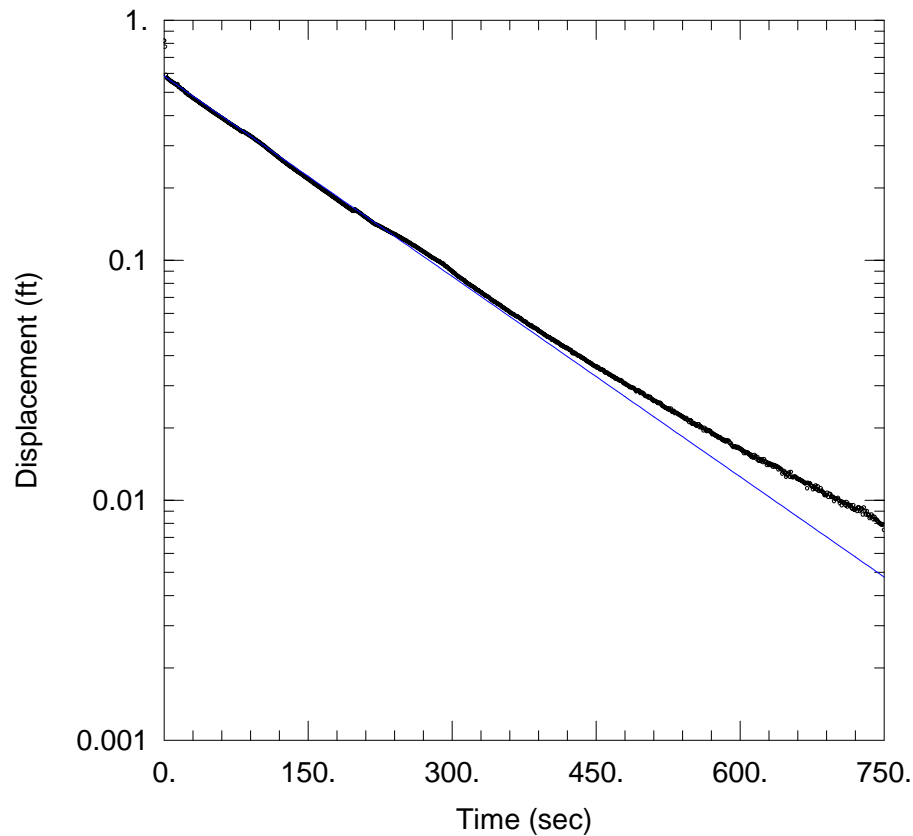
Total Well Penetration Depth: 10.97 ft

Casing Radius: 0.083 ft

Static Water Column Height: 10.97 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-06D SLUG IN

Data Set: \...\UFMW_06D_slugin_1.aqt

Date: 10/25/17

Time: 10:50:21

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-06D

Test Date: 10/5/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.9189 ft/day

y0 = 0.5849 ft

AQUIFER DATA

Saturated Thickness: 4. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-06D)

Initial Displacement: 0.8207 ft

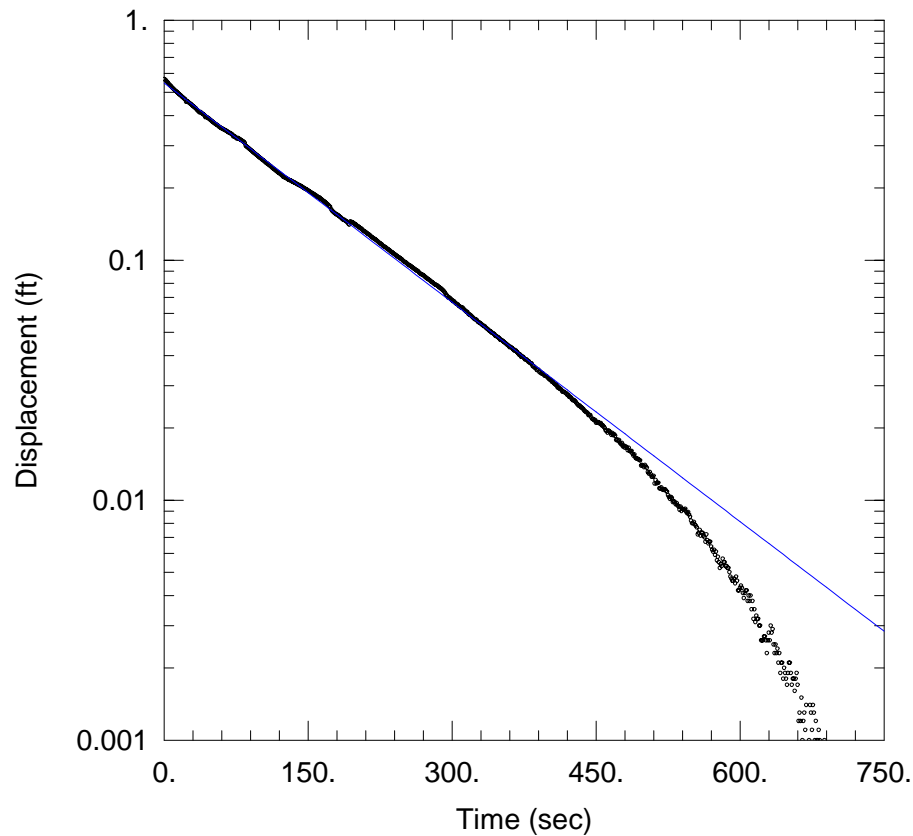
Total Well Penetration Depth: 23.15 ft

Casing Radius: 0.083 ft

Static Water Column Height: 23.15 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-06D SLUG OUT

Data Set: \...\UFMW_06D_slugout_1.aqt

Date: 10/25/17

Time: 10:50:31

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-06D

Test Date: 10/5/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.006$ ft/day

$y_0 = 0.5474$ ft

AQUIFER DATA

Saturated Thickness: 4. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFMW-06D)

Initial Displacement: 0.5672 ft

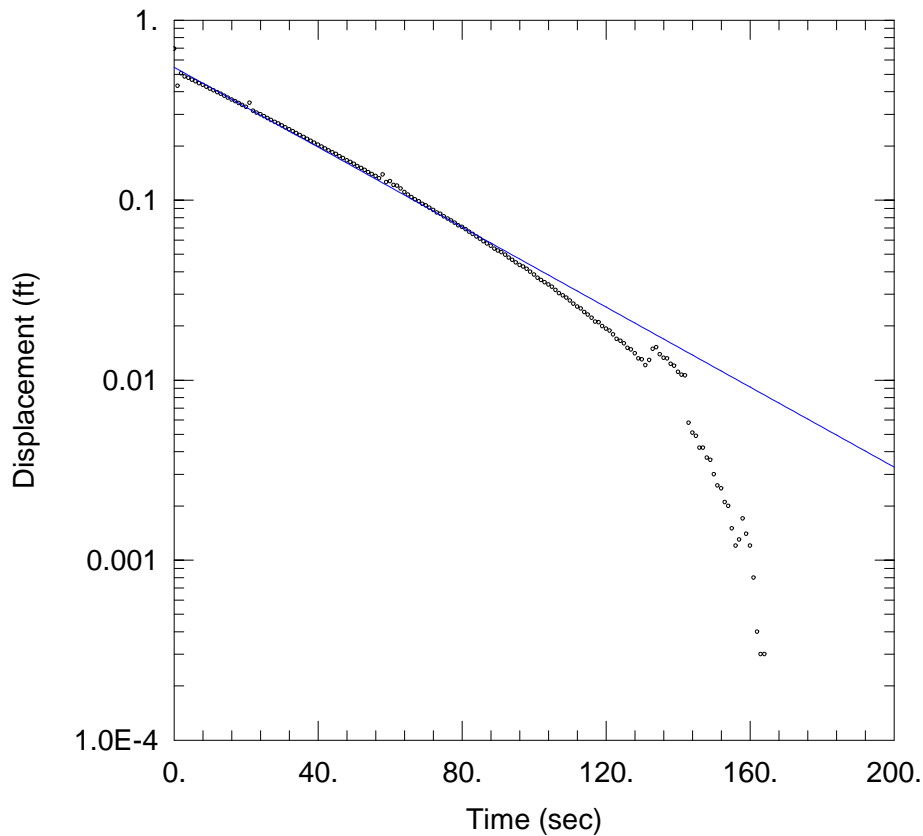
Total Well Penetration Depth: 23.15 ft

Casing Radius: 0.083 ft

Static Water Column Height: 23.15 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-06I SLUG IN

Data Set: \...\UFMW_06I_slugin_1.aqt

Date: 10/25/17

Time: 10:50:45

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-06I

Test Date: 10/5/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 5.062 ft/day

y0 = 0.5478 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-06I)

Initial Displacement: 0.6944 ft

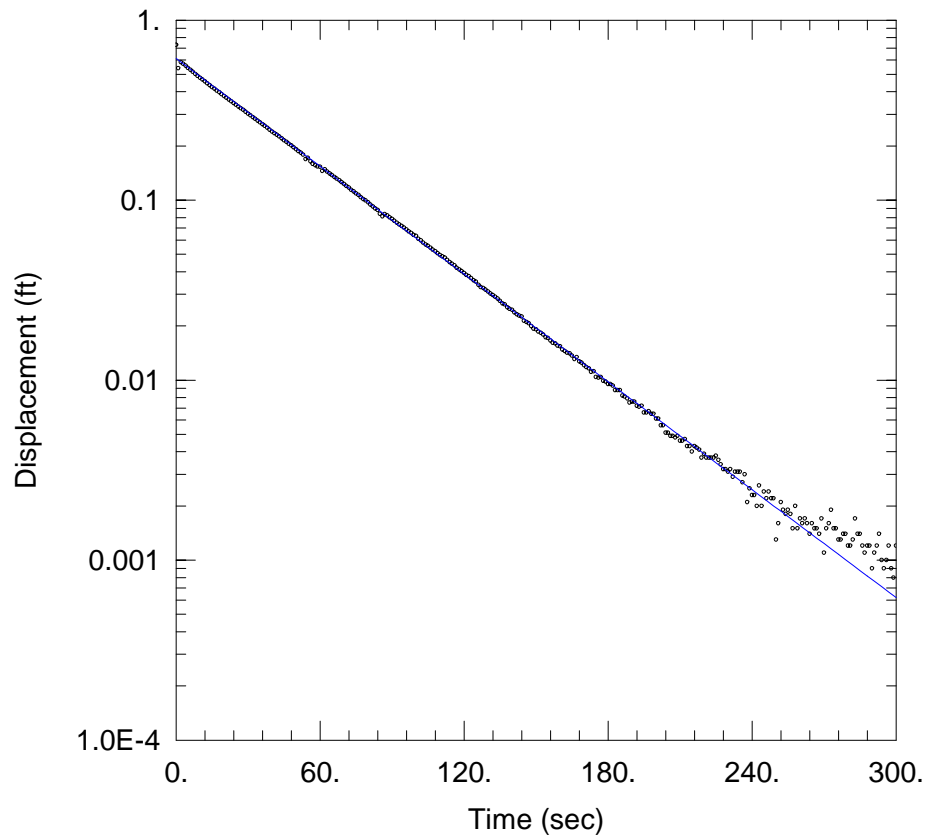
Total Well Penetration Depth: 16.43 ft

Casing Radius: 0.083 ft

Static Water Column Height: 16.43 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



UFMW-06I SLUG OUT

Data Set: \...\UFMW_06I_slugout_1.aqt

Date: 10/25/17

Time: 10:50:54

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-06I

Test Date: 10/5/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 4.549 ft/day

y0 = 0.6124 ft

AQUIFER DATA

Saturated Thickness: 6. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFMW-06I)

Initial Displacement: 0.7275 ft

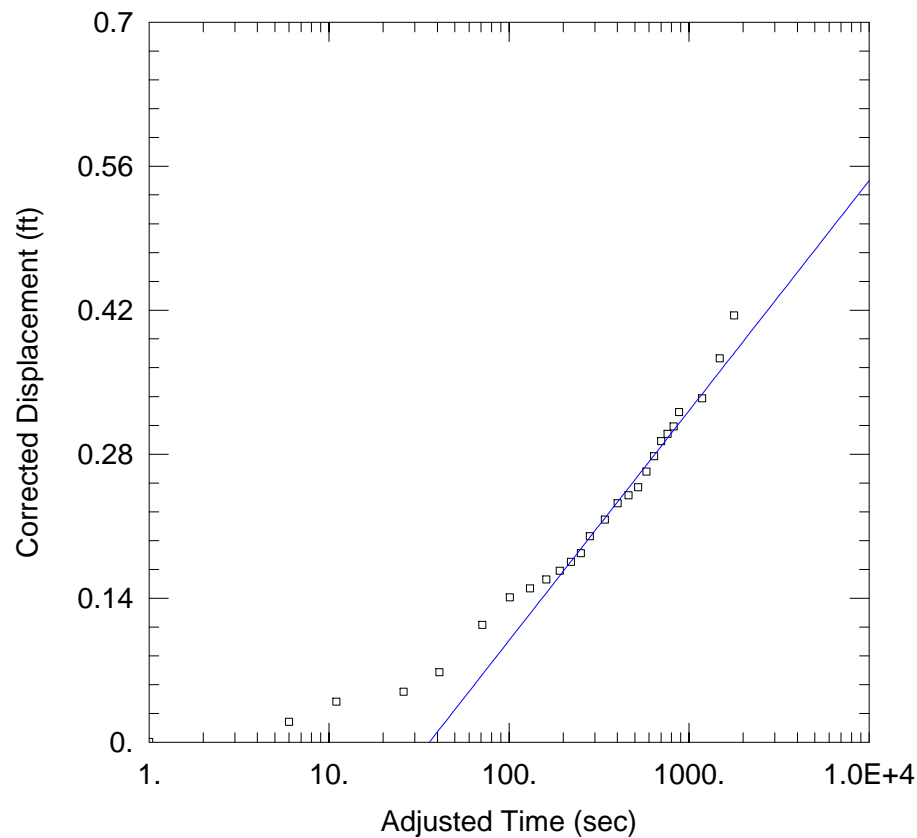
Total Well Penetration Depth: 16.43 ft

Casing Radius: 0.083 ft

Static Water Column Height: 16.43 ft

Screen Length: 5. ft

Well Radius: 0.5 ft



PUMPING TEST FOR UFMW-05S (0.5 L/MIN)

Data Set: \...\UFMW-05S 0.5.aqt

Date: 10/26/17

Time: 08:41:46

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-05S

Test Date: 10/10/2017

SOLUTION

Aquifer Model: Unconfined

Solution Method: Cooper-Jacob

T = 20.52 ft²/day

S = 0.3081

AQUIFER DATA

Saturated Thickness: 1.22 ft

Anisotropy Ratio (Kz/Kr): 0.1

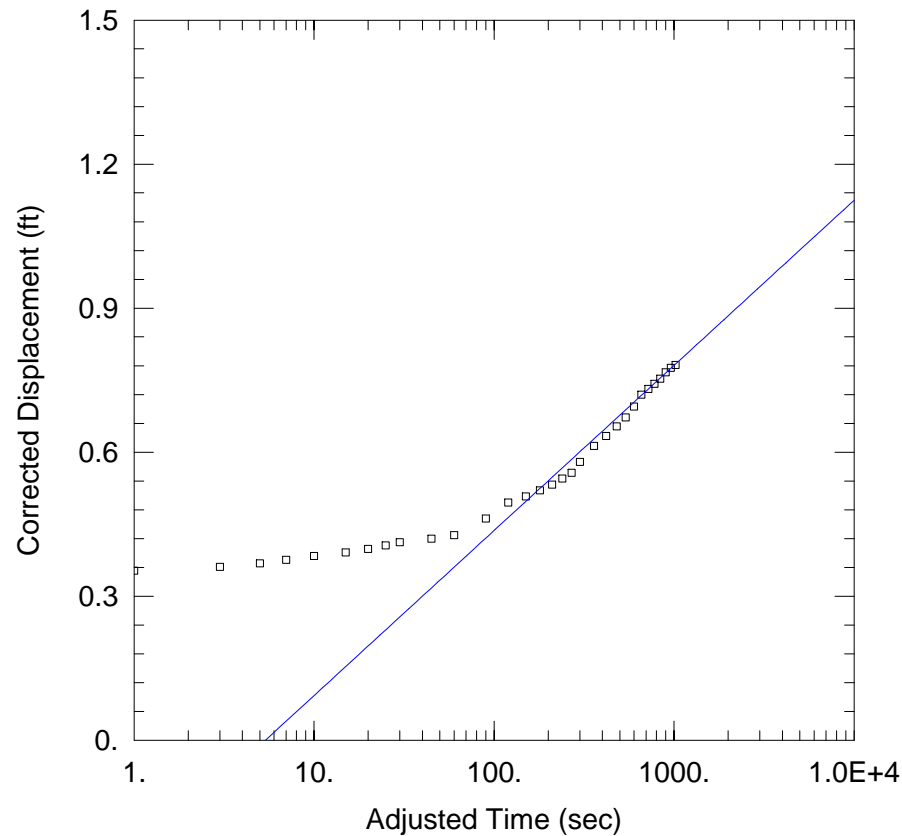
WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
UFMW-05S	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ UFMW-05S	0	0



PUMPING TEST FOR UFMW-06S

Data Set: \...\UFMW-06S.aqt

Date: 10/26/17

Time: 08:47:25

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFMW-06S

Test Date: 10/10/2017

SOLUTION

Aquifer Model: Unconfined

Solution Method: Cooper-Jacob

$T = 26.67 \text{ ft}^2/\text{day}$

$S = 0.01489$

AQUIFER DATA

Saturated Thickness: 1.71 ft

Anisotropy Ratio (K_z/K_r): 0.1

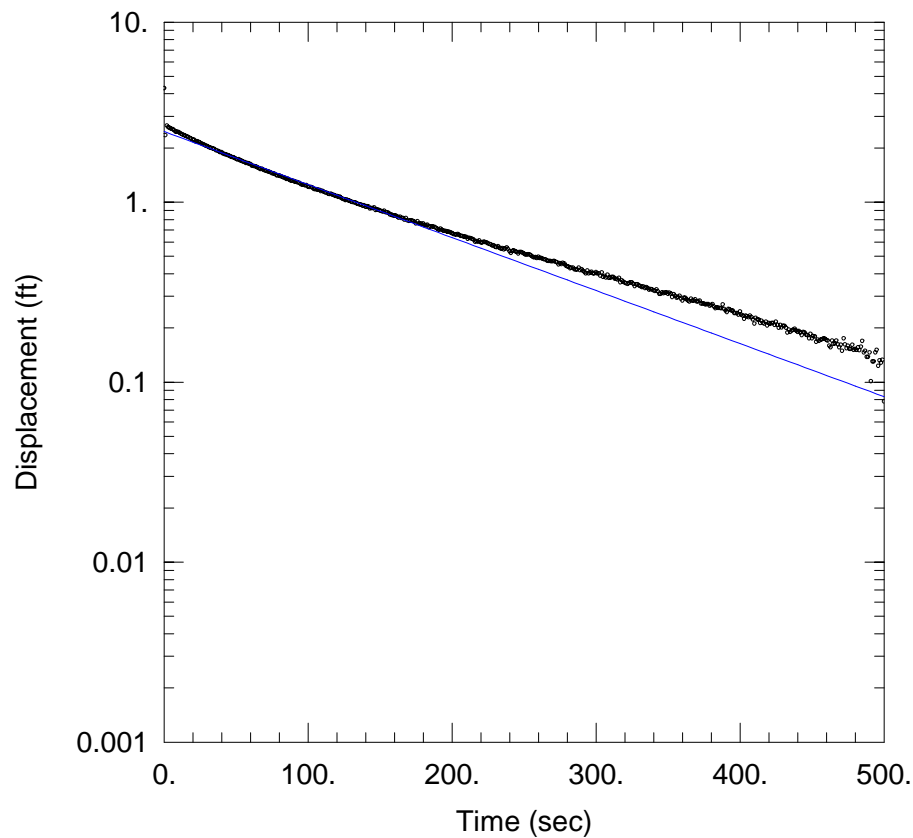
WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
UFMW-06S	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ UFMW-06S	0	0



UFIW-01I SLUG IN 1

Data Set: \...\UFIW_01I_slugin_1.aqt

Date: 11/02/17

Time: 14:01:46

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-01I

Test Date: 11/02/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.432 ft/day

y0 = 2.466 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-01I)

Initial Displacement: 4.291 ft

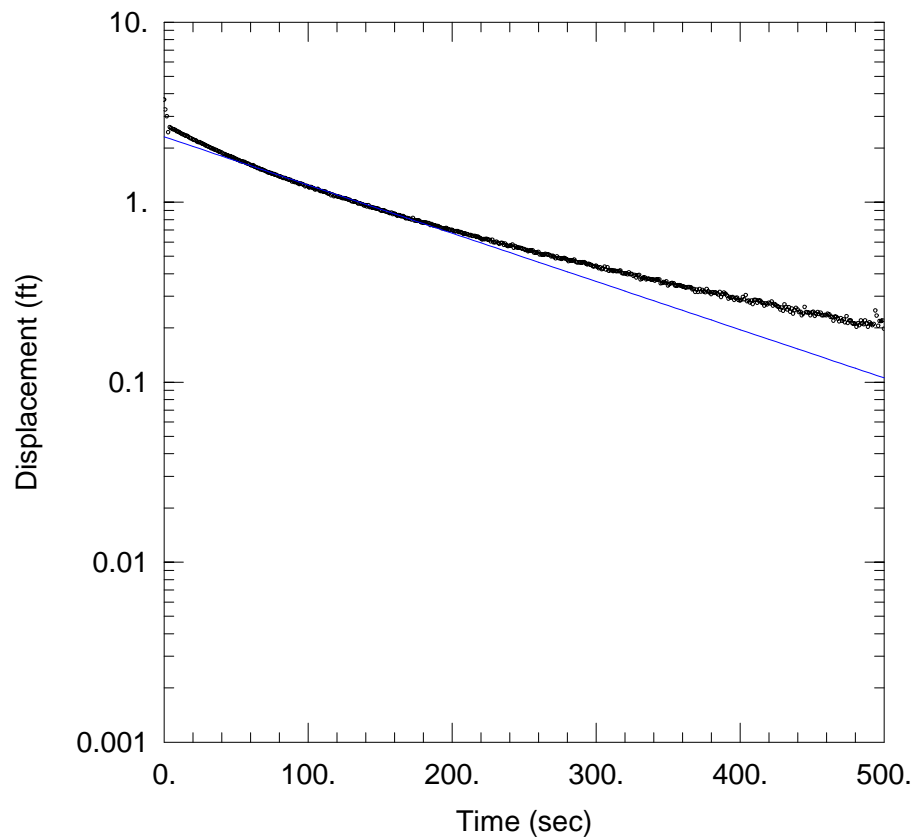
Total Well Penetration Depth: 8.92 ft

Casing Radius: 0.083 ft

Static Water Column Height: 8.92 ft

Screen Length: 5. ft

Well Radius: 0.25 ft



UFIW-01I SLUG IN 2

Data Set: \...\UFIW_01I_slugin_2.aqt

Date: 11/02/17

Time: 14:02:00

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-01I

Test Date: 11/02/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.303 ft/day

y0 = 2.307 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-01I)

Initial Displacement: 3.708 ft

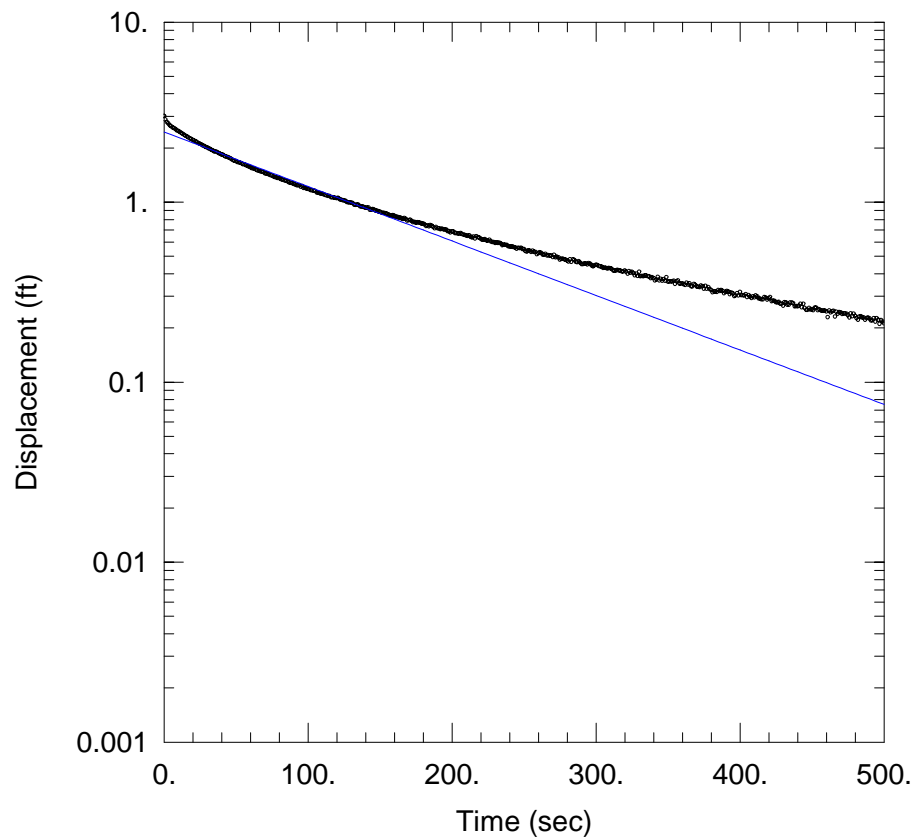
Total Well Penetration Depth: 8.92 ft

Casing Radius: 0.083 ft

Static Water Column Height: 8.92 ft

Screen Length: 5. ft

Well Radius: 0.25 ft



UFIW-01I SLUG OUT 1

Data Set: \...\UFIW_01I_slugout_1.aqt

Date: 11/02/17

Time: 14:02:18

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-01I

Test Date: 11/02/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 1.472 ft/day

y0 = 2.452 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-01I)

Initial Displacement: 3.012 ft

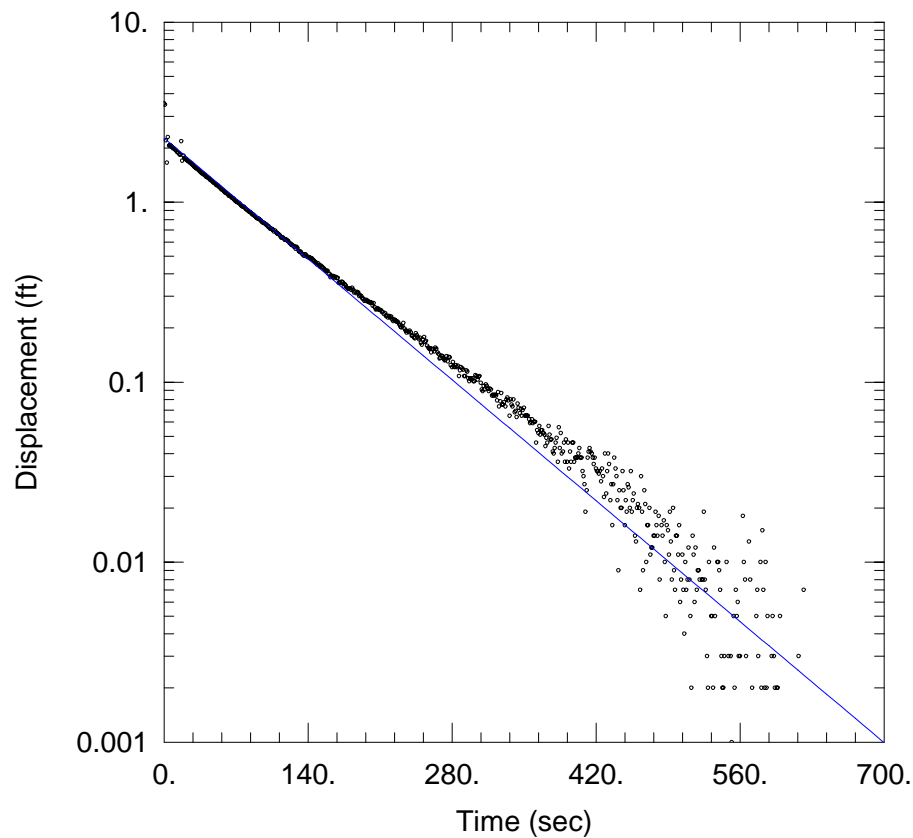
Total Well Penetration Depth: 8.92 ft

Casing Radius: 0.083 ft

Static Water Column Height: 8.92 ft

Screen Length: 5. ft

Well Radius: 0.25 ft



UFIW-04I SLUG IN 1

Data Set: \...\UFIW_04I_slugin_1.aqt

Date: 11/02/17

Time: 14:04:00

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-04I

Test Date: 11/2/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.215 ft/day

y0 = 2.269 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-04I)

Initial Displacement: 3.525 ft

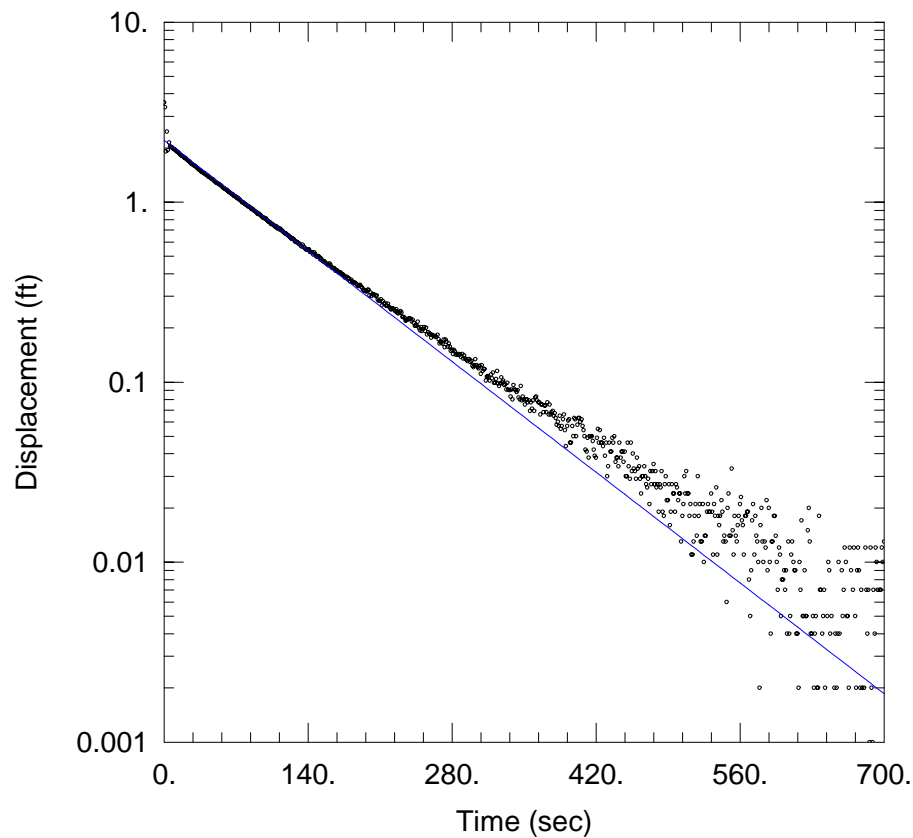
Total Well Penetration Depth: 9.61 ft

Casing Radius: 0.083 ft

Static Water Column Height: 9.61 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-04I SLUG IN 2

Data Set: \...\UFIW_04I_slugin_2.aqt

Date: 11/02/17

Time: 14:04:13

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-04I

Test Date: 11/2/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 2.028 ft/day

y0 = 2.207 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-04I)

Initial Displacement: 3.569 ft

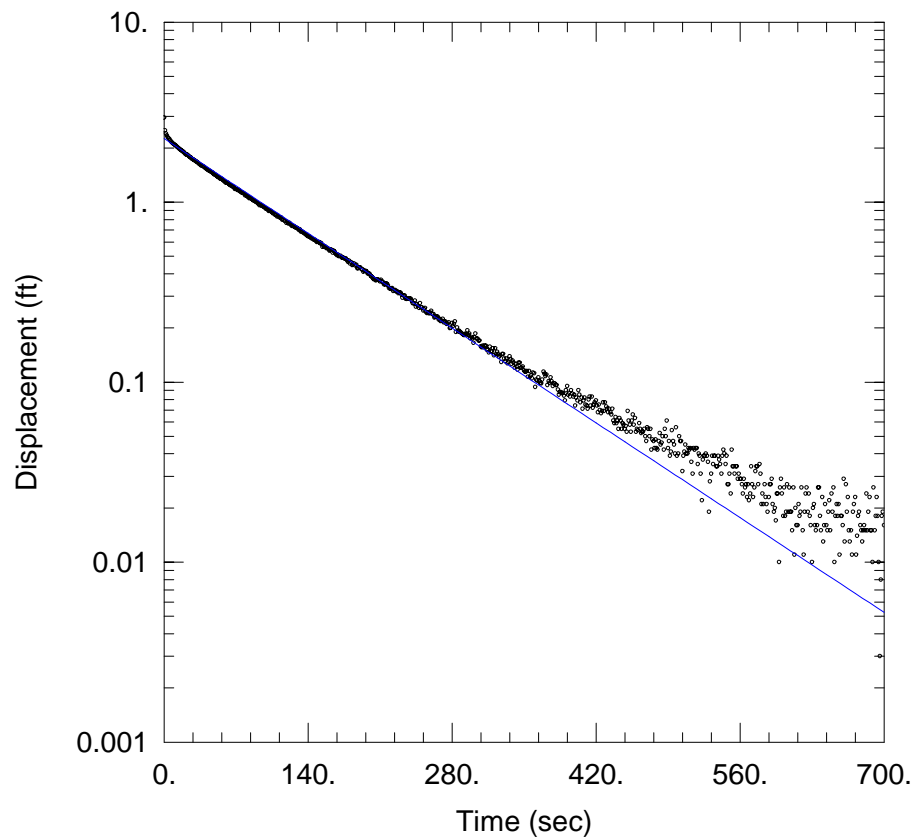
Total Well Penetration Depth: 9.61 ft

Casing Radius: 0.083 ft

Static Water Column Height: 9.61 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-04I SLUG OUT 1

Data Set: \...\UFIW_04I_slugout_1.aqt

Date: 11/02/17

Time: 14:04:27

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-04I

Test Date: 11/2/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

$K = 1.736$ ft/day

$y_0 = 2.255$ ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA (UFIW-04I)

Initial Displacement: 2.95 ft

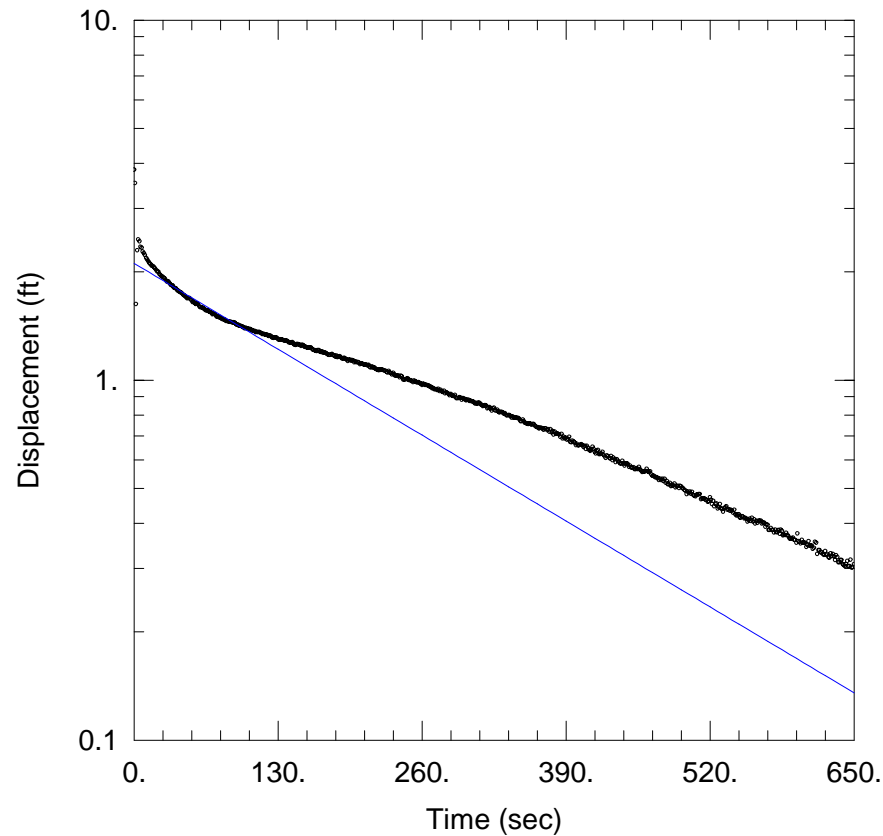
Total Well Penetration Depth: 9.61 ft

Casing Radius: 0.083 ft

Static Water Column Height: 9.61 ft

Screen Length: 5. ft

Well Radius: 0.33 ft



UFIW-05I SLUG IN 1

Data Set: \...\UFIW_05I_slugin_1.aqt

Date: 11/02/17

Time: 15:07:01

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-05I

Test Date: 11/2/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.8686 ft/day

y0 = 2.11 ft

AQUIFER DATA

Saturated Thickness: 6.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-05I)

Initial Displacement: 3.839 ft

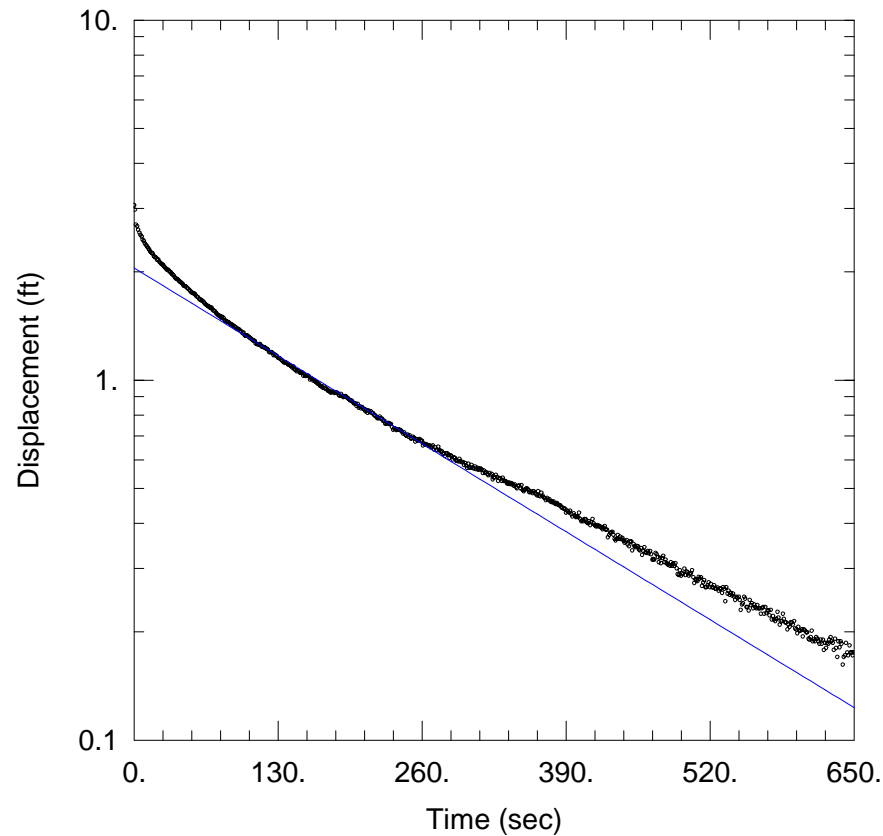
Total Well Penetration Depth: 11.04 ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.04 ft

Screen Length: 5 ft

Well Radius: 0.33 ft



UFIW-05I SLUG OUT 1

Data Set: \...\UFIW_05I_slugout_1.aqt

Date: 11/02/17

Time: 14:15:25

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-05I

Test Date: 11/2/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.8891 ft/day

y0 = 2.048 ft

AQUIFER DATA

Saturated Thickness: 6.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-05I)

Initial Displacement: 3.059 ft

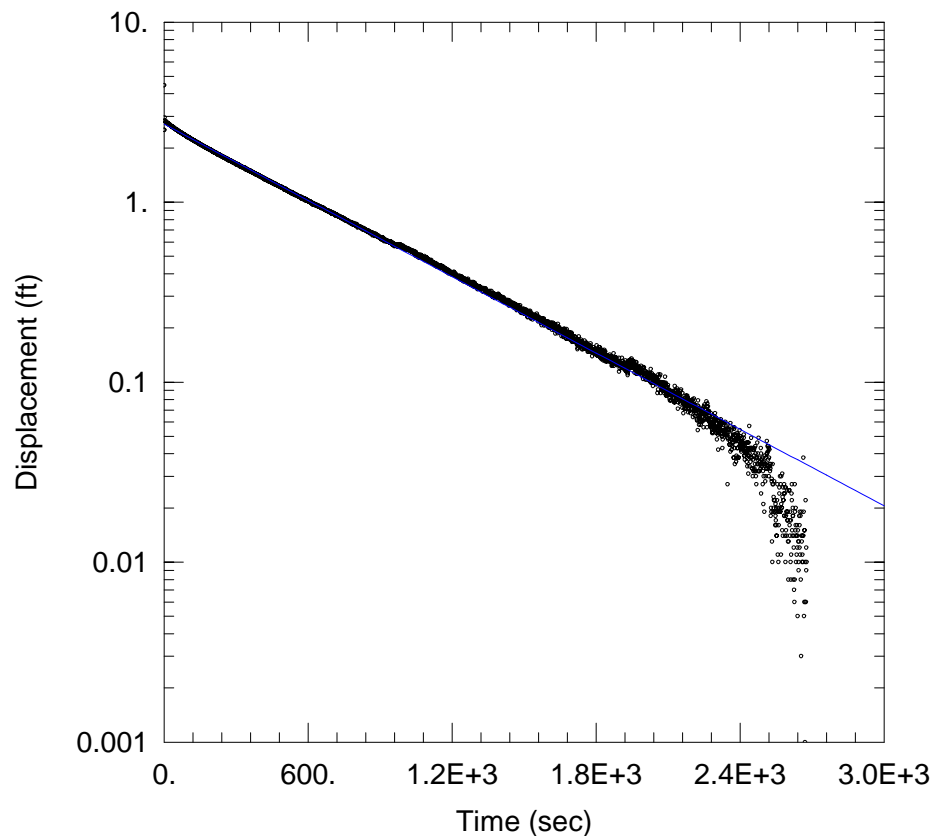
Total Well Penetration Depth: 11.04 ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.04 ft

Screen Length: 5 ft

Well Radius: 0.33 ft



UFIW-08I SLUG IN 1

Data Set: \...\UFIW_08I_slugin_1.aqt

Date: 11/02/17

Time: 14:21:52

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-08I

Test Date: 11/2/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.3604 ft/day

y0 = 2.714 ft

AQUIFER DATA

Saturated Thickness: 7. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-08I)

Initial Displacement: 4.457 ft

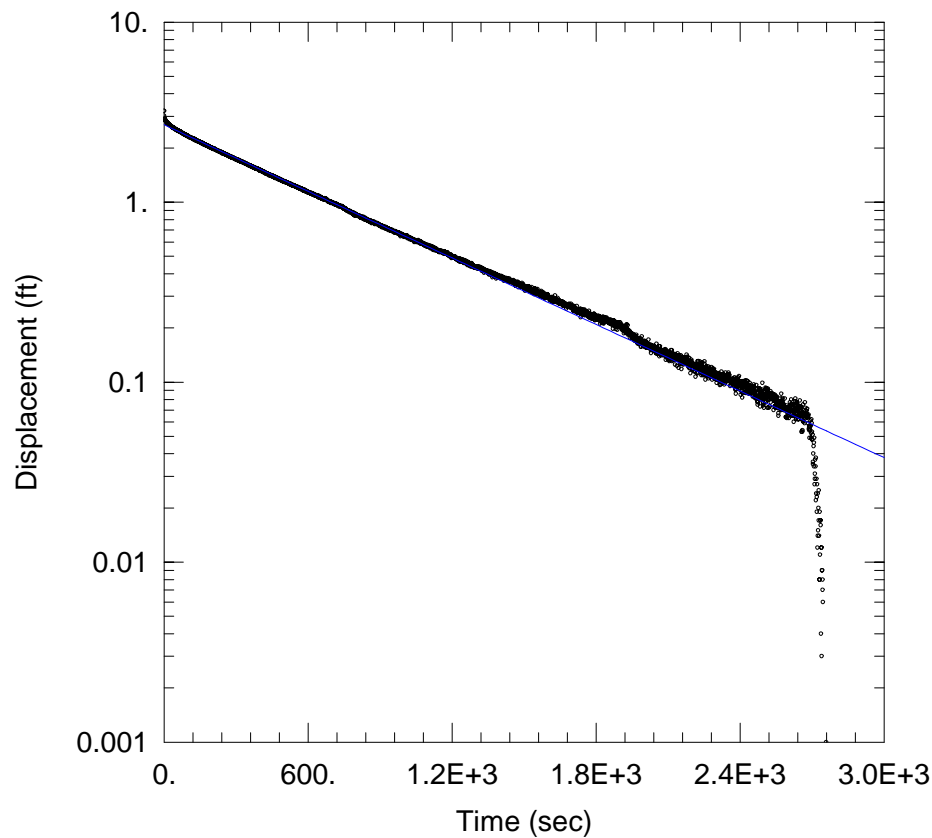
Total Well Penetration Depth: 11.82 ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.82 ft

Screen Length: 5. ft

Well Radius: 0.25 ft



UFIW-08I SLUG OUT 1

Data Set: \...\UFIW_08I_slugout_1.aqt

Date: 11/02/17

Time: 14:21:27

PROJECT INFORMATION

Company: Tetra Tech

Client: NERT

Location: Henderson, NV

Test Well: UFIW-08I

Test Date: 11/2/2017

SOLUTION

Aquifer Model: Confined

Solution Method: Bouwer-Rice

K = 0.3143 ft/day

y0 = 2.688 ft

AQUIFER DATA

Saturated Thickness: 7 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (UFIW-08I)

Initial Displacement: 3.209 ft

Total Well Penetration Depth: 11.82 ft

Casing Radius: 0.083 ft

Static Water Column Height: 11.82 ft

Screen Length: 5 ft

Well Radius: 0.25 ft

Appendix F

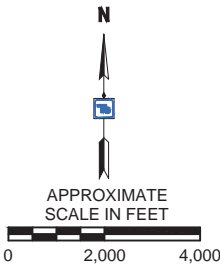
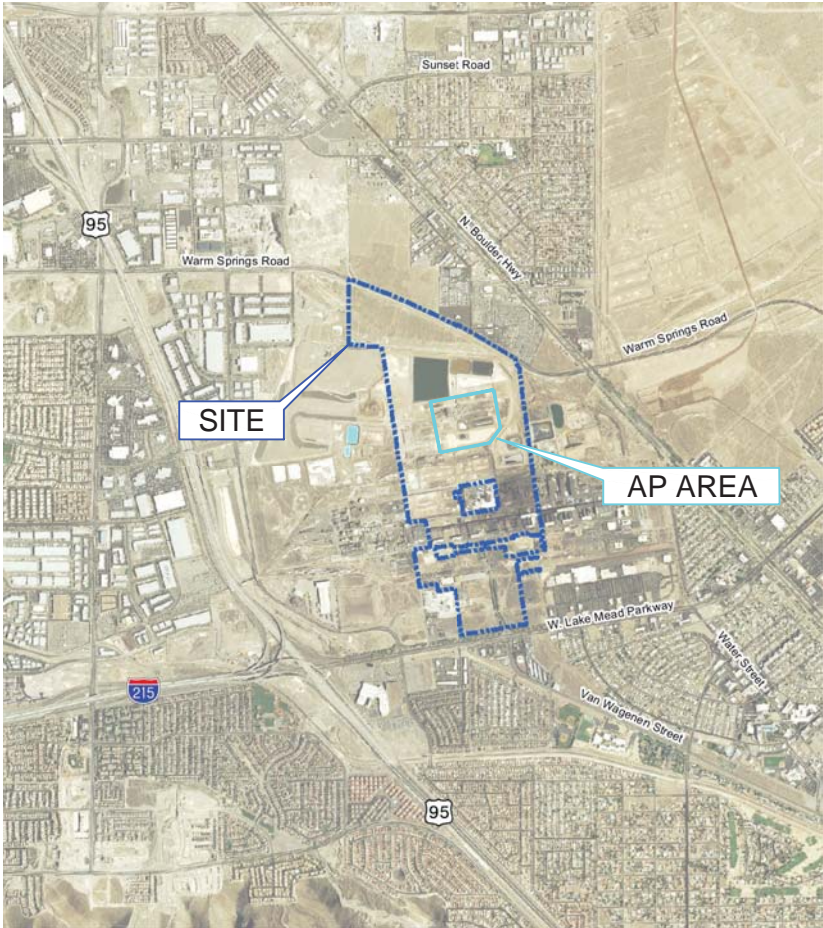
Plot 1 and Plot 2 As-Built Design Package

AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY
NEVADA ENVIRONMENTAL RESPONSE TRUST SITE
HENDERSON, NEVADA
PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS

PREPARED FOR: NEVADA ENVIRONMENTAL RESPONSE TRUST
TASK: M13

DRAWING INDEX / LIST OF DRAWINGS

SITE VICINITY MAP

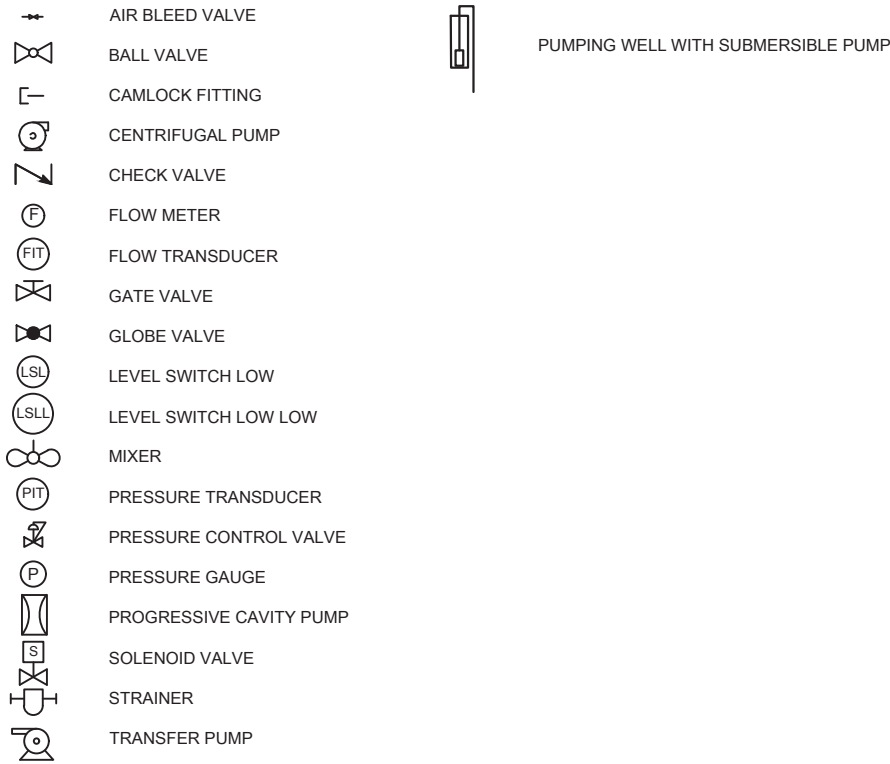


- TITLE SHEET
- LEGENDS AND SYMBOLOGY
- AP AREA
- PLOT 1 AND PLOT 2 BORING / WELL LAYOUT
- DOWN FLUSHING LAYOUT
- INJECTION / EXTRACTION SYSTEM LAYOUT
- DOWN FLUSHING PROCESS FLOW DIAGRAM
- UP FLUSHING PROCESS FLOW DIAGRAM
- EXTRACTION WELL PROCESS FLOW DIAGRAM
- INJECTION WELL CONSTRUCTION DIAGRAM
- EXTRACTION WELL AND MONITORING WELL CONSTRUCTION DIAGRAM
- TRENCH DETAILS
- EXTRACTION WELLHEAD AND PLOT 1 MANIFOLD DETAILS
- INJECTION WELLHEAD DETAILS
- I-AR CONNECTION DETAILS
- AREAS OF DEMOLITION
- ELECTRICAL POWER LAYOUT
- ELECTRICAL RACK
- ELECTRICAL ONE LINE DIAGRAM
- WELL CONTROL BOX WIRING DIAGRAM
- AUTO DIALER (NEMA UP)
- LEAK DETECTION WIRING DIAGRAM

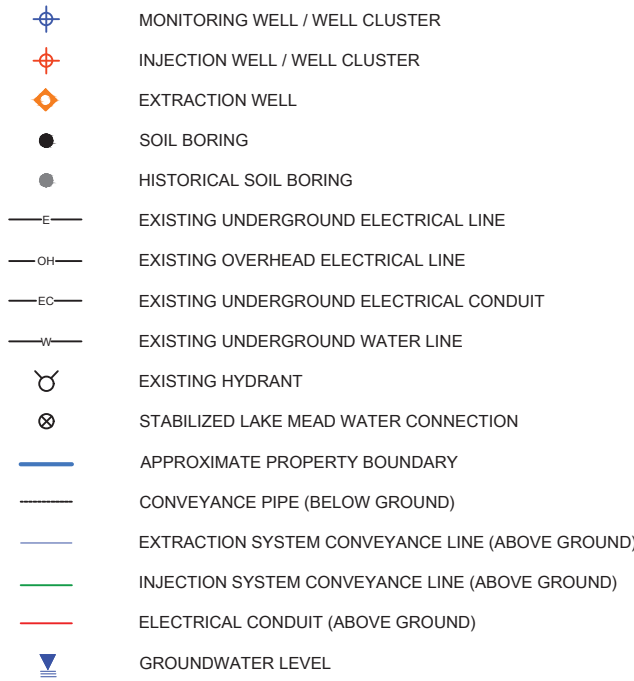
- SHEET 1 OF 22
- SHEET 2 OF 22
- SHEET 3 OF 22
- SHEET 4 OF 22
- SHEET 5 OF 22
- SHEET 6 OF 22
- SHEET 7 OF 22
- SHEET 8 OF 22
- SHEET 9 OF 22
- SHEET 10 OF 22
- SHEET 11 OF 22
- SHEET 12 OF 22
- SHEET 13 OF 22
- SHEET 14 OF 22
- SHEET 15 OF 22
- SHEET 16 OF 22
- SHEET 17 OF 22
- SHEET 18 OF 22
- SHEET 19 OF 22
- SHEET 20 OF 22
- SHEET 21 OF 22
- SHEET 22 OF 22

Designed By:		<div></div> <div>TETRA TECH, INC. 150 SOUTH 4TH STREET, UNIT A HENDERSON, NEVADA 89015 Phone (702) 854-2293</div>	7			
<div>TITLE SHEET</div> <div>AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA</div>			6	REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL
			5	REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017	CL
			4	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL
			3	REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	8-10-2016	CL
			2	CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	7-8-2016	CL
			1	CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL
NO.	DESCRIPTION			DATE	BY	
Designed For:		NEVADA ENVIRONMENTAL RESPONSE TRUST	REVISIONS (OR CHANGE NOTICES)			
TASK NO: M13						
DESIGNED BY: CL						
DRAWN BY: DVK						
CHECKED BY: CL						
DATE: APR. 24, 2018						
SHEET:						
1 OF 22						

PROCESS & INSTRUMENTATION SYMBOLS



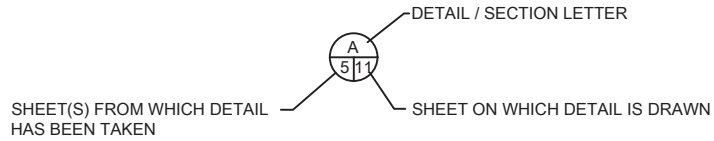
PIPING LAYOUT SYMBOLS



ABBREVIATIONS

ABS	ACRYLONITRILE BUTADIENE STYRENE
AMSL	ABOVE MEAN SEA LEVEL
AP	AMMONIUM PERCHLORATE
BGS	BELOW GROUND SURFACE
CPS	CALCIUM POLYSULFIDE
CU.FT.	CUBIC FEET
D	DEEP WELL
DIA.	DIAMETER
FI	TOTALIZING FLOW METER
FNPT	FEMALE NATIONAL PIPE THREAD
FT	FEET
FVNR	FULL VOLTAGE NON REVERSING
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GWTP	GROUNDWATER TREATMENT PLANT
HDPE	HIGH DENSITY POLYETHYLENE
H-O-A	HAND-OFF-AUTO
HP	HORSE POWER
I	INTERMEDIATE WELL
IN	INCH
ID	INSIDE DIAMETER
IWF	INTERCEPTOR WELL FIELD
kVA	KILOVOLT-AMPS
LCP	LEVEL CONTROL PANEL
LSH	LEVEL SWITCH HI
LSHH	LEVEL SWITCH HI-HI
LSL	LEVEL SWITCH LOW
MIL	MILLIMETER
MNPT	MALE NATIONAL PIPE THREAD
NTS	NOT TO SCALE
O.C.	ON CENTER
PC	PRESSURE CONTROL VALVE
PP	POLYPROPYLENE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
S	SHALLOW WELL
SCH	SCHEDULE
SLMW	STABILIZED LAKE MEAD WATER
SS	STAINLESS STEEL
TYP	TYPICAL
Qal	QUATERNARY ALLUVIUM
UMcf	UPPER MUDDY CREEK FORMATION

DETAIL IDENTIFICATION LAYOUT



<p>LEGENDS AND SYMBOLOGY</p> <p>AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA</p>	<p>DESIGNED BY:</p>  <p>TETRA TECH, INC. 150 SOUTH 4TH STREET, UNIT A HENDERSON, NEVADA 89015 Phone (702) 964-2201</p>	7	REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL
		6	REVISED FOR EXTRACTON SYSTEM MODIFICATIONS	1-31-2017	CL
		5	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL
		4	REVISED WELL LOCATIONS AND EXTRACTON WELL DESIGN	8-10-2016	CL
		3	CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	7-8-2016	CL
		2	CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL
		1	NO.	DATE	BY
<p>DESIGNED FOR:</p> <p>NEVADA ENVIRONMENTAL RESPONSE TRUST</p>		<p>REVISIONS (OR CHANGE NOTICES)</p>			
<p>TASK NO: M13</p> <p>DESIGNED BY: CL</p> <p>DRAWN BY: DVK</p> <p>CHECKED BY: CL</p> <p>DATE: APR. 24, 2018</p>					
<p>SHEET:</p> <p>2 OF 22</p>					

P:\07600M13-18\CAD\Design Package\As-Built\M13 SHEET 3 - AP AREA.dwg Apr 30, 2018 - 9:50am DANIEL KEADY



NOTES:
1. ALL ENCUMBRANCES, SUCH AS BLAST WALLS, WERE REMOVED PRIOR TO DRILLING AND CONSTRUCTION

<div>AP AREA</div> <div>AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA</div>		<div>Designed By:</div> <div><div><div><div></div><div>Tt</div></div></div><div><div>TETRA TECH, INC.</div><div>150 SOUTH 4TH STREET, UNIT A HENDERSON, NEVADA 89015 Phone (702) 854-2293</div></div></div>	7	REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL
			6	REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017	CL
			5	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL
			4	REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	8-10-2016	CL
			3	CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	7-8-2016	CL
		<div>Designed For:</div> <div>NEVADA ENVIRONMENTAL RESPONSE TRUST</div>	2	CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL
			1	CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL
			NO.	DESCRIPTION	DATE	BY
			REVISIONS (OR CHANGE NOTICES)			
TASK NO: M13						
DESIGNED BY: CL						
DRAWN BY: DVK						
CHECKED BY: CL						
DATE: APR. 24, 2018						
SHEET:						
3 OF 22						



Plot Coordinates				
N-NW	Plot 1	26719541.972	827308.552	1,755.74
N-NE		26719541.972	827398.720	1,757.78
N-SW		26719452.054	827308.552	1,759.25
N-SE		26719452.054	827398.720	1,759.95
S-NW	Plot 2	26719362.136	827308.551	1,759.63
S-NE		26719362.136	827398.720	1,759.91
S-SW		26719272.218	827308.551	1,761.99
S-SE		26719272.218	827398.720	1,762.84

INSET B

PLOT 2 (SOUTH) - INJECTION WELL CLUSTERS

PLOT 2 (SOUTH) - BOUNDARY

UFIW-05S UFIW-05I

UFIW-05D

UFIW-06S UFIW-06I

UFIW-06D

UFIW-07S UFIW-07I

UFIW-07D

UFIW-08S UFIW-08I

UFIW-08D

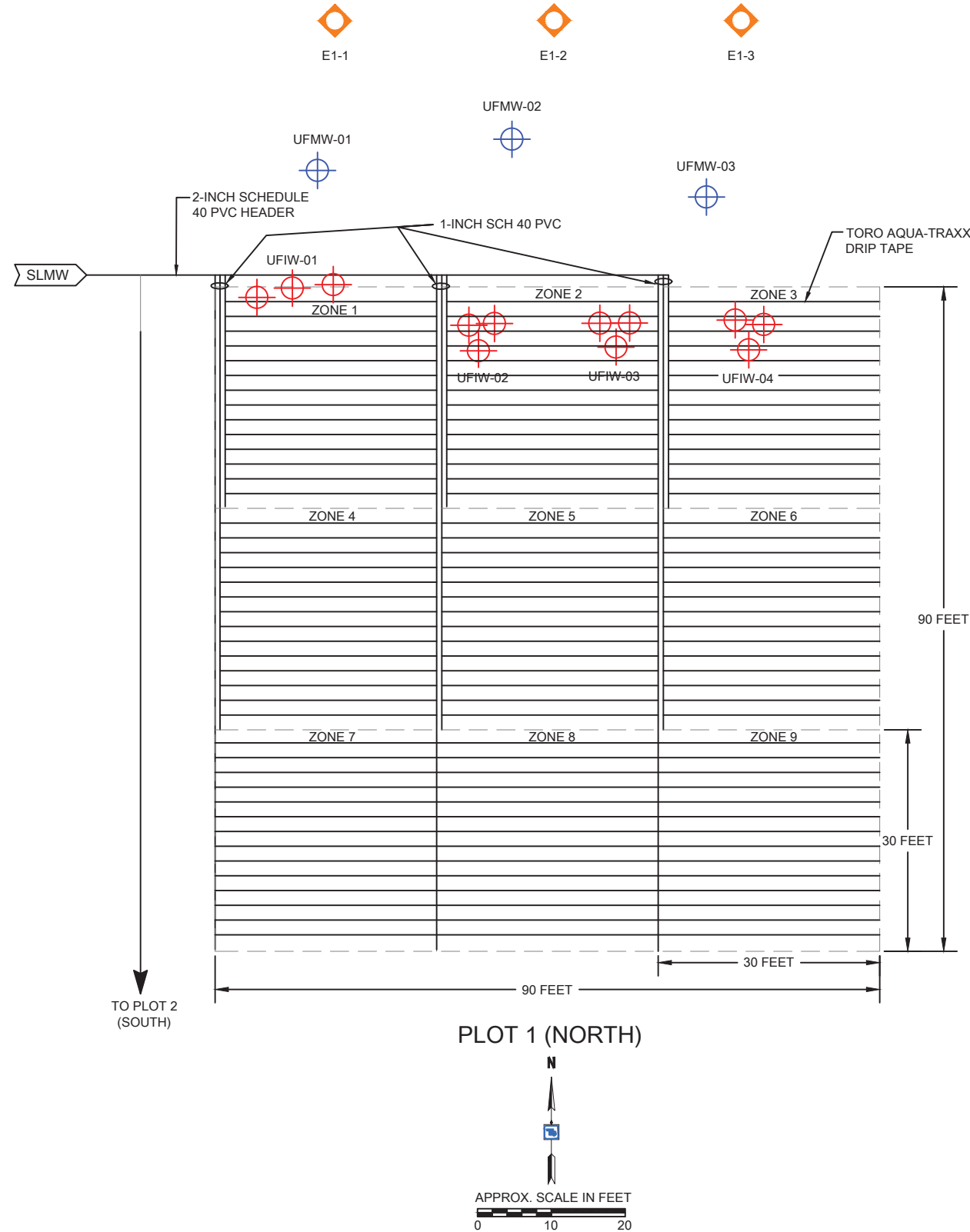
APPROXIMATE SCALE IN FEET

0 5 10

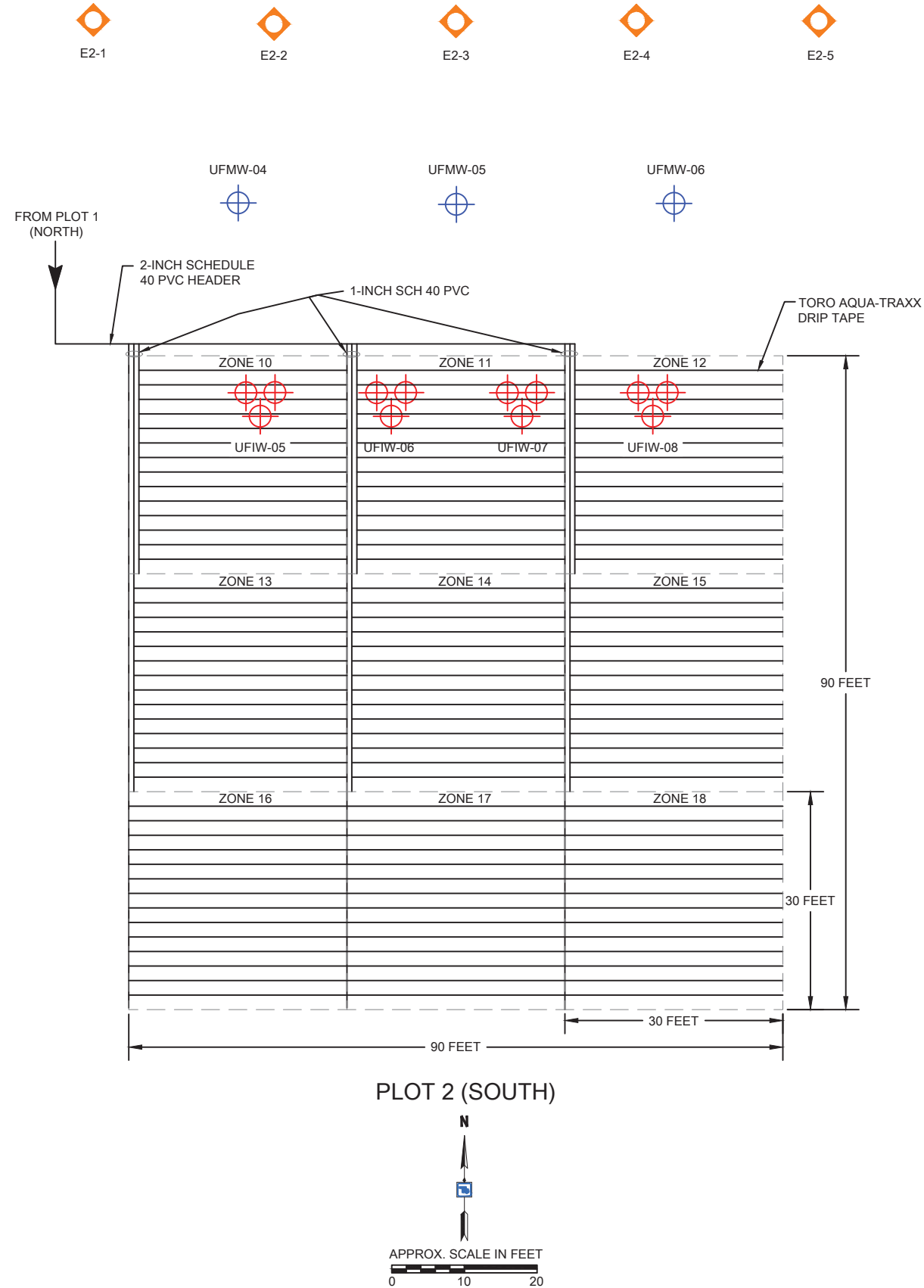
INSET B SCALE

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P:\87600\M13-18\CAD\Design Package\Initial Soil Flushing IFRM Design Package\As-Built\M13 SHEET 5 - DOWN FLUSHING LAYOUT.dwg Apr 30, 2018 - 9:54am DANIEL KEADY



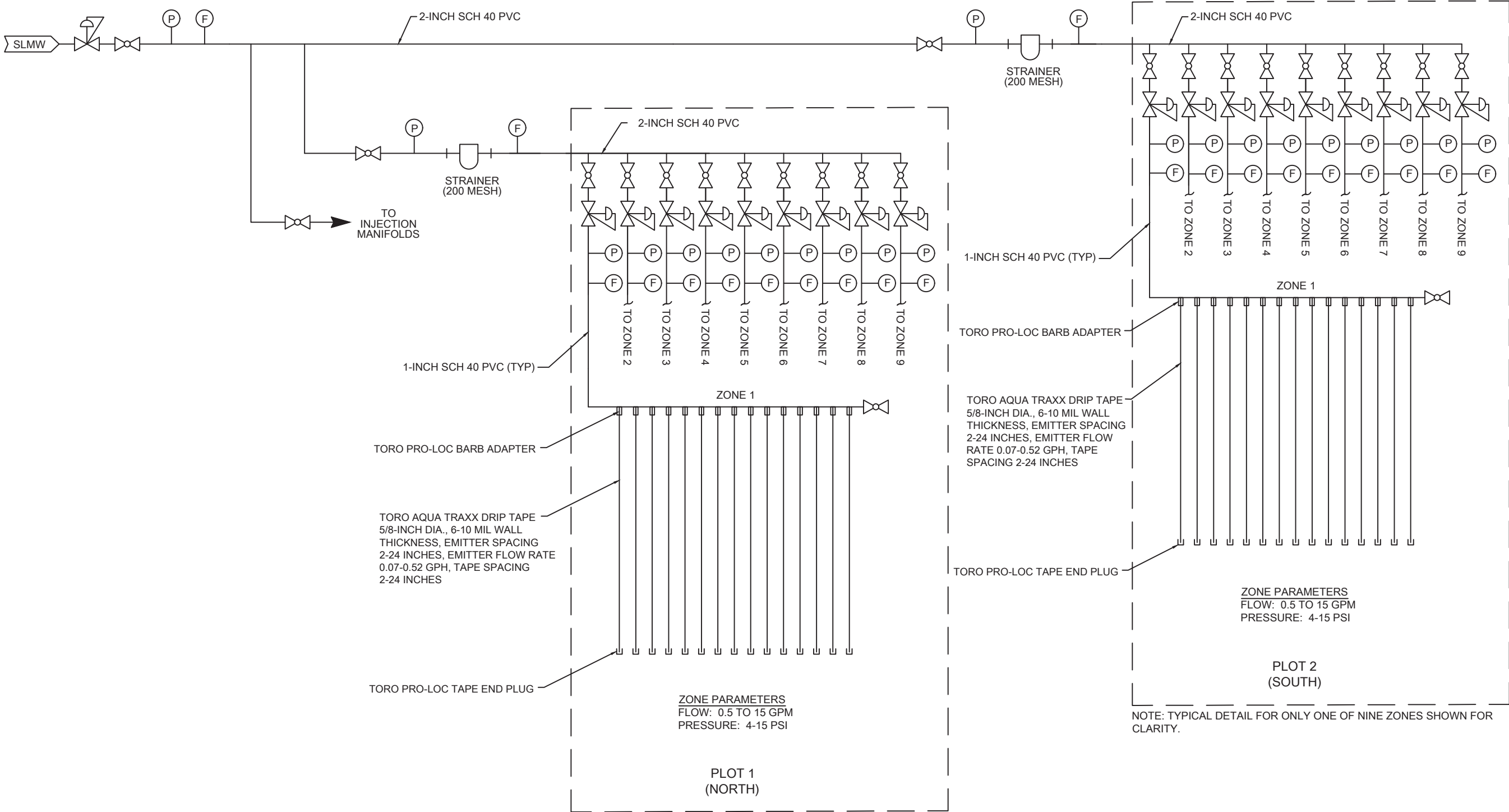
NOTES:
1. SPACING OF DRIP TAPE WAS DETERMINED BASED ON FIELD CONDITIONS AND ADJUSTED AS NEEDED TO PROVIDE ADEQUATE COVERAGE OF EACH ZONE.



NOTES:
1. SPACING OF DRIP TAPE WAS DETERMINED BASED ON FIELD CONDITIONS AND ADJUSTED AS NEEDED TO PROVIDE ADEQUATE COVERAGE OF EACH ZONE.

DOWN FLUSHING LAYOUT		AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA		TASK NO: M13						
DESIGNED BY: CL		DRAWN BY: DVK		CHECKED BY: CL						
DATE: APR. 24, 2018		SHEET: 5 OF 22								
Designed By:  TETRA TECH, INC. 150 SOUTH 4TH STREET, UNIT A HENDERSON, NEVADA 89015 Phone (702) 854-2293		Designed For: NEVADA ENVIRONMENTAL RESPONSE TRUST								
7	6	5	4	3	2	1	NO.	DESCRIPTION	DATE	BY
								REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL
								REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017	CL
								PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL
								REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	8-10-2016	CL
								CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	7-8-2016	CL
								CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL
								REVISIONS (OR CHANGE NOTICES)		

<div>INJECTION / EXTRACTION SYSTEM LAYOUT</div>	<div>AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA</div>	<div><div>Designed By:</div><div><div><div><div><div></div><div></div></div><div></div></div><div>TETRA TECH, INC.</div><div>160 SOUTH 4TH STREET, UNIT A HENDERSON, NV 89015 Phone (702) 854-2283</div></div></div><div><div>Designed For:</div><div>NEVADA ENVIRONMENTAL RESPONSE TRUST</div></div></div>	7				
			6		REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL
			5		REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017	CL
			4		PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL
			3		REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	8-10-2016	CL
			2		CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	7-8-2016	CL
			1		CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL
		NO.		DESCRIPTION	DATE	BY	
			REVISIONS (OR CHANGE NOTICES)				
TASK NO: M13							
DESIGNED BY: CL							
DRAWN BY: DVK							
CHECKED BY: CL							
DATE: APR. 24, 2018							
SHEET:		6 OF 22					

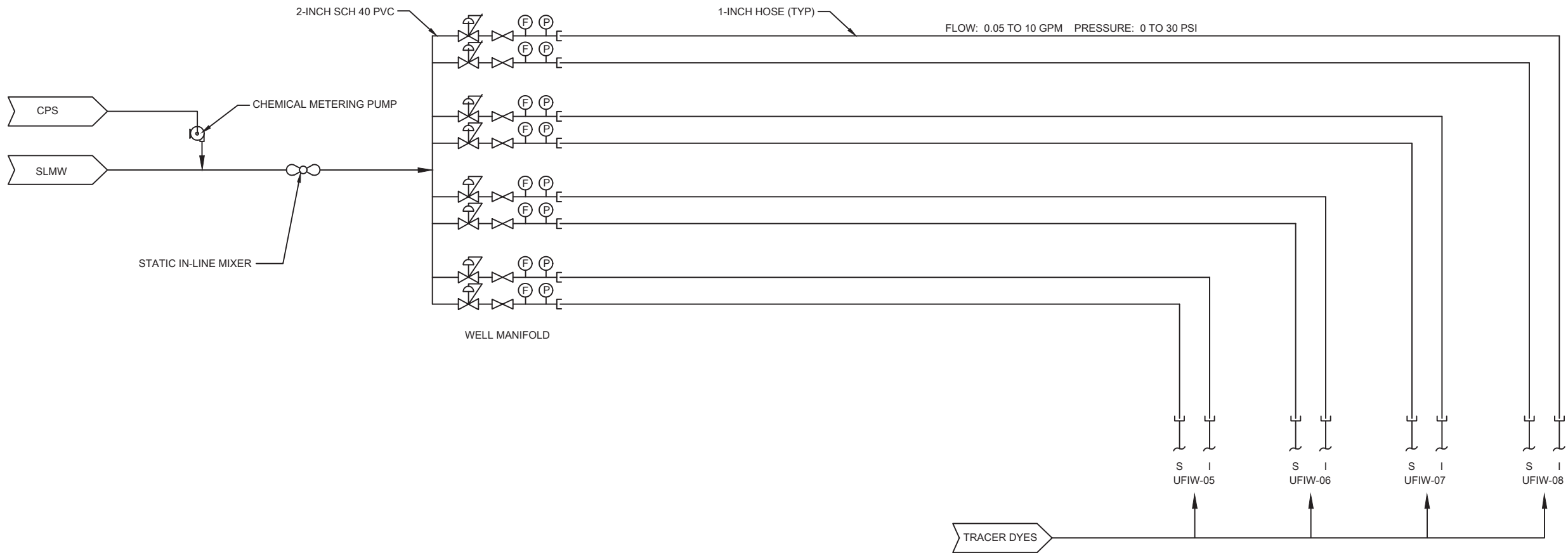
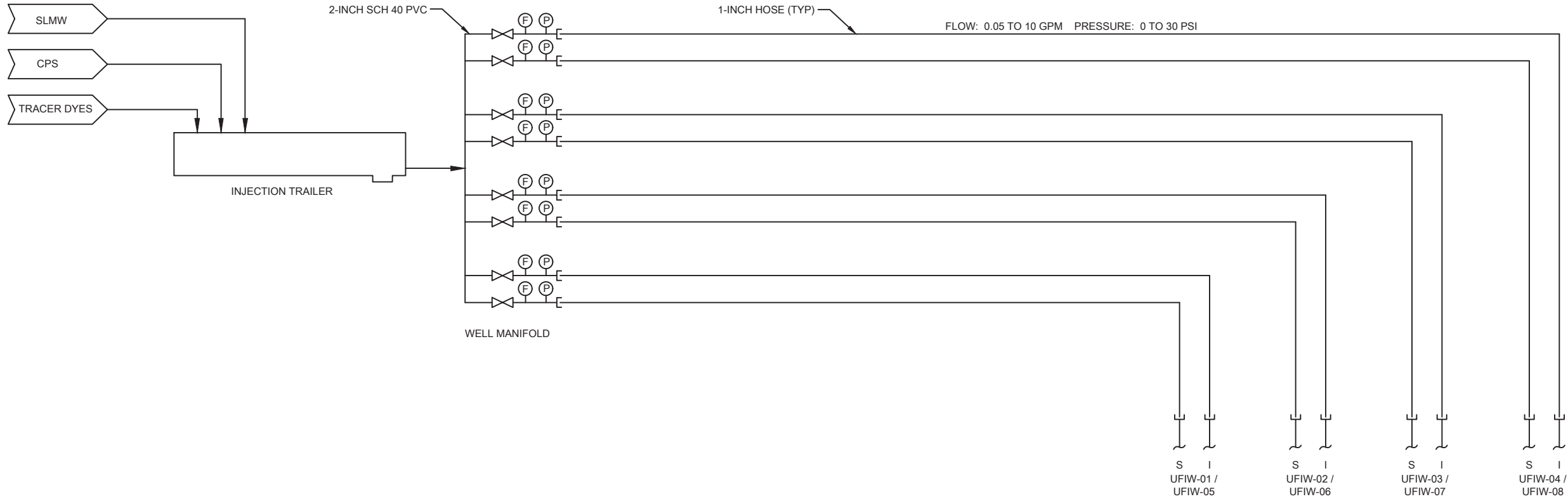


DRAWING NOT TO SCALE

<div>Designed By:</div> <div><div></div><div><div>TETRA TECH, INC.</div><div>150 SOUTH 4TH STREET, UNIT A HENDERSON, NV 89015 Phone (702) 864-2283</div></div></div>	<div>Designed For:</div> <div>NEVADA ENVIRONMENTAL RESPONSE TRUST</div>		7				
			6	REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL	
			5	REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017	CL	
			4	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL	
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			1	CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL	
			NO.	DESCRIPTION	DATE	BY	
				REVISIONS (OR CHANGE NOTICES)			

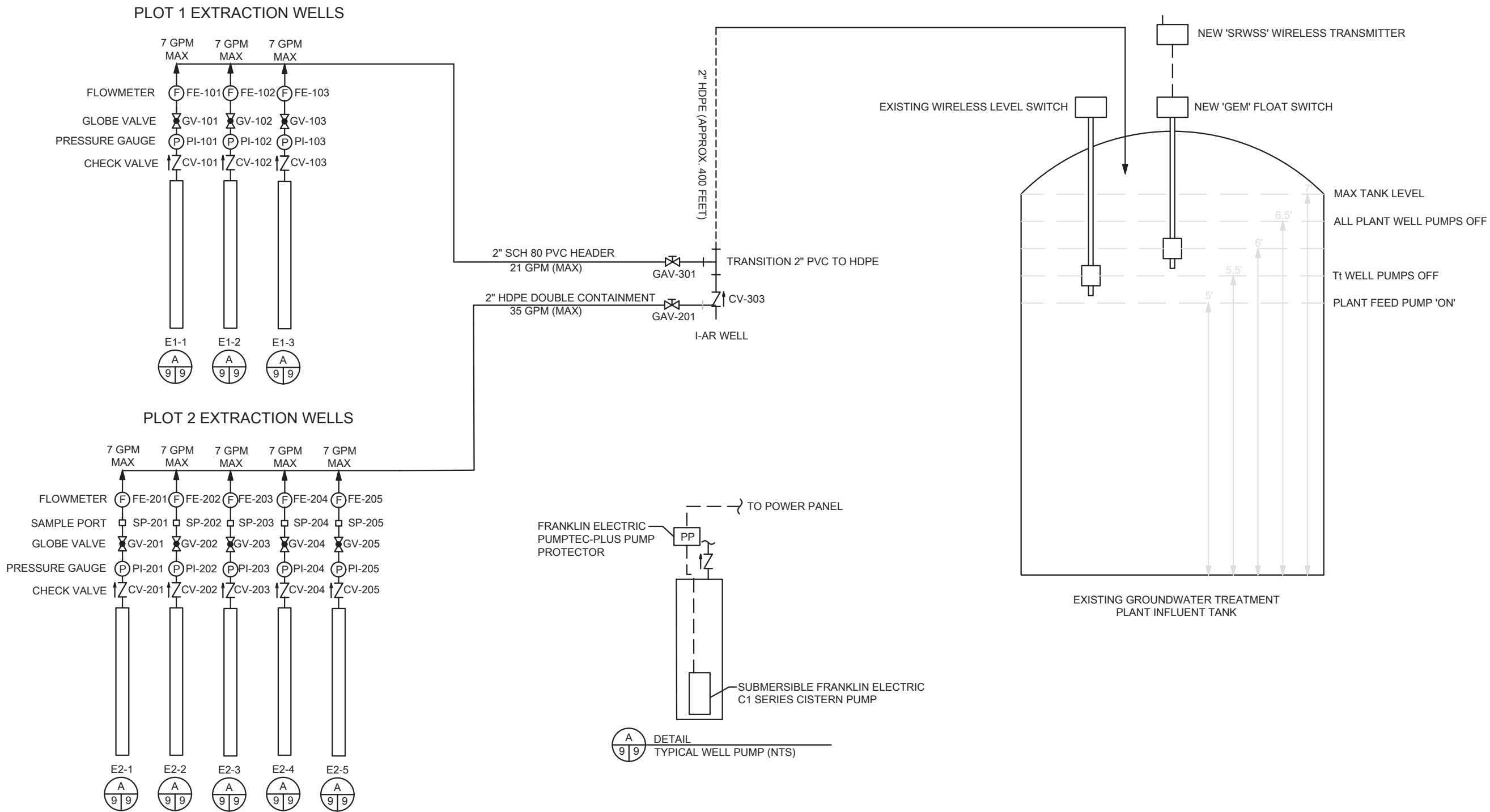
<div>DOWN FLUSHING PROCESS FLOW DIAGRAM</div>		<div>AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA</div>	
TASK NO: M13			
DESIGNED BY:		CL	
DRAWN BY:		DVK	
CHECKED BY:		CL	
DATE:		APR. 24, 2018	
SHEET:			
		7 OF 22	

P:\87600\M13-18\CAD\Design Package\Initial Soil Flushing IFRM Design Package\As-Built\M13 SHEET 8 - UP FLUSHING FLOW DIAGRAM.dwg Apr 30, 2018 - 9:56am DANIEL KEADY

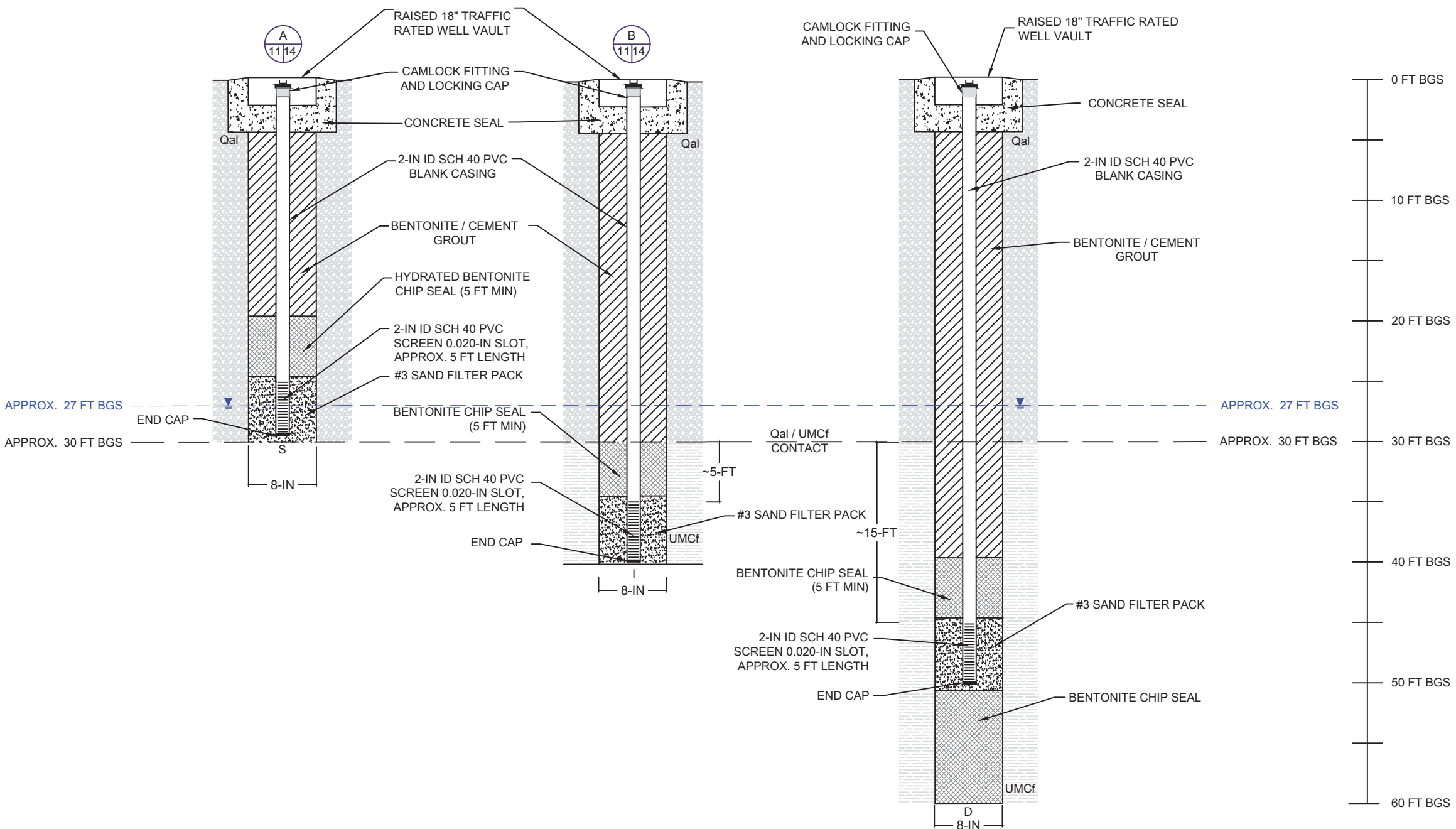


DRAWING NOT TO SCALE.

UP FLUSHING PROCESS FLOW DIAGRAM		<div>Designed By:</div> <div><div>TETRA TECH, INC. 150 SOUTH 4TH STREET, UNIT A HENDERSON, NEVADA 89015 Phone (702) 864-2293</div></div>	7				4-24-2018	CL
			6		REVISED FOR FINAL AS-BUILT DESIGN		1-31-2017	CL
AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA		<div>Designed For:</div> <div>NEVADA ENVIRONMENTAL RESPONSE TRUST</div>	5		REVISED FOR EXTRACTION SYSTEM MODIFICATIONS		11-11-2016	CL
			4		PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS		8-10-2016	CL
			3		REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN		7-8-2016	CL
		<div>Designed For:</div> <div>NEVADA ENVIRONMENTAL RESPONSE TRUST</div>	2		CONCEPTUAL DESIGN UPDATE FOR FIELD WORK		6-14-2016	CL
			1		CONCEPTUAL DESIGN SUBMITTAL		DATE	BY
			NO.		DESCRIPTION			
			REVISIONS (OR CHANGE NOTICES)					
SHEET:		8 OF 22						

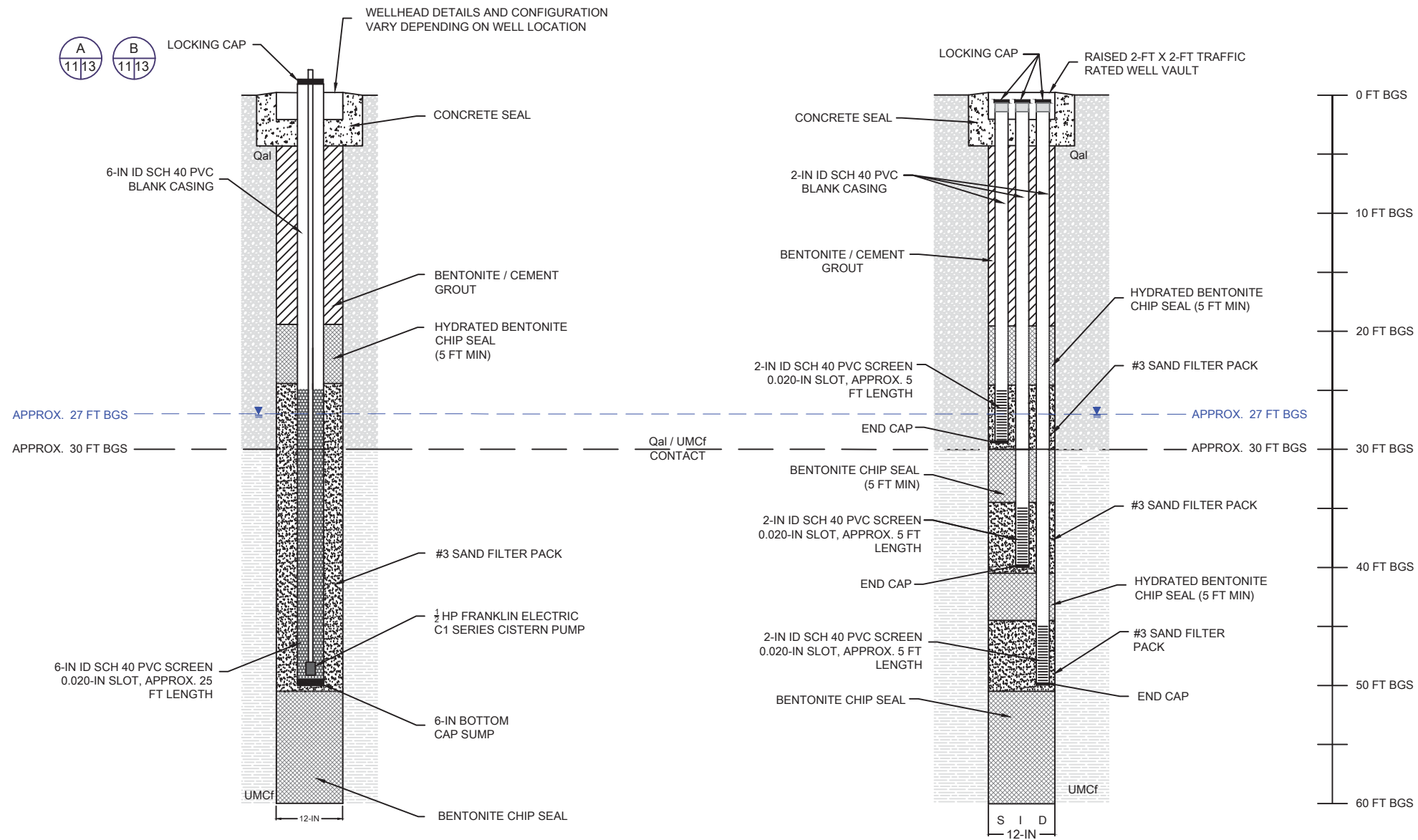


<p>EXTRACTION WELL PROCESS FLOW DIAGRAM</p> <p>AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA</p>	<p>DESIGNED BY:</p>  <p>TETRA TECH, INC. 150 SOUTH 4TH STREET, UNIT A HENDERSON, NEVADA 89015 Phone (702) 584-2200</p>	7	REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL
		6	REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017	CL
		5	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL
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		1	DESCRIPTION	DATE	BY
<p>DESIGNED FOR:</p> <p>NEVADA ENVIRONMENTAL RESPONSE TRUST</p>		<p>REVISIONS (OR CHANGE NOTICES)</p>			
<p>TASK NO: M13</p> <p>DESIGNED BY: CL</p> <p>DRAWN BY: DVK</p> <p>CHECKED BY: CL</p> <p>DATE: APR. 24, 2018</p>					
<p>SHEET: 9 OF 22</p>					



A DETAIL
4.510 TYPICAL SINGLE COMPLETION INJECTION WELLS
SHALLOW ~30 FT BGS, INTERMEDIATE ~40 FT BGS, DEEP ~50 FT BGS (SCALED TO DEPTH)
INCLUDES UFIW-01, UFIW-02, UFIW-03, UFIW-04, UFIW-05, UFIW-06, UFIW-07, AND UFIW-08
SCREEN LENGTH FOR UFIW-02I AND UFIW-06I IS 10 FT

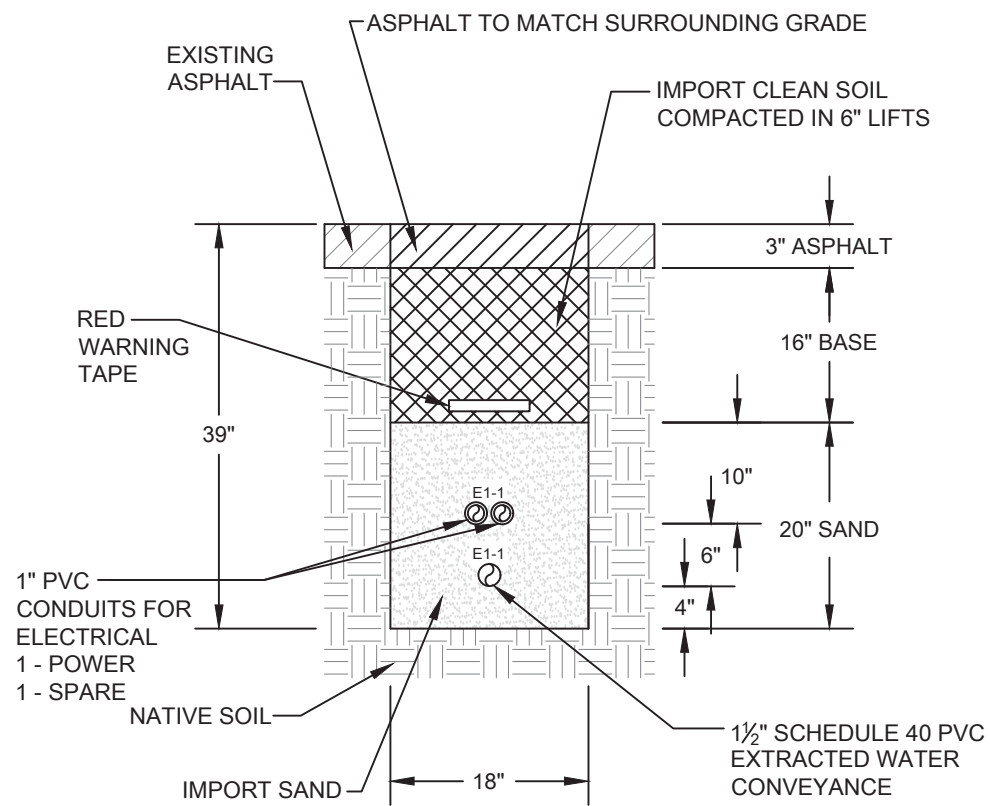
<div>INJECTION WELL CONSTRUCTION DIAGRAM</div> <div>AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA</div>	<div>Designed By:</div> <div><div></div><div><div>TETRA TECH, INC.</div><div>160 SOUTH 4TH STREET, UNIT A HENDERSON, NV 89015 Phone: (702) 864-2208</div></div></div>		7			
			6	REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL
			5	REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017	CL
			4	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL
			3	REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	8-10-2016	CL
			2	CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	7-8-2016	CL
			1	CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL
	<div>Designed For:</div> <div>NEVADA ENVIRONMENTAL RESPONSE TRUST</div>		NO.	DESCRIPTION	DATE	BY
			REVISIONS (OR CHANGE NOTICES)			
TASK NO: M13						
DESIGNED BY: CL						
DRAWN BY: DVK						
CHECKED BY: CL						
DATE: APR. 24, 2018						
SHEET:						
10 OF 22						



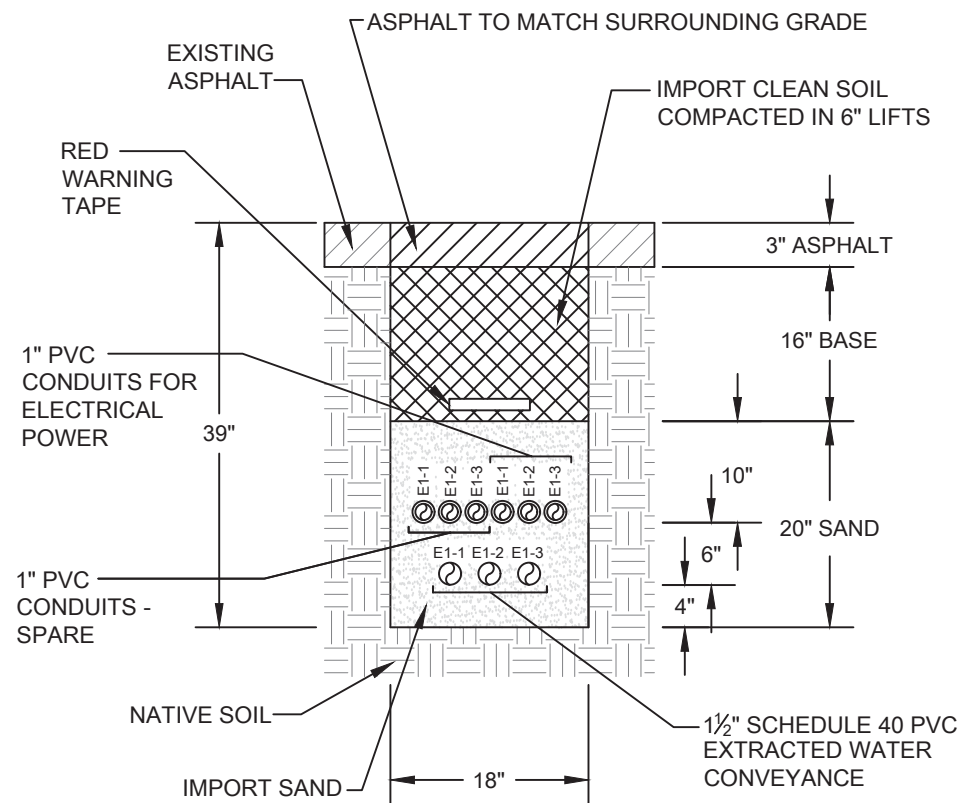
A	DETAIL
4.611	<p>TYPICAL EXTRACTION WELL (NTS)</p> <p>INCLUDES E1-1, E1-2, E1-3, E2-1, E2-2, E2-3, E2-4, AND E2-5 SCREEN LENGTH 25 FT ACROSS CONTACT BETWEEN Qal AND UMc</p>

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	TYPICAL TRIPLE COMPLETION MONITORING WELL
	SHALLOW ~30 FT BGS, INTERMEDIATE ~40 FT BGS, DEEP ~50 FT BGS (SCALED TO DEPTH)
	INCLUDES UFMW-01, UFMW-02, UFMW-04, UFMW-05, AND UFMW-06

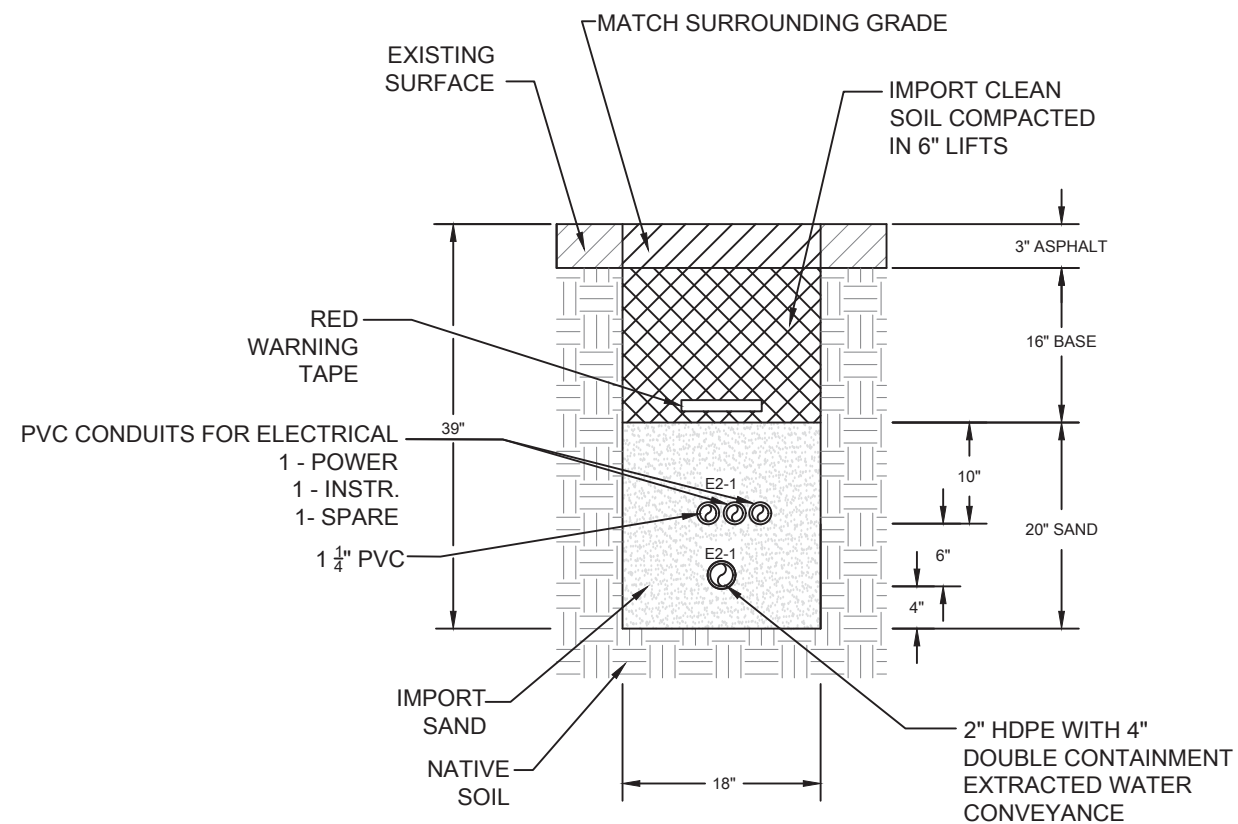
<p>EXTRACTION WELL AND MONITORING WELL CONSTRUCTION DIAGRAM</p> <p>AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA</p>	<p>TETRA TECH, INC. 160 SOUTH 4TH STREET, UNIT A HENDERSON, NEVADA 89015 Phone (702) 864-2268</p>		7		
	<p>NEVADA ENVIRONMENTAL RESPONSE TRUST</p>		6	REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018
			5	REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017
			4	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016
			3	REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	8-10-2016
			2	CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	7-8-2016
			1	CONCEPTUAL DESIGN SUBMITTAL	6-14-2016
<p>Designed By:</p>		NO.	DESCRIPTION	DATE	BY
<p>Designed For:</p>		<p>REVISIONS (OR CHANGE NOTICES)</p>			



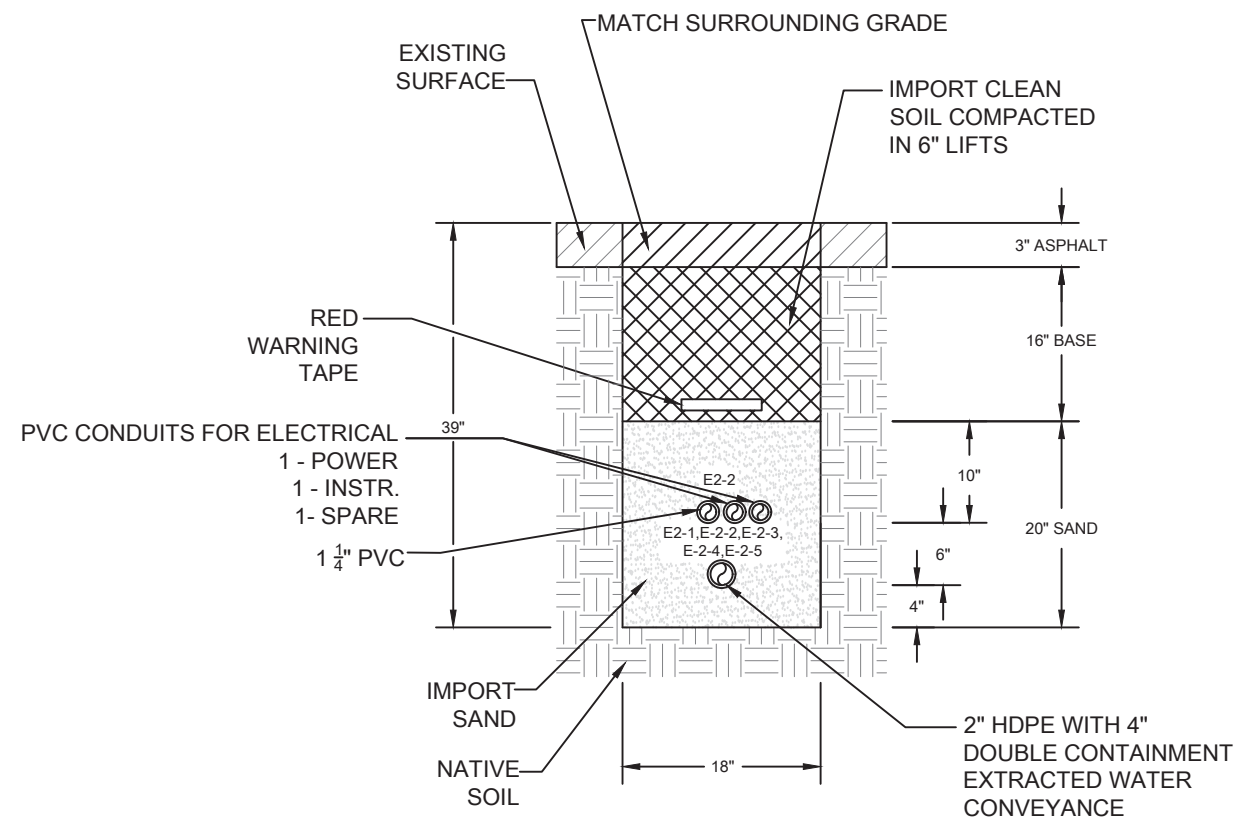
DETAIL
TYPICAL PLOT 1 UTILITY TRENCH (NTS)



DETAIL
TYPICAL PLOT 1 UTILITY TRENCH (NTS)



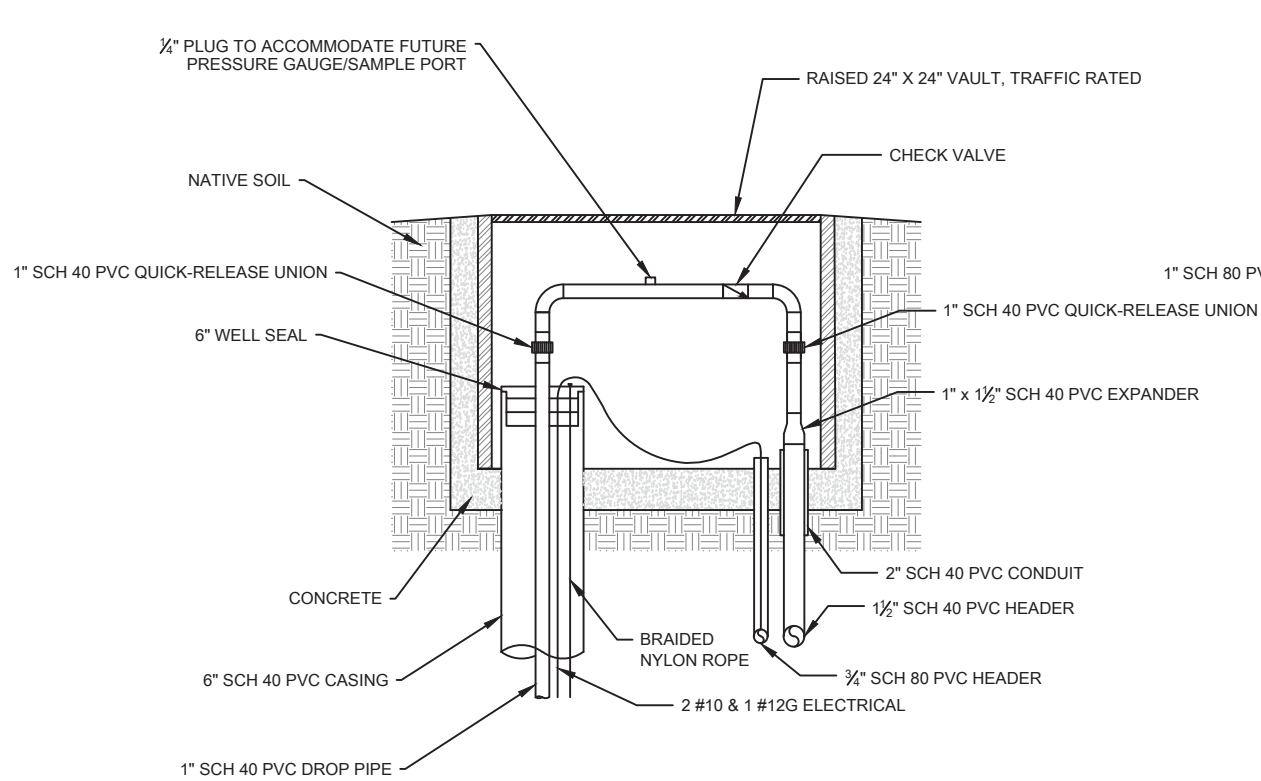

 DETAIL
 TYPICAL PLOT 2 UTILITY TRENCH (NTS)



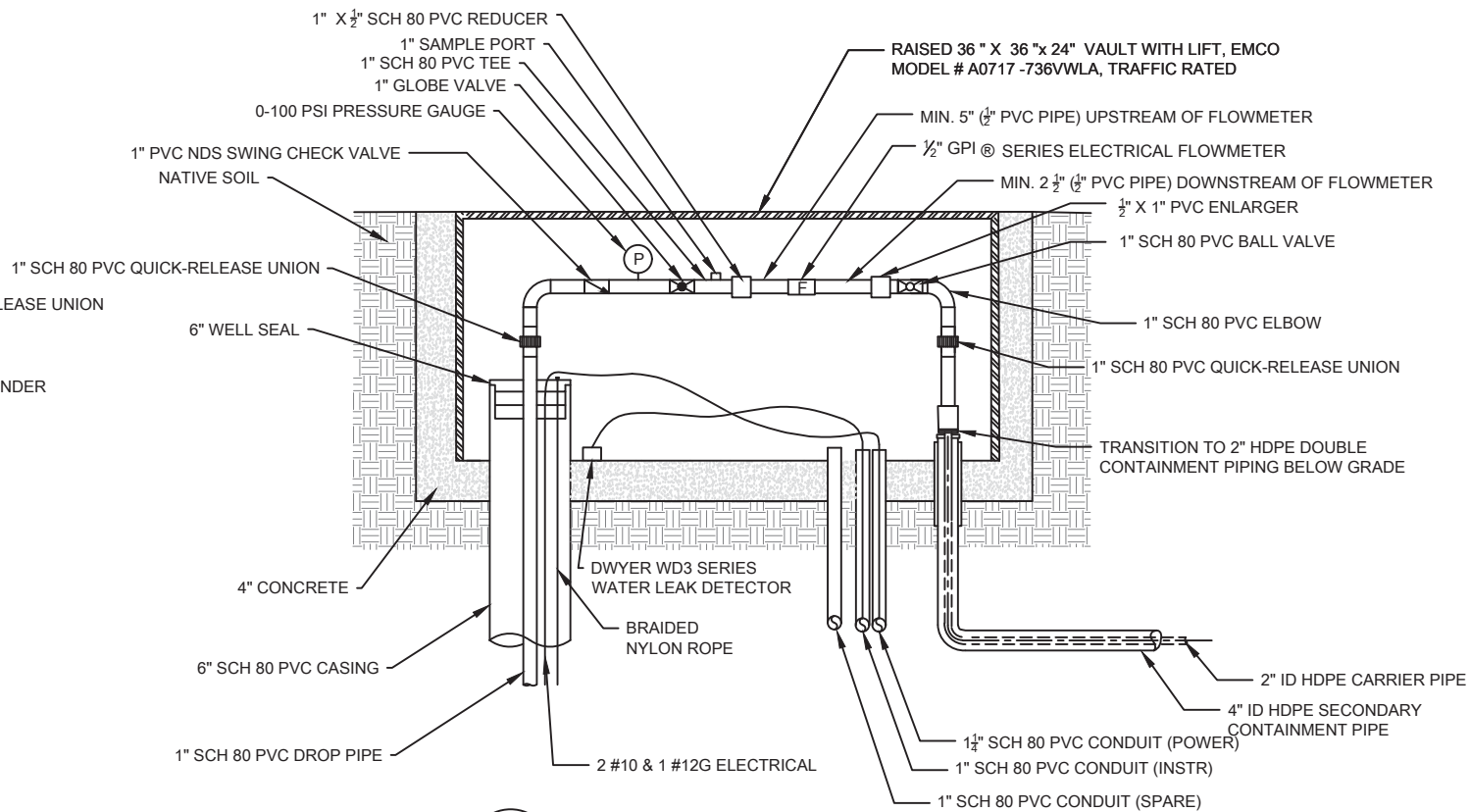

 DETAIL
 TYPICAL PLOT 2 UTILITY TRENCH (NTS)

<div>Designed By:</div> <div><div><div><div>TETRA TECH, INC.</div><div>160 SOUTH 4TH STREET, UNIT A HENDERSON, NEVADA 89016 Phone (702) 584-4288</div></div></div></div>	<div>TRENCH DETAILS</div> <div>AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA</div>	7	REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL
		6	REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017	CL
		5	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL
		4	REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	8-10-2016	CL
		3	CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	7-8-2016	CL
		2	CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL
		1	NO.	DATE	BY
<div>Designed For:</div> <div>NEVADA ENVIRONMENTAL RESPONSE TRUST</div>	REVISIONS (OR CHANGE NOTICES)				
TASK NO: M13					
DESIGNED BY: CL					
DRAWN BY: DVK					
CHECKED BY: CL					
DATE: APR. 24, 2018					
SHEET: 12 OF 22					

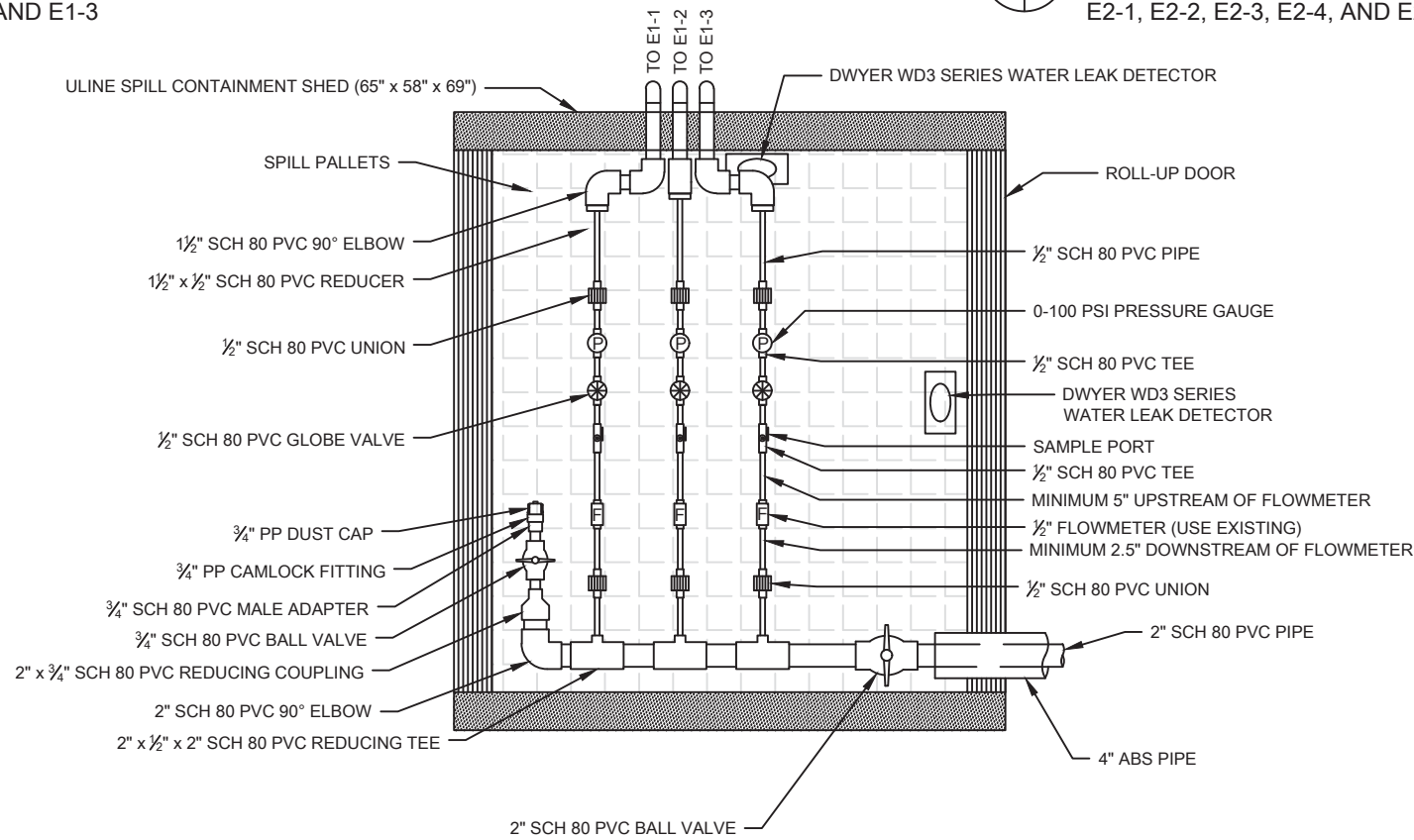
P:\87600M13-18\CAD\Design Package\As-Built\M13 SHEET 13 - EXTRACTION WELLHEAD DETAILS.dwg Apr 30, 2018 - 10:10am DANIEL KEADY



A
11/13
DETAIL
EXTRACTION WELLHEAD
E1-1, E1-2, AND E1-3



B
11/13
DETAIL
EXTRACTION WELLHEAD
E2-1, E2-2, E2-3, E2-4, AND E2-5



NOTE: ALL PIPING AND FITTINGS WRAPPED WITH REFLECTIX STAPLE TAB INSULATION.

C
6/13
DETAIL
PLOT 1 ABOVE GROUND PIPING MANIFOLD
PLAN VIEW

DRAWING NOT TO SCALE

7	6	5	4	3	2	1	NO.	DESCRIPTION	REVISIONS (OR CHANGE NOTICES)
7	6	5	4	3	2	1	NO.	DESIGN UPDATE FOR FIELD WORK	CONCEPTUAL DESIGN SUBMITTAL
6	5	4	3	2	1	NO.	DESIGN UPDATE FOR FIELD WORK	CONCEPTUAL DESIGN SUBMITTAL	REVISIONS (OR CHANGE NOTICES)
5	4	3	2	1	NO.	DESIGN UPDATE FOR FIELD WORK	CONCEPTUAL DESIGN SUBMITTAL	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)
4	3	2	1	NO.	DESIGN UPDATE FOR FIELD WORK	CONCEPTUAL DESIGN SUBMITTAL	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)
3	2	1	NO.	DESIGN UPDATE FOR FIELD WORK	CONCEPTUAL DESIGN SUBMITTAL	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)
2	1	NO.	DESIGN UPDATE FOR FIELD WORK	CONCEPTUAL DESIGN SUBMITTAL	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)
1	NO.	DESIGN UPDATE FOR FIELD WORK	CONCEPTUAL DESIGN SUBMITTAL	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)	REVISIONS (OR CHANGE NOTICES)
4-24-2018	1-31-2017	11-11-2016	8-10-2016	7-8-2016	6-14-2016	DATE	DATE	DATE	DATE
CL	CL	CL	CL	CL	CL	BY	BY	BY	BY

Designed By:
TETRA TECH, INC.
1500 SOUTH STREET, SUITE 100
HENDERSON, NEVADA 89015
Phone (702) 854-2293

**EXTRACTION WELLHEAD
AND PLOT 1 MANIFOLD
DETAILS**

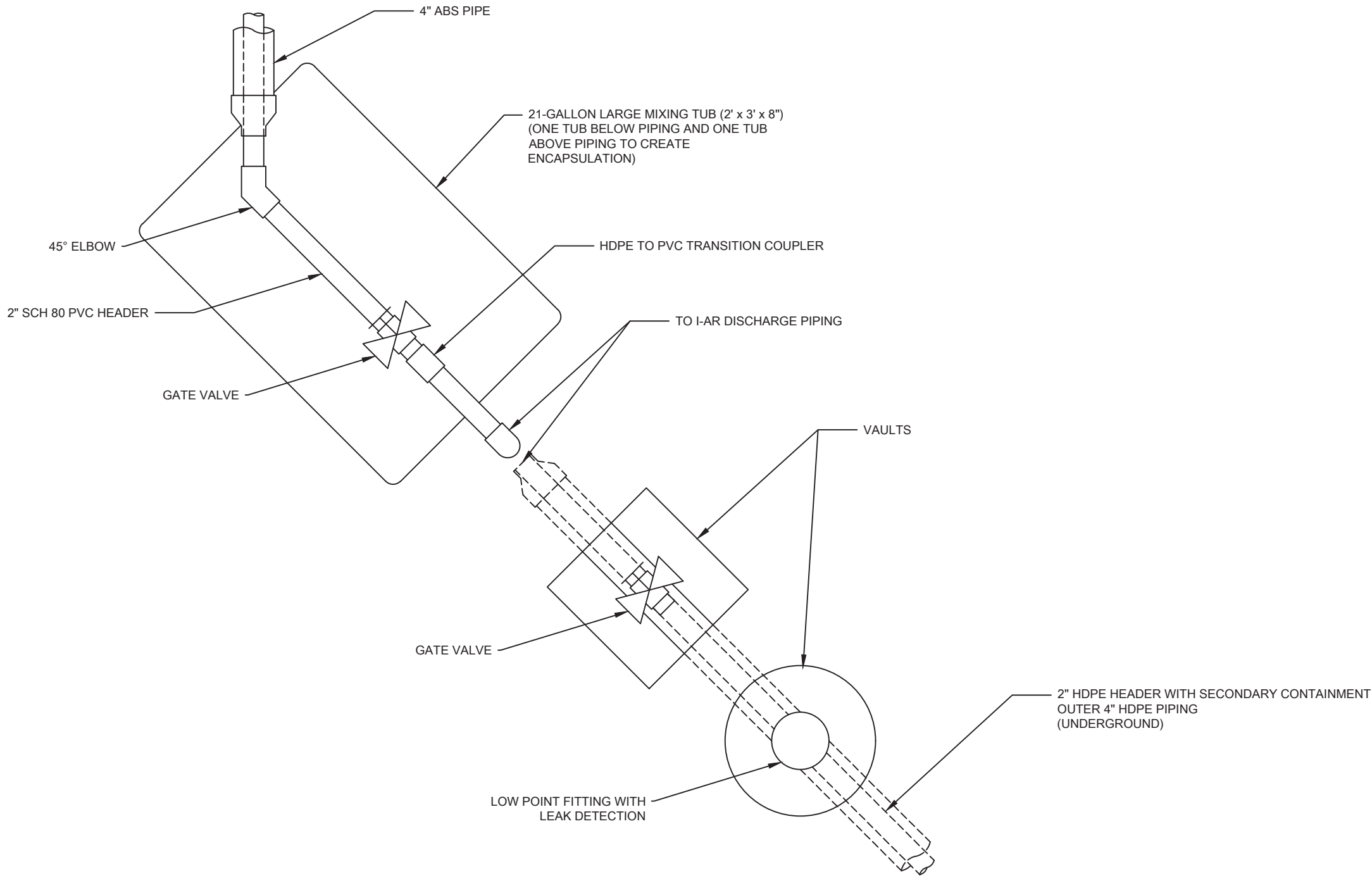
AP AREA DOWN AND UP FLUSHING
TREATABILITY STUDY
510 SOUTH 4TH STREET
HENDERSON, NEVADA

Task NO: M13
Designed By: CL
Drawn By: DVK
Checked By: CL
Date: APR. 24, 2018

SHEET:
13 OF 22

P:\87600\M13-18\CAD\Design Package\Initial Soil Flushing IFRM Design Package\As-Built\M13 SHEET 15 - I-AR CONNECTION.dwg Apr 30, 2018 - 10:34am DANIEL KEADY

1500 SOUTH STREET, SUITE 100
HENDERSON, NEVADA 89015
Phone (702) 854-2293

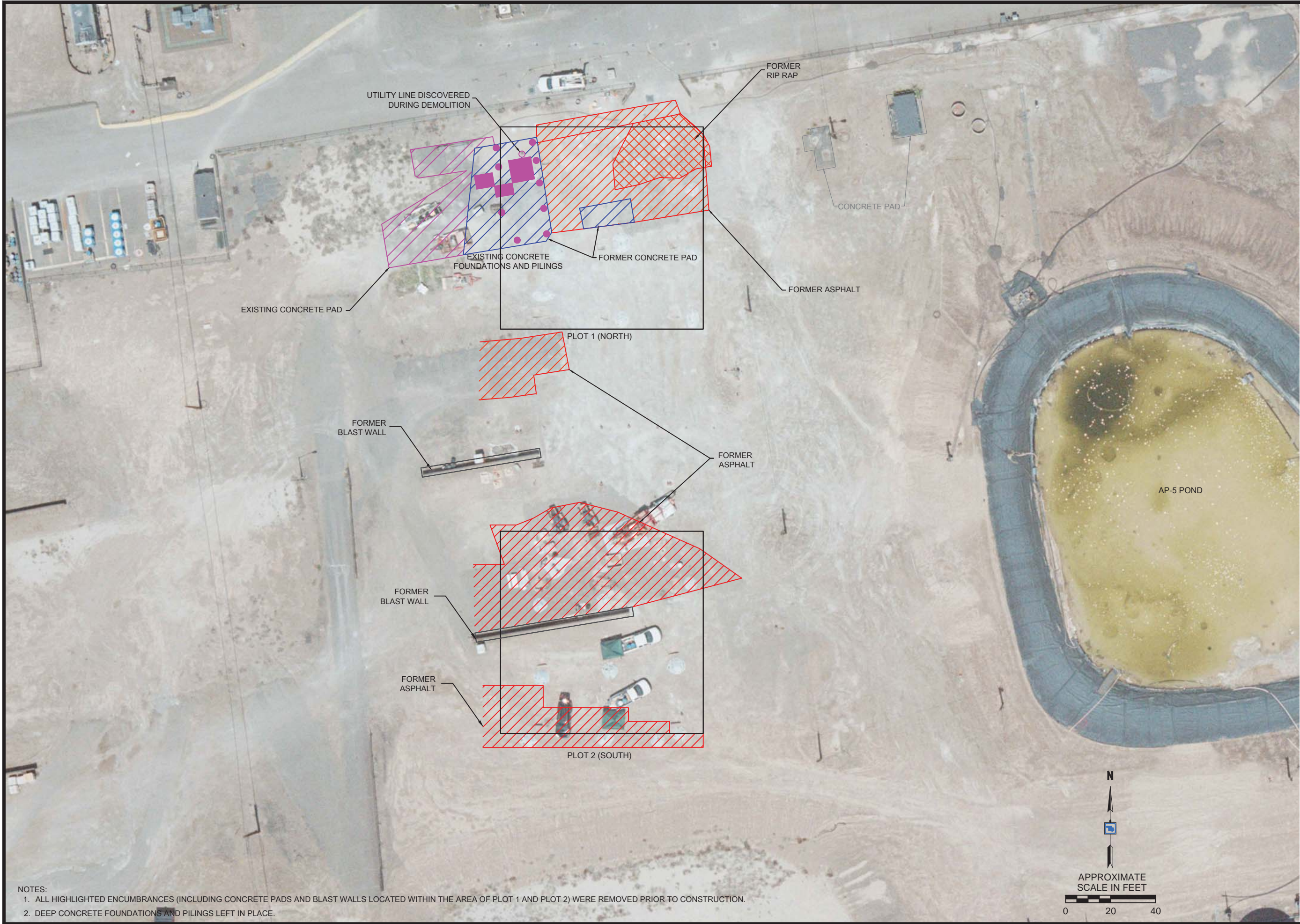


A
6 | **15** **DETAIL**
CONNECTION TO EXTRACTION WELL
I-AR CONVEYANCE LINE

DRAWING NOT TO SCALE

I-AR CONNECTION DETAILS		TETRA TECH, INC. 1500 SOUTH STREET, SUITE 100 HENDERSON, NEVADA 89015 Phone (702) 854-2293		7	REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL
AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA		DESIGNED FOR: NEVADA ENVIRONMENTAL RESPONSE TRUST		6	REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017	CL
				5	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL
				4	REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	8-10-2016	CL
TASK NO: M13		DESIGNED BY: CL		3	CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	7-8-2016	CL
				2	CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL
				1	DESCRIPTION	DATE	BY
SHEET: 15 of 22		REVISIONS (OR CHANGE NOTICES)					

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- NOTES:
1. ALL HIGHLIGHTED ENCUMBRANCES (INCLUDING CONCRETE PADS AND BLAST WALLS LOCATED WITHIN THE AREA OF PLOT 1 AND PLOT 2) WERE REMOVED PRIOR TO CONSTRUCTION.
 2. DEEP CONCRETE FOUNDATIONS AND PILINGS LEFT IN PLACE.

DESIGNED BY:		DESIGNED FOR:		7	REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL
DESIGNED BY:		DESIGNED FOR:		6	REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017	CL
DESIGNED BY:		DESIGNED FOR:		5	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL
DESIGNED BY:		DESIGNED FOR:		4	REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	8-10-2016	CL
DESIGNED BY:		DESIGNED FOR:		3	CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	7-8-2016	CL
DESIGNED BY:		DESIGNED FOR:		2	CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL
DESIGNED BY:		DESIGNED FOR:		1	DESCRIPTION	DATE	BY
DESIGNED BY:		DESIGNED FOR:		NO.	REVISIONS (OR CHANGE NOTICES)		

AREAS OF DEMOLITION

AP AREA DOWN AND UP FLUSHING
TREATABILITY STUDY
510 SOUTH 4TH STREET
HENDERSON, NEVADA

DESIGNED BY:



TETRA TECH, INC.
1650 SOUTH 4TH STREET, UNIT A
HENDERSON, NV 89015
Phone (702) 884-2283

DESIGNED FOR:

NEVADA ENVIRONMENTAL
RESPONSE TRUST

TASK NO: M13

DESIGNED BY: CL

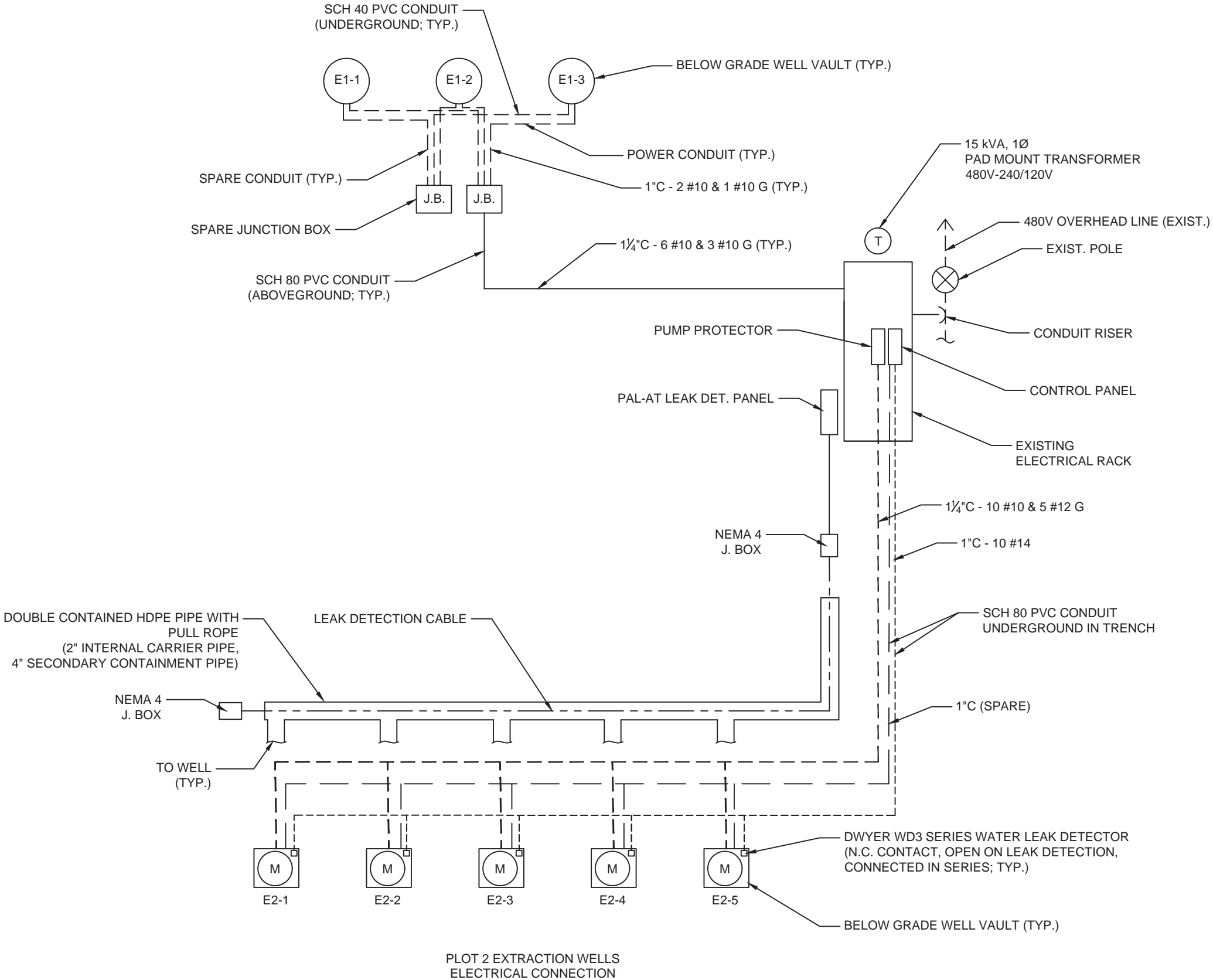
DRAWN BY: DVK

CHECKED BY: CL

DATE: APR. 24, 2018

SHEET:

16 OF 22



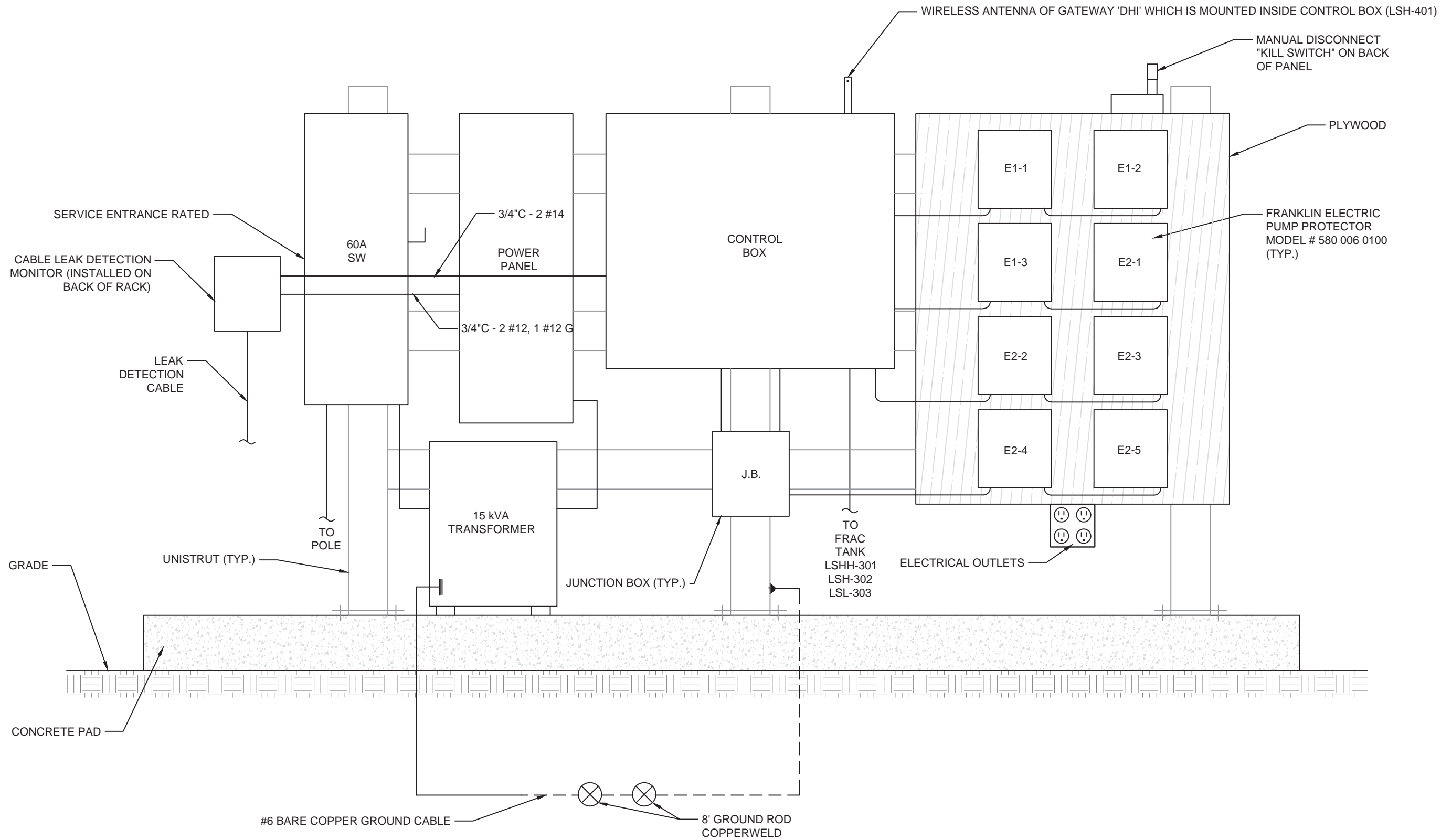
<div><div>Designed By:</div><div><div><div>TETRA TECH, INC.</div><div>150 SOUTH 4TH STREET, UNIT A HENDERSON, NEVADA 89015 Phone (702) 504-2200</div></div></div></div> <div><div>ELECTRICAL POWER LAYOUT</div><div>AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA</div></div>	7			
	6	REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL
	5	REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017	CL
	4	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL
	3	REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	8-10-2016	CL
	2	CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	7-8-2016	CL
	1	CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL
<div><div>Designed For:</div><div>NEVADA ENVIRONMENTAL RESPONSE TRUST</div></div>	NO.	DESCRIPTION	DATE	BY
	REVISIONS (OR CHANGE NOTICES)			

TASK NO: M13
DESIGNED BY: CL
DRAWN BY: DVK
CHECKED BY: CL
DATE: APR. 24, 2018

SHEET:

17 OF 22

P:\87600\M13-18\CAD\Design Package\Initial Soil Flushing IFRM Design Package\As-Built\M13 SHEET 18 - ELECTRICAL RACK.dwg Apr 30, 2018 - 10:37am DANIEL KEADY



- NOTES:
1. ALL ELECTRICAL INSTALLATION SPECIFIED TO MEET NATIONAL ELECTRICAL CODE (NEC) AND LOCAL CODE REQUIREMENTS.
 2. ALL EQUIPMENT NEMA 3R OR NEMA 4.
 3. LEAK DETECTION IN BELOW-GROUND DOUBLE CONTAINMENT PIPING WILL SHUT DOWN PLOT 2 EXTRACTION WELLS ONLY.

DRAWING NOT TO SCALE

7	REVISED FOR FINAL AS-BUILT DESIGN	CL	4-24-2018	BY
6	REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	CL	1-31-2017	BY
5	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	CL	11-11-2016	BY
4	REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	CL	8-10-2016	BY
3	CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	CL	7-8-2016	BY
2	CONCEPTUAL DESIGN SUBMITTAL	CL	6-14-2016	BY
1	DESCRIPTION	CL	DATE	BY
NO.	REVISIONS (OR CHANGE NOTICES)			

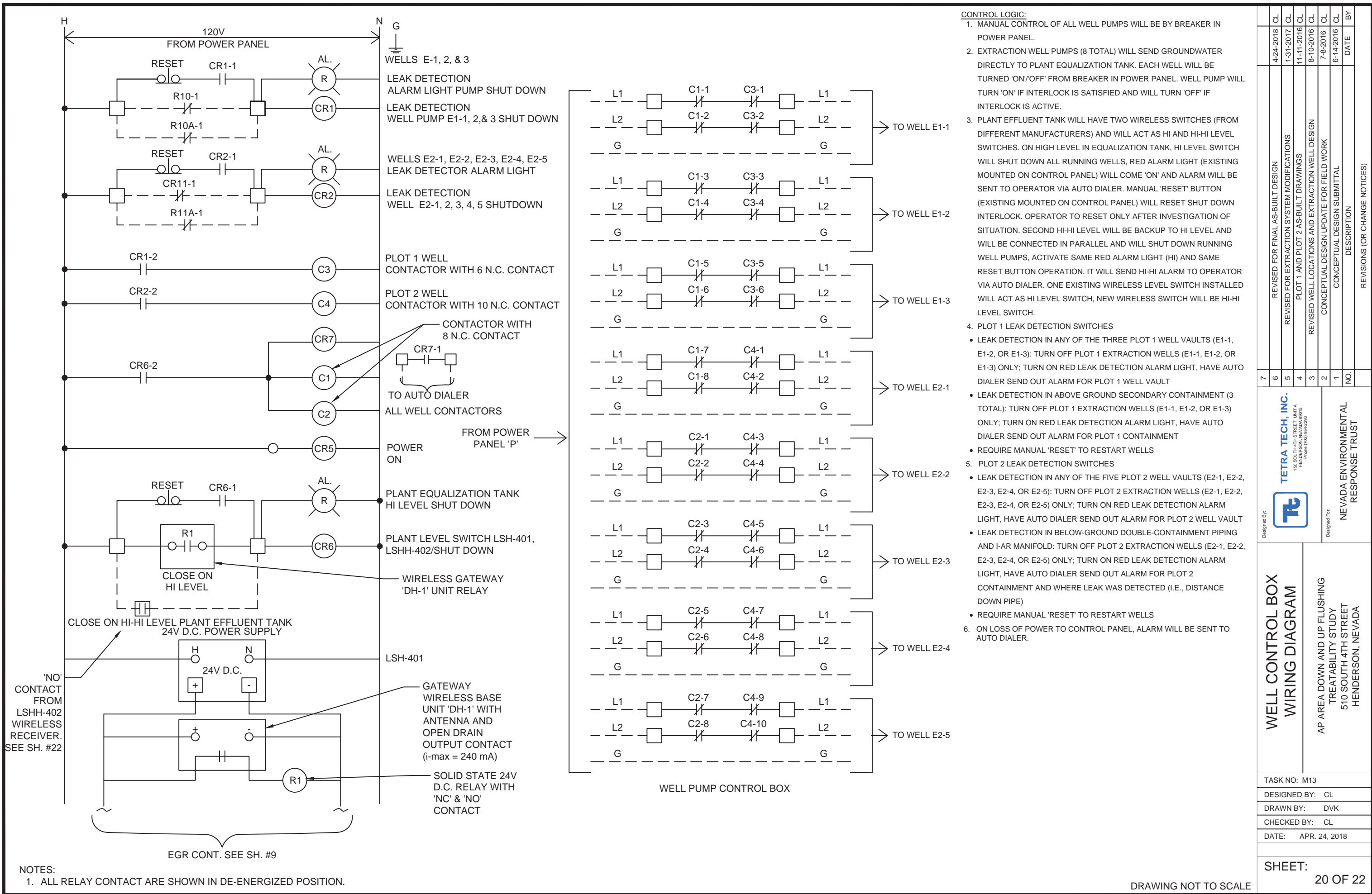
DESIGNED BY:	TETRA TECH, INC. 1500 SOUTH 4TH STREET, SUITE 100 HENDERSON, NEVADA 89015 Phone (702) 854-2293
DESIGNED FOR:	NEVADA ENVIRONMENTAL RESPONSE TRUST

ELECTRICAL RACK	AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA
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TASK NO:	M13
DESIGNED BY:	CL
DRAWN BY:	DVK
CHECKED BY:	CL
DATE:	APR. 24, 2018

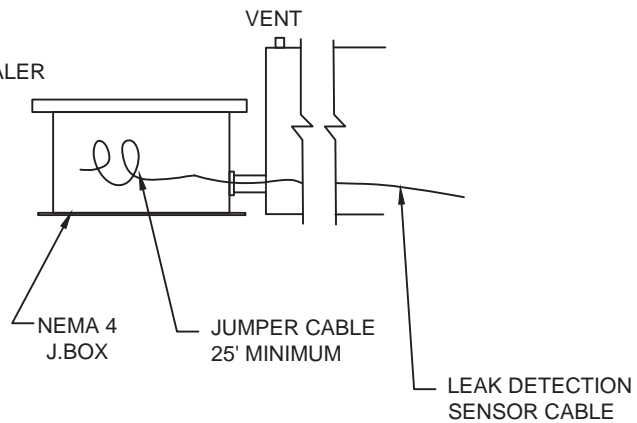
SHEET:	18 OF 22
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P:\87600M13-18\CAD\Design Package\As-Built\13 SHEET 20 - WELL CONTROL BOX WIRING DIAGRAM.dwg Apr 30, 2018 - 10:38am DANIEL KEADY



CL	4-24-2018	REVISED FOR FINAL AS-BUILT DESIGN	DESIGNED BY: CL	TASK NO: M13
CL	1-31-2017	REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	DRAWN BY: DVK	DESIGNED BY: CL
CL	11-11-2016	PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	CHECKED BY: CL	DATE: APR. 24, 2018
CL	8-10-2016	REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	DATE: APR. 24, 2018	
CL	7-8-2016	CONCEPTUAL DESIGN UPDATE FOR FIELD WORK		
CL	6-14-2016	CONCEPTUAL DESIGN SUBMITTAL		
BY	DATE	DESCRIPTION	NEVADA ENVIRONMENTAL RESPONSE TRUST	SHEET: 20 OF 22
		REVISIONS (OR CHANGE NOTICES)	AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA	

NOTES:
1. ALL RELAY CONTACTS ARE SHOWN IN DE-ENERGIZED POSITION.




D.C. PIPE LEAK DETECTION WIRING DIAGRAM

BILL OF MATERIALS

Quantity	Part Number	Description	Description
*		PAL-AT PANEL & CABLE	
1	8028300	AT30C Monitoring Panel	monitors 1 cable, 3,000 ft. (900m)
90'	8017718	JMP-UD Jumper Cable PE Jacket	rated 108 F- w/o waterblock
500'	8017705	AGW Gold Sensor Cable	rated 400 F - all liquids
1	8027786	CAJMPs Connector CAJMP with Shrink	requires crimp tool CRPC-includes conn for 2 ends and coupler
1	8027790	CAGOLD Connector AGW/AGT/TFH Gold JPP bb with shrink	requires crimp tool CRPC-includes conn for 2 ends and coupler
1	8047640	STRTV RTV Caulking	RTV caulk under shrink tubing-for 25-50 connectors
2	8047681	NEMA 4X J Box8"x6"x4" 150 DegF	sd polyester junction box w/hinged cover
2	8057954	1/2" Cord Grip - JMP-U, JMP-UD	
1	8068299	CRPKIT Crimp Tool Kit CRPG and CRPC	2 complete tools and dies, includes 8068300 and 8068301

DRAWING NOT TO SCALE

<div><div>LEAK DETECTION WIRING DIAGRAM</div><div>AP AREA DOWN AND UP FLUSHING TREATABILITY STUDY 510 SOUTH 4TH STREET HENDERSON, NEVADA</div></div>	<div><div>Designed By:</div><div><div><div>TETRA TECH, INC.</div><div>160 SOUTH 4TH STREET, UNIT A HENDERSON, NEVADA 89015 Phone: (702) 964-2260</div></div></div><div><div>Designed For:</div><div>NEVADA ENVIRONMENTAL RESPONSE TRUST</div></div></div>	7		REVISED FOR FINAL AS-BUILT DESIGN	4-24-2018	CL
		6		REVISED FOR EXTRACTION SYSTEM MODIFICATIONS	1-31-2017	CL
		5		PLOT 1 AND PLOT 2 AS-BUILT DRAWINGS	11-11-2016	CL
		4		REVISED WELL LOCATIONS AND EXTRACTION WELL DESIGN	8-10-2016	CL
		3		CONCEPTUAL DESIGN UPDATE FOR FIELD WORK	7-8-2016	CL
		2		CONCEPTUAL DESIGN SUBMITTAL	6-14-2016	CL
		1		DESCRIPTION	DATE	BY
		NO.		REVISIONS (OR CHANGE NOTICES)		

Appendix G

Injection Summary Tables

Table G-1 - Plot 1 Injection Testing Summary (September 2016)
AP Area Down and Up Flushing Treatability Study

Injection Date	Injection Well ID	Dye and CPS Injection						
		Maximum Flow Rate (gpm)	Maximum Pressure (psi)	Injection Mass of Tracer Dye ¹ (lbs)	Injection Mass of CPS (lbs)	Tracer Dye Injection Concentration (%wt)	CPS Injection Concentration (%wt)	Total Injection Solution Volume (gal)
9/20/2016 16:45-18:01	UFIW-01S	2.0	0.0	0.04	18	0.004%	1.91%	117
	UFIW-01I	2.0	3.0	0.02	19	0.003%	2.26%	106
	UFIW-02S	1.8	9.0	0.03	15	0.004%	1.94%	96
	UFIW-02I	2.0	7.0	0.02	19	0.003%	2.30%	103
	UFIW-03S	2.0	2.5	0.04	18	0.004%	1.92%	118
	UFIW-03I	2.0	1.5	0.02	20	0.003%	2.32%	108
	UFIW-04S	2.0	5.0	0.04	18	0.004%	1.95%	116
	UFIW-04I	2.0	0.0	0.02	20	0.003%	2.34%	105
Daily Summary		15.8	9.0	0.23	147	--	--	868
9/21/2016 8:35-16:55	UFIW-01S	3.1	10.0	0.20	11	0.004%	0.20%	645
	UFIW-01I	5.0	10.0	0.15	10	0.002%	0.16%	751
	UFIW-02S	3.0	13.0	0.06	4	0.004%	0.22%	200
	UFIW-02I	3.0	9.0	0.13	9	0.002%	0.17%	661
	UFIW-03S	3.8	9.5	0.24	11	0.004%	0.17%	754
	UFIW-03I	3.0	4.5	0.15	11	0.002%	0.17%	753
	UFIW-04S	4.6	8.0	0.32	11	0.004%	0.13%	1,015
	UFIW-04I	3.8	2.0	0.16	11	0.002%	0.17%	802
Daily Summary		29.3	13.0	1.42	77	--	--	5,582
9/22/2016 7:34-16:55	UFIW-01S	2.9	9.0	0.34	16	0.004%	0.18%	1,082
	UFIW-01I	3.0	6.0	0.17	9	0.002%	0.14%	823
	UFIW-02S	0.0	10.0	0.03	2	0.004%	0.18%	105
	UFIW-02I	3.0	10.0	0.12	5	0.002%	0.11%	574
	UFIW-03S	3.5	7.0	0.37	17	0.004%	0.18%	1,176
	UFIW-03I	3.0	5.0	0.20	15	0.002%	0.19%	982
	UFIW-04S	4.0	2.0	0.44	25	0.004%	0.21%	1,414
	UFIW-04I	4.0	3.5	0.21	18	0.002%	0.21%	1,045
Daily Summary		23.4	10.0	1.88	107	--	--	7,201
9/23/2016 7:38-11:21	UFIW-01S	2.9	10.0	0.11	12	0.004%	0.43%	338
	UFIW-01I	3.0	5.5	0.11	12	0.002%	0.28%	544
	UFIW-02S	1.5	10.5	0.02	5	0.004%	1.13%	56
	UFIW-02I	2.5	8.0	0.09	7	0.002%	0.21%	433
	UFIW-03S	3.8	9.0	0.13	15	0.004%	0.42%	422
	UFIW-03I	2.8	4.0	0.12	10	0.002%	0.22%	569
	UFIW-04S	3.5	6.0	0.12	12	0.004%	0.39%	370
	UFIW-04I	3.4	3.0	0.13	13	0.002%	0.25%	650
Daily Summary		23.4	10.5	0.82	87	--	--	3,382
Monthly Summary		29.3	13.0	4.0	418	--	--	17,032

Notes:

CPS
gpm
lbs

Calcium Polysulfide
Gallon per minute
Pounds

gal
psi
ft bgs

Gallon
Pounds per square inch
Feet below ground surface

¹ Rhodamine or uranine tracer dye

Table G-2 - Plot 2 Injection Testing Summary (November 2016)
AP Area Down and Up Flushing Treatability Study

Injection Date	Injection Well ID	Dye and CPS Injection						
		Maximum Flow Rate (gpm)	Maximum Pressure (psi)	Injection Mass of Tracer Dye ¹ (lbs)	Injection Mass of CPS (lbs)	Tracer Dye Injection Concentration (%wt)	CPS Injection Concentration (%wt)	Total Injection Solution Volume (gal)
11/3/2016 10:49-24:00	UFIW-05S	3.6	16.0	0.90	4.5	0.009%	0.046%	1,203
	UFIW-05I	2.7	16.0	0.45	0.9	0.023%	0.046%	233
	UFIW-06S	0.4	12.0	0.90	1.5	0.027%	0.046%	410
	UFIW-06I	1.9	10.5	0.45	4.7	0.004%	0.046%	1,239
	UFIW-07S	0.9	10.5	0.90	2.5	0.016%	0.046%	668
	UFIW-07I	2.0	20.0	0.45	2.3	0.009%	0.046%	615
	UFIW-08S	2.5	12.5	0.90	3.3	0.012%	0.046%	870
	UFIW-08I	0.9	15.0	0.45	2.7	0.008%	0.046%	719
Daily Summary		14.9	20.0	5.4	22.5	--	--	5,957
11/4/2016 0:00-11:52	UFIW-05S	1.2	6.0	0.90	2.6	0.016%	0.046%	700
	UFIW-05I	0.8	8.3	0.45	0.5	0.044%	0.046%	122
	UFIW-06S	0.9	8.0	0.90	1.6	0.025%	0.046%	430
	UFIW-06I	1.3	5.0	0.45	3.2	0.006%	0.046%	840
	UFIW-07S	0.7	7.0	0.90	1.7	0.024%	0.046%	449
	UFIW-07I	0.8	13.5	0.45	1.1	0.018%	0.046%	298
	UFIW-08S	0.6	9.0	0.90	1.5	0.027%	0.046%	395
	UFIW-08I	0.9	9.5	0.45	2.2	0.009%	0.046%	579
Daily Summary		7.2	13.5	5.4	14.4	--	--	3,814
Monthly Summary		14.9	20.0	10.8	36.9	--	--	9,771

Notes:

CPS Calcium Polysulfide
 gpm Gallon per minute
 lbs Pounds
 gal Gallon
 psi Pounds per square inch
 ft bgs Feet below ground surface
 ¹ Rhodamine or uranine tracer dye

Table G-3 - Plot 1 and Plot 2 Injection Testing Summary (August 2017)
AP Area Down and Up Flushing Treatability Study

Plot 1 and Plot 2 Injection Testing Summary (August 2017)										
Injection Date	Injection Well ID	Maximum Flow Rate ¹ (gpm)	Maximum Pressure (psi)	Mass of CPS (lbs)	Mass of Stabilized Lake Mead Water Injected as Part of Solution (lbs)	Total Mass of Injectate (lbs)	Total Volume of Injectate (gal)	Volume of Stabilized Lake Mead Water Used as Flush/Chase Water (gal)	Injectate Concentrations	
									CPS Concentration (%wt)	Stabilized Lake Mead Water Concentration (%wt)
8/7/2017 14:55 - 17:10	UFIW-01S	4.6	10	53	376	429	50	250	12.37%	87.63%
	UFIW-01I	5.6	1	40	284	324	38	300	12.29%	87.71%
	UFIW-02S	4.6	13	53	376	429	50	250	12.37%	87.63%
	UFIW-02I	5.6	5	40	284	324	38	300	12.29%	87.71%
	UFIW-03S	4.6	7	53	376	429	50	250	12.37%	87.63%
	UFIW-03I	5.6	7	40	284	324	38	300	12.29%	87.71%
	UFIW-04S	0.0	0	0	0	0	0	0	--	--
	UFIW-04I	5.6	5	40	284	324	38	300	12.29%	87.71%
Daily Summary		16.8	13	318	2,263	2,581	301	1,950	12.33%	87.67%
8/8/2017 09:00 - 11:40	UFIW-05S	4.5	15	40	284	324	38	300	12.29%	87.71%
	UFIW-05I	4.1	15	40	284	324	38	60	12.29%	87.71%
	UFIW-06S	4.5	18	40	284	324	38	300	12.29%	87.71%
	UFIW-06I	4.5	13	40	284	324	38	300	12.29%	87.71%
	UFIW-07S	4.5	21	40	284	324	38	300	12.29%	87.71%
	UFIW-07I	4.4	15	40	284	324	38	100	12.29%	87.71%
	UFIW-08S	4.5	14	40	284	324	38	300	12.29%	87.71%
	UFIW-08I	4.5	10	40	284	324	38	300	12.29%	87.71%
Daily Summary		13.5	21	318	2,271	2,589	302	1,960	12.29%	87.71%
Event Summary		16.8	21	636	4,534	5,170	603	3,910	12.31%	87.69%

Notes:

CPS Calcium polysulfide
gpm gallons per minute
psi pounds per square-inch
lbs pounds
%wt percent by weight
¹ Only four shallow or intermediate wells were injected simultaneously on either 8/7/17 and 8/8/17.

Appendix H

Data Validation Summary Report

The Data Validation Summary Report (DVSR) is currently being revised per comments received by the Nevada Division of Environmental Protection on October 17, 2018. A revised DVSR will be submitted in January 2019 for inclusion in the final AP Area Down and Up Flushing Treatability Study Results Report.

Appendix I

Infiltration Test Report



August 26, 2016
Project No. 20153655E2

Mr. Mark Feldman
Tetra Tech
301 East Vanderbilt Way, Suite 450
San Bernardino, California 92408

RE: *Summary Letter of Test Results*
Double-Ring Infiltrometer Testing of the Central Basin
Nevada Environmental Response Trust (APN 178-12-301-005)
Black Mountain Industrial Complex, Henderson, Nevada

Dear Mr. Feldman:

The purpose of this report is to provide the results of a recent double-ring infiltrometer testing program performed by Geotechnical & Environmental Services, Inc. (GES) to aid in the design of proposed soil flushing systems projected for use in the central basin of the Nevada Environmental Response Trust (NERT) Property within the Black Mountain Industrial Complex. The test area lies within the southern portion of APN 178-12-301-005 in the proximity of 510 4th Street, Henderson, Clark County, Nevada.

Introduction

Eighteen double-ring infiltrometer (constant head) tests (DFSB-1 through DFSB-18) were performed by GES between the dates of July 27, 2016, and August 10, 2016, within the NERT Property central basin, to measure the in-situ average infiltration rate. Figure 1 shows the approximate location of the project site within the Las Vegas Valley and Figure 2 shows the approximate test locations within the site.

Instrumentation

The equipment utilized to measure the in-situ infiltration rate consists of two (2) stainless steel rings, measuring approximately 12 inches and 24 inches in diameter by 24 inches high, in accordance with the ASTM D3385 test method. Water obtained from Las Vegas municipal supplies was used to fill and refill the rings throughout testing. Two (2) graduated Mariotte tubes were used to provide a constant head of water during the test and measure the flow rate, one with a volume of 3,000 milliliters (mL) to provide water to the inner ring, and one with a volume of 10,000 mL for the annular space between the two rings. Clear, 3/8-inch diameter tubing and copper fittings were used to provide water to the metal rings during the test. A photo log provided in Appendix A shows images of the typical setup used when performing double ring Infiltrometer testing at the NERT site.

Methodology

Tests were performed in general accordance with the ASTM D3385 test method which consists of driving two concentric metal rings into the ground approximately 3 inches to 6 inches for the outer ring and approximately 2 inches to 4 inches for the inner ring. Then, infiltration rates are determined by measuring the amount of water needed to maintain a constant water elevation inside the rings. The measurements were obtained at intervals of approximately 15 minutes for the first hour, 30 minutes for the second hour, and at least one every hour thereafter for up to 6 hours or until steady state was obtained.

PROVIDING

- Geotechnical Engineering
- Construction Materials Testing & Inspections
- Environmental Services
- Ground Source Heat Exchange
- Thermal Conductivity Testing
- IAS Accredited
- AASHTO Accredited Testing Laboratory

Due to rapid infiltration rates, readings were taken between 15 and 30 minutes, as measuring in one-hour increments would fully drain the Mariotte tubes when refilling the rings. Additionally, all tests were undertaken for the full 6 hours prescribed in order to obtain a more accurate average infiltration rate at each site.

Infiltration testing was conducted within pits on the site. These pits were dug to approximately 3 feet deep with a backhoe prior to testing. This was done so that the rings could be driven into native soil, as the surface soil in the area was either paved over, or was made up of compacted fill material.

Subsurface and Atmospheric Conditions

The material encountered within the testing areas consisted primarily of dry to moist dark brown silty sand with gravel and trace to some cobbles. Encountered soils were typically dense to very dense. Nodules of weakly cemented material were noted throughout the study area.

Weather over the time of testing was primarily sunny and dry, with ambient temperatures frequently in excess of 100° Fahrenheit. The test method recommends that a shade shelter be used while performing infiltration testing to prevent unnecessary evaporation, and so efforts were made to shade the ring setup during testing. High wind events were noted during infiltration tests performed between August 8th and August 10th, while tests DFSB-1, DFSB-2, DFSB-4, DFSB-10, and DFSB-11 were being performed. While GES personnel were able to use the shade shelter on all other tests, winds proved to be too strong to use them consistently during tests DFSB-4, DFSB-10 and DFSB-11. In order to limit evaporation in these cases, a metal cover was used to cover the ring setup.

Additionally, a rain event was encountered during August 4, 2016 – local weather data indicates that 0.12-inches of rain fell in Henderson, NV over the day. The soil within the pits was moist when testing began, and therefore, rates from tests DFSB-5 and DFSB-9 will likely be lower than the actual dry infiltration rate due to the residual soil moisture.

Results

Appendix B contains the complete data collected during testing operations and the corresponding plot of incremental infiltration rate versus time. The reported approximate infiltration rate for each plot was obtained by averaging the infiltration rates determined in the inner ring throughout the course of the test – the standard indicates that when the inner and annular rates are different, the infiltration rate is determined by the rate of infiltration at the inner ring.

The approximate average infiltration rates obtained from each test during our testing program are summarized below:

Test Number	Location ¹	Average Inner Infiltration Rate, cm/h
DFSB-1	N 36.04783°, W 115.00432°	5.646
DFSB-2	N 36.04783°, W 115.00421°	10.593
DFSB-3	N 36.04783°, W 115.00412°	9.678
DFSB-4	N 36.04775°, W 115.00432°	8.034
DFSB-5	N 36.04775°, W 115.00421°	8.116
DFSB-6	N 36.04775°, W 115.00412°	7.796

Test Number	Location ¹	Average Inner Infiltration Rate, cm/h
DFSB-7	N 36.04767°, W 115.00412°	9.745
DFSB-8	N 36.04767°, W 115.00422°	5.238
DFSB-9	N 36.04767°, W 115.00434°	4.599
DFSB-10	N 36.04729°, W 115.00431°	13.039
DFSB-11	N 36.04729°, W 115.00420°	7.318
DFSB-12	N 36.04729°, W 115.00410°	11.182
DFSB-13	N 36.04712°, W 115.00433°	11.285
DFSB-14	N 36.04721°, W 115.00423°	7.984
DFSB-15	N 36.04721°, W 115.00414°	6.512
DFSB-16	N 36.04712°, W 115.00434°	6.481
DFSB-17	N 36.04712°, W 115.00424°	5.532
DFSB-18	N 36.04712°, W 115.00414°	5.179
Overall Average Infiltration Rate		7.991

¹ WGS84 Coordinate System, Obtained using a Handheld E-Trex 9 GPS Unit reporting a +/- 12' variance.

Limitations

Our services were performed using that degree of care and skill ordinarily exercised under similar circumstances by reputable engineering firms in this or similar localities. No other warranty, either expressed or implied, is included or intended in this report.

Should you have any questions regarding this matter or have further need of our services, please feel free to contact us at your convenience.

Sincerely,

Geotechnical & Environmental Services, Inc.

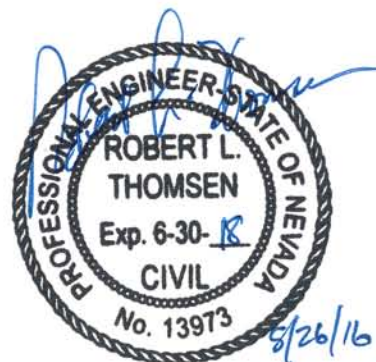


David Decker
Staff Geologist

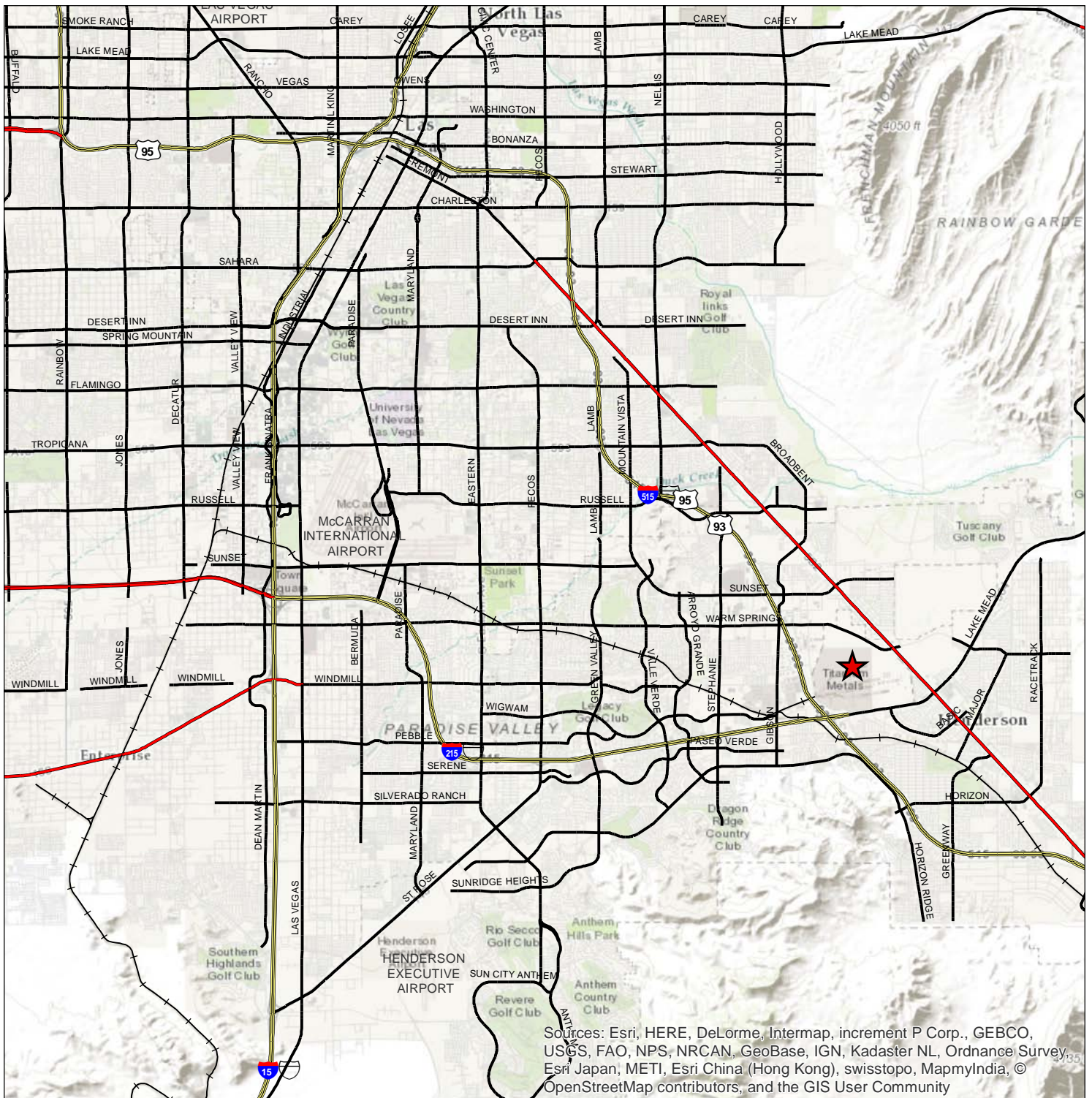
DD:RLT:caw

Enc: Figure 1 – Vicinity Map
Figure 2 – Testing Location Map
Appendix A – Site Photographs
Appendix B – Infiltrometer Testing Data

Dist: Original delivered to addressee
PDF copy to addressee at mark.feldman@tetrattech.com
Copy to the project file



Robert L. Thomsen, P.E.
Project Engineer



★ Approximate Site Location

0 1 2 4 6 8 Miles



GEOTECHNICAL & ENVIRONMENTAL SERVICES, INC.

7150 Placid St.
Las Vegas, NV 89119

702-365-1001
www.gesnevada.com

NOTE: Data presented on this map is a compilation of GIS Metadata extracted from a variety of sources. Major Streets, Airports, and Railroads is data obtained from the Southern Nevada GIS Management Office. This data is downloaded by GES for incorporation into drawings generated by GES. Data contained within this page is to be used for informational purposes only. GES has not modified the data contained herein and uses it as it is acquired from the respective agency.

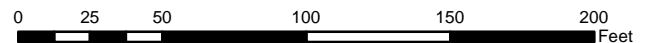
FIGURE 1 - VICINITY MAP
NERT DOUBLE-RING INFILTRMETER TESTING

Drawn By: DD	Date Drawn: 8/12/2016
20153655 Phase E2	Figure No. 1

J:\OBS\ux_jobs\GIS\Maps\Figure 1.mxd



● Infiltrometer Testing Sites





GEOTECHNICAL & ENVIRONMENTAL SERVICES, INC.
 7150 Placid St.
 Las Vegas, NV 89119
 702-365-1001
www.gesnevada.com

NOTE: Data presented on this map is a compilation of GIS Metadata extracted from a variety of sources. Major Streets, Airports, and Railroads is data obtained from the Southern Nevada GIS Management Office. This data is downloaded by GES for incorporation into drawings generated by GES. Data contained within this page is to be used for informational purposes only. GES has not modified the data contained herein and uses it as it is acquired from the respective agency.

**FIGURE 2 - TESTING LOCATION MAP
NERT DOUBLE-RING INFILTROMETER TESTING**

Drawn By: DD	Date Drawn: 8/12/2016
20153655 Phase E2	Figure No. 2

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Appendix A
Site Photographs



1. View of a typical double-ring infiltrometer testing setup. Water was siphoned from tanks in the truck bed to refill the Mariotte tubes, visible at the right of the picture.



2. View of the canopy shade structure covering the Mariotte tubes and testing pit during testing. Shade structures were often adjusted as testing progressed to maintain shade over the infiltration rings.



3. Close-up view of a typical testing pit, double-ring testing equipment and Mariotte tubes.



Project No. 20153655E2

Double-Ring Infiltrometer
Testing
NERT - BMI Complex
Henderson, Nevada

Appendix A
Site Photographs



4. Wide-angle view of a typical double-ring infiltrometer testing setup.



5. Wide-angle view of a canopy shade structure covering the Mariotte tubes and testing pit.



6. Close-up view of a typical test pit and double-ring testing equipment. At given time intervals described in the report, water was directed from the Mariotte tubes at left into the rings, in order to refill the rings to the initial water levels.



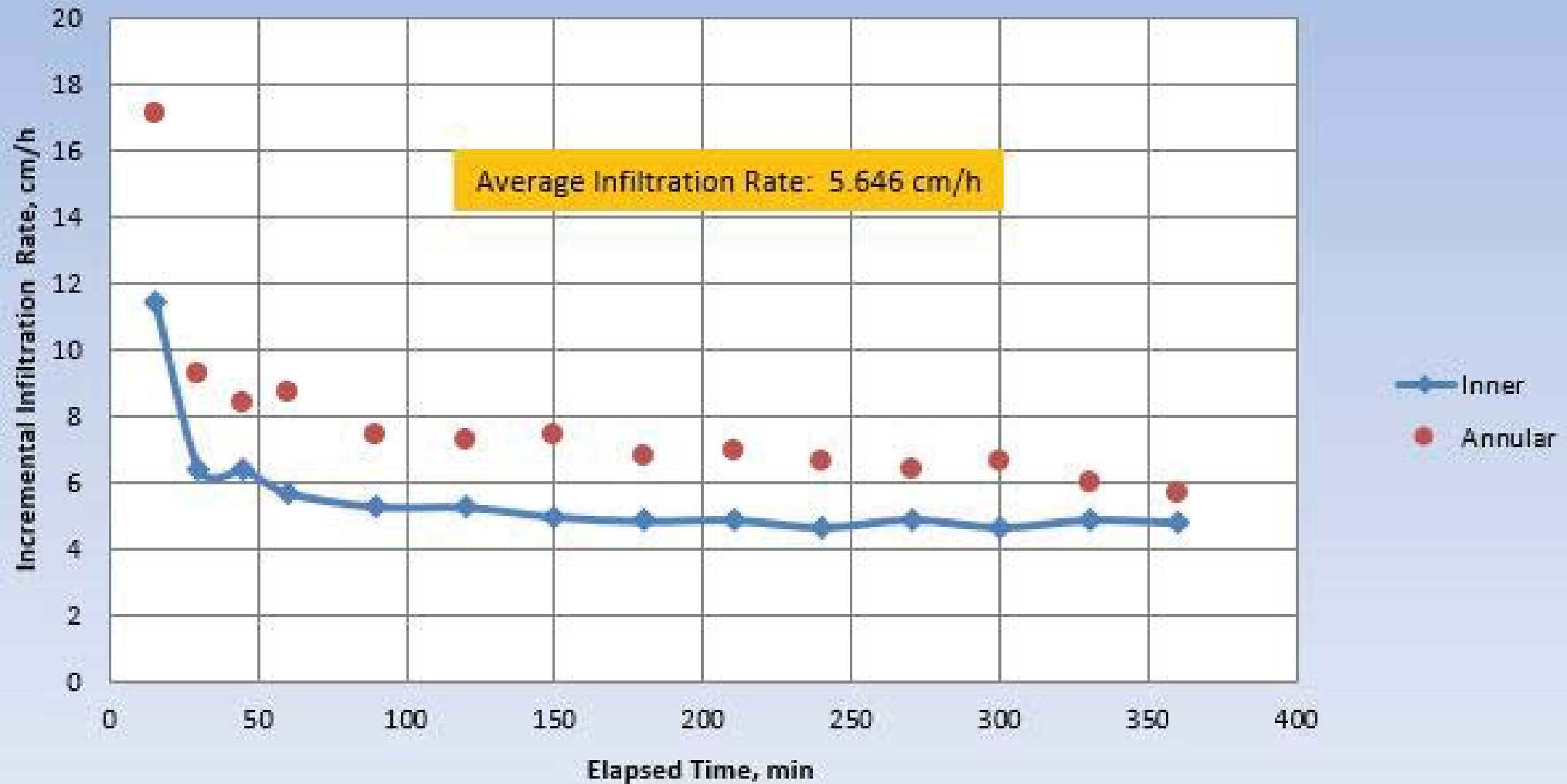
Project No. 20153655E2

Double-Ring Infiltrimeter
Testing
NERT - BMI Complex
Henderson, Nevada

**Appendix A
Site Photographs**

Appendix B
Infiltrometer Testing Data

Figure 3 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-1



Project Number 20153655E2
 Test Number DFSB-1
 Test Location
 Date 8/8/2016
 Tested By J. Shockley
 Liquid Used Water
 Liquid pH 7
 Weather Hot, sunny, gusty
 Ground Temp 100.0 °F
 Testing Depth 2'

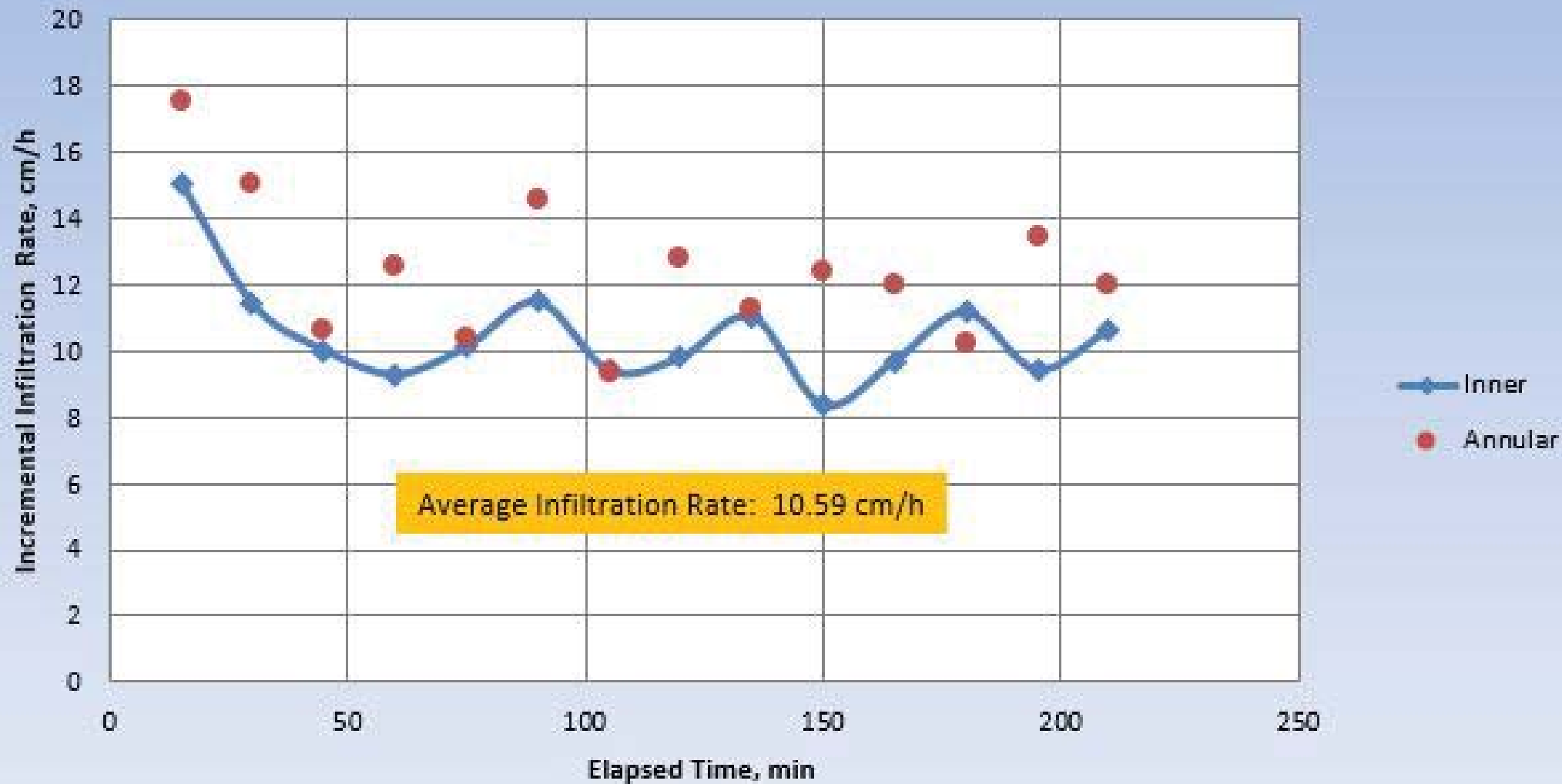
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	7.6
Annular space	2126.6	7.6
Inner ring penetration	7.6	
Outer ring penetration	7.6	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	7:55	15	60.0	2030	60.0	9116.685	90.0 °F	11.49	17.15	Refilled Mariotte tubes
	E	8:10	(15)	19.4		5.3					
2	S	8:10	15	60.0	1130	60.0	4916.677	90.0 °F	6.39	9.25	Refilled Mariotte tubes
	E	8:25	(30)	37.4		30.5					
3	S	8:25	15	60.0	1125	60.0	4450.009	90.0 °F	6.37	8.37	Refilled Mariotte tubes
	E	8:40	(45)	37.5		33.3					
4	S	8:40	15	60.0	1005	60.0	4650.009	95.0 °F	5.69	8.75	Refilled Mariotte tubes
	E	8:55	(60)	39.9		32.1					
5	S	8:55	30	60.0	1865	60.0	7950.016	95.0 °F	5.28	7.48	Refilled Mariotte tubes
	E	9:25	(90)	22.7		12.3					
6	S	9:25	30	60.0	1860	60.0	7766.682	95.0 °F	5.26	7.30	Refilled Mariotte tubes
	E	9:55	(120)	22.8		13.4					
7	S	9:56	30	60.0	1755	60.0	7916.683	100.0 °F	4.97	7.45	Refilled Mariotte tubes
	E	10:26	(150)	24.9		12.5					
8	S	10:26	30	60.0	1710	60.0	7250.015	100.0 °F	4.84	6.82	Refilled Mariotte tubes
	E	10:56	(180)	25.8		16.5					
9	S	10:57	30	60.0	1725	60.0	7383.348	100.0 °F	4.88	6.94	Refilled Mariotte tubes
	E	11:27	(210)	25.5		15.7					
10	S	11:27	30	60.0	1645	60.0	7033.347	100.0 °F	4.65	6.61	Refilled Mariotte tubes
	E	11:57	(240)	27.1		17.8					
11	S	11:57	30	60.0	1730	60.0	6783.347	100.0 °F	4.89	6.38	Refilled Mariotte tubes
	E	12:27	(270)	25.4		19.3					
12	S	12:27	30	60.0	1645	60.0	7100.014	100.0 °F	4.65	6.68	Refilled Mariotte tubes
	S	12:57	(300)	27.1		17.4					
13	S	12:57	30	60.0	1725	60.0	6350.013	100.0 °F	4.88	5.97	Refilled Mariotte tubes
	E	13:27	(330)	25.5		21.9					
14	S	13:27	30	60.0	1695	60.0	6066.679	100.0 °F	4.80	5.71	end test
	E	13:57	(360)	26.1		23.6					

Figure 4 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-2



Project Number 20153655E2
 Test Number DFSB-2
 Test Location
 Date 8/8/2016
 Tested By D. Decker
 Liquid Used Water
 Liquid pH
 Weather Hot, dry
 Ground Temp 86°F
 Testing Depth 2'

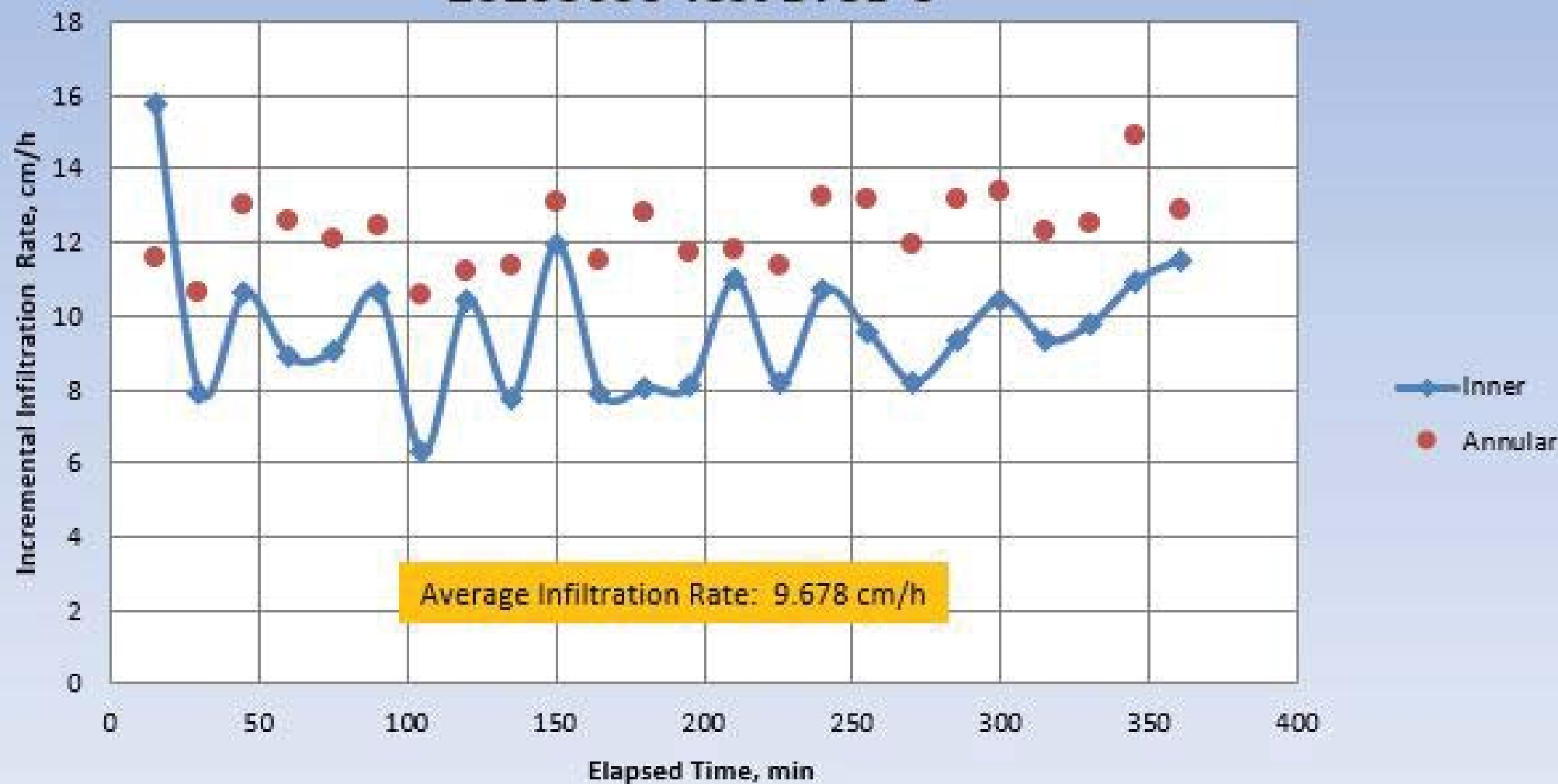
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	7.6
Annular space	2126.6	7.6
Inner ring penetration	7.6	
Outer ring penetration	6.4	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	7:40	15	60.0	2660	60.0	9316.685	89.0 °F	15.05	17.52	Refilled Mariotte tubes
	E	7:55	(15)	6.8		4.1					
2	S	7:55	15	60.0	2015	60.0	7983.349	87.0 °F	11.40	15.02	Refilled Mariotte tubes
	E	8:10	(30)	19.7		12.1					
3	S	8:10	15	60.0	1770	60.0	5650.011	86.0 °F	10.02	10.63	Refilled Mariotte tubes
	E	8:25	(45)	24.6		26.1					
4	S	8:25	15	60.0	1640	60.0	6666.68	88.0 °F	9.28	12.54	Refilled Mariotte tubes
	E	8:40	(60)	27.2		20.0					
5	S	8:40	15	60.0	1790	60.0	5516.678	86.0 °F	10.13	10.38	Refilled Mariotte tubes
	E	8:55	(75)	24.2		26.9					
6	S	8:55	15	60.0	2030	60.0	7750.016	88.0 °F	11.49	14.58	Refilled Mariotte tubes
	E	9:10	(90)	19.4		13.5					
7	S	9:10	15	60.0	1660	60.0	4983.343	87.0 °F	9.39	9.37	Refilled Mariotte tubes
	E	9:25	(105)	26.8		30.1					
8	S	9:25	15	60.0	1730	60.0	6783.347	88.0 °F	9.79	12.76	Refilled Mariotte tubes
	E	9:40	(120)	25.4		19.3					
9	S	9:40	15	60.0	1950	60.0	6000.012	90.0 °F	11.03	11.29	Refilled Mariotte tubes
	E	9:55	(135)	21.0		24.0					
10	S	9:55	15	60.0	1475	60.0	6583.347	90.0 °F	8.35	12.38	Refilled Mariotte tubes
	E	10:10	(150)	30.5		20.5					
11	S	10:10	15	60.0	1710	60.0	6383.346	91.0 °F	9.68	12.01	Refilled Mariotte tubes
	E	10:25	(165)	25.8		21.7					
12	S	10:25	15	60.0	1975	60.0	5416.678	93.0 °F	11.18	10.19	Refilled Mariotte tubes
	S	10:40	(180)	20.5		27.5					
13	S	10:40	15	60.0	1665	60.0	7116.681	94.0 °F	9.42	13.39	Refilled Mariotte tubes
	E	10:55	(195)	26.7		17.3					
14	S	10:55	15	60.0	1875	60.0	6383.346	94.0 °F	10.61	12.01	Refilled Mariotte tubes
	E	11:10	(210)	22.5		21.7					
15	S	11:10	15	60.0	1875	60.0	5966.679	95.0 °F	10.61	11.22	Refilled Mariotte tubes
	E	11:25	(225)	22.5		24.2					
16	S	11:25	15	60.0	1825	60.0	6950.014	95.0 °F	10.33	13.07	Refilled Mariotte tubes
	E	11:40	(240)	23.5		18.3					
17	S	11:40	15	60.0	1855	60.0	5883.345	95.0 °F	10.50	11.07	Refilled Mariotte tubes
	E	11:55	(255)	22.9		24.7					
18	S	11:55	15	60.0	1820	60.0	6816.68	95.0 °F	10.30	12.82	Refilled Mariotte tubes
	E	12:10	(270)	23.6		19.1					
19	S	12:10	15	60.0	1870	60.0	6116.679	96.0 °F	10.58	11.51	Refilled Mariotte tubes
	E	12:25	(285)	22.6		23.3					
20	S	12:25	15	60.0	2190	60.0	7300.015	94.0 °F	12.39	13.73	Refilled Mariotte tubes
	E	12:40	(300)	16.2		16.2					
21	S	12:40	15	60.0	1690	60.0	6100.012	98.0 °F	9.56	11.47	Refilled Mariotte tubes
	E	12:55	(315)	26.2		23.4					
22	S	12:55	15	60.0	1880	60.0	6666.68	98.0 °F	10.64	12.54	Refilled Mariotte tubes
	E	13:10	(330)	22.4		20.0					
23	S	13:10	15	60.0	1940	60.0	7000.014	101.0 °F	10.98	13.17	Refilled Mariotte tubes
	E	13:25	(345)	21.2		18.0					
24	S	13:25	15	60.0	2035	60.0	6666.68		11.52	12.54	end test
	E	13:40	(360)	19.3		20.0					

Figure 5 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-3



Project Number 20153655E2
 Test Number DFSB-3
 Test Location
 Date 08/04/2016
 Tested By D. Decker
 Liquid Used Water
 Liquid pH
 Weather Hot, dry
 Ground Temp 97° F
 Testing Depth 2'

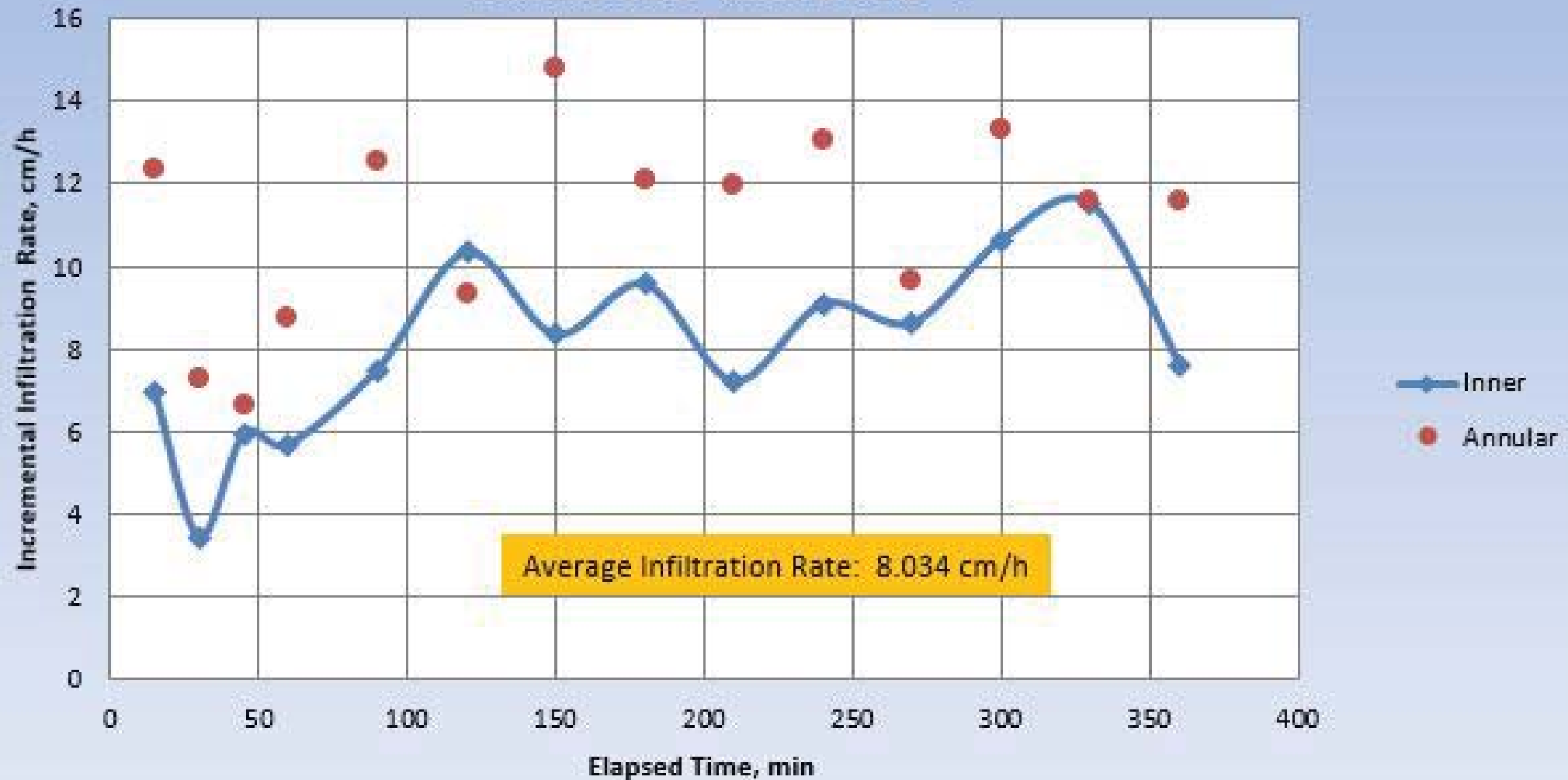
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	7.6
Annular space	2126.6	7.6
Inner ring penetration	7.6	
Outer ring penetration	6.35	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	9:39	15	60.0	2780	60.0	6150.012	85.0 °F	15.73	11.57	Refilled Mariotte tubes
	E	9:54	(15)	4.4		23.1					
2	S	9:54	15	60.0	1400	60.0	5666.678	87.0 °F	7.92	10.66	Refilled Mariotte tubes
	E	10:09	(30)	32.0		26.0					
3	S	10:09	15	60.0	1875	60.0	6916.681	89.0 °F	10.61	13.01	Refilled Mariotte tubes
	E	10:24	(45)	22.5		18.5					
4	S	10:24	15	60.0	1570	60.0	6700.013	89.0 °F	8.88	12.60	Refilled Mariotte tubes
	E	10:39	(60)	28.6		19.8					
5	S	10:39	15	60.0	1600	60.0	6416.68		9.05	12.07	Refilled Mariotte tubes
	E	10:54	(75)	28.0		21.5					
6	S	10:54	15	60.0	1875	60.0	6633.347		10.61	12.48	Refilled Mariotte tubes
	E	11:09	(90)	22.5		20.2					
7	S	11:09	15	60.0	1110	60.0	5616.678		6.28	10.56	Refilled Mariotte tubes
	E	11:24	(105)	37.8		26.3					
8	S	11:24	15	60.0	1840	60.0	5966.679		10.41	11.22	Refilled Mariotte tubes
	E	11:39	(120)	23.2		24.2					
9	S	11:39	15	60.0	1375	60.0	6033.345		7.78	11.35	Refilled Mariotte tubes
	E	11:54	(135)	32.5		23.8					
10	S	11:54	15	60.0	2110	60.0	6950.014		11.94	13.07	Refilled Mariotte tubes
	E	12:09	(150)	17.8		18.3					
11	S	12:09	15	60.0	1390	60.0	6116.679		7.87	11.51	Refilled Mariotte tubes
	E	12:24	(165)	32.2		23.3					
12	S	12:24	15	60.0	1425	60.0	6816.68		8.06	12.82	Refilled Mariotte tubes
	E	12:39	(180)	31.5		19.1					
13	S	12:39	15	60.0	1435	60.0	6216.679		8.12	11.69	Refilled Mariotte tubes
	E	12:54	(195)	31.3		22.7					
14	S	12:54	15	60.0	1940	60.0	6250.013		10.98	11.76	Refilled Mariotte tubes
	E	13:09	(210)	21.2		22.5					
15	S	13:09	15	60.0	1445	60.0	6050.012		8.18	11.38	Refilled Mariotte tubes
	E	13:24	(225)	31.1		23.7					
16	S	13:24	15	60.0	1890	60.0	7033.347		10.70	13.23	Refilled Mariotte tubes
	E	13:39	(240)	22.2		17.8					
17	S	13:39	15	60.0	1690	60.0	7000.014		9.56	13.17	Refilled Mariotte tubes
	E	13:54	(255)	26.2		18.0					
18	S	13:54	15	60.0	1450	60.0	6333.346		8.21	11.91	Refilled Mariotte tubes
	E	14:09	(270)	31.0		22.0					
19	S	14:09	15	60.0	1650	60.0	7000.014		9.34	13.17	Refilled Mariotte tubes
	E	14:24	(285)	27.0		18.0					
20	S	14:24	15	60.0	1845	60.0	7116.681		10.44	13.39	Refilled Mariotte tubes
	E	14:39	(300)	23.1		17.3					
21	S	14:39	15	60.0	1650	60.0	6533.346		9.34	12.29	Refilled Mariotte tubes
	E	14:54	(315)	27.0		20.8					
22	S	14:54	15	60.0	1730	60.0	6666.68		9.79	12.54	Refilled Mariotte tubes
	E	15:09	(330)	25.4		20.0					
23	S	15:09	15	60.0	1935	60.0	7916.683		10.95	14.89	Refilled Mariotte tubes
	E	15:24	(345)	21.3		12.5					
24	S	15:24	15	60.0	2035	60.0	6833.347		11.52	12.85	End Test
	E	13:39	(360)	19.3		19.0					

Figure 6 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-4



Project Number 20153655E2
 Test Number DFSB-4
 Test Location
 Date 8/10/2016
 Tested By D. DECKER
 Liquid Used Water
 Liquid pH
 Weather Warm, dry
 Ground Temp 89° F
 Testing Depth 2'

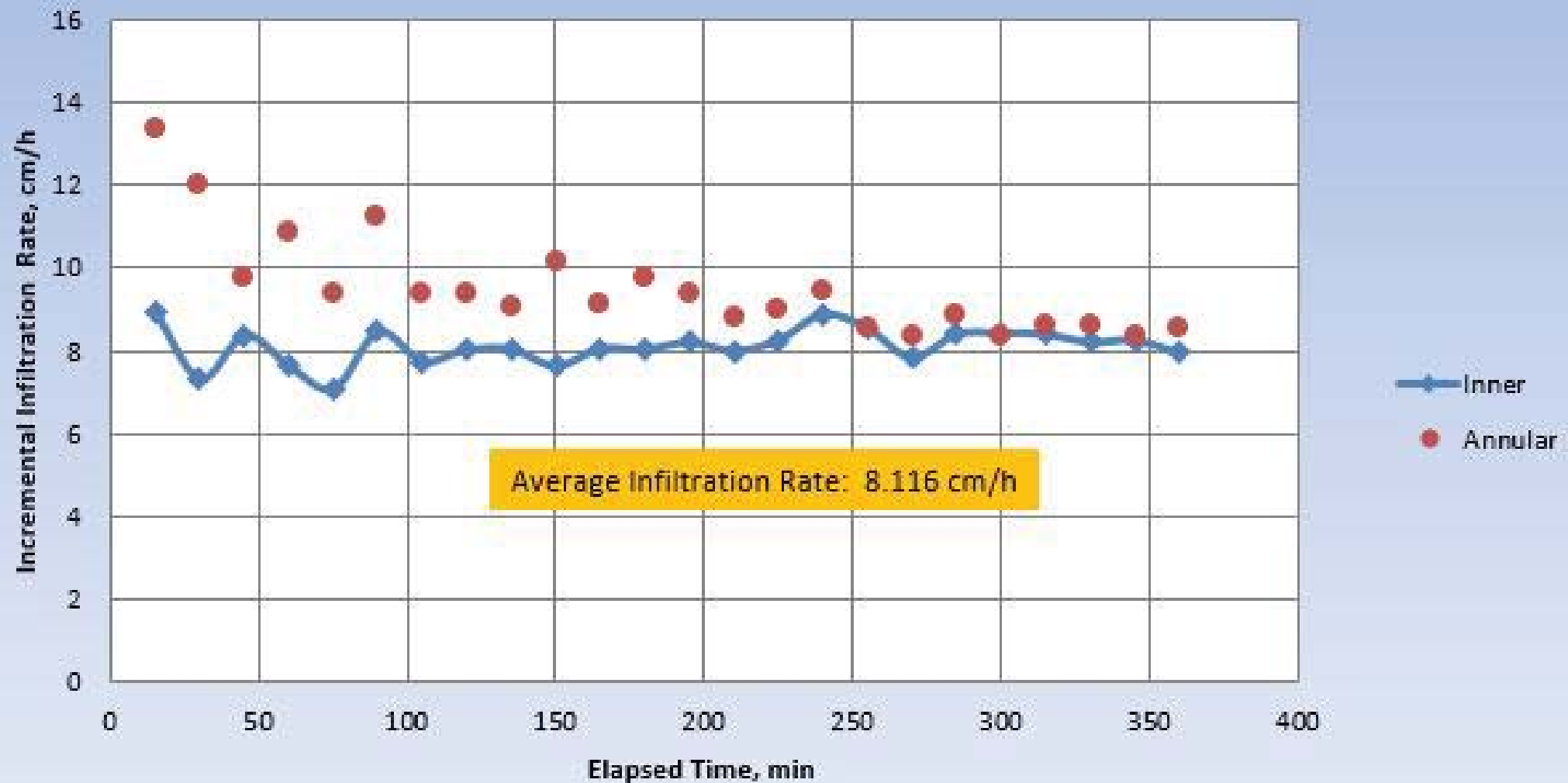
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	7.6
Annular space	2126.6	7.6
Inner ring penetration	7.6	
Outer ring penetration	7.6	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	7:31	15	60.0	1230	60.0	6566.68	85.0 °F	6.96	12.35	Refilled Mariotte tubes
	E	7:46	(15)	35.4		20.6		85.0 °F			
2	S	7:46	15	60.0	610	60.0	3883.341	85.0 °F	3.45	7.30	Refilled Mariotte tubes
	E	8:01	(30)	47.8		36.7		85.0 °F			
3	S	8:01	15	60.0	1050	60.0	3516.674	85.0 °F	5.94	6.61	Refilled Mariotte tubes
	E	8:16	(45)	39.0		38.9		85.0 °F			
4	S	8:16	15	60.0	1005	60.0	4650.009	85.0 °F	5.69	8.75	Refilled Mariotte tubes
	E	8:31	(60)	39.9		32.1		86.0 °F			
5	S	8:31	15	60.0	1325	60.0	6666.68	86.0 °F	7.50	12.54	Refilled Mariotte tubes
	E	9:01	(75)	33.5		20.0		87.0 °F			
6	S	9:01	15	60.0	1825	60.0	4950.01	87.0 °F	10.33	9.31	Refilled Mariotte tubes
	E	9:31	(90)	23.5		30.3		92.0 °F			
7	S	9:31	15	60.0	1475	60.0	7866.682	92.0 °F	8.35	14.80	Refilled Mariotte tubes
	E	10:01	(105)	30.5		12.8		93.0 °F			
8	S	10:01	15	60.0	1690	60.0	6416.68	93.0 °F	9.56	12.07	Refilled Mariotte tubes
	E	10:31	(120)	26.2		21.5		95.0 °F			
9	S	10:31	15	60.0	1275	60.0	6350.013	95.0 °F	7.22	11.94	Refilled Mariotte tubes
	E	11:01	(135)	34.5		21.9		99.0 °F			
10	S	11:01	15	60.0	1605	60.0	6933.347	99.0 °F	9.08	13.04	Refilled Mariotte tubes
	E	11:31	(150)	27.9		18.4		100.0 °F			
11	S	11:31	15	60.0	1525	60.0	5116.677	100.0 °F	8.63	9.62	Refilled Mariotte tubes
	E	12:01	(165)	29.5		29.3		103.0 °F			
12	S	12:01	15	60.0	1880	60.0	7066.681	103.0 °F	10.64	13.29	Refilled Mariotte tubes
	E	12:31	(180)	22.4		17.6		103.0 °F			
13	S	12:31	15	60.0	2035	60.0	6166.679	103.0 °F	11.52	11.60	Refilled Mariotte tubes
	E	13:01	(195)	19.3		23.0		104.0 °F			
14	S	13:01	15	60.0	1345	60.0	6166.679	104.0 °F	7.61	11.60	end test
	E	13:31	(210)	33.1		23.0					

Figure 7 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-5



Project Number 20153655E2
 Test Number DFSB-5
 Test Location
 Date 08/04/2016
 Tested By J. Shockley
 Liquid Used Water
 Liquid pH 7
 Weather Rainy, Cloudy
 Ground Temp 85° F
 Testing Depth 2'

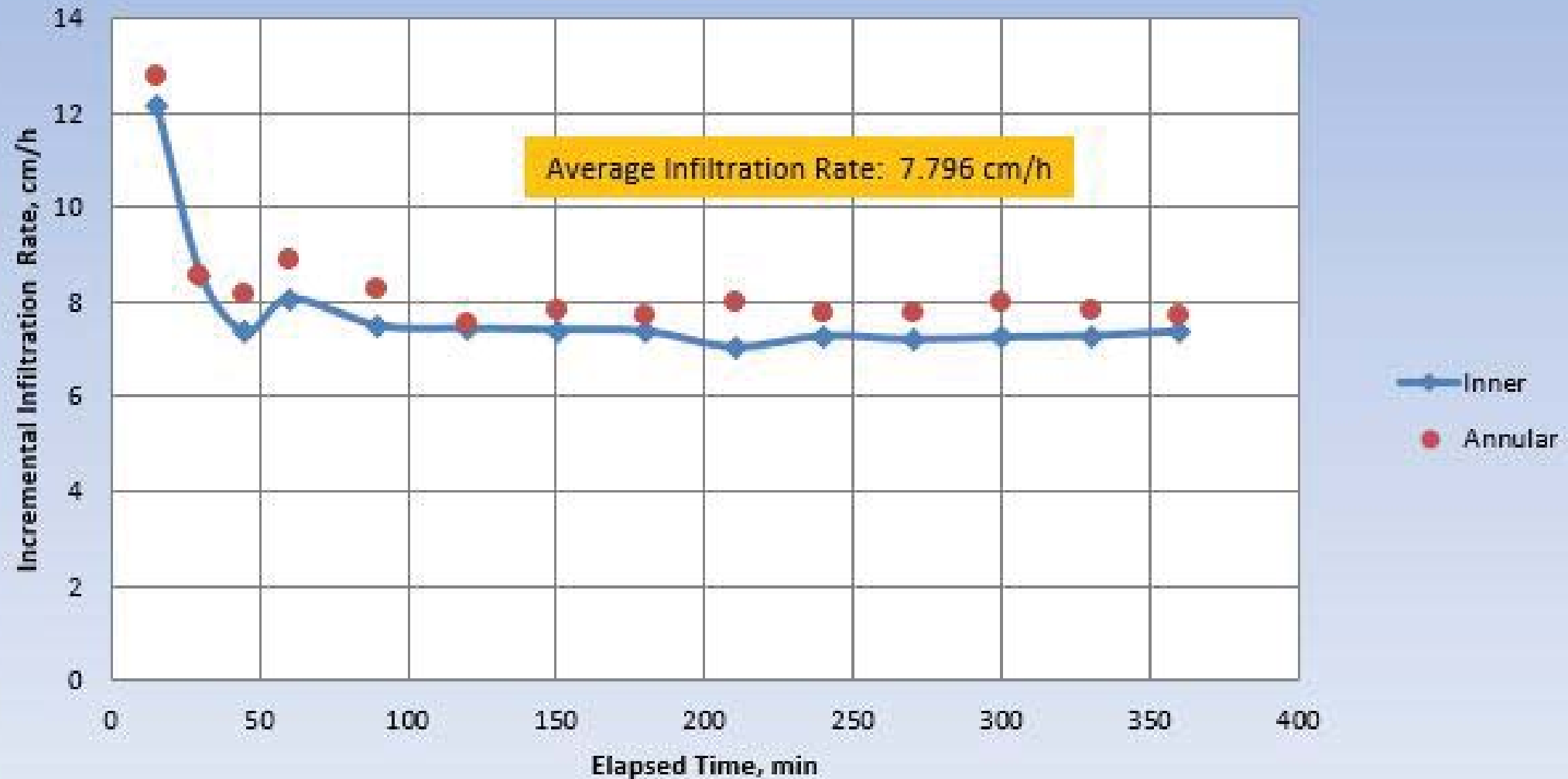
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	10.16
Annular space	2126.6	10.16
Inner ring penetration	7.62	
Outer ring penetration	7.62	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	7:50	15	60.0	1575	60.0	7116.681	85.0 °F	8.91	13.39	Refilled Mariotte tubes
	E	8:05	(15)	28.5		17.3					
2	S	8:05	15	60.0	1295	60.0	6383.346	85.0 °F	7.33	12.01	Refilled Mariotte tubes
	E	8:20	(30)	34.1		21.7					
3	S	8:20	15	60.0	1480	60.0	5183.344	85.0 °F	8.38	9.75	Refilled Mariotte tubes
	E	8:35	(45)	30.4		28.9					
4	S	8:35	15	60.0	1350	60.0	5783.345	85.0 °F	7.64	10.88	Refilled Mariotte tubes
	E	8:50	(60)	33.0		25.3					
5	S	8:50	15	60.0	1255	60.0	5000.01	85.0 °F	7.10	9.40	Refilled Mariotte tubes
	E	9:05	(75)	34.9		30.0					
6	S	9:05	15	60.0	1495	60.0	5983.345	85.0 °F	8.46	11.25	Refilled Mariotte tubes
	E	9:20	(90)	30.1		24.1					
7	S	9:20	15	60.0	1370	60.0	5000.01	85.0 °F	7.75	9.40	Refilled Mariotte tubes
	E	9:35	(105)	32.6		30.0					
8	S	9:35	15	60.0	1420	60.0	4983.343	85.0 °F	8.04	9.37	Refilled Mariotte tubes
	E	9:50	(120)	31.6		30.1					
9	S	9:50	15	60.0	1420	60.0	4833.343	85.0 °F	8.04	9.09	Refilled Mariotte tubes
	E	10:05	(135)	31.6		31.0					
10	S	10:05	15	60.0	1350	60.0	5400.011	85.0 °F	7.64	10.16	Refilled Mariotte tubes
	E	10:20	(150)	33.0		27.6					
11	S	10:20	15	60.0	1425	60.0	4850.01	85.0 °F	8.06	9.12	Refilled Mariotte tubes
	E	10:35	(165)	31.5		30.9					
12	S	10:35	15	60.0	1420	60.0	5200.01	85.0 °F	8.04	9.78	Refilled Mariotte tubes
	E	10:50	(180)	31.6		28.8					
13	S	10:50	15	60.0	1450	60.0	5000.01	85.0 °F	8.21	9.40	Refilled Mariotte tubes
	E	11:05	(195)	31.0		30.0					
14	S	11:05	15	60.0	1415	60.0	4683.343	85.0 °F	8.01	8.81	Refilled Mariotte tubes
	E	11:20	(210)	31.7		31.9					
15	S	11:20	15	60.0	1460	60.0	4800.01	85.0 °F	8.26	9.03	Refilled Mariotte tubes
	E	11:35	(225)	30.8		31.2					
16	S	11:35	15	60.0	1570	60.0	5016.677	85.0 °F	8.88	9.44	Refilled Mariotte tubes
	E	11:50	(240)	28.6		29.9					
17	S	11:50	15	60.0	1510	60.0	4533.342	85.0 °F	8.54	8.53	Refilled Mariotte tubes
	E	12:05	(255)	29.8		32.8					
18	S	12:05	15	60.0	1385	60.0	4433.342	85.0 °F	7.84	8.34	Refilled Mariotte tubes
	E	12:20	(270)	32.3		33.4					
19	S	12:20	15	60.0	1485	60.0	4716.676	85.0 °F	8.40	8.87	Refilled Mariotte tubes
	E	12:35	(285)	30.3		31.7					
20	S	12:35	15	60.0	1490	60.0	4450.009	85.0 °F	8.43	8.37	Refilled Mariotte tubes
	E	12:50	(300)	30.2		33.3					
21	S	12:50	15	60.0	1485	60.0	4583.343	85.0 °F	8.40	8.62	Refilled Mariotte tubes
	E	13:05	(315)	30.3		32.5					
22	S	13:05	15	60.0	1450	60.0	4583.343	85.0 °F	8.21	8.62	Refilled Mariotte tubes
	E	13:20	(330)	31.0		32.5					
23	S	13:20	15	60.0	1460	60.0	4450.009	85.0 °F	8.26	8.37	Refilled Mariotte tubes
	E	13:35	(345)	30.8		33.3					
24	S	13:35	15	60.0	1405	60.0	4533.342	85.0 °F	7.95	8.53	end test
	E	13:50	(360)	31.9		32.8					

Figure 8 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655Test DFSB-6



Project Number 20153655E2
 Test Number DFSB-6
 Test Location
 Date 08/03/2016
 Tested By J. Shockley
 Liquid Used Water
 Liquid pH 7
 Weather Hot sunny
 Ground Temp 85° F - 95° F
 Testing Depth 2'

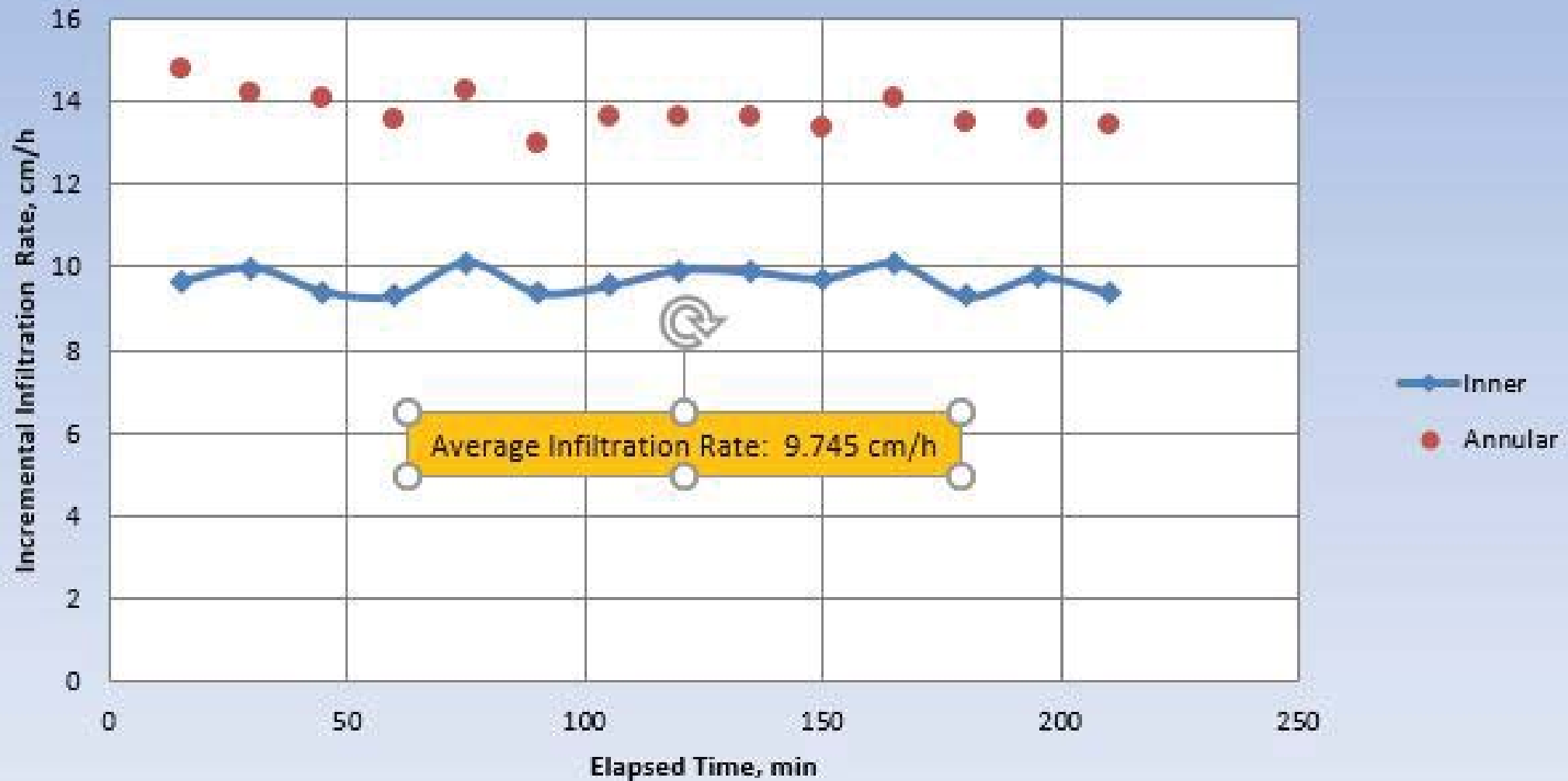
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	12.7
Annular space	2126.6	12.7
Inner ring penetration	10.16	
Outer ring penetration	10.16	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	9:45	15	60.0	2145	60.0	6800.014	90.0 °F	12.14	12.79	Refilled Mariotte tubes
	E	10:00	(15)	17.1		19.2					
2	S	10:00	15	60.0	1510	60.0	4550.009	90.0 °F	8.54	8.56	Refilled Mariotte tubes
	E	10:15	(30)	29.8		32.7					
3	S	10:15	15	60.0	1300	60.0	4333.342	90.0 °F	7.36	8.15	Refilled Mariotte tubes
	E	10:30	(45)	34.0		34.0					
4	S	10:30	15	60.0	1425	60.0	4716.676	90.0 °F	8.06	8.87	Refilled Mariotte tubes
	E	10:45	(60)	31.5		31.7					
5	S	10:45	30	60.0	2645	60.0	8783.351	90.0 °F	7.48	8.26	Refilled Mariotte tubes
	E	11:15	(90)	7.1		7.3					
6	S	11:15	30	60.0	2625	60.0	8033.349	90.0 °F	7.43	7.56	Refilled Mariotte tubes
	E	11:45	(120)	7.5		11.8					
7	S	11:45	30	60.0	2615	60.0	8316.683	95.0 °F	7.40	7.82	Refilled Mariotte tubes
	E	12:15	(150)	7.7		10.1					
8	S	12:15	30	60.0	2605	60.0	8200.016	95.0 °F	7.37	7.71	Refilled Mariotte tubes
	E	12:45	(180)	7.9		10.8					
9	S	12:45	30	60.0	2485	60.0	8516.684	95.0 °F	7.03	8.01	Refilled Mariotte tubes
	E	13:15	(210)	10.3		8.9					
10	S	13:15	30	60.0	2570	60.0	8233.35	95.0 °F	7.27	7.74	Refilled Mariotte tubes
	E	13:45	(240)	8.6		10.6					
11	S	13:45	30	60.0	2540	60.0	8250.017	100.0 °F	7.19	7.76	Refilled Mariotte tubes
	E	14:15	(270)	9.2		10.5					
12	S	14:15	30	60.0	2560	60.0	8483.35	100.0 °F	7.24	7.98	Refilled Mariotte tubes
	E	14:45	(300)	8.8		9.1					
13	S	14:45	30	60.0	2570	60.0	8333.35	100.0 °F	7.27	7.84	Refilled Mariotte tubes
	E	15:15	(330)	8.6		10.0					
14	S	15:15	30	60.0	2605	60.0	8183.35	100.0 °F	7.37	7.70	end test
	E	15:45	(360)	7.9		10.9					

Figure 9 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-7



Project Number 20153655E2
 Test Number DFSB-7
 Test Location
 Date 08/05/2016
 Tested By J. Shockley
 Liquid Used Water
 Liquid pH 7
 Weather Warm, sunny
 Ground Temp 100 F
 Testing Depth 2'

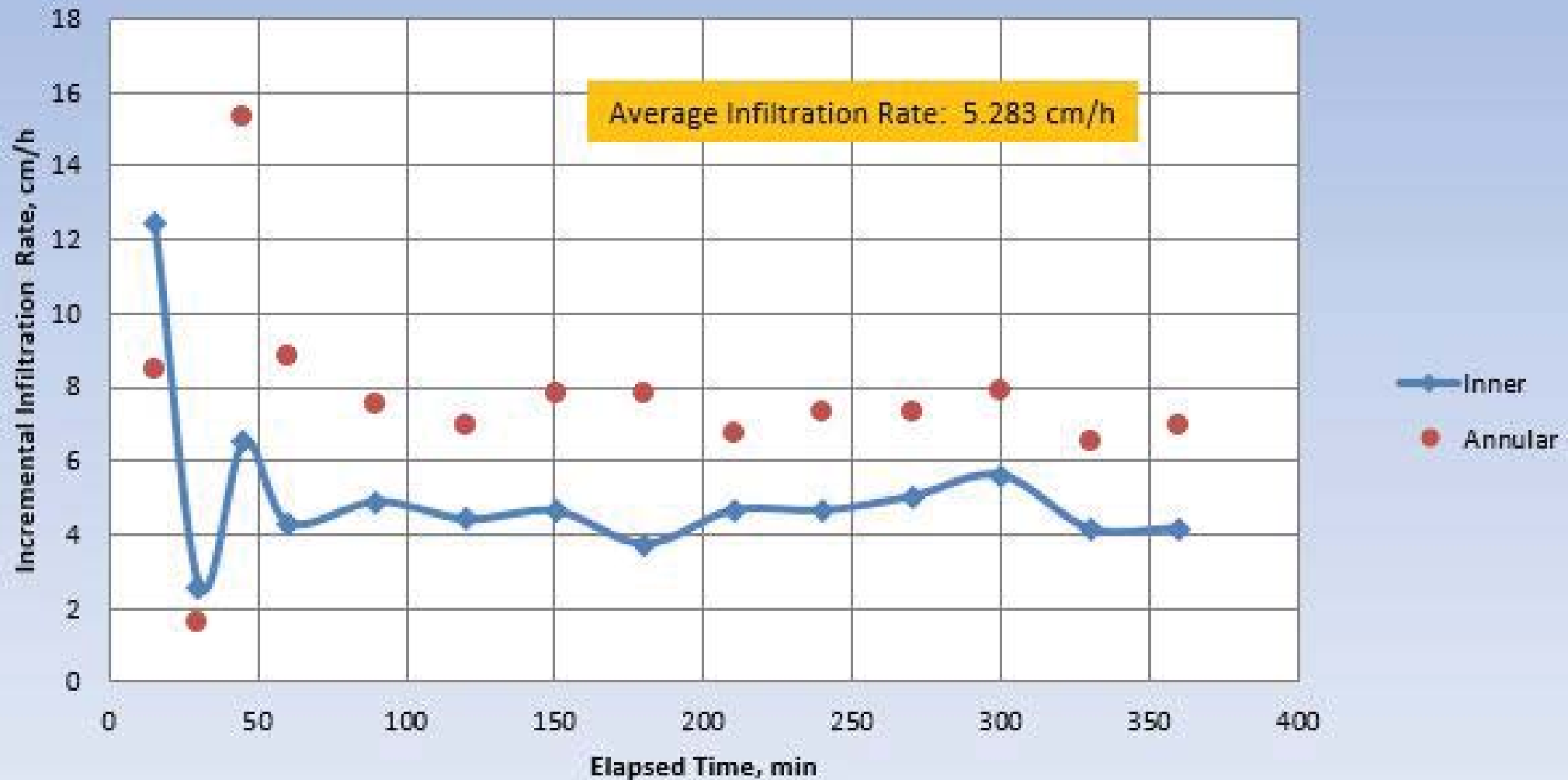
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	10.16
Annular space	2126.6	10.16
Inner ring penetration	7.62	
Outer ring penetration	7.62	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	7:57	15	60.0	1710	60.0	7850.016	85.0 °F	9.68	14.77	Refilled Mariotte tubes
	E	8:12	(15)	25.8		12.9					
2	S	8:12	15	60.0	1765	60.0	7566.682	85.0 °F	9.99	14.23	Refilled Mariotte tubes
	E	8:27	(30)	24.7		14.6					
3	S	8:27	15	60.0	1665	60.0	7466.682	85.0 °F	9.42	14.04	Refilled Mariotte tubes
	E	8:42	(45)	26.7		15.2					
4	S	8:42	15	60.0	1650	60.0	7210.014	90.0 °F	9.34	13.56	Refilled Mariotte tubes
	E	8:57	(60)	27.0		16.7					
5	S	8:57	15	60.0	1785	60.0	7583.349	90.0 °F	10.10	14.26	Refilled Mariotte tubes
	E	9:12	(75)	24.3		14.5					
6	S	9:12	15	60.0	1660	60.0	6916.681	90.0 °F	9.39	13.01	Refilled Mariotte tubes
	E	9:27	(90)	26.8		18.5					
7	S	9:27	15	60.0	1690	60.0	7233.348	90.0 °F	9.56	13.61	Refilled Mariotte tubes
	E	9:42	(105)	26.2		16.6					
8	S	9:42	15	60.0	1755	60.0	7250.015	90.0 °F	9.93	13.64	Refilled Mariotte tubes
	E	9:57	(120)	24.9		16.5					
9	S	9:57	15	60.0	1745	60.0	7250.015	90.0 °F	9.87	13.64	Refilled Mariotte tubes
	E	10:12	(135)	25.1		16.5					
10	S	10:12	15	60.0	1720	60.0	7116.681	100.0 °F	9.73	13.39	Refilled Mariotte tubes
	E	10:27	(150)	25.6		17.3					
11	S	10:27	15	60.0	1780	60.0	7483.348	100.0 °F	10.07	14.08	Refilled Mariotte tubes
	E	10:42	(165)	24.4		15.1					
12	S	10:42	15	60.0	1645	60.0	7183.348	100.0 °F	9.31	13.51	Refilled Mariotte tubes
	E	10:57	(180)	27.1		16.9					
13	S	10:57	15	60.0	1725	60.0	7216.681	100.0 °F	9.76	13.57	Refilled Mariotte tubes
	E	11:12	(195)	25.5		16.7					
14	S	11:12	15	60.0	1660	60.0	7148.348	100.0 °F	9.39	13.45	Refilled Mariotte tubes
	E	11:27	(210)	26.8		17.1					
15	S	11:27	15	60.0	1740	60.0	7300.015	100.0 °F	9.85	13.73	Refilled Mariotte tubes
	E	11:42	(225)	25.2		16.2					
16	S	11:42	15	60.0	1720	60.0	6933.347	100.0 °F	9.73	13.04	Refilled Mariotte tubes
	E	11:57	(240)	25.6		18.4					
17	S	11:57	15	60.0	1685	60.0	7000.014	100.0 °F	9.54	13.17	Refilled Mariotte tubes
	E	12:12	(255)	26.3		18.0					
18	S	12:12	15	60.0	1795	60.0	7666.682	100.0 °F	10.16	14.42	Refilled Mariotte tubes
	E	12:27	(270)	24.1		14.0					
19	S	12:27	15	60.0	1690	60.0	6916.681	100.0 °F	9.56	13.01	Refilled Mariotte tubes
	E	12:42	(285)	26.2		18.5					
20	S	12:42	15	60.0	1790	60.0	7033.347	100.0 °F	10.13	13.23	Refilled Mariotte tubes
	E	12:57	(300)	24.2		17.8					
21	S	12:57	15	60.0	1720	60.0	7416.682	100.0 °F	9.73	13.95	Refilled Mariotte tubes
	E	13:12	(315)	25.6		15.5					
22	S	13:12	15	60.0	1720	60.0	7183.348	100.0 °F	9.73	13.51	Refilled Mariotte tubes
	E	13:27	(330)	25.6		16.9					
23	S	13:27	15	60.0	1765	60.0	7100.014	100.0 °F	9.99	13.35	Refilled Mariotte tubes
	E	13:42	(345)	24.7		17.4					
24	S	13:42	15	60.0	1750	60.0	6950.014	100.0 °F	9.90	13.07	end test
	E	13:57	(360)	25.0		18.3					

Figure 10 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-8



Project Number 20153655E2
 Test Number DFB-8
 Test Location
 Date 08/05/2016
 Tested By D. Decker
 Liquid Used Water
 Liquid pH
 Weather hot, dry
 Ground Temp 80 F
 Testing Depth 2'

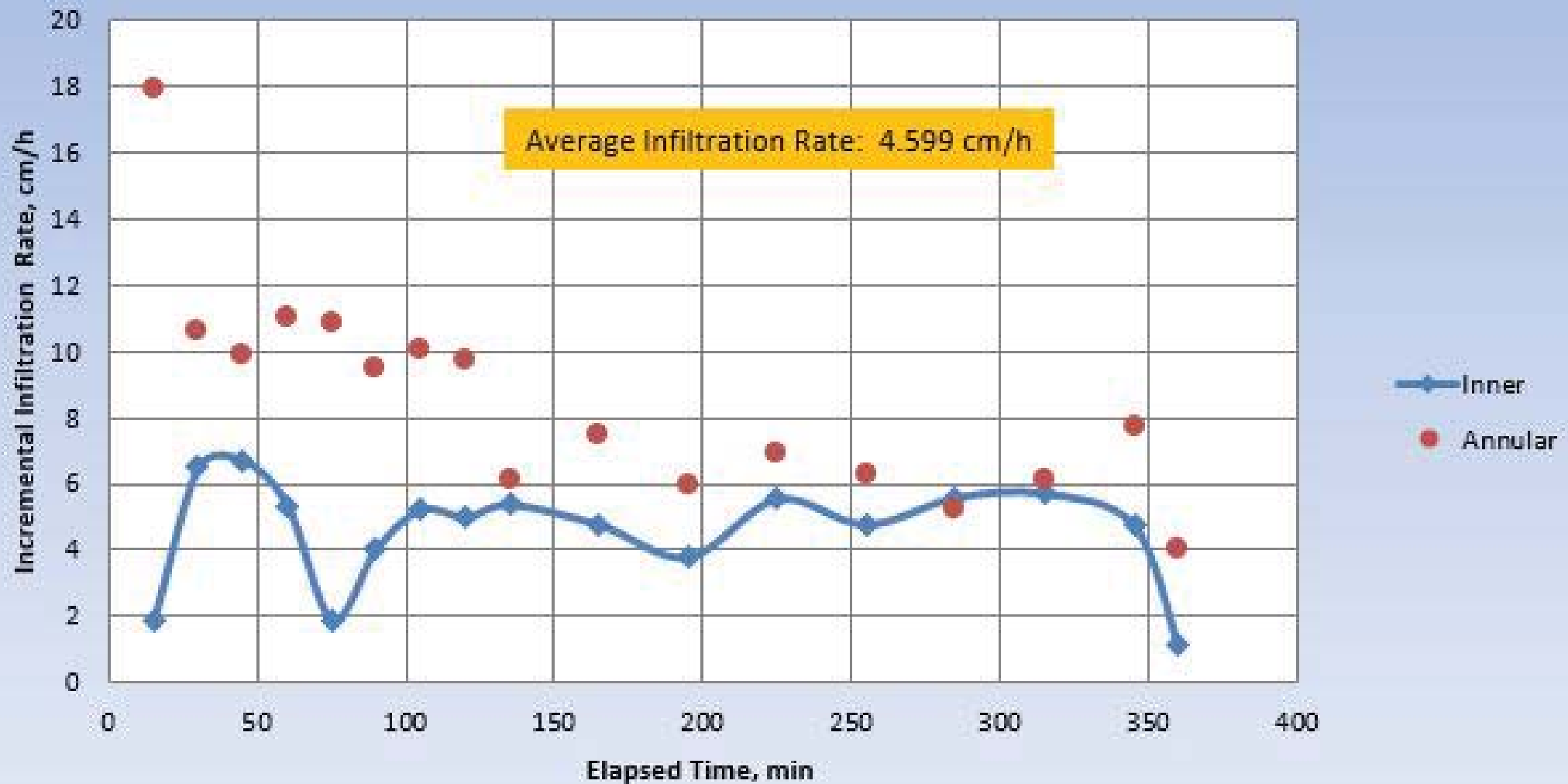
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	7.5
Annular space	2126.6	7.5
Inner ring penetration	7.5	
Outer ring penetration	6.25	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	8:01	15	60.0	2200	60.0	4500.009	76.0 °F	12.45	8.46	Refilled Mariotte tubes
	E	8:16	(15)	16.0		33.0					
2	S	8:16	15	60.0	455	60.0	850.0017	77.0 °F	2.57	1.60	Refilled Mariotte tubes
	E	8:31	(30)	50.9		54.9					
3	S	8:31	15	60.0	1150	60.0	8166.683	78.0 °F	6.51	15.36	Refilled Mariotte tubes
	E	8:46	(45)	37.0		11.0					
4	S	8:46	15	60.0	760	60.0	4700.009	77.0 °F	4.30	8.84	Refilled Mariotte tubes
	E	9:01	(60)	44.8		31.8					
5	S	9:01	30	60.0	1725	60.0	8016.683	79.0 °F	4.88	7.54	Refilled Mariotte tubes
	E	9:31	(90)	25.5		11.9					
6	S	9:31	30	60.0	1555	60.0	7416.682	82.0 °F	4.40	6.98	Refilled Mariotte tubes
	E	10:01	(120)	28.9		15.5					
7	S	10:01	30	60.0	1635	60.0	8300.017	81.0 °F	4.63	7.81	Refilled Mariotte tubes
	E	10:31	(150)	27.3		10.2					
8	S	10:31	30	60.0	1320	60.0	8283.35	83.0 °F	3.73	7.79	Refilled Mariotte tubes
	E	11:01	(180)	33.6		10.3					
9	S	11:01	30	60.0	1645	60.0	7183.348	85.0 °F	4.65	6.76	Refilled Mariotte tubes
	E	11:31	(210)	27.1		16.9					
10	S	11:31	30	60.0	1640	60.0	7816.682	85.0 °F	4.64	7.35	Refilled Mariotte tubes
	E	12:01	(240)	27.2		13.1					
11	S	12:01	30	60.0	1775	60.0	7750.016	85.0 °F	5.02	7.29	Refilled Mariotte tubes
	E	12:31	(270)	24.5		13.5					
12	S	12:31	30	60.0	1980	60.0	8366.683	88.0 °F	5.60	7.87	Refilled Mariotte tubes
	E	13:01	(300)	20.4		9.8					
13	S	13:01	30	60.0	1465	60.0	6933.347	92.0 °F	4.15	6.52	Refilled Mariotte tubes
	E	13:31	(330)	30.7		18.4					
14	S	13:31	30	60.0	1470	60.0	7383.348	93.0 °F	4.16	6.94	End test
	E	14:01	(360)	30.6		15.7					

Figure 11 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-9



Project Number 20153655E2
 Test Number DFSB-9
 Test Location
 Date 08/04/2016
 Tested By D. Decker
 Liquid Used Water
 Liquid pH
 Weather Rainy, Cloudy
 Ground Temp
 Testing Depth 2'

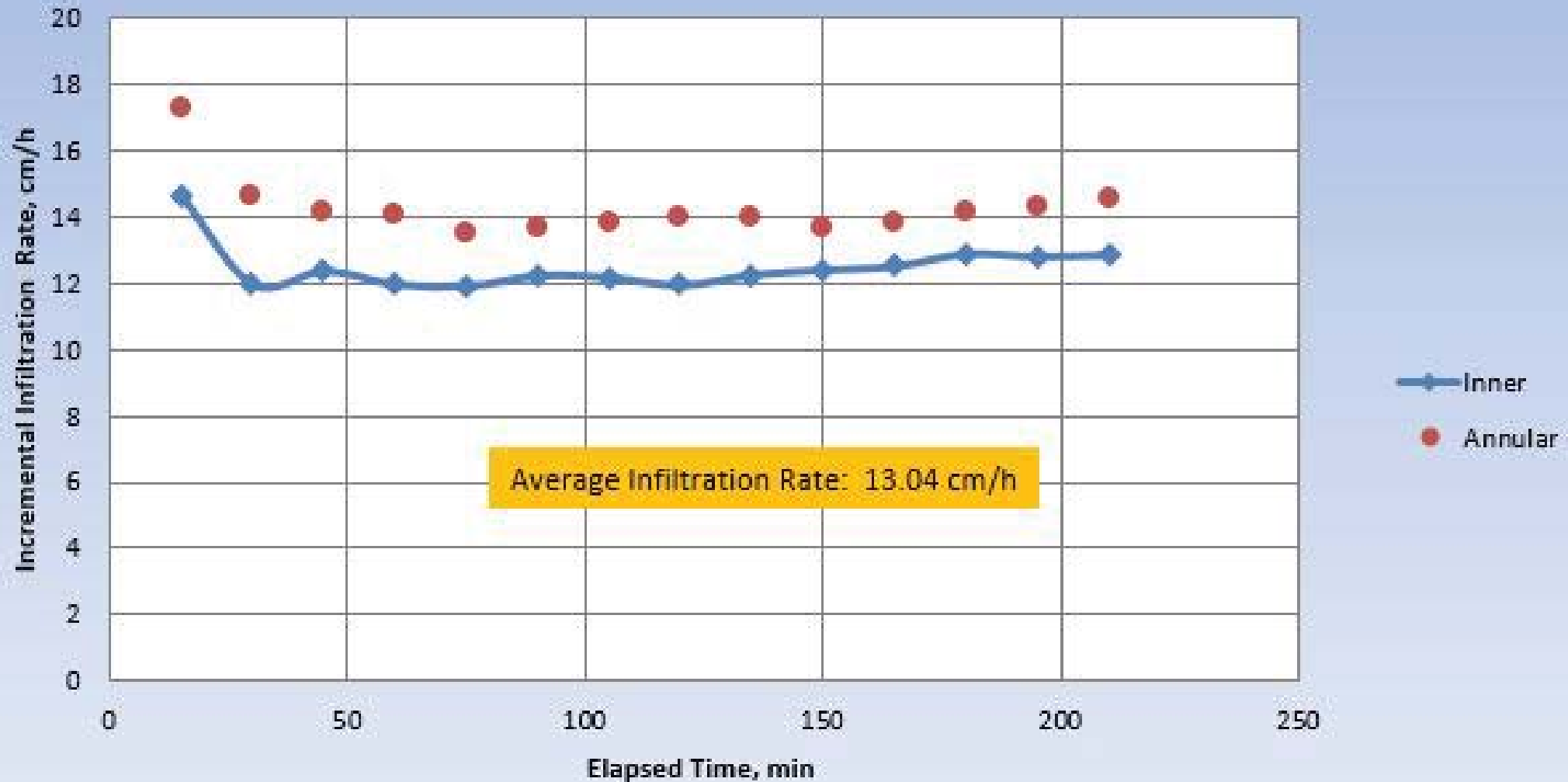
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	7.5
Annular space	2126.6	7.5
Inner ring penetration	7.5	
Outer ring penetration	6.4	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	7:45	15	60.0	335	60.0	9516.686		1.90	17.90	Refilled Mariotte tubes
	E	8:00	(15)	53.3		2.9					
2	S	8:00	15	60.0	1150	60.0	5650.011		6.51	10.63	Refilled Mariotte tubes
	E	8:15	(30)	37.0		26.1					
3	S	8:15	15	60.0	1185	60.0	5266.677		6.71	9.91	Refilled Mariotte tubes
	E	8:30	(45)	36.3		28.4					
4	S	8:30	15	60.0	945	60.0	5866.678		5.35	11.03	Refilled Mariotte tubes
	E	8:45	(60)	41.1		24.8					
5	S	8:45	15	60.0	335	60.0	5783.345		1.90	10.88	Refilled Mariotte tubes
	E	9:00	(75)	53.3		25.3					
6	S	9:00	15	60.0	715	60.0	5066.677		4.05	9.53	Refilled Mariotte tubes
	E	9:15	(90)	45.7		29.6					
7	S	9:15	15	60.0	925	60.0	5350.011		5.23	10.06	Refilled Mariotte tubes
	E	9:30	(105)	41.5		27.9					
8	S	9:30	15	60.0	885	60.0	5166.677		5.01	9.72	Refilled Mariotte tubes
	E	9:45	(120)	42.3		29.0					
9	S	9:45	15	60.0	950	60.0	3266.673		5.38	6.14	Refilled Mariotte tubes
	E	10:00	(135)	41.0		40.4					
10	S	10:00	30	60.0	1685	60.0	7950.016		4.77	7.48	Refilled Mariotte tubes
	E	10:30	(165)	26.3		12.3					
11	S	10:30	30	60.0	1340	60.0	6333.346	77.0 °F	3.79	5.96	Refilled Mariotte tubes
	E	11:00	(195)	33.2		22.0					
12	S	11:00	30	60.0	1960	60.0	7333.348		5.55	6.90	Refilled Mariotte tubes
	E	11:30	(225)	20.8		16.0					
13	S	11:30	30	60.0	1690	60.0	6666.68		4.78	6.27	Refilled Mariotte tubes
	E	12:00	(255)	26.2		20.0					
14	S	12:00	30	60.0	1975	60.0	5583.345	78.0 °F	5.59	5.25	Refilled Mariotte tubes
	E	12:30	(285)	20.5		26.5					
15	S	12:30	30	60.0	2020	60.0	6516.68	80.0 °F	5.72	6.13	Refilled Mariotte tubes
	E	13:00	(315)	19.6		20.9					
16	S	13:00	30	60.0	1690	60.0	8216.683	82.0 °F	4.78	7.73	Refilled Mariotte tubes
	E	13:30	(345)	26.2		10.7					
17	S	13:30	15	60.0	205	60.0	2133.338		1.16	4.01	end test
	E	13:45	(360)	55.9		47.2					

Figure 12 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-10



Project Number 20153655E2
 Test Number DFSB-10
 Test Location
 Date 8/9/16
 Tested By J. Shockley
 Liquid Used Water
 Liquid pH 7
 Weather Hot, sunny, windy
 Ground Temp 100 F
 Testing Depth 2'

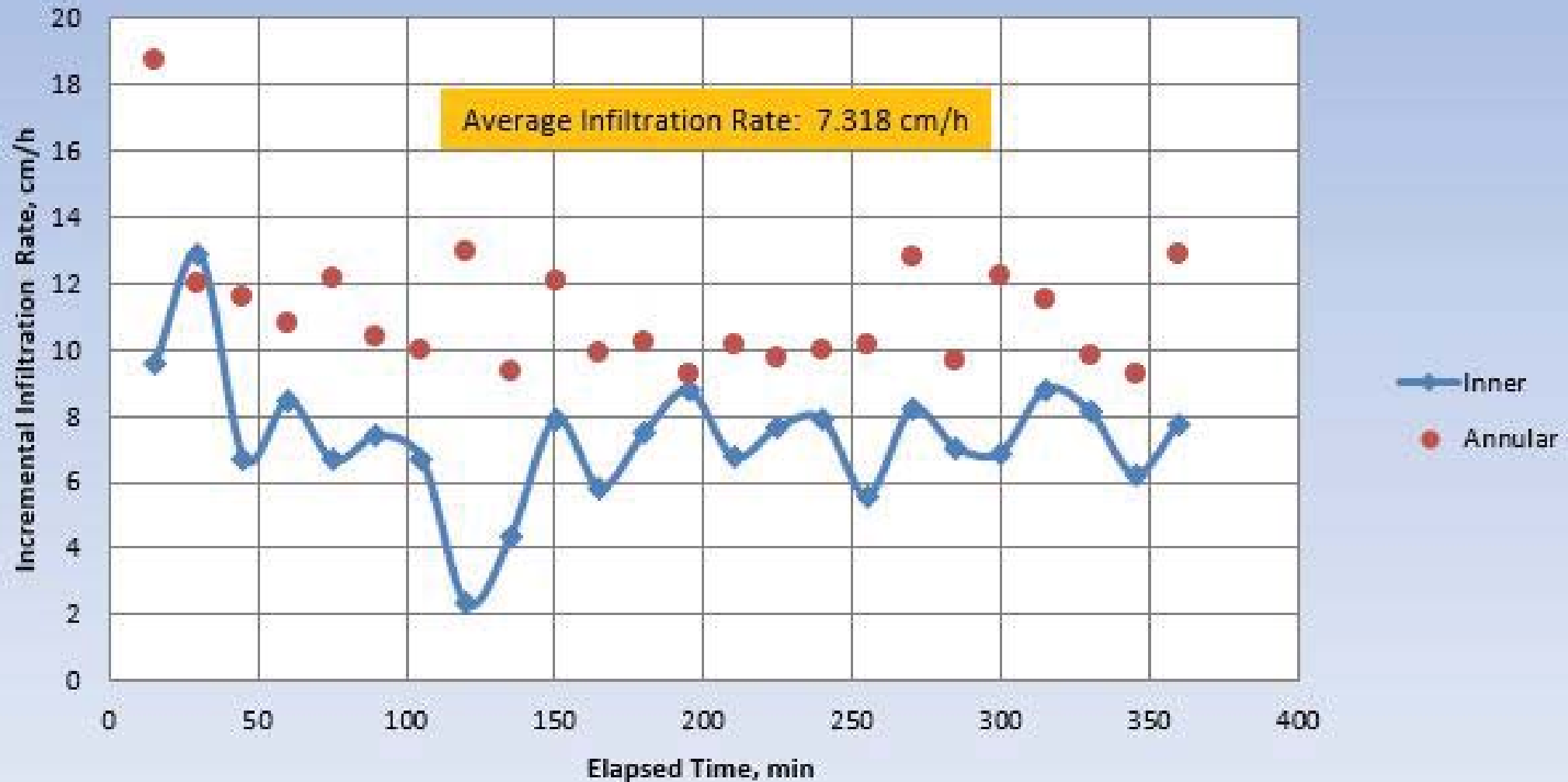
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	7.6
Annular space	2126.6	7.6
Inner ring penetration	7.6	
Outer ring penetration	7.6	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	7:33	15	60.0	2580	60.0	9166.685		14.60	17.24	Refilled Mariotte tubes
	E	7:48	(15)	8.4		5.0					
2	S	7:48	15	60.0	2115	60.0	7766.682		11.97	14.61	Refilled Mariotte tubes
	E	8:03	(30)	17.7		13.4					
3	S	8:03	15	60.0	2185	60.0	7533.348		12.36	14.17	Refilled Mariotte tubes
	E	8:18	(45)	16.3		14.8					
4	S	8:18	15	60.0	2115	60.0	7483.348		11.97	14.08	Refilled Mariotte tubes
	E	8:33	(60)	17.7		15.1					
5	S	8:33	15	60.0	2105	60.0	7183.348		11.91	13.51	Refilled Mariotte tubes
	E	8:48	(75)	17.9		16.9					
6	S	8:48	15	60.0	2160	60.0	7283.348		12.22	13.70	Refilled Mariotte tubes
	E	9:03	(90)	16.8		16.3					
7	S	9:03	15	60.0	2150	60.0	7350.015		12.17	13.82	Refilled Mariotte tubes
	E	9:18	(105)	17.0		15.9					
8	S	9:18	15	60.0	2110	60.0	7433.348		11.94	13.98	Refilled Mariotte tubes
	E	9:33	(120)	17.8		15.4					
9	S	9:33	15	60.0	2165	60.0	7433.348		12.25	13.98	Refilled Mariotte tubes
	E	9:48	(135)	16.7		15.4					
10	S	9:48	15	60.0	2190	60.0	7250.015		12.39	13.64	Refilled Mariotte tubes
	E	10:03	(150)	16.2		16.5					
11	S	10:03	15	60.0	2210	60.0	7350.015		12.51	13.82	Refilled Mariotte tubes
	E	10:18	(165)	15.8		15.9					
12	S	10:18	15	60.0	2275	60.0	7533.348		12.87	14.17	Refilled Mariotte tubes
	E	10:33	(180)	14.5		14.8					
13	S	10:33	15	60.0	2260	60.0	7600.015		12.79	14.30	Refilled Mariotte tubes
	E	10:48	(195)	14.8		14.4					
14	S	10:48	15	60.0	2270	60.0	7750.016		12.85	14.58	Refilled Mariotte tubes
	E	11:03	(210)	14.6		13.5					
15	S	11:03	15	60.0	2340	60.0	7733.349		13.24	14.55	Refilled Mariotte tubes
	E	11:18	(225)	13.2		13.6					
16	S	11:18	15	60.0	2385	60.0	7916.683		13.50	14.89	Refilled Mariotte tubes
	E	11:33	(240)	12.3		12.5					
17	S	11:33	15	60.0	2290	60.0	7750.016		12.96	14.58	Refilled Mariotte tubes
	E	11:48	(255)	14.2		13.5					
18	S	11:48	15	60.0	2460	60.0	7916.683		13.92	14.89	Refilled Mariotte tubes
	E	12:03	(270)	10.8		12.5					
19	S	12:03	15	60.0	2425	60.0	7716.682		13.72	14.51	Refilled Mariotte tubes
	E	12:18	(285)	11.5		13.7					
20	S	12:18	15	60.0	2480	60.0	7916.683		14.03	14.89	Refilled Mariotte tubes
	E	12:33	(300)	10.4		12.5					
21	S	12:33	15	60.0	2520	60.0	8033.349		14.26	15.11	Refilled Mariotte tubes
	E	12:48	(315)	9.6		11.8					
22	S	12:48	15	60.0	2460	60.0	8000.016		13.92	15.05	Refilled Mariotte tubes
	E	13:03	(330)	10.8		12.0					
23	S	13:03	15	60.0	2535	60.0	7983.349		14.35	15.02	Refilled Mariotte tubes
	E	13:18	(345)	9.3		12.1					
24	S	13:18	15	60.0	2515	60.0	7933.349		14.23	14.92	end test
	E	13:33	(360)	9.7		12.4					

Figure 13 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-11



Project Number 20153655E2
 Test Number DFSB-11
 Test Location
 Date 8/9/16
 Tested By D. Decker
 Liquid Used Water
 Liquid pH
 Weather Hot WINDY SUNNY
 Ground Temp 94°
 Testing Depth 2'

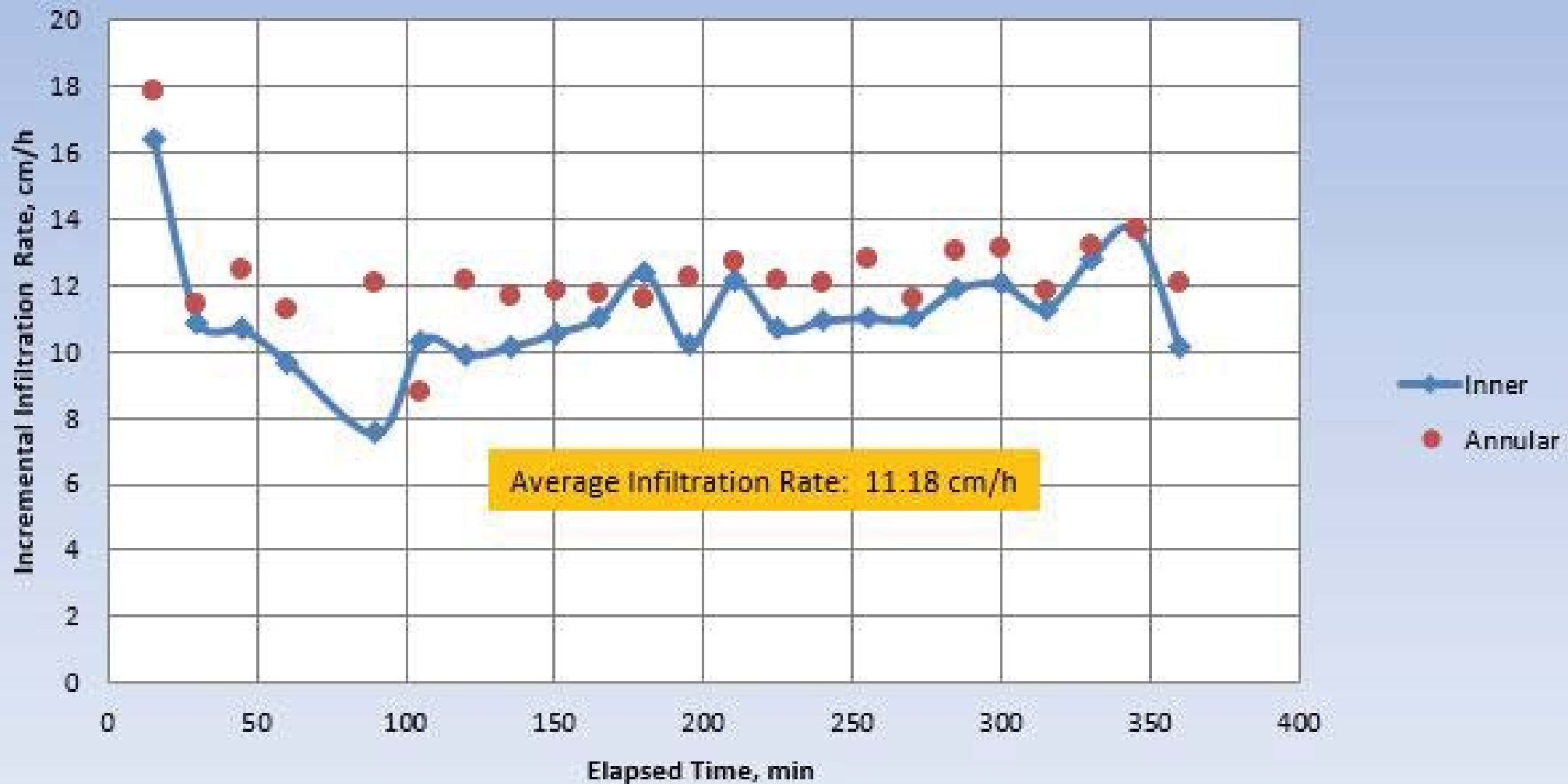
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	7.6
Annular space	2126.6	7.6
Inner ring penetration	7.6	
Outer ring penetration	7.6	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	7:33	15	60.0	1685	60.0	9966.687	82.0 °F	9.54	18.75	Refilled Mariotte tubes
	E	7:48	(15)	26.3		0.2					
2	S	7:48	15	60.0	2270	60.0	6350.013	81.0 °F	12.85	11.94	Refilled Mariotte tubes
	E	8:03	(30)	14.6		21.9					
3	S	8:03	15	60.0	1185	60.0	6166.679	85.0 °F	6.71	11.60	Refilled Mariotte tubes
	E	8:18	(45)	36.3		23.0					
4	S	8:18	15	60.0	1490	60.0	5733.345	85.0 °F	8.43	10.78	Refilled Mariotte tubes
	E	8:33	(60)	30.2		25.6					
5	S	8:33	15	60.0	1175	60.0	6466.68	85.0 °F	6.65	12.16	Refilled Mariotte tubes
	E	8:48	(75)	36.5		21.2					
6	S	8:48	15	60.0	1305	60.0	5500.011	86.0 °F	7.38	10.35	Refilled Mariotte tubes
	E	9:03	(90)	33.9		27.0					
7	S	9:03	15	60.0	1180	60.0	5316.677	87.0 °F	6.68	10.00	Refilled Mariotte tubes
	E	9:18	(105)	36.4		28.1					
8	S	9:18	15	60.0	410	60.0	6866.68	89.0 °F	2.32	12.92	Refilled Mariotte tubes
	E	9:33	(120)	51.8		18.8					
9	S	9:33	15	60.0	775	60.0	4966.677	90.0 °F	4.39	9.34	Refilled Mariotte tubes
	E	9:48	(135)	44.5		30.2					
10	S	9:48	15	60.0	1395	60.0	6416.68	92.0 °F	7.89	12.07	Refilled Mariotte tubes
	E	10:03	(150)	32.1		21.5					
11	S	10:03	15	60.0	1030	60.0	5250.011	95.0 °F	5.83	9.87	Refilled Mariotte tubes
	E	10:18	(165)	39.4		28.5					
12	S	10:18	15	60.0	1323	60.0	5433.344	96.0 °F	7.49	10.22	Refilled Mariotte tubes
	E	10:33	(180)	33.5		27.4					
13	S	10:33	15	60.0	1545	60.0	4916.677	92.0 °F	8.74	9.25	Refilled Mariotte tubes
	E	10:48	(195)	29.1		30.5					
14	S	10:48	15	60.0	1190	60.0	5400.011	95.0 °F	6.73	10.16	Refilled Mariotte tubes
	E	11:03	(210)	36.2		27.6					
15	S	11:03	15	60.0	1350	60.0	5183.344	95.0 °F	7.64	9.75	Refilled Mariotte tubes
	E	11:18	(225)	33.0		28.9					
16	S	11:18	15	60.0	1390	60.0	5300.011	96.0 °F	7.87	9.97	Refilled Mariotte tubes
	E	11:33	(240)	32.2		28.2					
17	S	11:33	15	60.0	985	60.0	5383.344	97.0 °F	5.57	10.13	Refilled Mariotte tubes
	E	11:48	(255)	40.3		27.7					
18	S	11:48	15	60.0	1445	60.0	6800.014	98.0 °F	8.18	12.79	Refilled Mariotte tubes
	E	12:03	(270)	31.1		19.2					
19	S	12:03	15	60.0	1240	60.0	5116.677	101.0 °F	7.02	9.62	Refilled Mariotte tubes
	E	12:18	(285)	35.2		29.3					
20	S	12:18	15	60.0	1215	60.0	6500.013	105.0 °F	6.88	12.23	Refilled Mariotte tubes
	E	12:33	(300)	35.7		21.0					
21	S	12:33	15	60.0	1550	60.0	6133.346	104.0 °F	8.77	11.54	Refilled Mariotte tubes
	E	12:48	(315)	29.0		23.2					
22	S	12:48	15	60.0	1435	60.0	5216.677	95.0 °F	8.12	9.81	Refilled Mariotte tubes
	E	13:03	(330)	31.3		28.7					
23	S	13:03	15	60.0	1100	60.0	4933.343	96.0 °F	6.22	9.28	Refilled Mariotte tubes
	E	13:18	(345)	38.0		30.4					
24	S	13:18	15	60.0	1370	60.0	6850.014	106.0 °F	7.75	12.88	end test
	E	13:33	(360)	32.6		18.9					

Figure 14 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-12



Project Number 20153655E2
 Test Number DFSB-12
 Test Location N 36°02'50.25900", W 115°00'14.75580"
 Date 07/28/2016
 Tested By D. Decker/J. Shockley/E. Wang
 Liquid Used Water
 Liquid pH 7
 Weather Sunny
 Ground Temp 106° F
 Testing Depth 2'

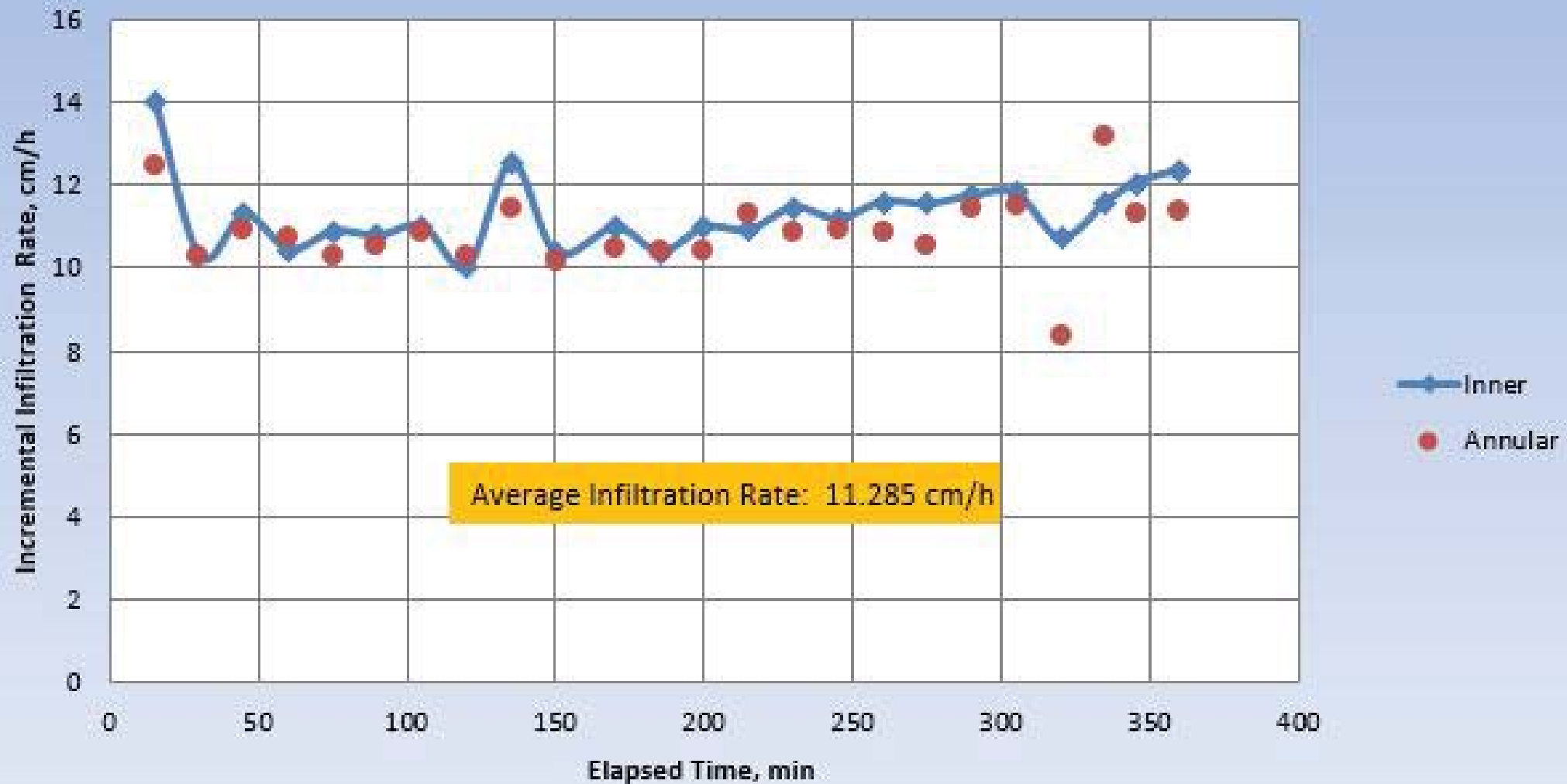
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	7.6
Annular space	2126.6	7.6
Inner ring penetration	7.6	
Outer ring penetration	10.1	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	10:19	15	58.0	2900	58.0	9500.019	92.0 °F	16.41	17.87	Refilled Mariotte tubes
	E	10:34	(15)	0.0		1.0					
2	S	10:34	15	60.0	1925	60.0	6066.679	99.0 °F	10.89	11.41	Refilled Mariotte tubes
	E	10:49	(30)	21.5		23.6					
3	S	10:49	15	60.0	1885	60.0	6633.347	95.0 °F	10.67	12.48	Refilled Mariotte tubes
	E	11:04	(45)	22.3		20.2					
4	S	11:04	15	60.0	1710	60.0	6000.012	101.0 °F	9.68	11.29	Refilled Mariotte tubes
	E	11:19	(60)	25.8		24.0					
5	S	11:19	30	60.0	3340	60.0	12833.36	99.0 °F	9.45	12.07	Refilled Mariotte tubes
	E	11:49	(90)	-6.8		-17.0					
6	S	11:49	15	60.0	1825	60.0	4683.343	105.0 °F	10.33	8.81	Refilled Mariotte tubes
	E	12:04	(105)	23.5		31.9					
7	S	12:04	15	60.0	1750	60.0	6466.68	104.0 °F	9.90	12.16	Refilled Mariotte tubes
	E	12:19	(120)	25.0		21.2					
8	S	12:19	15	60.0	1790	60.0	6216.679	101.0 °F	10.13	11.69	Refilled Mariotte tubes
	E	12:34	(135)	24.2		22.7					
9	S	12:34	15	60.0	1865	60.0	6300.013	101.0 °F	10.55	11.85	Refilled Mariotte tubes
	E	12:49	(150)	22.7		22.2					
10	S	12:49	15	60.0	1950	60.0	6250.013	103.0 °F	11.03	11.76	Refilled Mariotte tubes
	E	13:04	(165)	21.0		22.5					
11	S	13:04	15	60.0	2190	60.0	6166.679	99.0 °F	12.39	11.60	Refilled Mariotte tubes
	E	13:19	(180)	16.2		23.0					
12	S	13:19	15	60.0	1800	60.0	6483.346	103.0 °F	10.19	12.19	Refilled Mariotte tubes
	E	13:34	(195)	24.0		21.1					
13	S	13:34	15	60.0	2140	60.0	6750.014	104.0 °F	12.11	12.70	Refilled Mariotte tubes
	E	13:49	(210)	17.2		19.5					
14	S	13:49	15	60.0	1885	60.0	6433.346	104.0 °F	10.67	12.10	Refilled Mariotte tubes
	E	14:04	(225)	22.3		21.4					
15	S	14:04	15	60.0	1930	60.0	6416.68	105.0 °F	10.92	12.07	Refilled Mariotte tubes
	E	14:19	(240)	21.4		21.5					
16	S	14:19	15	60.0	1945	60.0	6816.68	105.0 °F	11.01	12.82	Refilled Mariotte tubes
	E	14:34	(255)	21.1		19.1					
17	S	14:34	15	60.0	1940	60.0	6150.012	106.0 °F	10.98	11.57	Refilled Mariotte tubes
	E	14:49	(270)	21.2		23.1					
18	S	14:49	15	60.0	2100	60.0	6916.681	105.0 °F	11.88	13.01	Refilled Mariotte tubes
	E	15:04	(285)	18.0		18.5					
19	S	15:04	15	60.0	2125	60.0	6950.014	107.0 °F	12.03	13.07	Refilled Mariotte tubes
	E	15:19	(300)	17.5		18.3					
20	S	15:19	15	60.0	1995	60.0	6283.346	105.0 °F	11.29	11.82	Refilled Mariotte tubes
	E	15:34	(315)	20.1		22.3					
21	S	15:34	15	60.0	2260	60.0	7000.014	106.0 °F	12.79	13.17	Refilled Mariotte tubes
	E	15:49	(330)	14.8		18.0					
22	S	15:49	15	60.0	2415	60.0	7266.681	107.0 °F	13.67	13.67	Refilled Mariotte tubes
	E	16:04	(345)	11.7		16.4					
23	S	16:04	15	60.0	1790	60.0	6416.68	106.0 °F	10.13	12.07	End test
	E	16:19	(360)	24.2		21.5					

Figure 15 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-13



Project Number 20153655E2
 Test Number DFSB-13
 Test Location
 Date 08/02/2016
 Tested By J. Shockley
 Liquid Used Water
 Liquid pH 7
 Weather hot Sunny
 Ground Temp 100 F
 Testing Depth 2'

Double Ring Infiltrometer Testing

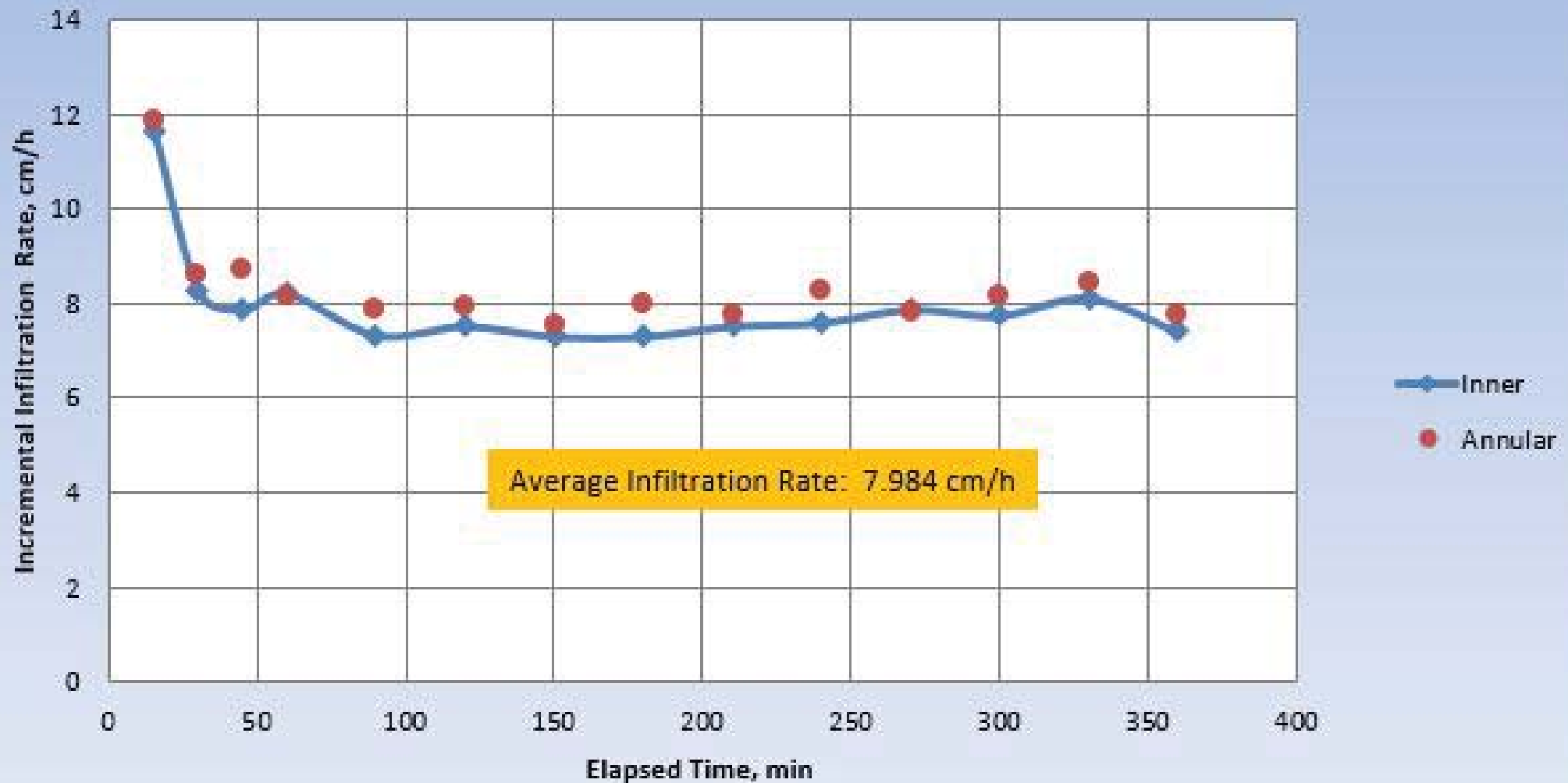
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	12.7
Annular space	2126.6	12.7
Inner ring penetration	10.16	
Outer ring penetration	10.16	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	8:00	15	60.0	2470	60.0	6633.347	85.0 °F	13.98	12.48	Refilled Mariotte tubes
	E	8:15	(15)	10.6		20.2					
2	S	8:15	15	60.0	1815	60.0	5466.678	85.0 °F	10.27	10.28	Refilled Mariotte tubes
	E	8:30	(30)	23.7		27.2					
3	S	8:30	15	60.0	1995	60.0	5816.678	90.0 °F	11.29	10.94	Refilled Mariotte tubes
	E	8:45	(45)	20.1		25.1					
4	S	8:45	15	60.0	1850	60.0	5700.011	90.0 °F	10.47	10.72	Refilled Mariotte tubes
	E	9:01	(60)	23.0		25.8					
5	S	9:01	15	60.0	1925	60.0	5466.678	90.0 °F	10.89	10.28	Refilled Mariotte tubes
	E	9:16	(75)	21.5		27.2					
6	S	9:16	15	60.0	1905	60.0	5600.011	90.0 °F	10.78	10.53	Refilled Mariotte tubes
	E	9:31	(90)	21.9		26.4					
7	S	9:32	15	60.0	1945	60.0	5766.678	95.0 °F	11.01	10.85	Refilled Mariotte tubes
	E	9:47	(105)	21.1		25.4					
8	S	9:47	15	60.0	1770	60.0	5133.344	95.0 °F	10.02	9.66	Refilled Mariotte tubes
	E	10:02	(120)	24.6		29.2					
9	S	10:03	15	60.0	2215	60.0	6083.346	95.0 °F	12.53	11.44	Refilled Mariotte tubes
	E	10:18	(135)	15.7		23.5					
10	S	10:18	15	60.0	1830	60.0	5416.678	95.0 °F	10.36	10.19	Refilled Mariotte tubes
	E	10:33	(150)	23.4		27.5					
11	S	10:33	15	60.0	1940	60.0	5566.678	100.0 °F	10.98	10.47	Refilled Mariotte tubes
	E	10:48	(170)	21.2		26.6					
12	S	10:48	15	60.0	1835	60.0	5550.011	100.0 °F	10.38	10.44	Refilled Mariotte tubes
	E	11:03	(185)	23.3		26.7					
13	S	11:03	15	60.0	1940	60.0	5533.344	100.0 °F	10.98	10.41	Refilled Mariotte tubes
	E	11:18	(200)	21.2		26.8					
14	S	11:19	15	60.0	1930	60.0	6000.012	100.0 °F	10.92	11.29	Refilled Mariotte tubes
	E	11:34	(215)	21.4		24.0					
15	S	11:35	15	60.0	2025	60.0	5783.345	100.0 °F	11.46	10.88	Refilled Mariotte tubes
	E	11:50	(230)	19.5		25.3					
16	S	11:50	15	60.0	1975	60.0	5816.678	100.0 °F	11.18	10.94	Refilled Mariotte tubes
	E	12:05	(245)	20.5		25.1					
17	S	12:05	15	60.0	2050	53.3	5783.345	100.0 °F	11.60	10.88	Refilled Mariotte tubes
	E	12:20	(260)	19.0		18.6					
18	S	12:21	15	60.0	2040	60.0	5600.011	100.0 °F	11.54	10.53	Refilled Mariotte tubes
	E	12:36	(275)	19.2		26.4					
19	S	12:37	15	60.0	2075	60.0	6100.012	100.0 °F	11.74	11.47	Refilled Mariotte tubes
	E	12:52	(290)	18.5		23.4					
20	S	12:52	15	60.0	2085	60.0	6116.679	100.0 °F	11.80	11.51	Refilled Mariotte tubes
	E	13:07	(305)	18.3		23.3					
21	S	13:07	15	60.0	1895	60.0	4433.342	100.0 °F	10.72	8.34	Refilled Mariotte tubes
	E	13:22	(320)	22.1		33.4					
22	S	13:22	15	60.0	2045	60.0	7016.681	100.0 °F	11.57	13.20	Refilled Mariotte tubes
	E	13:37	(335)	19.1		17.9					
23	S	13:37	15	60.0	2130	60.0	6000.012	100.0 °F	12.05	11.29	Refilled Mariotte tubes
	E	13:52	(345)	17.4		24.0					
24	S	13:53	15	60.0	2185	60.0	6050.012	100.0 °F	12.36	11.38	End test
	E	14:08	(360)	16.3		23.7					

Figure 16 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-14



Project Number 20153655E2
 Test Number DFSB-14
 Test Location N 36°02'49.94160", W 115°00'15.23040"
 Date 08/01/2016
 Tested By J. Shockley
 Liquid Used Water
 Liquid pH 7
 Weather Sunny
 Ground Temp 100 F
 Testing Depth 2'

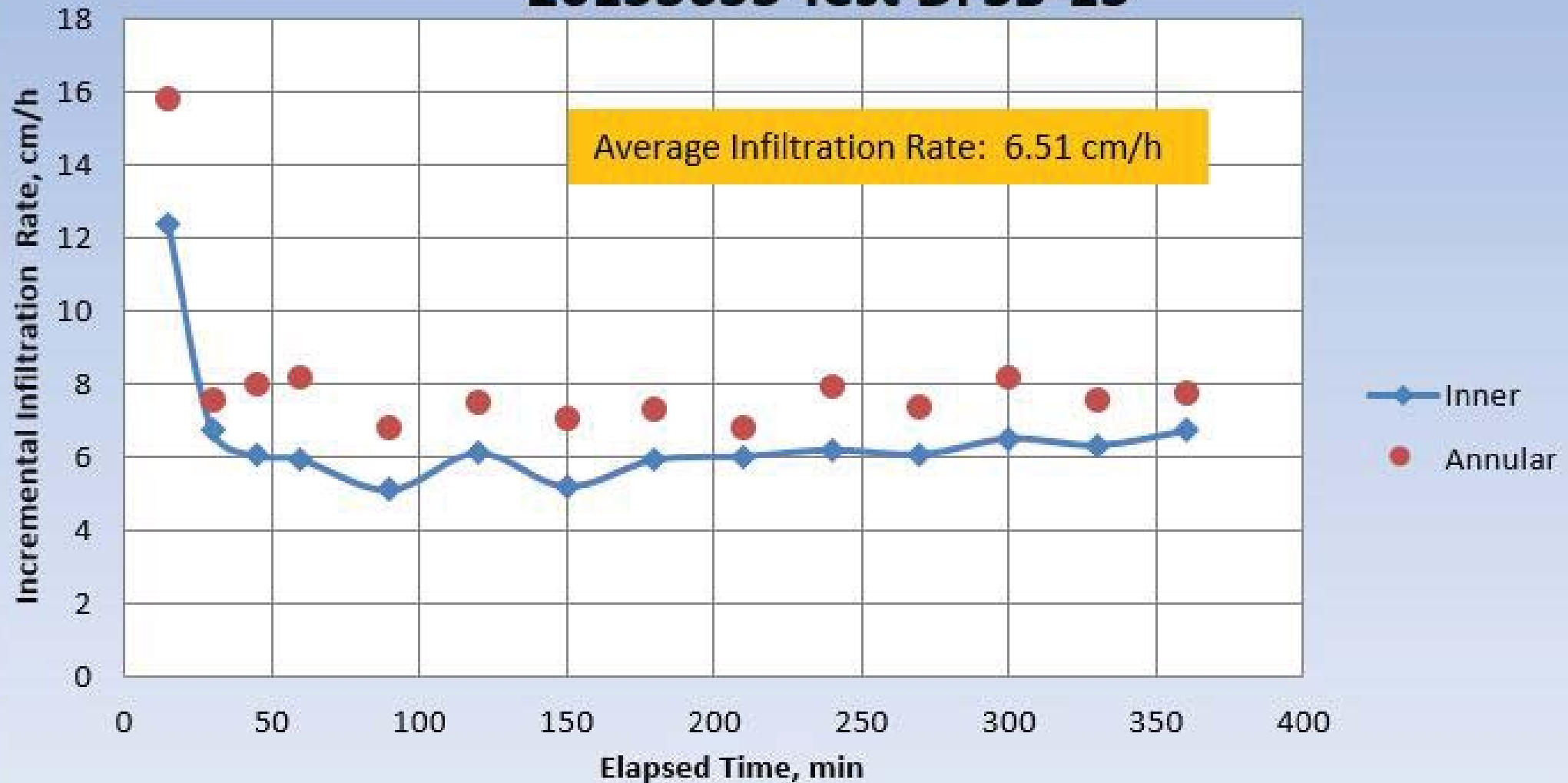
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	12.7
Annular space	2126.6	12.7
Inner ring penetration	12.7	
Outer ring penetration	12.7	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	7:55	15	60.0	2055	60.0	6316.679	80.0 °F	11.63	11.88	Refilled Mariotte Tubes
	E	8:10	(15)	18.9		22.1					
2	S	8:10	15	60.0	1460	60.0	4583.343	80.0 °F	8.26	8.62	Refilled Mariotte Tubes
	E	8:25	(30)	30.8		32.5					
3	S	8:25	15	60.0	1395	60.0	4633.343	80.0 °F	7.89	8.72	Refilled Mariotte Tubes
	E	8:40	(45)	32.1		32.2					
4	S	8:40	15	60.0	1450	60.0	4333.342	80.0 °F	8.21	8.15	Refilled Mariotte Tubes
	E	8:55	(60)	31.0		34.0					
5	S	8:55	30	60.0	2595	60.0	8366.683	90.0 °F	7.34	7.87	Refilled Mariotte Tubes
	E	9:25	(90)	8.1		9.8					
6	S	9:25	30	60.0	2660	60.0	8450.017	90.0 °F	7.53	7.95	Refilled Mariotte Tubes
	E	9:55	(120)	6.8		9.3					
7	S	9:55	30	60.0	2585	60.0	8000.016	90.0 °F	7.31	7.52	Refilled Mariotte Tubes
	E	10:25	(150)	8.3		12.0					
8	S	10:25	30	60.0	2585	60.0	8516.684	95.0 °F	7.31	8.01	Refilled Mariotte Tubes
	E	10:55	(180)	8.3		8.9					
9	S	10:55	30	60.0	2660	60.0	8250.017	95.0 °F	7.53	7.76	Refilled Mariotte Tubes
	E	11:25	(210)	6.8		10.5					
10	S	11:25	30	60.0	2685	60.0	8816.684	95.0 °F	7.60	8.29	Refilled Mariotte Tubes
	E	11:55	(240)	6.3		7.1					
11	S	11:55	30	60.0	2785	60.0	8350.017	100.0 °F	7.88	7.85	Refilled Mariotte Tubes
	E	12:25	(270)	4.3		9.9					
12	S	12:25	30	60.0	2740	60.0	8683.351	100.0 °F	7.75	8.17	Refilled Mariotte Tubes
	E	12:55	(300)	5.2		7.9					
13	S	12:55	30	60.0	2870	60.0	8966.685	100.0 °F	8.12	8.43	Refilled Mariotte Tubes
	E	13:25	(330)	2.6		6.2					
14	S	13:25	30	60.0	2620	60.0	8250.017	100.0 °F	7.41	7.76	end test
	E	13:55	(360)	7.6		10.5					

Figure 17 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-15



Project Number 20153655E2
 Test Number DFSB-15
 Test Location N 36°02'49.95540", W 115°00'14.89320"
 Date 7/29/2016
 Tested By J. Shockley
 Liquid Used Water
 Liquid pH 7
 Weather Sunny
 Ground Temp 100 F
 Testing Depth 2'

Double Ring Infiltrometer Testing

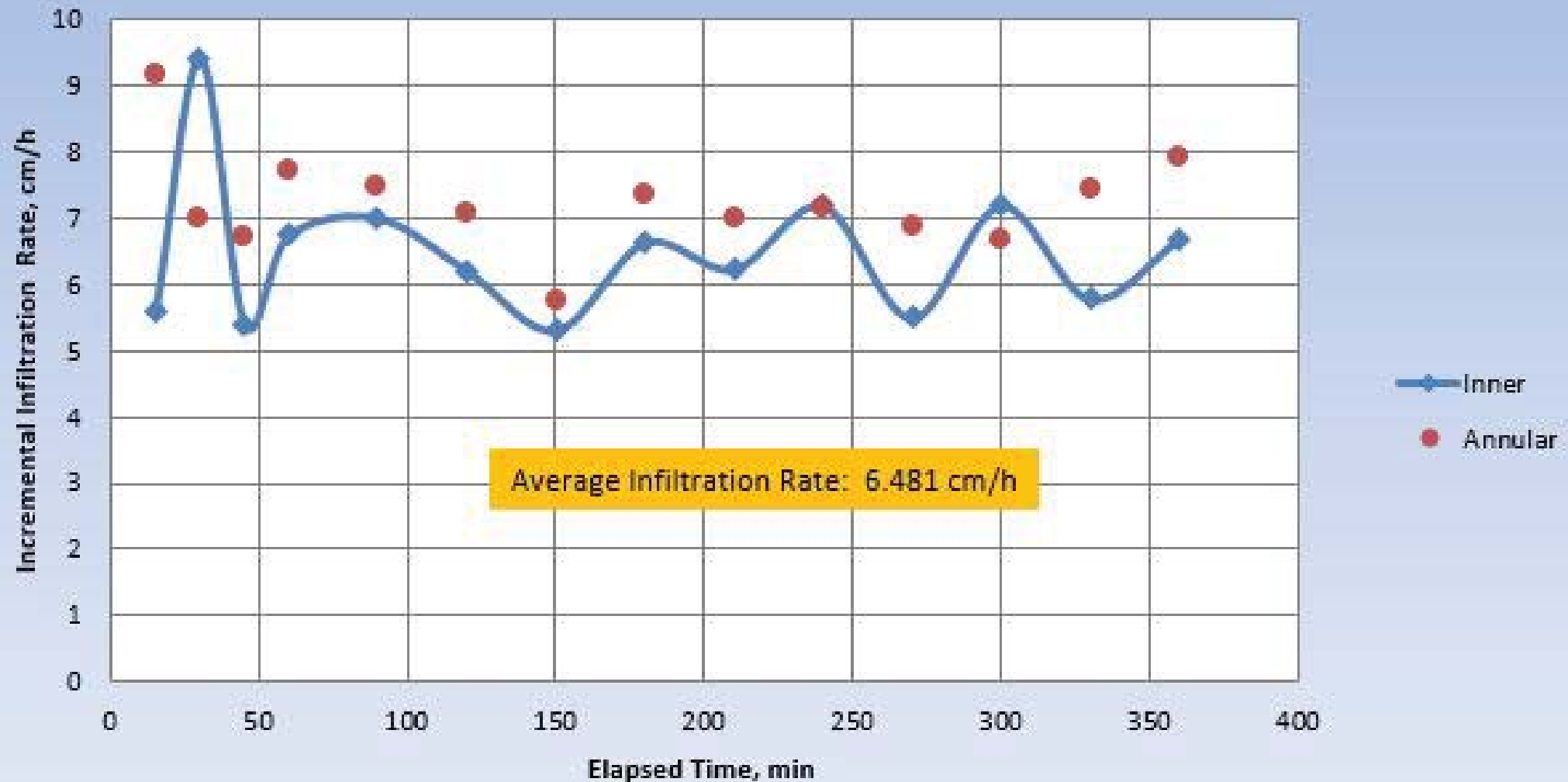
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	11.43
Annular space	2126.6	11.43
Inner ring penetration	11.43	
Outer ring penetration	11.43	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	8:43	15	60.0	2190	60.0	8416.684	97.0 °F	12.39	15.83	Refilled Mariotte tubes
	E	8:58	(15)	16.2		9.5					
2	S	9:00	15	60.0	1190	60.0	4016.675	98.0 °F	6.73	7.56	Refilled Mariotte tubes
	E	9:15	(30)	36.2		35.9					
3	S	9:15	15	60.0	1065	60.0	4250.009	100.0 °F	6.03	7.99	Refilled Mariotte tubes
	E	9:30	(45)	38.7		34.5					
4	S	9:30	15	60.0	1045	60.0	4350.009	100.0 °F	5.91	8.18	Refilled Mariotte tubes
	E	9:45	(60)	39.1		33.9					
5	S	9:45	30	60.0	1795	60.0	7250.015	100.0 °F	5.08	6.82	Refilled Mariotte tubes
	E	10:15	(90)	24.1		16.5					
6	S	10:15	30	60.0	2155	60.0	7950.016	100.0 °F	6.10	7.48	Refilled Mariotte tubes
	E	10:45	(120)	16.9		12.3					
7	S	10:45	30	60.0	1830	60.0	7500.015	100.0 °F	5.18	7.05	Refilled Mariotte tubes
	E	11:15	(150)	23.4		15.0					
8	S	11:15	30	60.0	2090	60.0	7750.016	100.0 °F	5.91	7.29	Refilled Mariotte tubes
	E	11:45	(180)	18.2		13.5					
9	S	11:45	30	60.0	2125	60.0	7250.015	100.0 °F	6.01	6.82	Refilled Mariotte tubes
	E	12:15	(210)	17.5		16.5					
10	S	12:15	30	60.0	2190	60.0	8416.684	100.0 °F	6.20	7.92	Refilled Mariotte tubes
	E	12:45	(240)	16.2		9.5					
11	S	12:45	30	60.0	2145	60.0	7833.349	100.0 °F	6.07	7.37	Refilled Mariotte tubes
	E	13:15	(270)	17.1		13.0					
12	S	13:15	30	60.0	2300	60.0	8716.684	100.0 °F	6.51	8.20	Refilled Mariotte tubes
	E	13:45	(300)	14.0		7.7					
13	S	13:45	30	60.0	2235	60.0	8050.016	100.0 °F	6.32	7.57	Refilled Mariotte tubes
	E	14:15	(330)	15.3		11.7					
14	S	14:15	30	60.0	2375	60.0	8250.017	100.0 °F	6.72	7.76	end test
	E	14:45	(360)	12.5		10.5					

Figure 18 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-16



Project Number 20153655E2
 Test Number DFSB-16
 Test Location
 Date 08/04/2016
 Tested By D. Decker
 Liquid Used Water
 Liquid pH
 Weather Hot dry and moist
 Ground Temp
 Testing Depth 2'

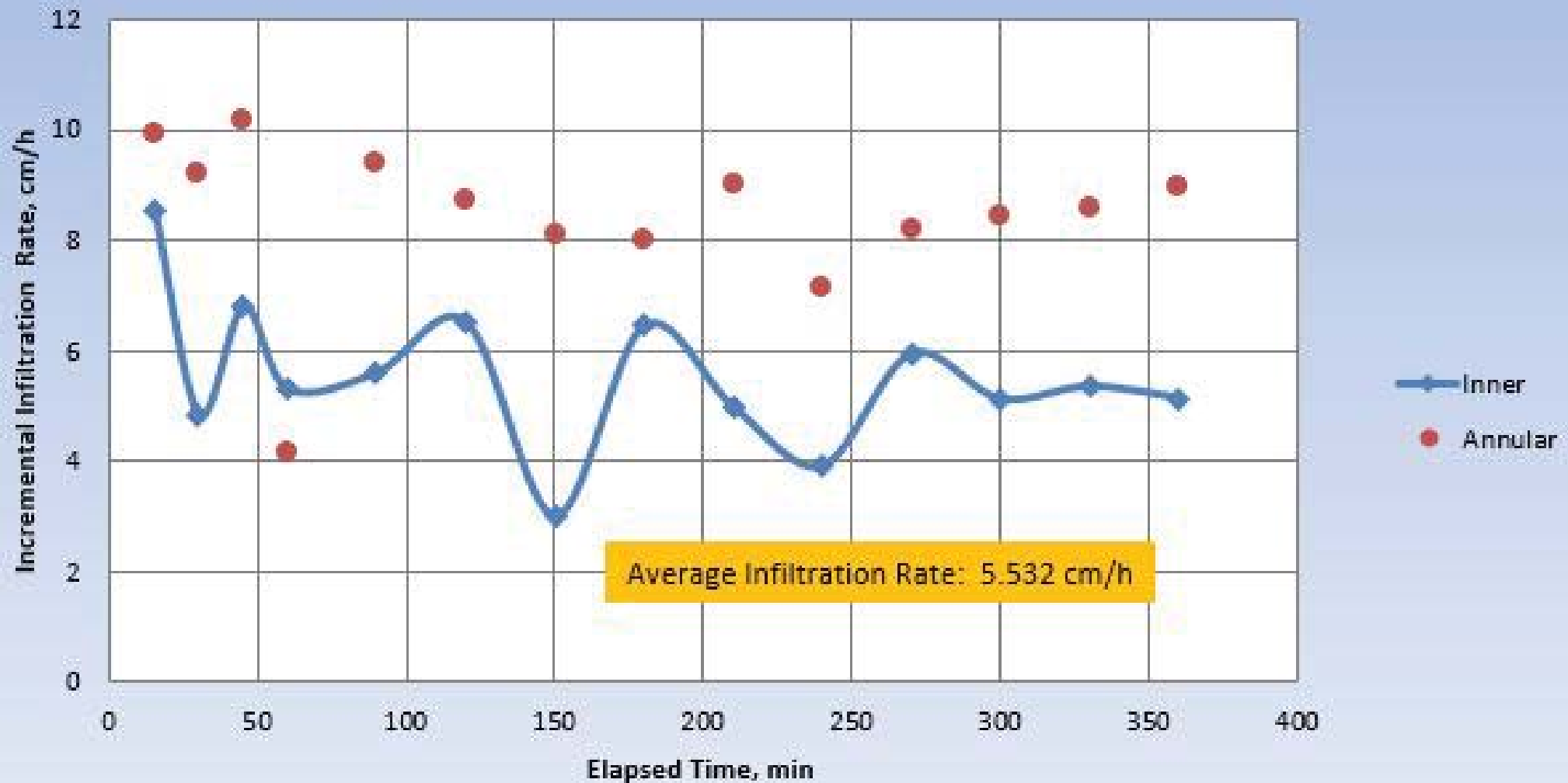
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	7.6
Annular space	2126.6	7.6
Inner ring penetration	7.6	
Outer ring penetration	5.08	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	8:03	15	60.0	990	60.0	4866.676		5.60	9.15	Refilled Mariotte tubes
	E	8:18	(15)	40.2		30.8					
2	S	8:18	15	60.0	1660	60.0	3716.674		9.39	6.99	Refilled Mariotte tubes
	E	8:33	(30)	26.8		37.7					
3	S	8:33	15	60.0	955	60.0	3566.674		5.40	6.71	Refilled Mariotte tubes
	E	8:48	(45)	40.9		38.6					
4	S	8:48	15	60.0	1190	60.0	4100.008		6.73	7.71	Refilled Mariotte tubes
	E	9:03	(60)	36.2		35.4					
5	S	9:03	30	60.0	2470	60.0	7950.016		6.99	7.48	Refilled Mariotte tubes
	E	9:33	(90)	10.6		12.3					
6	S	9:33	30	60.0	2190	60.0	7500.015		6.20	7.05	Refilled Mariotte tubes
	E	10:03	(120)	16.2		15.0					
7	S	10:03	30	60.0	1875	60.0	6100.012		5.31	5.74	Refilled Mariotte tubes
	E	10:33	(150)	22.5		23.4					
8	S	10:33	30	60.0	2340	60.0	7816.682		6.62	7.35	Refilled Mariotte tubes
	E	11:03	(180)	13.2		13.1					
9	S	11:03	30	60.0	2200	60.0	7433.348		6.22	6.99	Refilled Mariotte tubes
	E	11:33	(210)	16.0		15.4					
10	S	11:33	30	60.0	2535	60.0	7583.349		7.17	7.13	Refilled Mariotte tubes
	E	12:03	(240)	9.3		14.5					
11	S	12:03	30	60.0	1940	60.0	7300.015	90.0 °F	5.49	6.87	Refilled Mariotte tubes
	E	12:33	(270)	21.2		16.2					
12	S	12:33	30	60.0	2535	60.0	7083.348		7.17	6.66	Refilled Mariotte tubes
	E	13:03	(300)	9.3		17.5					
13	S	13:03	30	60.0	2040	60.0	7883.349		5.77	7.41	Refilled Mariotte tubes
	E	13:33	(330)	19.2		12.7					
14	S	13:33	30	60.0	2355	60.0	8416.684	95.0 °F	6.66	7.92	end test
	E	14:03	(360)	12.9		9.5					

Figure 19 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFIT-17



Project Number 20153655E2
 Test Number DFSB-17
 Test Location N 36°02'49.64700", W 115°00'15.27120"
 Date 08/01/2016
 Tested By D. Decker
 Liquid Used Water
 Liquid pH
 Weather Humid, Warm, Overcast
 Ground Temp
 Testing Depth 2'

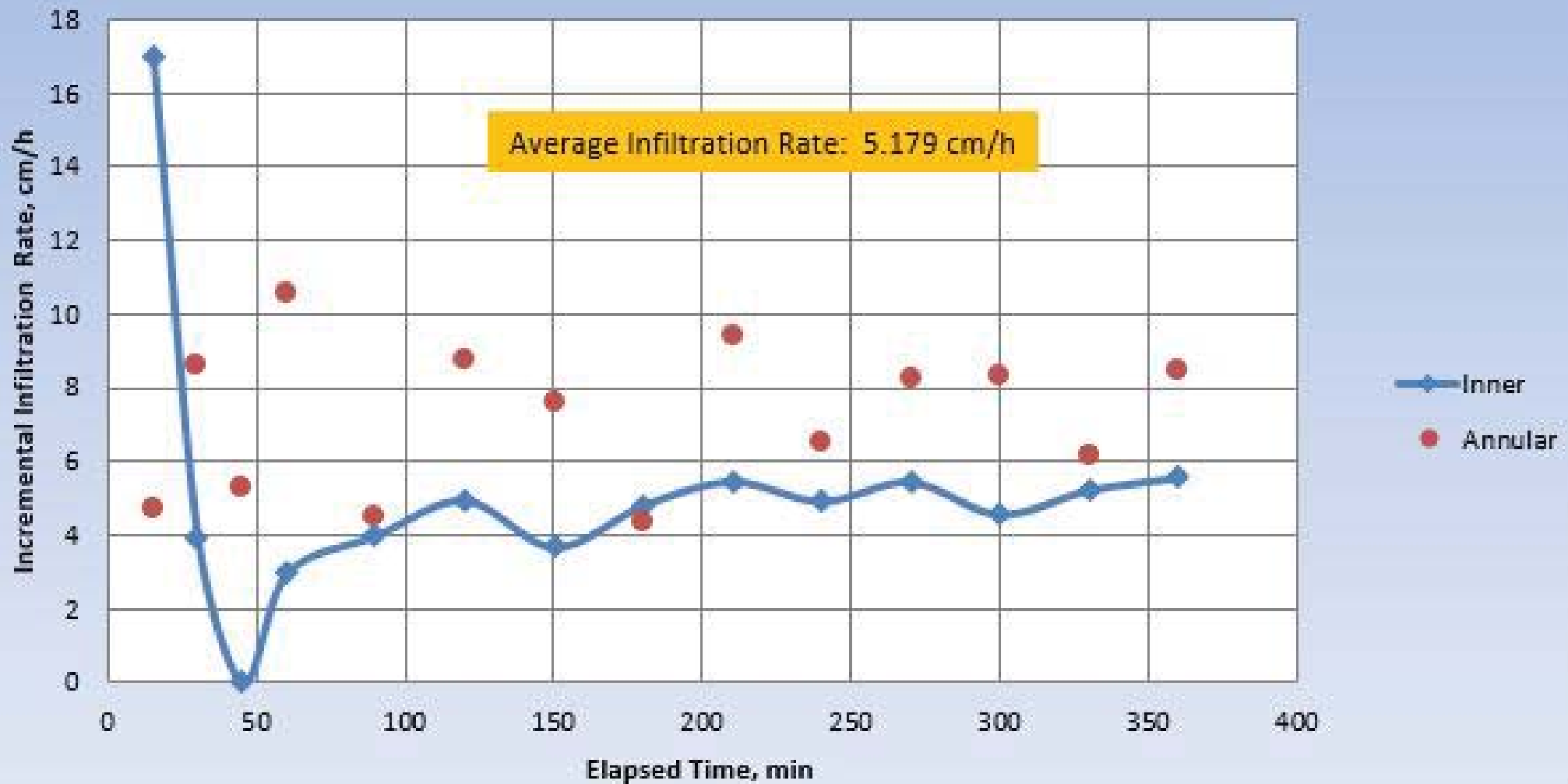
Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	8.26
Annular space	2126.6	9.21
Inner ring penetration	7.62	
Outer ring penetration	6.35	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	7:56	15	60.0	1510	60.0	5266.677		8.54	9.91	Refilled Mariotte tubes
	E	8:11	(15)	29.8		28.4					
2	S	8:11	15	60.0	855	60.0	4883.343		4.84	9.19	Refilled Mariotte tubes
	E	8:26	(30)	42.9		30.7					
3	S	8:26	15	60.0	1200	60.0	5416.678		6.79	10.19	Refilled Mariotte tubes
	E	8:41	(45)	36.0		27.5					
4	S	8:41	15	60.0	935	60.0	2216.671		5.29	4.17	Refilled Mariotte tubes
	E	8:56	(60)	41.3		46.7					
5	S	8:56	30	60.0	1980	60.0	10000.02		5.60	9.40	Refilled Mariotte tubes
	E	9:26	(90)	20.4		0.0					
6	S	9:26	30	60.0	2305	60.0	9266.685		6.52	8.72	Refilled Mariotte tubes
	E	9:56	(120)	13.9		4.4					
7	S	9:56	30	60.0	1055	60.0	8633.351		2.99	8.12	Refilled Mariotte tubes
	E	10:26	(150)	38.9		8.2					
8	S	10:26	30	60.0	2280	60.0	8500.017		6.45	7.99	Refilled Mariotte tubes
	E	10:56	(180)	14.4		9.0					
9	S	10:56	30	60.0	1760	60.0	9566.686		4.98	9.00	Refilled Mariotte tubes
	E	11:26	(210)	24.8		2.6					
10	S	11:26	30	60.0	1380	60.0	7616.682		3.90	7.16	Refilled Mariotte tubes
	E	11:56	(240)	32.4		14.3					
11	S	11:56	30	60.0	2100	60.0	8716.684		5.94	8.20	Refilled Mariotte tubes
	E	12:26	(270)	18.0		7.7					
12	S	12:26	30	60.0	1810	60.0	8983.351		5.12	8.45	Refilled Mariotte tubes
	E	12:56	(300)	23.8		6.1					
13	S	12:56	30	60.0	1890	60.0	9100.018		5.35	8.56	Refilled Mariotte tubes
	E	13:26	(330)	22.2		5.4					
14	S	13:26	30	60.0	1815	60.0	9533.352		5.14	8.97	end test
	E	13:56	(360)	23.7		2.8					

Figure 20 - Incremental Infiltration Rate Vs. Time
Double Ring Infiltrometer Testing
20153655 Test DFSB-18



Project Number Double Ring Infiltrometer Testing
 20153655E2
 Test Number DFSB-18
 Test Location _____
 Date 08/04/2016
 Tested By D. Decker
 Liquid Used Water
 Liquid pH _____
 Weather Dry, wind, hot
 Ground Temp 100° F
 Testing Depth 2'

Constants	Area, cm ²	Liq depth, cm
Inner ring	706.9	8.25
Annular space	2126.6	7
Inner ring penetration	7.62	
Outer ring penetration	5.08	

Liquid level maintained using:

Mariotte Tubes

No.	Start (S) or End (E)	Time	Elpd Time Δ / (total) (min)	Flow Readings				Liq Temp °F	Infiltration Rate		Remarks
				Inner		Annular			Inner cm / h	Annular cm / h	
				Mariotte Height, cm	flow, cm ³	Mariotte Height, cm	flow, cm ³				
1	S	9:30	15	60.0	3000	60.0	2500.005		16.98	4.70	Refilled Mariotte tubes
	E	9:45	(15)	0.0		45.0					
2	S	9:45	15	60.0	695	60.0	4583.343		3.93	8.62	Refilled Mariotte tubes
	E	10:00	(30)	46.1		32.5					
3	S	10:00	15	60.0	0	60.0	2800.006		0.00	5.27	Refilled Mariotte tubes
	E	10:15	(45)	60.0		43.2					
4	S	10:15	15	60.0	525	43.2	5616.678		2.97	10.56	Refilled Mariotte tubes
	E	10:30	(60)	49.5		9.5					
5	S	10:30	30	60.0	1415	60.0	4800.01	100.0 °F	4.00	4.51	Refilled Mariotte tubes
	E	11:00	(90)	31.7		31.2					
6	S	11:00	30	60.0	1750	60.0	9316.685	101.0 °F	4.95	8.76	Refilled Mariotte tubes
	E	11:30	(120)	25.0		4.1					
7	S	11:30	30	60.0	1300	60.0	8066.683	102.0 °F	3.68	7.59	Refilled Mariotte tubes
	E	12:00	(150)	34.0		11.6					
8	S	12:00	30	60.0	1700	60.0	4616.676		4.81	4.34	Refilled Mariotte tubes
	E	12:30	(180)	26.0		32.3					
9	S	12:30	30	60.0	1930	60.0	10000.02	103.0 °F	5.46	9.40	Refilled Mariotte tubes
	E	13:00	(210)	21.4		0.0					
10	S	13:00	30	60.0	1740	60.0	6950.014	104.0 °F	4.92	6.54	Refilled Mariotte tubes
	E	13:30	(240)	25.2		18.3					
11	S	13:30	30	60.0	1925	60.0	8750.018	103.0 °F	5.45	8.23	Refilled Mariotte tubes
	E	14:00	(270)	21.5		7.5					
12	S	14:00	30	60.0	1615	60.0	8816.684	104.0 °F	4.57	8.29	Refilled Mariotte tubes
	E	14:30	(300)	27.7		7.1					
13	S	14:30	30	60.0	1845	60.0	6583.347	104.0 °F	5.22	6.19	Refilled Mariotte tubes
	E	15:00	(330)	23.1		20.5					
14	S	15:00	30	60.0	1965	60.0	9033.351		5.56	8.50	End test
	E	15:30	(360)	20.7		5.8					

Appendix J

Vadose Zone Modeling Procedures

TECHNICAL MEMORANDUM

To: Arul Ayyaswami, Tetra Tech

Cc: Carl Lenker, Tetra Tech

From: Guy Roemer and Audrey Crockett, Tetra Tech

Date: July 23, 2018

Subject: Vadose Zone Modeling – AP Area Up and Down Flushing Treatability Study

Analysis of the timing of flows and leachate concentrations in response to down flushing required the simulation of fluid flow and solute transport in the vadose zone. The computer model VS2DT developed by the United States Geological Survey (Healy, 1990) was used to conduct the preliminary numerical simulations. Additional modeling was performed to evaluate down flushing performance using site-specific soil properties (from soil samples collected from borings required for the AP Area Treatability Study) and to evaluate actual down flushing performance during implementation of this treatability study. Preliminary and post-flushing modeling results are described below.

1.0 PRELIMINARY MODELING

Preliminary vadose zone and saturated zone modeling was conducted before any AP Area Up and Down Flushing Treatability Study data were collected within Plots 1 and 2 [i.e., physical and aquifer properties in the preliminary modeling were derived from two nearby historic soil borings (SA179 and SA70) and two nearby wells M-37 and I-AR]. While the modeling scenarios conducted did not explicitly end up simulating actual site conditions, they did bracket the possible range of site conditions observed at Plots 1 and 2. The important conclusion drawn from this preliminary modeling effort was that extraction wells were needed closer to Plots 1 and 2 to reduce travel times for removal of flushed water and to allow evaluation of the effectiveness of capturing down flushing water. Extraction of the flushed water by the Interceptor Well Field (IWF) wells, which are more than 250 feet and 430 feet away from the northern edges of Plot 1 and Plot 2, respectively, would have required more than 3 months of travel time and the effects of down flushing would have been masked due to mixing with ambient groundwater and the dissipation of groundwater mounding over those distances.

2.0 POST-FLUSHING MODELING

Two post-flushing numerical models were developed using VS2DT: one representing Plot 1 and one representing Plot 2. In Plot 1, down flushing through Zones 1, 2, 4, 5, 7, and 8 was simulated from March 31, 2017 to July 31, 2017; in Plot 2, down flushing through Zones 10, 11, 13, 14, 16, and 17 was simulated from October 27, 2017 through January 22, 2018. Each model had two stress periods: one period representing the pumping at the extraction well during down flushing at the other three zones in each Plot (namely Zones 3, 6, 9 for Plot 1 and Zones 12, 15, and 18 for Plot 2), and the second period representing down flushing in the above six zones in each Plot. Model dimensions and the duration of down flushing are presented in **Table 1**.

Table 1 Model Dimensions and Down Flushing Duration

Model Specification	Plot 1 Model	Plot 2 Model
Width (feet)	700	800
Depth (feet)	100	100
Number of Columns	410	477
Number of Rows	50	50
Down Flushing Period (days)	122	88

Two textural units were included in the Plot 1 and 2 models: one unit representing the upper, unsaturated silt and sand of the alluvium, and one unit representing the Upper Muddy Creek formation (UMCf), which was located at a depth of approximately 30 feet. The depth of the UMCf was identified from DFSB, UFIW, UFMW, E1, and E2 boring logs and was explicitly imported into the Plot 1 and 2 model grids.

2.1 Hydraulic Properties

Soil samples collected from borings in Plots 1 and 2 were evaluated for a variety of hydraulic properties, including porosity, horizontal and vertical hydraulic conductivity, grain size distribution, and soil-water retention curves. Hydraulic conductivity was also evaluated in some of the injection, monitoring, and extraction wells in Plots 1 and 2 by means of slug tests.

Evaluations of hydraulic conductivity varied by orders of magnitude for both the alluvium and the UMCf. Laboratory estimates of hydraulic conductivity in samples collected from borings in Plots 1 and 2 ranged from 0.01 to 2 feet per day (ft/day) for the alluvium, and from 0.01 to 0.03 ft/day for the UMCf. Slug tests conducted in the intermediate and deep wells screened within the UMCf produced hydraulic conductivity estimates ranging from 0.1 to 9.4 ft/day, much higher than the laboratory estimates. The flow rates from the extraction wells for the duration of down flushing were typically from one to three gallons per minute (gpm). Therefore, the hydraulic conductivity values obtained from the slug test analyses, rather than the laboratory values, were considered more representative of formation surrounding the wells. The Plot 1 and 2 models incorporated saturated hydraulic conductivities of 2.0 ft/day and 1/7 ft/day for the alluvium and UMCf, respectively.

The ratio of vertical to horizontal hydraulic conductivity was assumed to be 0.1, which is a typical value for silty sand based on professional judgment. Laboratory measurements of the ratio of vertical to horizontal hydraulic conductivity were unreliable since vertical hydraulic conductivity was reported to be greater than horizontal hydraulic conductivity, which is unlikely in sedimentary systems like those present in the AP Area.

Porosity was measured in the laboratory for both the alluvium and the UMCf. However, many of the porosity estimates were higher than expected, especially for the UMCf. For the purposes of this modeling, porosity for the

alluvium was assumed to be the mean of the laboratory measurements from the alluvium, 0.45, while porosity for the UMCf was assumed to be 0.5, which is a typical value for clayey silts or silty clays.

Soil-water retention was characterized in the model using the van Genuchten equation (van Genuchten, 1980). The van Genuchten equation characterizes the relationship between soil water content and matric potential. It is given as:

$$\theta(h) = \frac{\theta_s - \theta_r}{[1 + (\alpha|h|)^n]^{1-\frac{1}{n}}} + \theta_r$$

where h is the soil matric potential, θ is the volumetric soil moisture content, θ_s is the saturated soil moisture content, θ_r is the residual soil moisture content, and α and n are shape parameters related to the pore-size distribution and grain-size distribution of the soil.

Residual moisture content was assumed to be the smallest measured moisture content provided by the analytical laboratory. The shape parameters α and n were fitted to the laboratory data for the alluvium and UMCf. Van Genuchten parameters used in the model are shown in **Table 2**.

Table 2 Van Genuchten Parameters

Geologic Unit	Residual Moisture Content	α (ft ⁻¹)	n
Alluvium	0.2	0.17	2.01
UMCf	0.35	0.05	2.27

2.2 Initial Conditions

Initially, hydraulic head in the model was set to an equilibrium pressure head distribution with the water table at the elevation of the water table measured in the extraction wells before pumping began. Initial perchlorate concentration was contoured from measurements of soil perchlorate concentration in the down flushing borings, monitoring wells, and extraction wells. These soil concentrations were converted to equivalent water concentrations using the soil moisture content measurements for perchlorate samples. The equivalent water perchlorate concentrations were normalized using the highest-measured concentration in a north-south section of the down flushing test plots running from extraction well E1-1 in the north to boring DFSB-16 in the south. The maximum perchlorate concentration in water in the alluvium was in boring DFSB-01 in Plot 1. The maximum perchlorate concentration in water in the UMCf was in extraction well E2-2 north of Plot 2.

2.3 Boundary Conditions

The model was set up as a two-dimensional section between E1-1 and DFSB-16, but the left and right boundaries were extended several hundred feet beyond the northern edge of Plot 1 and southern edge of Plot 2 to avoid edge effects between the model boundaries and the down flushing water. The left and right boundaries were constant-head boundaries, imposing a south-to-north hydraulic gradient. The bottom of the model was a no-flow boundary; the model top was a no-flow boundary except in the 90-foot sections representing the down flushing zones in Plots 1 and 2. These down flushing zones were represented as constant-pressure head boundaries imposing 0.25 feet of pressure at the top of the model over a length of 90 feet.

The extraction wells were represented by source-sink points at the bottom of the well screen, with an area of highly permeable material representing the borehole above the source-sink point. The inclusion of the high-permeability wellbore material avoided numerical issues associated with dewatering the area around the well. The

rate of extraction was determined by distributing the groundwater volume pumped from the well (3 gpm for E1-1, and 1.8 gpm for E2-2) across the well screen.

2.4 Results

In Plot 1, the simulated down flushing water first reaches monitoring well UFMW-01S approximately 19 days after down flushing commences (see Figure 8a in main report). This time is defined as the inflection point on the hydrograph, when the hydraulic head in the monitoring well, which had been decreasing because of pumping at the extraction well, begins to increase. The area of highest concentration was in the vadose zone, just below and towards the northern edge of the down flushing zone; the infiltrating water was very effective at moving this high-concentration vadose zone water towards the extraction well (Figure 8b in main report).

In Plot 2, the simulated down flushing water reaches monitoring well UFMW-04S approximately 14 days after the down flushing treatment was applied (see Figure 9a in main report). Concentrations were not as high in Plot 2 as in Plot 1, and the area of highest concentration was near the southern edge of Plot 2, so the infiltrating water was not quite as effective at moving this higher-concentration vadose zone water towards the extraction well (Figure 9b in main report), but overall still effective at reducing perchlorate concentrations in the vadose zone.

The simulated infiltration rate was 0.09 inches per hour for Plot 1 and 0.06 inches per hour for Plot 2; these simulated rates are similar to the measured infiltration rates, which ranged from 0.12 to 0.30 inches per hour for Plots 1 and 2.

Simulated hydraulic head in monitoring wells downgradient of Plots 1 and 2 increased two to three times more than the measured hydraulic head increases in these monitoring wells. This difference is likely because the full hydraulic influence of the three-dimensional extraction well system could not be simulated using two-dimensional models [i.e., only one of the three (Plot 1) or five extraction wells (Plot 2) was simulated in the two-dimensional models].

2.5 Sensitivity Analysis

A formal sensitivity analysis was not performed, but three additional simulations were performed for each plot by modifying one model parameter at a time:

- Increasing the saturated horizontal hydraulic conductivity of the alluvium from 2 ft/day to 5 ft/day;
- Decreasing the ratio of horizontal to vertical hydraulic conductivity of the alluvium from 0.1 to 0.01; and
- Decreasing the porosity of the alluvium from 0.45 to 0.35.

Table 3 Sensitivity Analysis Results shows the results of this limited sensitivity analysis. The approximate time to reach the monitoring wells is shown for the sensitivity simulations and the base case for each model.

Table 3 Sensitivity Analysis Results

Model Parameter	Base Case		Sensitivity Simulations	
	Plot 1 Model	Plot 2 Model	Plot 1 Model	Plot 2 Model
Alluvium Horizontal Hydraulic Conductivity	19 days	14 days	7.5 days	5 days
Alluvium Ratio of Horizontal to Vertical Hydraulic Conductivity			>122 days	>88 days
Alluvium Porosity			12 days	9 days

Since the down flushing water does not reach the water table or the monitoring wells by the end of the modeling simulations, the ratio of vertical to horizontal hydraulic conductivity must be closer to 0.1 than 0.01. Increases in hydraulic head in the monitoring wells likely occurred between two to three weeks after the initiation of down flushing, which indicates that the higher porosity and lower hydraulic conductivity values for the alluvium are more in line with the formation values than the other values tested.

3.0 REFERENCES

- Healy, R. (1990). Simulation of solute transport in variably saturated porous media with supplemental information on modifications to the U.S. Geological Survey's computer program VS2D. *U.S. Geological Survey Water-Resources Investigations Report 90-4025*, 125.
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