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To:	Anastasia Duarte, REHS/RS Retail Environmental Remediation Administrator, Pacific Division  Speedway LLC 3450 South 344th Way, Suite 201 Auburn, WA 98001	From:	Bob Gilfilian, PE Principal Senior Engineer  Stantec Consulting Services, Inc. 725 E Fireweed Lane, Suite 200 Anchorage, Alaska 99508
File:	UST Facility #2986, ADEC File 2265.26.037	Date:	April 27, 2020

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**Reference: Speedway Store 5314 (Former Tesoro 2Go Mart 76) - Installation of Remediation Well RW 19-1 (originally referred to RM-1)**

## 1 INTRODUCTION

On behalf Speedway LLC (former Tesoro), Stantec Consulting Inc. (Stantec) is pleased to submit this Technical Memorandum for the October 20, 2019 installation of the Remediation Well RW 19-1 (originally referred to as RM-1) at Speedway Store 5314 (Former Tesoro 2Go Mart 76) located at 3600 East Palmer-Wasilla Highway, Wasilla, Alaska (see Figure 1 Site Location Map).

This Technical Memorandum describes the results of field screening and analytical sampling and well construction details. The findings presented herein were provided to you and Pete Campbell, P.E. (ADEC Project Manager) during the annual work plan meeting with Tesoro and ADEC held on December 12, 2019, at the Stantec office in Anchorage, Alaska.

This Technical Memorandum describes the results of field efforts and analytical sampling conducted during the installation of the Remediation Well (RW 19-1) in the area adjacent to the soil vapor extraction (SVE) blower knock box (see Figure 2 Site Map). This memo also includes a description of the well construction details. The well was constructed in accordance with the Stantec Work Plan for Task 3 (dated July 1, 2019) that was approved on July 26, 2019, by Paul Horwath, P.E., with the ADEC. Initially the proposed remediation well was referred to as "REM Well" which was renamed to "RM-1" during the drilling and development of the well. Subsequent to the completion of the well construction and development, Stantec decided to change the name of the well to a more appropriate title of "RW 19-1" as means to clearly identify the well since it was completed in 2019.

John Marshall (Stantec Environmental Scientist) and Bob Gilfilian, P.E. (Stantec Principal Engineer) completed the well installation on October 20, 2019. Stantec field staff completed the field screening and sampling of soil boring cuttings to evaluate the presence of residual petroleum at the former Tesoro 2Go Mart 76. In addition, this memo includes a description of the well development. The well was partially developed by John Marshall and Bob Gilfilian on October 21, 2019, a day after well construction. However, John and Bob returned to the site on December 9, 2019, to complete a more through well development and sampling program.

## 2 SOIL BORING AND SAMPLING METHODOLOGY

Upon completion of underground utility locates, it was decided to place the well in the gravel pad on the west side of the existing SVE blower unit located in a Knack box as shown in the attached site photographs. Drilling for the well installation was completed on October 20, 2019. Photographs taken at the site during the well drilling and subsequent well development are provided in Attachment 3.

Drilling was conducted by direct push using a Geoprobe 8040DT track mounted drilling rig operated by GeoTek Alaska from Anchorage, Alaska. Prior to drilling the bore hole, a vacuum truck was used to extract the upper 5-feet of overburden. Starting at depth of 5-feet, representative soil samples were extracted by macro-core with 5-foot disposable

**Reference: Speedway Store 5314 (Former Tesoro 2Go Mart 76) - Installation of Remediation Well RM-19-1**

1.6" diameter core sleeves. The well casing was subsequently set via 7.5-inch diameter hollow stem auger with expendable drive point.

## 2.1 FIELD SCREENING METHODOLOGY AND RESULTS

Field screening head space samples were collected from each soil sample extracted during the geotechnical investigation to a total depth of 33-feet below ground surface (bgs). The groundwater table interface was encountered at an approximate depth of 20-feet bgs. A portion of each soil sample, collected with Macrocore by direct push, was transferred to a re-sealable polyethylene bag for screening by photoionization detector (PID). Calibration of the PID was conducted at the start of the day with a 100 part per million calibration standard. Samples were warmed and allowed to volatilize for at least 10 minutes prior to screening.

Field screening results are summarized on the well log in Attachment 1. Field screening results ranged from 0.2 to 1.7 parts per million by volume (ppmv). Fuel stained soil was not visible, nor fuel odor detected by olfactory means in the recovered soil samples.

## 2.2 ANALYTICAL SAMPLING METHODOLOGY AND RESULTS

The soil boring was sampled, and field screened to a depth of 33 feet bgs. Due to the low field screening measurements and lack of olfactory detection of petroleum contamination, representative analytical samples were collected from the groundwater interface and a few feet below the water table. Two analytical soil samples represented of the soil boring were collected at depths of 17.0 to 19.0-feet and 22.0 to 24.0-feet. Analytical samples were submitted to Eurofins TestAmerica Laboratories Inc. (TestAmerica) for analysis of select volatile organic compounds (VOCs) by United States Environmental Protection Agency (EPA) Method 8260C, polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270D Selective Ion Monitoring (SIM), gasoline range organics (GRO) by Alaska Test Method AK101 (AK101), and diesel range organics (DRO) by Alaska Test Method AK102 (AK102). The laboratory analytical report is provided in Attachment 2. Table 1 is a summary of the Soil Analytical Results.

Table 1 Soil Analytical Results

Speedway Store 5314 Samples collected on October 20, 2019											
Sample Identification	Bromo methane <sup>1</sup> (µg/Kg)	Chloro-form <sup>1</sup> (µg/Kg)	Carbon Tetra-chloride <sup>1</sup> (µg/Kg)	Benzene <sup>1</sup> (µg/Kg)	1,2-Dichloro-ethane <sup>1</sup> (µg/Kg)	Trichloro-ethene <sup>1</sup> (µg/Kg)	Dibromo-methane <sup>1</sup> (µg/Kg)	Bromo-dichloro-methane <sup>1</sup> (µg/Kg)	cis-1,3-Dichloro-propene <sup>1</sup> (µg/Kg)	trans-1,3-Dichloro-propene <sup>1</sup> (µg/Kg)	1,1,2-Trichloro-ethane <sup>1</sup> (µg/Kg)
REM-1-17-19	U (140)	U (28)	U (14)	U (21)	U (14)	U (42)	U (42)	U (42)	U (14)	U (28)	U (14)
REM-1-22-24	U (240)	U (48)	U (24)	590	U (24)	U (72)	U (72)	U (72)	U (24)	U (48)	U (24)
Duplicate of REM-1-22-24	U (250)	U (50)	U (25)	670	U (25)	U (75)	U (75)	U (75)	U (25)	U (50)	U (25)
Trip Blank	U (200)	U (40)	U (20)	U (30)	U (20)	U (60)	U (60)	U (60)	U (20)	U (40)	U (20)
<b>SCLs</b>	<b>24</b>	<b>7.1</b>	<b>21</b>	<b>22</b>	<b>5.5</b>	<b>11</b>	<b>25</b>	<b>4.3</b>	<b>18</b>	<b>18</b>	<b>1.4</b>
Sample Identification	2-Hexanone <sup>1</sup> (µg/Kg)	Dibromo chloro methane <sup>1</sup> (µg/Kg)	1,2-Dibromo ethane <sup>1</sup> (µg/Kg)	1,1,1,2-Tetrachloro ethane <sup>1</sup> (µg/Kg)	Bromofor m <sup>1</sup> (µg/Kg)	1,1,2,2-Tetrachloroethane <sup>1</sup> (µg/Kg)	1,4-Dichloro benzene <sup>1</sup> (µg/Kg)	1,2,3-Trichloro benzene <sup>1</sup> (µg/Kg)	Hexachloro butadiene <sup>1</sup> (µg/Kg)	1,2,3-Trichloro propane <sup>1</sup> (µg/Kg)	Vinyl Chloride <sup>1</sup> (µg/Kg)
REM-1-17-19	U (71)	U (28)	U (14)	U (28)	U (140)	U (14)	U (42)	U (110)	U (110)	U (28)	U (110)
REM-1-22-24	U (120)	U (48)	U (24)	U (48)	U (240)	U (24)	U (72)	U (180)	U (180)	U (48)	U (180)
Duplicate of REM-1-22-24	U (130)	U (50)	U (25)	U (50)	U (250)	U (25)	U (75)	U (190)	U (190)	U (50)	U (190)
Trip Blank	U (100)	U (40)	U (20)	U (40)	U (200)	U (20)	U (60)	U (150)	U (150)	U (40)	U (150)
<b>SCLs</b>	<b>110</b>	<b>2.7</b>	<b>0.24</b>	<b>22</b>	<b>100</b>	<b>3.0</b>	<b>37</b>	<b>150</b>	<b>20</b>	<b>0.031</b>	<b>0.80</b>

Key:

1 – Analyzed by EPA Method 8260C.

EPA – U.S. Environmental Protection Agency  
 µg/Kg - micrograms per kilogram

SCLs – Soil cleanup levels, per Alaska Department of Environmental Conservation 18 Alaska Administrative Code 75.345, Tables B1 and B2, updated September 29, 2018.

U – Undetected above practical quantitation limit shown in parentheses

**Bold** indicates the concentration exceeds the SCL or, if not detected, the practical quantitation limit exceeds the SCL

**Reference: Speedway Store 5314 (Former Tesoro 2Go Mart 76) - Installation of Remediation Well RM-19-1**

Soil analytical results were compared to 18 Alaska Administrative Code (AAC) 75 Method Two Migration-to-Groundwater Soil Cleanup Levels (SCLs). A summary of soil analytical exceedances is provided in Table 1. Detected exceedances for benzene were found at the remediation well location. As shown in Table 1, several additional analytes exhibited practical quantitation limits (PQLs) that exceeded their SCLs. These occurrences however pertained to analytes which were not predominantly contaminants of concern (associated with petroleum hydrocarbons) for the subject site.

### 2.2.1 Analytical Soil Sampling Quality Assurance (QA) and Quality Control (QC)

TestAmerica met all laboratory QA/QC criteria during the analysis of soil samples, as described in Table 2, which provides a summary of the laboratory QC objectives and outcomes. Sample TNS 76 is a duplicate of REM-1 (22-24). The duplicate sample set was collected to determine the precision of the field collection and laboratory analysis. Table 2 shows the precision for the duplicate sample set for analytes that were detected above the PQLs and SCLs and the relative percent differences (RPDs) could be calculated. As shown in Table 2, the precision was within the established QA criteria tolerances for the analytes in soil. The holding times for VOCs, PAHs, GRO, and DRO in the soil samples were within established criteria. Laboratory QC data and the Alaska Department of Environmental Conservation (ADEC) Laboratory Data Review Checklist are included with the laboratory report in Attachment 2.

**Table 2 Laboratory Quality Control Objectives**

Quality Control Designation	Tolerance	Results for This Event	Key: % – percent ± – plus or minus DRO – diesel range organics GRO – gasoline range organics PAH – polynuclear aromatic hydrocarbon VOC – volatile organic Compound
<b>Holding Times</b>			
DRO/Soil/to analyze	40 days	7 to 14 days	
DRO/Soil/to extract	14 days	4 to 8 days	
GRO/Soil/to analyze	14 days	4 to 5 days	
VOCs/Soil/to analyze	14 days	5 to 12 days	
PAHs/Soil/to analyze	40 days	15 days	
PAHs/Soil/to extract	14 days	10 days	
<b>Field Duplicates – Precision</b>			
Benzene/Soil	± 50%	-12.70%	

## 3 REMEDIATION WELL CONSTRUCTION, DEVELOPMENT, AND SAMPLING

### 3.1 REMEDIATION WELL CONSTRUCTION

The remediation well was constructed of 4-inch diameter Schedule 40 poly vinyl chloride (PVC). The well casing consisted of a 4-inch diameter Schedule 40 PVC threaded casing with a 20 foot long 0.010 slot well screen. As shown on the completed well construction log (see Attachment 1), the cased well has a total depth of 33-feet. The bottom 20-foot section of the well was screened from 13 to 33-feet bgs. A pre-washed 10-20 mesh quartz sand filter pack was placed around the well screen from 10 to 33-feet bgs. Pea gravel was placed from 1 to 3-feet bgs between the outer well casing and the edge of the 12-inch diameter auger hole. Hydrated bentonite chips were placed in the bottom portion of the well and boring annular space from 8 to 13-feet bgs. The well was completed at grade (top of existing gravel pad) and covered in a flush mount bolted steel cover.

Soil cuttings from the drilling operation were temporarily stored on-site in two appropriately labeled and securely sealed 55 gallon steel drums. On October 25, 2019, ADEC approved the transport, treatment and disposal of contaminated media of the 2 drums of soil cuttings by NRC Alaska LLC (NRC) in Anchorage. Attachment 5 includes a copy of the ADEC signed approval form for off-site treatment of the drum of soil cuttings, and the non-hazardous waste manifest from NRC dated December 3, 2019, for the pickup of the drums of soil cuttings.

Reference: **Speedway Store 5314 (Former Tesoro 2Go Mart 76) - Installation of Remediation Well RM-19-1**

### 3.2 WELL DEVELOPMENT AND SAMPLING

The well was partially developed a day following the completion of the well on October 21, 2019. John Marshall and Bob Gilfilian conducted the initial well development by surging technique using a Watera Hydrolift II pump. The surge pump was not able to produce a high flow rate and noted to yield only 1.5 gallons per minute (gpm). A total volume of approximately 50 gallons was removed from the well and observed not to have a sheen. It was decided to return to the site at a later date with a more robust pumping method.

On December 9, 2019, Bob Gilfilian and John Marshall returned to site and completed a more complete well development and sampling program. A 0.5 horsepower submersible pump manufactured by Grundfos (Model 1-SQ-160) was used for the developing and pump testing the well. The pump was set at a depth of approximately 24-feet bgs. The pumped water was discharged into the inlet line for the proposed Chemox injection well consisting of the former bio-spargers wells #RW-1, RW-2 and RW-3. These injection wells are located beneath the existing building within the footprint of the former UST (see Figure 2). The well was pumped for 75 minutes at a rate of flow that ranged from 4 to 10 gpm. A total of 484 gallons was pumped from the well and water levels measured in the well was noted to drop approximately 5.18-feet. The static water level in nearby monitoring well MW 4 was measured at various times during the pump test and noted not to change. Also, the discharged water from RW 19-1 was observed to be very clear with no cloudiness nor sheen.

Representative water samples were collected during the pump operation and tested in the field for the following parameters: pH, specific conductance, dissolved oxygen, redox potential, and temperature. A summary of the field measurements is presented in Table 3.

**Table 3 Well Development Pump Test Data for Remediation Well RW 19-1**

Pump On: 12/9/19 @ 1200				Static Water Level: 20.30-feet btoc							
Pump Off: 12/9/19 @ 1315				Measuring Point: TOC (top of casing)							
Duration of test: 1 Hour 15 min				Staff: J Marshall, B Gilfilian							
	Clock Time	Time since pump started (t)	Flow Rate	Well Water Level Reading	Estimated Total Flow Volume	Dissolved Oxygen	Redox	pH	Specific Conductivity	Temperature	Comments Observations
Date	pm	(min)	(gpm)	(feet)	(gal)	(mg/L)	(mV)		(uS/cm)	(Deg C)	
12/9/2019	12:00	0	0	20.3	0	0.71	NT	NT	NT	8.7	Note 1
12/9/2019	12:01	1	4	20.5	4	NT	NT	NT	NT	NT	Note 1
12/9/2019	12:03	3	4	NM	12	NT	NT	NT	NT	NT	Note 1
12/9/2019	12:05	5	4	22.5	20	1.16	NT	NT	NT	7.6	Note 1
12/9/2019	12:10	10	4	22.48	40	NT	NT	NT	NT	NT	Note 1
12/9/2019	12:15	15	4	22.48	60	1.12	37.5	5.1	690	7.7	Note 1
12/9/2019	12:25	25	4	NM	100	1.28	35.5	5.3	682	7.8	Note 1
12/9/2019	12:30	30	6	23.45	130	1.6	NT	6.9	NT	NT	Note 1
12/9/2019	12:33	33	6	23.53	148	NT	NT	NT	NT	NT	Note 2
12/9/2019	12:39	39	6	23.45	184	NT	NT	NT	NT	NT	Note 2
12/9/2019	12:46	46	6	NM	226	1.68	48.0	5.5	609	7.7	Note 2
12/9/2019	12:50	50	8	NM	258	NT	NT	NT	NT	NT	Note 3
12/9/2019	12:51	51	8	24.78	266	NT	NT	NT	NT	NT	Note 3
12/9/2019	12:53	53	8	25.08	282	NT	NT	NT	NT	NT	Note 3
12/9/2019	12:56	56	8	25.2	306	NT	NT	NT	NT	NT	Note 3
12/9/2019	13:02	62	8	NM	354	NT	NT	NT	NT	NT	Note 3
12/9/2019	13:10	70	10	25.48	434	NT	NT	NT	NT	NT	Note 3
12/9/2019	13:15	75	10	25.48	484	NT	43.1	5.5	640	7.4	Note 3
12/9/2019	13:15	75									Pump Off

**Reference: Speedway Store 5314 (Former Tesoro 2Go Mart 76) - Installation of Remediation Well RM-19-1**

**NOTES:**

- 1) Discharged flow into Chemox Injection Well #RW-3
- 2) Discharged flow into Chemox Injection Well #RW-2
- 3) Discharged flow into Chemox Injection Well #RW-1
- 4) Pump flow rate measured in calibrated bucket - ranged from 4 to 10 gpm
- 5) End of test water samples collected for lab analyses (BTEX, GRO, and DRO)
- 6) Discharged water was sheen free and very clear

**ACRONYMS:**

NM - not measured  
NT - not tested

Upon completion of the pump test, a water sample was collected from the flowing discharged water and sent to TestAmerica for the following analytical water tests: BTEX (Method 8260C), GRO (Method AK101), and DRO (Method AK102). A copy of the lab results (Lab Job ID: 580-91298-1) is included in Attachment 4. The following is a summary of the lab results that shows none of the chemicals of concern exceed their representative clean-up levels.

Diesel Range Organics (DRO)	ND (Reporting Limit 0.11 mg/L)
Benzene	ND (Reporting Limit 3.0 ug/L)
Ethylbenzene	ND (Reporting Limit 3.0 ug/L)
Gasoline Range Organics (GRO)	ND (Reporting Limit 0.25 mg/L)
o-Xylene	ND (Reporting Limit 3.0 ug/L)
Toluene	ND (Reporting Limit 2.0 ug/L)
m-Xylene and o-Xylene	ND (Reporting Limit 3.0 ug/L)

Please feel free to contact me if you have any questions regarding the findings reported herein.

**STANTEC CONSULTING SERVICES INC.**

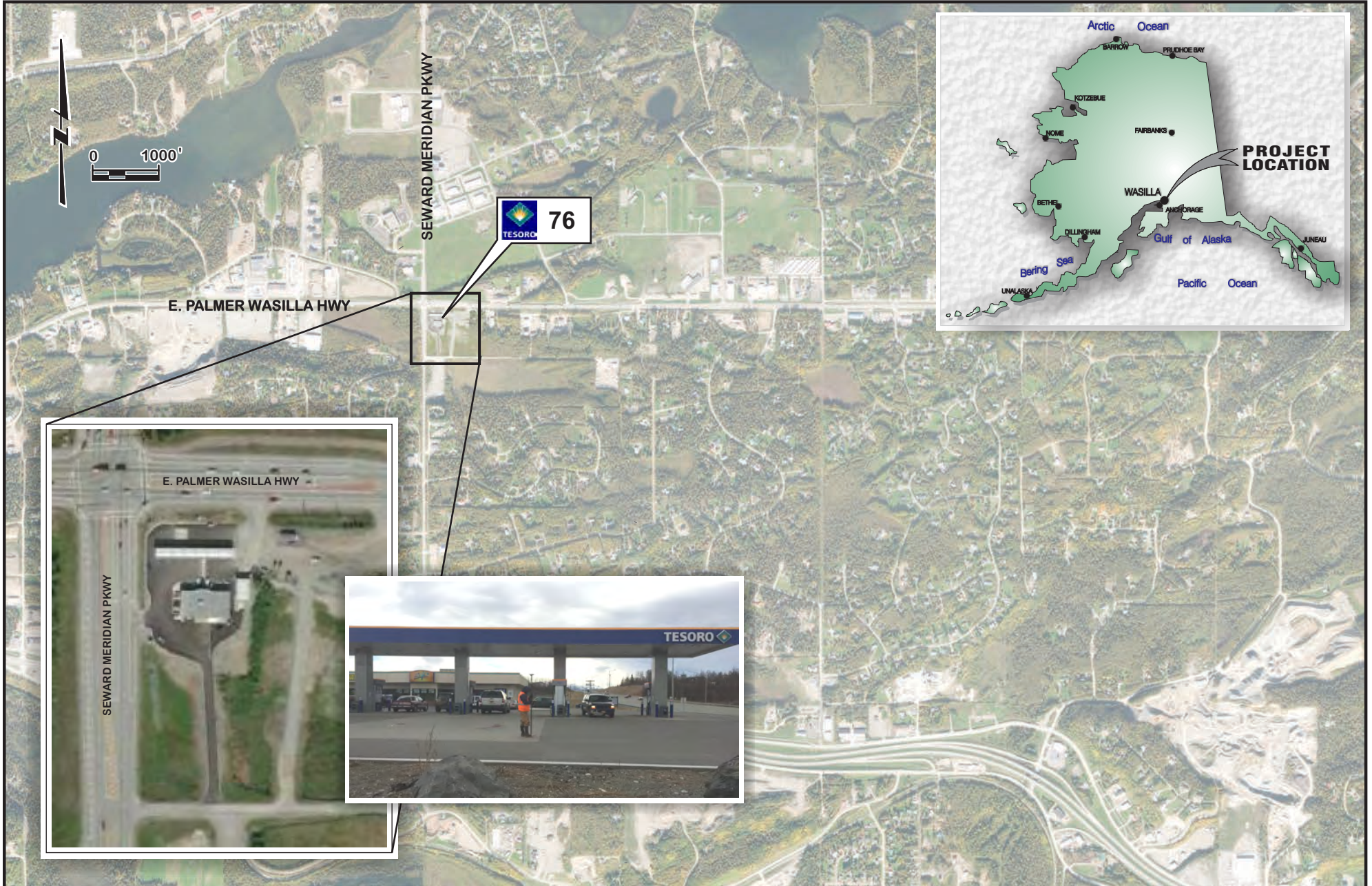
**Bob Gilfilian, PE**

Principal, Civil Engineer  
725 E Fireweed Lane, Suite 200  
Anchorage, AK 99508  
Phone: (907) 277-9883  
bob.gilfilian@stantec.com

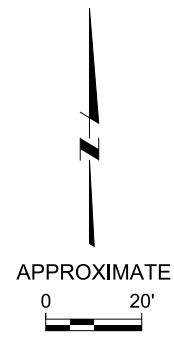
Attachments: Figure 1 Site Vicinity Map  
Figure 2 Site Plan with RW 19-1 Well Location  
Attachment 1 Soil Boring and Remediation Well RW 19-1 Construction Log  
Attachment 2 TestAmerica Laboratory Data Report for Soil Samples and Data Review Checklist  
Attachment 3 Site Photographs  
Attachment 4 TestAmerica Laboratory Data Report for Water Sample collected from RW 19-1  
Attachment 5 ADEC Approval to Haul Contaminated Soil and NRC Manifest for Drums of Soil Cuttings

c. Pete Campbell, ADEC Contaminated Sites Program





E. PALMER WASILLA HWY



APPROXIMATE LOCATION OF PROPERTY LINE  
3600 PALMER-WASILLA HWY

WATER SUPPLY WELL LOCATION

UNDERGROUND STORAGE TANK  
CANOPY  
FUEL DISPENSER (TYP)

SEPTIC SYSTEM

MW-1

RW1

RW2

RW3

RW19-1

MW-4

MW-2

MW-3

CAMERON ACRES  
BLOCK 1  
LOT 7

TESORO  
2 GO MART #76

UNDERGROUND  
PIPING

REMEDIAION  
WELL ACCESS POINT

F-UST

F-UST

F-UST

F-UST

F-UST

F-UST

F-UST

F-UST

F-UST

F-UST

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F-UST

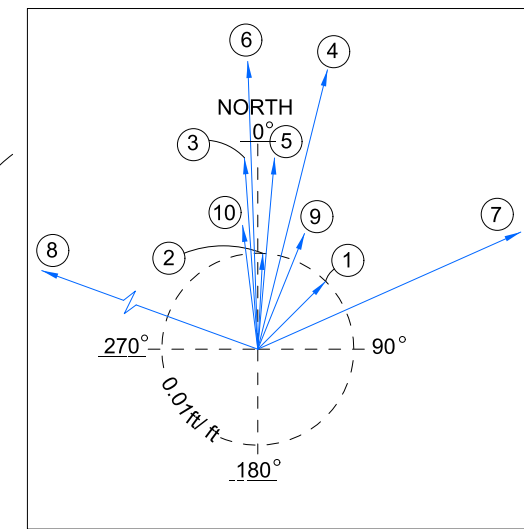
F-UST

F-UST

F-UST

F-UST

SEWARD MERIDIAN PKWY



GROUNDWATER FLOW SUMMARY

DATE	BEARING	GRADIENT (ft/ft)
1 APRIL 24, 2017	45°	0.01
2 SEP. 1, 2017	3°	0.01
3 FEB. 15, 2018	356°	0.02
4 JUNE 29, 2018	14°	0.03
5 SEP. 11, 2018	5°	0.02
6 OCT. 26, 2018	358°	0.03
7 FEB. 25, 2019	66°	0.03
8 APRIL 25, 2019	290°	0.04
9 JULY 25, 2019	22°	0.013
10 OCT. 18, 2019	353°	0.013

**MW-1**

Benzene	U (0.003)
Toluene	U (0.002)
Ethylbenzene	U (0.003)
Xylenes	U (0.003)
GRO	U (0.25)
DRO	0.16
GW Elev	75.68

**MW-2**

Benzene	0.025
Toluene	0.0065
Ethylbenzene	0.022
Xylenes	0.101
GRO	-0.74
DRO	0.24
GW Elev	77.05

**MW-3**

Benzene	0.21
Toluene	0.66
Ethylbenzene	1.7
Xylenes	9.7
GRO	21
DRO	1.2
GW Elev	77.04

**MW-3 (Duplicate)**

Benzene	0.18
Toluene	0.6
Ethylbenzene	1.6
Xylenes	8.9
GRO	18
DRO	0.91
GW Elev	77.04

**MW-4**

Benzene	0.020
Toluene	0.015
Ethylbenzene	0.0059
Xylenes	0.0277
GRO	U (0.25)
DRO	U (0.12)
GW Elev	77.03

LEGEND:

- F-UST FORMER UNDERGROUND STORAGE TANK
- MONITORING WELL LOCATION
- REMEDIATION WELL LOCATION
- DRO DIESEL RANGE ORGANICS
- GRO GASOLINE RANGE ORGANICS
- H SAMPLE WAS PREPPED OR ANALYZED BEYOND THE SPECIFIED HOLDING TIME
- RW REMEDIATION WELL
- U UNDETECTED ABOVE PRACTICAL QUANTITATION LIMITS SHOWN IN PARENTHESES
- DRINKING WATER WELL

NOTES:

1. RESULTS SHOWN ARE FOR WELLS SAMPLED ON OCTOBER 18, 2019
2. RESULTS ARE IN MILLIGRAMS PER LITER
3. BOLD/ RED TEXT INDICATES CONTAMINANT CONCENTRATIONS ABOVE CLEANUP LEVELS FOR THIS SITE

FILE: C:\D\CAD\Proj\Tesoro\TGM\Mar076\_185751226\MonEvent\2019\October 2019\Fig02\_Site Plan with GroundWtr.dgn  
TIME: 10-DEC-2019 12:16



TESORO COMPANY  
TESORO 2 GO MART #76  
OCTOBER 2019  
MONITORING EVENT REPORT

SITE PLAN  
WITH GROUNDWATER  
ANALYTICAL RESULTS

FIGURE

2

185751226.  
200.205



April 27, 2020

Reference: **Speedway Store 5314 (Former Tesoro 2Go Mart 76) - Installation of Remediation Well RM-19-1**

## ATTACHMENT 1

# Soil Boring and Remediation Well RW-19-1 Construction Log



PROJECT: **Tesoro 2Go Mart 76**  
 LOCATION: **Wasilla, AK**  
 PROJECT NUMBER: **185751226.200.202**

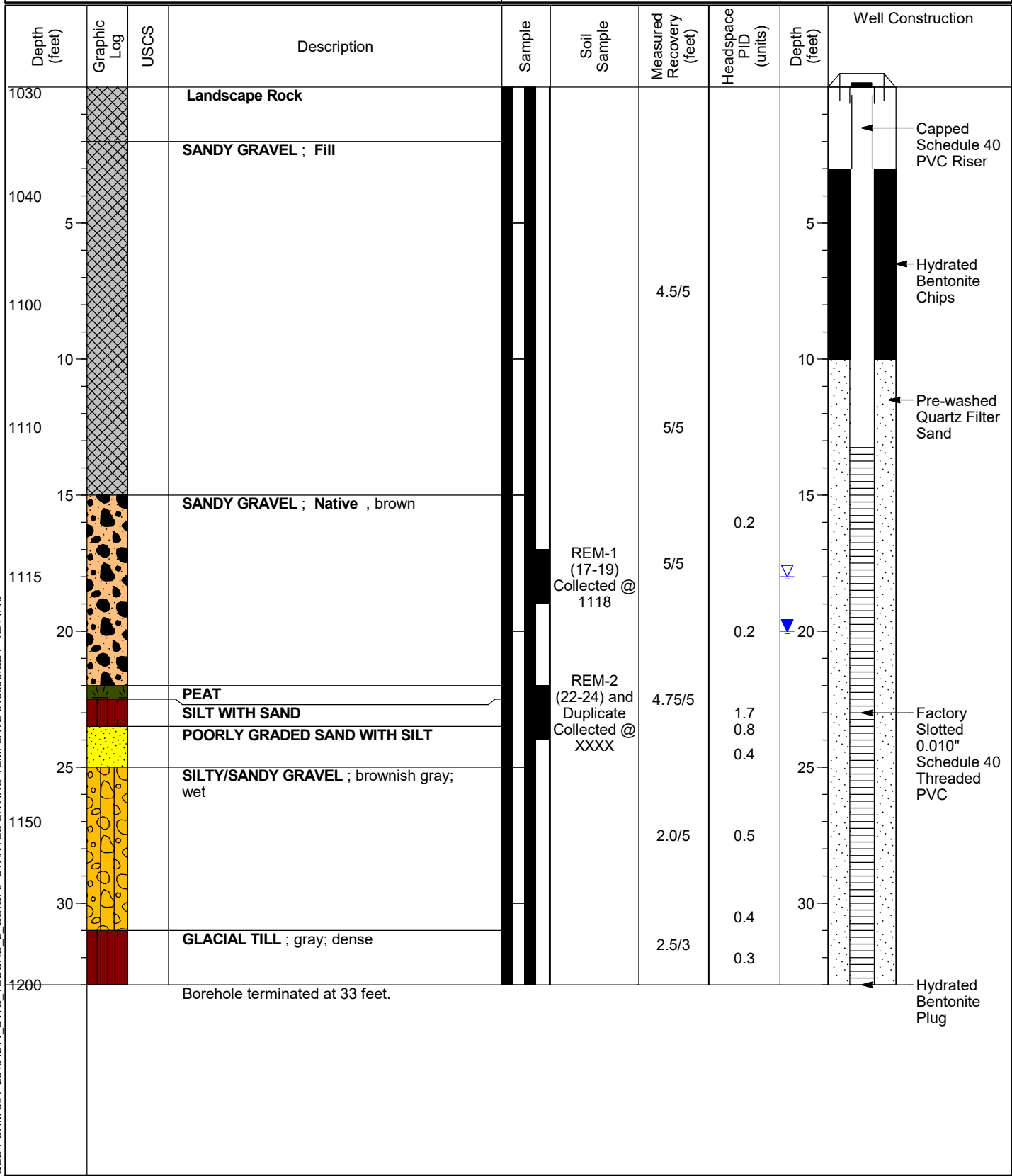
WELL / PROBEHOLE / BOREHOLE NO:

**RW 19-1**



DRILLING: STARTED: **10/20/19** COMPLETED: **10/20/19**  
 INSTALLATION: STARTED: **10/20/19** COMPLETED: **10/20/19**  
 DRILLING COMPANY: **Geo-Tek Alaska**  
 DRILLING EQUIPMENT: **Geoprobe 8040DT**  
 DRILLING METHOD: **8" Auger**  
 SAMPLING EQUIPMENT: **Micro-Core**

NORTHING (ft): -- EASTING (ft): --  
 GROUND ELEV (ft): -- TOC ELEV (ft): --  
 INITIAL DTW (ft): **18** BOREHOLE DEPTH (ft): **33**  
 STATIC DTW (ft): **20** WELL DEPTH (ft): **33**  
 WELL CASING DIA. (in): **4** BOREHOLE DIA.(in): **8**  
 LOGGED BY: **JM** CHECKED BY: **BG**



GEO FORM 304 20191211\_DWG\_TESORO\_2\_GO.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 12/11/19

April 27, 2020

Reference: **Speedway Store 5314 (Former Tesoro 2Go Mart 76) - Installation of Remediation Well RM-19-1**

## ATTACHMENT 2

# TestAmerica Laboratory Data Report for Soil Samples and Data Review Checklist

## ANALYTICAL REPORT

Eurofins TestAmerica, Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-90139-1  
Client Project/Site: Tesoro - TNS 76

For:  
Stantec Consulting Services Inc  
1835 S. Bragraw  
Suite 350  
Anchorage, Alaska 99508

Attn: John Marshall

*M. Elaine Walker*

Authorized for release by:  
11/4/2019 4:12:45 PM

Elaine Walker, Project Manager II  
(253)248-4972  
[elaine.walker@testamericainc.com](mailto:elaine.walker@testamericainc.com)

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*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.*



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# Case Narrative

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

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## Job ID: 580-90139-1

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Laboratory: Eurofins TestAmerica, Seattle

### Narrative

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#### Job Narrative 580-90139-1

#### Receipt

Six samples were received on 10/18/2019 4:01 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.6° C.

#### GC/MS VOA

Method 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-3 (580-90139-3) and TNS 76 (580-90139-5). Elevated reporting limits (RLs) are provided.

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

#### GC VOA

Method AK101: The following samples exhibited positive detects outside of the AK defined region: MW-2 (580-90139-2), MW-3 (580-90139-3) and TNS 76 (580-90139-5).

Method AK101: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-3 (580-90139-3) and TNS 76 (580-90139-5). Elevated reporting limits (RLs) are provided.

Method AK101: The Gasoline Range Organics (GRO) concentration reported for the following sample is due to the presence of discrete peaks: MW-3 (580-90139-3). Gasoline Range Organics (GRO)-C6-C10

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

#### GC Semi VOA

Method AK102 & 103: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: MW-2 (580-90139-2), MW-3 (580-90139-3) and TNS 76 (580-90139-5).

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

# Definitions/Glossary

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

## 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)

# Client Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

**Client Sample ID: MW-1**

**Lab Sample ID: 580-90139-1**

**Date Collected: 10/18/19 12:10**

**Matrix: Water**

**Date Received: 10/18/19 16:01**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			10/24/19 20:17	1
Toluene	ND		2.0		ug/L			10/24/19 20:17	1
Ethylbenzene	ND		3.0		ug/L			10/24/19 20:17	1
m-Xylene & p-Xylene	ND		3.0		ug/L			10/24/19 20:17	1
o-Xylene	ND		2.0		ug/L			10/24/19 20:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120		10/24/19 20:17	1
Trifluorotoluene (Surr)	87		80 - 120		10/24/19 20:17	1
4-Bromofluorobenzene (Surr)	93		80 - 120		10/24/19 20:17	1
Dibromofluoromethane (Surr)	100		80 - 120		10/24/19 20:17	1
1,2-Dichloroethane-d4 (Surr)	95		80 - 126		10/24/19 20:17	1

## Method: AK101 - Alaska - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			10/25/19 14:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	92		50 - 150		10/25/19 14:10	1
4-Bromofluorobenzene (Surr)	95		50 - 150		10/25/19 14:10	1

## Method: AK102 - Nonhalogenated Organics by FID (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>DRO (nC10-&lt;nC25)</b>	<b>0.16</b>		0.12		mg/L		10/31/19 09:00	11/02/19 20:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150	10/31/19 09:00	11/02/19 20:21	1

# Client Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

**Client Sample ID: MW-2**

**Lab Sample ID: 580-90139-2**

Date Collected: 10/18/19 12:53

Matrix: Water

Date Received: 10/18/19 16:01

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	25		3.0		ug/L			10/24/19 20:42	1
Toluene	6.5		2.0		ug/L			10/24/19 20:42	1
Ethylbenzene	22		3.0		ug/L			10/24/19 20:42	1
m-Xylene & p-Xylene	69		3.0		ug/L			10/24/19 20:42	1
o-Xylene	32		2.0		ug/L			10/24/19 20:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120		10/24/19 20:42	1
Trifluorotoluene (Surr)	89		80 - 120		10/24/19 20:42	1
4-Bromofluorobenzene (Surr)	95		80 - 120		10/24/19 20:42	1
Dibromofluoromethane (Surr)	95		80 - 120		10/24/19 20:42	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 126		10/24/19 20:42	1

### Method: AK101 - Alaska - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	0.74		0.25		mg/L			10/25/19 14:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	102		50 - 150		10/25/19 14:40	1
4-Bromofluorobenzene (Surr)	102		50 - 150		10/25/19 14:40	1

### Method: AK102 - Nonhalogenated Organics by FID (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (nC10-<nC25)	0.24		0.12		mg/L		10/31/19 09:00	11/02/19 20:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	76		50 - 150	10/31/19 09:00	11/02/19 20:41	1



# Client Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

**Client Sample ID: MW-3**

**Lab Sample ID: 580-90139-3**

Date Collected: 10/18/19 14:04

Matrix: Water

Date Received: 10/18/19 16:01

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	210		150		ug/L			10/25/19 20:23	50
Toluene	660		100		ug/L			10/25/19 20:23	50
Ethylbenzene	1700		150		ug/L			10/25/19 20:23	50
m-Xylene & p-Xylene	6700		150		ug/L			10/25/19 20:23	50
o-Xylene	3000		100		ug/L			10/25/19 20:23	50

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120					10/25/19 20:23	50
Trifluorotoluene (Surr)	89		80 - 120					10/25/19 20:23	50
4-Bromofluorobenzene (Surr)	95		80 - 120					10/25/19 20:23	50
Dibromofluoromethane (Surr)	97		80 - 120					10/25/19 20:23	50
1,2-Dichloroethane-d4 (Surr)	98		80 - 126					10/25/19 20:23	50

## Method: AK101 - Alaska - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	21		2.5		mg/L			10/29/19 15:32	10

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	102		50 - 150					10/29/19 15:32	10
4-Bromofluorobenzene (Surr)	108		50 - 150					10/29/19 15:32	10

## Method: AK102 - Nonhalogenated Organics by FID (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (nC10-<nC25)	1.2		0.12		mg/L		10/31/19 09:00	11/02/19 21:01	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150				10/31/19 09:00	11/02/19 21:01	1

# Client Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

**Client Sample ID: MW-4**

**Lab Sample ID: 580-90139-4**

Date Collected: 10/18/19 13:20

Matrix: Water

Date Received: 10/18/19 16:01

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20		3.0		ug/L			10/25/19 15:47	1
Toluene	15		2.0		ug/L			10/25/19 15:47	1
Ethylbenzene	5.9		3.0		ug/L			10/25/19 15:47	1
m-Xylene & p-Xylene	20		3.0		ug/L			10/25/19 15:47	1
o-Xylene	7.7		2.0		ug/L			10/25/19 15:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	109		80 - 120		10/25/19 15:47	1
Trifluorotoluene (Surr)	90		80 - 120		10/25/19 15:47	1
4-Bromofluorobenzene (Surr)	89		80 - 120		10/25/19 15:47	1
Dibromofluoromethane (Surr)	91		80 - 120		10/25/19 15:47	1
1,2-Dichloroethane-d4 (Surr)	95		80 - 126		10/25/19 15:47	1

## Method: AK101 - Alaska - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			10/29/19 14:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	105		50 - 150		10/29/19 14:00	1
4-Bromofluorobenzene (Surr)	93		50 - 150		10/29/19 14:00	1

## Method: AK102 - Nonhalogenated Organics by FID (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (nC10-<nC25)	ND		0.12		mg/L		10/31/19 09:00	11/02/19 21:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	71		50 - 150	10/31/19 09:00	11/02/19 21:21	1

# Client Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

**Client Sample ID: TNS 76**

**Lab Sample ID: 580-90139-5**

Date Collected: 10/18/19 14:06

Matrix: Water

Date Received: 10/18/19 16:01

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	180		150		ug/L			10/25/19 20:49	50
Toluene	600		100		ug/L			10/25/19 20:49	50
Ethylbenzene	1600		150		ug/L			10/25/19 20:49	50
m-Xylene & p-Xylene	6100		150		ug/L			10/25/19 20:49	50
o-Xylene	2800		100		ug/L			10/25/19 20:49	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120		10/25/19 20:49	50
Trifluorotoluene (Surr)	90		80 - 120		10/25/19 20:49	50
4-Bromofluorobenzene (Surr)	92		80 - 120		10/25/19 20:49	50
Dibromofluoromethane (Surr)	96		80 - 120		10/25/19 20:49	50
1,2-Dichloroethane-d4 (Surr)	99		80 - 126		10/25/19 20:49	50

**Method: AK101 - Alaska - Gasoline Range Organics (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	18		2.5		mg/L			10/28/19 13:43	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	64		50 - 150		10/28/19 13:43	10
4-Bromofluorobenzene (Surr)	109		50 - 150		10/28/19 13:43	10

**Method: AK102 - Nonhalogenated Organics by FID (Diesel Range Organics)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (nC10-<nC25)	0.91		0.12		mg/L		10/31/19 09:00	11/02/19 21:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	60		50 - 150	10/31/19 09:00	11/02/19 21:42	1

# Client Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 580-90139-6**

**Date Collected: 10/18/19 12:00**

**Matrix: Water**

**Date Received: 10/18/19 16:01**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			10/24/19 17:47	1
Toluene	ND		2.0		ug/L			10/24/19 17:47	1
Ethylbenzene	ND		3.0		ug/L			10/24/19 17:47	1
m-Xylene & p-Xylene	ND		3.0		ug/L			10/24/19 17:47	1
o-Xylene	ND		2.0		ug/L			10/24/19 17:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120		10/24/19 17:47	1
Trifluorotoluene (Surr)	93		80 - 120		10/24/19 17:47	1
4-Bromofluorobenzene (Surr)	91		80 - 120		10/24/19 17:47	1
Dibromofluoromethane (Surr)	95		80 - 120		10/24/19 17:47	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 126		10/24/19 17:47	1

**Method: AK101 - Alaska - Gasoline Range Organics (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			10/25/19 13:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	107		50 - 150		10/25/19 13:40	1
4-Bromofluorobenzene (Surr)	96		50 - 150		10/25/19 13:40	1



# QC Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 580-315102/7**  
**Matrix: Water**  
**Analysis Batch: 315102**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			10/24/19 17:22	1
Toluene	ND		2.0		ug/L			10/24/19 17:22	1
Ethylbenzene	ND		3.0		ug/L			10/24/19 17:22	1
m-Xylene & p-Xylene	ND		3.0		ug/L			10/24/19 17:22	1
o-Xylene	ND		2.0		ug/L			10/24/19 17:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120		10/24/19 17:22	1
Trifluorotoluene (Surr)	91		80 - 120		10/24/19 17:22	1
4-Bromofluorobenzene (Surr)	94		80 - 120		10/24/19 17:22	1
Dibromofluoromethane (Surr)	96		80 - 120		10/24/19 17:22	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 126		10/24/19 17:22	1

**Lab Sample ID: LCS 580-315102/4**  
**Matrix: Water**  
**Analysis Batch: 315102**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	9.15		ug/L		92	75 - 121
Toluene	10.0	10.3		ug/L		103	80 - 120
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120
m-Xylene & p-Xylene	10.0	9.85		ug/L		99	80 - 120
o-Xylene	10.0	10.2		ug/L		102	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	104		80 - 120
Trifluorotoluene (Surr)	92		80 - 120
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
1,2-Dichloroethane-d4 (Surr)	101		80 - 126

**Lab Sample ID: LCSD 580-315102/5**  
**Matrix: Water**  
**Analysis Batch: 315102**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	8.90		ug/L		89	75 - 121	3	14
Toluene	10.0	9.86		ug/L		99	80 - 120	5	19
Ethylbenzene	10.0	9.84		ug/L		98	80 - 120	3	14
m-Xylene & p-Xylene	10.0	9.61		ug/L		96	80 - 120	2	14
o-Xylene	10.0	9.89		ug/L		99	80 - 120	3	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
Trifluorotoluene (Surr)	92		80 - 120
4-Bromofluorobenzene (Surr)	93		80 - 120
Dibromofluoromethane (Surr)	95		80 - 120

Eurofins TestAmerica, Seattle

# QC Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 580-315102/5**  
**Matrix: Water**  
**Analysis Batch: 315102**

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

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	97		80 - 126

**Lab Sample ID: MB 580-315172/7**  
**Matrix: Water**  
**Analysis Batch: 315172**

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

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		3.0		ug/L			10/25/19 13:07	1
Toluene	ND		2.0		ug/L			10/25/19 13:07	1
Ethylbenzene	ND		3.0		ug/L			10/25/19 13:07	1
m-Xylene & p-Xylene	ND		3.0		ug/L			10/25/19 13:07	1
o-Xylene	ND		2.0		ug/L			10/25/19 13:07	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	104		80 - 120		10/25/19 13:07	1
Trifluorotoluene (Surr)	89		80 - 120		10/25/19 13:07	1
4-Bromofluorobenzene (Surr)	88		80 - 120		10/25/19 13:07	1
Dibromofluoromethane (Surr)	95		80 - 120		10/25/19 13:07	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 126		10/25/19 13:07	1

**Lab Sample ID: LCS 580-315172/4**  
**Matrix: Water**  
**Analysis Batch: 315172**

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

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Benzene	10.0	8.81		ug/L		88	75 - 121
Toluene	10.0	10.2		ug/L		102	80 - 120
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120
m-Xylene & p-Xylene	10.0	9.71		ug/L		97	80 - 120
o-Xylene	10.0	9.67		ug/L		97	80 - 120

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	106		80 - 120
Trifluorotoluene (Surr)	89		80 - 120
4-Bromofluorobenzene (Surr)	92		80 - 120
Dibromofluoromethane (Surr)	93		80 - 120
1,2-Dichloroethane-d4 (Surr)	97		80 - 126

**Lab Sample ID: LCSD 580-315172/5**  
**Matrix: Water**  
**Analysis Batch: 315172**

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

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
		Result	Qualifier						
Benzene	10.0	8.74		ug/L		87	75 - 121	1	14
Toluene	10.0	9.66		ug/L		97	80 - 120	5	19
Ethylbenzene	10.0	9.76		ug/L		98	80 - 120	3	14
m-Xylene & p-Xylene	10.0	9.40		ug/L		94	80 - 120	3	14
o-Xylene	10.0	9.29		ug/L		93	80 - 120	4	16

Eurofins TestAmerica, Seattle

# QC Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	105		80 - 120
Trifluorotoluene (Surr)	88		80 - 120
4-Bromofluorobenzene (Surr)	91		80 - 120
Dibromofluoromethane (Surr)	94		80 - 120
1,2-Dichloroethane-d4 (Surr)	95		80 - 126

## Method: AK101 - Alaska - Gasoline Range Organics (GC)

Lab Sample ID: MB 580-315132/7  
Matrix: Water  
Analysis Batch: 315132

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			10/25/19 12:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	104		50 - 150		10/25/19 12:07	1
4-Bromofluorobenzene (Surr)	94		50 - 150		10/25/19 12:07	1

Lab Sample ID: LCS 580-315132/8  
Matrix: Water  
Analysis Batch: 315132

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	1.00	0.983		mg/L		98	77 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Trifluorotoluene (Surr)	106		50 - 150
4-Bromofluorobenzene (Surr)	100		50 - 150

Lab Sample ID: LCSD 580-315132/9  
Matrix: Water  
Analysis Batch: 315132

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	1.00	0.974		mg/L		97	77 - 123	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Trifluorotoluene (Surr)	104		50 - 150
4-Bromofluorobenzene (Surr)	100		50 - 150

Lab Sample ID: MB 580-315249/7  
Matrix: Water  
Analysis Batch: 315249

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			10/28/19 11:41	1

Eurofins TestAmerica, Seattle

# QC Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

## Method: AK101 - Alaska - Gasoline Range Organics (GC) (Continued)

**Lab Sample ID: MB 580-315249/7**  
**Matrix: Water**  
**Analysis Batch: 315249**

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Trifluorotoluene (Surr)	107		50 - 150		10/28/19 11:41	1
4-Bromofluorobenzene (Surr)	96		50 - 150		10/28/19 11:41	1

**Lab Sample ID: LCS 580-315249/8**  
**Matrix: Water**  
**Analysis Batch: 315249**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Trifluorotoluene (Surr)	106		50 - 150
4-Bromofluorobenzene (Surr)	95		50 - 150

**Lab Sample ID: LCSD 580-315249/9**  
**Matrix: Water**  
**Analysis Batch: 315249**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Trifluorotoluene (Surr)	104		50 - 150
4-Bromofluorobenzene (Surr)	97		50 - 150

**Lab Sample ID: MB 580-315376/7**  
**Matrix: Water**  
**Analysis Batch: 315376**

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			10/29/19 12:29	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Trifluorotoluene (Surr)	106		50 - 150		10/29/19 12:29	1
4-Bromofluorobenzene (Surr)	94		50 - 150		10/29/19 12:29	1

**Lab Sample ID: LCS 580-315376/8**  
**Matrix: Water**  
**Analysis Batch: 315376**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

# QC Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

## Method: AK101 - Alaska - Gasoline Range Organics (GC) (Continued)

**Lab Sample ID: LCS 580-315376/8**  
**Matrix: Water**  
**Analysis Batch: 315376**

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Trifluorotoluene (Surr)	116		50 - 150
4-Bromofluorobenzene (Surr)	96		50 - 150

**Lab Sample ID: LCSD 580-315376/9**  
**Matrix: Water**  
**Analysis Batch: 315376**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	1.00	0.857		mg/L		86	77 - 123	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Trifluorotoluene (Surr)	116		50 - 150
4-Bromofluorobenzene (Surr)	97		50 - 150

## Method: AK102 - Nonhalogenated Organics by FID (Diesel Range Organics)

**Lab Sample ID: MB 580-315583/1-A**  
**Matrix: Water**  
**Analysis Batch: 315825**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 315583**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (nC10-<nC25)	ND		0.11		mg/L		10/31/19 09:00	11/02/19 18:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150	10/31/19 09:00	11/02/19 18:20	1

**Lab Sample ID: LCS 580-315583/2-A**  
**Matrix: Water**  
**Analysis Batch: 315838**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 315583**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (nC10-<nC25)	2.00	1.52		mg/L		76	75 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	76		50 - 150

**Lab Sample ID: LCSD 580-315583/3-A**  
**Matrix: Water**  
**Analysis Batch: 315838**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 315583**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (nC10-<nC25)	2.00	1.66		mg/L		83	75 - 125	8	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	76		50 - 150

Eurofins TestAmerica, Seattle

# Lab Chronicle

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

## Client Sample ID: MW-1

Date Collected: 10/18/19 12:10

Date Received: 10/18/19 16:01

## Lab Sample ID: 580-90139-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	315102	10/24/19 20:17	W1T	TAL SEA
Total/NA	Analysis	AK101		1	315132	10/25/19 14:10	EML	TAL SEA
Total/NA	Prep	3510C			315583	10/31/19 09:00	NRF	TAL SEA
Total/NA	Analysis	AK102		1	315825	11/02/19 20:21	W1T	TAL SEA

## Client Sample ID: MW-2

Date Collected: 10/18/19 12:53

Date Received: 10/18/19 16:01

## Lab Sample ID: 580-90139-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	315102	10/24/19 20:42	W1T	TAL SEA
Total/NA	Analysis	AK101		1	315132	10/25/19 14:40	EML	TAL SEA
Total/NA	Prep	3510C			315583	10/31/19 09:00	NRF	TAL SEA
Total/NA	Analysis	AK102		1	315825	11/02/19 20:41	W1T	TAL SEA

## Client Sample ID: MW-3

Date Collected: 10/18/19 14:04

Date Received: 10/18/19 16:01

## Lab Sample ID: 580-90139-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		50	315172	10/25/19 20:23	TL1	TAL SEA
Total/NA	Analysis	AK101		10	315376	10/29/19 15:32	EML	TAL SEA
Total/NA	Prep	3510C			315583	10/31/19 09:00	NRF	TAL SEA
Total/NA	Analysis	AK102		1	315825	11/02/19 21:01	W1T	TAL SEA

## Client Sample ID: MW-4

Date Collected: 10/18/19 13:20

Date Received: 10/18/19 16:01

## Lab Sample ID: 580-90139-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	315172	10/25/19 15:47	TL1	TAL SEA
Total/NA	Analysis	AK101		1	315376	10/29/19 14:00	EML	TAL SEA
Total/NA	Prep	3510C			315583	10/31/19 09:00	NRF	TAL SEA
Total/NA	Analysis	AK102		1	315825	11/02/19 21:21	W1T	TAL SEA

## Client Sample ID: TNS 76

Date Collected: 10/18/19 14:06

Date Received: 10/18/19 16:01

## Lab Sample ID: 580-90139-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		50	315172	10/25/19 20:49	TL1	TAL SEA
Total/NA	Analysis	AK101		10	315249	10/28/19 13:43	EML	TAL SEA
Total/NA	Prep	3510C			315583	10/31/19 09:00	NRF	TAL SEA
Total/NA	Analysis	AK102		1	315825	11/02/19 21:42	W1T	TAL SEA

Eurofins TestAmerica, Seattle



# Lab Chronicle

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 580-90139-6**

**Date Collected: 10/18/19 12:00**

**Matrix: Water**

**Date Received: 10/18/19 16:01**

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Analysis	8260C		1	315102	10/24/19 17:47	W1T	TAL SEA
Total/NA	Analysis	AK101		1	315132	10/25/19 13:40	EML	TAL SEA

**Laboratory References:**

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310



# Accreditation/Certification Summary

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

## Laboratory: Eurofins TestAmerica, Seattle

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-024	01-19-22
ANAB	Dept. of Defense ELAP	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
California	State	2901	11-05-19
Montana (UST)	State	NA	04-13-21
Oregon	NELAP	WA100007	11-05-19
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00039	02-10-20
Washington	State	C553	02-17-20

# Sample Summary

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - TNS 76

Job ID: 580-90139-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-90139-1	MW-1	Water	10/18/19 12:10	10/18/19 16:01	
580-90139-2	MW-2	Water	10/18/19 12:53	10/18/19 16:01	
580-90139-3	MW-3	Water	10/18/19 14:04	10/18/19 16:01	
580-90139-4	MW-4	Water	10/18/19 13:20	10/18/19 16:01	
580-90139-5	TNS 76	Water	10/18/19 14:06	10/18/19 16:01	
580-90139-6	Trip Blank	Water	10/18/19 12:00	10/18/19 16:01	

# TestAmerica Anchorage

2000 W. International Airport Road  
Suite A10

Anchorage, AK 99502  
Phone: 907.563.9200 Fax: 907.563.9210

## Chain of Custody Record


249747

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING  
TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact		Project Manager: <u>Mike Zudek</u>		Site Contact:		Date: <u>10/18/19</u>		COC No:	
Company Name: <u>Stantec</u>		Tel/Fax:		Lab Contact:		Carrier:		1 of 1 COCs	
Address: <u>725 B Firwood LN, Suite 200</u>		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) <u>AK101 / 8260</u> <u>AK103</u>		 580-90139 Chain of Custody		Sampler: <u>JM</u>	
City/State/Zip: <u>Anchorage, AK 99503</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS						For Lab Use Only:	
Phone: <u>907-266-1108</u>		TAT if different from Below _____							
Fax:		<input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day							
Project Name: <u>FNS 76</u>		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		# of Cont.	
Site: <u>FNS 76</u>		Sample Date		Sample Time		Matrix		# of Cont.	
P O # <u>Send to Anne Duarte @ TESCO/specimen</u>		Sample Date		Sample Time		Matrix		# of Cont.	
Sample Identification		Sample Date		Sample Time		Matrix		# of Cont.	
<u>MW-1</u>		<u>10/18/19</u>		<u>1210</u>		<u>G W</u>		<u>8</u>	
<u>MW-2</u>		<u>10/18/19</u>		<u>1253</u>		<u>G W</u>		<u>8</u>	
<u>MW-3</u>		<u>10/18/19</u>		<u>1404</u>		<u>G W</u>		<u>8</u>	
<u>MW-4</u>		<u>10/18/19</u>		<u>1320</u>		<u>G W</u>		<u>8</u>	
<u>TNS 76</u>		<u>10/18/19</u>		<u>1410</u>		<u>G W</u>		<u>8</u>	
<u>Trip Blank</u>		<u>10/18/19</u>		<u>1200</u>		<u>G W</u>		<u>6</u>	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other		Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)		Return to Client		Disposal by Lab		Archive for _____ Months	
Possible Hazard Identification:		Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)		Return to Client		Disposal by Lab		Archive for _____ Months	
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.		Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)		Return to Client		Disposal by Lab		Archive for _____ Months	
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		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 & Comments:		Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: <u>5.6</u>		Therm ID No.:			
<u>Please Report DRO, GRO, BTEX only</u>		Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: <u>5.6</u>		Therm ID No.:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: <u>5.6</u>		Therm ID No.:			
Relinquished by: <u>John Marshall</u>		Company: <u>Stantec</u>		Date/Time: <u>10/18/19 1601</u>		Received by: <u>[Signature]</u>		Company: <u>TA-AIC</u>	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:	

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11/14/2019





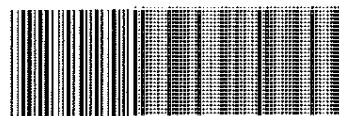
6102/1/17  
**TestAmerica Anchorage**  
 2000 M. International Airport Road  
 Suite A10  
 Anchorage, AK 99502  
 Phone: 907.563.9200 Fax: 907.563.9210

Page 21 of 22  
**Chain of Custody Record**

249747

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING  
 TestAmerica Laboratories, Inc.  
 TAL-8210 (0713)

Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact		Project Manager: <u>Mike Zidek</u>		Site Contact:		Date: <u>10/18/19</u>		COC No:	
Company Name: <u>Stantec</u>		Tel/Fax:		Lab Contact:		Carrier:		1 of 1 COCs	
Address: <u>725 E Firwood LN Suite 200</u>		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS/MSD (Y/N) <u>AK101/8260</u> <u>AK102</u>		 580-90139 Chain of Custody		Sampler: <u>SM</u>	
City/State/Zip: <u>Anchorage, AK 99503</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____						For Lab Use Only:	
Phone: <u>907-266-1188</u>		<input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day							
Fax:									
Project Name: <u>TNS 76</u>									
Site: <u>TNS 76</u>									
PO# <u>Send to Ann Duarte @ Tesco/speaking</u>									
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Sample Specific Notes:	
<u>MW-1</u>	<u>10/18/19</u>	<u>1210</u>	<u>G</u>	<u>W</u>	<u>8</u>	<u>X</u>	<u>X</u>		
<u>MW-2</u>	<u>10/18/19</u>	<u>1253</u>	<u>G</u>	<u>W</u>	<u>8</u>	<u>X</u>	<u>X</u>		
<u>MW-3</u>	<u>10/18/19</u>	<u>1404</u>	<u>G</u>	<u>W</u>	<u>8</u>	<u>X</u>	<u>X</u>		
<u>MW-4</u>	<u>10/18/19</u>	<u>1320</u>	<u>G</u>	<u>W</u>	<u>8</u>	<u>X</u>	<u>X</u>		
<u>TNS 76</u>	<u>10/18/19</u>	<u>1406</u>	<u>G</u>	<u>W</u>	<u>8</u>	<u>X</u>	<u>X</u>		
<u>Trip Blank</u>	<u>10/18/19</u>	<u>1200</u>	<u>G</u>	<u>W</u>	<u>6</u>	<u>X</u>			
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other						<u>2 2</u>			
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.						Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)			
<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"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months			
Special Instructions/QC Requirements & Comments: <u>Please Report DRO BRO, BTEX only</u>									
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temp. (°C): Obs'd:		Corr'd: <u>5.6</u>		Therm ID No.:	
Relinquished by: <u>John Marshall</u>		Company: <u>Stantec</u>		Date/Time: <u>10/18/19 16:01</u>		Received by: <u>[Signature]</u>		Company: <u>TA-AK</u>	
Relinquished by: <u>[Signature]</u>		Company: <u>TA-AK</u>		Date/Time: <u>10/21/19 12:00</u>		Received by: <u>[Signature]</u>		Company: <u>TABed</u>	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:	

7-2.6

# Login Sample Receipt Checklist

Client: Stantec Consulting Services Inc

Job Number: 580-90139-1

**Login Number: 90139**

**List Source: Eurofins TestAmerica, Seattle**

**List Number: 1**

**Creator: Pilch, Andrew C**

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.	True	
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.	True	
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	



**Laboratory Data Review Checklist**

Completed By:

Erin O'Malley

Title:

Environmental Engineer

Date:

January 17, 2020

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

Eurofins TestAmerica, Seattle

Laboratory Report Number:

580-90156-1

Laboratory Report Date:

November 7, 2019

CS Site Name:

Tesoro 2Go Mart 76

ADEC File Number:

2265.26.037

Hazard Identification Number:

26295

580-90156-1

Laboratory Report Date:

November 7, 2019

CS Site Name:

Tesoro 2Go Mart 76

**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes  No  N/A  Comments:

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes  No  N/A  Comments:

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A  Comments:

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes  No  N/A  Comments:

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes  No  N/A  Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  No  N/A  Comments:

Soil Prep Method 5035 (For Analytical Methods 8260C and AK101): The following soil samples were provided to the laboratory with a significantly different initial weight than that required by the reference method: REM-1-17-19 (580-90156-1) and REM-1-22-24 (580-90156-2). Deviations in the weight by more than 20% may affect reporting limits and potentially method performance. The method specifies 25g. The amount provided was above this range.

e. Data quality or usability affected?

Comments:

Yes, the issues noted above for Method 8260C and AK101 caused elevated PQLs, which in turn caused less accurate data.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A  Comments:

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

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d. What is the effect on data quality/usability according to the case narrative?

Comments:

See below sections.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No  N/A  Comments:

There are a number of LOQs that exceed the SCLs for all samples. See Table 1.

e. Data quality or usability affected?

All non-detect results where the LOQ exceeds the SCL are affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

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ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

No samples affected.

v. Data quality or usability affected?

Comments:

No.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes  No  N/A  Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

No metal/inorganics analyzed.

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- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

Method 8260C: The LCS and / or LCSD for preparation batch 580-315094 and analytical batch 580-315111 recovered outside control limits for the following analytes: Acetone and Bromoform. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8270D SIM: The following analyte recovered outside control limits for the LCS associated with preparation batch 580-315548 and analytical batch 580-316087: Anthracene. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

Method AK101: The LCSD for preparation batch 580-315087 and analytical batch 580-315095 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

Method AK101: The RPD of the LCS and LCSD for batch preparation batch 580-315087 and analytical batch 580-315095 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10. The MS/MSD recovered within the RPD limits; therefore, the data has been reported.

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

Method 8260C: Acetone and Bromoform in all soil samples.  
Method 8270D SIM: Anthracene in all soil samples analyzed for PAHs.  
Method AK101: GRO in all soil samples.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:



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vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

No. Data usable as qualified.

Method 8260C: LCS/LCSD recovery issues preparation batch 580-315094 and analytical batch 580-315111 Acetone and Bromoform: These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8270D SIM: Anthracene LCS recovery outside control limits in preparation batch 580-315548 and analytical batch 580-316087 is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

Method AK101: LCSD recovery issues preparation batch 580-315087 and analytical batch 580-315095 Gasoline Range Organics (GRO)-C6-C10: This analyte was biased high in the LCSD and was not detected in the associated samples; therefore, the data have been reported.

Method AK101: LCS/LCSD RPD outside control limits for batch preparation batch 580-315087 and analytical batch 580-315095 Gasoline Range Organics (GRO)-C6-C10: The MS/MSD recovered within the RPD limits; therefore, the data has been reported.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

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- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No  N/A  Comments:

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

- d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

- i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes  No  N/A  Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

Method 8260C: Surrogate recovery for the following samples were outside control limits: REM-1-17-19 (580-90156-1), REM-1-22-24 (580-90156-2) and Trip Blank (580-90156-4). The samples did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes  No  N/A  Comments:

iv. Data quality or usability affected?

Comments:

No. Data usable as qualified. The samples did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes  No  N/A  Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes  No  N/A  Comments:

iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No.

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f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No  N/A  Comments:

No duplicate samples required.

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

No duplicate samples submitted.

iii. Precision – All relative percent differences (RPD) less than specified project objectives?  
(Recommended: 30% water, 50% soil)

$$RPD (\%) = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where R<sub>1</sub> = Sample Concentration  
R<sub>2</sub> = Field Duplicate Concentration

Yes  No  N/A  Comments:

No duplicate samples submitted.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

No.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes  No  N/A  Comments:

No decontamination or equipment blanks were required for this project.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

No decontamination or equipment blanks submitted.

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ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No decontamination or equipment blanks submitted.

iii. Data quality or usability affected?

Comments:

No decontamination or equipment blanks submitted.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No  N/A

Comments:

April 27, 2020

Reference: **Speedway Store 5314 (Former Tesoro 2Go Mart 76) - Installation of Remediation Well RM-19-1**

# ATTACHMENT 3

## Site Photographs



Photos:



**Photo 1:** Vacuuming the upper 5-feet of soil prior to start of drilling RW 19-1 well



**Photo 2:** "Drilling RW 19-1 Well with Geoprobe 8040DT track mounted drilling rig operated by GeoTek Alaska



**Photo 3:** Completed remediation well RW 19-1 in foreground is a 4" diameter PVC well casing within a 12" diameter steel flush mounted protective casing (1). The aboveground piping for the chemox injection wells (2) is behind the SVE blower Knack box



**Photo 4:** Submersible well pump and discharge piping used for development of Remediation Well RW 19-1

April 27, 2020

Reference: **Speedway Store 5314 (Former Tesoro 2Go Mart 76) - Installation of Remediation Well RM-19-1**

## ATTACHMENT 4

# TestAmerica Laboratory Water Test Results for Water Samples Collected During Well Pump Test

## ANALYTICAL REPORT

Eurofins TestAmerica, Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-91298-1  
Client Project/Site: TNS 76

For:  
Stantec Consulting Services Inc  
1835 S. Bragraw  
Suite 350  
Anchorage, Alaska 99508

Attn: John Marshall

*M. Elaine Walker*

Authorized for release by:  
12/23/2019 10:30:34 AM

Elaine Walker, Project Manager II  
(253)248-4972  
[elaine.walker@testamericainc.com](mailto:elaine.walker@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*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.*



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# Case Narrative

Client: Stantec Consulting Services Inc  
Project/Site: TNS 76

Job ID: 580-91298-1

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**Job ID: 580-91298-1**

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**Laboratory: Eurofins TestAmerica, Seattle**

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**Narrative**

**Job Narrative  
580-91298-1**

**Receipt**

Two samples were received on 12/9/2019 3:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.6° C.

**GC/MS VOA**

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

**GC VOA**

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

**GC Semi VOA**

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



# Definitions/Glossary

Client: Stantec Consulting Services Inc  
Project/Site: TNS 76

Job ID: 580-91298-1

## 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)



# Client Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: TNS 76

Job ID: 580-91298-1

**Client Sample ID: RW19-1**

**Lab Sample ID: 580-91298-1**

**Date Collected: 12/09/19 13:16**

**Matrix: Water**

**Date Received: 12/09/19 15:55**

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/13/19 14:46	1
Toluene	ND		2.0		ug/L			12/13/19 14:46	1
Ethylbenzene	ND		3.0		ug/L			12/13/19 14:46	1
m-Xylene & p-Xylene	ND		3.0		ug/L			12/13/19 14:46	1
o-Xylene	ND		2.0		ug/L			12/13/19 14:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120		12/13/19 14:46	1
Trifluorotoluene (Surr)	105		80 - 120		12/13/19 14:46	1
4-Bromofluorobenzene (Surr)	103		80 - 120		12/13/19 14:46	1
Dibromofluoromethane (Surr)	103		80 - 120		12/13/19 14:46	1
1,2-Dichloroethane-d4 (Surr)	97		80 - 126		12/13/19 14:46	1

## Method: AK101 - Alaska - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			12/12/19 18:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	96		50 - 150		12/12/19 18:34	1
4-Bromofluorobenzene (Surr)	105		50 - 150		12/12/19 18:34	1

## Method: AK102 - Nonhalogenated Organics by FID (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (nC10-<nC25)	ND		0.11		mg/L		12/20/19 09:45	12/22/19 15:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	78		50 - 150	12/20/19 09:45	12/22/19 15:20	1

# Client Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: TNS 76

Job ID: 580-91298-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 580-91298-2**

**Date Collected: 12/09/19 12:00**

**Matrix: Water**

**Date Received: 12/09/19 15:55**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/13/19 13:31	1
Toluene	ND		2.0		ug/L			12/13/19 13:31	1
Ethylbenzene	ND		3.0		ug/L			12/13/19 13:31	1
m-Xylene & p-Xylene	ND		3.0		ug/L			12/13/19 13:31	1
o-Xylene	ND		2.0		ug/L			12/13/19 13:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120		12/13/19 13:31	1
Trifluorotoluene (Surr)	107		80 - 120		12/13/19 13:31	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/13/19 13:31	1
Dibromofluoromethane (Surr)	100		80 - 120		12/13/19 13:31	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 126		12/13/19 13:31	1

**Method: AK101 - Alaska - Gasoline Range Organics (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			12/12/19 18:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	95		50 - 150		12/12/19 18:10	1
4-Bromofluorobenzene (Surr)	104		50 - 150		12/12/19 18:10	1



# QC Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: TNS 76

Job ID: 580-91298-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 580-318799/6**  
**Matrix: Water**  
**Analysis Batch: 318799**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/13/19 13:06	1
Toluene	ND		2.0		ug/L			12/13/19 13:06	1
Ethylbenzene	ND		3.0		ug/L			12/13/19 13:06	1
m-Xylene & p-Xylene	ND		3.0		ug/L			12/13/19 13:06	1
o-Xylene	ND		2.0		ug/L			12/13/19 13:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120		12/13/19 13:06	1
Trifluorotoluene (Surr)	105		80 - 120		12/13/19 13:06	1
4-Bromofluorobenzene (Surr)	104		80 - 120		12/13/19 13:06	1
Dibromofluoromethane (Surr)	102		80 - 120		12/13/19 13:06	1
1,2-Dichloroethane-d4 (Surr)	95		80 - 126		12/13/19 13:06	1

**Lab Sample ID: LCS 580-318799/3**  
**Matrix: Water**  
**Analysis Batch: 318799**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.7		ug/L		107	75 - 121
Toluene	10.0	10.7		ug/L		107	80 - 120
Ethylbenzene	10.0	10.9		ug/L		109	80 - 120
m-Xylene & p-Xylene	10.0	10.9		ug/L		109	80 - 120
o-Xylene	10.0	10.9		ug/L		109	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
Trifluorotoluene (Surr)	105		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	104		80 - 120
1,2-Dichloroethane-d4 (Surr)	95		80 - 126

**Lab Sample ID: LCSD 580-318799/4**  
**Matrix: Water**  
**Analysis Batch: 318799**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	9.46		ug/L		95	75 - 121	12	14
Toluene	10.0	9.69		ug/L		97	80 - 120	10	19
Ethylbenzene	10.0	9.70		ug/L		97	80 - 120	11	14
m-Xylene & p-Xylene	10.0	9.68		ug/L		97	80 - 120	12	14
o-Xylene	10.0	9.54		ug/L		95	80 - 120	13	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 120
Trifluorotoluene (Surr)	106		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120

Eurofins TestAmerica, Seattle

# QC Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: TNS 76

Job ID: 580-91298-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 580-318799/4**  
**Matrix: Water**  
**Analysis Batch: 318799**

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

Surrogate	LCS D %Recovery	LCS D Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		80 - 126

## Method: AK101 - Alaska - Gasoline Range Organics (GC)

**Lab Sample ID: MB 580-318732/7**  
**Matrix: Water**  
**Analysis Batch: 318732**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			12/12/19 12:54	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Trifluorotoluene (Surr)	96		50 - 150		12/12/19 12:54	1			
4-Bromofluorobenzene (Surr)	103		50 - 150		12/12/19 12:54	1			

**Lab Sample ID: LCS 580-318732/8**  
**Matrix: Water**  
**Analysis Batch: 318732**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	1.00	1.03		mg/L		103	77 - 123
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Trifluorotoluene (Surr)	96		50 - 150				
4-Bromofluorobenzene (Surr)	105		50 - 150				

**Lab Sample ID: LCSD 580-318732/9**  
**Matrix: Water**  
**Analysis Batch: 318732**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	1.00	1.03		mg/L		103	77 - 123	0	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
Trifluorotoluene (Surr)	98		50 - 150						
4-Bromofluorobenzene (Surr)	103		50 - 150						

## Method: AK102 - Nonhalogenated Organics by FID (Diesel Range Organics)

**Lab Sample ID: MB 580-319323/1-A**  
**Matrix: Water**  
**Analysis Batch: 319461**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 319323**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (nC10-<nC25)	ND		0.11		mg/L		12/20/19 09:44	12/22/19 14:15	1

Eurofins TestAmerica, Seattle

# QC Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: TNS 76

Job ID: 580-91298-1

## Method: AK102 - Nonhalogenated Organics by FID (Diesel Range Organics) (Continued)

**Lab Sample ID: MB 580-319323/1-A**  
**Matrix: Water**  
**Analysis Batch: 319461**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 319323**

<i>Surrogate</i>	<i>MB MB</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>o-Terphenyl</i>	80		50 - 150	12/20/19 09:44	12/22/19 14:15	1

**Lab Sample ID: LCS 580-319323/2-A**  
**Matrix: Water**  
**Analysis Batch: 319461**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 319323**

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>
DRO (nC10-<nC25)	2.00	1.96		mg/L		98	75 - 125

<i>Surrogate</i>	<i>LCS LCS</i>	<i>Qualifier</i>	<i>Limits</i>
<i>o-Terphenyl</i>	90		50 - 150

**Lab Sample ID: LCSD 580-319323/3-A**  
**Matrix: Water**  
**Analysis Batch: 319461**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 319323**

<i>Analyte</i>	<i>Spike Added</i>	<i>LCSD Result</i>	<i>LCSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
DRO (nC10-<nC25)	2.00	2.04		mg/L		102	75 - 125	4	20

<i>Surrogate</i>	<i>LCSD LCSD</i>	<i>Qualifier</i>	<i>Limits</i>
<i>o-Terphenyl</i>	88		50 - 150

# Lab Chronicle

Client: Stantec Consulting Services Inc  
Project/Site: TNS 76

Job ID: 580-91298-1

**Client Sample ID: RW19-1**

**Date Collected: 12/09/19 13:16**

**Date Received: 12/09/19 15:55**

**Lab Sample ID: 580-91298-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	318799	12/13/19 14:46	T1W	TAL SEA
Total/NA	Analysis	AK101		1	318732	12/12/19 18:34	TL1	TAL SEA
Total/NA	Prep	3510C			319323	12/20/19 09:45	NRF	TAL SEA
Total/NA	Analysis	AK102		1	319461	12/22/19 15:20	CJ	TAL SEA

**Client Sample ID: Trip Blank**

**Date Collected: 12/09/19 12:00**

**Date Received: 12/09/19 15:55**

**Lab Sample ID: 580-91298-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	318799	12/13/19 13:31	T1W	TAL SEA
Total/NA	Analysis	AK101		1	318732	12/12/19 18:10	TL1	TAL SEA

**Laboratory References:**

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Stantec Consulting Services Inc  
Project/Site: TNS 76

Job ID: 580-91298-1

## Laboratory: Eurofins TestAmerica, Seattle

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-024	01-19-22
ANAB	Dept. of Defense ELAP	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
California	State	2901	11-05-20
Montana (UST)	State	NA	04-13-21
Oregon	NELAP	WA100007	11-06-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00039	02-10-20
Washington	State	C553	02-17-20

# Sample Summary

Client: Stantec Consulting Services Inc  
Project/Site: TNS 76

Job ID: 580-91298-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-91298-1	RW19-1	Water	12/09/19 13:16	12/09/19 15:55	
580-91298-2	Trip Blank	Water	12/09/19 12:00	12/09/19 15:55	

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











## Login Sample Receipt Checklist

Client: Stantec Consulting Services Inc

Job Number: 580-91298-1

**Login Number: 91298**

**List Source: Eurofins TestAmerica, Seattle**

**List Number: 1**

**Creator: Pilch, Andrew C**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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.	True	
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.	True	
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	

April 27, 2020

Reference: **Speedway Store 5314 (Former Tesoro 2Go Mart 76) - Installation of Remediation Well RM-19-1**

## ATTACHMENT 5

# ADEC Approval to Haul Contaminated Soil dated NRC Manifest for Drums of Soil Cuttings



**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
DIVISION OF SPILL PREVENTION AND RESPONSE  
Contaminated Sites and Prevention and Emergency Response Programs**

**Transport, Treatment, & Disposal Approval Form for Contaminated Media**

<b>DEC HAZARD/SPILL ID #</b>	<b>NAME OF SPILL OR CONTAMINATED SITE</b>	
26295	Tesoro 2Go Mart 76	
<b>SITE OR SPILL LOCATION</b>		
3600 Palmer-Wasilla Highway, Wasilla, Alaska		
<b>CURRENT LOCATION AND TYPE OF CONTAMINATED MEDIA</b>		<b>SOURCE OF THE CONTAMINATION</b>
South side of lot, near car wash entry		Drill cuttings from MW installation
<b>COMPOUNDS OF CONCERN</b>	<b>ESTIMATED VOLUME</b>	<b>DATE(S) GENERATED</b>
Benzene	two 55-gal Drums	10/20/2019
<b>POST TREATMENT ANALYSIS REQUIRED</b> (such as GRO, DRO, RRO, BTEX, and/or Chlorinated Solvents)		
None		
<b>COMMENTS</b>		
Contaminated soil will be consolidated at NRC Alaska Anchorage facility; then manifested to Columbia Ridge Landfill an EPA approved subtitle D landfill located in Arlington, OR. for final disposal.		

**Facility Accepting the Contaminated Media**

<b>NAME OF THE FACILITY</b>	<b>PHYSICAL ADDRESS/PHONE NUMBER</b>
NRC ALASKA, LLC	2020 VIKING DRIVE, ANCH AK, 99501 907-258-1558

**Responsible Party and Contractor Information**

<b>BUSINESS/NAME</b>	<b>ADDRESS/PHONE NUMBER</b>
Tesoro Refining & Marketing Company LLC	3450 S 344th Way, Suite 135, Auburn, WA / (253)896-8801
Stantec Consulting Services Inc	725 E Fireweed Lane Suite 200, Anchorage, AK / (907)266-1109

**John Marshall**

Name of the Person Requesting Approval (printed)

Signature

**Senior Environmental Scientist**

Title/Association

11/25/2019

Date

907-266-1108

Phone Number

**-----DEC USE ONLY-----**

Based on the information provided, ADEC approves transport of the above-described media for treatment in accordance with the approved facility operations plan. The Responsible Party or their consultant must submit to the DEC Project Manager a copy of weight/volume receipts of the loads transported to the facility and a post treatment analytical report. If the media is contaminated soil, it shall be transported as a covered load in compliance with 18 AAC 60.015.

**Peter Campbell**

DEC Project Manager Name (printed)

Signature

**Environmental Program Specialist III**

Project Manager Title

11-25-19

Date

907-266-3412

Phone Number

# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on white (12 pitch) typewritten)

2 Page 1 of 1

## NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No:  
**EXEMPT**

Manifest Document No: **145896A**

2. Generator Name and Mailing Address  
**STANTEC  
725 E. FIREWEED ST SUITE 200  
ANCHORAGE, AK 99503**

3. Recipient Name and Mailing Address  
**TESORO 2GO MART 76  
3600 PALMER WASILLA HWY  
WASILLA, AK 99654**

32

4. Generator's Phone ( )  
**NRC ALASKA LLC**

6. US EPA ID Number  
**AKR000004184**

A. State Transporter's ID  
**907-258-1558**

5. Transporter 1 Company Name

7. Transporter 2 Company Name

B. Transporter 1 Phone

C. State Transporter's ID

D. Transporter 2 Phone

E. State Facility's ID

9. Designated Facility Name and Site Address  
**NRC ALASKA LLC  
2020 VIKING DRIVE  
ANCHORAGE, AK 99501**

10. US EPA ID Number  
**AKR000004184**

F. Facility's Phone **907-258-1558**

11. WASTE DESCRIPTION

Containers  
No. Type

13. Total Quantity

14. Unit: WT./Vol.

HM  
a. MATERIAL NOT REGULATED BY D.O.T.

2

DM

2,500

P

12. Additional Descriptions for Materials Listed Above  
b. **EA0707 IDW BORE CUTTINGS**

H. Handling Codes for Wastes Listed Above  
**D27400**

15. Special Handling Instructions and Additional Information  
**Shipper's Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation**

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name  
**John Marshall**

Signature  
*[Signature]*

Date  
Month Day Year  
**12 | 3 | 19**

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name  
**ROY C. TOSDAL JR**

Signature  
*[Signature]*

Date  
Month Day Year  
**12 | 3 | 19**

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date  
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

Signature

Date  
Month Day Year

NON-HAZARDOUS WASTE

GENERATOR

TRANSPORTER