

TECHNICAL MEMORANDUM

To: Nevada Environmental Response Trust

Cc: Dan Pastor, Tetra Tech

From: Bounkheana Chhun, David Bohmann

Date: August 11, 2017

Subject: AP-5 Tank Sampling Activities and Mass Estimate Summary
Nevada Environmental Response Trust Site; Henderson, Nevada

As required by the Nevada Division of Environmental Protection (NDEP) and at the request of the Nevada Environmental Response Trust (NERT or Trust), Tetra Tech, Inc. (Tetra Tech) sampled the AP-5 Process Tanks and prepared this summary of the sampling activities and results. The objective of the sampling and analysis was to prepare an estimate of the total mass of perchlorate present in the Process Tanks. The tank sampling and mass estimate calculation methods were discussed with and verbally approved by NDEP during a June 7, 2017 meeting.

SUMMARY OF FIELD ACTIVITIES

On July 6 – 7, 2017, field personnel collected a total of 27 slurry samples and nine solids samples from Process Tanks T-201, T-202, and T-203. A summary of field activities is provided below. Tank sampling schematics showing the general sampling layout are provided in Attachment A.

Slurry Sampling

Tetra Tech personnel collected a total of 27 slurry samples from the three Process Tanks using a discrete-depth sampler. Sampling positions were established at three separate locations along the mixer bridge (7.5, 15.0, and 22.5 feet from the sidewall) that represented equal distances between the sidewall and the mixer. Samples were then collected from each position at three discrete depths within an upper, middle, and lower sample interval. Field personnel determined the middle point of each sampling interval depth based on the overall height of slurry in each Process Tank. A summary of the sample locations is provided below:

Table 1. Slurry Sampling Locations

Process Tank	Sample Interval Description	Sample Interval Depth (ft)
T-201	Upper Depth (feet)	19.0
	Middle Depth (feet)	24.8
	Lower Depth (feet)	30.6
T-202	Upper Depth (feet)	16.5
	Middle Depth (feet)	23.3
	Lower Depth (feet)	30.1
T-203	Upper Depth (feet)	17.4
	Middle Depth (feet)	23.9
	Lower Depth (feet)	30.4

Accumulated Solids Measurement and Sampling

Tetra Tech personnel measured the depth to accumulated solids in the bottom of each Process Tank on July 6, 2017. A depth measurement was taken every six feet across the bottom to determine the locations of accumulated solids (Attachment B). Field personnel then determined the three locations from each tank with the most measured solids to allow for sample collection. Three solids samples were collected from these locations in each Process Tank using an Ekman dredge sampler. A total of nine solids samples were collected. The sample locations are provided below:

Table 2. Solids Sampling Locations

Process Tank	Horizontal Distance from Sidewall (feet)	Sample Depth (feet)
T-201	0	32.5
	18	32.1
	42	32.9
T-202	0	32.0
	42	32.1
	60	31.6
T-203	18	31.5
	42	31.8
	60	32.2

SUMMARY OF RESULTS

The following sections provide a summary of the analytical results and field measurements from the slurry and solids sampling. The results are also summarized in the calculations provided in Attachment B. The analytical results are provided in Attachment C. The laboratory data was not validated for this mass estimating exercise.

Slurry Samples – Perchlorate Concentration

The perchlorate concentrations for the slurry samples from T-201, T-202, and T-203 are provided in the following tables:

Table 3. Summary of Perchlorate Concentration (mg/L) for T-201 for Slurry Samples

Sample Interval	Sample Depth (ft)	Horizontal Distance from Sidewall		
		7.5 feet	15.0 feet	22.5 feet
Upper Depth	19.0 feet	58,000	82,000	53,000
Middle Depth	24.8 feet	52,000	58,000	54,000
Lower Depth	30.6 feet	50,000	49,000	45,000

Table 4. Summary of Perchlorate Concentration (mg/L) for T-202 for Slurry Samples

Sample Interval	Sample Depth (ft)	Horizontal Distance from Sidewall		
		7.5 feet	15.0 feet	22.5 feet
Upper Depth	16.5 feet	50,000	91,000	63,000
Middle Depth	23.3 feet	65,000	77,000	62,000
Lower Depth	30.1 feet	63,000	53,000	77,000

Table 5. Summary of Perchlorate Concentration (mg/L) for T-203 for Slurry Samples

Sample Interval	Sample Depth (ft)	Horizontal Distance from Sidewall		
		7.5 feet	15.0 feet	22.5 feet
Upper Depth	17.4 feet	50,000	50,000	52,000
Middle Depth	23.9 feet	62,000	50,000	51,000
Lower Depth	30.4 feet	54,000	50,000	55,000

Slurry Samples – Percent Solids

The percent solids for the slurry samples from T-201, T-202, and T-203 are provided in the following tables:

Table 6. Summary of Percent Solids for T-201 for Slurry Samples

Sample Interval	Sample Depth (ft)	Horizontal Distance from Sidewall		
		7.5 feet	15.0 feet	22.5 feet
Upper Depth	19.0 feet	11%	11%	12%
Middle Depth	24.8 feet	11%	12%	12%
Lower Depth	30.6 feet	11%	11%	12%

Table 7. Summary of Percent Solids for T-202 for Slurry Samples

Sample Interval	Sample Depth (ft)	Horizontal Distance from Sidewall		
		7.5 feet	15.0 feet	22.5 feet
Upper Depth	16.5 feet	11%	11%	10%
Middle Depth	23.3 feet	11%	11%	10%
Lower Depth	30.1 feet	12%	11%	11%

Table 8. Summary of Percent Solids for T-203 for Slurry Samples

Sample Interval	Sample Depth (ft)	Horizontal Distance from Sidewall		
		7.5 feet	15 feet	22.5 feet
Upper Depth	17.4 feet	12%	11%	11%
Middle Depth	23.9 feet	12%	11%	10%
Lower Depth	30.4 feet	12%	11%	11%

Solids Samples – Perchlorate Concentration and Percent Solids

The perchlorate concentrations and percent solids for the solids samples from T-201, T-202, and T-203 are provided in the table below. The thickness of the solid layer is presented in Attachment B:

Table 9. Summary of Perchlorate and Percent Solids for Solids Samples

	Horizontal Distance from sidewall (feet)	Sample Depth (feet)	Perchlorate Concentration (mg/kg)	Average Perchlorate Concentration (mg/kg)	Percent Solids (%)	Average Percent Solids (%)
T-201	0	32.5	180,000	146,667	24.3%	28.3%
	18	32.1	140,000		29.0%	
	42	32.9	120,000		31.7%	
T-202	0	32.0	180,000	180,000	20.9%	24.4%
	42	32.0	170,000		26.9%	
	60	31.6	190,000		25.5%	
T-203	18	31.5	170,000	146,667	24.0%	26.8%
	42	31.8	150,000		27.0%	
	60	32.2	120,000		29.5%	

PERCHLORATE MASS ESTIMATE

A summary of the procedures used to calculate the range of total mass of perchlorate in each Process Tank is provided in this section. The average mass of perchlorate in solids and in the slurry were calculated separately and added together to determine the total average of mass of perchlorate in each tank. The calculation sheets for T-201, T-202, and T-203 are provided in Attachment B.

Measured Solids Profile

The settled solids profile is provided in the calculations sheets in Attachment B. This profile was used to estimate the solids volume in each Process Tank using AutoCAD Civil 3D. The resulting estimated volumes are provided in the following table.

Table 10. Estimated Volume of Solids from Measured Solids Profile

Tank ID	Estimated Volume (ft ³)
T-201	881.3
T-202	1,432.4
T-203	1,345.4

Average Mass of Perchlorate in Settled Solids

The perchlorate concentrations from the three solids samples from each tank were averaged. The average solids perchlorate concentration was then multiplied by the density of sediment and the estimated settled solids volume calculated in AutoCAD Civil 3D, with appropriate unit conversions, as shown by the formula below:

$$M_{Solids} = (V_{Settled Solids}) * (X_{Average}) * (\rho_{sediment})$$

Where,

M_{Solids} = Calculated mass of perchlorate present in the settled solids

$V_{Settled Solids}$ = Estimated volume of settled solids

$X_{Average}$ = Average concentration of perchlorate in the settled solids

$\rho_{sediment}$ = Density of sediment

Average Perchlorate Mass in Slurry

The total tank volume at the time of sampling was determined by using the tank level documented from the control panel at the time of sampling. The slurry volume at the time of sampling was then calculated by subtracting the estimated volume of settled solids from the total tank volume. These calculations are shown by the formulas below:

$$V_{Tank} = \pi * (r_{tank})^2 * L_{Tank}$$

$$V_{Slurry} = V_{Tank} - V_{Settled Solids}$$

Where,

V_{Tank} = Process Tank volume at time of sampling

r_{tank} = Radius of the Process Tanks = 30 ft

L_{Tank} = Process Tank level at time of sampling

V_{Slurry} = Volume of slurry in the Process Tank at time of sampling

$V_{Settled Solids}$ = Estimated volume of solids in settled solids

The volume of liquid in the slurry was calculated by multiplying the slurry volume at the time of sampling by the average percent moisture in the slurry, as shown by the formula below:

$$V_{Liquid in slurry} = V_{Slurry} * (1 - S_{Average})$$

Where,

$V_{Liquid in slurry}$ = Volume of the liquid portion of the slurry

V_{Slurry} = Volume of slurry in the Process Tank at time of sampling

$S_{Average}$ = Average percent solids in slurry

The average perchlorate mass in the slurry liquid was then calculated by multiplying the volume of liquid in the slurry by the average perchlorate concentration, with appropriate unit conversions, as shown by the formula below:

$$M_{Slurry} = V_{Liquid\ in\ slurry} * X_{Average}$$

Where,

M_{Slurry} = Calculated mass of perchlorate present in the slurry liquid

$V_{Liquid\ in\ slurry}$ = Volume of the liquid portion of the slurry

$X_{Average}$ = Average perchlorate concentration of the slurry

Total Perchlorate Mass Estimate

For each Process Tank, the total perchlorate mass was calculated by summing the average calculated mass of perchlorate in the settled solids and the slurry. The resulting average perchlorate mass for each tank and the total for all three tanks is provided in **Table 11** below.

The analytical results for perchlorate showed relatively significant variability of concentrations within a given tank. This is likely due to a combination of factors, such as heterogeneity within the tanks, inherent sample variability, and the significant dilution factors required by the laboratory to analyze samples with elevated concentrations. Less variability was observed in the analytical results for percent solids.

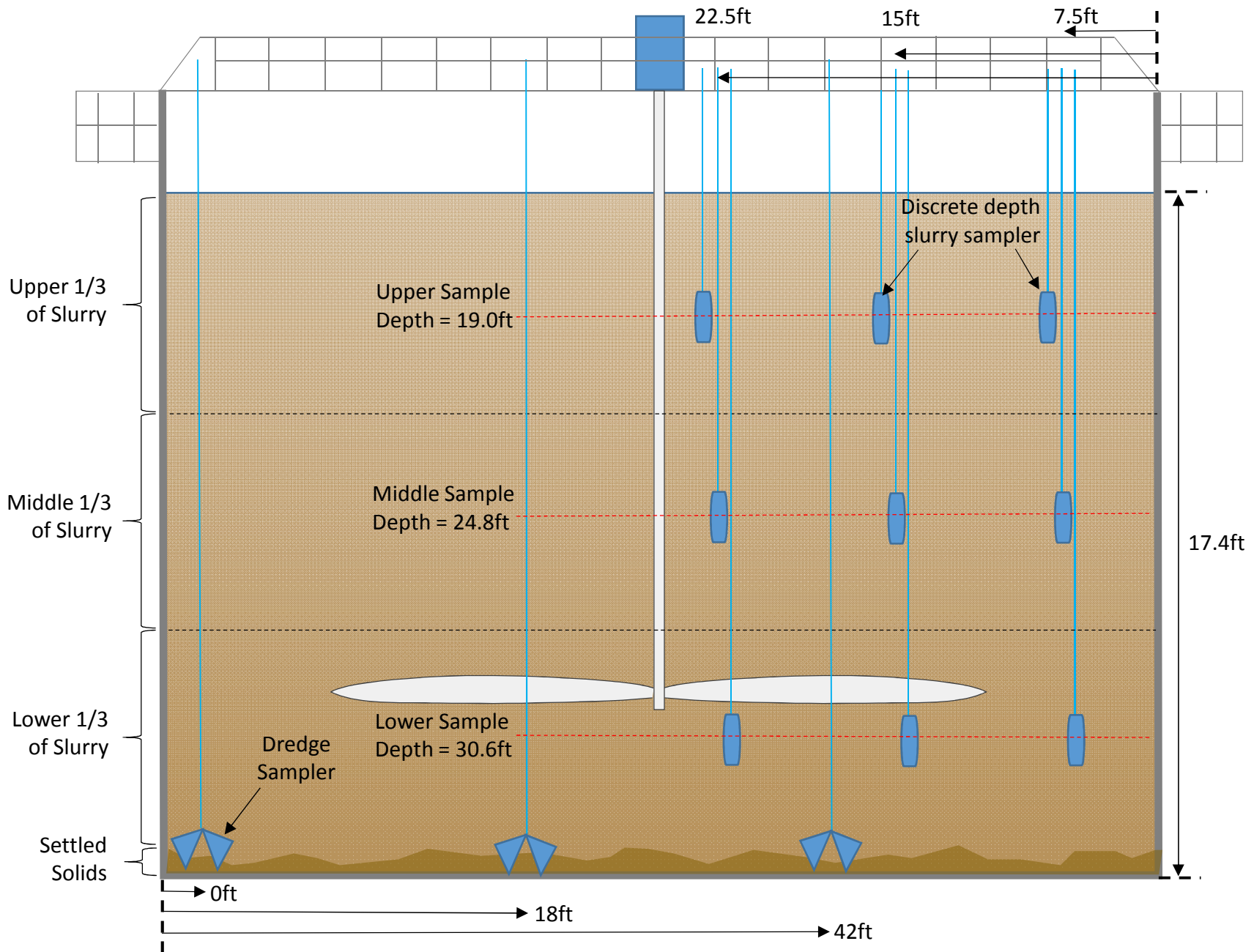
Given the variability of the laboratory results, a range of estimated perchlorate mass in each Process Tank was calculated. The standard deviations for perchlorate concentrations and percent solids were calculated for each Process Tank. The low range of the perchlorate mass estimate was calculated using the average values for perchlorate concentration and percent solids minus two standard deviations. The high range of the perchlorate mass estimate was calculated using the average values for perchlorate concentration and percent solids plus two standard deviations. Assuming a normal distribution around the mean, this estimated range of plus and minus two standard deviations should represent a 95 percent confidence interval for the perchlorate mass in each Process Tank. The calculated average and range of perchlorate mass concentrations are provided in the table below:


Table 11. Range of Perchlorate Mass Estimate

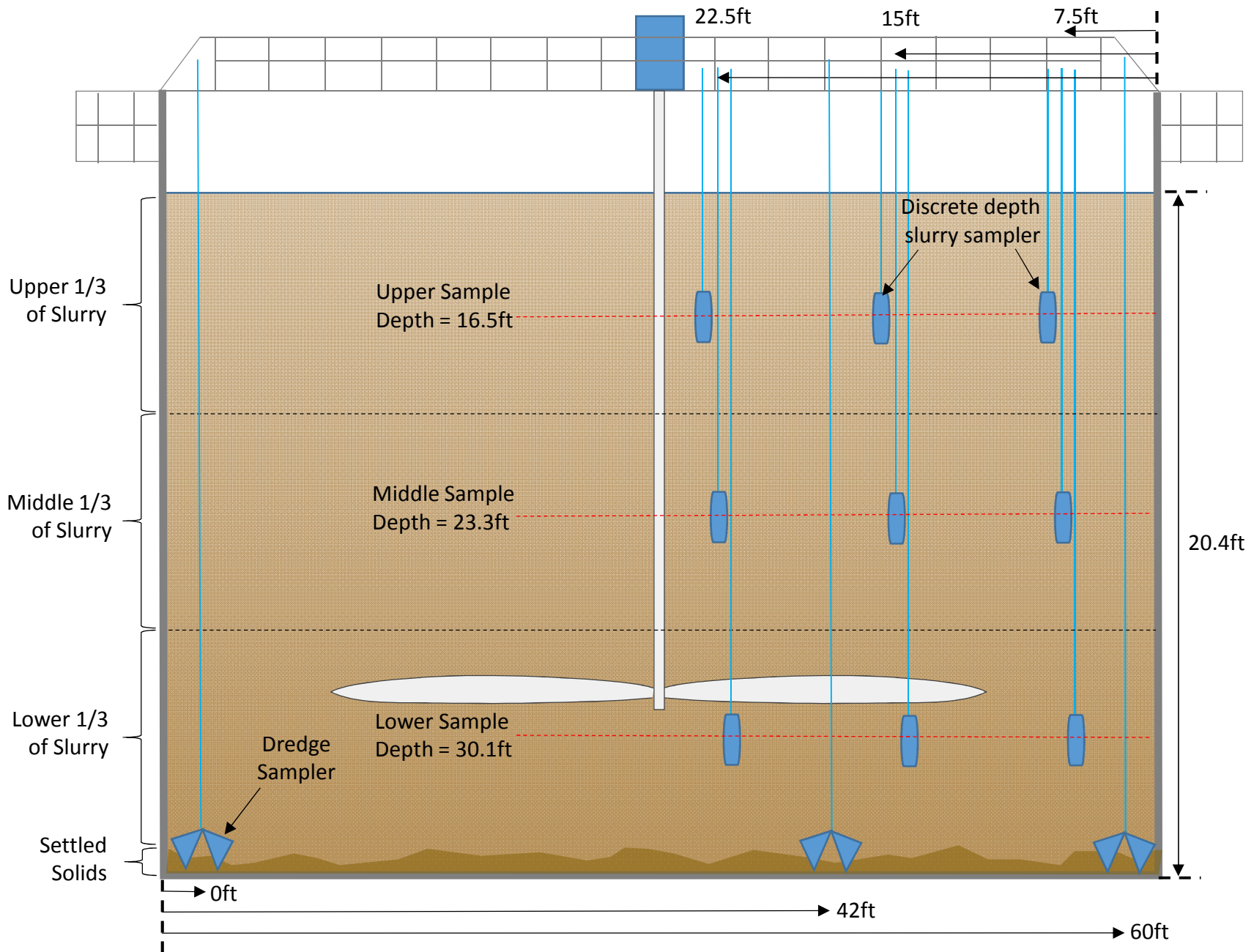
	Mass in T-201 (lbs)	Mass in T-202 (lbs)	Mass in T-203 (lbs)	Total Perchlorate Mass in Process Tanks (lbs)
Low Est. (avg. – 2 std. dev.)	103,851	164,587	154,054	422,491
Average	168,055	247,579	185,745	601,380
High Est. (avg. + 2 std. dev.)	230,898	328,402	216,730	776,030


Attachment A

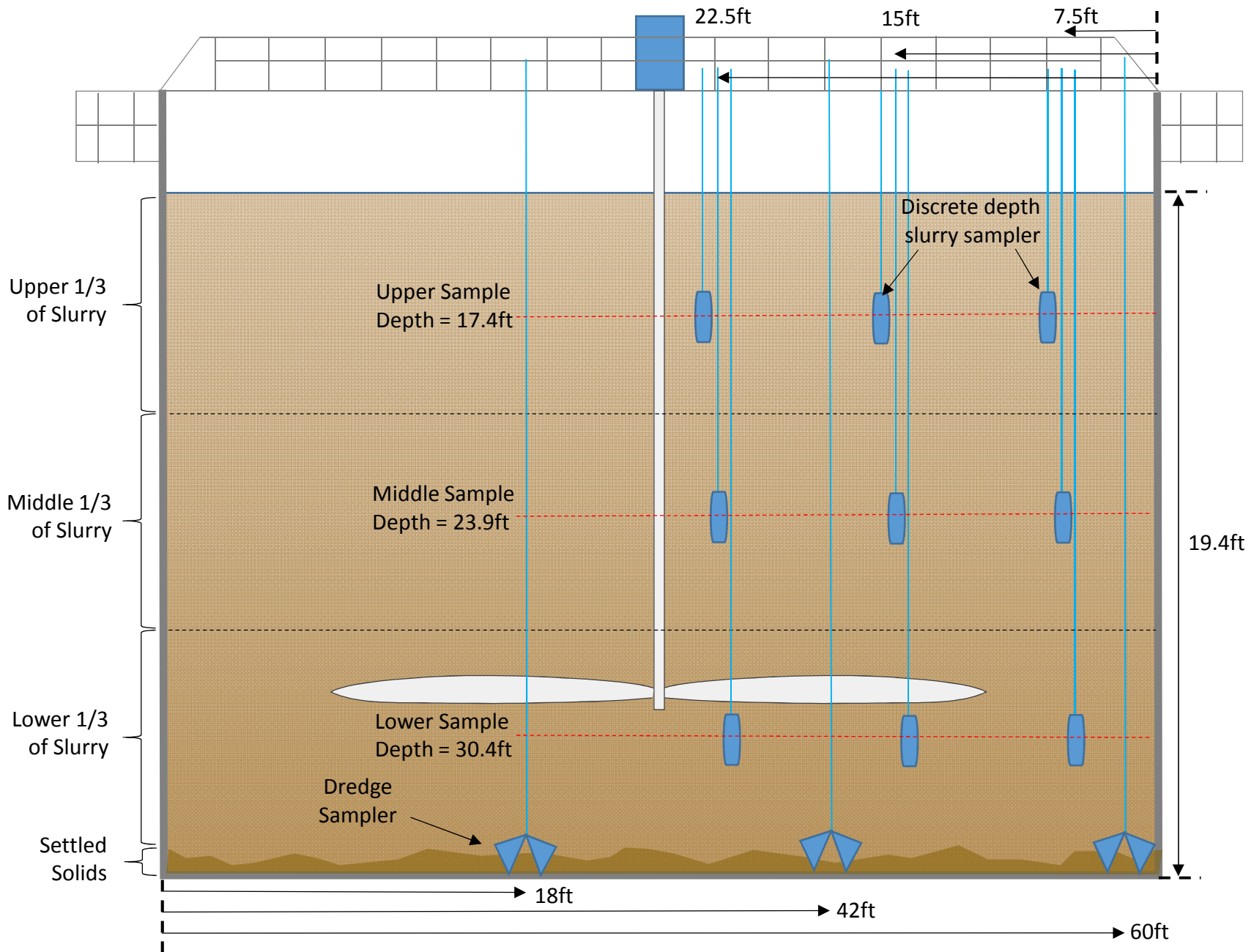
Tank Sampling Schematics




 TETRA TECH www.tetratech.com 150 S. 4th Street, Unit A Henderson, Nevada 89015 PHONE: (702) 966-8340	NEVADA ENVIRONMENTAL RESPONSE TRUST SITE HENDERSON, NEVADA	Project No.: 117-7502017 Date: August 1, 2017 Drawn By: BC
	Process Tank T-201 Sampling Location Schematic	Figure No. 1



 TETRA TECH www.tetrattech.com 150 S. 4th Street, Unit A Henderson, Nevada 89015 PHONE: (702) 966-8340	NEVADA ENVIRONMENTAL RESPONSE TRUST SITE HENDERSON, NEVADA	Project No.: 117-7502017 Date: August 1, 2017 Drawn By: BC
	Process Tank T-202 Sampling Location Schematic	



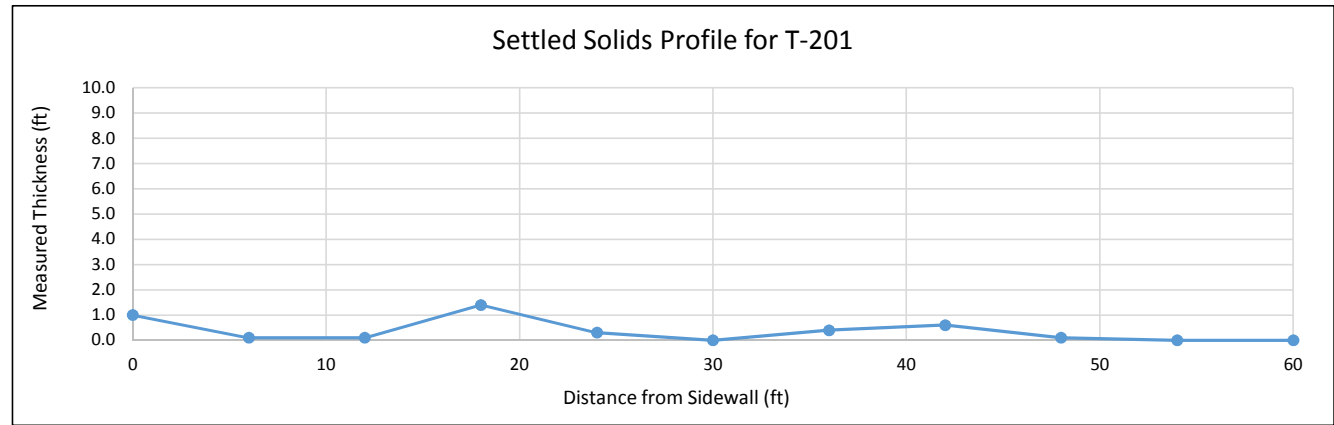
 TETRA TECH www.tetratech.com 150 S. 4th Street, Unit A Henderson, Nevada 89015 PHONE: (702) 966-8340	NEVADA ENVIRONMENTAL RESPONSE TRUST SITE HENDERSON, NEVADA	Project No.: 117-7502017 Date: August 1, 2017 Drawn By: BC
	Process Tank T-203 Sampling Location Schematic	

Attachment B
Analytical Summaries and Calculations

Tank T-201 Perchlorate Mass Estimate Calculations

Measured Solids Profile

Distance from Sidewall (ft)	Depth to Solids (ft)	Solids Thickness (ft)
0	32.5	1.0
6	33.4	0.1
12	33.4	0.1
18	32.1	1.4
24	33.2	0.3
30	33.5	0
36	33.1	0.4
42	32.9	0.6
48	33.4	0.1
54	33.5	0
60	33.5	0
<i>Average:</i>		<i>0.36</i>



Settled solids volume as calculated using CAD Civil 3D = 881.3 ft^3 32.6 CY

Solid Sample Results

Distance from sidewall (ft)	Sample Depth (ft)	Perchlorate Concentration (mg/kg)	Percent Solids (%)	Percent Moisture (%)
0	32.5	180,000	24.3%	75.7%
18	32.1	140,000	29.0%	71.0%
42	32.9	120,000	31.7%	68.3%
<i>Average:</i>		<i>146,667</i>	<i>28.3%</i>	<i>71.7%</i>
<i>Minimum:</i>		<i>120,000</i>	<i>24.3%</i>	<i>68.3%</i>
<i>Maximum:</i>		<i>180,000</i>	<i>31.7%</i>	<i>75.7%</i>
<i>Standard Deviation:</i>		<i>30,551</i>	<i>3.7%</i>	<i>3.7%</i>

Avg. volume of solids in settled solids = 881.3 ft^3
 Density of sediment = 2.40 g/cm^3
 Avg. solids perchlorate concentration = $146,667 \text{ mg/kg}$
 Avg. mass of perchlorate in solid fraction = $8,784 \text{ kg}$
 $19,366 \text{ lbs}$

Tank T-201 Perchlorate Mass Estimate Calculations

Slurry Sample Results

Perchlorate Concentration (mg/L)

	Sample Depth (ft)	Horizontal Distance from Sidewall		
		7.5 feet	15 feet	22.5 feet
Upper	19.0	58,000	82,000	53,000
Middle	24.8	52,000	58,000	54,000
Lower	30.6	50,000	49,000	45,000
		Average:		55,667
		Minimum:		45,000
		Maximum:		82,000
		Standard Deviation:		10,712

Percent Solids

	Sample Depth (ft)	Horizontal Distance from Sidewall		
		7.5 feet	15 feet	22.5 feet
Upper	19.0	11%	11%	12%
Middle	24.8	11%	12%	12%
Lower	30.6	11%	11%	12%
		Average:		11.4%
		Minimum:		11.0%
		Maximum:		12.0%
		Standard Deviation:		0.53%

Tank level at time of sampling = 17.4 ft
 Tank volume at time of sampling = 49,197 ft³
 Slurry volume at time of sampling = 48,316 ft³ (total volume minus settled solids volume)
 Average % solids in slurry = 11.4%
 Volume of liquid in slurry = 42,787 ft³
 Avg. perchlorate mass in slurry liquid = 67,445 kg
 148,690 lbs

Total Average Perchlorate Mass Estimate

Avg. mass of perchlorate in settled solids = 19,366 lbs
 Avg. mass of perchlorate in slurry = 148,690 lbs
 Total avg. mass of perchlorate in tank = 168,055 lbs

Range of Perchlorate Mass Estimate

Range of Perchlorate Mass in Settled Solids

	% Solids	Perchlorate Concentration (mg/kg)	Perchlorate Mass (lbs)
Low Est. (avg. - 2 std. dev.)	20.8%	85,566	11,298
Average	28.3%	146,667	19,366
High Est. (avg. + 2 std. dev.)	35.8%	207,768	27,433

Range of Perchlorate Mass in Slurry

	% Solids	Perchlorate Concentration (mg/L)	Perchlorate Mass (lbs)
Low Est. (avg. - 2 std. dev.)	10.4%	34,242	92,553
Average	11.4%	55,667	148,690
High Est. (avg. + 2 std. dev.)	12.5%	77,090.95	203,464

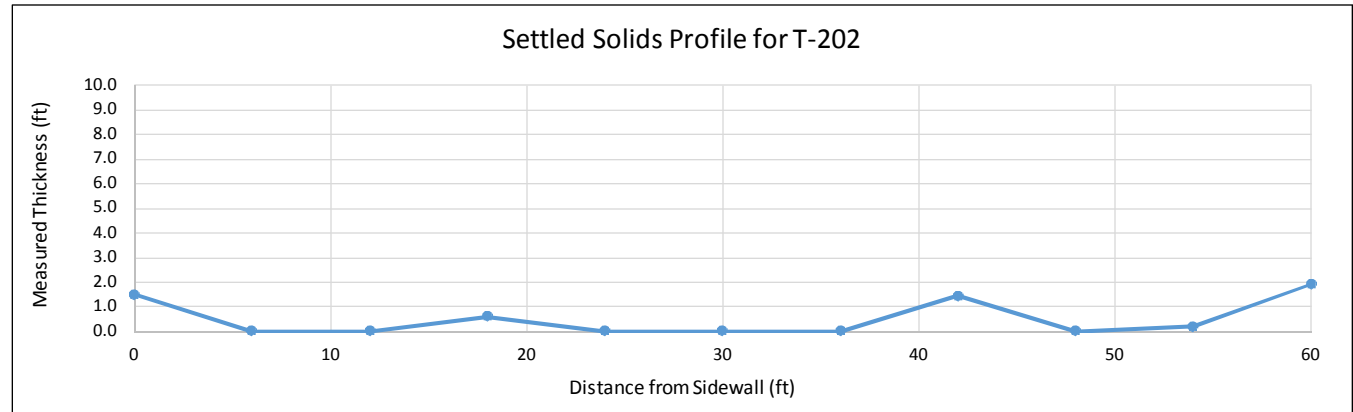
Range of Total Perchlorate Mass in Tanks

	Mass in Settled Solids (lbs)	Mass in Slurry (lbs)	Total Mass (lbs)
Low Est. (avg. - 2 std. dev.)	11,298	92,553	103,851
Average	19,366	148,690	168,055
High Est. (avg. + 2 std. dev.)	27,433	203,464	230,898

Tank T-202 Perchlorate Mass Estimate Calculations

Measured Solids Profile

Distance from Sidewall (ft)	Depth to Solids (ft)	Solids Thickness (ft)
0	32.0	1.5
6	33.5	0
12	33.5	0
18	32.9	0.6
24	33.5	0
30	33.5	0
36	33.5	0
42	32.1	1.45
48	33.5	0
54	33.3	0.2
60	31.6	1.9
<i>Average:</i>		<i>0.51</i>



Settled solids volume as calculated using CAD Civil 3D = 1432.4 ft^3 53.1 CY

Solid Sample Results

Distance from sidewall (ft)	Sample Depth (ft)	Perchlorate Concentration (mg/kg)	Percent Solids (%)	Percent Moisture (%)
0	32.0	180,000	20.9%	79.1%
42	32.1	170,000	26.9%	73.1%
60	31.6	190,000	25.5%	74.5%
<i>Average:</i>		<i>180,000</i>	<i>24.4%</i>	<i>75.6%</i>
<i>Minimum:</i>		<i>170,000</i>	<i>20.9%</i>	<i>73.1%</i>
<i>Maximum:</i>		<i>190,000</i>	<i>26.9%</i>	<i>79.1%</i>
<i>Standard Deviation:</i>		<i>10,000</i>	<i>3.1%</i>	<i>3.1%</i>

Avg. volume of solids in settled solids = $1,432.4 \text{ ft}^3$
 Density of sediment = 2.40 g/cm^3
 Avg. solids perchlorate concentration = $180,000 \text{ mg/kg}$
 Avg. mass of perchlorate in solid fraction = $17,522 \text{ kg}$
 $38,629 \text{ lbs}$

Tank T-202 Perchlorate Mass Estimate Calculations

Slurry Sample Results

Perchlorate Concentration (mg/L)

	Sample Depth (ft)	Horizontal Distance from Sidewall		
		7.5 feet	15 feet	22.5 feet
Upper	16.5	50,000	91,000	63,000
Middle	23.3	65,000	77,000	62,000
Lower	30.1	63,000	53,000	77,000
		<i>Average:</i>		66,778
		<i>Minimum:</i>		50,000
		<i>Maximum:</i>		91,000
		<i>Standard Deviation:</i>		12,853

Percent Solids

	Sample Depth (ft)	Horizontal Distance from Sidewall		
		7.5 feet	15 feet	22.5 feet
Upper	16.5	11%	11%	10%
Middle	23.3	11%	11%	10%
Lower	30.1	12%	11%	11%
		<i>Average:</i>		10.9%
		<i>Minimum:</i>		10.0%
		<i>Maximum:</i>		12.0%
		<i>Standard Deviation:</i>		0.60%

Tank level at time of sampling = 20.4 ft
 Tank volume at time of sampling = 57,680 ft³
 Slurry volume at time of sampling = 56,247 ft³ (total volume minus settled solids volume)
 Average % solids in slurry = 10.9%
 Volume of liquid in slurry = 50,123 ft³
 Avg. perchlorate mass in slurry liquid = 94,778 kg
 208,950 lbs

Total Average Perchlorate Mass Estimate

Avg. mass of perchlorate in settled solids = 38,629 lbs
 Avg. mass of perchlorate in slurry = 208,950 lbs
 Total avg. mass of perchlorate in tank = 247,579 lbs

Range of Perchlorate Mass Estimate

Range of Perchlorate Mass in Settled Solids

	% Solids	Perchlorate Concentration (mg/kg)	Perchlorate Mass (lbs)
Low Est. (avg. - 2 std. dev.)	18.2%	160,000	34,337
Average	24.4%	180,000	38,629
High Est. (avg. + 2 std. dev.)	30.7%	200,000	42,921

Range of Perchlorate Mass in Slurry

	% Solids	Perchlorate Concentration (mg/L)	Perchlorate Mass (lbs)
Low Est. (avg. - 2 std. dev.)	9.7%	41,072	130,250
Average	10.9%	66,778	208,950
High Est. (avg. + 2 std. dev.)	12.1%	92,483.38	285,481

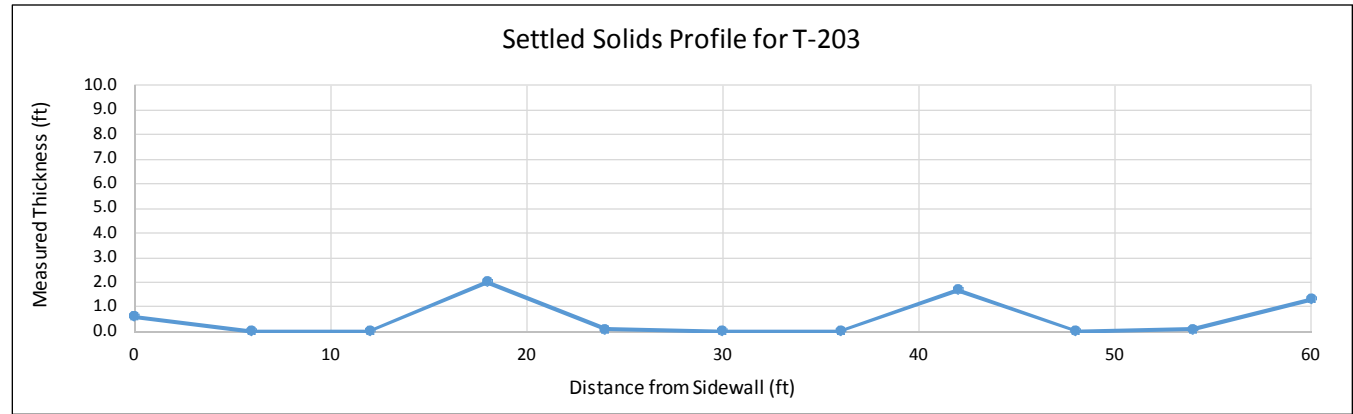
Range of Total Perchlorate Mass in Tanks

	Mass in Settled Solids (lbs)	Mass in Slurry (lbs)	Total Mass (lbs)
Low Est. (avg. - 2 std. dev.)	34,337	130,250	164,587
Average	38,629	208,950	247,579
High Est. (avg. + 2 std. dev.)	42,921	285,481	328,402

Tank T-203 Perchlorate Mass Estimate Calculations

Measured Solids Profile

Distance from Sidewall (ft)	Depth to Solids (ft)	Solids Thickness (ft)
0	32.9	0.6
6	33.5	0
12	33.5	0
18	31.5	2
24	33.4	0.1
30	33.5	0
36	33.5	0
42	31.8	1.7
48	33.5	0
54	33.4	0.1
60	32.2	1.3
<i>Average:</i>		<i>0.53</i>



Settled solids volume as calculated using CAD Civil 3D = ft³ 1345.4 CY 49.8

Solid Sample Results

Distance from sidewall (ft)	Sample Depth (ft)	Perchlorate Concentration (mg/kg)	Percent Solids (%)	Percent Moisture (%)
18	31.5	170,000	24.0%	76.0%
42	31.8	150,000	27.0%	73.0%
60	32.2	120,000	29.5%	70.5%
<i>Average:</i>		<i>146,667</i>	<i>26.8%</i>	<i>73.2%</i>
<i>Minimum:</i>		<i>120,000</i>	<i>24.0%</i>	<i>70.5%</i>
<i>Maximum:</i>		<i>170,000</i>	<i>29.5%</i>	<i>76.0%</i>
<i>Standard Deviation:</i>		<i>25,166</i>	<i>2.8%</i>	<i>2.8%</i>

Avg. volume of solids in settled solids = 1,345.4 ft³
 Density of sediment = 2.40 g/cm³
 Avg. solids perchlorate concentration = 146,667 mg/kg
 Avg. mass of perchlorate in solid fraction = 13,410 kg
 29,565 lbs

Tank T-203 Perchlorate Mass Estimate Calculations

Slurry Sample Results

Perchlorate Concentration (mg/L)

	Sample Depth (ft)	Horizontal Distance from Sidewall		
		7.5 feet	15 feet	22.5 feet
Upper	17.4	50,000	50,000	52,000
Middle	23.9	62,000	50,000	51,000
Lower	30.4	54,000	50,000	55,000
<i>Average:</i>				52,667
<i>Minimum:</i>				50,000
<i>Maximum:</i>				62,000
<i>Standard Deviation:</i>				3,969

Percent Solids

	Sample Depth (ft)	Horizontal Distance from Sidewall		
		7.5 feet	15 feet	22.5 feet
Upper	17.4	12%	11%	11%
Middle	23.9	12%	11%	10%
Lower	30.4	12%	11%	11%
<i>Average:</i>				11.2%
<i>Minimum:</i>				10.0%
<i>Maximum:</i>				12.0%
<i>Standard Deviation:</i>				0.67%

Tank level at time of sampling = 19.4 ft
 Tank volume at time of sampling = 54,852 ft³
 Slurry volume at time of sampling = 53,507 ft³ (total volume minus settled solids volume)
 Average % solids in slurry = 11.2%
 Volume of liquid in slurry = 47,502 ft³
 Avg. perchlorate mass in slurry liquid = 70,842 kg
 156,181 lbs

Total Average Perchlorate Mass Estimate

Avg. mass of perchlorate in settled solids = 29,565 lbs
 Avg. mass of perchlorate in slurry = 156,181 lbs
 Total avg. mass of perchlorate in tank = 185,745 lbs

Range of Perchlorate Mass Estimate

Range of Perchlorate Mass in Settled Solids

	% Solids	Perchlorate Concentration (mg/kg)	Perchlorate Mass (lbs)
Low Est. (avg. - 2 std. dev.)	21.3%	96,334	19,419
Average	26.8%	146,667	29,565
High Est. (avg. + 2 std. dev.)	32.3%	196,999	39,711

Range of Perchlorate Mass in Slurry

	% Solids	Perchlorate Concentration (mg/L)	Perchlorate Mass (lbs)
Low Est. (avg. - 2 std. dev.)	9.9%	44,729	134,635
Average	11.2%	52,667	156,181
High Est. (avg. + 2 std. dev.)	12.6%	60,603.92	177,019

Range of Total Perchlorate Mass in Tanks

	Mass in Settled Solids (lbs)	Mass in Slurry (lbs)	Total Mass (lbs)
Low Est. (avg. - 2 std. dev.)	19,419	134,635	154,054
Average	29,565	156,181	185,745
High Est. (avg. + 2 std. dev.)	39,711	177,019	216,730

Attachment C

Analytical Results

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-187928-1

Client Project/Site: NERT K05

For:

Tetra Tech, Inc.

150 South Fourth St

Unit A

Henderson, Nevada 89015

Attn: Kyle Hansen



Authorized for release by:

7/19/2017 3:45:47 PM

Patty Mata, Senior Project Manager

(949)261-1022

patty.mata@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12

13



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	13
Lab Chronicle	14
QC Sample Results	21
QC Association Summary	25
Definitions/Glossary	28
Certification Summary	29
Chain of Custody	30
Receipt Checklists	33

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-187928-1	T-203-18ft-20170707	Solid	07/07/17 11:55	07/08/17 11:05
440-187928-2	T-203-60ft-20170707	Solid	07/07/17 11:58	07/08/17 11:05
440-187928-3	T-203-42ft-20170707	Solid	07/07/17 12:01	07/08/17 11:05
440-187928-4	T-203-7.5ft-Lower-20170707	Water	07/07/17 12:20	07/08/17 11:05
440-187928-5	T-203-7.5ft-Middle-20170707	Water	07/07/17 12:21	07/08/17 11:05
440-187928-6	T-203-7.5ft-Upper-20170707	Water	07/07/17 12:22	07/08/17 11:05
440-187928-7	T-203-15ft-Lower-20170707	Water	07/07/17 12:24	07/08/17 11:05
440-187928-8	T-203-15ft-Middle-20170707	Water	07/07/17 12:25	07/08/17 11:05
440-187928-9	T-203-15ft-Upper-20170707	Water	07/07/17 12:26	07/08/17 11:05
440-187928-10	T-203-22.5ft-Lower-20170707	Water	07/07/17 12:28	07/08/17 11:05
440-187928-11	T-203-22.5ft-Middle-20170707	Water	07/07/17 12:29	07/08/17 11:05
440-187928-12	T-203-22.5ft-Upper-20170707	Water	07/07/17 12:30	07/08/17 11:05
440-187928-13	T-202-0ft-20170707	Solid	07/07/17 10:20	07/08/17 11:05
440-187928-14	T-202-42ft-20170707	Solid	07/07/17 10:23	07/08/17 11:05
440-187928-15	T-202-60ft-20170707	Solid	07/07/17 10:26	07/08/17 11:05
440-187928-16	T-202-7.5ft-Lower-20170707	Water	07/07/17 09:40	07/08/17 11:05
440-187928-17	T-202-7.5ft-Middle-20170707	Water	07/07/17 09:41	07/08/17 11:05
440-187928-18	T-202-7.5ft-Upper-20170707	Water	07/07/17 09:42	07/08/17 11:05
440-187928-19	T-202-15ft-Lower-20170707	Water	07/07/17 09:44	07/08/17 11:05
440-187928-20	T-202-15ft-Middle-20170707	Water	07/07/17 09:45	07/08/17 11:05
440-187928-21	T-202-15ft-Upper-20170707	Water	07/07/17 09:46	07/08/17 11:05
440-187928-22	T-202-22.5ft-Lower-20170707	Water	07/07/17 09:48	07/08/17 11:05
440-187928-23	T-202-22.5ft-Middle-20170707	Water	07/07/17 09:49	07/08/17 11:05
440-187928-24	T-202-22.5ft-Upper-20170707	Water	07/07/17 09:50	07/08/17 11:05
440-187928-25	T-201-42ft-20170707	Solid	07/07/17 09:13	07/08/17 11:05
440-187928-26	T-201-18ft-20170707	Solid	07/07/17 09:10	07/08/17 11:05
440-187928-27	T-201-0ft-20170707	Solid	07/07/17 09:07	07/08/17 11:05

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Job ID: 440-187928-1

Laboratory: TestAmerica Irvine

Narrative

**Job Narrative
440-187928-1**

Comments

No additional comments.

Receipt

The samples were received on 7/8/2017 11:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.9° C and 4.4° C.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-203-18ft-20170707

Lab Sample ID: 440-187928-1

Date Collected: 07/07/17 11:55

Matrix: Solid

Date Received: 07/08/17 11:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	76.0		0.1	0.1	%			07/10/17 16:01	1

Client Sample ID: T-203-18ft-20170707

Lab Sample ID: 440-187928-1

Date Collected: 07/07/17 11:55

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 24.0

Method: 314.0 - Perchlorate (IC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	170000		8300	2000	mg/Kg	☼		07/12/17 12:29	50000

Client Sample ID: T-203-60ft-20170707

Lab Sample ID: 440-187928-2

Date Collected: 07/07/17 11:58

Matrix: Solid

Date Received: 07/08/17 11:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	70.5		0.1	0.1	%			07/10/17 16:01	1

Client Sample ID: T-203-60ft-20170707

Lab Sample ID: 440-187928-2

Date Collected: 07/07/17 11:58

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 29.5

Method: 314.0 - Perchlorate (IC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	120000		6800	1600	mg/Kg	☼		07/12/17 13:23	50000

Client Sample ID: T-203-42ft-20170707

Lab Sample ID: 440-187928-3

Date Collected: 07/07/17 12:01

Matrix: Solid

Date Received: 07/08/17 11:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	73.0		0.1	0.1	%			07/10/17 16:01	1

Client Sample ID: T-203-42ft-20170707

Lab Sample ID: 440-187928-3

Date Collected: 07/07/17 12:01

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 27.0

Method: 314.0 - Perchlorate (IC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	150000		7400	1800	mg/Kg	☼		07/12/17 13:41	50000

Client Sample ID: T-203-7.5ft-Lower-20170707

Lab Sample ID: 440-187928-4

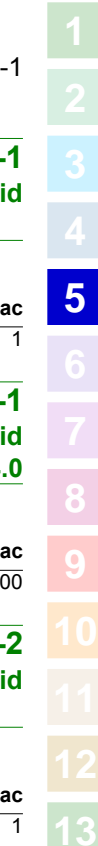
Date Collected: 07/07/17 12:20

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	5400000		4000000	950000	ug/L			07/14/17 15:04	100000



TestAmerica Irvine

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-203-7.5ft-Lower-20170707

Lab Sample ID: 440-187928-4

Date Collected: 07/07/17 12:20

Matrix: Water

Date Received: 07/08/17 11:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	12		0.10	0.10	%			07/10/17 13:32	1

Client Sample ID: T-203-7.5ft-Middle-20170707

Lab Sample ID: 440-187928-5

Date Collected: 07/07/17 12:21

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	62000000		20000000	4800000	ug/L			07/18/17 14:57	500000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	12		0.10	0.10	%			07/10/17 13:32	1

Client Sample ID: T-203-7.5ft-Upper-20170707

Lab Sample ID: 440-187928-6

Date Collected: 07/07/17 12:22

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	50000000		4000000	950000	ug/L			07/14/17 15:22	100000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	12		0.10	0.10	%			07/10/17 13:32	1

Client Sample ID: T-203-15ft-Lower-20170707

Lab Sample ID: 440-187928-7

Date Collected: 07/07/17 12:24

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	50000000		4000000	950000	ug/L			07/14/17 15:40	100000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%			07/10/17 13:32	1

Client Sample ID: T-203-15ft-Middle-20170707

Lab Sample ID: 440-187928-8

Date Collected: 07/07/17 12:25

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	50000000		4000000	950000	ug/L			07/14/17 15:58	100000 0

TestAmerica Irvine

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-203-15ft-Middle-20170707

Lab Sample ID: 440-187928-8

Date Collected: 07/07/17 12:25

Matrix: Water

Date Received: 07/08/17 11:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%			07/10/17 13:32	1

Client Sample ID: T-203-15ft-Upper-20170707

Lab Sample ID: 440-187928-9

Date Collected: 07/07/17 12:26

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	50000000		4000000	950000	ug/L			07/14/17 16:16	100000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%			07/10/17 13:32	1

Client Sample ID: T-203-22.5ft-Lower-20170707

Lab Sample ID: 440-187928-10

Date Collected: 07/07/17 12:28

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	55000000		20000000	4800000	ug/L			07/18/17 15:18	500000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%			07/10/17 13:32	1

Client Sample ID: T-203-22.5ft-Middle-20170707

Lab Sample ID: 440-187928-11

Date Collected: 07/07/17 12:29

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	51000000		4000000	950000	ug/L			07/14/17 16:34	100000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	10		0.10	0.10	%			07/10/17 13:32	1

Client Sample ID: T-203-22.5ft-Upper-20170707

Lab Sample ID: 440-187928-12

Date Collected: 07/07/17 12:30

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	52000000		4000000	950000	ug/L			07/18/17 15:39	100000 0

TestAmerica Irvine

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-203-22.5ft-Upper-20170707

Lab Sample ID: 440-187928-12

Date Collected: 07/07/17 12:30

Matrix: Water

Date Received: 07/08/17 11:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%			07/10/17 13:32	1

Client Sample ID: T-202-0ft-20170707

Lab Sample ID: 440-187928-13

Date Collected: 07/07/17 10:20

Matrix: Solid

Date Received: 07/08/17 11:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	79.1		0.1	0.1	%			07/10/17 16:01	1

Client Sample ID: T-202-0ft-20170707

Lab Sample ID: 440-187928-13

Date Collected: 07/07/17 10:20

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 20.9

Method: 314.0 - Perchlorate (IC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	180000		9500	2300	mg/Kg	☒		07/12/17 15:31	50000

Client Sample ID: T-202-42ft-20170707

Lab Sample ID: 440-187928-14

Date Collected: 07/07/17 10:23

Matrix: Solid

Date Received: 07/08/17 11:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	73.1		0.1	0.1	%			07/10/17 16:01	1

Client Sample ID: T-202-42ft-20170707

Lab Sample ID: 440-187928-14

Date Collected: 07/07/17 10:23

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 26.9

Method: 314.0 - Perchlorate (IC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	170000		7400	1800	mg/Kg	☒		07/12/17 15:49	50000

Client Sample ID: T-202-60ft-20170707

Lab Sample ID: 440-187928-15

Date Collected: 07/07/17 10:26

Matrix: Solid

Date Received: 07/08/17 11:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	74.5		0.1	0.1	%			07/10/17 16:01	1

Client Sample ID: T-202-60ft-20170707

Lab Sample ID: 440-187928-15

Date Collected: 07/07/17 10:26

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 25.5

Method: 314.0 - Perchlorate (IC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	190000		7800	1900	mg/Kg	☒		07/12/17 16:07	50000

TestAmerica Irvine

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-202-7.5ft-Lower-20170707

Lab Sample ID: 440-187928-16

Date Collected: 07/07/17 09:40

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	63000000		4000000	950000	ug/L			07/14/17 17:09	1000000
									0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	12		0.10	0.10	%			07/10/17 13:32	1

Client Sample ID: T-202-7.5ft-Middle-20170707

Lab Sample ID: 440-187928-17

Date Collected: 07/07/17 09:41

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	65000000		4000000	950000	ug/L			07/14/17 17:27	1000000
									0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%			07/10/17 13:32	1

Client Sample ID: T-202-7.5ft-Upper-20170707

Lab Sample ID: 440-187928-18

Date Collected: 07/07/17 09:42

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	50000000		4000000	950000	ug/L			07/14/17 17:45	1000000
									0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%			07/10/17 13:32	1

Client Sample ID: T-202-15ft-Lower-20170707

Lab Sample ID: 440-187928-19

Date Collected: 07/07/17 09:44

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	53000000		4000000	950000	ug/L			07/13/17 19:48	1000000
									0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%			07/10/17 13:32	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-202-15ft-Middle-20170707

Lab Sample ID: 440-187928-20

Date Collected: 07/07/17 09:45

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	77000000		4000000	950000	ug/L	-		07/13/17 20:10	1000000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%	-		07/10/17 13:32	1

Client Sample ID: T-202-15ft-Upper-20170707

Lab Sample ID: 440-187928-21

Date Collected: 07/07/17 09:46

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	91000000		4000000	950000	ug/L	-		07/13/17 20:31	1000000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%	-		07/10/17 13:32	1

Client Sample ID: T-202-22.5ft-Lower-20170707

Lab Sample ID: 440-187928-22

Date Collected: 07/07/17 09:48

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	77000000		4000000	950000	ug/L	-		07/13/17 20:52	1000000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%	-		07/10/17 13:32	1

Client Sample ID: T-202-22.5ft-Middle-20170707

Lab Sample ID: 440-187928-23

Date Collected: 07/07/17 09:49

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	62000000		20000000	4800000	ug/L	-		07/18/17 20:30	500000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	10		0.10	0.10	%	-		07/10/17 13:32	1

TestAmerica Irvine

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-202-22.5ft-Upper-20170707

Lab Sample ID: 440-187928-24

Date Collected: 07/07/17 09:50

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	63000000		4000000	950000	ug/L			07/13/17 21:35	100000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	10		0.10	0.10	%			07/10/17 15:31	1

Client Sample ID: T-201-42ft-20170707

Lab Sample ID: 440-187928-25

Date Collected: 07/07/17 09:13

Matrix: Solid

Date Received: 07/08/17 11:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	68.3		0.1	0.1	%			07/10/17 16:01	1

Client Sample ID: T-201-42ft-20170707

Lab Sample ID: 440-187928-25

Date Collected: 07/07/17 09:13

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 31.7

Method: 314.0 - Perchlorate (IC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	120000		6300	1500	mg/Kg	☼		07/12/17 16:25	50000

Client Sample ID: T-201-18ft-20170707

Lab Sample ID: 440-187928-26

Date Collected: 07/07/17 09:10

Matrix: Solid

Date Received: 07/08/17 11:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	71.0		0.1	0.1	%			07/10/17 16:01	1

Client Sample ID: T-201-18ft-20170707

Lab Sample ID: 440-187928-26

Date Collected: 07/07/17 09:10

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 29.0

Method: 314.0 - Perchlorate (IC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	140000		6900	1600	mg/Kg	☼		07/12/17 16:43	50000

Client Sample ID: T-201-0ft-20170707

Lab Sample ID: 440-187928-27

Date Collected: 07/07/17 09:07

Matrix: Solid

Date Received: 07/08/17 11:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	75.7		0.1	0.1	%			07/10/17 16:01	1

TestAmerica Irvine

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-201-0ft-20170707

Lab Sample ID: 440-187928-27

Date Collected: 07/07/17 09:07

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 24.3

Method: 314.0 - Perchlorate (IC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	180000		8200	2000	mg/Kg	☼		07/12/17 17:01	50000

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Method	Method Description	Protocol	Laboratory
314.0	Perchlorate (IC)	EPA	TAL IRV
Moisture	Percent Moisture	EPA	TAL IRV
SM 2540G	Total, Fixed, and Volatile Solids	SM	TAL IRV

Protocol References:

EPA = US Environmental Protection Agency
SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-203-18ft-20170707

Date Collected: 07/07/17 11:55

Date Received: 07/08/17 11:05

Lab Sample ID: 440-187928-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			416549	07/10/17 16:01	EC1	TAL IRV

Client Sample ID: T-203-18ft-20170707

Date Collected: 07/07/17 11:55

Date Received: 07/08/17 11:05

Lab Sample ID: 440-187928-1

Matrix: Solid

Percent Solids: 24.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.02 g	40 mL	416753	07/11/17 15:12	CTH	TAL IRV
Soluble	Analysis	314.0		50000			416652	07/12/17 12:29	CTH	TAL IRV

Client Sample ID: T-203-60ft-20170707

Date Collected: 07/07/17 11:58

Date Received: 07/08/17 11:05

Lab Sample ID: 440-187928-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			416549	07/10/17 16:01	EC1	TAL IRV

Client Sample ID: T-203-60ft-20170707

Date Collected: 07/07/17 11:58

Date Received: 07/08/17 11:05

Lab Sample ID: 440-187928-2

Matrix: Solid

Percent Solids: 29.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.01 g	40 mL	416753	07/11/17 15:12	CTH	TAL IRV
Soluble	Analysis	314.0		50000			416652	07/12/17 13:23	CTH	TAL IRV

Client Sample ID: T-203-42ft-20170707

Date Collected: 07/07/17 12:01

Date Received: 07/08/17 11:05

Lab Sample ID: 440-187928-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			416549	07/10/17 16:01	EC1	TAL IRV

Client Sample ID: T-203-42ft-20170707

Date Collected: 07/07/17 12:01

Date Received: 07/08/17 11:05

Lab Sample ID: 440-187928-3

Matrix: Solid

Percent Solids: 27.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			3.99 g	40 mL	416753	07/11/17 15:12	CTH	TAL IRV
Soluble	Analysis	314.0		50000			416652	07/12/17 13:41	CTH	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-203-7.5ft-Lower-20170707

Lab Sample ID: 440-187928-4

Date Collected: 07/07/17 12:20

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417123	07/14/17 15:04	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-203-7.5ft-Middle-20170707

Lab Sample ID: 440-187928-5

Date Collected: 07/07/17 12:21

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		500000			417833	07/18/17 14:57	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-203-7.5ft-Upper-20170707

Lab Sample ID: 440-187928-6

Date Collected: 07/07/17 12:22

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417123	07/14/17 15:22	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-203-15ft-Lower-20170707

Lab Sample ID: 440-187928-7

Date Collected: 07/07/17 12:24

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417123	07/14/17 15:40	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-203-15ft-Middle-20170707

Lab Sample ID: 440-187928-8

Date Collected: 07/07/17 12:25

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417123	07/14/17 15:58	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-203-15ft-Upper-20170707

Lab Sample ID: 440-187928-9

Date Collected: 07/07/17 12:26

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417123	07/14/17 16:16	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-203-22.5ft-Lower-20170707

Lab Sample ID: 440-187928-10

Date Collected: 07/07/17 12:28

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		500000			417833	07/18/17 15:18	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-203-22.5ft-Middle-20170707

Lab Sample ID: 440-187928-11

Date Collected: 07/07/17 12:29

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417123	07/14/17 16:34	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-203-22.5ft-Upper-20170707

Lab Sample ID: 440-187928-12

Date Collected: 07/07/17 12:30

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417833	07/18/17 15:39	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-202-0ft-20170707

Lab Sample ID: 440-187928-13

Date Collected: 07/07/17 10:20

Matrix: Solid

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			416549	07/10/17 16:01	EC1	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-202-0ft-20170707

Lab Sample ID: 440-187928-13

Date Collected: 07/07/17 10:20

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 20.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.02 g	40 mL	416753	07/11/17 15:12	CTH	TAL IRV
Soluble	Analysis	314.0		50000			416652	07/12/17 15:31	CTH	TAL IRV

Client Sample ID: T-202-42ft-20170707

Lab Sample ID: 440-187928-14

Date Collected: 07/07/17 10:23

Matrix: Solid

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			416549	07/10/17 16:01	EC1	TAL IRV

Client Sample ID: T-202-42ft-20170707

Lab Sample ID: 440-187928-14

Date Collected: 07/07/17 10:23

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 26.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.03 g	40 mL	416753	07/11/17 15:12	CTH	TAL IRV
Soluble	Analysis	314.0		50000			416652	07/12/17 15:49	CTH	TAL IRV

Client Sample ID: T-202-60ft-20170707

Lab Sample ID: 440-187928-15

Date Collected: 07/07/17 10:26

Matrix: Solid

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			416549	07/10/17 16:01	EC1	TAL IRV

Client Sample ID: T-202-60ft-20170707

Lab Sample ID: 440-187928-15

Date Collected: 07/07/17 10:26

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 25.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.02 g	40 mL	416753	07/11/17 15:12	CTH	TAL IRV
Soluble	Analysis	314.0		50000			416652	07/12/17 16:07	CTH	TAL IRV

Client Sample ID: T-202-7.5ft-Lower-20170707

Lab Sample ID: 440-187928-16

Date Collected: 07/07/17 09:40

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417123	07/14/17 17:09	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-202-7.5ft-Middle-20170707

Lab Sample ID: 440-187928-17

Date Collected: 07/07/17 09:41

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417123	07/14/17 17:27	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-202-7.5ft-Upper-20170707

Lab Sample ID: 440-187928-18

Date Collected: 07/07/17 09:42

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417123	07/14/17 17:45	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-202-15ft-Lower-20170707

Lab Sample ID: 440-187928-19

Date Collected: 07/07/17 09:44

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417122	07/13/17 19:48	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-202-15ft-Middle-20170707

Lab Sample ID: 440-187928-20

Date Collected: 07/07/17 09:45

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417122	07/13/17 20:10	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-202-15ft-Upper-20170707

Lab Sample ID: 440-187928-21

Date Collected: 07/07/17 09:46

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417122	07/13/17 20:31	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-202-22.5ft-Lower-20170707

Lab Sample ID: 440-187928-22

Date Collected: 07/07/17 09:48

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417122	07/13/17 20:52	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-202-22.5ft-Middle-20170707

Lab Sample ID: 440-187928-23

Date Collected: 07/07/17 09:49

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		500000			417833	07/18/17 20:30	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416496	07/10/17 13:32	EC1	TAL IRV

Client Sample ID: T-202-22.5ft-Upper-20170707

Lab Sample ID: 440-187928-24

Date Collected: 07/07/17 09:50

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417122	07/13/17 21:35	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416537	07/10/17 15:31	EC1	TAL IRV

Client Sample ID: T-201-42ft-20170707

Lab Sample ID: 440-187928-25

Date Collected: 07/07/17 09:13

Matrix: Solid

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			416549	07/10/17 16:01	EC1	TAL IRV

Client Sample ID: T-201-42ft-20170707

Lab Sample ID: 440-187928-25

Date Collected: 07/07/17 09:13

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 31.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.02 g	40 mL	416753	07/11/17 15:12	CTH	TAL IRV
Soluble	Analysis	314.0		50000			416652	07/12/17 16:25	CTH	TAL IRV

Client Sample ID: T-201-18ft-20170707

Lab Sample ID: 440-187928-26

Date Collected: 07/07/17 09:10

Matrix: Solid

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			416549	07/10/17 16:01	EC1	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Client Sample ID: T-201-18ft-20170707

Lab Sample ID: 440-187928-26

Date Collected: 07/07/17 09:10

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 29.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.01 g	40 mL	416753	07/11/17 15:15	CTH	TAL IRV
Soluble	Analysis	314.0		50000			416652	07/12/17 16:43	CTH	TAL IRV

Client Sample ID: T-201-0ft-20170707

Lab Sample ID: 440-187928-27

Date Collected: 07/07/17 09:07

Matrix: Solid

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			416549	07/10/17 16:01	EC1	TAL IRV

Client Sample ID: T-201-0ft-20170707

Lab Sample ID: 440-187928-27

Date Collected: 07/07/17 09:07

Matrix: Solid

Date Received: 07/08/17 11:05

Percent Solids: 24.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.00 g	40 mL	416753	07/11/17 15:15	CTH	TAL IRV
Soluble	Analysis	314.0		50000			416652	07/12/17 17:01	CTH	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MRL 440-416652/5
Matrix: Solid
Analysis Batch: 416652

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	3.26	J	ug/L		82	75 - 125

Lab Sample ID: MB 440-417122/3
Matrix: Water
Analysis Batch: 417122

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			07/13/17 11:02	1

Lab Sample ID: LCS 440-417122/2
Matrix: Water
Analysis Batch: 417122

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	26.6		ug/L		106	85 - 115

Lab Sample ID: MRL 440-417122/5
Matrix: Water
Analysis Batch: 417122

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	4.40		ug/L		110	75 - 125

Lab Sample ID: 440-187925-E-3 MS
Matrix: Water
Analysis Batch: 417122

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	ND		25.0	27.4		ug/L		109	80 - 120

Lab Sample ID: 440-187925-E-3 MSD
Matrix: Water
Analysis Batch: 417122

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	ND		25.0	27.2		ug/L		109	80 - 120	1	20

Lab Sample ID: MB 440-417123/46
Matrix: Water
Analysis Batch: 417123

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			07/14/17 10:46	1

Lab Sample ID: LCS 440-417123/47
Matrix: Water
Analysis Batch: 417123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	26.2		ug/L		105	85 - 115

TestAmerica Irvine

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Lab Sample ID: MRL 440-417123/5
Matrix: Water
Analysis Batch: 417123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	3.91	J	ug/L		98	75 - 125

Lab Sample ID: 440-188152-A-1 MS
Matrix: Water
Analysis Batch: 417123

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	ND		25.0	27.6		ug/L		110	80 - 120

Lab Sample ID: 440-188152-A-1 MSD
Matrix: Water
Analysis Batch: 417123

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	ND		25.0	27.2		ug/L		109	80 - 120	1	20

Lab Sample ID: MB 440-417833/4
Matrix: Water
Analysis Batch: 417833

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			07/18/17 10:38	1

Lab Sample ID: LCS 440-417833/5
Matrix: Water
Analysis Batch: 417833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	24.0		ug/L		96	85 - 115

Lab Sample ID: MRL 440-417833/7
Matrix: Water
Analysis Batch: 417833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	3.92	J	ug/L		98	75 - 125

Lab Sample ID: 440-188153-D-1 MS
Matrix: Water
Analysis Batch: 417833

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	30	F1	25.0	74.0	F1	ug/L		177	80 - 120

Lab Sample ID: 440-188153-D-1 MSD
Matrix: Water
Analysis Batch: 417833

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	30	F1	25.0	76.3	F1	ug/L		187	80 - 120	3	20

TestAmerica Irvine

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MB 440-416753/1-A
Matrix: Solid
Analysis Batch: 416652

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		0.040	0.0095	mg/Kg			07/12/17 00:01	1

Lab Sample ID: LCS 440-416753/2-A
Matrix: Solid
Analysis Batch: 416652

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	0.499	0.470		mg/Kg		94	85 - 115

Lab Sample ID: 440-187928-1 MS
Matrix: Solid
Analysis Batch: 416652

Client Sample ID: T-203-18ft-20170707
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	170000		2.09	174000	4	mg/Kg	☼	27182 0	80 - 120

Lab Sample ID: 440-187928-1 MSD
Matrix: Solid
Analysis Batch: 416652

Client Sample ID: T-203-18ft-20170707
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	170000		2.07	182000	4	mg/Kg	☼	63683 8	80 - 120	4	20

Method: Moisture - Percent Moisture

Lab Sample ID: 440-187892-A-1 DU
Matrix: Solid
Analysis Batch: 416549

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	28.1		27.7		%		1	20

Method: SM 2540G - Total, Fixed, and Volatile Solids

Lab Sample ID: MB 440-416496/1
Matrix: Water
Analysis Batch: 416496

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	ND		0.10	0.10	%			07/10/17 13:32	1

Lab Sample ID: 440-187928-4 DU
Matrix: Water
Analysis Batch: 416496

Client Sample ID: T-203-7.5ft-Lower-20170707
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	12		11.7		%		1	10

TestAmerica Irvine

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Method: SM 2540G - Total, Fixed, and Volatile Solids (Continued)

Lab Sample ID: 440-187928-17 DU
Matrix: Water
Analysis Batch: 416496

Client Sample ID: T-202-7.5ft-Middle-20170707
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	11		10.2		%		5	10

Lab Sample ID: MB 440-416537/1
Matrix: Water
Analysis Batch: 416537

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	ND		0.10	0.10	%			07/10/17 15:31	1

Lab Sample ID: 440-187928-24 DU
Matrix: Water
Analysis Batch: 416537

Client Sample ID: T-202-22.5ft-Upper-20170707
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	10		10.0		%		2	10



QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

HPLC/IC

Analysis Batch: 416652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187928-1	T-203-18ft-20170707	Soluble	Solid	314.0	416753
440-187928-2	T-203-60ft-20170707	Soluble	Solid	314.0	416753
440-187928-3	T-203-42ft-20170707	Soluble	Solid	314.0	416753
440-187928-13	T-202-0ft-20170707	Soluble	Solid	314.0	416753
440-187928-14	T-202-42ft-20170707	Soluble	Solid	314.0	416753
440-187928-15	T-202-60ft-20170707	Soluble	Solid	314.0	416753
440-187928-25	T-201-42ft-20170707	Soluble	Solid	314.0	416753
440-187928-26	T-201-18ft-20170707	Soluble	Solid	314.0	416753
440-187928-27	T-201-0ft-20170707	Soluble	Solid	314.0	416753
MB 440-416753/1-A	Method Blank	Soluble	Solid	314.0	416753
LCS 440-416753/2-A	Lab Control Sample	Soluble	Solid	314.0	416753
MRL 440-416652/5	Lab Control Sample	Total/NA	Solid	314.0	
440-187928-1 MS	T-203-18ft-20170707	Soluble	Solid	314.0	416753
440-187928-1 MSD	T-203-18ft-20170707	Soluble	Solid	314.0	416753

Leach Batch: 416753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187928-1	T-203-18ft-20170707	Soluble	Solid	DI Leach	
440-187928-2	T-203-60ft-20170707	Soluble	Solid	DI Leach	
440-187928-3	T-203-42ft-20170707	Soluble	Solid	DI Leach	
440-187928-13	T-202-0ft-20170707	Soluble	Solid	DI Leach	
440-187928-14	T-202-42ft-20170707	Soluble	Solid	DI Leach	
440-187928-15	T-202-60ft-20170707	Soluble	Solid	DI Leach	
440-187928-25	T-201-42ft-20170707	Soluble	Solid	DI Leach	
440-187928-26	T-201-18ft-20170707	Soluble	Solid	DI Leach	
440-187928-27	T-201-0ft-20170707	Soluble	Solid	DI Leach	
MB 440-416753/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 440-416753/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
440-187928-1 MS	T-203-18ft-20170707	Soluble	Solid	DI Leach	
440-187928-1 MSD	T-203-18ft-20170707	Soluble	Solid	DI Leach	

Analysis Batch: 417122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187928-19	T-202-15ft-Lower-20170707	Total/NA	Water	314.0	
440-187928-20	T-202-15ft-Middle-20170707	Total/NA	Water	314.0	
440-187928-21	T-202-15ft-Upper-20170707	Total/NA	Water	314.0	
440-187928-22	T-202-22.5ft-Lower-20170707	Total/NA	Water	314.0	
440-187928-24	T-202-22.5ft-Upper-20170707	Total/NA	Water	314.0	
MB 440-417122/3	Method Blank	Total/NA	Water	314.0	
LCS 440-417122/2	Lab Control Sample	Total/NA	Water	314.0	
MRL 440-417122/5	Lab Control Sample	Total/NA	Water	314.0	
440-187925-E-3 MS	Matrix Spike	Total/NA	Water	314.0	
440-187925-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 417123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187928-4	T-203-7.5ft-Lower-20170707	Total/NA	Water	314.0	
440-187928-6	T-203-7.5ft-Upper-20170707	Total/NA	Water	314.0	
440-187928-7	T-203-15ft-Lower-20170707	Total/NA	Water	314.0	
440-187928-8	T-203-15ft-Middle-20170707	Total/NA	Water	314.0	
440-187928-9	T-203-15ft-Upper-20170707	Total/NA	Water	314.0	

TestAmerica Irvine

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

HPLC/IC (Continued)

Analysis Batch: 417123 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187928-11	T-203-22.5ft-Middle-20170707	Total/NA	Water	314.0	
440-187928-16	T-202-7.5ft-Lower-20170707	Total/NA	Water	314.0	
440-187928-17	T-202-7.5ft-Middle-20170707	Total/NA	Water	314.0	
440-187928-18	T-202-7.5ft-Upper-20170707	Total/NA	Water	314.0	
MB 440-417123/46	Method Blank	Total/NA	Water	314.0	
LCS 440-417123/47	Lab Control Sample	Total/NA	Water	314.0	
MRL 440-417123/5	Lab Control Sample	Total/NA	Water	314.0	
440-188152-A-1 MS	Matrix Spike	Total/NA	Water	314.0	
440-188152-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 417833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187928-5	T-203-7.5ft-Middle-20170707	Total/NA	Water	314.0	
440-187928-10	T-203-22.5ft-Lower-20170707	Total/NA	Water	314.0	
440-187928-12	T-203-22.5ft-Upper-20170707	Total/NA	Water	314.0	
440-187928-23	T-202-22.5ft-Middle-20170707	Total/NA	Water	314.0	
MB 440-417833/4	Method Blank	Total/NA	Water	314.0	
LCS 440-417833/5	Lab Control Sample	Total/NA	Water	314.0	
MRL 440-417833/7	Lab Control Sample	Total/NA	Water	314.0	
440-188153-D-1 MS	Matrix Spike	Total/NA	Water	314.0	
440-188153-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

General Chemistry

Analysis Batch: 416496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187928-4	T-203-7.5ft-Lower-20170707	Total/NA	Water	SM 2540G	
440-187928-5	T-203-7.5ft-Middle-20170707	Total/NA	Water	SM 2540G	
440-187928-6	T-203-7.5ft-Upper-20170707	Total/NA	Water	SM 2540G	
440-187928-7	T-203-15ft-Lower-20170707	Total/NA	Water	SM 2540G	
440-187928-8	T-203-15ft-Middle-20170707	Total/NA	Water	SM 2540G	
440-187928-9	T-203-15ft-Upper-20170707	Total/NA	Water	SM 2540G	
440-187928-10	T-203-22.5ft-Lower-20170707	Total/NA	Water	SM 2540G	
440-187928-11	T-203-22.5ft-Middle-20170707	Total/NA	Water	SM 2540G	
440-187928-12	T-203-22.5ft-Upper-20170707	Total/NA	Water	SM 2540G	
440-187928-16	T-202-7.5ft-Lower-20170707	Total/NA	Water	SM 2540G	
440-187928-17	T-202-7.5ft-Middle-20170707	Total/NA	Water	SM 2540G	
440-187928-18	T-202-7.5ft-Upper-20170707	Total/NA	Water	SM 2540G	
440-187928-19	T-202-15ft-Lower-20170707	Total/NA	Water	SM 2540G	
440-187928-20	T-202-15ft-Middle-20170707	Total/NA	Water	SM 2540G	
440-187928-21	T-202-15ft-Upper-20170707	Total/NA	Water	SM 2540G	
440-187928-22	T-202-22.5ft-Lower-20170707	Total/NA	Water	SM 2540G	
440-187928-23	T-202-22.5ft-Middle-20170707	Total/NA	Water	SM 2540G	
MB 440-416496/1	Method Blank	Total/NA	Water	SM 2540G	
LCS 440-416496/2	Lab Control Sample	Total/NA	Water	SM 2540G	
440-187928-4 DU	T-203-7.5ft-Lower-20170707	Total/NA	Water	SM 2540G	
440-187928-17 DU	T-202-7.5ft-Middle-20170707	Total/NA	Water	SM 2540G	

TestAmerica Irvine

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

General Chemistry (Continued)

Analysis Batch: 416537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187928-24	T-202-22.5ft-Upper-20170707	Total/NA	Water	SM 2540G	
MB 440-416537/1	Method Blank	Total/NA	Water	SM 2540G	
LCS 440-416537/2	Lab Control Sample	Total/NA	Water	SM 2540G	
440-187928-24 DU	T-202-22.5ft-Upper-20170707	Total/NA	Water	SM 2540G	

Analysis Batch: 416549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187928-1	T-203-18ft-20170707	Total/NA	Solid	Moisture	
440-187928-2	T-203-60ft-20170707	Total/NA	Solid	Moisture	
440-187928-3	T-203-42ft-20170707	Total/NA	Solid	Moisture	
440-187928-13	T-202-0ft-20170707	Total/NA	Solid	Moisture	
440-187928-14	T-202-42ft-20170707	Total/NA	Solid	Moisture	
440-187928-15	T-202-60ft-20170707	Total/NA	Solid	Moisture	
440-187928-25	T-201-42ft-20170707	Total/NA	Solid	Moisture	
440-187928-26	T-201-18ft-20170707	Total/NA	Solid	Moisture	
440-187928-27	T-201-0ft-20170707	Total/NA	Solid	Moisture	
440-187892-A-1 DU	Duplicate	Total/NA	Solid	Moisture	

Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187928-1

Laboratory: TestAmerica Irvine

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-18 *
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	06-30-18
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 17-003R	01-23-18
Hawaii	State Program	9	N/A	01-29-18
Kansas	NELAP Secondary AB	7	E-10420	07-31-17 *
Nevada	State Program	9	CA015312017-3	07-31-17 *
New Mexico	State Program	6	N/A	01-29-18 *
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *
Oregon	NELAP	10	4028	01-29-18
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Irvine

Chain of Custody Record

OF THE STATE OF CALIFORNIA

Client Information Client Contact: Kyle Hansen Company: Tetra Tech, Inc. Address: 150 South Fourth St Unit A City: Henderson State, Zip: NV, 89015 Phone: _____ Email: Kyle.Hansen@tetratech.com Project Name: NERT K05 Site: _____		Sampler: Jacob Souza Lab PM: Mata, Patty Phone: 817-729-8470 E-Mail: patty.mata@testamericainc.com		Carmer Tracking No(s): _____ COC No: 440-124635-22358-1 Page: Page 1 of 4 Job #: _____			
Due Date Requested: _____ TAT Requested (days): 5 days		Analysis Requested Perform MSMSD (Yes or No) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 2540G - TS - Total Solids <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 314.0 - Perchlorate <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 314.0 - Moisture <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Total Number of Containers: _____					
Sample Identification T-203-18ft-20170707 T-203-40ft-20170707 T-203-42ft-20170707 T-203-7.5ft-Lower-20170707 T-203-7.5ft-Middle-20170707 T-203-7.5ft-Upper-20170707 T-203-15ft-Lower-20170707 T-203-15ft-Middle-20170707 T-203-15ft-Upper-20170707 T-203-22.5ft-Lower-20170707 T-203-22.5ft-Middle-20170707	Sample Date 7/7/17 7/7/17 7/7/17 7/7/17 7/7/17 7/7/17 7/7/17 7/7/17 7/7/17	Sample Time 1155 1158 1201 1220 1221 1222 1224 1225 1226 1228 1229	Sample Type (C=Comp, G=grab) G G G W G G G G G G G	Matrix (Water, Sediment, Organic, Inorganic) S S S W G G G G G G G	Preservation Code: 314.0 - Moisture 314.0 - Perchlorate 2540G - TS - Total Solids Perform MSMSD (Yes or No) Field Filtered Sample (Yes or No)	Special Instructions/Note: 440-187928 Chain of Custody	Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: _____ M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested: I, II, III, IV, Other (specify) _____		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Empty Kit Relinquished by: _____ Relinquished by: _____ Relinquished by: _____ Relinquished by: _____		Date: 7/7/17 1440 Date: 7/7/17 1440 Date: 7/7/17 1440 Date: 7/7/17 1440		Date/Time: 7/17/17 1440 Date/Time: 7/17/17 1440 Date/Time: 7/17/17 1440 Date/Time: 7/17/17 1440			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: _____		Cooler Temperature(s) °C and Other Remarks: 18.0 72.1			

7/18/17

1
2
3
4
5
6
7
8
9
10
11
12
13

18.0 72.1
 53039
 TRAV

Chain of Custody Record

Client Information Client Contact: Kyle Hansen Company: Tetra Tech, Inc. Address: 150 South Fourth St Unit A City: Henderson State: NV, Zip: 89015 Phone: [Blank] Email: Kyle.Hansen@tetratech.com Project Name: NERT K05 Site: [Blank]		Lab PM: Mata, Patty E-Mail: patty.mata@testamericainc.com Phone: 817-729-8440 Carrier Tracking No(s): 440-124635-22358.2 Page: Page 2 of 4 Job #: [Blank]	
Due Date Requested: [Blank] TAT Requested (days): 5 days PO #: K05-CWP-19-WA6 WO #: [Blank]		Analysis Requested: [Blank]	
Sample Identification: I-203-22.5ft - Upper-20170707 I-202 - 0 ft - 20170707 T-202 - 4.75ft - 20170707 T-202 - 6.0ft - 20170707 T-202 - 7.5ft - ^{Low} 20170707 I-202 - 7.5ft - Middle - 20170707 T-202 - 7.5ft - Upper - 20170707 T-202 - 15ft - Lower - 20170707 T-202 - 15ft - Middle - 20170707 T-202 - 15ft - Upper - 20170707 T-202 - 22.5ft - Lower - 20170707		Matrix (W=water, S=solid, O=waterfall, BT=TISSUE, A=AIR) Sample Type (C=Comp, G=grab) Preservation Code: Sample Date Sample Time Matrix 7/7/17 1230 G W 1020 S 1023 1026 0940 W 0941 0942 0944 0945 0946 0948	
Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No)		Total Number of Containers Special Instructions/Note:	
2540G - TS - Total Solids 314.0 - Peroxide 314.0 - Moisture		M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 L - EDTA Z - other (specify) Other:	
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements: Level 3QC 15.8/14.4-78 Method of Shipment:			
Delivered by: [Signature] Date: 7/17/17 1440 Company: HF		Received by: [Signature] Date/Time: 7/17/17 1440 Company: HF	
Relinquished by: [Signature] Date/Time: 7/17/17 1600 Company: HF		Received by: [Signature] Date/Time: 7/16/17 1100 Company: HF	
Relinquished by: [Signature] Date/Time: [Blank] Company: [Blank]		Received by: [Signature] Date/Time: [Blank] Company: [Blank]	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Cooler Temperature(s) °C and Other Remarks: IR-0 Tolu IR25 3.6/3.9			

4/8/17

1
2
3
4
5
6
7
8
9
10
11
12
13

Chain of Custody Record

17461 Derian Ave Suite 100 Irvine CA 92614-5817

Client Information		Sampler: Jacob Souza Lab PM: Mata, Patty		COC No: 440-124635-22358.3					
Client Contact: Kyle Hansen		Phone: 817-729-8440		Page: Page 3 of 4					
Company: Tetra Tech, Inc.		E-Mail: patty.mata@testamericainc.com		Job #:					
Address: 150 South Fourth St Unit A		Due Date Requested:		Analysis Requested					
City: Henderson		TAT Requested (days): 5 days		Total Number of Containers: 2					
State, Zip: NV, 89015		PO #: K05-CWP-19-WAG		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SSO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)					
Phone:		WO #:		Other:					
Email: Kyle.Hansen@tetratech.com		Project #:		Special Instructions/Note:					
Project Name: NERT K05		SSOW#:							
Site:									
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wast/wat, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540G - TS - Total Solids	314.0 - Perchlorate	314.0 - Moisture
T-202 - 22.5ft - Middle - 20170707	7/7/17	0949	G	N	N	N	N	N	N
T-202 - 22.5ft - Upper - 20170707		0950	G	A	N	N	N	N	N
T-201 - 42ft - 20170707		0913	G	S	N	N	N	N	N
T-201 - 18ft - 20170707		0910	G	S	N	N	N	N	N
T-201 - 0ft - 20170707		0907	G	S	N	N	N	N	N
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)									
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/Requirements: Level 3AC to 844-78									
Empty Kit Relinquished by: _____ Date: _____									
Relinquished by: _____ Date/Time: 7/17/17 1440 Company: GT									
Relinquished by: _____ Date/Time: 7/17/17 1105 Company: GT									
Relinquished by: _____ Date/Time: _____ Company: _____									
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: 731129409101									

7/18/17
LE

5
6
7
8
9
10
11
12
13

18.0
731129409101

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 440-187928-1

Login Number: 187928

List Number: 1

Creator: Escalante, Maria I

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-187933-1

Client Project/Site: NERT K05

For:

Tetra Tech, Inc.

150 South Fourth St

Unit A

Henderson, Nevada 89015

Attn: Kyle Hansen



Authorized for release by:

7/19/2017 11:48:00 AM

Patty Mata, Senior Project Manager

(949)261-1022

patty.mata@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12

13



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	8
Lab Chronicle	9
QC Sample Results	11
QC Association Summary	12
Definitions/Glossary	13
Certification Summary	14
Chain of Custody	15
Receipt Checklists	16

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187933-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-187933-1	T-201-7.5ft-middle-20170707	Water	07/07/17 08:22	07/08/17 11:05
440-187933-2	T-201-7.5ft-upper-20170707	Water	07/07/17 08:24	07/08/17 11:05
440-187933-3	T-201-7.5ft-lower-20170707	Water	07/07/17 08:20	07/08/17 11:05
440-187933-4	T-201-15ft-middle-20170707	Water	07/07/17 08:29	07/08/17 11:05
440-187933-5	T-201-15ft-upper-20170707	Water	07/07/17 08:31	07/08/17 11:05
440-187933-6	T-201-15ft-lower-20170707	Water	07/07/17 08:27	07/08/17 11:05
440-187933-7	T-201-22.5ft-middle-20170707	Water	07/07/17 09:02	07/08/17 11:05
440-187933-8	T-201-22.5ft-upper-20170707	Water	07/07/17 09:04	07/08/17 11:05
440-187933-9	T-201-22.5ft-lower-20170707	Water	07/07/17 09:00	07/08/17 11:05



Case Narrative

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187933-1

Job ID: 440-187933-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-187933-1

Comments

No additional comments.

Receipt

The samples were received on 7/8/2017 11:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.4° C.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187933-1

Client Sample ID: T-201-7.5ft-middle-20170707

Lab Sample ID: 440-187933-1

Date Collected: 07/07/17 08:22

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	52000000		20000000	4800000	ug/L	-		07/18/17 20:52	500000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%	-		07/10/17 15:31	1

Client Sample ID: T-201-7.5ft-upper-20170707

Lab Sample ID: 440-187933-2

Date Collected: 07/07/17 08:24

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	58000000		4000000	950000	ug/L	-		07/18/17 21:13	100000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%	-		07/10/17 15:31	1

Client Sample ID: T-201-7.5ft-lower-20170707

Lab Sample ID: 440-187933-3

Date Collected: 07/07/17 08:20

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	50000000		20000000	4800000	ug/L	-		07/18/17 21:35	500000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%	-		07/10/17 15:31	1

Client Sample ID: T-201-15ft-middle-20170707

Lab Sample ID: 440-187933-4

Date Collected: 07/07/17 08:29

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	58000000		4000000	950000	ug/L	-		07/18/17 21:56	100000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	12		0.10	0.10	%	-		07/10/17 15:31	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187933-1

Client Sample ID: T-201-15ft-upper-20170707

Lab Sample ID: 440-187933-5

Date Collected: 07/07/17 08:31

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	82000000		4000000	950000	ug/L	-		07/18/17 22:17	100000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%	-		07/10/17 15:31	1

Client Sample ID: T-201-15ft-lower-20170707

Lab Sample ID: 440-187933-6

Date Collected: 07/07/17 08:27

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	49000000		20000000	4800000	ug/L	-		07/18/17 22:39	500000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	11		0.10	0.10	%	-		07/10/17 15:31	1

Client Sample ID: T-201-22.5ft-middle-20170707

Lab Sample ID: 440-187933-7

Date Collected: 07/07/17 09:02

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	54000000		40000000	9500000	ug/L	-		07/18/17 23:00	100000 00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	12		0.10	0.10	%	-		07/10/17 15:32	1

Client Sample ID: T-201-22.5ft-upper-20170707

Lab Sample ID: 440-187933-8

Date Collected: 07/07/17 09:04

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	53000000		4000000	950000	ug/L	-		07/18/17 23:21	100000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	12		0.10	0.10	%	-		07/10/17 15:32	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187933-1

Client Sample ID: T-201-22.5ft-lower-20170707

Lab Sample ID: 440-187933-9

Date Collected: 07/07/17 09:00

Matrix: Water

Date Received: 07/08/17 11:05

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	45000000		4000000	950000	ug/L			07/18/17 23:43	100000 0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	12		0.10	0.10	%			07/10/17 15:32	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187933-1

Method	Method Description	Protocol	Laboratory
314.0	Perchlorate (IC)	EPA	TAL IRV
SM 2540G	Total, Fixed, and Volatile Solids	SM	TAL IRV

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187933-1

Client Sample ID: T-201-7.5ft-middle-20170707

Date Collected: 07/07/17 08:22

Date Received: 07/08/17 11:05

Lab Sample ID: 440-187933-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		500000			417833	07/18/17 20:52	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416537	07/10/17 15:31	EC1	TAL IRV

Client Sample ID: T-201-7.5ft-upper-20170707

Date Collected: 07/07/17 08:24

Date Received: 07/08/17 11:05

Lab Sample ID: 440-187933-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417833	07/18/17 21:13	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416537	07/10/17 15:31	EC1	TAL IRV

Client Sample ID: T-201-7.5ft-lower-20170707

Date Collected: 07/07/17 08:20

Date Received: 07/08/17 11:05

Lab Sample ID: 440-187933-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		500000			417833	07/18/17 21:35	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416537	07/10/17 15:31	EC1	TAL IRV

Client Sample ID: T-201-15ft-middle-20170707

Date Collected: 07/07/17 08:29

Date Received: 07/08/17 11:05

Lab Sample ID: 440-187933-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417833	07/18/17 21:56	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416537	07/10/17 15:31	EC1	TAL IRV

Client Sample ID: T-201-15ft-upper-20170707

Date Collected: 07/07/17 08:31

Date Received: 07/08/17 11:05

Lab Sample ID: 440-187933-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417833	07/18/17 22:17	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416537	07/10/17 15:31	EC1	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187933-1

Client Sample ID: T-201-15ft-lower-20170707

Lab Sample ID: 440-187933-6

Date Collected: 07/07/17 08:27

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		500000			417833	07/18/17 22:39	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416537	07/10/17 15:31	EC1	TAL IRV

Client Sample ID: T-201-22.5ft-middle-20170707

Lab Sample ID: 440-187933-7

Date Collected: 07/07/17 09:02

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417833	07/18/17 23:00	CTH	TAL IRV
				00						
Total/NA	Analysis	SM 2540G		1			416537	07/10/17 15:32	EC1	TAL IRV

Client Sample ID: T-201-22.5ft-upper-20170707

Lab Sample ID: 440-187933-8

Date Collected: 07/07/17 09:04

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417833	07/18/17 23:21	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416537	07/10/17 15:32	EC1	TAL IRV

Client Sample ID: T-201-22.5ft-lower-20170707

Lab Sample ID: 440-187933-9

Date Collected: 07/07/17 09:00

Matrix: Water

Date Received: 07/08/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100000			417833	07/18/17 23:43	CTH	TAL IRV
				0						
Total/NA	Analysis	SM 2540G		1			416537	07/10/17 15:32	EC1	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187933-1

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 440-417833/4
Matrix: Water
Analysis Batch: 417833

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			07/18/17 10:38	1

Lab Sample ID: LCS 440-417833/5
Matrix: Water
Analysis Batch: 417833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	24.0		ug/L		96	85 - 115

Lab Sample ID: MRL 440-417833/7
Matrix: Water
Analysis Batch: 417833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	3.92	J	ug/L		98	75 - 125

Lab Sample ID: 440-188153-D-1 MS
Matrix: Water
Analysis Batch: 417833

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	30	F1	25.0	74.0	F1	ug/L		177	80 - 120

Lab Sample ID: 440-188153-D-1 MSD
Matrix: Water
Analysis Batch: 417833

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	30	F1	25.0	76.3	F1	ug/L		187	80 - 120	3	20

Method: SM 2540G - Total, Fixed, and Volatile Solids

Lab Sample ID: MB 440-416537/1
Matrix: Water
Analysis Batch: 416537

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Solids	ND		0.10	0.10	%			07/10/17 15:31	1

Lab Sample ID: 440-187928-A-24 DU
Matrix: Water
Analysis Batch: 416537

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	10		10.0		%		2	10

TestAmerica Irvine

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187933-1

HPLC/IC

Analysis Batch: 417833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187933-1	T-201-7.5ft-middle-20170707	Total/NA	Water	314.0	
440-187933-2	T-201-7.5ft-upper-20170707	Total/NA	Water	314.0	
440-187933-3	T-201-7.5ft-lower-20170707	Total/NA	Water	314.0	
440-187933-4	T-201-15ft-middle-20170707	Total/NA	Water	314.0	
440-187933-5	T-201-15ft-upper-20170707	Total/NA	Water	314.0	
440-187933-6	T-201-15ft-lower-20170707	Total/NA	Water	314.0	
440-187933-7	T-201-22.5ft-middle-20170707	Total/NA	Water	314.0	
440-187933-8	T-201-22.5ft-upper-20170707	Total/NA	Water	314.0	
440-187933-9	T-201-22.5ft-lower-20170707	Total/NA	Water	314.0	
MB 440-417833/4	Method Blank	Total/NA	Water	314.0	
LCS 440-417833/5	Lab Control Sample	Total/NA	Water	314.0	
MRL 440-417833/7	Lab Control Sample	Total/NA	Water	314.0	
440-188153-D-1 MS	Matrix Spike	Total/NA	Water	314.0	
440-188153-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

General Chemistry

Analysis Batch: 416537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187933-1	T-201-7.5ft-middle-20170707	Total/NA	Water	SM 2540G	
440-187933-2	T-201-7.5ft-upper-20170707	Total/NA	Water	SM 2540G	
440-187933-3	T-201-7.5ft-lower-20170707	Total/NA	Water	SM 2540G	
440-187933-4	T-201-15ft-middle-20170707	Total/NA	Water	SM 2540G	
440-187933-5	T-201-15ft-upper-20170707	Total/NA	Water	SM 2540G	
440-187933-6	T-201-15ft-lower-20170707	Total/NA	Water	SM 2540G	
440-187933-7	T-201-22.5ft-middle-20170707	Total/NA	Water	SM 2540G	
440-187933-8	T-201-22.5ft-upper-20170707	Total/NA	Water	SM 2540G	
440-187933-9	T-201-22.5ft-lower-20170707	Total/NA	Water	SM 2540G	
MB 440-416537/1	Method Blank	Total/NA	Water	SM 2540G	
LCS 440-416537/2	Lab Control Sample	Total/NA	Water	SM 2540G	
440-187928-A-24 DU	Duplicate	Total/NA	Water	SM 2540G	

Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187933-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: NERT K05

TestAmerica Job ID: 440-187933-1

Laboratory: TestAmerica Irvine

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-18 *
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	06-30-18
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 17-003R	01-23-18
Hawaii	State Program	9	N/A	01-29-18
Kansas	NELAP Secondary AB	7	E-10420	07-31-17 *
Nevada	State Program	9	CA015312017-3	07-31-17 *
New Mexico	State Program	6	N/A	01-29-18 *
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *
Oregon	NELAP	10	4028	01-29-18
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Irvine

Chain of Custody Record

7/18/17
 LB

Client Information		Sampler: Jacob Souza		Lab PM: Mata, Patty		Carrier Tracking Net(s)		COC No.: 440-124635-22358.1	
Client Contact: Kyle Hansen		Phone: 817-729-8440		E-Mail: patty.mata@testamericainc.com		Page: Page 1 of 4		Job #:	
Company: Tetra Tech, Inc.		Address: 150 South Fourth St. Unit A		City: Henderson		State, Zip: NV, 89015		Phone: 	
Email: Kyle.Hansen@tetratech.com		PO #: K05-CWP-19-WA6		WO #:		Project #: 44017858		SSOW#:	
Project Name: NERT K05		Due Date Requested:		TAT Requested (days): 5 days		Perform MS/MSD (Yes or No)		Total Number of Containers	
Site:		Sample Date		Sample Time		Sample Type (C-comp, G-grab)		Matrix (H-water, S-solid, O-water, A-air)	
Sample Identification		Sample Date		Sample Time		Sample Type (C-comp, G-grab)		Matrix (H-water, S-solid, O-water, A-air)	
T-201-7.5ft-middle-20170707		7/7/17		0822		G		W	
T-201-7.5ft-upper-20170707				0824					
T-201-7.5ft-lower-20170707				0820					
T-201-15ft-middle-20170707				0829					
T-201-15ft-upper-20170707				0827					
T-201-15ft-lower-20170707				0902					
T-201-22.5ft-middle-20170707				0904					
T-201-22.5ft-upper-20170707				0900					
T-201-22.5ft-lower-20170707									
Special Instructions/Note:		440-187933 Chain of Custody		Barcode		3140 - Perchlorate		3140, Moisture	
Special Instructions/Note:						2540G - TS - Total Solids			
Preservation Codes:		A - HCL		M - Hexane		B - NaOH		N - None	
C - Zn Acetate		D - Nitric Acid		O - AsNaO2		E - NaHSO4		P - Na2O4S	
F - MeOH		G - Amchlor		R - Na2SO3		H - Ascorbic Acid		Q - Na2SO4	
I - Ice		J - DI Water		S - H2SO4		K - EDTA		T - TSP Dodecahydrate	
L - EDA		Other:		U - Acetone		W - pH 4.5		V - MCAA	
						Z - other (specify)			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Return To Client		Disposal By Lab		Archive For		Months	
Special Instructions/QC Requirements:		Level 3QC		15.0		4.4-7.8			
Empty Kit Relinquished by:		Date/Time:		Date/Time:		Date/Time:		Company	
Relinquished by:		7/17/17 1440		1440		1440		Company	
Relinquished by:		7/17/17 1400		1105		1105		Company	
Relinquished by:		7/18/17 1810		1810		1810		Company	
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					
Δ Yes Δ No									

1
2
3
4
5
6
7
8
9
10
11
12
13

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 440-187933-1

Login Number: 187933

List Number: 1

Creator: Escalante, Maria I

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

