August 9, 2021

Erin Gleason
Contaminated Sites Program
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, AK 99501

Re: Greer Tank Facility / Draft 2020 Annual Monitoring Report

Dear Ms. Gleason

Please find the attached Draft 2020 Annual Groundwater Monitoring Report for the Greer Tank Facility in Anchorage, Alaska. The report details the 2020 annual groundwater monitoring activities, as well as SVE system O&M tasks.

If you have any questions, please feel free to contact me at (907) 341-9305.

Respectfully Submitted,

Ryan Burich
Project Geologist
Rescon Alaska, LLC

2020 ANNUAL MONITORING REPORT

GREER TANK FACILITY
2921 WEST INTERNATIONAL AIRPORT ROAD
ANCHORAGE, ALASKA

August 2021

Prepared for:

Alaska National Insurance Company

Prepared by:

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Ryan Burich
Project Geologist
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August 9, 2021
Date

Reviewed by:

Nathan Oberlee
Principal - Environmental Engineer
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August 9, 2021
Date

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ACRONYMS AND ABBREVIATIONS

18 AAC 75 ..... Title 18 of the Alaska Administrative Code Chapter 75
ADEC ..... Alaska Department of Environmental Conservation
ALS ..... ALS Environmental
bgs ..... below ground surface
COC ..... contaminants of concern
ºC ..... degrees Celsius
cDCE cis-1,2-dichloroethylene
CS-LAP ..... Contaminated Sites – Laboratory Approval Program
DO ..... dissolved oxygen
DCE 1,1-dichloroethane
Dhc ..... *Dehalococcoides mcartyii*
EBR ..... enhanced bio-remediation
EPA ..... U.S. Environmental Protection Agency
ft ..... feet
GCL ..... groundwater cleanup levels
gc/L ..... gene copies per liter
Greer ..... Greer Tank Facility
HCl ..... hydrochloric acid
IDW ..... investigation-derived waste
mg/L ..... milligrams per liter
mL ..... milliliter
MNA ..... monitored natural attenuation
mV ..... millivolts
ND ..... not detected
O&M ..... operation and maintenance
ORP ..... oxidation reduction potential
PCE ..... tetrachloroethylene
Rescon ..... Rescon Alaska, LLC
SCL ..... soil cleanup level
Stanley ..... Stanley Automotive
SVE ..... soil vapor extraction
TCE ..... trichloroethylene
tDCE trans-1,2-dichoroethylene
TOC ..... total organic carbon
µg/L ..... micrograms per liter
µg/m^3 ..... micrograms per cubic meter
VFA ..... volatile fatty acid
VOC ..... volatile organic compounds
YSI ..... YSI 556® Multi-Parameter Instrument

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1. INTRODUCTION

Rescon Alaska, LLC (Rescon) has prepared this Annual Monitoring Report to detail remedial activities associated with the annual groundwater monitoring event, as well as operation and maintenance (O&M) tasks associated with the soil vapor extraction (SVE) system, conducted at the Stanley Automotive (Stanley) property and Greer Tank Facility (Greer), respectively, in Anchorage, Alaska in 2020. The monitoring activities were conducted to assess the progress of active remediation processes on chlorinated solvent contamination in the groundwater, while the O&M tasks were completed to ensure continued optimal performance of the SVE system. Rescon conducted these activities on behalf of Alaska National Insurance Company (herein referred to as "the Client"). The site is managed under the Alaska Department of Environmental Conservation (ADEC) Contaminated Sites Program (File #: 2100.38.369/ Hazard Identification #: 1204).

1.1. Contaminants of Concern

Contaminants of concern (COCs) at the site are based on historical groundwater sampling in the area and include volatile organic compounds (VOCs), specifically tetrachloroethylene (PCE) and the associated degradation compounds trichloroethylene (TCE), 1,1-dichloroethylene (DCE), cis-1,2-DCE (cDCE), trans-1,2-DCE (tDCE), and vinyl chloride.

1.2. Project Objectives

The objectives of the groundwater monitoring event were as follows:

1. Assess the current PCE (and degradation compounds) concentrations in four of the source-area wells (MW-4, MW-104, MW-105, and MW-106);
2. Assess the remedial progress by comparing laboratory analytical results to the current ADEC Title 18 Alaska Administrative Code Chapter 75 (18 AAC 75) Table C. Groundwater Cleanup Levels (GCLs);
3. Assess the down-gradient groundwater (at sentry well MW-121) for evidence of down-gradient contaminant migration (from the source area);
4. Assess the current potential for anaerobic biodegradation by analyzing water quality, geochemical, and microbial parameters (also referred to as monitored natural attenuation [MNA] parameters);
5. Determine whether additional remedial treatment is necessary;
6. Assess the effectiveness of the SVE system at removing contaminants from the vadose zone soil by assessing contaminant concentrations in the SVE system exhaust; and
7. Ensure continued optimal contaminant removal from the vadose zone soil by the SVE system.

1.3. Scope of Work

The scope-of-work completed to meet the objectives of this monitoring event was as follows:

- Collected groundwater samples from five groundwater monitoring wells for VOC analysis.
- Collected groundwater samples from three of five monitoring wells for analysis of Dissolved Gases (Methane, Ethane, and Ethene), Total Organic Carbon (TOC), Volatile Fatty Acids (VFAs) (lactic, pyruvic, acetic, butyric, and propionic), and microbial analysis (*Dehalococcoides* [Dhc], including tceA, vcrA, and bvcA functional genes).
- Collected field measurements of the water-quality and geochemical parameters.
- Inspected and documented monitoring well and associated monument conditions.
- Performed periodic O&M assessments of the SVE system.
- Collected air samples from six individual SVE extraction lines.
- Generated this report presenting field observations, analytical results, figures, conclusions, and recommendations.
- Determined scope of continued compliance monitoring and additional treatment, based on findings.

1.4. Regulatory Framework

The regulatory framework for the groundwater monitoring event was developed under consideration of the following regulations and guidance documents:

- 18 AAC 75, ADEC Oil and Other Hazardous Substances Pollution Control, dated October 2018 (ADEC 2021).
- The ADEC Field Sampling Guidance, dated October 2019 (ADEC 2019a).
- 18 AAC 78, ADEC Underground Storage Tank Regulations, dated September 2019 (ADEC 2019b).

The groundwater samples were evaluated using the ADEC GCLs listed in Table C of 18 AAC 75.345. The groundwater cleanup levels for the site COCs are listed below in Table 1.

TABLE 1: GROUNDWATER CLEANUP LEVEL

Contaminant	Table C GCLs (ug/L) 18 AAC 75 (June 2021)
PCE	41
TCE	2.8
DCE	280
cDCE	36
tDCE	360
Vinyl Chloride	0.19

Key:

GCL	Groundwater Cleanup Level
PCE	tetrachloroethylene
TCE	trichloroethylene
DCE	1,1-dichloroethylene
cDCE	cis-1,2-dichloroethylene
tDCE	trans-1,2-dichloroethylene
ug/L	micrograms per liter

2. BACKGROUND

This section describes the site location, background, and the environmental assessment history.

2.1. Site Description and Location

The Greer property is located at 2921 West International Airport Road in Anchorage, Alaska in a commercial/industrial area in west Anchorage (Figure 1). The Greer property consists of an irregularly-shaped building surrounded by an unpaved storage yard. The Greer business operations consist of bulk storage-tank fabrication and painting. The site building houses a guest lobby, office space, restrooms and a metal fabrication shop. Two hangar tents north of the shop are utilized for painting and sand blasting activities (Figure 2).

The Stanley property is located adjacent to the northwest boundary of the Greer property. The two lots are separated by an approximately 4-foot-high concrete retaining wall. The Stanley property consists of one rectangular building housing several businesses, including an office space and a recreational vehicle rental business as shown on Figure 2. The remaining property surrounding the building is paved asphalt. A chain link fence encloses a portion of the property to the north and east of the building. The portion of the property to the south of the building is utilized for visitor parking.

The elevation of the site is approximately 80 feet above mean sea level. The Stanley property (north of the retaining wall) sits approximately 4 feet lower than the Greer property. The water table below the Stanley property has been documented between 7 feet (ft) to 11 ft below ground surface (bgs), while the water table on the Greer property is 11 ft to 15 ft bgs.

2.2. Site Background

The Greer property has been occupied by Greer Tank and Welding, since 1972. Based on limited historical records, two potential chlorinated solvent releases have been documented at the Greer property. During the winter of 1979-1980, a fire broke out at the facility burning the western portion of the property building. At the time of the fire, up to three 55-gallon drums of paint thinner, and a vat containing solvent, were located in the western end of the building. It was unconfirmed whether any contaminants were released to the environment during the fire. A second incident occurred during the summer of 1981 or 1982, when a forklift punctured a 55-gallon drum containing PCE, releasing an estimated 40 gallons of PCE directly to the soil. Resulting from those two spills, several chlorinated compounds, including PCE and the subsequent PCE degradation compounds, have been documented in the soil and groundwater at the site (spanning both properties).

2.3. Historical Environmental Activities Conducted

Multiple environmental assessments, remedial injections, and monitoring events have been performed at the Greer and Stanley properties from 1992 to present, as follows.

1. **Terrasat Environmental 1992 – 1993 (Terrasat 1993)**

- Conducted a site characterization;
- Reviewed the analytical results and determined methylene chloride and PCE in the soil and groundwater were above their respective ADEC cleanup criteria;
- Conducted an SVE pilot test; and
- Concluded that the system was effective in extracting volatile contaminants from the subsurface soil.

2. **Dowl Engineers 1993 – 2013 (Dowl 2009)**

- Operated the pilot test SVE system from 1993 to 1995;
- Decommissioned the SVE unit in 1997;
- Conducted a site reconnaissance and groundwater monitoring effort at the Stanley property; and
- Reviewed the analytical results and determined concentrations of PCE and TCE were present in the groundwater on the Stanley property above their respective ADEC Table C. GCLs.

3. **Rescon 2013 – 2014 (Rescon 2015a)**

- Continued the groundwater-monitoring program;
- Installed two additional wells (MW-120 and MW-121) to delineate the extent of the groundwater contaminant plume;
- Investigated the vapor intrusion concern for both site buildings;
- Collected soil gas and indoor air samples;
- Reviewed the analytical results and determined concentrations of site COCs were below their respective ADEC target levels for indoor air and subslab soil gas during two air sampling events; and
- Conducted a subsurface soil investigation to delineate the lateral and vertical extents of contaminated soil on the two site properties.

4. **Rescon 2015 (Rescon 2015b and 2016)**

- Performed further subsurface investigation activities (advanced additional soil borings, installed additional wells [MW-122, 123 and 124], and operated a temporary SVE pilot test system);
- Collected groundwater samples for VOC and MNA parameter analyses;
- Reviewed analytical results for VOCs and MNA parameters and determined existing groundwater chemistry was insufficient to promote natural attenuation of the site contaminants;

- Injected a chemical enhanced bioremediation (EBR) inoculant into the saturated zone throughout the site; and
- Installed a new SVE system to remediate the vadose zone soil.

5. Rescon 2016 (Rescon 2017)

- Collected groundwater samples and analyzed for VOC and MNA parameters to assess the progress of active remediation processes;
- Collected one air sample from the SVE system exhaust port for VOC analysis;
- Reviewed analytical results and determined the following:
- There were measurable contaminant reductions following the 2015 EBR injection;
    - PCE concentrations at MW-4 and MW-104 have declined by more than ten times the pre-injection levels, and there were corresponding increases in the subsequent degradation compounds;
    - PCE concentrations remained elevated at MW-106 (A trench was excavated [on the Stanley property] through the area of contamination, and proximal to MW-106, in August 2016 to install a sewer pipe. This activity may have mixed PCE-contaminated soil in the vadose zone with soil in the saturated zone and introduced additional contamination into the groundwater in this area); and
    - The SVE system was effectively removing PCE from the vadose zone source area (Rescon estimates that 5.423 kilograms [11.95 pounds] of PCE were removed from the vadose zone throughout the initial eight months of operation).

6. Rescon 2017 (Rescon 2018a and 2018b)

- Performed environmental investigation activities to evaluate the levels of PCE contamination remaining in the vadose zone soil. Soil borings were advanced in direct proximity to the 2014 soil investigation boring locations in order to assess the effectiveness of the SVE system;
- Compared the 2017 analytical results with results from the 2014 investigation, which was performed prior to the installation of the SVE system, and determined PCE concentrations in soil decreased by an average of 80%, but remained above the applicable ADEC Table B1. Method Two Soil Cleanup Level (SCL) in all of the borings except for SB-31 (located on the Stanley property approximately 15 feet west of the eastern retaining wall). The PCE concentrations were highest at the northwest corner of the Greer property (SB-7 and SB-8);
- Collected groundwater samples and analyzed for VOC and MNA parameters to assess the progress of active remediation processes;
- Collected one air sample from the SVE system exhaust port for VOC analysis;
- Reviewed analytical results from the annual monitoring event and determined the following:
    - There continued to be measurable contaminant reductions following the 2015 EBR injection;

- PCE concentrations were below the applicable ADEC Table C. GCL at monitoring wells MW-4 and MW-104, but remained above the GCL at MW-106;
- There were corresponding increases in the subsequent degradation compounds;
- Vinyl chloride concentrations remained above the ADEC Table C. GCL at the source-area wells;
- The concentration of TOC, which includes the microbial nutrient, was 21.1 milligrams per liter (mg/L). This concentration was significantly lower than the proposed concentration of 100 mg/L, which is suggested for optimal dechlorination; and
- The SVE system continues to effectively remove PCE from the vadose zone source area (Rescon estimated 6.828 kilograms [15.05 pounds] of PCE were removed from the vadose zone throughout the initial 21 months of operation.

7. Rescon 2018 (Rescon 2019a and 2019b)

- Performed environmental investigation activities to evaluate the levels of PCE contamination remaining in the vadose zone soil. Soil borings were advanced in direct proximity to the 2014 (and 2017) soil investigation boring locations in order to assess the effectiveness of the SVE system;
- Compared the 2018 analytical results with results from the 2014 investigation, which was performed prior to the installation of the SVE system;
- Reviewed analytical results and determined PCE concentrations in soils decreased to below the applicable ADEC Table B1. Method Two SCL at one of the boring locations (SB-37), but remain above the applicable ADEC SCL at two locations (SB-3 and SB-9), though significantly decreased in concentration compared to the 2014 levels;
- Conducted a second subsurface, in-situ treatment / injection event;
- Collected groundwater samples and analyzed for VOC and MNA parameters to assess the progress of active remediation processes;
- Collected one air sample from the SVE system exhaust port for VOC analysis;
- Reviewed analytical results and determined the following:
  - There were measurable contaminant reductions following the 2015 and 2018 EBR injections;
  - PCE concentrations were below the applicable ADEC GCL at monitoring wells MW-4 and MW-104, but remained above the GCL at MW-106;
  - There were corresponding increases in the subsequent degradation compounds;
  - Vinyl chloride concentrations remained above the ADEC GCL at the source-area wells;

- The concentration of TOC was 1,584 mg/l, which is a marked increase from the 2017 concentration of 21.1 mg/l. This concentration is significantly higher than the proposed concentration of 100 mg/L, which is suggested for optimal dechlorination; and
- The SVE system continues to effectively remove PCE from the vadose zone source area. (Rescon estimated 14.9 kilograms [32.8 pounds] of PCE were removed from the subsurface throughout the initial 38 months of operation.

3. FIELD ACTIVITIES

This section describes the field activities performed in October 2020 by Ryan Burich, a "qualified environmental professional" as described in 18 AAC 75.333. The monitoring activities performed at the site properties consisted of groundwater sampling, as well as general SVE O&M tasks. A description of each of the activities is provided below. Copies of the field notes and groundwater sample data sheets are provided in Appendix A. O&M forms documenting the SVE system performance, as well as adjustments, are provided in Appendix B.

3.1. Groundwater Monitoring

Rescon conducted a groundwater-sampling event on 5 October 2020 to assess the current contaminant concentrations in the groundwater and evaluate the remedial progress of the 2018 EBR injection. Groundwater samples were collected from four source-area wells (MW-4, MW-104, MW-105, and MW-106) and one down-gradient sentry wells (MW-121) on the Stanley property.

A low flow purging and sampling technique was utilized with a stainless-steel submersible pump. The process for purging and sampling was as follows:

- Put on a new pair of nitrile gloves, and verified equipment was previously decontaminated.
- Measured depth-to-water with a Solinst Model 122 water level indicator.
- Connected tubing to a SS Monsoon® stainless-steel submersible pump and placed pump approximately 0.5 ft from the bottom of the well.
- Connected the other end of the tubing to a YSI 556® Multi-Parameter Instrument (YSI) flow-through cell and began purging at a rate between 100 and 500 milliliters (mL) per minute. Verified flow rate with a graduated cylinder and stopwatch.
- Purged into a 5-gallon plastic bucket and consolidated all purge water in an appropriate 55-gallon open-top drum.
- Recorded the depth to water and water quality parameters every three to five minutes until four of the five parameters (below) reached stability:
    - pH was stable within 0.1 pH units;
    - Temperature was stable within 0.2 degrees Celsius (°C);
    - Conductivity was stable within 3%;
    - Oxidation-reduction potential (ORP) was stable within 10 millivolts (mV); or
    - Dissolved oxygen (DO) in mg/L was stable within 10%.
- Disconnected the tubing from the flow-through cell and filled three, 40-mL amber vials pre-preserved with hydrochloric acid (HCl) for VOC analysis by SW8260C.
- For wells planned to be sampled for performance monitoring parameters, sample containers were filled for additional analyses in the following order:

  - Three, 40-mL amber vials pre-preserved with HCl for dissolved gas analysis by RSK 175;
  - One, 40-mL amber vial for VFAs by customized ion chromatography;
  - One, 1-liter bottle for Gene-Trac® Dhc and functional genes by quantitative polymerase chain reaction; and
  - One, 125-mL amber bottle pre-preserved with HCl for TOC analysis by SW9060A.
- Samples collected into 40-mL vials were completely filled without any headspace remaining in the container to prevent volatilization of the target analytes.
- The water level indicator and submersible pump were decontaminated by scrubbing with an Alconox® solution and rinsing with potable water. All decontamination water was containerized and placed in a Satellite Accumulation Area (SAA) on the Greer Tank property for management as U-listed hazardous waste. Table 2 (below) shows the monitoring wells that were sampled.

TABLE 2: MONITORING WELLS SAMPLED IN OCTOBER 2020

Well	Dates Sampled	VOCs (Compliance)	Geochemical / Microbial (Performance)
MW-4	October 2020	X	X
MW-104		X	X
MW-105		X	
MW-106		X	X
MW-121		X	

VOCs = volatile organic compounds

All samples were placed in a cooler with sufficient gel ice to keep sample temperatures at 4°C ± 2°C until delivery to the ADEC-approved laboratory under standard chain-of-custody procedures. The samples were submitted to ALS Environmental – Kelso (ALS), a laboratory approved under the ADEC's Contaminated Sites – Laboratory Approval Program (CS-LAP). A lab-provided trip blank was transported with the cooler. A copy of the chain-of-custody is included with the laboratory analytical report provided in Appendix C.

A quality control sample (field duplicate) was collected and prepared to assess potential errors introduced during sample collection, handling, and analysis. The field duplicate sample was collected for the VOC analytical method (SW8260C) and submitted blind to the project laboratory.

Additional MNA parameters were collected onsite. Nitrate, ferrous iron, and sulfate concentrations were field-measured at each well utilizing the Hach DR900 Multi-Parameter Portable Colorimeter. Results were recorded on groundwater sample data sheets (Appendix A), as well is in Table 7.

3.2. SVE System

3.2.1. Periodic Operations and Maintenance

Rescon performed periodic O&M assessments of the SVE system during the months of January 2020 through December 2020. During these assessments, Rescon balanced and/or optimized the airflow in the conveyance lines to ensure optimal contaminant removal. This was accomplished by adjusting the flow rates to the extraction points in order to achieve adequate vacuum influence across the site. Additional tasks included flow line and moisture separator draining, flow meter cleaning, extraction point cleaning, and general system inspections / repairs.

System measurements, changes to the system conditions, and tasks performed were documented on site-specific O&M data sheets. Copies of the completed O&M data sheets are provided in Appendix B.

3.2.2. SVE Effluent Sampling

One air sample was collected from each of the six SVE system exhaust lines (6 total) to measure the concentrations of VOCs currently being removed from the vadose zone soil at each of the extraction points, as well as to calculate the mass of VOCs being extracted annually.

Each sample was collected from a previously-installed sample port on each extraction point exhaust line. Polyethylene tubing was connected from the sample port to a 6-liter, 100% batch-certified, summa canister and secured on both ends with pneumatic push-to-connect and/or compression-style fittings. The sample port and sample canister valves were then opened to collect the air sample. The valves were closed when the vacuum gauge, attached to the sample canister, indicated a vacuum of at least 5 inches Hg still remained in the canister. The samples were submitted to ALS in Simi Valley, CA, a laboratory approved under the ADEC's CS-LAP, for analysis of VOC concentrations using U.S. Environmental Protection Agency (EPA) Method TO-15.

3.3. Deviations

There were no deviations from the ADEC-approved work plan for the 2020 annual monitoring event.

3.4. Investigative Derived Waste

The investigation derived waste (IDW) for the 2020 groundwater-monitoring event consisted of purge and decontamination water, disposable sampling equipment, and administrative waste (paper towels, spent personal protective equipment etc.). The purge and decontamination water were placed into an appropriate, UN-rated 55-gallon, open-top steel drum staged onsite at the Greer Tank property. The drum was labeled with content and contact information, as well as the generation date. Rescon will request approval from the ADEC site project manager to dispose of the contents as Resource Conservation and Recovery Act U-listed hazardous waste, U-210, per the EPA guidance

document titled *Management of Remediation Waste Under RCRA* (EPA 1998b) when subsequent monitoring events completely fill the drum.

The onsite drums were filled during multiple groundwater monitoring events (2018 – 2020) and one soil investigation (2018). Rescon subcontracted NRC Alaska (a US Ecology Company) to manifest and transport the drums of waste to US Ecology in Grandview, Idaho, a RCRA-permitted Treatment, Storage, and Disposal Facility. The ADEC's Transport, Treatment, and Disposal Approval Form, hazardous waste manifest, and certificates of disposal are shown in Appendix F. The IDW types and approximate volumes are summarized below in Table 3.

TABLE 3: 2020 INVESTIGATION DERIVED WASTE SUMMARY

Manifest Number	Container	Contents	Approximate Weight (pounds)
152479A	55-gallon, steel, open-top drum	Purge water, decontamination water	400
	55-gallon, steel, open-top drum	Soil cuttings	150

4. RESULTS

ALS, a laboratory approved under the ADEC's CS-LAP, located in Kelso, Washington, performed the analysis of the groundwater and air samples for VOC concentrations, using Methods SW8260C and TO-15, respectively. ALS also performed the analyses of MNA / performance-monitoring parameters (dissolved gases and TOC concentrations) that could not be measured in the field.

SiREM Laboratory in Guelph, Ontario conducted the analyses of the groundwater samples for additional MNA / performance-monitoring parameters including VFAs (lactic, pyruvic, acetic, butyric, and propionic) and microbial (Dhc, including tceA, vcrA, and bvcA functional genes) analyses.

The laboratory analytical reports are provided in Appendix C. A Data Quality Assessment is included in Appendix D. An ADEC Laboratory Data Review Checklist for each sample delivery group can be found in Appendix E.

Field-measured, performance monitoring parameters were assessed with the use of a YSI and a Hach DR900 Multi-Parameter Portable Colorimeter, and results were recorded on groundwater sample data sheets, as seen Appendix A.

4.1. Compliance Monitoring Results

A summary of the analytical results for the groundwater samples collected in October 2020 is provided in Table 5 and on Figure 2. The associated laboratory analytical reports are included in Appendix C. The analytical results from the six monitoring wells were compared to the ADEC Table C. GCLs in 18 AAC 75 Oil and Other Hazardous Substances Pollution Control (ADEC 2021). Any GCL exceedances are highlighted in Table 5, Figure 2, and described below.

In addition, a comparison of the historical COC concentrations at the wells situated within and down-gradient of the contaminant plume is presented on Table 6. The historical data on Table 6 is oriented so as to separate the data collected before and after the 2015 and 2018 injections of the EBR amendment. A summary of the analytical results for the site COCs is provided below.

- PCE was detected in samples collected from all wells (MW-4, MW-104, MW-105, MW-106, and MW-121). Concentrations at these wells ranged from 0.15 micrograms per liter (µg/L) to 82 µg/L. The detected concentrations at MW-105 (47 µg/L) and MW-106 (82 µg/L) were the only exceedances of the ADEC GCL of 41 µg/L.
- TCE was detected in samples from wells MW-4, MW-105, and MW-106. Concentrations at these wells ranged from 0.21 µg/L to 3.4 µg/L. The detected concentration at MW-106 (3.4 µg/L) was the only exceedances of the ADEC GCL of 2.8 µg/L.
- DCE was not detected in any of the collected groundwater samples.

- The DCE isomer, cDCE, was detected in samples from wells MW-4, MW-104, MW-105, and MW-106. Concentrations at these wells ranged from 1.2 µg/L to 26 µg/L. All detected concentrations were below the ADEC GCL of 36 µg/L.
- The DCE isomer, tDCE, was detected in samples from wells MW-4, MW-104, MW-105, and MW-106. Concentrations at these wells ranged from 0.090 µg/L to 1.6 µg/L. All detected concentrations were below the ADEC GCL of 360 µg/L.
- Vinyl chloride was detected in samples from wells MW-4, MW-104, MW-105, and MW-106. Concentrations at these wells ranged from 0.15 µg/L to 1.4 µg/L. The detected concentrations at all wells (except MW-104) were above the ADEC GCL of 0.19 ug/L.

4.2. Performance Monitoring Results

Performance monitoring results are compared to the thresholds shown below in Table 4.

Table 4: Performance Monitoring Parameter Summary

Parameter	Description	Threshold Level	Significance of Threshold Level
pH	pH is a measure of the acidity or alkalinity of the groundwater.	5 < pH < 9	Optimal range for reductive pathway.
Temperature	Groundwater temperature affects the metabolic rate of bacteria. Groundwater temperatures less than 5°C tend to inhibit biodegradation. Biodegradation rates typically double for every 10°C increase in water temperature.	> 20°C	Biochemical process accelerated
Dissolved Oxygen	Depressed DO levels indicate that the reductive pathway is possible.	< 0.5 mg/L	Reductive pathway is not suppressed.
Oxidation Reduction Potential	ORP is an indicator of oxidation potential (aerobic) or reductive potential (anaerobic) of the groundwater system.	< 50 mV < -100 mV	Reductive pathway possible Reductive pathway likely.
Dissolved Iron	Ferrous iron (iron II) is produced when ferric iron (iron III) is used as an electron acceptor during anaerobic biodegradation.	>1 mg/L	Indicative that reductive pathway is possible.
Methane	The presence of methane in groundwater is indicative of strongly reducing conditions. Methanogenesis generally occurs after the oxygen, nitrate, and sulfate have been depleted in the treatment zone.	> 0.5 mg/L	Indicative that reductive pathway is likely but may also compete with reductive dechlorination process.
Ethane and Ethene	Produced during reductive dechlorination.	> 0.01 mg/L	Indicative that reductive pathway is likely.
Total Organic Carbon	Carbon is the energy source that drives reductive dechlorination.	> 20 mg/L	Energy source needed to drive reductive dechlorination.
Sulfate	Natural occurring electron acceptor	< 20 mg/L	Below these concentrations, conditions are conducive for reductive dechlorination. At higher concentrations, may compete with reductive pathway.
Nitrate	Naturally occurring electron acceptor	< 1 mg/L	
Volatile Fatty Acids	Used as electron donor to provide energy to microorganisms that facilitate reductive dechlorination. Fermentation of VFAs produces molecular hydrogen for anaerobic dechlorination".	> 0.01 mg/L	Presence indicates substrate / nutrient distribution, as well as potential for molecular hydrogen generation.

4.2.1. Field-Measured Performance-Monitoring Results

Field-measured parameters were measured and recorded at the four monitoring wells (MW-4, MW-104, MW-105, and MW-106) prior to collecting groundwater samples. Results can be found in Table 7 and on the Groundwater Sample Data Sheets in Appendix A, as well as displayed in the bullets below.

- The pH values ranged from 8.35 to 8.79. This range was within the optimal range of 5 - 9 for reductive dechlorination. However, it appears the pH probe on the rented YSI may have malfunctioned, as the pH range for the previous monitoring events in 2019 ranged from 4.93 to 6.28 in June 2019, and from 5.86 to 6.32 in January / February 2020. Additionally, the pH of groundwater at the site has historically been below 8.
- The temperatures ranged from 9.89 °C to 11.97 °C. These temperatures were below the 20°C threshold for accelerated biochemical processes.
- The DO ranged from 0.36 mg/L to 2.51 mg/L. Groundwater at three of the wells (MW-104, MW-105, and MW-106) had DO concentrations below the 0.5 mg/L threshold indicating the reductive pathway is likely not suppressed at these two locations. Anaerobic bacteria generally do not tolerate dissolved oxygen concentrations greater than about 0.5 mg/L (EPA 1998a), as measured at location MW-4 (2.51 mg/L).
- The ORP ranged from -102.3 mV to -107.2 mV. Groundwater at all wells had ORP values below the 100-mV threshold indicating the reductive pathway is likely at these locations. However, it appears the potentially-malfunctioning pH probe on the rented YSI may have affected the ORP readings, as the ORP range for the previous monitoring events in 2019 ranged from 125.7 mV to 93.1 mV in June 2019, and from 68.5 mV to 38.1 mV in January / February 2020.
- Nitrate concentrations ranged from not detected (ND) to 1.8 mg/L. Groundwater at two of the wells (MW-105 and MW-106) had nitrate concentrations below the 1 mg/L threshold indicative of conditions conducive for reductive dechlorination. The range of values (exceeding the 1 mg/L threshold) observed at the other two wells (MW-4 and MW-104) indicates nitrate may be competing as an electron acceptor at those locations.
- Dissolved iron concentrations ranged from 0.03 mg/L to 1.12 mg/L. Groundwater from wells MW-4, MW-104, and MW-105 contained dissolved iron concentrations that were above, or slightly below, the 1 mg/L threshold. Dissolved iron concentrations above this threshold are generally indicative of anaerobic biodegradation processes.
- Sulfate concentrations in groundwater from all wells were ND. Concentrations below the 20 mg/L threshold indicate conditions are conducive for reductive dechlorination.

4.2.2. Laboratory-Analyzed Performance-Monitoring Results

- Methane concentrations ranged from 4 mg/L to 6.9 mg/L. Methane concentrations in groundwater from all source-area wells were above the 0.5 mg/L threshold indicative of strongly reducing conditions favorable for dechlorination. Methanogenesis is generally observed as concentrations of the competing electron acceptors, oxygen, nitrate, and sulfate, have been depleted in the groundwater.
- The combined ethane / ethene concentrations ranged from ND to 0.00184 mg/L. These concentrations were less than the threshold level of 0.01 mg/L. However, the ethene and ethane are degradation compounds of vinyl chloride, and their presence indicates there is likely a reductive pathway in the groundwater at the source-area wells.
- The microbial species Dhc was present in groundwater samples at concentrations ranging from 2 X 10^4 to 1 X 10^6 gene copies per liter (gc/L). The 1 X 10^6 gc/L concentration at MW-4 indicates that the sample contains a moderate concentration of Dhc which may, or may not be, associated with observable dechlorination activity. The 4 X 10^5 gc/L and 2 X 10^4 gc/L concentrations at MW-104 and MW-106, respectively, indicate low concentrations that are sub-optimal for high rates of dechlorination.
- The vinyl chloride reductase gene, vcrA, which plays a role in converting cDCE and vinyl chloride to ethene, was detected at concentrations ranging from 2 X 10^4 gc/L to 1 X 10^6 gc/L. Concentrations detected in samples from wells MW-4 and MW-104 exceeded the minimum recommended concentration of 1 X 10^5 gc/L necessary for robust vinyl chloride dichlorination; while the concentration detected at MW-106 was below the recommended concentration. The other vinyl chloride reductase gene, bvcA, which also plays a role in converting cDCE and vinyl chloride to ethene, was detected in wells MW-4 and MW-104 at concentrations of 7 X 10^5 gc/L and 1 X 10^6 gc/L, respectively. The concentrations detected at these wells exceeded the minimum recommended concentration of 1 X 10^5 gc/L necessary for robust vinyl chloride dechlorination, while bvcA was not detected in well MW-106. Additionally, the TCE reductase gene, tceA, was detected in samples from all source area wells. A tceA detection indicates the Dhc population has the potential to dechlorinate TCE to cDCE and vinyl chloride, and vinyl chloride to ethene. These results indicate concentrations of functional genes are generally favorable for complete dechlorination in groundwater in the vicinity of wells MW-4 and MW-104, while functional genes are absent or sub-optimal in groundwater from well MW-106.
- TOC concentrations ranged from 6.9 mg/L to 34 mg/L. The TOC concentration at well MW-104 remained above the threshold level of 20 mg/L, while the concentrations at wells MW-4 and MW-106 were below the 20 mg/L threshold. The concentration at well MW-104 suggests the nutrient (electron donor) source at this location is likely sufficient to drive dechlorination processes. The TOC

concentrations of 6.9 mg/L and 18.9 mg/L at wells MW-106 and MW-104, respectively, were below the recommended threshold, and indicate the electron donor at these locations is not likely sufficient to support dechlorination processes.

- VFAs were detected in samples from two of the source-area wells (MW-4 and MW-104) at concentrations ranging from 2.7 mg/L to 17 mg/L. The concentrations detected at these two wells exceeded the recommended minimum concentration of 0.1 mg/L. This indicates there is likely adequate electron donor at these locations; however, VFAs in these samples were predominantly acetate. Acetate on its own is not an effective electron donor for complete reductive dechlorination. A higher concentration of VFAs were detected during the June 2019 sampling event. The VFAs at that time were diverse and not predominantly acetate. Additionally, the sample collected from MW-106 did not contain detectable concentrations of VFAs, which indicates an inadequate fermentable substrate (carbon source) at that location.

Table 7 presents the results of the MNA / performance monitoring parameters along with an interpretation of the potential for anaerobic biodegradation based on the parameter results. The parameter concentrations in Table 7 were determined using a combination of field-testing (i.e. YSI 556 Water Quality Meter and Hach test kits) and laboratory analyses. The table includes the parameter results for the most recent pre- and post-injection monitoring events for comparison of the changes to the degradation potential at each well, over time.

The interpretations of the dechlorination potential for each well on Table 7 were developed based on an aggregation of the natural-attenuation scoring criterion of each MNA / performance monitoring parameter. Rescon utilized the scoring criteria for interpreting dechlorination potential as established in the EPA Guidance Document: *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater* (EPA 1998a). The scoring criteria presented in Tables 2.3 of the guidance document assigned a comparable weighted value for quantifying the potential attenuation capability for each parameter. Table 2.4 in the document assigned an overall interpretation of the attenuation potential based on the sum of the parameter weighted values. Table 2.4 developed four interpretation categories (Inadequate, Limited, Adequate and Strong) for determining evidence for dechlorination based on the total of the parameter weighted values. Table 7, in this report, utilizes that scoring criteria for the individual and composite parameter weighted values to determine the biodegradation potential at each well during each monitoring event.

Review of the composite MNA scoring classifications for source area wells MW-4, MW-104, and MW-106 indicates scoring has historically fluctuated between Limited and Adequate evidence of dechlorination following the EBR injections. The results from the most recent monitoring event indicated adequate dechlorination conditions at source-area wells MW-4, MW-104 and MW-106, as follows:

- The total weighted value score for MW-4 has increased 1 point since the January 2020 sampling event, indicating evidence for biodegradation at this well remains Adequate.
- The total weighted value score for MW-104 has increased 2 points since the January 2020 sampling event, indicating evidence for biodegradation at this well is now considered Adequate.
- The total weighted value score for MW-106 has increased 2 points since the January 2020 sampling event, indicating evidence for biodegradation at this well is now considered Adequate.

4.3. SVE Air Sampling Results

Analytical results for the air samples collected from each of the six SVE system exhaust lines in August 2020 are provided in Table 8. The cumulative effluent concentrations are displayed in Table 9. The associated laboratory analytical report is included in Appendix C. A summary of the analytical results for the site COCs is provided below.

- PCE was detected in samples collected from all six SVE exhaust lines / extraction points (SVE-1, SVE-2, SVE-3, SVE-4, SVE-H1, and SVE-H2). Concentrations ranged from 86 micrograms per cubic meter (µg/m^3) to 1,100 µg/m^3.
- TCE was detected in samples from two of the exhaust lines / extraction points (SVE-1 and SVE-2). Concentrations at these wells were 19 µg/m^3 and 9 µg/m^3, respectively.
- DCE was not detected in any of the collected sampled.
- The DCE isomer, cDCE, was detected in samples from two of the exhaust lines / extraction points (SVE-1 and SVE-2). Concentrations at these wells were 19 µg/m^3 and 13 µg/m^3, respectively.
- The DCE isomer, tDCE, was detected in samples from all six SVE exhaust lines / extraction points (SVE-1, SVE-2, SVE-3, SVE-4, SVE-H1, and SVE-H2). Concentrations ranged from 2.3 µg/m^3 to 6.9 µg/m^3.
- Vinyl chloride was not detected in any of the collected sampled.

5. QUALITY ASSURANCE REVIEW

The data quality assessment was conducted by the Corvid, LLC Senior Chemist. The review and data qualification were conducted according to the USEPA National Functional Guidelines for Organic Superfund Methods Data Review (EPA 2017), accepted through reference by the ADEC per page 10 of the Field Sampling Guidance (ADEC 2019). This assessment included review of the K2009514ALS Kelso, WA and Simi Valley, CA report, and the completion of the ADEC Data Review Checklist. The laboratory reported many analytes that were not considered COCs as will be pointed out in the following sections. The data quality objectives for this project defines the COCs as follows: PCE, TCE, 1,1-DCE, cDCE, tDCE, and vinyl chloride. To evaluate natural attenuation, ethane, ethene, methane, and TOC, select samples were collected.

Samples collected on October 15, 2020 included six groundwater samples and a trip blank. All samples and the trip blank were analyzed by SW8260C for VOCs. Select samples (MW-104-20-F, MW-105-20-F, MW-106-20-F, and MW-4-20-F) were analyzed by a modified version of RSK-175 for methane, ethane, and ethene. Samples MW-104-20-F, MW-106-20-F, and MW-4-20-F were analyzed by SW5310C for TOC.

All reporting limits were below the established action limits.

The method and laboratory quality control parameters were assessed to determine if the data quality meets the project objectives and if failures impact the usability of the data. All criteria were met except for the following, where sample results were impacted:

5.1. Holding Times

All samples analyzed by Modified RSK-175 were analyzed past the 14-day holding time. All positive results are considered (H-J).

5.2. Continuing Calibration Verification (CCV)

The recovery criteria for vinyl chloride in the CCV associated with samples analyzed 10/23/2020 did not meet established method criteria. All vinyl chloride results are considered estimated (CCV-J).

5.3. Laboratory Control Samples

All results (non-detected and detected) for ethene in this project are considered (L-UJ or L-J).

5.4. Method Blanks and Trip Blanks

The method blanks and trip blank did not contain contaminates above the reporting limit in the project samples.

5.5. Field Duplicate Samples

All acceptance criteria were met.

A 100% completeness was achieved, and all results are acceptable as qualified to support project decisions and none of the results were rejected.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1. Groundwater Monitoring

Rescon conducted the 2020 annual groundwater monitoring event to assess current concentrations of the contaminants of concern, as well as monitor remedial progress, in impacted groundwater at the site. Review of the analytical results from this event (provided in Table 5 and on Figure 2) indicates additional EBR amendments may need to be injected into the groundwater, as concentrations of PCE and degradation compounds at wells MW-4, MW-105, and MW-106 continue to exceed applicable GCLs and have remained relatively stable since the last annual monitoring event.

6.1.1. Contaminants of Concern

The PCE concentrations at wells MW-105 and MW-106 were 47 ug/L and 82 ug/L, respectively, and remain above the GCL of 41 ug/L. The concentration detected at MW-106 has decreased by approximately 25% from the concentration spike of 110 ug/L observed in December 2016. Additionally, well MW-105 (located approximately 15 feet northwest of MW-106) was added to the annual monitoring plan in 2019, and the PCE concentration at this well remains slightly above the applicable GCL. This well was last sampled in 2013, and results at that time indicated PCE had reduced from 30 ug/L (in 2011) to 9.9 ug/L (in 2013). The increase in PCE concentration to 47 ug/L (in 2020) at this well is similar to the increase observed at well MW-106 in December 2016. The cause of this is unknown; however, it was observed that a trench was excavated through the area of known contamination, and proximal to both MW-106 and MW-105, in August 2016, to install a sewer pipe from a vehicle wash area located on the east side of the Stanley property. It is possible that PCE-contaminated vadose-zone soil was inadvertently mixed with saturated zone soil during that project and may have contributed to a spike in the PCE concentration in the groundwater at that time.

Additionally, concentrations of PCE degradation compounds continue to decline in groundwater at the site. However, vinyl chloride concentrations remain above the 0.19 ug/L GCL at wells MW-4, MW-105, and MW-106 and appear relatively stable. Additionally, the TCE concentration at well MW-106 remains slightly above the 2.8 ug/L GCL and is also stable. It is common, and expected, for concentrations of PCE degradation compounds such as TCE and vinyl chloride to initially increase, then gradually decrease, as part of the reductive dechlorination process. The initially-observed increases in these degradation compounds, as well as subsequent decreases, indicates the subsurface EBR amendments were generating positive results. However, COC concentrations appear to be stable or fluctuating (above applicable GCLs), which indicates additional EBR amendments should be injected into groundwater at the site to facilitate continued reductive dechlorination (resulting in decreases in COC concentrations).

Charts 1, 2, and 3 (MW-4, MW-104, and MW-106, respectively) display molar concentrations (over time) of PCE, TCE, DCE, and vinyl chloride, as well as the sum of the molar concentrations. The charts show decreases in PCE concentrations (after the

2015 and 2018 EBR injections), followed by the subsequent increases and decreases of the degradation compound concentrations at each well location. Additionally, Chart 3 displays the spike in molar concentrations following the trenching activities through the site in 2016.

Figure 3 shows the current approximate extents of contaminant plumes (PCE, TCE, and vinyl chloride) in groundwater at the site, based on the October 2020 analytical results. It should be noted that PCE was detected for the first time at well MW-121, one of the downgradient sentry wells, located approximately 75 feet west of the zone of contamination. The detected concentration of 0.15 ug/L is well-below the GCL of 41 ug/L and is likely the result of cross-contamination due to inadequate decontamination of non-dedicated sampling equipment. A groundwater sample will be collected from this well during the 2021 annual monitoring event in order to verify this assumption.

Rescon recommends that the groundwater continue to be monitored annually for VOCs until offsite (Stanley property) groundwater contaminants of concern reduce below their respective ADEC groundwater cleanup levels.

6.2. Monitored Natural Attenuation Parameters

Review of the MNA parameter results on Table 7 indicates conditions for reductive dechlorination are generally adequate in the area of impact; however, the groundwater sample from MW-106 contained a low concentration of total organic carbon (TOC) (less than the prescribed 20 mg/L), and volatile fatty acids (VFAs) were not detected at this time. VFAs are necessary for sustained reductive dechlorination conditions. TOC and VFAs are further discussed below in Section 6.3.2 and Section 6.3.3.

Rescon recommends that the groundwater continue to be monitored for MNA parameters in ensure the appropriate actions can be taken to optimize the reductive dechlorination process.

6.3. EBR Performance Monitoring Results

The previously injected EBR solution (*Dehalococcoides mccartyi* [Dhc] and Emulsified Lecithin Substrate [ELS]) provided specific anaerobic bacteria (Dhc) to facilitate dechlorination of COCs in groundwater at the site. These bacteria function optimally in an anaerobic (oxygen deficient) environment. The carbon source (ELS) was necessary to act as an electron donor for existing aerobic bacteria to drive down oxygen levels. The fermentation of this carbon source (ELS) by the aerobic bacteria generates VFAs. The VFAs provide a nutrient source for the injected bacteria (Dhc), as well as provide molecular hydrogen (H_2) as an electron donor for reductive dechlorination.

Groundwater samples were collected from source-area wells MW-4, MW-104, and MW-106 to quantify the previously-injected microbial population (Dhc) and electron donor solution (ELS), as well as VFAs, concentrations per liter of groundwater in the source area of the site.

6.3.1. Microbial (*Dehalococcoides mccartyi)* Population

The Gene-Trac Dhc-Total *Dehalococcoides* Assay indicates a Dhc population range of 2 X 10^4 gc/L to 1 X 10^6 gc/L. These low to moderate concentrations of Dhc are sub-optimal for high rates of dechlorination and may, or may not be, associated with observable dechlorination activity.

The Gene-Trac Functional Gene Assay indicates the Dhc population has concentrations of all functional genes (vcrA, bvcA, and tceA). The vinyl chloride reductase gene, vcrA, which plays a role in converting cDCE and vinyl chloride to ethene, was detected in all three source-area wells sampled at concentrations ranging from 2 X 10^4 gc/L to 1 X 10^6 gc/L. Concentrations detected in samples from wells MW-4 and MW-104 exceeded the minimum recommended concentration of 1 X 10^5 gc/L necessary for robust vinyl chloride dechlorination, while the concentration detected at MW-106 was below the recommended concentration. The other vinyl chloride reductase gene, bvcA, which also plays a role in converting cDCE and vinyl chloride to ethene, was detected in samples from wells MW-4 and MW-104 only and at concentrations ranging from 7 X 10^5 gc/L and 1 X 10^6 gc/L, respectively. The concentrations detected at wells MW-4 and MW-104 exceeded the minimum recommended concentration of 1 X 10^5 gc/L necessary for robust vinyl chloride dechlorination, while bvcA was not detected in the groundwater sample from well MW-106. Additionally, the TCE reductase gene, tceA, was detected in samples from all source area wells. A tceA detection indicates the Dhc population has the potential to dechlorinate TCE to cDCE and vinyl chloride, and vinyl chloride to ethene.

These results indicate concentrations of functional genes are generally favorable for complete dechlorination in groundwater in the vicinity of wells MW-4 and MW-104, while functional genes are absent or sub-optimal in groundwater from well MW-106.

Rescon recommends injecting an additional volume of microbial culture in groundwater at the site, as well as continuing to assess groundwater for microbial populations annually to ensure the maintenance of optimal remedial conditions.

6.3.2. Electron Donor (ELS)

As stated above in Section 6.2, the previously-injected ELS provides a surplus carbon source (measured as TOC) that will be readily utilized as an electron donor by the existing aerobic microbes and result in the increased consumption of dissolved oxygen (electron acceptor) in the groundwater. The amendment will effectively create an oxygen depleted (anaerobic) environment where by reductive dechlorination processes through biodegradation can occur.

The TOC concentrations dropped from a range of 15.9 mg/L to 78 mg/L in January / February 2020 to a range of 6.9 mg/L to 34 mg/L in October 2020. The TOC concentration at well MW-104 remained above the threshold level of 20 mg/L at the October 2020 sampling event. The concentration at MW-104 suggests the carbon (electron donor) source at this location is likely sufficient to drive dechlorination processes. However, the TOC concentrations of 6.9 mg/L to 18.9 mg/L at MW-106 and MW-4, respectively, were

below the recommended threshold, and indicate the electron donor at these locations are not likely sufficient to support dechlorination processes.

Rescon recommends an additional application of carbon substrate, such as the previously injected ELS, to maintain optimal anaerobic conditions for reductive dechlorination. Rescon also recommends that groundwater continue to be assessed for TOC concentrations annually to ensure the maintenance of optimal remedial conditions.

6.3.3. Volatile Fatty Acids

VFAs are produced by the degradation (fermentation) of the injected carbon substrate (ELS) by aerobic bacteria. The injected anaerobic bacteria (Dhc) utilize the VFAs as a nutrient source, while existing microbes ferment the VFAs and generate H_2 as a byproduct. The anaerobic bacteria (Dhc) utilize the molecular hydrogen as an electron donor during the reductive dechlorination process.

VFAs were detected in samples from two of the three source area wells sampled (MW-4 and MW-104) at concentrations of 2.7 mg/L and 17 mg/L, respectively. These concentrations have decreased substantially from the total concentration of 1,584 mg/L detected at MW-4 after the 2018 EBR injection, but continue to exceed the recommended minimum concentration of 0.1 mg/L. The sample collected from MW-106 during the October 2020 sampling event did not contain detectable concentrations of VFAs, which indicates an inadequate fermentable substrate (carbon source) at that location.

A lack of VFAs (less than 0.1 mg/L) indicates that additional carbon substrate (electron donor) is required (Air Force Center for Environmental Excellence, Naval Facilities Engineering Service Center, and Environmental Security Technology Certification Program 2004).

Rescon recommends an additional application of carbon substrate, such as the previously injected ELS, to generate additional VFAs. Rescon also recommends that the groundwater continue to be assessed for VFA concentration annually to ensure the maintenance of optimal remedial conditions.

6.4. SVE Operation

Rescon performed O&M tasks on the SVE system throughout the 2020 monitoring season to maintain optimal system parameters. Effluent air samples were also collected from each of the six extraction lines in order to determine which of the six extraction points contained relatively higher concentrations of PCE (See analytical results on Table 8).

The estimated contaminant mass removal rate was calculated using the average of the six vapor contaminant concentrations and the corresponding SVE system flow rate (See Chart 4). The cumulative contaminant mass removed was then calculated by taking an average of the two most recent mass removal rates and multiplying by the length of time that had elapsed between the two events (see Table 9).

The most-recent calculation indicates the SVE system continues to effectively remove PCE (and degradation daughter products) from the vadose zone source area at the site. Rescon estimates that 1.5 kilograms (3.3 pounds) of PCE were removed from the

subsurface since the last SVE effluent monitoring event on 21 January 2019 (18-month period). Cumulatively, 16.4 kilograms (36.1 pounds) of PCE were removed from the subsurface throughout the SVE system's 57 months of operation.

Based on review of the analytical results, Rescon does not yet recommend taking any of the SVE wells offline that display relatively lower VOC concentrations, as the changes in VOC concentrations are not yet asymptotic (less than 10% change / decrease between sampling events).

Additionally, Rescon recommends continuing O&M assessments of the SVE system to ensure continued optimal contaminant removal. Continued monitoring of the system remains necessary, as the system periodically has been affected by intermittent power outages at the Greer Tank property.

7. REFERENCES

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TABLES

TABLE 5
GROUNDWATER - COC ANALYTICAL RESULTS
2020 ANNUAL MONITORING REPORT
GREER TANK
ANCHORAGE, ALASKA

Sample ID:	ADEC Table C Groundwater Cleanup Level (in µg/L) [1]	MW-4	MW-104	MW-105	MW-106 (MW-107 as FD)	MW-121
Sample Time:		**1305**	**1445**	**1630**	**1100**	**1730**
Sample Date:		**10/15/2020**	**10/15/2020**	**10/15/2020**	**10/15/2020**	**10/15/2020**
Volatile Organic Compounds (EPA 8260C)		all results in µg/L				
Tetrachloroethene	41	**0.65**	**0.72**	**47**	**82**	0.15
Trichloroethene	2.8	**0.21 J**	ND	**1.2**	**3.4**	ND
1,1-Dichloroethene	280	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	36	**5.8**	**1.2**	**13**	**26**	ND
trans-1,2-Dichloroethene	360	**1.6**	**0.090 J**	**0.22 J**	**0.32 J**	ND
Vinyl chloride	0.19	**1.4**	**0.15**	**0.35**	**0.49**	ND

Notes and Abbreviations:

[1] ADEC Table C Groundwater Cleanup Levels; 18 AAC 75 "Oil and Other Hazardous Substances Pollution Control"; June 24, 2021.

Results above ADEC cleanup values are red, underlined & emboldened. Detected results are emboldened.

Only contaminants of concern are tabulated above; remaining results were not detected or were below cleanup levels.

ADEC = Alaska Department of Environmental Conservation

µg/L = micrograms per liter

J = The result is an estimated value

ND = Analyte was analyzed for, but not detected at or above the method reporting limit and/or the method detection limit

TABLE 6
GROUNDWATER - HISTORICAL ANALYTICAL RESULTS
2020 ANNUAL MONITORING REPORT
GREER TANK
ANCHORAGE, ALASKA

Date Collected			2011	Aug-13	May-15		Nov-15	May-16		Dec-16	Dec-17		Jan-19	Jun-19	Jan-20	Oct-20
Well Location	**Analyte**	**ADEC Table C Groundwater Cleanup Level (in µg/L) (1)**	**Results in ug/L**													
MW-4	Tetrachloroethene	41	108	134	150		120	0.15 J		0.37 J	0.35 J		2.7	2.3	0.37 J	0.65
	Trichloroethene	2.8	2.1	2.2	3.8		9.8	ND		ND	0.14 J		0.70	0.44 J	0.24 J	0.21 J
	1,1-Dichloroethene	280	--	ND	ND		0.080 J	0.96 J		0.22 *J*	0.10 J		ND	ND	ND	ND
	cis-1,2-Dichloroethene	36	--	1.39	21		42	420 *D*		180 *D*	80		26	8.4	12	5.8
	trans-1,2-Dichloroethene	360	--	ND	0.25		6.1	7.7		6.5	4.5		2.5	0.94	2.3	1.6
	Vinyl chloride	0.19	--	ND	ND		1.5	3.4		5	7.4		3.3	1.5	2.7	1.4
MW-104	Tetrachloroethene	41	NS	37.6*	NS		NS	0.31 *J*		0.46 *J*	0.33		NS	0.42 J	0.34 J	0.72
	Trichloroethene	2.8	NS	0.4	NS		NS	ND		0.11 *J*	ND		NS	ND	ND	ND
	1,1-Dichloroethene	280	NS	ND	NS		NS	0.16 *J*		ND	ND		NS	ND	ND	ND
	cis-1,2-Dichloroethene	36	NS	ND	NS		NS	58		13	5.2		NS	3.7	2.0	1.2
	trans-1,2-Dichloroethene	360	NS	ND	NS		NS	0.47		0.56	0.22		NS	0.18 J	0.19J	0.090 J
	Vinyl chloride	0.19	NS	ND	NS		NS	1.1		2.8	0.71		NS	0.20 J	0.24 J	0.15
MW-105	Tetrachloroethene	41	30	9.9	NS		NS	NS		NS	NS		NS	NS	44	47
	Trichloroethene	2.8	--	0.3	NS		NS	NS		NS	NS		NS	NS	1.3	1.2
	1,1-Dichloroethene	280	--	ND	NS		NS	NS		NS	NS		NS	NS	ND	ND
	cis-1,2-Dichloroethene	36	6.8	4.8	NS		NS	NS		NS	NS		NS	NS	11	13
	trans-1,2-Dichloroethene	360	--	ND	NS		NS	NS		NS	NS		NS	NS	0.23 J	0.22 J
	Vinyl chloride	0.19	--	ND	NS		NS	NS		NS	NS		NS	NS	0.090 J	0.35
MW-106	Tetrachloroethene	41	61	46.9	NS		NS	29		110	87 D		110 D	94 D	76	82
	Trichloroethene	2.8	1.4	1.18	NS		NS	0.63		1.3	2.6		3.9	3.7	3.7	3.4
	1,1-Dichloroethene	280	ND	ND	NS		NS	ND		ND	ND		ND	0.19 J	ND	ND
	cis-1,2-Dichloroethene	36	7.7	6.21	NS		NS	3.5		5.9	12		23	37	47	26
	trans-1,2-Dichloroethene	360	ND	ND	NS		NS	0.14 *J*		ND	0.11		0.20 J	0.31 J	0.37 J	0.32 J
	Vinyl chloride	0.19	ND	ND	NS		NS	ND		ND	0.48		0.65	0.68	0.49	0.49
MW-121	Tetrachloroethene	41	NS	ND	NS		NS	ND		ND	ND		ND	ND	NS	0.15
	Trichloroethene	2.8	NS	ND	NS		NS	ND		ND	ND		ND	ND	NS	ND
	1,1-Dichloroethene	280	NS	ND	NS		NS	ND		ND	ND		ND	ND	NS	ND
	cis-1,2-Dichloroethene	36	NS	ND	NS		NS	ND		ND	ND		ND	ND	NS	ND
	trans-1,2-Dichloroethene	360	NS	ND	NS		NS	ND		ND	ND		ND	ND	NS	ND
	Vinyl chloride	0.19	NS	ND	NS		NS	ND		ND	ND		ND	ND	NS	ND
MW-113	Tetrachloroethene	41	NS	NS	NS		NS	NS		NS	NS		ND	NS	ND	NS
	Trichloroethene	2.8	NS	NS	NS		NS	NS		NS	NS		ND	NS	ND	NS
	1,1-Dichloroethene	280	NS	NS	NS		NS	NS		NS	NS		ND	NS	ND	NS
	cis-1,2-Dichloroethene	36	NS	NS	NS		NS	NS		NS	NS		ND	NS	ND	NS
	trans-1,2-Dichloroethene	360	NS	NS	NS		NS	NS		NS	NS		ND	NS	ND	NS
	Vinyl chloride	0.19	NS	NS	NS		NS	NS		NS	NS		ND	NS	ND	NS

2015 EBR INJECTION

* TRENCH EXCAVATED THROUGH SOURCE AREA IN 2016

2018 EBR & PRB INJECTION

Notes and Abbreviations:

(1) **ADEC Table C Groundwater Cleanup Levels; 18 AAC 75 "Oil and Hazardous Substances Pollution Control"; June 24, 2021.**

Results above ADEC cleanup values are red, underlined & bolded. Detected results are bolded.

Only contaminants of concern are tabulated above

ADEC = Alaska Department of Environmental Conservation

bgs = Below ground surface

µg/L = micrograms per liter

D = The reported result is from a dilution

J = The result is an estimated value

ND = Analyte was analyzed for, but not detected at or above the method reporting limit and/or the method detection limit

NS = Not sampled

(--) = No data available

* = Detected concentration exceeded previous ADEC cleanup level (i.e. prior to 2016 revision)

*A trench was excavated through the source area on the Stanley property, from the vehicle wash area (east side of building) towards Spenard Rd. Piping was placed in the trench to conect the vehicle wash area to municipal wastewater infrastructure. The trenching activities may have inadvertently mixed contaminated vadose-zone soil with saturated-zone soil, resulting in an increase in PCE in groundwater in this area.

RESCON alaska

TABLE 7
GROUNDWATER - MONITORED NATURAL ATTENUATION PARAMETER RESULTS
2020 MONITORING REPORT
GREER TANK
ANCHORAGE, ALASKA

Greer Tank MNA Parameter Results (unless stated, results reported in mg/L)																				
MNA Parameters		DO	ORP (mV)	Nitrate	Iron II	Sulfate	Methane	pH (pH units)	TOC	VFA	Chloride	BTEX	PCE	TCE	DCE	VC	Chloroethane	Ethene/Ethane	Total Weighted MNA Value	Evidence for Anaerobic Biodegradation at Well
Units		mg/L	mV	mg/L	mg/L	mg/L	mg/L	pH (pH units)	mg/L	mg/L		mg/L						mg/L		
Scoring Criteria[1]		< 0.5 = 3 > 5 = -3	< 50 = 1 < -100 = 2	< 1 = 2	> 1 = 3	< 20 = 2	< 0.5 = 0 > 0.5 = 3	5 < pH < 9 = 0 5 > pH > 9 = -2	> 20 = 2	> 0.1 = 2	> 2x Bkgd = 2	> 0.1 = 2	NA	2*	2*Φ	2*	2*	> 0.01 = 2 > 0.1 = 3		
Up-Gradient Wells - Greer Property																				
MW-122	May-15	3.61	35.4	0.9	0.27	7	0.00098	6.39	7.35	NC	14	0.00169	0.00026	ND	ND	ND	ND	0.00045	5	Inadequate
	MNA Score	0	1	2	0	2	0	0	0	0	0	0		0	0	0	0	0		
	Nov-15	0.54	70.7	3.6	0.18	11	0.00041	6.47	8.3	NC	3.9	0.00074	0.00092	ND	0.00007	ND	ND	0.00045	4	Inadequate
	MNA Score	0	0	0	0	2	0	0	0	0	0	0		0	2	0	0	0		
MW-123	May-15	2.01	21.9	>5.0	0	18	0.00070	6.12	3.08	NC	47.3	0.00078	ND	ND	ND	ND	ND	0.000258	3	Inadequate
	MNA Score	0	1	0	0	2	0	0	0	0	0	0		0	0	0	0	0		
	Nov-15	2.68	76.8	1.4	0	0	0.00032	6.48	3.6	NC	23.1	0.00029	0.00018	ND	ND	ND	ND	0.0002	2	Inadequate
	MNA Score	0	0	0	0	2	0	0	0	0	0	0		0	0	0	0	0		
MW-124	May-15	1.62	27.9	0	0.04	3	0.072	6.57	58	NC	13.8	0.00213	ND	ND	ND	ND	ND	0.00061	7	Limited
	MNA Score	0	1	2	0	2	0	0	2	0	0	0		0	0	0	0	0		
	Nov-15	0.32	75.7	0.7	0.05	1	0.098	6.01	59	NC	23.8	0.00143	ND	ND	ND	ND	ND	ND	9	Limited
	MNA Score	3	0	2	0	2	0	0	2	0	0	0		0	0	0	0	0		
	May-16	0.37	100.1	0	0.15	0	0.047	5.99	61.3	NC	26.9	0.00065	ND	ND	ND	ND	ND	ND	9	Limited
	MNA Score	3	0	2	0	2	0	0	2	0	0	0		0	0	0	0	0		
	Dec-16	0.29	151	OR	0.18	0	0.039	5.37	63	NC	31.9	0.00147	ND	ND	ND	ND	ND	ND	7	Limited
	MNA Score	3	0	0	0	2	0	0	2	0	0	0		0	0	0	0	0		

Notes:
* - Points awarded only if it is known that the compound is a daugther product (i.e., not the constituent source)
Φ - If cis is > 80% of total DCE it is likely a daughter product. Presence of 1,1-DCE can be result of chemical reaction product of TCA
* - Not analyzed in 2015. Analytical result taken from most recent groundwater monitoring effort in 2013.
[1] - MNA parameter scoring based on the criteria listed in Tables 2.3 and 2.4 of the EPA Guidance Document: *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*

OR - out of range
NC - not collected
ND - analyte not detected

Interpretation of Potential for Anaerobic Degradation via reductive dechlorination based on Total Weighted MNA Values	
Total Weighted MNA Value	Interpretation
0 to 5	Inadequate Evidence for Anaerobic Biodegradation of Chlorinated Organics.
6 to 14	Limited Evidence for Anaerobic Biodegradation of Chlorinated Organics.
15 to 20	Adequate Evidence for Anaerobic Biodegradation of Chlorinated Organics.
> 20	Strong Evidence for Anaerobic Biodegradation of Chlorinated Organics.

TABLE 7
GROUNDWATER - MONITORED NATURAL ATTENUATION PARAMETER RESULTS
2020 MONITORING REPORT
GREER TANK
ANCHORAGE, ALASKA

Greer Tank MNA Parameter Results (unless stated, results reported in mg/L)																				
MNA Parameters		DO	ORP (mV)	Nitrate	Iron II	Sulfate	Methane	pH (pH units)	TOC	VFA	Chloride	BTEX	PCE	TCE	DCE	VC	Chloroethane	Ethene/Ethane	Total Weighted MNA Value	Evidence for Anaerobic Biodegradation at Well
Units		mg/L	mV	mg/L	mg/L	mg/L	mg/L	pH (pH units)	mg/L	mg/L		mg/L						mg/L		
Scoring Criteria[1]		< 0.5 = 3 > 5 = -3	< 50 = 1 < -100 = 2	< 1 = 2	> 1 = 3	< 20 = 2	< 0.5 = 0 > 0.5 = 3	5 < pH < 9 = 0 5 > pH > 9 = -2	> 20 = 2	> 0.1 = 2	> 2x Bkgd = 2	> 0.1 = 2	NA	2*	2*Φ	2*	2*	> 0.01 = 2 > 0.1 = 3		
Impacted Wells - Stanley Property																				
MW-4	May-15	2.34	65.1	1.8	0.03	4	ND	6.43	3.92	NC	12.8	0.00039	0.15	0.0038	0.02125	ND	ND	ND	6	Limited
	MNA Score	0	0	0	0	2	0	0	0	0	0	0		2	2	0	0	0		
	Nov-15	0.45	-113	OR	0.94	0	0.00056	6.52	201	NC	3.6	0.00159	0.12	0.0098	0.04818	0.0015	ND	0.00084	15	Adequate
	MNA Score	3	2	0	0	2	0	0	2	0	0	0		2	2	2	0	0		
	May-16	0.18	-92	OR	1.15	0	0.1	6.37	54	NC	4.8	0.00145	0.0015	ND	0.429	0.0037	ND	0.00056	15	Adequate
	MNA Score	3	1	0	3	2	0	0	2	0	0	0		0	2	2	0	0		
	Dec-16	0.12	-8.8	OR	1.11	0	3.4	6.18	45	NC	8.09	0.00145	0.0007	ND	0.18672	0.005	ND	ND	18	Adequate
	MNA Score	3	1	0	3	2	3	0	2	0	0	0		0	2	2	0	0		
	Dec-17	0.62	58.2	3.5	0.8	0	4.8	5.59	21.1	12.7	2.92	0.0011	0.00035	0.00014	0.0079 [2]	0.0072	ND	0.0024	15	Adequate
	MNA Score	0	0	0	0	2	3	0	2	2	0	0		2	2	2	0	0		
	Jan-19	2.28	-7.7	2.6	1	0	2.4	4.98	550	1596.7	8.57	0.0039	0.00270	0.00070	0.0285	0.0033	ND	0.0065	14	Limited
	MNA Score	0	1	0	0	2	3	-2	2	2	0	0		2	2	2	0	0		
	Jun-19	0.22	103.7	1.8	0.99	0	3.3	6.28	143	196.1	NC	0.0011	0.0023	0.0004	0.0093	0.0015	ND	0.0051	18	Adequate
	MNA Score	3	0	0	0	2	3	0	2	2	0	0		2	2	2	0	0		
	Jan-20	2	63	2	1	0	1.1	5.98	46	38.8	NC	0.0019	0.0004	0.0002	0.0143	0.0027	ND	0.00054	15	Adequate
	MNA Score	0	0	0	0	2	3	0	2	2	0	0		2	2	2	0	0		
	Oct-20	2.5	NM	1.4	1.1	0	4	6	18.9	2.7	NC	0.00082	0.00065	0.00021	0.0074	0.0014	ND	0.00184	16	Adequate
	MNA Score	0	0	0	3	2	3	0	0	2	0	0		2	2	2	0	0		
MW-104	May-16	0.42	-97.7	NC	NC	NC	1.1	6.77	NC	NC	NC	0.0002	0.00031	ND	0.05863	0.0011	ND	ND	10	Limited
	MNA Score	3	0	0	0	0	3	0	0	0	0	0		0	2	2	0	0		
	Dec-16	0.25	-57.3	OR	1.15	0	2.4	6.32	19.6	NC	1.47	0.00045	0.00046	0.00011	0.01356	0.0028	ND	0.0018	17	Adequate
	MNA Score	3	0	0	3	2	3	0	0	0	0	0		2	2	2	0	0		
	Dec-17	0.77	74.9	OR	1.15	0	2.2	5.87	15.9	NC	2.25	0.000872	0.00033	ND	0.005.2 [2]	0.00071	ND	0.0008	12	Limited
	MNA Score	0	0	0	3	2	3	0	0	0	0	0		0	2	2	0	0		
	Jun-19	0.55	125.7	0	0.66	0	4.1	4.93	133	137.6	NS	0.0044	0.0004	ND	0.0039	0.0002	ND	0.00031	13	Limited
	MNA Score	0	0	2	0	2	3	-2	2	2	0	0		0	2	2	0	0		
	Jan-20	3.5	38.1	3.7	0.99	0	3.1	5.86	78	54.2	NS	0.0026	0.0003	ND	0.0022	0.0002	ND	0.00049	14	Limited
	MNA Score	0	1	0	0	2	3	0	2	2	0	0		0	2	2	0	0		
	Oct-20	0.4	NM	1.8	0.9	0.0	5.9	5.8	34	17	NC	0.00060	0.00072	ND	0.00129	0.00015	ND	ND	16	Adequate
	MNA Score	3	0	0	0	2	3	0	2	2	0	0		0	2	2	0	0		

Notes:
* - Points awarded only if it is known that the compound is a daugther product (i.e., not the constituent source)
Φ - If cis is > 80% of total DCE it is likely a daughter product. Presence of 1,1-DCE can be result of chemical reaction product of TCA
* - Not analyzed in 2015. Analytical result taken from most recent groundwater monitoring effort in 2013.
[1] - MNA parameter scoring based on the criteria listed in Tables 2.3 and 2.4 of the EPA Guidance Document: *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*

NC - not collected
ND - analyte not detected
NM - not measured

Interpretation of Potential for Anaerobic Degradation via reductive dechlorination based on Total Weighted MNA Values	
Total Weighted MNA Value	Interpretation
0 to 5	Inadequate Evidence for Anaerobic Biodegradation of Chlorinated Organics.
6 to 14	Limited Evidence for Anaerobic Biodegradation of Chlorinated Organics.
15 to 20	Adequate Evidence for Anaerobic Biodegradation of Chlorinated Organics.
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RESCON alaska

TABLE 7
GROUNDWATER - MONITORED NATURAL ATTENUATION PARAMETER RESULTS
2020 MONITORING REPORT
GREER TANK
ANCHORAGE, ALASKA

Greer Tank MNA Parameter Results (unless stated, results reported in mg/L)																				
MNA Parameters		DO	ORP (mV)	Nitrate	Iron II	Sulfate	Methane	pH (pH units)	TOC	VFA	Chloride	BTEX	PCE	TCE	DCE	VC	Chloroethane	Ethene/Ethane	Total Weighted MNA Value	Evidence for Anaerobic Biodegradation at Well
Units		mg/L	mV	mg/L	mg/L	mg/L	mg/L	pH (pH units)	mg/L	mg/L		mg/L						mg/L		
Scoring Criteria[1]		< 0.5 = 3 > 5 = -3	< 50 = 1 < -100 = 2	< 1 = 2	> 1 = 3	< 20 = 2	< 0.5 = 0 > 0.5 = 3	5 < pH < 9 = 0 5 > pH > 9 = -2	> 20 = 2	> 0.1 = 2	> 2x Bkgd = 2	> 0.1 = 2	NA	2*	2*Φ	2*	2*	> 0.01 = 2 > 0.1 = 3		
Impacted Wells - Stanley Property																				
MW-105	Jan-20	0.38	57	0.8	0.75	4	NC	6.3	NC	NC	NC	0.0021	0.044	0.0013	0.0112	0.00009	ND	NC	13	Limited
	MNA Score	3	0	2	0	2	0	0	0	0	0	0		2	2	2	0	0		
	Oct-20	0.09	NM	0.0	0.76	0	NC	6.0	NC	NC	NC	0.0001	0.047	0.0012	0.0132	0.00035	ND	NC	13	Limited
	MNA Score	3	0	2	0	2	0	0	0	0	0	0		2	2	2	0	0		
MW-106	May-15	6.03	83.0	1.3	0.01	2	0.330	6.13	3.39	NC	18.2	ND	0.0469¥	0.00118¥	0.00621¥	ND¥	ND¥	ND¥	3	Inadequate
	MNA Score	-3	0	0	0	2	0	0	0	0	0	0		2	2	0	0	0		
	May-16	1.30	96.2	OR	0.05	0	0.007	6.43	1.73	NC	1.27	0.00017	0.029	0.00063	0.00364	ND	ND	ND	6	Limited
	MNA Score	0	0	0	0	2	0	0	0		0	0		2	2	0	0	0		
	Dec-16	1.21	161.7	0.0	0.02	4	0.087	5.96	5.2	NC	7.3	0.00008	0.11	0.0013	0.0059	0	ND	ND	8	Limited
	MNA Score	0	0	2	0	2	0	0	0	0	0	0		2	2	0	0	0		
	Dec-17	0.67	7.5	3.2	0.08	5	3.8	6.30	5	NC	9.33	0.000664	0.087	2.6	12 [2]	0.00048	ND	ND	12	Limited
	MNA Score	0	1	0	0	2	3	0	0	0	0	0		2	2	2	0	0		
	Jan-19	1.14	160.8	3.3	0.05	0	9.7	6.13	6.2	NC	6.58	0.00014	0.11	0.0039	23.2	0.00065	ND	0.0042	11	Limited
	MNA Score	0	0	0	0	2	3	0	0	0	0	0		2	2	2	0	0		
	Jun-19	0.44	97.3	1	0.66	0	5.9	5.83	110	229.6	NC	0.0005	0.091	0.0034	0.0353	0.0007	ND	0.0021	18	Adequate
	MNA Score	3	0	0	0	2	3	0	2	2	0	0		2	2	2	0	0		
	Jan-20	0.2	68.5	5.5	0.68	7	3.3	6.3	15.9	ND	NC	0.0023	0.076	0.0037	0.0454	0.0005	ND	0.0005	14	Limited
	MNA Score	3	0	0	0	2	3	0	0	0	0	0		2	2	2	0	0		
	Oct-20	0.4	NM	0.3	0.3	0.0	6.9	6.4	6.9	ND	NC	0.00018	0.082	0.0034	0.0263	0.00049	0.00025	0.00121	16	Adequate
	MNA Score	3	0	2	0	0	3	0	0	0	0	0		2	2	2	2	0		

Notes:

* - Points awarded only if it is known that the compound is a daugther product (i.e., not the constituent source)
Φ - If cis is > 80% of total DCE it is likely a daughter product. Presence of 1,1-DCE can be result of chemical reaction product of TCA
* - Not analyzed in 2015. Analytical result taken from most recent groundwater monitoring effort in 2013.
[1] - MNA parameter scoring based on the criteria listed in Tables 2.3 and 2.4 of the EPA Guidance Document: *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*

NC - not collected
ND - analyte detected
NM - not mesured

Interpretation of Potential for Anaerobic Degradation via reductive dechlorination based on Total Weighted MNA Values	
Total Weighted MNA Value	Interpretation
0 to 5	Inadequate Evidence for Anaerobic Biodegradation of Chlorinated Organics.
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TABLE 7
GROUNDWATER - MONITORED NATURAL ATTENUATION PARAMETER RESULTS
2020 MONITORING REPORT
GREER TANK
ANCHORAGE, ALASKA

Greer Tank MNA Parameter Results (unless stated, results reported in mg/L)																				
MNA Parameters		DO	ORP (mV)	Nitrate	Iron II	Sulfate	Methane	pH (pH units)	TOC	VFA	Chloride	BTEX	PCE	TCE	DCE	VC	Chloroethane	Ethene/Ethane	Total Weighted MNA Value	Evidence for Anaerobic Biodegradation at Well
Units		mg/L	mV	mg/L	mg/L	mg/L	mg/L	pH (pH units)	mg/L	mg/L		mg/L						mg/L		
Scoring Criteria[1]		< 0.5 = 3 > 5 = -3	< 50 = 1 < -100 = 2	< 1 = 2	> 1 = 3	< 20 = 2	< 0.5 = 0 > 0.5 = 3	5 < pH < 9 = 0 5 > pH > 9 = -2	> 20 = 2	> 0.1 = 2	> 2x Bkgd = 2	> 0.1 = 2	NA	2*	2*Φ	2*	2*	> 0.01 = 2 > 0.1 = 3		
Down-gradient Wells- Stanley Property																				
MW-113	Jan-20	2.94	149	0	0.06	1	NS	5.75	NS	NS	NS	0.00217	ND	ND	ND	ND	ND	NS	4	Inadequate
	MNA Score	0	0	2	0	2	0	0	0	0	0	0		0	0	0	0	0		
MW-121	2013	4.23	108	2	0	4	0.00038	6.15	3.14	NC	8.3	ND	ND¥	ND¥	ND¥	ND¥	ND¥	ND¥	2	Inadequate
	MNA Score	0	0	0	0	2	0	0	0	0	0	0		0	0	0	0	0		
	Nov-15	5.33	79.4	1.9	OR	5	0.00091	5.84	2.82	NC	11.9	0.00008	ND	ND	ND	ND	ND	ND	-1	Inadequate
	MNA Score	-3	0	0	0	2	0	0	0	0	0	0		0	0	0	0	0		
	May-16	1.69	-10.5	1.4	0.05	5	ND	6.19	2.48	NC	7.38	ND	ND	ND	ND	ND	ND	ND	2	Inadequate
	MNA Score	0	0	0	0	2	0	0	0	0	0	0		0	0	0	0	0		
	Dec-16	4.87	130.5	3.2	0.02	2	ND	7.76	2.64	NC	0.91	0.00098	ND	ND	ND	ND	ND	ND	2	Inadequate
	MNA Score	0	0	0	0	2	0	0	0	0	0	0		0	0	0	0	0		
	Jan-19	7.32	227.7	3.3	0.05	0	ND	5.66	2.74	NC	5.25	0.00012	ND	ND	ND	ND	ND	ND	-3	Inadequate
	MNA Score	-3	0	0	0	2	0	0	0	0	0	0		0	0	0	0	0		
	Jun-19	9.97	150	0.5	0	1	NC	5.82	NC	NC	NC	0.0002	ND	ND	ND	ND	ND	NS	1	Inadequate
	MNA Score	-3	0	2	0	2	0	0	0	0	0	0		0	0	0	0	0		
	Oct-20	8.40	NM	1.2	0	4	NC	8.29	NC	NC	NC	0.00015	0.00015	ND	ND	ND	ND	NC	-1	Inadequate
	MNA Score	-3	0	0	0	2	0	0	0	0	0	0		0	0	0	0	0		

Notes:
* - Points awarded only if it is known that the compound is a daugther product (i.e., not the constituent source)
Φ - If cis is > 80% of total DCE it is likely a daughter product. Presence of 1,1-DCE can be result of chemical reaction product of TCA
* - Not analyzed in 2015. Analytical result taken from most recent groundwater monitoring effort in 2013.
[1] - MNA parameter scoring based on the criteria listed in Tables 2.3 and 2.4 of the EPA Guidance Document: *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*

NC - not collected
ND - analyte not detected
NM - not measured

Interpretation of Potential for Anaerobic Degradation via reductive dechlorination based on Total Weighted MNA Values	
Total Weighted MNA Value	Interpretation
0 to 5	Inadequate Evidence for Anaerobic Biodegradation of Chlorinated Organics.
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TABLE 8
INDIVIDUAL SVE EXTRACTION POINT COC ANALYTICAL RESULTS
2020 ANNUAL MONITORING REPORT
GREER TANK
ANCHORAGE, ALASKA

Sample ID:	**SVE - 1 - 20**	**SVE - 2 - 20**	**SVE - 3 - 20**	**SVE - 4 - 20**	**SVE - H1 - 20**	**SVE - H2 - 20**
Sample Time:	**1545**	**1555**	**1600**	**1605**	**1610**	**1615**
Sample Date:	**08/10/2020**	**08/10/2020**	**08/10/2020**	**08/10/2020**	**08/10/2020**	**08/10/2020**
Volatile Organic Compounds (EPA TO - 15)	all results in $\mu g/m^3$					
Tetrachloroethene	1,100	630	670	720	120	86
Trichloroethene	19	9	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	19	13	ND	ND	ND	ND
trans-1,2-Dichloroethene	4.1	6.9	5.1	2.3	6.3	6.8
Vinyl chloride	ND	ND	ND	ND	ND	ND

Notes and Abbreviations:

Only contaminants of concern are tabulated above; remaining results were not detected or were below cleanup levels.

µg/m3 = micrograms per cubic meter

ND = Analyte was analyzed for, but not detected at or above the method reporting limit and/or the method detection limit

TABLE 9
SVE EXHAUST CUMULATIVE COC ANALYTICAL RESULTS
2020 ANNUAL MONITORING REPORT
GREER TANK
ANCHORAGE, ALASKA

Sample ID:	**EFF-01**		**EFF-2**		**EFF-3**		**EFF-4**		**EFF-5**		**EFF-6**		**EFF-7**		**EFF-8**	
Sample Time:	**14:00**		**10:00**		**15:35**		**)**		**13:40**		**10:15**		**15:15**		**15:45**	
Sample Date:	**11/10/15**		**11/11/15**		**11/19/15**		**12/18/15**		**7/13/16**		**8/11/17**		**1/21/19**		**8/10/20**	
Initial Flow (CFM)	**56**		**59**		**60**		**55**		**83**		**72**		**72**		**72**	
Time Since Startup (hours)	**4**		**24**		**222**		**913**		**5908**		**15360**		**28037**		**41646**	
Volatile Organic Compounds (EPA TO-15)	all results in µg/m³	Grams of Contaminant Removed	all results in µg/m³	Grams of Contaminant Removed	all results in µg/m³	Grams of Contaminant Removed	all results in µg/m³	Grams of Contaminant Removed	all results in µg/m³	Grams of Contaminant Removed	all results in µg/m³	Grams of Contaminant Removed	all results in µg/m³	Grams of Contaminant Removed	all results in µg/m³	Grams of Contaminant Removed
Tetrachloroethene	47,000	17.89	38,000	100.70	22,000	699.83	7,440	1,714.89	5,600	5,423.51	3,600	11,236.88	1,200	14,958.70	554	16,418.71
Trichloroethene	480	0.18	280	0.92	ND	3.70	ND	3.70	ND	3.70	21	15.84	6.9	37.47	4.7	47.13
1,1-Dichloroethene	ND	0.00	ND	0.00	ND	0.00	ND	0.00	ND	0.00	ND	0.00	ND	0.00	ND	0.00
cis-1,2-Dichloroethene	1,200	0.46	840	2.44	270	13.50	122	26.95	72.9	81.10	39	152.23	17	195.65	5.3	214.21
trans-1,2-Dichloroethene	7,600	2.89	2,800	12.93	1,200	52.83	617	115.01	341	379.11	68	645.68	10	706.16	5.3	718.89
Vinyl chloride	ND	0.00	ND	0.00	ND	0.00	ND	0.00	ND	0.00	ND	0.00	ND	0.00	ND	0.00

Notes and Abbreviations:

Only contaminants of concern are tabulated above; remaining results were not detected or were below cleanup levels.

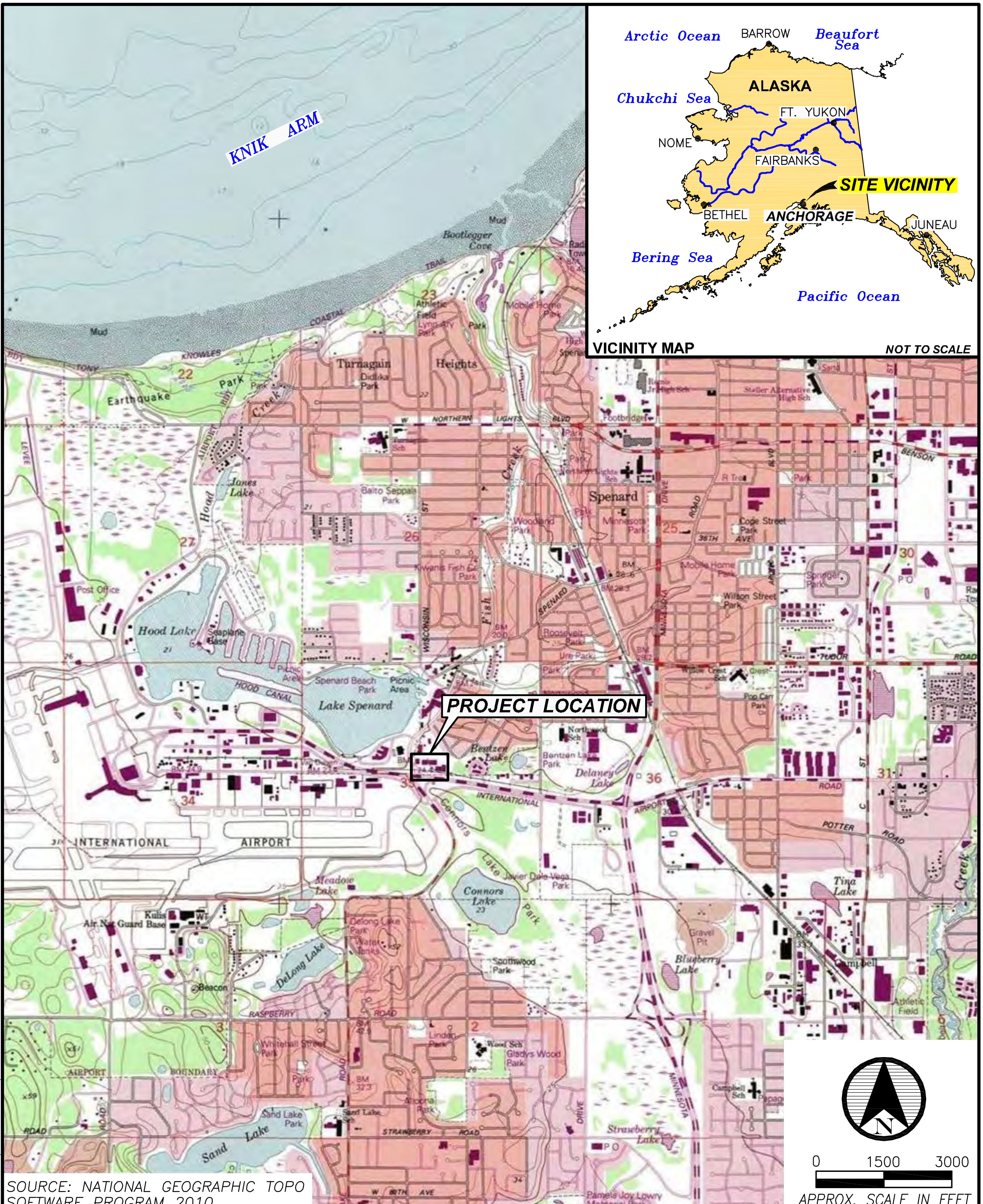
COC = contaminants of concern

µg/m^3 = micrograms per cubic meter

ND = Analyte was analyzed for, but not detected at or above the method reporting limit and/or the method detection limit

VOCs = volatile organic compounds

FIGURES AND CHARTS



PATH: 21 Dwgs\21 Rescon\21 Greer\20 GREER GW RPT FILE: 20-GR-GW-RPT-F1.DWG PLOTTED: 3/31/21.

DATE: MARCH 2021 REV.: - CHKD: R.M.B. DRAWN: C.E.H. PROJ. No.: 07-001	RESCON alaska 8361 PETERSBURG STREET ANCHORAGE, ALASKA 99507 907-677-7423	**SITE LOCATION MAP** 2020 ANNUAL MONITORING REPORT GREER TANK AND WELDING, INC. Anchorage, Alaska	**FIGURE** **1**

MW-121	12/27/17	1/23/19	6/14/19	10/15/20
PCE	ND	ND	ND	0.15
TCE	ND	ND	ND	ND
1,1-DCE	ND	ND	ND	ND
cDCE	ND	ND	ND	ND
tDCE	ND	ND	ND	ND
VC	ND	ND	ND	ND

MW-113	1/23/19	2/3/20
PCE	ND	ND
TCE	ND	ND
1,1-DCE	ND	ND
cDCE	ND	ND
tDCE	ND	ND
VC	ND	ND

MW-104	12/29/16	12/15/17	6/14/19	2/3/20	10/15/20
PCE	0.46	0.33	0.42	0.34	0.72
TCE	0.11	ND	ND	ND	ND
1,1-DCE	ND	ND	ND	ND	ND
cDCE	13	5.2	3.7	2.0	1.2
tDCE	0.56	0.22	0.18	0.19	0.090
VC	**2.8**	**0.71**	**0.20**	**0.24**	0.15

MW-105	8/1/2013	1/30/20	10/15/20
PCE	9.9	**44**	**47**
TCE	0.30	1.3	1.2
1,1-DCE	ND	ND	ND
cDCE	4.8	11	13
tDCE	ND	0.23	0.22
VC	ND	0.090	**0.35**

MW-4	12/15/17	1/25/19	6/13/19	2/3/20	10/15/20
PCE	0.35	2.7	2.3	0.37	0.65
TCE	0.14	0.70	0.44	0.24	0.21
1,1-DCE	0.10	ND	ND	ND	ND
cDCE	**80**	26	8.4	12	5.8
tDCE	4.5	2.5	0.94	2.3	1.6
VC	**7.4**	**3.3**	**1.5**	**2.7**	**1.4**

MW-106	12/27/17	1/23/19	6/13/19	1/30/20	10/15/20
PCE	**87**	**110**	**94**	**76**	**82**
TCE	2.6	**3.9**	**3.7**	**3.7**	**3.4**
1,1-DCE	ND	ND	0.19	0.10	ND
cDCE	12	23	**37**	**47**	26
tDCE	0.11	0.20	0.31	0.37	0.32
VC	**0.48**	**0.65**	**0.68**	**0.49**	**0.49**

LEGEND

⊕	EXISTING MONITORING WELL LOCATION
PCE	TETRACHLOROETHYLENE (ug/L)
TCE	TRICHLOROETHENE (ug/L)
1,1-DCE	1,2-DICHLOROETHENE (ug/L)
cDCE	cis-1,2-DICHLOROETHENE (ug/L)
tDCE	trans-1,2-DICHLOROETHENE (ug/L)
VC	VINYL CHLORIDE (ug/L)

NOTE:
BOLD/RED TEXT = VALUE ABOVE ADEC TABLE C GROUNDWATER CLEANUP LEVEL.

SOURCE: IMAGE FROM GOOGLE EARTH PROFESSIONAL DATED 7/1/14.

0 20 40
APPROX. SCALE IN FEET

GROUNDWATER MONITORING RESULTS

2020 ANNUAL MONITORING REPORT
GREER TANK AND WELDING, INC.
Anchorage, Alaska

FIGURE 2

RESCON alaska
8361 PETERSBURG STREET
ANCHORAGE, ALASKA 99507
907-677-7423

DATE: MARCH 2021
REV.: –
CHKD: R.M.B.
DRAWN: C.E.H.
PROJ. No.: 07-001

PATH: 21 Dwgs\21 Rescon\21 Greer\20 GREER GW RPT FILE: 20-GR-GW-RPT-F2.DWG PLOTTED: 3/31/21.

PATH: 21 Dwgs\21 Rescon\21 Greer\20 GREER GW RPT FILE: 20-GR-GW-RPT-F3.DWG PLOTTED: 3/31/21.

LEGEND

- EXISTING MONITORING WELL LOCATION
- PREVIOUSLY DECOMMISSIONED MONITORING WELL
- MONITORING WELL MISSING OR DESTROYED

SOURCE: IMAGE FROM GOOGLE EARTH PROFESSIONAL DATED 7/1/14.

FIGURE 3

PCE, TCE, AND VINYL CHLORIDE PLUMES

2020 ANNUAL MONITORING REPORT
GREER TANK AND WELDING, INC.
Anchorage, Alaska

RESCON alaska
8361 PETERSBURG STREET
ANCHORAGE, ALASKA 99507
907-677-7423

DATE: MARCH 2021
REV.: –
CHKD: R.M.B.
DRAWN: C.E.H.
PROJ. No.: 07-001

CHART 1
MOLAR CONCENTRATIONS OF PCE AND DEGRADATION DAUGHTER PRODUCTS IN MW-4
2015 - 2020

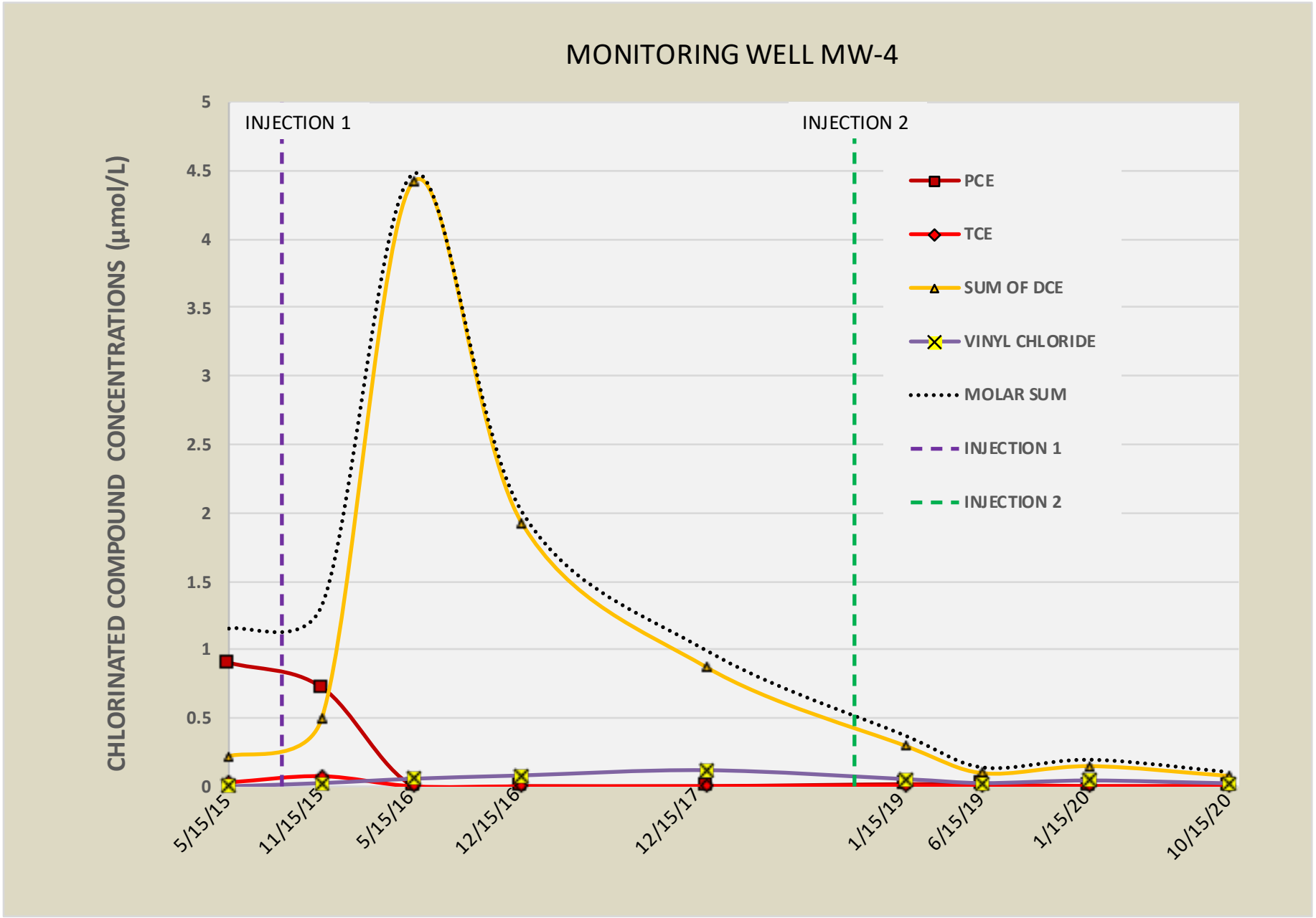


CHART 2
MOLAR CONCENTRATIONS OF PCE AND DEGRADATION DAUGHTER PRODUCTS IN MW-104
2015 - 2020

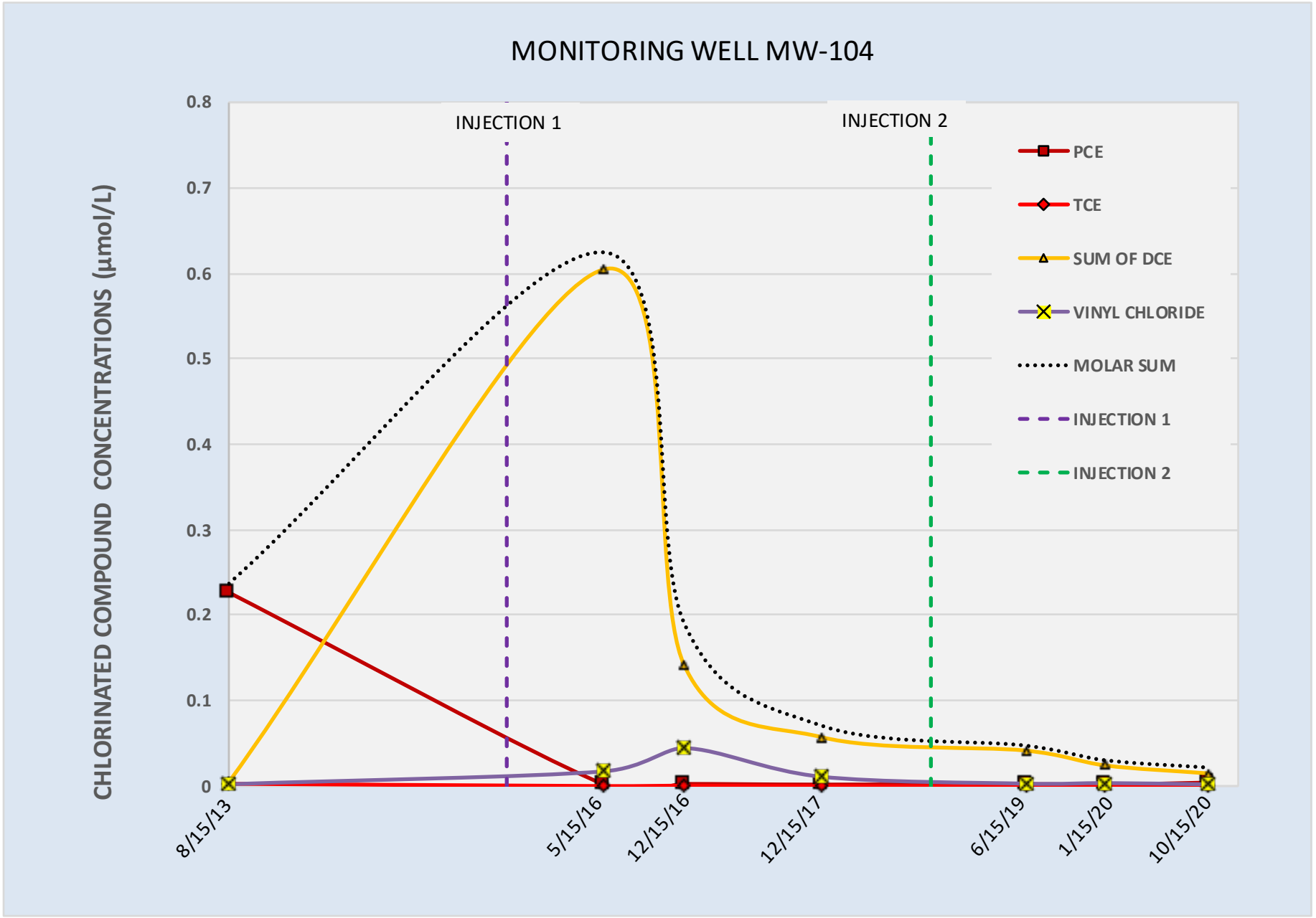


CHART 3
MOLAR CONCENTRATIONS OF PCE AND DEGRADATION DAUGHTER PRODUCTS IN MW-106
2013 - 2020

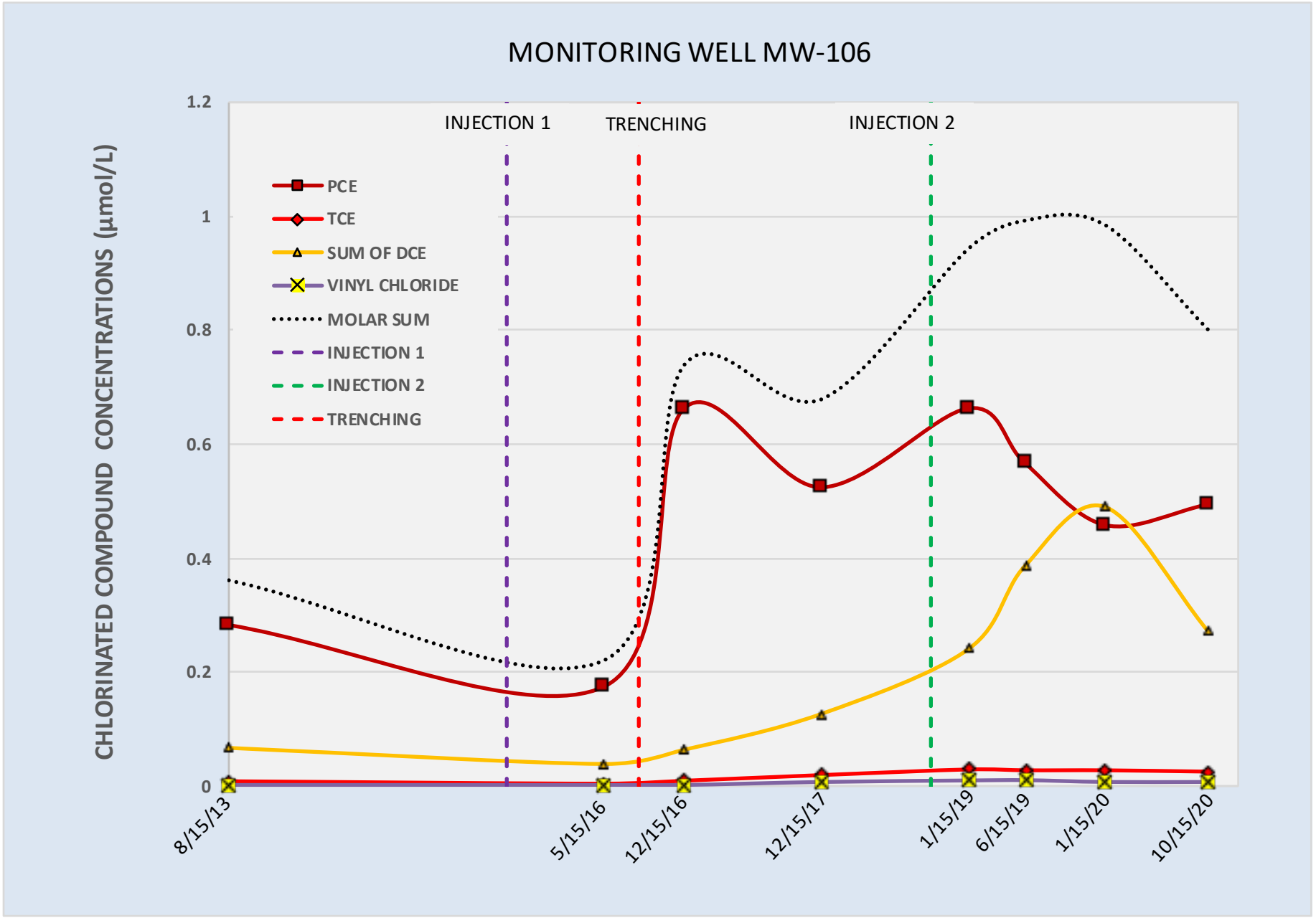
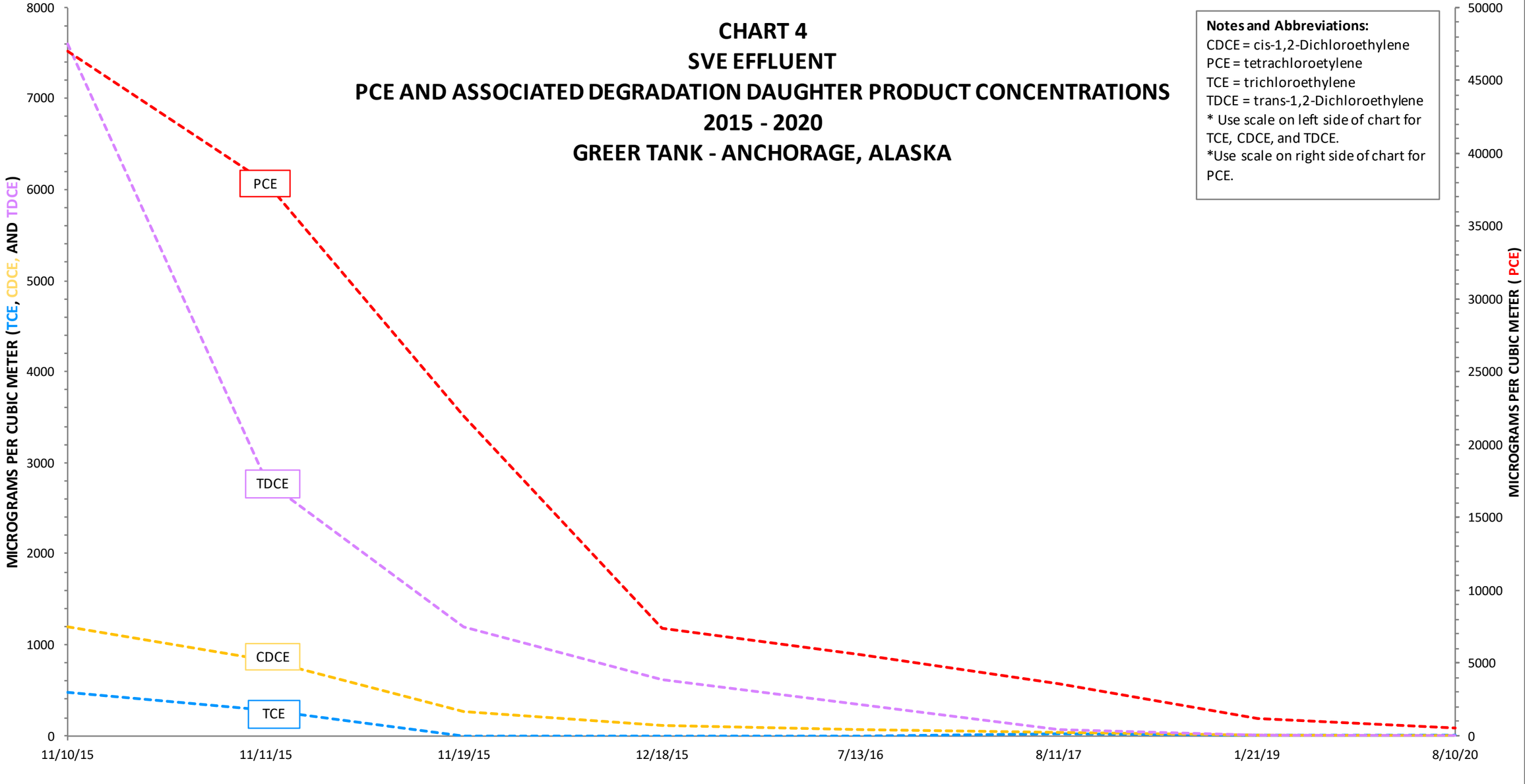


CHART 4
SVE EFFLUENT
PCE AND ASSOCIATED DEGRADATION DAUGHTER PRODUCT CONCENTRATIONS
2015 - 2020
GREER TANK - ANCHORAGE, ALASKA

Notes and Abbreviations:
CDCE = cis-1,2-Dichloroethylene
PCE = tetrachloroethylene
TCE = trichloroethylene
TDCE = trans-1,2-Dichloroethylene
* Use scale on left side of chart for TCE, CDCE, and TDCE.
*Use scale on right side of chart for PCE.



APPENDIX A

FIELD NOTES AND GROUNDWATER SAMPLE DATA SHEETS

10/15/20 GREER TANK YARD - PCE 41°F; Cloudy; Wind 5mph variable

R. Burich; C. Swanson

0900 Contact Tony Stanley property tenant (Go North) and inform them Rescon will be onsite to collect groundwater samples. Rescon will need access to the fenced-in portion of the property in order to collect samples from wells MW-4 and MW-104.

0930 Rescon onsite. Check in with Go North. Locate and open wells (MW-4, 104, 105, 106, & 121). Collect and record depth-to-water and total-well-depth measurements at each location (*See sample data sheets). Decontaminate water-level indicator after each well by spraying with an alconox/tapwater solution and wiping with a clean paper towel.

1100 Collect groundwater sample from well MW-106. Collect field duplicate from this location and identify it as MW-107. Samples collected by placing a stainless-steel monsoon pump approx 6 inches from the bottom of the well. Pump ground water at a low-flow rate (< 500 ml/min) into a YSI flow-through cell equipped with a multi-sensor array. Purge water until water quality parameters stabilize, while ensuring minimal water-level draw-down (< 0.3 ft). Collect water into appropriate lab-provided containers and place into a cooler with frozen gel-ice. Groundwater at this location to be analyzed for VOCs (short list of COCs) and MNA parameters (TOC, gases, VFAs, and microbes). Collect additional volume to field-measure for Fe^{2+}, NO_3, and SO_4.

* See sample data sheet.

1115 Decontaminate Monsoon pump by running an alconox/tapwater solution through the pump and following with a clean tapwater rinse.

10/15/20 GREER TANK YARD - PCE

R. BURICH C. SWANSON

1305 Collect groundwater from well MW-4, using the method described previously. Groundwater at this location to be analyzed for VOCs and MNA parameters (TOC, gases, VFAs, and microbes). Collect additional volume of water to field-measure Fe^{2+}, NO_3, and SO_4. * See sample data sheet.

1315 Decontaminate Monsoon pump using the method described previously.

1445 Collect groundwater from well MW-104 using the method described previously. Groundwater at this location to be analyzed for VOCs and MNA parameters (TOC, gases, VFAs, and microbes). Collect additional volume of water to field-measure Fe^{2+}, NO_3, and SO_4. * See sample data sheet.

1455 Decontaminate Monsoon pump using the method described previously.

1630 Collect groundwater from well MW-105 using the method described previously. Groundwater at this location analyzed for VOCs only. Collect additional volume of water to field-measure Fe^{2+}, NO_3, and SO_4. * See sample data sheet. Decontaminate pump.

1730 Collect groundwater from Sentry well MW-121 using the method described previously. Groundwater at this location analyzed for VOCs only. Collect additional volume of water to field-measure Fe^{2+}, NO_3 & SO_4. *See sample data sheet. Decontaminate pump.

1745 Place purge / decontamination water in appropriately labeled hazardous waste drum staged on the Greer Tank property.

1800 Rescon offsite.

10/15/20

Scale: 1 square = ____

APPENDIX B

SVE SYSTEM O&M FORMS

GREER - SOIL VAPOR EXTRACTION SYSTEM DATA SHEET

Project Number:	7-001	**Client:**	Alaska National Insurance
Project Name:	Greer Tank and Welding	**Sampler:**	Ryan Burich
Weather:	24°F; Sunny; Wind 7 mph NE	**Date / Time:**	18 Dec 19 / 1510

Vapor Extraction Lines

Location ID	Vacuum - INITIAL (inWC)	Vacuum - FINAL (inWC)	Flow - INITIAL (CFM)	Flow - FINAL (CFM)	Valve Position - INITIAL (% Open)	Valve Position - FINAL (% Open)	~~% CO2~~	~~%O2~~	Comments
SVE-1	-14	-11	14	12	50	50			None
SVE-2	-38	-36	15	12	50	50			None
SVE-3	-31	-31	12	12	50	50			None
SVE-4	-9	-7	14	12	50	50			None
SVE-H1	-25	-27	11	12	75	75			None
SVE-H2	-8	-10	10	12	50	50			None

SVE System Parameters

	Intial Readings	Final Readings
Dilution Valve (% open)	0	0
Pre-Filter Vacuum (inWC)	60	58
Post-Filter Vacuum (inWC)	68	66
Exhaust Temp (degF)	—	150
Motor Speed (Hz)	—	50
Heat Trace On?	No. Breaker "popped"	
Electrical Meter Reading (kW-Hr)	106379	
Knockout Drum Level	Empty	
Hour Meter Reading / Time	23448	
Previous Hourmeter Reading Date/Time	22729	
Percent Operability	58%	

Outdoor Vapor Monitoring Points

~~Location ID~~	~~Vacuum (inWC)~~	~~%CO2~~	~~%O2~~	~~Other~~
~~VMP-1~~				
~~VMP-2~~				
~~VMP-3~~				
~~VMP-4~~				
~~VMP-5~~				
~~VMP-6~~				

Comments / Observations:

* System off when arrived at site. Observe "ESTOP" and "Blower Fault" alarms. Acknowledge alarms and restart system.

GREER - SOIL VAPOR EXTRACTION SYSTEM DATA SHEET

Project Number:	7-001	**Client:**	Alaska National Insurance
Project Name:	Greer Tank and Welding	**Sampler:**	Ryan Burich
Weather:	15°F; Cloudy; Wind 5mph North	**Date / Time:**	13 Feb 2020; 1130

Vapor Extraction Lines

Location ID	Vacuum - INITIAL (inWC)	Vacuum - FINAL (inWC)	Flow - INITIAL (CFM)	Flow - FINAL (CFM)	Valve Position - INITIAL (% Open)	Valve Position - FINAL (% Open)	% CO2	%O2	Comments
SVE-1	-9	-8	12	12	50	50			None
SVE-2	-19	-17	15	12	50	50			None
SVE-3	-29	-29	12	12	50	50			None
SVE-4	-9	-8	14	12	50	50			None
SVE-H1	-42	-40	13	12	75	75-80			None
SVE-H2	-36	-42	7	8	75-80	75-80			None

SVE System Parameters

	Intial Readings	Final Readings
Dilution Valve (% open)	0	0
Pre-Filter Vacuum (inWC)	-62	-58
Post-Filter Vacuum (inWC)	-68	-66
Exhaust Temp (degF)	125	125
Motor Speed (Hz)	50	50
Heat Trace On?	No	
Electrical Meter Reading (kW-Hr)	111,723	
Knockout Drum Level	Empty	
Hour Meter Reading / Time	24,812	
Previous Hourmeter Reading Date/Time	23,448	
Percent Operability	100%	

Outdoor Vapor Monitoring Points

Location ID	Vacuum (inWC)	%CO2	%O2	Other
VMP-1				
VMP-2				
VMP-3				
VMP-4				
VMP-5				
VMP-6				

Comments / Observations:

None.

GREER - SOIL VAPOR EXTRACTION SYSTEM DATA SHEET

Project Number:	7-001	**Client:**	Alaska National Insurance
Project Name:	Greer Tank and Welding	**Sampler:**	Ryan Burich
Weather:	35°F; Light Snow; Wind 6 MPH NE	**Date / Time:**	3 April 2020; 1430

Vapor Extraction Lines

Location ID	Vacuum - INITIAL (inWC)	Vacuum - FINAL (inWC)	Flow - INITIAL (CFM)	Flow - FINAL (CFM)	Valve Position - INITIAL (% Open)	Valve Position - FINAL (% Open)	% CO2	%O2	Comments
SVE-1	-8	-8	12	12	50	50			None
SVE-2	-19	-19	12	12	50	50			None
SVE-3	-28	-30	10	12	50	50			None
SVE-4	-7	-8	12	12	50	50			None
SVE-H1	-40	-41	12	12	75	75-80			None
SVE-H2	-36	-41	7	8	50	75-80			Will not flow > 8 SCFM

SVE System Parameters

	Intial Readings	Final Readings
Dilution Valve (% open)	0	0
Pre-Filter Vacuum (inWC)	-58	-58
Post-Filter Vacuum (inWC)	-66	-66
Exhaust Temp (degF)	125	125
Motor Speed (Hz)	50	50
Heat Trace On?	No	
Electrical Meter Reading (kW-Hr)	116412	
Knockout Drum Level	Empty	
Hour Meter Reading / Time	26012	
Previous Hourmeter Reading Date/Time	24812	
Percent Operability	100%	

Outdoor Vapor Monitoring Points

Location ID	Vacuum (inWC)	%CO2	%O2	Other
VMP-1				
VMP-2				
VMP-3				
VMP-4				
VMP-5				
VMP-6				

Comments / Observations:

None.

GREER - SOIL VAPOR EXTRACTION SYSTEM DATA SHEET

Project Number:	7-001	**Client:**	Alaska National Insurance
Project Name:	Greer Tank and Welding	**Sampler:**	Ryan Burich
Weather:	63°F; Sunny; Wind 8 mph North	**Date / Time:**	5 June 20; 1620

Vapor Extraction Lines

Location ID	Vacuum - INITIAL (inWC)	Vacuum - FINAL (inWC)	Flow - INITIAL (CFM)	Flow - FINAL (CFM)	Valve Position - INITIAL (% Open)	Valve Position - FINAL (% Open)	~~% CO2~~	~~%O2~~	Comments
SVE-1	12	13	11	12	50	50			None
SVE-2	18	19	11	12	50	50			None
SVE-3	31	33	10	12	50	50			None
SVE-4	8	9	12	12	50	50			None
SVE-H1	20	40	8-12	8-12	50	50			Variable flow; water in line
SVE-H2	15	30	10-14	10-14	50	50			Variable flow; water in line

SVE System Parameters

	Intial Readings	Final Readings
Dillution Valve (% open)	0	0
Pre-Filter Vacuum (inWC)	55	54
Post-Filter Vacuum (inWC)	64	62
Exhaust Temp (degF)		145
Motor Speed (Hz)		50
Heat Trace On?	No	
Electrical Meter Reading (kW-Hr)	119298.25	
Knockout Drum Level	Empty	
Hour Meter Reading / Time	26541	
Previous Hourmeter Reading Date/Time	26012	
Percent Operability	35%	

Outdoor Vapor Monitoring Points

~~Location ID~~	Vacuum (inWC)	~~%CO2~~	~~%O2~~	Other
VMP-1				
VMP-2				
VMP-3				
VMP-4				
VMP-5				
VMP-6				

Comments / Observations:

~~Collect 6-month system operation effluent air sample (EFF-5 @ 1340) - Pi=30 inHG / Pf=6inHG - Canister # = R0623 (SN); 27409 (CN) - Submit for VOC analysis by TO-15~~

SVE system not running when arrived onsite. Observe "blower fault" alarm. Acknowledge alarm and restart system

GREER - SOIL VAPOR EXTRACTION SYSTEM DATA SHEET

Project Number:	7-001	**Client:**	Alaska National Insurance
Project Name:	Greer Tank and Welding	**Sampler:**	Ryan Burich
Weather:	62°F; Overcast; Wind 4 mph NW	**Date / Time:**	8/06/20 @ 1530

Vapor Extraction Lines

Location ID	Vacuum - INITIAL (inWC)	Vacuum - FINAL (inWC)	Flow - INITIAL (CFM)	Flow - FINAL (CFM)	Valve Position - INITIAL (% Open)	Valve Position - FINAL (% Open)	% CO2	%O2	Comments
SVE-1	-11	-11	12	12	50	50	—	—	
SVE-2	-20	-20	12	12	50	50	—	—	
SVE-3	-33	-33	11	10	75	75	—	—	10 CFM is maximum
SVE-4	-5	-6	13	12	50	50	—	—	
SVE-H1	-14 to -19	-14 to -19	14	12	50	50	—	—	Fluctuating, possible water in line
SVE-H2	-16 to -27	-16 to -27	13	10-14	50	50	—	—	Fluctuating, possible water in line

SVE System Parameters

	Intial Readings	Final Readings
Dilution Valve (% open)	0	0
Pre-Filter Vacuum (inWC)	54	54
Post-Filter Vacuum (inWC)	62	62
Exhaust Temp (degF)	110	125
Motor Speed (Hz)	50	50
Heat Trace On?	No	
Electrical Meter Reading (kW-Hr)	124580.50	
Knockout Drum Level	Empty	
Hour Meter Reading / Time	27912	
Previous Hourmeter Reading Date/Time	26541	
Percent Operability	92%	

Outdoor Vapor Monitoring Points

Location ID	Vacuum (inWC)	%CO2	%O2	Other
VMP-1	—	—	—	
VMP-2	—	—	—	
VMP-3	—	—	—	
VMP-4	—	—	—	
VMP-5	—	—	—	
VMP-6	—	—	—	

Comments / Observations:

System not running. Blower fault alarm. Acknowledge alarm and re start system.

GREER - SOIL VAPOR EXTRACTION SYSTEM DATA SHEET

Project Number:	7-001	**Client:**	Alaska National Insurance
Project Name:	Greer Tank and Welding	**Sampler:**	Ryan Burich
Weather:	58°F, Cloudy, Wind 12 mph SE	**Date / Time:**	30 Sept 20 / 1630

Vapor Extraction Lines

Location ID	Vacuum - INITIAL (inWC)	Vacuum - FINAL (inWC)	Flow - INITIAL (CFM)	Flow - FINAL (CFM)	Valve Position - INITIAL (% Open)	Valve Position - FINAL (% Open)	% CO2	%O2	Comments
SVE-1	-11	~~+12~~	12	12	50	50			None
SVE-2	-32	~~+0~~	10	12	50	50			None
SVE-3	-35	~~8~~	8	8	75	50			None
SVE-4	-8	~~+12~~	12	12	50	50			None
SVE-H1	-25-35	~~+0~~	10	10	50	50			Water in line
SVE-H2	-20-35	~~+12~~	12	10	50	50			Water in line

SVE System Parameters

	Intial Readings	Final Readings
Dillution Valve (% open)	0	0
Pre-Filter Vacuum (inWC)	-56	-56
Post-Filter Vacuum (inWC)	-62	-64
Exhaust Temp (degF)	150	150
Motor Speed (Hz)	50	50
Heat Trace On?	N	
Electrical Meter Reading (kW-Hr)	129551.14	
Knockout Drum Level	Empty	
Hour Meter Reading / Time	29232	
Previous Hourmeter Reading Date/Time	27912	
Percent Operability	100%	

Outdoor Vapor Monitoring Points

Location ID	Vacuum (inWC)	%CO2	%O2	Other
VMP-1				
VMP-2				
VMP-3				
VMP-4				
VMP-5				
VMP-6				

Comments / Observations: SVE-3; Remains @ 8-10 SCFM when valve open 100%
SVE H1 & H2; Water in lines. Remove water @ later date.

GREER - SOIL VAPOR EXTRACTION SYSTEM DATA SHEET

Project Number:	7-001	**Client:**	Alaska National Insurance
Project Name:	Greer Tank and Welding	**Sampler:**	Ryan Burich
Weather:	20°F ; Snow ; Wind 5mph N	**Date / Time:**	6 Nov 20 / 1630

Vapor Extraction Lines

Location ID	Vacuum - INITIAL (inWC)	Vacuum - FINAL (inWC)	Flow - INITIAL (CFM)	Flow - FINAL (CFM)	Valve Position - INITIAL (% Open)	Valve Position - FINAL (% Open)	% CO2	%O2	Comments
SVE-1	-11	-10	12	12	50	50			None
SVE-2	-32	-28	14	12	50	50			None
SVE-3	-32	-37	8	8	75	50			None
SVE-4	-8	-8	14	12	75	50			None
SVE-H1	-30	-36	10	10	50	50			None
SVE-H2	-52	-50	10	10	50	50			None

SVE System Parameters

	Intial Readings	Final Readings
Dilution Valve (% open)	0	0
Pre-Filter Vacuum (inWC)	-60	-58
Post-Filter Vacuum (inWC)	-68	-68
Exhaust Temp (degF)	150	150
Motor Speed (Hz)	50	50
Heat Trace On?	No	
Electrical Meter Reading (kW-Hr)	133,159.15	
Knockout Drum Level	Empty	
Hour Meter Reading / Time	30,120	
Previous Hourmeter Reading Date/Time	29,232	
Percent Operability	100%	

Outdoor Vapor Monitoring Points

Location ID	Vacuum (inWC)	%CO2	%O2	Other
VMP-1				
VMP-2				
VMP-3				
VMP-4				
VMP-5				
VMP-6				

Comments / Observations:

* Water in SVE-H1 and H2 lines. Remove in Spring/Summer 2021.

GREER - SOIL VAPOR EXTRACTION SYSTEM DATA SHEET

Project Number: 7-001
Project Name: Greer Tank and Welding
Weather: 23°F; Cloudy; Wind 5mph North

Client: Alaska National Insurance
Sampler: Ryan Burich
Date / Time: 16 Dec 2020 / 1630

Vapor Extraction Lines

Location ID	Vacuum - INITIAL (inWC)	Vacuum - FINAL (inWC)	Flow - INITIAL (CFM)	Flow - FINAL (CFM)	Valve Position - INITIAL (% Open)	Valve Position - FINAL (% Open)	% CO2	%O2	Comments
SVE-1	12	13	10	12	75	80			
SVE-2	32	26	14	12	85	80			
SVE-3	34	39	8	10	85	100			
SVE-4	8	8	14	12	80	75			
SVE-H1	29	35	4	4	75	75			
SVE-H2	52	50	4	4	80	80			

SVE System Parameters

	Intial Readings	Final Readings
Dilution Valve (% open)	Ø	Ø
Pre-Filter Vacuum (inWC)	60	58
Post-Filter Vacuum (inWC)	68	68
Exhaust Temp (degF)	150	150
Motor Speed (Hz)	50	50
Heat Trace On?	Yes	
Electrical Meter Reading (kW-Hr)	136572.32	
Knockout Drum Level	empty	
Hour Meter Reading / Time	31080	
Previous Hourmeter Reading Date/Time	30120	
Percent Operability	100%	

Outdoor Vapor Monitoring Points

Location ID	Vacuum (inWC)	%CO2	%O2	Other
VMP-1				
VMP-2				
VMP-3				
VMP-4				
VMP-5				
VMP-6				

Comments / Observations: None

APPENDIX C

LABORATORY REPORTS

November 12, 2020 Service Request No:K2009514

Ryan Burich
Rescon Alaska
8361 Petersburg Street
Anchorage, AK 99507

Laboratory Results for: Greer Tank

Dear Ryan,

Enclosed are the results of the sample(s) submitted to our laboratory October 20, 2020
For your reference, these analyses have been assigned our service request number **K2009514.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Rescon Alaska
Project: Greer Tank
Sample Matrix: Water

Service Request: K2009514
Date Received: 10/20/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Seven water samples were received for analysis at ALS Environmental on 10/20/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Subcontracted Analytical Parameters:

Dissolved Gases by RSK-175
This analysis was performed at ALS Simi Valley, CA Laboratory. The data for this analysis is included in the corresponding section of this report.

Volatiles by GC/MS:

Method 8260C, 10/23/2020: The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS46\1023F004.D: Acetone, 2-Butanone (MEK), Chloroethane, 1,2-Dibromo-3-chloropropane, Dichlorodifluoromethane, 2-Hexanone, 4-Methyl-2-pentanone (MIBK) and Vinyl Chloride. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are allowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

Method 8260C, 10/29/2020: The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS46\1023F004.D: Carbon Tetrachloride, Chloromethane, Dichlorodifluoromethane, 2-Hexanone, and Naphthalene. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are allowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

Method 8260C, 10/29/2020:The upper control criterion was exceeded for Dichlorodifluoromethane in Laboratory Control Sample (LCS) KQ2017106-03 and Duplicate Laboratory Control Sample (DLCS) KQ2017106-04. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Method 8260C, 10/24/2020: The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS46\1023F004.D: Acetone, 2-Butanone (MEK), Chloroethane, Dichlorodifluoromethane, 2-Hexanone, 4-Methyl-2-pentanone (MIBK), Naphthalene and Vinyl Chloride. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are allowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

Method 8260C, 10/24/2020: The lower control criterion was exceeded for Bromomethane in Laboratory Control Sample (LCS) KQ2016365-05. The analyte in question limits are advisory for the method and the compound passed the daily MRL check. The error associated with recovery indicated a slight low bias. The sample data was not significantly affected. No further corrective action was appropriate.

Approved by Kelley Lovejoy Date 11/12/2020

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-4-20-F			Lab ID: K2009514-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	18.9		0.07	0.50	mg/L	SM 5310 C
Acetone	43		3.3	20	ug/L	8260C
Benzene	0.14	J	0.062	0.50	ug/L	8260C
2-Butanone (MEK)	70		1.9	20	ug/L	8260C
Carbon Disulfide	0.21	J	0.069	0.50	ug/L	8260C
Chloromethane	1.4		0.068	0.50	ug/L	8260C
cis-1,2-Dichloroethene	5.8		0.067	0.50	ug/L	8260C
trans-1,2-Dichloroethene	1.6		0.072	0.50	ug/L	8260C
Tetrachloroethene (PCE)	0.65		0.099	0.50	ug/L	8260C
Toluene	0.32	J	0.054	0.50	ug/L	8260C
Trichloroethene (TCE)	0.21	J	0.10	0.50	ug/L	8260C
Vinyl Chloride	1.4		0.075	0.20	ug/L	8260C
o-Xylene	0.12	J	0.074	0.50	ug/L	8260C
m,p-Xylenes	0.24	J	0.11	0.50	ug/L	8260C

CLIENT ID: MW-104-20-F			Lab ID: K2009514-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	34.0		0.07	0.50	mg/L	SM 5310 C
Acetone	31		3.3	20	ug/L	8260C
2-Butanone (MEK)	2.2	J	1.9	20	ug/L	8260C
Carbon Disulfide	0.36	J	0.069	0.50	ug/L	8260C
Chloromethane	1.9		0.068	0.50	ug/L	8260C
cis-1,2-Dichloroethene	1.2		0.067	0.50	ug/L	8260C
trans-1,2-Dichloroethene	0.090	J	0.072	0.50	ug/L	8260C
Methylene Chloride	0.21	J	0.10	2.0	ug/L	8260C
Tetrachloroethene (PCE)	0.72		0.099	0.50	ug/L	8260C
Toluene	0.41	J	0.054	0.50	ug/L	8260C
Vinyl Chloride	0.15		0.075	0.10	ug/L	8260C
o-Xylene	0.080	J	0.074	0.50	ug/L	8260C
m,p-Xylenes	0.11	J	0.11	0.50	ug/L	8260C

CLIENT ID: MW-106-20-F			Lab ID: K2009514-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Carbon, Total Organic	6.89		0.07	0.50	mg/L	SM 5310 C
Acetone	10	J	3.3	20	ug/L	8260C
Chloromethane	0.98		0.068	0.50	ug/L	8260C
cis-1,2-Dichloroethene	23		0.067	0.50	ug/L	8260C
trans-1,2-Dichloroethene	0.32	J	0.072	0.50	ug/L	8260C
Tetrachloroethene (PCE)	78		0.99	5.0	ug/L	8260C
Toluene	0.18	J	0.054	0.50	ug/L	8260C
Trichloroethene (TCE)	3.4		0.10	0.50	ug/L	8260C
Vinyl Chloride	0.47		0.075	0.20	ug/L	8260C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-107-20-F			Lab ID: K2009514-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetone	11	J	3.3	20	ug/L	8260C
Chloroethane	0.25	J	0.16	0.50	ug/L	8260C
Chloromethane	1.9		0.068	0.50	ug/L	8260C
cis-1,2-Dichloroethene	26		0.067	0.50	ug/L	8260C
trans-1,2-Dichloroethene	0.30	J	0.072	0.50	ug/L	8260C
Tetrachloroethene (PCE)	82		0.99	5.0	ug/L	8260C
Toluene	0.15	J	0.054	0.50	ug/L	8260C
Trichloroethene (TCE)	3.4		0.10	0.50	ug/L	8260C
Vinyl Chloride	0.49		0.075	0.20	ug/L	8260C

CLIENT ID: MW-105-20-F			Lab ID: K2009514-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetone	5.4	J	3.3	20	ug/L	8260C
Chloromethane	1.3		0.068	0.50	ug/L	8260C
cis-1,2-Dichloroethene	13		0.067	0.50	ug/L	8260C
trans-1,2-Dichloroethene	0.22	J	0.072	0.50	ug/L	8260C
Tetrachloroethene (PCE)	47		0.099	0.50	ug/L	8260C
Toluene	0.11	J	0.054	0.50	ug/L	8260C
Trichloroethene (TCE)	1.2		0.10	0.50	ug/L	8260C
Vinyl Chloride	0.35		0.075	0.20	ug/L	8260C

CLIENT ID: MW-121-20-F			Lab ID: K2009514-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetone	12	J	3.3	20	ug/L	8260C
Carbon Disulfide	0.20	J	0.069	0.50	ug/L	8260C
Chloromethane	1.7		0.068	0.50	ug/L	8260C
Tetrachloroethene (PCE)	0.15	J	0.099	0.50	ug/L	8260C
Toluene	0.15	J	0.054	0.50	ug/L	8260C

CLIENT ID: TB-1-20-F			Lab ID: K2009514-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetone	5.9	J	3.3	20	ug/L	8260C
Carbon Disulfide	0.080	J	0.069	0.50	ug/L	8260C
Chloromethane	0.10	J	0.068	0.50	ug/L	8260C
Methylene Chloride	0.20	J	0.10	2.0	ug/L	8260C
Toluene	0.33	J	0.054	0.50	ug/L	8260C

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Rescon Alaska **Service Request:**K2009514
Project: Greer Tank/07-001

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2009514-001	MW-4-20-F	10/15/2020	1305
K2009514-002	MW-104-20-F	10/15/2020	1445
K2009514-003	MW-106-20-F	10/15/2020	1100
K2009514-004	MW-107-20-F	10/15/2020	0600
K2009514-005	MW-105-20-F	10/15/2020	1630
K2009514-006	MW-121-20-F	10/15/2020	1730
K2009514-007	TB-1-20-F	10/15/2020	0700

ALS Environmental

CHAIN OF CUSTODY
111037

002

SR# K2005514

COC Set 1 of 1

COC#

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: GREER TANK	Project Number: 07-001
Project Manager: RYAN BURICH	
Company: RESCON ALASKA	
Address: 8361 PETERSBURG ST / ANCHORAGE AK 99507	
Phone #: 9073419305	email: rburich@rescon alaska.com
Sampler Signature: Ryan Burich	Sampler Printed Name: RYAN BURICH

CLIENT SAMPLE ID	LABID	SAMPLING Date	Time	Matrix	NUMBER OF CONTAINERS	14D: 8260C / VOC FP	14D: RSK 175 / Gases	28D: SM 5310 C / TOC T	1	2	3	4	5	Remarks
1. MW-4-20-F		10/15/20	1305	GW	8	X	X	X						
2. MW-104-20-F		10/15/20	1445	GW	8	X	X	X						
3. MW-106-20-F		10/15/20	1100	GW	8	X	X	X						
4. MW-107-20-F		10/15/20	0600	GW	3	X								
5. MW-105-20-F		10/15/20	1630	GW	3	X								
6. MW-121-20-F		10/15/20	1730	GW	3	X								
7. TB-1-20-F		10/15/20	0700	NA	4	X	X							Trip Blank
8.														
9.														
10.														

Report Requirements

- [X] I. Routine Report: Method Blank, Surrogate, as required
- [ ] II. Report Dup., MS, MSD as required
- [ ] III. CLP Like Summary (no raw data)
- [ ] IV. Data Validation Report
- [ ] V. EDD

Invoice Information

P.O.#

Bill To: RESCON ALASKA

Turnaround Requirements

- [ ] 24 hr.
- [ ] 48 hr.
- [ ] 5 Day
- [X] Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Ryan Burich	Signature: K Monroe	Signature	Signature	Signature	Signature
Printed Name: RYAN BURICH	Printed Name: K MONROE	Printed Name	Printed Name	Printed Name	Printed Name
Firm: RESCON ALASKA	Firm: ALS	Firm	Firm	Firm	Firm
Date/Time: 10/16/20 1300	Date/Time: 10/20/20 1120	Date/Time	Date/Time	Date/Time	Date/Time

PM KL

Cooler Receipt and Preservation Form

Client ResCon Alaska Service Request K20 09514

Received: 10/20/20 Opened: 10/20/20 By: [illegible] Unloaded: 10/20/20 By: [illegible]

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1F + 1 Side
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N
4. Was a Temperature Blank present in cooler? NA Y (N) If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
N/A	3.5	IR02	111037	—	—	027706841910	

6. Packing material: (*Inserts*) *Baggies* (*Bubble Wrap*) (*Gel Packs*) *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA (Y) N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Rescon Alaska
Project: Greer Tank/07-001
Service Request: K2009514

Sample Name: MW-4-20-F
Lab Code: K2009514-001
Sample Matrix: Water
Date Collected: 10/15/20
Date Received: 10/20/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES
RSK 175		WHENTON
SM 5310 C		MSPECHT

Sample Name: MW-104-20-F
Lab Code: K2009514-002
Sample Matrix: Water
Date Collected: 10/15/20
Date Received: 10/20/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES
RSK 175		WHENTON
SM 5310 C		MSPECHT

Sample Name: MW-104-20-F
Lab Code: K2009514-002.R01
Sample Matrix: Water
Date Collected: 10/15/20
Date Received: 10/20/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Sample Name: MW-106-20-F
Lab Code: K2009514-003
Sample Matrix: Water
Date Collected: 10/15/20
Date Received: 10/20/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES
RSK 175		WHENTON
SM 5310 C		MSPECHT

Client: Rescon Alaska
Project: Greer Tank/07-001
Service Request: K2009514

Sample Name: MW-106-20-F
Lab Code: K2009514-003.R01
Sample Matrix: Water
Date Collected: 10/15/20
Date Received: 10/20/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Sample Name: MW-107-20-F
Lab Code: K2009514-004
Sample Matrix: Water
Date Collected: 10/15/20
Date Received: 10/20/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Sample Name: MW-107-20-F
Lab Code: K2009514-004.R01
Sample Matrix: Water
Date Collected: 10/15/20
Date Received: 10/20/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Sample Name: MW-105-20-F
Lab Code: K2009514-005
Sample Matrix: Water
Date Collected: 10/15/20
Date Received: 10/20/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Sample Name: MW-121-20-F
Lab Code: K2009514-006
Sample Matrix: Water
Date Collected: 10/15/20
Date Received: 10/20/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001		

Sample Name:	MW-121-20-F	**Date Collected:**	10/15/20
Lab Code:	K2009514-006.R01	**Date Received:**	10/20/20
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Sample Name:	TB-1-20-F	**Date Collected:**	10/15/20
Lab Code:	K2009514-007	**Date Received:**	10/20/20
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES
RSK 175		WHENTON

Sample Name:	TB-1-20-F	**Date Collected:**	10/15/20
Lab Code:	K2009514-007.R01	**Date Received:**	10/20/20
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 13:05
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-4-20-F	**Units:**	ug/L
Lab Code:	K2009514-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Acetone	**43**		20	3.3	1	10/23/20 17:05	*
Benzene	**0.14**	**J**	0.50	0.062	1	10/23/20 17:05	
Bromobenzene	ND	U	2.0	0.12	1	10/23/20 17:05	
Bromochloromethane	ND	U	0.50	0.16	1	10/23/20 17:05	
Bromodichloromethane	ND	U	0.50	0.091	1	10/23/20 17:05	
Bromoform	ND	U	0.50	0.16	1	10/23/20 17:05	
Bromomethane	ND	U	0.50	0.16	1	10/23/20 17:05	
2-Butanone (MEK)	**70**		20	1.9	1	10/23/20 17:05	*
n-Butylbenzene	ND	U	4.0	0.054	1	10/23/20 17:05	
sec-Butylbenzene	ND	U	2.0	0.062	1	10/23/20 17:05	
tert-Butylbenzene	ND	U	2.0	0.059	1	10/23/20 17:05	
Carbon Disulfide	**0.21**	**J**	0.50	0.069	1	10/23/20 17:05	
Carbon Tetrachloride	ND	U	0.50	0.096	1	10/23/20 17:05	
Chlorobenzene	ND	U	0.50	0.11	1	10/23/20 17:05	
Chloroethane	ND	U	0.50	0.16	1	10/23/20 17:05	*
Chloroform	ND	U	0.50	0.072	1	10/23/20 17:05	
Chloromethane	**1.4**		0.50	0.068	1	10/23/20 17:05	
2-Chlorotoluene	ND	U	2.0	0.10	1	10/23/20 17:05	
4-Chlorotoluene	ND	U	2.0	0.13	1	10/23/20 17:05	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	10/23/20 17:05	*
Dibromochloromethane	ND	U	0.50	0.14	1	10/23/20 17:05	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.10	1	10/23/20 17:05	
Dibromomethane	ND	U	0.50	0.15	1	10/23/20 17:05	
1,2-Dichlorobenzene	ND	U	0.50	0.12	1	10/23/20 17:05	
1,3-Dichlorobenzene	ND	U	0.50	0.10	1	10/23/20 17:05	
1,4-Dichlorobenzene	ND	U	0.50	0.12	1	10/23/20 17:05	
Dichlorodifluoromethane	ND	U	0.50	0.13	1	10/23/20 17:05	*
1,1-Dichloroethane	ND	U	0.50	0.077	1	10/23/20 17:05	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	10/23/20 17:05	
1,1-Dichloroethene	ND	U	0.50	0.080	1	10/23/20 17:05	
cis-1,2-Dichloroethene	**5.8**		0.50	0.067	1	10/23/20 17:05	
trans-1,2-Dichloroethene	**1.6**		0.50	0.072	1	10/23/20 17:05	
1,2-Dichloropropane	ND	U	0.50	0.095	1	10/23/20 17:05	
1,3-Dichloropropane	ND	U	0.50	0.14	1	10/23/20 17:05	
2,2-Dichloropropane	ND	U	0.50	0.065	1	10/23/20 17:05	
1,1-Dichloropropene	ND	U	0.50	0.089	1	10/23/20 17:05	
cis-1,3-Dichloropropene	ND	U	0.50	0.18	1	10/23/20 17:05	
trans-1,3-Dichloropropene	ND	U	0.50	0.068	1	10/23/20 17:05	
Ethylbenzene	ND	U	0.50	0.050	1	10/23/20 17:05	
Hexachlorobutadiene	ND	U	2.0	0.11	1	10/23/20 17:05	
2-Hexanone	ND	U	20	2.7	1	10/23/20 17:05	*
Isopropylbenzene	ND	U	2.0	0.051	1	10/23/20 17:05	
4-Isopropyltoluene	ND	U	2.0	0.060	1	10/23/20 17:05	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 13:05
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-4-20-F	**Units:**	ug/L
Lab Code:	K2009514-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	10/23/20 17:05	*
Methylene Chloride	ND	U	2.0	0.10	1	10/23/20 17:05	
Naphthalene	ND	U	2.0	0.088	1	10/23/20 17:05	
n-Propylbenzene	ND	U	2.0	0.054	1	10/23/20 17:05	
Styrene	ND	U	0.50	0.089	1	10/23/20 17:05	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.11	1	10/23/20 17:05	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	10/23/20 17:05	
Tetrachloroethene (PCE)	**0.65**		0.50	0.099	1	10/23/20 17:05	
Toluene	**0.32**	**J**	0.50	0.054	1	10/23/20 17:05	
1,2,3-Trichlorobenzene	ND	U	2.0	0.11	1	10/23/20 17:05	
1,2,4-Trichlorobenzene	ND	U	2.0	0.096	1	10/23/20 17:05	
1,1,2-Trichloroethane	ND	U	0.50	0.14	1	10/23/20 17:05	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	10/23/20 17:05	
Trichloroethene (TCE)	**0.21**	**J**	0.50	0.10	1	10/23/20 17:05	
Trichlorofluoromethane (CFC 11)	ND	U	0.50	0.12	1	10/23/20 17:05	
1,2,3-Trichloropropane	ND	U	0.50	0.20	1	10/23/20 17:05	
1,2,4-Trimethylbenzene	ND	U	2.0	0.069	1	10/23/20 17:05	
1,3,5-Trimethylbenzene	ND	U	2.0	0.089	1	10/23/20 17:05	
Vinyl Chloride	**1.4**		0.20	0.075	1	10/23/20 17:05	*
o-Xylene	**0.12**	**J**	0.50	0.074	1	10/23/20 17:05	
m,p-Xylenes	**0.24**	**J**	0.50	0.11	1	10/23/20 17:05	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	68 - 117	10/23/20 17:05	
Dibromofluoromethane	111	73 - 122	10/23/20 17:05	
Toluene-d8	101	65 - 144	10/23/20 17:05	

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 14:45
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-104-20-F	**Units:**	ug/L
Lab Code:	K2009514-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	**31**	20	3.3	1	10/29/20 13:33	
Benzene	ND U	0.50	0.062	1	10/29/20 13:33	
Bromobenzene	ND U	2.0	0.12	1	10/29/20 13:33	
Bromochloromethane	ND U	0.50	0.16	1	10/29/20 13:33	
Bromodichloromethane	ND U	0.50	0.091	1	10/29/20 13:33	
Bromoform	ND U	0.50	0.16	1	10/29/20 13:33	
Bromomethane	ND U	0.50	0.16	1	10/29/20 13:33	
2-Butanone (MEK)	**2.2 J**	20	1.9	1	10/29/20 13:33	
n-Butylbenzene	ND U	4.0	0.054	1	10/29/20 13:33	
sec-Butylbenzene	ND U	2.0	0.062	1	10/29/20 13:33	
tert-Butylbenzene	ND U	2.0	0.059	1	10/29/20 13:33	
Carbon Disulfide	**0.36 J**	0.50	0.069	1	10/29/20 13:33	
Carbon Tetrachloride	ND U	0.50	0.096	1	10/29/20 13:33	*
Chlorobenzene	ND U	0.50	0.11	1	10/29/20 13:33	
Chloroethane	ND U	0.50	0.16	1	10/29/20 13:33	
Chloroform	ND U	0.50	0.072	1	10/29/20 13:33	
Chloromethane	**1.9**	0.50	0.068	1	10/29/20 13:33	*
2-Chlorotoluene	ND U	2.0	0.10	1	10/29/20 13:33	
4-Chlorotoluene	ND U	2.0	0.13	1	10/29/20 13:33	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/29/20 13:33	
Dibromochloromethane	ND U	0.50	0.14	1	10/29/20 13:33	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	10/29/20 13:33	
Dibromomethane	ND U	0.50	0.15	1	10/29/20 13:33	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	10/29/20 13:33	
1,3-Dichlorobenzene	ND U	0.50	0.10	1	10/29/20 13:33	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	10/29/20 13:33	
Dichlorodifluoromethane	ND U	0.50	0.13	1	10/29/20 13:33	*
1,1-Dichloroethane	ND U	0.50	0.077	1	10/29/20 13:33	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/29/20 13:33	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/29/20 13:33	
cis-1,2-Dichloroethene	**1.2**	0.50	0.067	1	10/29/20 13:33	
trans-1,2-Dichloroethene	**0.090 J**	0.50	0.072	1	10/29/20 13:33	
1,2-Dichloropropane	ND U	0.50	0.095	1	10/29/20 13:33	
1,3-Dichloropropane	ND U	0.50	0.14	1	10/29/20 13:33	
2,2-Dichloropropane	ND U	0.50	0.065	1	10/29/20 13:33	
1,1-Dichloropropene	ND U	0.50	0.089	1	10/29/20 13:33	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	10/29/20 13:33	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	10/29/20 13:33	
Ethylbenzene	ND U	0.50	0.050	1	10/29/20 13:33	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/29/20 13:33	
2-Hexanone	ND U	20	2.7	1	10/29/20 13:33	*
Isopropylbenzene	ND U	2.0	0.051	1	10/29/20 13:33	
4-Isopropyltoluene	ND U	2.0	0.060	1	10/29/20 13:33	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 14:45
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-104-20-F	**Units:**	ug/L
Lab Code:	K2009514-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	10/29/20 13:33	
Methylene Chloride	**0.21**	**J**	2.0	0.10	1	10/29/20 13:33	
Naphthalene	ND	U	2.0	0.088	1	10/29/20 13:33	*
n-Propylbenzene	ND	U	2.0	0.054	1	10/29/20 13:33	
Styrene	ND	U	0.50	0.089	1	10/29/20 13:33	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.11	1	10/29/20 13:33	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	10/29/20 13:33	
Tetrachloroethene (PCE)	**0.72**		0.50	0.099	1	10/29/20 13:33	
Toluene	**0.41**	**J**	0.50	0.054	1	10/29/20 13:33	
1,2,3-Trichlorobenzene	ND	U	2.0	0.11	1	10/29/20 13:33	
1,2,4-Trichlorobenzene	ND	U	2.0	0.096	1	10/29/20 13:33	
1,1,2-Trichloroethane	ND	U	0.50	0.14	1	10/29/20 13:33	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	10/29/20 13:33	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	10/29/20 13:33	
Trichlorofluoromethane (CFC 11)	ND	U	0.50	0.12	1	10/29/20 13:33	
1,2,3-Trichloropropane	ND	U	0.50	0.20	1	10/29/20 13:33	
1,2,4-Trimethylbenzene	ND	U	2.0	0.069	1	10/29/20 13:33	
1,3,5-Trimethylbenzene	ND	U	2.0	0.089	1	10/29/20 13:33	
Vinyl Chloride	**0.15**		0.10	0.075	1	10/29/20 13:33	
o-Xylene	**0.080**	**J**	0.50	0.074	1	10/29/20 13:33	
m,p-Xylenes	**0.11**	**J**	0.50	0.11	1	10/29/20 13:33	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	68 - 117	10/29/20 13:33	
Dibromofluoromethane	100	73 - 122	10/29/20 13:33	
Toluene-d8	99	65 - 144	10/29/20 13:33	

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 11:00
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-106-20-F	**Units:**	ug/L
Lab Code:	K2009514-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Acetone	**10**	**J**	20	3.3	1	10/23/20 17:57	*
Benzene	ND	U	0.50	0.062	1	10/23/20 17:57	
Bromobenzene	ND	U	2.0	0.12	1	10/23/20 17:57	
Bromochloromethane	ND	U	0.50	0.16	1	10/23/20 17:57	
Bromodichloromethane	ND	U	0.50	0.091	1	10/23/20 17:57	
Bromoform	ND	U	0.50	0.16	1	10/23/20 17:57	
Bromomethane	ND	U	0.50	0.16	1	10/23/20 17:57	
2-Butanone (MEK)	ND	U	20	1.9	1	10/23/20 17:57	*
n-Butylbenzene	ND	U	4.0	0.054	1	10/23/20 17:57	
sec-Butylbenzene	ND	U	2.0	0.062	1	10/23/20 17:57	
tert-Butylbenzene	ND	U	2.0	0.059	1	10/23/20 17:57	
Carbon Disulfide	ND	U	0.50	0.069	1	10/23/20 17:57	
Carbon Tetrachloride	ND	U	0.50	0.096	1	10/23/20 17:57	
Chlorobenzene	ND	U	0.50	0.11	1	10/23/20 17:57	
Chloroethane	ND	U	0.50	0.16	1	10/23/20 17:57	*
Chloroform	ND	U	0.50	0.072	1	10/23/20 17:57	
Chloromethane	**0.98**		0.50	0.068	1	10/23/20 17:57	
2-Chlorotoluene	ND	U	2.0	0.10	1	10/23/20 17:57	
4-Chlorotoluene	ND	U	2.0	0.13	1	10/23/20 17:57	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	10/23/20 17:57	*
Dibromochloromethane	ND	U	0.50	0.14	1	10/23/20 17:57	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.10	1	10/23/20 17:57	
Dibromomethane	ND	U	0.50	0.15	1	10/23/20 17:57	
1,2-Dichlorobenzene	ND	U	0.50	0.12	1	10/23/20 17:57	
1,3-Dichlorobenzene	ND	U	0.50	0.10	1	10/23/20 17:57	
1,4-Dichlorobenzene	ND	U	0.50	0.12	1	10/23/20 17:57	
Dichlorodifluoromethane	ND	U	0.50	0.13	1	10/23/20 17:57	*
1,1-Dichloroethane	ND	U	0.50	0.077	1	10/23/20 17:57	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	10/23/20 17:57	
1,1-Dichloroethene	ND	U	0.50	0.080	1	10/23/20 17:57	
cis-1,2-Dichloroethene	**23**		0.50	0.067	1	10/23/20 17:57	
trans-1,2-Dichloroethene	**0.32**	**J**	0.50	0.072	1	10/23/20 17:57	
1,2-Dichloropropane	ND	U	0.50	0.095	1	10/23/20 17:57	
1,3-Dichloropropane	ND	U	0.50	0.14	1	10/23/20 17:57	
2,2-Dichloropropane	ND	U	0.50	0.065	1	10/23/20 17:57	
1,1-Dichloropropene	ND	U	0.50	0.089	1	10/23/20 17:57	
cis-1,3-Dichloropropene	ND	U	0.50	0.18	1	10/23/20 17:57	
trans-1,3-Dichloropropene	ND	U	0.50	0.068	1	10/23/20 17:57	
Ethylbenzene	ND	U	0.50	0.050	1	10/23/20 17:57	
Hexachlorobutadiene	ND	U	2.0	0.11	1	10/23/20 17:57	
2-Hexanone	ND	U	20	2.7	1	10/23/20 17:57	*
Isopropylbenzene	ND	U	2.0	0.051	1	10/23/20 17:57	
4-Isopropyltoluene	ND	U	2.0	0.060	1	10/23/20 17:57	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 11:00
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-106-20-F	**Units:**	ug/L
Lab Code:	K2009514-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	10/23/20 17:57	*
Methylene Chloride	ND	U	2.0	0.10	1	10/23/20 17:57	
Naphthalene	ND	U	2.0	0.088	1	10/23/20 17:57	
n-Propylbenzene	ND	U	2.0	0.054	1	10/23/20 17:57	
Styrene	ND	U	0.50	0.089	1	10/23/20 17:57	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.11	1	10/23/20 17:57	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	10/23/20 17:57	
Tetrachloroethene (PCE)	**78**		5.0	0.99	10	10/23/20 18:23	
Toluene	**0.18**	**J**	0.50	0.054	1	10/23/20 17:57	
1,2,3-Trichlorobenzene	ND	U	2.0	0.11	1	10/23/20 17:57	
1,2,4-Trichlorobenzene	ND	U	2.0	0.096	1	10/23/20 17:57	
1,1,2-Trichloroethane	ND	U	0.50	0.14	1	10/23/20 17:57	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	10/23/20 17:57	
Trichloroethene (TCE)	**3.4**		0.50	0.10	1	10/23/20 17:57	
Trichlorofluoromethane (CFC 11)	ND	U	0.50	0.12	1	10/23/20 17:57	
1,2,3-Trichloropropane	ND	U	0.50	0.20	1	10/23/20 17:57	
1,2,4-Trimethylbenzene	ND	U	2.0	0.069	1	10/23/20 17:57	
1,3,5-Trimethylbenzene	ND	U	2.0	0.089	1	10/23/20 17:57	
Vinyl Chloride	**0.47**		0.20	0.075	1	10/23/20 17:57	*
o-Xylene	ND	U	0.50	0.074	1	10/23/20 17:57	
m,p-Xylenes	ND	U	0.50	0.11	1	10/23/20 17:57	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	68 - 117	10/23/20 17:57	
Dibromofluoromethane	111	73 - 122	10/23/20 17:57	
Toluene-d8	102	65 - 144	10/23/20 17:57	

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 06:00
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-107-20-F	**Units:**	ug/L
Lab Code:	K2009514-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Acetone	**11**	**J**	20	3.3	1	10/23/20 18:50	*
Benzene	ND	U	0.50	0.062	1	10/23/20 18:50	
Bromobenzene	ND	U	2.0	0.12	1	10/23/20 18:50	
Bromochloromethane	ND	U	0.50	0.16	1	10/23/20 18:50	
Bromodichloromethane	ND	U	0.50	0.091	1	10/23/20 18:50	
Bromoform	ND	U	0.50	0.16	1	10/23/20 18:50	
Bromomethane	ND	U	0.50	0.16	1	10/23/20 18:50	
2-Butanone (MEK)	ND	U	20	1.9	1	10/23/20 18:50	*
n-Butylbenzene	ND	U	4.0	0.054	1	10/23/20 18:50	
sec-Butylbenzene	ND	U	2.0	0.062	1	10/23/20 18:50	
tert-Butylbenzene	ND	U	2.0	0.059	1	10/23/20 18:50	
Carbon Disulfide	ND	U	0.50	0.069	1	10/23/20 18:50	
Carbon Tetrachloride	ND	U	0.50	0.096	1	10/23/20 18:50	
Chlorobenzene	ND	U	0.50	0.11	1	10/23/20 18:50	
Chloroethane	**0.25**	**J**	0.50	0.16	1	10/23/20 18:50	*
Chloroform	ND	U	0.50	0.072	1	10/23/20 18:50	
Chloromethane	**1.9**		0.50	0.068	1	10/23/20 18:50	
2-Chlorotoluene	ND	U	2.0	0.10	1	10/23/20 18:50	
4-Chlorotoluene	ND	U	2.0	0.13	1	10/23/20 18:50	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	10/23/20 18:50	*
Dibromochloromethane	ND	U	0.50	0.14	1	10/23/20 18:50	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.10	1	10/23/20 18:50	
Dibromomethane	ND	U	0.50	0.15	1	10/23/20 18:50	
1,2-Dichlorobenzene	ND	U	0.50	0.12	1	10/23/20 18:50	
1,3-Dichlorobenzene	ND	U	0.50	0.10	1	10/23/20 18:50	
1,4-Dichlorobenzene	ND	U	0.50	0.12	1	10/23/20 18:50	
Dichlorodifluoromethane	ND	U	0.50	0.13	1	10/23/20 18:50	*
1,1-Dichloroethane	ND	U	0.50	0.077	1	10/23/20 18:50	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	10/23/20 18:50	
1,1-Dichloroethene	ND	U	0.50	0.080	1	10/23/20 18:50	
cis-1,2-Dichloroethene	**26**		0.50	0.067	1	10/23/20 18:50	
trans-1,2-Dichloroethene	**0.30**	**J**	0.50	0.072	1	10/23/20 18:50	
1,2-Dichloropropane	ND	U	0.50	0.095	1	10/23/20 18:50	
1,3-Dichloropropane	ND	U	0.50	0.14	1	10/23/20 18:50	
2,2-Dichloropropane	ND	U	0.50	0.065	1	10/23/20 18:50	
1,1-Dichloropropene	ND	U	0.50	0.089	1	10/23/20 18:50	
cis-1,3-Dichloropropene	ND	U	0.50	0.18	1	10/23/20 18:50	
trans-1,3-Dichloropropene	ND	U	0.50	0.068	1	10/23/20 18:50	
Ethylbenzene	ND	U	0.50	0.050	1	10/23/20 18:50	
Hexachlorobutadiene	ND	U	2.0	0.11	1	10/23/20 18:50	
2-Hexanone	ND	U	20	2.7	1	10/23/20 18:50	*
Isopropylbenzene	ND	U	2.0	0.051	1	10/23/20 18:50	
4-Isopropyltoluene	ND	U	2.0	0.060	1	10/23/20 18:50	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 06:00
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-107-20-F	**Units:**	ug/L
Lab Code:	K2009514-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	10/23/20 18:50	*
Methylene Chloride	ND	U	2.0	0.10	1	10/23/20 18:50	
Naphthalene	ND	U	2.0	0.088	1	10/23/20 18:50	
n-Propylbenzene	ND	U	2.0	0.054	1	10/23/20 18:50	
Styrene	ND	U	0.50	0.089	1	10/23/20 18:50	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.11	1	10/23/20 18:50	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	10/23/20 18:50	
Tetrachloroethene (PCE)	**82**		5.0	0.99	10	10/24/20 12:32	
Toluene	**0.15**	**J**	0.50	0.054	1	10/23/20 18:50	
1,2,3-Trichlorobenzene	ND	U	2.0	0.11	1	10/23/20 18:50	
1,2,4-Trichlorobenzene	ND	U	2.0	0.096	1	10/23/20 18:50	
1,1,2-Trichloroethane	ND	U	0.50	0.14	1	10/23/20 18:50	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	10/23/20 18:50	
Trichloroethene (TCE)	**3.4**		0.50	0.10	1	10/23/20 18:50	
Trichlorofluoromethane (CFC 11)	ND	U	0.50	0.12	1	10/23/20 18:50	
1,2,3-Trichloropropane	ND	U	0.50	0.20	1	10/23/20 18:50	
1,2,4-Trimethylbenzene	ND	U	2.0	0.069	1	10/23/20 18:50	
1,3,5-Trimethylbenzene	ND	U	2.0	0.089	1	10/23/20 18:50	
Vinyl Chloride	**0.49**		0.20	0.075	1	10/23/20 18:50	*
o-Xylene	ND	U	0.50	0.074	1	10/23/20 18:50	
m,p-Xylenes	ND	U	0.50	0.11	1	10/23/20 18:50	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	68 - 117	10/23/20 18:50	
Dibromofluoromethane	108	73 - 122	10/23/20 18:50	
Toluene-d8	102	65 - 144	10/23/20 18:50	

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 16:30
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-105-20-F	**Units:**	ug/L
Lab Code:	K2009514-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Acetone	**5.4**	**J**	20	3.3	1	10/23/20 19:16	*
Benzene	ND	U	0.50	0.062	1	10/23/20 19:16	
Bromobenzene	ND	U	2.0	0.12	1	10/23/20 19:16	
Bromochloromethane	ND	U	0.50	0.16	1	10/23/20 19:16	
Bromodichloromethane	ND	U	0.50	0.091	1	10/23/20 19:16	
Bromoform	ND	U	0.50	0.16	1	10/23/20 19:16	
Bromomethane	ND	U	0.50	0.16	1	10/23/20 19:16	
2-Butanone (MEK)	ND	U	20	1.9	1	10/23/20 19:16	*
n-Butylbenzene	ND	U	4.0	0.054	1	10/23/20 19:16	
sec-Butylbenzene	ND	U	2.0	0.062	1	10/23/20 19:16	
tert-Butylbenzene	ND	U	2.0	0.059	1	10/23/20 19:16	
Carbon Disulfide	ND	U	0.50	0.069	1	10/23/20 19:16	
Carbon Tetrachloride	ND	U	0.50	0.096	1	10/23/20 19:16	
Chlorobenzene	ND	U	0.50	0.11	1	10/23/20 19:16	
Chloroethane	ND	U	0.50	0.16	1	10/23/20 19:16	*
Chloroform	ND	U	0.50	0.072	1	10/23/20 19:16	
Chloromethane	**1.3**		0.50	0.068	1	10/23/20 19:16	
2-Chlorotoluene	ND	U	2.0	0.10	1	10/23/20 19:16	
4-Chlorotoluene	ND	U	2.0	0.13	1	10/23/20 19:16	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	10/23/20 19:16	*
Dibromochloromethane	ND	U	0.50	0.14	1	10/23/20 19:16	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.10	1	10/23/20 19:16	
Dibromomethane	ND	U	0.50	0.15	1	10/23/20 19:16	
1,2-Dichlorobenzene	ND	U	0.50	0.12	1	10/23/20 19:16	
1,3-Dichlorobenzene	ND	U	0.50	0.10	1	10/23/20 19:16	
1,4-Dichlorobenzene	ND	U	0.50	0.12	1	10/23/20 19:16	
Dichlorodifluoromethane	ND	U	0.50	0.13	1	10/23/20 19:16	*
1,1-Dichloroethane	ND	U	0.50	0.077	1	10/23/20 19:16	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	10/23/20 19:16	
1,1-Dichloroethene	ND	U	0.50	0.080	1	10/23/20 19:16	
cis-1,2-Dichloroethene	**13**		0.50	0.067	1	10/23/20 19:16	
trans-1,2-Dichloroethene	**0.22**	**J**	0.50	0.072	1	10/23/20 19:16	
1,2-Dichloropropane	ND	U	0.50	0.095	1	10/23/20 19:16	
1,3-Dichloropropane	ND	U	0.50	0.14	1	10/23/20 19:16	
2,2-Dichloropropane	ND	U	0.50	0.065	1	10/23/20 19:16	
1,1-Dichloropropene	ND	U	0.50	0.089	1	10/23/20 19:16	
cis-1,3-Dichloropropene	ND	U	0.50	0.18	1	10/23/20 19:16	
trans-1,3-Dichloropropene	ND	U	0.50	0.068	1	10/23/20 19:16	
Ethylbenzene	ND	U	0.50	0.050	1	10/23/20 19:16	
Hexachlorobutadiene	ND	U	2.0	0.11	1	10/23/20 19:16	
2-Hexanone	ND	U	20	2.7	1	10/23/20 19:16	*
Isopropylbenzene	ND	U	2.0	0.051	1	10/23/20 19:16	
4-Isopropyltoluene	ND	U	2.0	0.060	1	10/23/20 19:16	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 16:30
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-105-20-F	**Units:**	ug/L
Lab Code:	K2009514-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	10/23/20 19:16	*
Methylene Chloride	ND	U	2.0	0.10	1	10/23/20 19:16	
Naphthalene	ND	U	2.0	0.088	1	10/23/20 19:16	
n-Propylbenzene	ND	U	2.0	0.054	1	10/23/20 19:16	
Styrene	ND	U	0.50	0.089	1	10/23/20 19:16	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.11	1	10/23/20 19:16	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	10/23/20 19:16	
Tetrachloroethene (PCE)	**47**		0.50	0.099	1	10/23/20 19:16	
Toluene	**0.11**	**J**	0.50	0.054	1	10/23/20 19:16	
1,2,3-Trichlorobenzene	ND	U	2.0	0.11	1	10/23/20 19:16	
1,2,4-Trichlorobenzene	ND	U	2.0	0.096	1	10/23/20 19:16	
1,1,2-Trichloroethane	ND	U	0.50	0.14	1	10/23/20 19:16	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	10/23/20 19:16	
Trichloroethene (TCE)	**1.2**		0.50	0.10	1	10/23/20 19:16	
Trichlorofluoromethane (CFC 11)	ND	U	0.50	0.12	1	10/23/20 19:16	
1,2,3-Trichloropropane	ND	U	0.50	0.20	1	10/23/20 19:16	
1,2,4-Trimethylbenzene	ND	U	2.0	0.069	1	10/23/20 19:16	
1,3,5-Trimethylbenzene	ND	U	2.0	0.089	1	10/23/20 19:16	
Vinyl Chloride	**0.35**		0.20	0.075	1	10/23/20 19:16	*
o-Xylene	ND	U	0.50	0.074	1	10/23/20 19:16	
m,p-Xylenes	ND	U	0.50	0.11	1	10/23/20 19:16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	68 - 117	10/23/20 19:16	
Dibromofluoromethane	107	73 - 122	10/23/20 19:16	
Toluene-d8	100	65 - 144	10/23/20 19:16	

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 17:30
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-121-20-F	**Units:**	ug/L
Lab Code:	K2009514-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Acetone	**12**	**J**	20	3.3	1	10/29/20 13:59	
Benzene	ND	U	0.50	0.062	1	10/29/20 13:59	
Bromobenzene	ND	U	2.0	0.12	1	10/29/20 13:59	
Bromochloromethane	ND	U	0.50	0.16	1	10/29/20 13:59	
Bromodichloromethane	ND	U	0.50	0.091	1	10/29/20 13:59	
Bromoform	ND	U	0.50	0.16	1	10/29/20 13:59	
Bromomethane	ND	U	0.50	0.16	1	10/29/20 13:59	
2-Butanone (MEK)	ND	U	20	1.9	1	10/29/20 13:59	
n-Butylbenzene	ND	U	4.0	0.054	1	10/29/20 13:59	
sec-Butylbenzene	ND	U	2.0	0.062	1	10/29/20 13:59	
tert-Butylbenzene	ND	U	2.0	0.059	1	10/29/20 13:59	
Carbon Disulfide	**0.20**	**J**	0.50	0.069	1	10/29/20 13:59	
Carbon Tetrachloride	ND	U	0.50	0.096	1	10/29/20 13:59	*
Chlorobenzene	ND	U	0.50	0.11	1	10/29/20 13:59	
Chloroethane	ND	U	0.50	0.16	1	10/29/20 13:59	
Chloroform	ND	U	0.50	0.072	1	10/29/20 13:59	
Chloromethane	**1.7**		0.50	0.068	1	10/29/20 13:59	*
2-Chlorotoluene	ND	U	2.0	0.10	1	10/29/20 13:59	
4-Chlorotoluene	ND	U	2.0	0.13	1	10/29/20 13:59	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	10/29/20 13:59	
Dibromochloromethane	ND	U	0.50	0.14	1	10/29/20 13:59	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.10	1	10/29/20 13:59	
Dibromomethane	ND	U	0.50	0.15	1	10/29/20 13:59	
1,2-Dichlorobenzene	ND	U	0.50	0.12	1	10/29/20 13:59	
1,3-Dichlorobenzene	ND	U	0.50	0.10	1	10/29/20 13:59	
1,4-Dichlorobenzene	ND	U	0.50	0.12	1	10/29/20 13:59	
Dichlorodifluoromethane	ND	U	0.50	0.13	1	10/29/20 13:59	*
1,1-Dichloroethane	ND	U	0.50	0.077	1	10/29/20 13:59	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	10/29/20 13:59	
1,1-Dichloroethene	ND	U	0.50	0.080	1	10/29/20 13:59	
cis-1,2-Dichloroethene	ND	U	0.50	0.067	1	10/29/20 13:59	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	10/29/20 13:59	
1,2-Dichloropropane	ND	U	0.50	0.095	1	10/29/20 13:59	
1,3-Dichloropropane	ND	U	0.50	0.14	1	10/29/20 13:59	
2,2-Dichloropropane	ND	U	0.50	0.065	1	10/29/20 13:59	
1,1-Dichloropropene	ND	U	0.50	0.089	1	10/29/20 13:59	
cis-1,3-Dichloropropene	ND	U	0.50	0.18	1	10/29/20 13:59	
trans-1,3-Dichloropropene	ND	U	0.50	0.068	1	10/29/20 13:59	
Ethylbenzene	ND	U	0.50	0.050	1	10/29/20 13:59	
Hexachlorobutadiene	ND	U	2.0	0.11	1	10/29/20 13:59	
2-Hexanone	ND	U	20	2.7	1	10/29/20 13:59	*
Isopropylbenzene	ND	U	2.0	0.051	1	10/29/20 13:59	
4-Isopropyltoluene	ND	U	2.0	0.060	1	10/29/20 13:59	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 17:30
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-121-20-F	**Units:**	ug/L
Lab Code:	K2009514-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	10/29/20 13:59	
Methylene Chloride	ND	U	2.0	0.10	1	10/29/20 13:59	
Naphthalene	ND	U	2.0	0.088	1	10/29/20 13:59	*
n-Propylbenzene	ND	U	2.0	0.054	1	10/29/20 13:59	
Styrene	ND	U	0.50	0.089	1	10/29/20 13:59	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.11	1	10/29/20 13:59	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	10/29/20 13:59	
Tetrachloroethene (PCE)	**0.15**	**J**	0.50	0.099	1	10/29/20 13:59	
Toluene	**0.15**	**J**	0.50	0.054	1	10/29/20 13:59	
1,2,3-Trichlorobenzene	ND	U	2.0	0.11	1	10/29/20 13:59	
1,2,4-Trichlorobenzene	ND	U	2.0	0.096	1	10/29/20 13:59	
1,1,2-Trichloroethane	ND	U	0.50	0.14	1	10/29/20 13:59	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	10/29/20 13:59	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	10/29/20 13:59	
Trichlorofluoromethane (CFC 11)	ND	U	0.50	0.12	1	10/29/20 13:59	
1,2,3-Trichloropropane	ND	U	0.50	0.20	1	10/29/20 13:59	
1,2,4-Trimethylbenzene	ND	U	2.0	0.069	1	10/29/20 13:59	
1,3,5-Trimethylbenzene	ND	U	2.0	0.089	1	10/29/20 13:59	
Vinyl Chloride	ND	U	0.10	0.075	1	10/29/20 13:59	
o-Xylene	ND	U	0.50	0.074	1	10/29/20 13:59	
m,p-Xylenes	ND	U	0.50	0.11	1	10/29/20 13:59	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	88	68 - 117	10/29/20 13:59	
Dibromofluoromethane	98	73 - 122	10/29/20 13:59	
Toluene-d8	99	65 - 144	10/29/20 13:59	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 07:00
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	TB-1-20-F	**Units:**	ug/L
Lab Code:	K2009514-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Acetone	**5.9**	**J**	20	3.3	1	10/29/20 13:07	
Benzene	ND	U	0.50	0.062	1	10/29/20 13:07	
Bromobenzene	ND	U	2.0	0.12	1	10/29/20 13:07	
Bromochloromethane	ND	U	0.50	0.16	1	10/29/20 13:07	
Bromodichloromethane	ND	U	0.50	0.091	1	10/29/20 13:07	
Bromoform	ND	U	0.50	0.16	1	10/29/20 13:07	
Bromomethane	ND	U	0.50	0.16	1	10/29/20 13:07	
2-Butanone (MEK)	ND	U	20	1.9	1	10/29/20 13:07	
n-Butylbenzene	ND	U	4.0	0.054	1	10/29/20 13:07	
sec-Butylbenzene	ND	U	2.0	0.062	1	10/29/20 13:07	
tert-Butylbenzene	ND	U	2.0	0.059	1	10/29/20 13:07	
Carbon Disulfide	**0.080**	**J**	0.50	0.069	1	10/29/20 13:07	
Carbon Tetrachloride	ND	U	0.50	0.096	1	10/29/20 13:07	*
Chlorobenzene	ND	U	0.50	0.11	1	10/29/20 13:07	
Chloroethane	ND	U	0.50	0.16	1	10/29/20 13:07	
Chloroform	ND	U	0.50	0.072	1	10/29/20 13:07	
Chloromethane	**0.10**	**J**	0.50	0.068	1	10/29/20 13:07	*
2-Chlorotoluene	ND	U	2.0	0.10	1	10/29/20 13:07	
4-Chlorotoluene	ND	U	2.0	0.13	1	10/29/20 13:07	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	10/29/20 13:07	
Dibromochloromethane	ND	U	0.50	0.14	1	10/29/20 13:07	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.10	1	10/29/20 13:07	
Dibromomethane	ND	U	0.50	0.15	1	10/29/20 13:07	
1,2-Dichlorobenzene	ND	U	0.50	0.12	1	10/29/20 13:07	
1,3-Dichlorobenzene	ND	U	0.50	0.10	1	10/29/20 13:07	
1,4-Dichlorobenzene	ND	U	0.50	0.12	1	10/29/20 13:07	
Dichlorodifluoromethane	ND	U	0.50	0.13	1	10/29/20 13:07	*
1,1-Dichloroethane	ND	U	0.50	0.077	1	10/29/20 13:07	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	10/29/20 13:07	
1,1-Dichloroethene	ND	U	0.50	0.080	1	10/29/20 13:07	
cis-1,2-Dichloroethene	ND	U	0.50	0.067	1	10/29/20 13:07	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	10/29/20 13:07	
1,2-Dichloropropane	ND	U	0.50	0.095	1	10/29/20 13:07	
1,3-Dichloropropane	ND	U	0.50	0.14	1	10/29/20 13:07	
2,2-Dichloropropane	ND	U	0.50	0.065	1	10/29/20 13:07	
1,1-Dichloropropene	ND	U	0.50	0.089	1	10/29/20 13:07	
cis-1,3-Dichloropropene	ND	U	0.50	0.18	1	10/29/20 13:07	
trans-1,3-Dichloropropene	ND	U	0.50	0.068	1	10/29/20 13:07	
Ethylbenzene	ND	U	0.50	0.050	1	10/29/20 13:07	
Hexachlorobutadiene	ND	U	2.0	0.11	1	10/29/20 13:07	
2-Hexanone	ND	U	20	2.7	1	10/29/20 13:07	*
Isopropylbenzene	ND	U	2.0	0.051	1	10/29/20 13:07	
4-Isopropyltoluene	ND	U	2.0	0.060	1	10/29/20 13:07	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 07:00
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	TB-1-20-F	**Units:**	ug/L
Lab Code:	K2009514-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	10/29/20 13:07	
Methylene Chloride	**0.20**	**J**	2.0	0.10	1	10/29/20 13:07	
Naphthalene	ND	U	2.0	0.088	1	10/29/20 13:07	*
n-Propylbenzene	ND	U	2.0	0.054	1	10/29/20 13:07	
Styrene	ND	U	0.50	0.089	1	10/29/20 13:07	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.11	1	10/29/20 13:07	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	10/29/20 13:07	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	10/29/20 13:07	
Toluene	**0.33**	**J**	0.50	0.054	1	10/29/20 13:07	
1,2,3-Trichlorobenzene	ND	U	2.0	0.11	1	10/29/20 13:07	
1,2,4-Trichlorobenzene	ND	U	2.0	0.096	1	10/29/20 13:07	
1,1,2-Trichloroethane	ND	U	0.50	0.14	1	10/29/20 13:07	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	10/29/20 13:07	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	10/29/20 13:07	
Trichlorofluoromethane (CFC 11)	ND	U	0.50	0.12	1	10/29/20 13:07	
1,2,3-Trichloropropane	ND	U	0.50	0.20	1	10/29/20 13:07	
1,2,4-Trimethylbenzene	ND	U	2.0	0.069	1	10/29/20 13:07	
1,3,5-Trimethylbenzene	ND	U	2.0	0.089	1	10/29/20 13:07	
Vinyl Chloride	ND	U	0.10	0.075	1	10/29/20 13:07	
o-Xylene	ND	U	0.50	0.074	1	10/29/20 13:07	
m,p-Xylenes	ND	U	0.50	0.11	1	10/29/20 13:07	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	68 - 117	10/29/20 13:07	
Dibromofluoromethane	98	73 - 122	10/29/20 13:07	
Toluene-d8	99	65 - 144	10/29/20 13:07	

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 13:05
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-4-20-F	**Basis:**	NA
Lab Code:	K2009514-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**18.9**	mg/L	0.50	0.07	1	11/10/20 18:44	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 14:45
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-104-20-F	**Basis:**	NA
Lab Code:	K2009514-002		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**34.0**	mg/L	0.50	0.07	1	11/10/20 18:44	

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	10/15/20 11:00
Sample Matrix:	Water	**Date Received:**	10/20/20 11:20
Sample Name:	MW-106-20-F	**Basis:**	NA
Lab Code:	K2009514-003		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	**6.89**	mg/L	0.50	0.07	1	11/10/20 18:44	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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Volatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Rescon Alaska **Service Request:** K2009514
Project: Greer Tank/07-001
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: None

Sample Name	Lab Code	4-Bromofluorobenzene 68-117	Dibromofluoromethane 73-122	Toluene-d8 65-144
MW-4-20-F	K2009514-001	100	111	101
MW-104-20-F	K2009514-002	92	100	99
MW-106-20-F	K2009514-003	97	111	102
MW-107-20-F	K2009514-004	97	108	102
MW-105-20-F	K2009514-005	96	107	100
MW-121-20-F	K2009514-006	88	98	99
TB-1-20-F	K2009514-007	91	98	99
Method Blank	KQ2016344-07	99	113	102
Method Blank	KQ2016365-07	101	111	102
Method Blank	KQ2017106-05	90	96	99
Lab Control Sample	KQ2016344-05	109	103	104
Duplicate Lab Control Sample	KQ2016344-06	106	102	104
Lab Control Sample	KQ2016365-05	106	108	109
Duplicate Lab Control Sample	KQ2016365-06	108	107	107
Lab Control Sample	KQ2017106-03	93	99	100
Duplicate Lab Control Sample	KQ2017106-04	93	101	103

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2016344-07	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	ND U	20	3.3	1	10/23/20 15:20	
Benzene	ND U	0.50	0.062	1	10/23/20 15:20	
Bromobenzene	ND U	2.0	0.12	1	10/23/20 15:20	
Bromochloromethane	ND U	0.50	0.16	1	10/23/20 15:20	
Bromodichloromethane	ND U	0.50	0.091	1	10/23/20 15:20	
Bromoform	ND U	0.50	0.16	1	10/23/20 15:20	
Bromomethane	ND U	0.50	0.16	1	10/23/20 15:20	
2-Butanone (MEK)	ND U	20	1.9	1	10/23/20 15:20	
n-Butylbenzene	ND U	4.0	0.054	1	10/23/20 15:20	
sec-Butylbenzene	ND U	2.0	0.062	1	10/23/20 15:20	
tert-Butylbenzene	ND U	2.0	0.059	1	10/23/20 15:20	
Carbon Disulfide	ND U	0.50	0.069	1	10/23/20 15:20	
Carbon Tetrachloride	ND U	0.50	0.096	1	10/23/20 15:20	
Chlorobenzene	ND U	0.50	0.11	1	10/23/20 15:20	
Chloroethane	ND U	0.50	0.16	1	10/23/20 15:20	
Chloroform	ND U	0.50	0.072	1	10/23/20 15:20	
Chloromethane	ND U	0.50	0.068	1	10/23/20 15:20	
2-Chlorotoluene	ND U	2.0	0.10	1	10/23/20 15:20	
4-Chlorotoluene	ND U	2.0	0.13	1	10/23/20 15:20	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/23/20 15:20	
Dibromochloromethane	ND U	0.50	0.14	1	10/23/20 15:20	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	10/23/20 15:20	
Dibromomethane	ND U	0.50	0.15	1	10/23/20 15:20	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	10/23/20 15:20	
1,3-Dichlorobenzene	ND U	0.50	0.10	1	10/23/20 15:20	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	10/23/20 15:20	
Dichlorodifluoromethane	ND U	0.50	0.13	1	10/23/20 15:20	
1,1-Dichloroethane	ND U	0.50	0.077	1	10/23/20 15:20	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/23/20 15:20	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/23/20 15:20	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/23/20 15:20	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/23/20 15:20	
1,2-Dichloropropane	ND U	0.50	0.095	1	10/23/20 15:20	
1,3-Dichloropropane	ND U	0.50	0.14	1	10/23/20 15:20	
2,2-Dichloropropane	ND U	0.50	0.065	1	10/23/20 15:20	
1,1-Dichloropropene	ND U	0.50	0.089	1	10/23/20 15:20	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	10/23/20 15:20	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	10/23/20 15:20	
Ethylbenzene	ND U	0.50	0.050	1	10/23/20 15:20	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/23/20 15:20	
2-Hexanone	ND U	20	2.7	1	10/23/20 15:20	
Isopropylbenzene	ND U	2.0	0.051	1	10/23/20 15:20	
4-Isopropyltoluene	ND U	2.0	0.060	1	10/23/20 15:20	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2016344-07	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	10/23/20 15:20	
Methylene Chloride	ND U	2.0	0.10	1	10/23/20 15:20	
Naphthalene	ND U	2.0	0.088	1	10/23/20 15:20	
n-Propylbenzene	ND U	2.0	0.054	1	10/23/20 15:20	
Styrene	ND U	0.50	0.089	1	10/23/20 15:20	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	10/23/20 15:20	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/23/20 15:20	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	10/23/20 15:20	
Toluene	ND U	0.50	0.054	1	10/23/20 15:20	
1,2,3-Trichlorobenzene	ND U	2.0	0.11	1	10/23/20 15:20	
1,2,4-Trichlorobenzene	ND U	2.0	0.096	1	10/23/20 15:20	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	10/23/20 15:20	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/23/20 15:20	
Trichloroethene (TCE)	ND U	0.50	0.10	1	10/23/20 15:20	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/23/20 15:20	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	10/23/20 15:20	
1,2,4-Trimethylbenzene	ND U	2.0	0.069	1	10/23/20 15:20	
1,3,5-Trimethylbenzene	ND U	2.0	0.089	1	10/23/20 15:20	
Vinyl Chloride	ND U	0.20	0.075	1	10/23/20 15:20	
o-Xylene	ND U	0.50	0.074	1	10/23/20 15:20	
m,p-Xylenes	ND U	0.50	0.11	1	10/23/20 15:20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	68 - 117	10/23/20 15:20	
Dibromofluoromethane	113	73 - 122	10/23/20 15:20	
Toluene-d8	102	65 - 144	10/23/20 15:20	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2016365-07	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Acetone	ND U	20	3.3	1	10/24/20 11:39	
Benzene	ND U	0.50	0.062	1	10/24/20 11:39	
Bromobenzene	ND U	2.0	0.12	1	10/24/20 11:39	
Bromochloromethane	ND U	0.50	0.16	1	10/24/20 11:39	
Bromodichloromethane	ND U	0.50	0.091	1	10/24/20 11:39	
Bromoform	ND U	0.50	0.16	1	10/24/20 11:39	
Bromomethane	ND U	0.50	0.16	1	10/24/20 11:39	
2-Butanone (MEK)	ND U	20	1.9	1	10/24/20 11:39	
n-Butylbenzene	ND U	4.0	0.054	1	10/24/20 11:39	
sec-Butylbenzene	ND U	2.0	0.062	1	10/24/20 11:39	
tert-Butylbenzene	ND U	2.0	0.059	1	10/24/20 11:39	
Carbon Disulfide	ND U	0.50	0.069	1	10/24/20 11:39	
Carbon Tetrachloride	ND U	0.50	0.096	1	10/24/20 11:39	
Chlorobenzene	ND U	0.50	0.11	1	10/24/20 11:39	
Chloroethane	ND U	0.50	0.16	1	10/24/20 11:39	
Chloroform	ND U	0.50	0.072	1	10/24/20 11:39	
Chloromethane	ND U	0.50	0.068	1	10/24/20 11:39	
2-Chlorotoluene	ND U	2.0	0.10	1	10/24/20 11:39	
4-Chlorotoluene	ND U	2.0	0.13	1	10/24/20 11:39	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/24/20 11:39	
Dibromochloromethane	ND U	0.50	0.14	1	10/24/20 11:39	
1,2-Dibromoethane (EDB)	ND U	2.0	0.10	1	10/24/20 11:39	
Dibromomethane	ND U	0.50	0.15	1	10/24/20 11:39	
1,2-Dichlorobenzene	ND U	0.50	0.12	1	10/24/20 11:39	
1,3-Dichlorobenzene	ND U	0.50	0.10	1	10/24/20 11:39	
1,4-Dichlorobenzene	ND U	0.50	0.12	1	10/24/20 11:39	
Dichlorodifluoromethane	ND U	0.50	0.13	1	10/24/20 11:39	
1,1-Dichloroethane	ND U	0.50	0.077	1	10/24/20 11:39	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/24/20 11:39	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/24/20 11:39	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/24/20 11:39	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/24/20 11:39	
1,2-Dichloropropane	ND U	0.50	0.095	1	10/24/20 11:39	
1,3-Dichloropropane	ND U	0.50	0.14	1	10/24/20 11:39	
2,2-Dichloropropane	ND U	0.50	0.065	1	10/24/20 11:39	
1,1-Dichloropropene	ND U	0.50	0.089	1	10/24/20 11:39	
cis-1,3-Dichloropropene	ND U	0.50	0.18	1	10/24/20 11:39	
trans-1,3-Dichloropropene	ND U	0.50	0.068	1	10/24/20 11:39	
Ethylbenzene	ND U	0.50	0.050	1	10/24/20 11:39	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/24/20 11:39	
2-Hexanone	ND U	20	2.7	1	10/24/20 11:39	
Isopropylbenzene	ND U	2.0	0.051	1	10/24/20 11:39	
4-Isopropyltoluene	ND U	2.0	0.060	1	10/24/20 11:39	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2016365-07	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
4-Methyl-2-pentanone (MIBK)	ND U	20	2.6	1	10/24/20 11:39	
Methylene Chloride	ND U	2.0	0.10	1	10/24/20 11:39	
Naphthalene	ND U	2.0	0.088	1	10/24/20 11:39	
n-Propylbenzene	ND U	2.0	0.054	1	10/24/20 11:39	
Styrene	ND U	0.50	0.089	1	10/24/20 11:39	
1,1,1,2-Tetrachloroethane	ND U	0.50	0.11	1	10/24/20 11:39	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/24/20 11:39	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	10/24/20 11:39	
Toluene	ND U	0.50	0.054	1	10/24/20 11:39	
1,2,3-Trichlorobenzene	ND U	2.0	0.11	1	10/24/20 11:39	
1,2,4-Trichlorobenzene	ND U	2.0	0.096	1	10/24/20 11:39	
1,1,2-Trichloroethane	ND U	0.50	0.14	1	10/24/20 11:39	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/24/20 11:39	
Trichloroethene (TCE)	ND U	0.50	0.10	1	10/24/20 11:39	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/24/20 11:39	
1,2,3-Trichloropropane	ND U	0.50	0.20	1	10/24/20 11:39	
1,2,4-Trimethylbenzene	ND U	2.0	0.069	1	10/24/20 11:39	
1,3,5-Trimethylbenzene	ND U	2.0	0.089	1	10/24/20 11:39	
Vinyl Chloride	ND U	0.20	0.075	1	10/24/20 11:39	
o-Xylene	ND U	0.50	0.074	1	10/24/20 11:39	
m,p-Xylenes	ND U	0.50	0.11	1	10/24/20 11:39	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	68 - 117	10/24/20 11:39	
Dibromofluoromethane	111	73 - 122	10/24/20 11:39	
Toluene-d8	102	65 - 144	10/24/20 11:39	

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2017106-05	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Acetone	ND	U	20	3.3	1	10/29/20 12:40	
Benzene	ND	U	0.50	0.062	1	10/29/20 12:40	
Bromobenzene	ND	U	2.0	0.12	1	10/29/20 12:40	
Bromochloromethane	ND	U	0.50	0.16	1	10/29/20 12:40	
Bromodichloromethane	ND	U	0.50	0.091	1	10/29/20 12:40	
Bromoform	ND	U	0.50	0.16	1	10/29/20 12:40	
Bromomethane	ND	U	0.50	0.16	1	10/29/20 12:40	
2-Butanone (MEK)	ND	U	20	1.9	1	10/29/20 12:40	
n-Butylbenzene	ND	U	4.0	0.054	1	10/29/20 12:40	
sec-Butylbenzene	ND	U	2.0	0.062	1	10/29/20 12:40	
tert-Butylbenzene	ND	U	2.0	0.059	1	10/29/20 12:40	
Carbon Disulfide	**0.090**	**J**	0.50	0.069	1	10/29/20 12:40	
Carbon Tetrachloride	ND	U	0.50	0.096	1	10/29/20 12:40	
Chlorobenzene	ND	U	0.50	0.11	1	10/29/20 12:40	
Chloroethane	ND	U	0.50	0.16	1	10/29/20 12:40	
Chloroform	ND	U	0.50	0.072	1	10/29/20 12:40	
Chloromethane	ND	U	0.50	0.068	1	10/29/20 12:40	
2-Chlorotoluene	ND	U	2.0	0.10	1	10/29/20 12:40	
4-Chlorotoluene	ND	U	2.0	0.13	1	10/29/20 12:40	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	10/29/20 12:40	
Dibromochloromethane	ND	U	0.50	0.14	1	10/29/20 12:40	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.10	1	10/29/20 12:40	
Dibromomethane	ND	U	0.50	0.15	1	10/29/20 12:40	
1,2-Dichlorobenzene	ND	U	0.50	0.12	1	10/29/20 12:40	
1,3-Dichlorobenzene	ND	U	0.50	0.10	1	10/29/20 12:40	
1,4-Dichlorobenzene	ND	U	0.50	0.12	1	10/29/20 12:40	
Dichlorodifluoromethane	ND	U	0.50	0.13	1	10/29/20 12:40	
1,1-Dichloroethane	ND	U	0.50	0.077	1	10/29/20 12:40	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	10/29/20 12:40	
1,1-Dichloroethene	ND	U	0.50	0.080	1	10/29/20 12:40	
cis-1,2-Dichloroethene	ND	U	0.50	0.067	1	10/29/20 12:40	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	10/29/20 12:40	
1,2-Dichloropropane	ND	U	0.50	0.095	1	10/29/20 12:40	
1,3-Dichloropropane	ND	U	0.50	0.14	1	10/29/20 12:40	
2,2-Dichloropropane	ND	U	0.50	0.065	1	10/29/20 12:40	
1,1-Dichloropropene	ND	U	0.50	0.089	1	10/29/20 12:40	
cis-1,3-Dichloropropene	ND	U	0.50	0.18	1	10/29/20 12:40	
trans-1,3-Dichloropropene	ND	U	0.50	0.068	1	10/29/20 12:40	
Ethylbenzene	ND	U	0.50	0.050	1	10/29/20 12:40	
Hexachlorobutadiene	**0.20**	**J**	2.0	0.11	1	10/29/20 12:40	
2-Hexanone	ND	U	20	2.7	1	10/29/20 12:40	
Isopropylbenzene	ND	U	2.0	0.051	1	10/29/20 12:40	
4-Isopropyltoluene	ND	U	2.0	0.060	1	10/29/20 12:40	

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2017106-05	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	10/29/20 12:40	
Methylene Chloride	**0.20**	**J**	2.0	0.10	1	10/29/20 12:40	
Naphthalene	**0.14**	**J**	2.0	0.088	1	10/29/20 12:40	
n-Propylbenzene	ND	U	2.0	0.054	1	10/29/20 12:40	
Styrene	ND	U	0.50	0.089	1	10/29/20 12:40	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.11	1	10/29/20 12:40	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	10/29/20 12:40	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	10/29/20 12:40	
Toluene	ND	U	0.50	0.054	1	10/29/20 12:40	
1,2,3-Trichlorobenzene	**0.18**	**J**	2.0	0.11	1	10/29/20 12:40	
1,2,4-Trichlorobenzene	**0.11**	**J**	2.0	0.096	1	10/29/20 12:40	
1,1,2-Trichloroethane	ND	U	0.50	0.14	1	10/29/20 12:40	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	10/29/20 12:40	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	10/29/20 12:40	
Trichlorofluoromethane (CFC 11)	ND	U	0.50	0.12	1	10/29/20 12:40	
1,2,3-Trichloropropane	ND	U	0.50	0.20	1	10/29/20 12:40	
1,2,4-Trimethylbenzene	ND	U	2.0	0.069	1	10/29/20 12:40	
1,3,5-Trimethylbenzene	ND	U	2.0	0.089	1	10/29/20 12:40	
Vinyl Chloride	ND	U	0.10	0.075	1	10/29/20 12:40	
o-Xylene	ND	U	0.50	0.074	1	10/29/20 12:40	
m,p-Xylenes	ND	U	0.50	0.11	1	10/29/20 12:40	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	68 - 117	10/29/20 12:40	
Dibromofluoromethane	96	73 - 122	10/29/20 12:40	
Toluene-d8	99	65 - 144	10/29/20 12:40	

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Analyzed:**	10/23/20
Sample Matrix:	Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	700662

	Lab Control Sample KQ2016344-05			Duplicate Lab Control Sample KQ2016344-06					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1,2-Tetrachloroethane	9.80	10.0	98	9.78	10.0	98	66-124	<1	30
1,1,1-Trichloroethane (TCA)	9.23	10.0	92	9.35	10.0	94	59-136	1	30
1,1,2,2-Tetrachloroethane	8.87	10.0	89	9.24	10.0	92	70-127	4	30
1,1,2-Trichloroethane	9.68	10.0	97	9.53	10.0	95	74-118	2	30
1,1-Dichloroethane	8.63	10.0	86	8.87	10.0	89	68-132	3	30
1,1-Dichloroethene	9.25	10.0	93	9.26	10.0	93	66-129	<1	30
1,1-Dichloropropene	8.94	10.0	89	9.19	10.0	92	59-134	3	30
1,2,3-Trichlorobenzene	9.06	10.0	91	9.20	10.0	92	68-120	2	30
1,2,3-Trichloropropane	9.50	10.0	95	9.58	10.0	96	69-123	<1	30
1,2,4-Trichlorobenzene	9.45	10.0	95	9.52	10.0	95	58-126	<1	30
1,2,4-Trimethylbenzene	9.11	10.0	91	9.38	10.0	94	63-122	3	30
1,2-Dibromo-3-chloropropane	8.76	10.0	88	9.33	10.0	93	55-132	6	30
1,2-Dibromoethane (EDB)	9.68	10.0	97	9.82	10.0	98	74-118	1	30
1,2-Dichlorobenzene	8.97	10.0	90	9.02	10.0	90	72-115	<1	30
1,2-Dichloroethane (EDC)	8.77	10.0	88	8.87	10.0	89	56-142	1	30
1,2-Dichloropropane	8.30	10.0	83	8.62	10.0	86	67-126	4	30
1,3,5-Trimethylbenzene	9.17	10.0	92	9.44	10.0	94	62-126	3	30
1,3-Dichlorobenzene	9.00	10.0	90	9.21	10.0	92	70-116	2	30
1,3-Dichloropropane	9.33	10.0	93	9.37	10.0	94	75-116	<1	30
1,4-Dichlorobenzene	8.93	10.0	89	9.14	10.0	91	73-115	2	30
2,2-Dichloropropane	9.11	10.0	91	9.27	10.0	93	37-145	2	30
2-Butanone (MEK)	84.4	100	84	87.6	100	88	71-149	4	30
2-Chlorotoluene	8.79	10.0	88	8.88	10.0	89	55-131	1	30
2-Hexanone	88.8	100	89	93.3	100	93	59-131	5	30
4-Chlorotoluene	8.75	10.0	88	8.88	10.0	89	66-121	1	30
4-Isopropyltoluene	9.44	10.0	94	9.63	10.0	96	61-128	2	30
4-Methyl-2-pentanone (MIBK)	84.3	100	84	87.1	100	87	64-134	3	30
Acetone	85.3	100	85	88.5	100	89	68-135	4	30
Benzene	8.92	10.0	89	9.04	10.0	90	69-124	1	30
Bromobenzene	9.24	10.0	92	9.28	10.0	93	72-116	<1	30
Bromochloromethane	9.85	10.0	99	9.93	10.0	99	75-131	<1	30
Bromodichloromethane	8.83	10.0	88	9.06	10.0	91	63-129	3	30
Bromoform	10.1	10.0	101	9.98	10.0	100	52-144	1	30
Bromomethane	9.18	10.0	92	9.72	10.0	97	35-113	6	30
Carbon Disulfide	7.93	10.0	79	8.14	10.0	81	46-144	3	30
Carbon Tetrachloride	9.95	10.0	100	10.1	10.0	101	55-140	1	30
Chlorobenzene	9.40	10.0	94	9.57	10.0	96	72-116	2	30
Chloroethane	7.53	10.0	75	7.60	10.0	76	58-134	<1	30
Chloroform	8.87	10.0	89	9.18	10.0	92	70-129	3	30
Chloromethane	7.77	10.0	78	8.17	10.0	82	34-130	5	30
cis-1,2-Dichloroethene	8.77	10.0	88	8.87	10.0	89	71-118	1	30

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Analyzed:**	10/23/20
Sample Matrix:	Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	700662

	Lab Control Sample KQ2016344-05			Duplicate Lab Control Sample KQ2016344-06					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
cis-1,3-Dichloropropene	8.98	10.0	90	9.09	10.0	91	62-132	1	30
Dibromochloromethane	9.89	10.0	99	9.72	10.0	97	67-126	2	30
Dibromomethane	9.15	10.0	92	9.04	10.0	90	69-128	1	30
Dichlorodifluoromethane	6.50	10.0	65	6.50	10.0	65	32-124	<1	30
Ethylbenzene	9.73	10.0	97	9.67	10.0	97	67-121	<1	30
Hexachlorobutadiene	9.60	10.0	96	9.71	10.0	97	57-119	1	30
Isopropylbenzene	10.0	10.0	100	9.99	10.0	100	67-129	<1	30
m,p-Xylenes	19.9	20.0	100	20.0	20.0	100	69-121	<1	30
Methylene Chloride	9.24	10.0	92	9.50	10.0	95	71-122	3	30
Naphthalene	9.12	10.0	91	9.13	10.0	91	64-126	<1	30
n-Butylbenzene	8.99	10.0	90	9.10	10.0	91	55-130	1	30
n-Propylbenzene	8.98	10.0	90	9.06	10.0	91	61-124	<1	30
o-Xylene	10.1	10.0	101	9.92	10.0	99	71-119	1	30
sec-Butylbenzene	9.02	10.0	90	9.36	10.0	94	59-128	4	30
Styrene	10.3	10.0	103	10.1	10.0	101	74-121	2	30
tert-Butylbenzene	8.82	10.0	88	9.24	10.0	92	61-127	5	30
Tetrachloroethene (PCE)	10.1	10.0	101	10.0	10.0	100	62-126	1	30
Toluene	8.78	10.0	88	9.05	10.0	91	69-124	3	30
trans-1,2-Dichloroethene	9.13	10.0	91	9.25	10.0	93	67-125	1	30
trans-1,3-Dichloropropene	9.27	10.0	93	9.28	10.0	93	59-125	<1	30
Trichloroethene (TCE)	8.81	10.0	88	9.10	10.0	91	67-128	3	30
Trichlorofluoromethane (CFC 11)	8.44	10.0	84	8.86	10.0	89	52-141	5	30
Vinyl Chloride	7.38	10.0	74	7.30	10.0	73	55-123	1	30

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Analyzed:**	10/24/20
Sample Matrix:	Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	700708

	Lab Control Sample KQ2016365-05			Duplicate Lab Control Sample KQ2016365-06					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1,2-Tetrachloroethane	8.80	10.0	88	8.69	10.0	87	66-124	1	30
1,1,1-Trichloroethane (TCA)	8.77	10.0	88	8.30	10.0	83	59-136	6	30
1,1,2,2-Tetrachloroethane	7.77	10.0	78	7.75	10.0	78	70-127	<1	30
1,1,2-Trichloroethane	8.42	10.0	84	8.62	10.0	86	74-118	2	30
1,1-Dichloroethane	8.19	10.0	82	7.95	10.0	80	68-132	3	30
1,1-Dichloroethene	8.24	10.0	82	8.30	10.0	83	66-129	<1	30
1,1-Dichloropropene	8.41	10.0	84	8.11	10.0	81	59-134	4	30
1,2,3-Trichlorobenzene	8.32	10.0	83	7.94	10.0	79	68-120	5	30
1,2,3-Trichloropropane	7.96	10.0	80	8.43	10.0	84	69-123	6	30
1,2,4-Trichlorobenzene	8.29	10.0	83	8.07	10.0	81	58-126	3	30
1,2,4-Trimethylbenzene	8.18	10.0	82	8.06	10.0	81	63-122	1	30
1,2-Dibromo-3-chloropropane	7.43	10.0	74	7.42	10.0	74	55-132	<1	30
1,2-Dibromoethane (EDB)	8.69	10.0	87	8.49	10.0	85	74-118	2	30
1,2-Dichlorobenzene	8.09	10.0	81	8.13	10.0	81	72-115	<1	30
1,2-Dichloroethane (EDC)	8.80	10.0	88	8.28	10.0	83	56-142	6	30
1,2-Dichloropropane	7.96	10.0	80	7.74	10.0	77	67-126	3	30
1,3,5-Trimethylbenzene	8.03	10.0	80	8.03	10.0	80	62-126	<1	30
1,3-Dichlorobenzene	8.28	10.0	83	8.05	10.0	81	70-116	3	30
1,3-Dichloropropane	8.51	10.0	85	8.37	10.0	84	75-116	2	30
1,4-Dichlorobenzene	8.45	10.0	85	8.14	10.0	81	73-115	4	30
2,2-Dichloropropane	8.73	10.0	87	8.22	10.0	82	37-145	6	30
2-Butanone (MEK)	42.5	50.0	85	40.3	50.0	81	71-149	5	30
2-Chlorotoluene	7.84	10.0	78	7.81	10.0	78	55-131	<1	30
2-Hexanone	43.1	50.0	86	42.5	50.0	85	59-131	1	30
4-Chlorotoluene	7.84	10.0	78	7.73	10.0	77	66-121	1	30
4-Isopropyltoluene	8.66	10.0	87	8.37	10.0	84	61-128	3	30
4-Methyl-2-pentanone (MIBK)	43.5	50.0	87	41.0	50.0	82	64-134	6	30
Acetone	42.0	50.0	84	38.4	50.0	77	68-135	9	30
Benzene	8.61	10.0	86	8.30	10.0	83	69-124	4	30
Bromobenzene	8.36	10.0	84	8.02	10.0	80	72-116	4	30
Bromochloromethane	8.51	10.0	85	8.70	10.0	87	75-131	2	30
Bromodichloromethane	8.50	10.0	85	8.20	10.0	82	63-129	4	30
Bromoform	9.31	10.0	93	9.12	10.0	91	52-144	2	30
Bromomethane	3.40	10.0	34 *	3.83	10.0	38	35-113	12	30
Carbon Disulfide	16.2	20.0	81	15.8	20.0	79	46-144	3	30
Carbon Tetrachloride	9.54	10.0	95	8.99	10.0	90	55-140	6	30
Chlorobenzene	8.61	10.0	86	8.62	10.0	86	72-116	<1	30
Chloroethane	7.75	10.0	78	7.55	10.0	76	58-134	3	30
Chloroform	8.46	10.0	85	8.53	10.0	85	70-129	<1	30
Chloromethane	9.13	10.0	91	9.07	10.0	91	34-130	<1	30
cis-1,2-Dichloroethene	8.40	10.0	84	8.26	10.0	83	71-118	2	30

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Analyzed:**	10/24/20
Sample Matrix:	Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	700708

	Lab Control Sample KQ2016365-05			Duplicate Lab Control Sample KQ2016365-06					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
cis-1,3-Dichloropropene	8.14	10.0	81	7.86	10.0	79	62-132	4	30
Dibromochloromethane	8.87	10.0	89	8.74	10.0	87	67-126	1	30
Dibromomethane	8.58	10.0	86	8.44	10.0	84	69-128	2	30
Dichlorodifluoromethane	9.51	10.0	95	8.83	10.0	88	32-124	7	30
Ethylbenzene	8.51	10.0	85	8.35	10.0	84	67-121	2	30
Hexachlorobutadiene	8.11	10.0	81	7.94	10.0	79	57-119	2	30
Isopropylbenzene	9.11	10.0	91	9.05	10.0	91	67-129	<1	30
m,p-Xylenes	18.2	20.0	91	17.9	20.0	89	69-121	2	30
Methylene Chloride	8.87	10.0	89	8.49	10.0	85	71-122	4	30
Naphthalene	8.02	10.0	80	7.57	10.0	76	64-126	6	30
n-Butylbenzene	8.03	10.0	80	7.90	10.0	79	55-130	2	30
n-Propylbenzene	8.00	10.0	80	7.64	10.0	76	61-124	5	30
o-Xylene	9.04	10.0	90	8.96	10.0	90	71-119	<1	30
sec-Butylbenzene	8.07	10.0	81	7.84	10.0	78	59-128	3	30
Styrene	8.94	10.0	89	9.21	10.0	92	74-121	3	30
tert-Butylbenzene	8.15	10.0	82	7.76	10.0	78	61-127	5	30
Tetrachloroethene (PCE)	8.98	10.0	90	8.95	10.0	90	62-126	<1	30
Toluene	8.19	10.0	82	8.16	10.0	82	69-124	<1	30
trans-1,2-Dichloroethene	8.92	10.0	89	8.30	10.0	83	67-125	7	30
trans-1,3-Dichloropropene	8.29	10.0	83	8.20	10.0	82	59-125	1	30
Trichloroethene (TCE)	8.07	10.0	81	8.13	10.0	81	67-128	<1	30
Trichlorofluoromethane (CFC 11)	8.70	10.0	87	8.24	10.0	82	52-141	5	30
Vinyl Chloride	7.85	10.0	79	7.42	10.0	74	55-123	6	30

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Analyzed:**	10/29/20
Sample Matrix:	Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	701364

	Lab Control Sample KQ2017106-03			Duplicate Lab Control Sample KQ2017106-04					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1,2-Tetrachloroethane	9.70	10.0	97	10.5	10.0	105	66-124	8	30
1,1,1-Trichloroethane (TCA)	10.7	10.0	107	11.4	10.0	114	59-136	6	30
1,1,2,2-Tetrachloroethane	9.36	10.0	94	9.44	10.0	94	70-127	<1	30
1,1,2-Trichloroethane	9.19	10.0	92	9.55	10.0	96	74-118	4	30
1,1-Dichloroethane	10.4	10.0	104	10.9	10.0	109	68-132	5	30
1,1-Dichloroethene	8.54	10.0	85	8.86	10.0	89	66-129	4	30
1,1-Dichloropropene	10.3	10.0	103	10.8	10.0	108	59-134	5	30
1,2,3-Trichlorobenzene	9.65	10.0	97	9.91	10.0	99	68-120	3	30
1,2,3-Trichloropropane	10.5	10.0	105	10.1	10.0	101	69-123	4	30
1,2,4-Trichlorobenzene	9.35	10.0	94	9.71	10.0	97	58-126	4	30
1,2,4-Trimethylbenzene	9.68	10.0	97	10.0	10.0	100	63-122	4	30
1,2-Dibromo-3-chloropropane	7.88	10.0	79	9.72	10.0	97	55-132	21	30
1,2-Dibromoethane (EDB)	9.08	10.0	91	9.56	10.0	96	74-118	5	30
1,2-Dichlorobenzene	9.50	10.0	95	10.0	10.0	100	72-115	6	30
1,2-Dichloroethane (EDC)	10.7	10.0	107	11.2	10.0	112	56-142	5	30
1,2-Dichloropropane	9.70	10.0	97	9.91	10.0	99	67-126	2	30
1,3,5-Trimethylbenzene	9.48	10.0	95	9.78	10.0	98	62-126	3	30
1,3-Dichlorobenzene	9.36	10.0	94	9.78	10.0	98	70-116	4	30
1,3-Dichloropropane	9.08	10.0	91	9.03	10.0	90	75-116	<1	30
1,4-Dichlorobenzene	9.26	10.0	93	9.53	10.0	95	73-115	3	30
2,2-Dichloropropane	8.80	10.0	88	8.99	10.0	90	37-145	2	30
2-Butanone (MEK)	55.9	50.0	112	61.7	50.0	123	71-149	10	30
2-Chlorotoluene	9.19	10.0	92	9.57	10.0	96	55-131	4	30
2-Hexanone	46.5	50.0	93	46.9	50.0	94	59-131	<1	30
4-Chlorotoluene	9.71	10.0	97	9.98	10.0	100	66-121	3	30
4-Isopropyltoluene	9.76	10.0	98	9.87	10.0	99	61-128	1	30
4-Methyl-2-pentanone (MIBK)	53.8	50.0	108	56.0	50.0	112	64-134	4	30
Acetone	61.7	50.0	123	62.5	50.0	125	68-135	1	30
Benzene	10.2	10.0	102	10.7	10.0	107	69-124	5	30
Bromobenzene	9.39	10.0	94	9.96	10.0	100	72-116	6	30
Bromochloromethane	10.6	10.0	106	11.3	10.0	113	75-131	6	30
Bromodichloromethane	11.2	10.0	112	11.7	10.0	117	63-129	4	30
Bromoform	10.8	10.0	108	11.6	10.0	116	52-144	7	30
Bromomethane	6.56	10.0	66	7.58	10.0	76	35-113	14	30
Carbon Disulfide	19.1	20.0	96	19.8	20.0	99	46-144	4	30
Carbon Tetrachloride	11.6	10.0	116	12.2	10.0	122	55-140	5	30
Chlorobenzene	9.04	10.0	90	9.54	10.0	95	72-116	5	30
Chloroethane	10.2	10.0	102	10.6	10.0	106	58-134	4	30
Chloroform	10.4	10.0	104	10.9	10.0	109	70-129	4	30
Chloromethane	9.79	10.0	98	10.7	10.0	107	34-130	8	30
cis-1,2-Dichloroethene	10.2	10.0	102	10.8	10.0	108	71-118	6	30

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Analyzed:**	10/29/20
Sample Matrix:	Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	701364

	Lab Control Sample KQ2017106-03			Duplicate Lab Control Sample KQ2017106-04					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
cis-1,3-Dichloropropene	10.1	10.0	101	10.4	10.0	104	62-132	3	30
Dibromochloromethane	11.3	10.0	113	11.7	10.0	117	67-126	3	30
Dibromomethane	10.4	10.0	104	10.7	10.0	107	69-128	3	30
Dichlorodifluoromethane	12.9	10.0	129 *	14.1	10.0	141 *	32-124	9	30
Ethylbenzene	8.76	10.0	88	9.14	10.0	91	67-121	4	30
Hexachlorobutadiene	9.73	10.0	97	10.7	10.0	107	57-119	9	30
Isopropylbenzene	9.32	10.0	93	9.74	10.0	97	67-129	4	30
m,p-Xylenes	17.7	20.0	89	18.6	20.0	93	69-121	5	30
Methylene Chloride	10.5	10.0	105	11.2	10.0	112	71-122	6	30
Naphthalene	8.49	10.0	85	8.99	10.0	90	64-126	6	30
n-Butylbenzene	9.19	10.0	92	9.42	10.0	94	55-130	2	30
n-Propylbenzene	9.47	10.0	95	9.85	10.0	99	61-124	4	30
o-Xylene	8.66	10.0	87	9.40	10.0	94	71-119	8	30
sec-Butylbenzene	9.26	10.0	93	9.51	10.0	95	59-128	3	30
Styrene	9.33	10.0	93	9.92	10.0	99	74-121	6	30
tert-Butylbenzene	9.23	10.0	92	9.53	10.0	95	61-127	3	30
Tetrachloroethene (PCE)	9.29	10.0	93	9.74	10.0	97	62-126	5	30
Toluene	10.5	10.0	105	11.3	10.0	113	69-124	7	30
trans-1,2-Dichloroethene	10.3	10.0	103	10.7	10.0	107	67-125	4	30
trans-1,3-Dichloropropene	8.88	10.0	89	8.58	10.0	86	59-125	3	30
Trichloroethene (TCE)	10.3	10.0	103	10.9	10.0	109	67-128	6	30
Trichlorofluoromethane (CFC 11)	9.55	10.0	96	10.3	10.0	103	52-141	7	30
Vinyl Chloride	10.5	10.0	105	11.1	10.0	111	55-123	5	30

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2009514-MB		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic	SM 5310 C	ND U	mg/L	0.50	0.07	1	11/10/20 18:44	

Client:	Rescon Alaska	**Service Request:**	K2009514
Project:	Greer Tank/07-001	**Date Analyzed:**	11/10/20
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	702961

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2009514-LCS	26.1	25.0	105	83-117

Subcontracted Analytical Parameters

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

LABORATORY REPORT

November 10, 2020

Ryan Burich
Rescon Alaska
8361 Petersburg Street
Anchorage, AK 99507

RE: Greer Tank / 07-001

Dear Ryan:

Enclosed are the results of the sample submitted to our laboratory on October 20, 2020. For your reference, these analyses have been assigned our service request number K2009514.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Kaneko
Nov 10, 2020, 1:49 pm

Kate Kaneko
Project Manager

CASE NARRATIVE

The samples were received intact under chain of custody at the Simi Valley facility on October 20, 2020 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Methane, Ethene and Ethane Analysis

The samples were analyzed for methane, ethene, and ethane using a gas chromatograph equipped with a flame ionization detector (FID). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least two hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (methane, ethene and ethane) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the laboratory's NELAP or DoD-ELAP accreditation.

The samples were analyzed outside of the 14 day holding time.

The upper control criterion was exceeded for ethane \ ethylene in the Laboratory Control Sample (LCS) analyzed on November 2, 2020. The Laboratory Control Sample Duplicate was within control criteria. The error associated with the elevated recovery equates to a high bias, the sample data has not been significantly affected. The data has been flagged accordingly. No corrective action was required.

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1776326
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-007
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

Intra-Network Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 1-360-577-7222 • FAX 1-360-636-1068

ALS Contact: Kelley Lovejoy

Project Name: Greer Tank
Project Number: 07-001
Project Manager: Ryan Burich
Company: Rescon Alaska
QAP: LAB QAP

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Gases RSK 175
K2009514-001	MW-4-20-F	3	Water	10/15/20	1305	10/20/20	SIMIVALLEY	II
K2009514-002	MW-104-20-F		Water	10/15/20	1445	10/20/20	SIMIVALLEY	II
K2009514-003	MW-106-20-F		Water	10/15/20	1100	10/20/20	SIMIVALLEY	II
K2009514-007	TB-1-20-F	2	Water	10/15/20	0700	10/20/20	SIMIVALLEY	II

Test Comments
Gases - RSK 175 K2009514-001,2,3,7 MEE

Special Instructions/Comments
Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com.

pH Checked _____

Turnaround Requirements
_____ **RUSH** (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
✓ **STANDARD**
Requested FAX Date: _____
Requested Report Date: 11/10/20

Report Requirements
____ I. Results Only
✓ II. Results + QC Summaries
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
PQL/MDL/J Y
EDD Y

Invoice Information
PO# 51K2009514
Bill to

Relinquished By: [signature] 10/21/2020 1000 Received By: [signature] 10/22/20 0935 3° GEL Airbill Number: _____

ALS Environmental
Sample Acceptance Check Form

Client: Rescon Alaska Work order: K2009514

Project: Greer Tank / 07-001

Sample(s) received on: 10/22/20 Date opened: 10/22/20 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 3° C	Gel Pa		
8	Were **custody seals** on outside of cooler/Box/Container?	☒	☐	☐
	Location of seal(s)? _____ Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☒	☐	☐
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☒	☐
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
K2009514-001.04	40 mL AG HCL		1		A	wh 11/2/20
K2009514-001.05	40 mL AG HCL				A	
K2009514-001.06	40 mL AG HCL				A	
K2009514-002.04	40 mL AG HCL		1		A	wh 11/2/20
K2009514-002.05	40 mL AG HCL				A	
K2009514-002.06	40 mL AG HCL				A	
K2009514-003.04	40 mL AG HCL		1		A	wh 11/2/20
K2009514-003.05	40 mL AG HCL				P	
K2009514-003.06	40 mL AG HCL				A	
K2009514-007.03	40 mL AG HCL		1		P	wh 11/2/20
K2009514-007.04	40 mL AG HCL				P	

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS Environmental
Sample Acceptance Check Form

Client: Rescon Alaska Work order: K2009514
Project: Greer Tank / 07-001
Sample(s) received on: 10/22/20 Date opened: 10/22/20 by: ADAVID

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska**
Client Sample ID: **MW-4-20-F**
Client Project ID: **Greer Tank / 07-001**

ALS Project ID: K2009514
ALS Sample ID: K2009514-001

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Sample Type: Water
Test Notes: **H1**

Date Collected: 10/15/20
Date Received: 10/20/20
Date Analyzed: 11/2/20
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**4,000**	1.3	0.51	
74-85-1	Ethene	**1.2**	1.0	0.24	
74-84-0	Ethane	**0.64**	0.60	0.16	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska**
Client Sample ID: **MW-104-20-F**
Client Project ID: **Greer Tank / 07-001**

ALS Project ID: K2009514
ALS Sample ID: K2009514-002

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Sample Type: Water
Test Notes: **H1**

Date Collected: 10/15/20
Date Received: 10/20/20
Date Analyzed: 11/2/20
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**5,900**	1.3	0.51	
74-85-1	Ethene	ND	1.0	0.24	
74-84-0	Ethane	ND	0.60	0.16	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska**
Client Sample ID: **MW-106-20-F**
Client Project ID: **Greer Tank / 07-001**

ALS Project ID: K2009514
ALS Sample ID: K2009514-003

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Sample Type: Water
Test Notes: **H1**

Date Collected: 10/15/20
Date Received: 10/20/20
Date Analyzed: 11/2/20
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**6,900**	1.3	0.51	
74-85-1	Ethene	**0.33**	1.0	0.24	**J**
74-84-0	Ethane	**0.88**	0.60	0.16	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska**
Client Sample ID: **TB-1-20-F**
Client Project ID: **Greer Tank / 07-001**

ALS Project ID: K2009514
ALS Sample ID: K2009514-007

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Sample Type: Water
Test Notes: **H1**

Date Collected: 10/15/20
Date Received: 10/20/20
Date Analyzed: 11/2/20
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	ND	1.3	0.51	
74-85-1	Ethene	ND	1.0	0.24	
74-84-0	Ethane	ND	0.60	0.16	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska**
Client Sample ID: **Method Control Sample** ALS Project ID: K2009514
Client Project ID: **Greer Tank / 07-001** ALS Sample ID: P201102-MB

Test Code: RSK 175 Date Collected: NA
Instrument ID: HP5890A/GC10/FID Date Received: NA
Analyst: Wade Henton Date Analyzed: 11/02/20
Sample Type: Water Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	ND	1.3	0.51	
74-85-1	Ethene	ND	1.0	0.24	
74-84-0	Ethane	ND	0.60	0.16	

The Method Control Sample is laboratory water carried through the entire analytical process.
ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Rescon Alaska**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Greer Tank / 07-001**

ALS Project ID: K2009514
ALS Sample ID: P201102-LCS
P201102-DLCS

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Sample Type: Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 11/02/20
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS µg/L	Result[1] LCS µg/L	Result[1] DLCS µg/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
74-82-8	Methane	2.52	2.71	2.58	**108**	**102**	65-129	6	26	
74-85-1	Ethene	4.40	5.41	5.05	**123**	**115**	80-122	7	11	**L**
74-84-0	Ethane	4.72	5.08	4.83	**108**	**102**	78-119	6	10	

[1] = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.

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Leading Science · Lasting Solutions

130 Stone Rd. W
Guelph, ON N1G 3Z2
(519) 822-2265

Certificate of Analysis: Gene-Trac® *Dehalococcoides* Assay

Customer: Ryan Burich, Rescon Alaska

Project: Greer Tank

Customer Reference: 07-001

SiREM Reference: S-6413

Report Date: 3-Nov-20

Data Files: iQ5B-DHCT-TM-QPCR-1822
iQ5B-DB-DHC-TM-QPCR-1137

Table 1a: Test Results

Sample ID	*Dehalococcoides* (Dhc)	
	Percent Dhc(1)	**Enumeration/Liter(2)**
MW-4-20-F	0.002 - 0.006 %	1×10^6
MW-104-20-F	0.00009 - 0.0003 %	4×10^5
MW-106-20-F	0.02 - 0.06 %	2×10^4

See final page for notes.

Analyst: Taylor Aris, B.Sc.
Laboratory Technician

Approved: J. Wilkinson
Jen Wilkinson
Senior Laboratory Technician II

SiREM
Leading Science · Lasting Solutions

Certificate of Analysis: Gene-Trac® Functional Gene Assay

Customer: Ryan Burich, Rescon Alaska

Project: Greer Tank

Customer Reference: 07-001

SiREM Reference: S-6413

Report Date: 3-Nov-20

Data Files: iQ5A-FGA-QPCR-1196
iQ5A-DB-FGA-QPCR-0888

Table 1b: Test Results

Sample ID	VC Reductase (*vcrA*)		BAV1 VC Reductase (*bvcA*)		TCE Reductase (*tceA*)	
	Percent *vcrA* (3)	Gene Copies/Liter	Percent *bvcA* (3)	Gene Copies/Liter	Percent *tceA* (3)	Gene Copies/Liter
MW-4-20-F	0.002 - 0.007 %	1×10^6	0.001 - 0.004 %	7×10^5	0.001 - 0.004 %	8×10^5
MW-104-20-F	0.0003 - 0.001 %	1×10^6	0.0004 - 0.001 %	1×10^6	0.0002 - 0.0005 %	7×10^5
MW-106-20-F	0.02 - 0.06 %	2×10^4	NA	1×10^4 U	0.001 - 0.004 %	1×10^3 J

See final page for notes.

Analyst: Taylor
Taylor Aris, B.Sc.
Laboratory Technician

Approved: J. Wilkinson
Jen Wilkinson
Senior Laboratory Technician II

Table 2: Detailed Test Parameters, Gene-Trac Test Reference S-6413

Customer Sample ID	MW-4-20-F	MW-104-20-F	MW-106-20-F
SiREM Dhc Test ID	DHC-20097	DHC-20098	DHC-20099
SiREM FGA Test ID	FGA-9848	FGA-9849	FGA-9850
Date Sampled [4]	15-Oct-20	15-Oct-20	15-Oct-20
Matrix	Groundwater	Groundwater	Groundwater
Date Received [4]	20-Oct-20	20-Oct-20	20-Oct-20
Sample Temperature	4.5 °C	4.5 °C	4.5 °C
Filtration Date [4]	21-Oct-20	21-Oct-20	21-Oct-20
Volume Used for DNA Extraction	10 mL	10 mL	100 mL
DNA Extraction Date	25-Oct-20	25-Oct-20	26-Oct-20
DNA Concentration in Sample (extractable)	122250 ng/L	789750 ng/L	225 ng/L (J)
PCR Amplifiable DNA	Detected	Detected	Detected
Dhc qPCR Date Analyzed	29-Oct-20	29-Oct-20	29-Oct-20
FGA qPCR Date Analyzed	30-Oct-20	30-Oct-20	30-Oct-20
Laboratory Controls (see Tables 3 & 4)	Passed	Passed	Passed
Comments	- -	- -	- -

See final page for notes.

Table 3: Gene-Trac Dhc Control Results, Test Reference S-6413

Laboratory Control	Analysis Date	Control Description	Spiked Dhc 16S rRNA Gene Copies per Liter	Recovered Dhc 16S rRNA Gene Copies per Liter	Comments
Positive Control Low Concentration	29-Oct-20	Genomic DNA (CSLD-1460)	3.4×10^6	4.4×10^6	Passed
Positive Control High Concentration	29-Oct-20	Genomic DNA (CSHD-1460)	7.2×10^8	8.1×10^8	Passed
Extraction Control	29-Oct-20	Extraction Control (KB-0748)	1.1×10^9	7.1×10^8	Passed
DNA Extraction Blank	29-Oct-20	Sterile Water (FB-3671)	0	2.6×10^3 U	Passed
Negative Control	29-Oct-20	Reagent Blank (TBD-1419)	0	2.6×10^3 U	Passed

See final page for notes.

Table 4: Gene-Trac FGA Control Results, Test Reference S-6413

Laboratory Control	Analysis Date	Control Description	*vcrA*		*bvcA*		*tceA*		Comments
			Spiked Gene Copies per Liter	Recovered Gene Copies per Liter	Spiked Gene Copies per Liter	Recovered Gene Copies per Liter	Spiked Gene Copies per Liter	Recovered Gene Copies per Liter	
Positive Control Low Concentration	30-Oct-20	Genomic DNA (CSLF-1064)	2.1×10^6	2.8×10^6	7.2×10^5	5.7×10^5	8.6×10^5	1.1×10^6	Passed
Positive Control High Concentration	30-Oct-20	Genomic DNA (CSHF-1064)	3.5×10^8	4.5×10^8	8.6×10^7	1.1×10^8	1.8×10^8	1.4×10^8	Passed
DNA Extraction Blank	30-Oct-20	Sterile Water (FB-3671)	0	2.6×10^3 U	0	2.6×10^3 U	0	2.6×10^3 U	Passed
Negative Control	30-Oct-20	Reagent Blank (TBF-1035)	0	2.6×10^3 U	0	2.6×10^3 U	0	2.6×10^3 U	Passed

See final page for notes.

Notes:

Dhc = *Dehalococcoides*

vcrA = VC reductase

bvcA = BAV1 VC reductase

tceA = TCE reductase

FGA = functional gene assay

J The associated value is an estimated quantity between the method detection limit and quantitation limit.

U Not detected, associated value is the quantitation limit.

B Analyte was detected in the method blank within an order of magnitude of the test sample.

E Extracted genomic DNA was not detected in the sample.

I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.

ng/L = nanograms per liter

mL = milliliter

NA = not applicable

ND = not detected

DNA = deoxyribonucleic acid

16S rRNA = 16S ribosomal ribonucleic acid

PCR = polymerase chain reaction

qPCR = quantitative PCR

°C = degrees Celsius

[1]Percent *Dehalococcoides* (Dhc) in microbial population. This value is calculated by dividing the number of Dhc 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhc enumeration.

[2]Based on quantification of Dhc 16S rRNA gene copies. Dhc are generally reported to contain one 16S rRNA gene copy per cell; therefore, this number is often interpreted to represent the number of Dhc cells present in the sample.

[3]Percent of functional gene in microbial population. This value is calculated by dividing the functional gene copies quantified by the total number of estimated prokaryotes in the sample (based on the total quantity of DNA extracted from the sample). A value of 100% would suggest that all microbes in the sample contain the gene.

[4]Samples are stabilized by freezing at -80 °C upon sample reception (field filters) or in-lab filtration (groundwater). Hold time not exceeded if sampling date is within 7 days of date received or filtration date.

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Chain-of-Custody Form

siremlab.com

180A Market Place Blvd
Knoxville, TN 37922
1-866-251-1747

Lab # S-6413

*Project Name: GREER TANK	*Project #: 07-001
*Project Manager: RYAN BURICH	*Company: RESCON ALASKA
*Email Address: rburich@resconalaska.com	
Address (Street): 8361 PETERSBURG ST	
City: ANCHORAGE	State/Province: AK
Country: USA	
*Phone #: 907 341 9305	
*Sampler's Signature: RBD	*Sampler's Printed Name: RYAN BURICH

Analysis

Preservative Key
0. None
1. HCL
2. Other
3. Other
4. Other
5. Other
6. Other

Client Sample ID	Sampling Date	Sampling Time	Matrix	# of Containers	Gene-Trac DHC	Gene-Trac FGA	Gene-Trac DHB	Gene-Trac DHGM	Gene-Trac SRB	Volatile Fatty Acids	Dissolved hydrocarbon gases	Treatability Study				Other Information
MW-4-20-F	10/15/20	1305	GW	3	X	X				X						BK-06242
MW-104-20-F	10/15/20	1445	GW	3	X	X				X		Bubble x1				BK-06244
MW-106-20-F	10/15/20	1100	GW	3	X	X				X		Bubble x1				BK-06243

Billing Information
P.O. #:
*Bill To: RESCON ALASKA

Turnaround Time Requested
Normal ☒
Rush ☐

For Lab Use Only
Cooler Condition: Good-BlueIce
Cooler Temperature: 4.5°C
Custody Seals: Yes ☐ No ☑

For Lab Use Only
Proposal #:

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: RBD	Signature: Susan Thomas	Signature:	Signature:	Signature:	Signature:
Printed Name: RYAN BURICH	Printed Name: Susan Thomas	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: RESCON ALASKA	Firm: SiREM	Firm:	Firm:	Firm:	Firm:
Date/Time: 10/16/20 @ 1300	Date/Time: 10-20-2020 1230	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: White - return to Originator: Yellow - Lab Copy: Pink - Retained by Client

** Mandatory Fields*

SiREM

Chain-of-Custody Form

siremlab.com

1808 Market Place Blvd
Knoxville, TN 37922
1-865-291-4718 or 1-866-251-1747

Lab # S-6413

*Project Name: Green Tank	*Project #: 07-001
*Project Manager: Ryan Durich	*Company: ResconAlaska
*Email Address: rdurich@resconalaska.com	
Address (Street): 8361 Petersburg Street	
City: Anchorage	State/Province: AK
Country: USA	
*Phone #: 907-341-9305	
*Sampler's Signature: Susan Thomas	Sampler's Printed Name: Susan Thomas

Client Sample ID	Sampling Date	Sampling Time	Matrix	# of Containers	Gene-Trac DHC	Gene-Trac FGA	Gene-Trac DHB	Gene-Trac DHGM	Gene-Trac SRB	Volatile Fatty Acids	Dissolved hydrocarbon gases	Treatability Study	Other Information
MW-4-20-F	10-21-2020	0800	Filter + vials 3	3	X	X				X			
MW-104-20-F	↓	↓	3	3	X	X				X			
MW-106-20-F	↓	↓	3	3	X	X				X			

Analysis

Preservative Key
0. None
1. HCl
2. Other
3. Other
4. Other
5. Other
6. Other

Billing Information	Turnaround Time Requested	For Lab Use Only	For Lab Use Only
P.O. #	Normal ☐	Cooler Condition:	Proposal #:
*Bill To:	Rush ☐	Cooler Temperature:	
		Custody Seals: Yes ☐ No ☐	

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Susan Thomas	Signature: Brent	Signature:	Signature:	Signature:	Signature:
Printed Name: Susan Thomas	Printed Name: Natasha Brent	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: SiREM	Firm: SiREM	Firm:	Firm:	Firm:	Firm:
Date/Time: 10-21-2020 1500	Date/Time: 23 Oct 20 14:30	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: White - return to Originator; Yellow - Lab Copy; Pink - Retained by Client

* Mandatory Fields

Technical Note 1.5:
Interpretation of Gene-Trac® Dhc, *vcrA*, *bvcA and tceA* Assays

This note provides technical background and guidelines for interpretation of the following Gene-Trac® assays:

(1) Gene-Trac® Dhc

(2) Gene-Trac® *vcrA*

(3) Gene-Trac® *bvcA*

(4) Gene-Trac® *tceA*

Gene-Trac® Dhc-Total *Dehalococcoides* Test

Background

Gene-Trac® Dhc is a quantitative polymerase chain reaction (qPCR) test for the microbial species *Dehalococcoides mccartyi* (i.e., *Dehalococcoides* [Dhc]). The Gene-Trac® Dhc test targets sequences of the 16S ribosomal ribonucleic acid (16S rRNA) gene unique to Dhc. Note the 16S rRNA gene does not directly participate in dechlorination, but is used as a molecular fingerprint in the identification and quantification of a wide variety of microbial groups. The detection of Dhc in environmental samples is significant as Dhc contain the greatest number of reductive dehalogenase genes of any microbial group (Tas et al., 2010). Dhc are capable of reductive dechlorination of a wide variety compounds/compound classes including:

- Chlorinated ethenes (tetrachloroethene [PCE], trichloroethene [TCE] , cis-1,2-dichloroethene [*c*DCE], 1,1-dichloroethene [1,1-DCE], trans-1,2-dichloroethene [*t*DCE, vinyl chloride [VC]) (Duhamel et al., 2002);
- 1,2-dichloroethane (1,2-DCA) to ethene (Grostern and Edwards, 2006);
- Selected polychlorinated biphenyl [PCB] congeners (Bedard et al., 2007);
- Selected chlorinated benzene compounds (Adrian et al., 2000; Fennell et al., 2004);
- Chlorophenols and polychlorinated dibenzo-*p*-dioxins (Fennell et al., 2004) and;
- 1,2-dibromoethane (Magnusson et al., 2000).

In addition to screening for diverse dechlorinating activities, Gene-Trac® Dhc can also be used to assess the *in situ* growth of Dhc containing bioaugmentation cultures such as KB-1® (Major et al., 2002).

Gene-Trac® Dhc Results Interpretation

Negative (Non-detect [ND]) Gene-Trac® Dhc Test Results

The absence of Dhc is associated with a lack of dechlorination or only partial reductive dechlorination of chlorinated ethenes. Where Dhc are absent the accumulation of cDCE is commonly observed, particularly after electron donor addition, often due to the presence of partial dechlorinators (e.g., *Dehalobacter, Geobacter*). Bioaugmentation with Dhc containing cultures (e.g., KB-1®) often improves bioremediation performance at sites lacking indigenous Dhc.

Positive (Detect) Gene-Trac® Dhc Test Results

The detection of Dhc is correlated with the complete biological dechlorination of chlorinated ethenes to non-toxic ethene at contaminated sites (Hendrickson et al., 2002). A positive Gene-Trac® Dhc test indicates that Dhc DNA was detected and is correlated with the occurrence of reductive dechlorination. Note, not all Dhc can convert vinyl chloride to ethene; this capability can be determined by quantifying the functional genes (*vcrA*, *bvcA, tceA*) (see following section). In most cases Dhc must be present at sufficient concentrations in order for significant dechlorination to be observed, guidelines for expected impacts on chlorinated ethenes at various Dhc concentrations in groundwater are indicated below.

- **10^4 Dhc gene copies per liter (or lower):** indicates low concentrations of Dhc which may indicate site conditions that are sub-optimal for high rates of dechlorination. Increases in Dhc concentrations at the site may be possible if conditions are optimized (e.g., electron donor addition/pH adjustment).

- **10^5-10^6 Dhc gene copies per liter:** indicates the sample contains moderate concentrations of Dhc which may, or may not, be associated with observable dechlorination activity.

- **1 x 10^7 Dhc gene copies per liter (or above):** indicates that the sample contains high concentrations of Dhc often associated with significant dechlorination rates (Lu et al., 2006).

- **10^9-10^{10} Dhc gene copies per liter:** are generally the highest observed for groundwater samples and are associated with very high rates of dechlorination

Interpretation of Functional Gene Assays for *vcrA*, *bvcA* and *tceA*

Background

Gene-Trac® *vcrA*, *bvcA* and *tceA* tests are provided combined as a functional gene assay package. These tests quantify genes that code for enzymes that dechlorinate chlorinated ethenes and other compounds. The *vcrA*, *bvcA* and *tceA* genes play specific roles in reductive dechlorination, specifically *tceA* converts TCE and cDCE to VC and *vcrA* and *bvcA* convert cDCE and VC to non-toxic ethene (Figure 1).

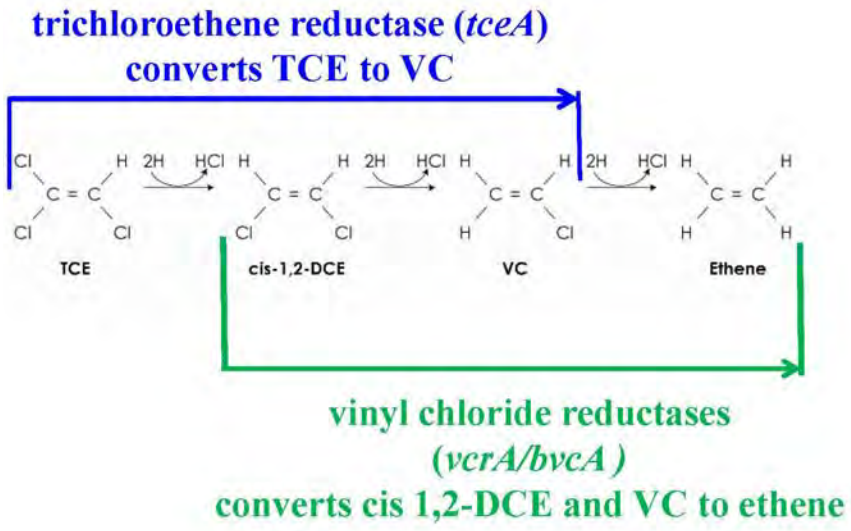
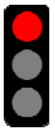


Figure 1: Major (energy yielding) activities against chlorinated ethene of enzymes coded for by the *tceA, vcrA* and *bvcA* genes.

Results Interpretation

Table 1 provides interpretation guidelines for different scenarios for Gene-Trac® Dhc, *vcrA*, *bvcA and tceA* tests. In general, accumulation of VC is more likely where Gene-Trac® *vcrA/bvcA* results are ND, or significantly lower than Gene-Trac® Dhc/*tceA*. Where abundance of *vcrA*/*bvcA* is similar to total Dhc the chances of VC accumulation are reduced.

Table 1: Interpretation of Gene-Trac® Dhc, *vcrA*, bvcA, *tceA* test results

Gene Copies/L				Summary	Interpretation	Remediation Implications	
Dhc	*vcrA*	*bvcA*	*tceA*				
ND	ND	ND	ND	ND for Dhc and functional genes	Site lacks Dhc	Complete dechlorination unlikely, may observe cis-DCE accumulation Site may require bioaugmentation	
≥1 x 10^7	≥1 x 10^7	≥1 x 10^7	≥1 x 10^7	Dhc and *vcrA/bvcA/tceA* are the same	Entire Dhc population has *tceA*, *vcrA* and *bvcA* gene	Potential for complete dechlorination very high. VC stall unlikely-sites with *vcr*A above 1 x 10^7/L typically have detectable ethene	
≥1 x 10^7	ND	≥1 x 10^7	ND	Total Dhc and *bvcA*/are the same *vcrA*/*tceA* ND	Dhc at high concentrations entire Dhc population has *bvcA* gene	Potential for complete dechlorination high. VC stall unlikely	
≥1 x 10^7	≥1 x 10^7	ND	ND	Total Dhc and *vcrA*/are the same *bvcA*/*tceA* ND	Dhc at high concentrations entire Dhc population has *vcrA* gene	Potential for complete dechlorination high. VC stall unlikely-sites with *vcr*A above 1 x 10^7/L often have detectable ethene	
≥1 x 10^7	ND	ND	≥1 x 10^7	Total Dhc high; *vcrA* and *bvcA* non-detect *tceA* same as Dhc	High concentration of Dhc, entire Dhc population has *tceA* but lacks the *vcrA/bvcA* genes	Likelihood for VC accumulation high as *vcrA* and *bvcA* both ND	
1 x 10^7	1 x 10^5	1 x 10^6	1 x 10^7	Total Dhc and *tceA* is significantly higher 10-100 fold) than *vcrA/bvcA*	*Dhc* population consists of different types, some with the *vcrA/* gene (10%) some with *bvcA* gene (1%) all contain *tceA* gene	VC-accumulation possible; Dhc:*vcrA:bvcA:tceA* ratios may evolve over the course of remediation	
1 x 10^7	1 x 10^7	1 x 10^6	ND	Total Dhc is high *vcrA*/*bvcA* high *tceA* ND	*tceA* negative population	cDCE to ethene dechlorination likely PCE and TCE dechlorination possible via *pceA* commonly found in other dechlorinators such as *Dehalobacter*	

 = favorable for complete dechlorination,  = some potential for VC stall  = complete dechlorination unlikely

Gene-Trac® *vcrA*/*bvcA*

Gene-Trac® *vcrA and bvcA* tests quantify VC-reductase genes that produce enzymes that convert VC to non-toxic ethene; a critical step in reductive dechlorination. The VC reductase genes (*vcrA, bvcA*) (Müller et al., 2004; Krajmalnik-Brown et al., 2004) produce enzymes found in many (but not all) Dhc. The *vcrA* gene is reported to be the most commonly identified VC reductase gene in the environment, whereas *bvcA* is generally less common but can predominate especially in more oxidizing groundwater (van der Zaan et al., 2010) and possibly where DCE is dominant. The *vcrA* gene can be used for tracking bioaugmentation cultures including KB-1® and is typically present at a 1:1 ratio with total Dhc whereas the *bvcA* gene is not predominant in the KB-1® culture and is present at less than a 1:1 ratio with total Dhc, therefore *bvcA* is not generally used for tracking KB-1® bioaugmentation and may be negative even after bioaugmentation with KB-1®.

Positive Gene-Trac® *vcrA*, *bvcA* Tests

Positive Gene-Trac® *vcrA* or *bvcA* tests indicate that the Dhc population has the *vcrA* and/or the *bvcA* gene and complete dechlorination to ethene is likely. As a minimal requirement, *vcrA* and/or *bvcA* copies exceeding 10^5/L combined with observed increases over time (i.e., cell growth) are required for robust VC dechlorination (van der Zaan et al., 2010). In one study, more than 90% of samples where *vcrA* enumeration exceeded 1 x 10^7 gene copies/L of groundwater had detectable ethene (Dennis, 2009). The enzyme produced by the *bvcA* genes has also been shown to degrade 1,2-DCA directly to ethene (Grostern and Edwards 2009) and the *bvcA* is used for tracking the KB-1® 1,2-DCA culture.

Non-Detect in Gene-Trac® *vcrA*/*bvcA* Test

A ND in the Gene-Trac® *vcrA* and *bvcA* test indicates that *vcrA*/*bvcA* gene sequences in the sample were below the detection limit of the assay. In cases where *vcrA*/*bvcA* are ND the chances of VC accumulation are increased compared to samples with detectable *vcrA*/*bvcA*. In such cases, *tceA* may promote limited and slow cometabolic degradation of VC to ethene (Lee et al., 2008) that may account for (generally low) detections of ethene where *vcrA* and *bvcA* are ND.

Gene-Trac® *tceA*

Gene-Trac® *tceA* test targets the trichloroethene reductase gene that produces an enzyme that primarily converts TCE to *c*DCE and VC. Studies have shown that this gene is commonly expressed under more oxidized conditions compared to *vcrA* (van der Zaan et al., 2010). Note the *tceA* gene is not predominant in the KB-1® culture and therefore *tceA* is not used for tracking KB-1® bioaugmentation.

Positive *tceA* test

A positive *tceA* test indicates that the Dhc population has the potential to dechlorinate TCE to cDCE and VC and VC to ethene cometabolically at relatively slow rates (Lee et al. 2008). Detection of *tceA* in the absence of *vcrA*/*bvcA* also indicates an increased likelihood for VC accumulation. The enzyme produced by *tceA* is also reported to dehalogenate 1,2-DCA and 1,2 dibromoethane (Magnussen et al., 2000).

Negative *tceA* test

A ND *tceA* test indicates that the Dhc population may lack the ability to convert TCE to cDCE and VC, nevertheless, conversion of PCE to cDCE is relatively common amongst other dechlorinators that harbor the *pceA* gene (Maillard et al., 2003; Wagner et al., 2012*)*. Therefore *tceA is* not essential for complete dechlorination of TCE provided that *pceA* harboring microorganisms are present. Gene-Trac® Dhb (*Dehalobacter)* and Gene-Trac® Geo (*Geobacter*) can be used to quantify these common *pceA* containing microorganisms.

Sites with mixed Dhc populations

At some sites the Dhc population is homogenous while other sites have Dhc populations that are mixtures of different Dhc types. These scenarios can lead to differing proportions for Gene-Trac® Dhc *vcrA bvcA* and *tceA* test results. If the numerical results of Gene-Trac® *vcrA, bvcA or tceA* tests are identical to those obtained in the Gene-Trac® Dhc test it suggests that the entire Dhc population contains that gene. In other cases, Gene-Trac® *vcrA, bvcA, tceA* results may differ significantly (i.e., more than an order of magnitude) from total Dhc. For example, the *vcrA* gene may be 100-fold lower than the total Dhc. This scenario would suggest that only 1% of the Dhc population harbors the *vcrA* gene and the remaining 99% of the Dhc population does not contain the *vcrA* gene. In such cases the proportions of the functional genes may change over time (e.g., the proportion of *vcrA* may increase as the VC concentration increases favoring Dhc that contain *vcrA*).

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SiREM
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130 Stone Rd. W
Guelph, ON N1G 3Z2
(519) 822-2265

Analytical Results

Client: Rescon Alaska
Client Project Number: 07-001
Date Samples Received: October 20, 2020
Date Samples Analyzed: November 4, 2020

SiREM File Reference: S-6413

Client Sample ID	SiREM Reference ID	Client Sample Date	Sample Dilution Factor	Lactate	Acetate	Propionate	Formate	Butyrate	Pyruvate
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-4-20-F	20-3173	15-Oct-20	50	<0.39	2.7	<0.62	<0.22	<0.41	<0.69
MW-104-20-F	20-3174	15-Oct-20	50	<0.39	17	<0.62	<0.22	<0.41	<0.69
MW-106-20-F	20-3175	15-Oct-20	50	<0.39	<0.54	<0.62	<0.22	<0.41	<0.69
		QL	50	0.39	0.54	0.31	0.22	0.41	0.69

Comments:
Method: Ion Chromatography - Electrical Conductivity Detection
QL = Quantitation limit
< = compound analysed for but not detected, associated value is QL. Sample QL is corrected for dilution.

Analyst:

Rachel Hallman
Laboratory Technician

Results approved:

Michael Healey, B.Sc.
Treatability and SP3™ Services Coordinator

Date: 5-Nov-20

SiREM

Chain-of-Custody Form

siremlab.com

1808 Market Place Blvd
Knoxville, TN 37922
1-865-291-4718 or 1-866-251-1747

Lab # S-6413

*Project Name: Green Tank	*Project #: 07-001
*Project Manager: Ryan Durich	*Company: ResconAlaska
*Email Address: rdurich@resconalaska.com	
Address (Street): 8361 Petersburg Street	
City: Anchorage	State/Province: AK
Country: USA	
*Phone #: 907-341-9305	
*Sampler's Signature: Susan Thomas	Sampler's Printed Name: Susan Thomas

Client Sample ID	Sampling Date	Sampling Time	Matrix	# of Containers	Gene-Trac DHC	Gene-Trac FGA	Gene-Trac DHB	Gene-Trac DHGM	Gene-Trac SRB	Volatile Fatty Acids	Dissolved hydrocarbon gases	Treatability Study	Other Information
MW-4-20-F	10-21-2020	0800	Filter + vials 3	3	X	X				X			
MW-104-20-F	↓	↓	3	3	X	X				X			
MW-106-20-F	↓	↓	3	3	X	X				X			

Analysis

Preservative Key
0. None
1. HCl
2. Other
3. Other
4. Other
5. Other
6. Other

Billing Information	Turnaround Time Requested	For Lab Use Only	For Lab Use Only
P.O. #	Normal ☐	Cooler Condition:	Proposal #:
*Bill To:	Rush ☐	Cooler Temperature:	
		Custody Seals: Yes ☐ No ☐	

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Susan Thomas	Signature: Brent	Signature:	Signature:	Signature:	Signature:
Printed Name: Susan Thomas	Printed Name: Natasha Brent	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: SiREM	Firm: SiREM	Firm:	Firm:	Firm:	Firm:
Date/Time: 10-21-2020 1500	Date/Time: 23 Oct 20 14:30	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: White - return to Originator; Yellow - Lab Copy; Pink - Retained by Client

* Mandatory Fields

SiREM

Chain-of-Custody Form

siremlab.com

180A Market Place Blvd
Knoxville, TN 37922
1-866-251-1747

Lab # S-6413

*Project Name: GREER TANK	*Project #: 07-001
*Project Manager: RYAN BURICH	*Company: RESCON ALASKA
*Email Address: rburich@resconalaska.com	
Address (Street): 8361 PETERSBURG ST	
City: ANCHORAGE	State/Province: AK
Country: USA	
*Phone #: 907 341 9305	
*Sampler's Signature: RBD	*Sampler's Printed Name: RYAN BURICH

Analysis

Preservative Key
0. None
1. HCL
2. Other
3. Other
4. Other
5. Other
6. Other

Client Sample ID	Sampling Date	Sampling Time	Matrix	# of Containers	Gene-Trac DHC	Gene-Trac FGA	Gene-Trac DHB	Gene-Trac DHGM	Gene-Trac SRB	Volatile Fatty Acids	Dissolved hydrocarbon gases	Treatability Study				Other Information
MW-4-20-F	10/15/20	1305	GW	3	X	X				X						BK-06242
MW-104-20-F	10/15/20	1445	GW	3	X	X				X		Bubble x1				BK-06244
MW-106-20-F	10/15/20	1100	GW	3	X	X				X		Bubble x1				BK-06243

Billing Information
P.O. #:
*Bill To: RESCON ALASKA

Turnaround Time Requested
Normal ☒
Rush ☐

For Lab Use Only
Cooler Condition: Good-BlueIce
Cooler Temperature: 4.5°C
Custody Seals: Yes ☐ No ☑

For Lab Use Only
Proposal #:

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: RBD	Signature: Susan Thomas	Signature:	Signature:	Signature:	Signature:
Printed Name: RYAN BURICH	Printed Name: Susan Thomas	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: RESCON ALASKA	Firm: SiREM	Firm:	Firm:	Firm:	Firm:
Date/Time: 10/16/20 @ 1300	Date/Time: 10-20-2020 1230	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: White - return to Originator: Yellow - Lab Copy: Pink - Retained by Client

** Mandatory Fields*

2655 Park Center Dr., Suite A
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T: +1 805 526 7161
www.alsglobal.com

LABORATORY REPORT

August 26, 2020

Ryan Burich
Rescon Alaska
8361 Petersburg Street
Anchorage, AK 99507

RE: Greer Tank / 07-001

Dear Ryan:

Enclosed are the results of the samples submitted to our laboratory on August 12, 2020. For your reference, these analyses have been assigned our service request number P2004471.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Kaneko
Aug 26, 2020, 12:45 pm

Kate Kaneko
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client: Rescon Alaska
Project: Greer Tank / 07-001

Service Request No: P2004471

CASE NARRATIVE

The samples were received intact under chain of custody on August 12, 2020 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.1 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1776326
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-007
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Rescon Alaska
Service Request: P2004471
Project ID: Greer Tank / 07-001

Date Received: 8/12/2020
Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
SVE-1-20	P2004471-001	Air	8/10/2020	15:45	1SS01045	-1.41	5.96	X
SVE-2-20	P2004471-002	Air	8/10/2020	15:55	1SC00449	-1.64	7.61	X
SVE-3-20	P2004471-003	Air	8/10/2020	16:00	1SS01033	-1.34	5.60	X
SVE-4-20	P2004471-004	Air	8/10/2020	16:05	1SS00123	-1.67	5.46	X
SVE-H1-20	P2004471-005	Air	8/10/2020	16:10	1SS00734	-1.02	6.30	X
SVE-H2-20	P2004471-006	Air	8/10/2020	16:15	1SS00047	-1.76	5.25	X

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10 Day-Standard)

ALS Project No. V00447|

Company Name & Address (Reporting Information)	RESCON ALASKA 8361 PETERSBURG ST. ANCHORAGE,
Project Name	GREER TANK
Project Number	07-001
Project Manager	RYAN BURICH
P.O. # / Billing Information	RESCON ALASKA 8361 PETERSBURG ST. ANCHORAGE, AK 99507
Phone	907-341-9305
Fax	———
Email Address for Result Reporting	rburich@resconalaska.com
Sampler (Print & Sign)	RYAN BURICH
ALS Contact:	Kate Kaneko

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: TO-15 (VOCs)		Comments e.g. Actual Preservative or specific instructions
SVE-1 - 20		8/10/20	1545	1550104S	NA	-30	-4	1L	✓		Grab
SVE-2 - 20		8/10/20	1555	15C00449	NA	-29	-3	1L	✓		Grab
SVE-3 - 20		8/10/20	1600	1550 1033	NA	-30	-4	1L	✓		Grab
SVE-4 - 20		8/10/20	1605	155 0123	NA	-28	-4	1L	✓		Grab
SVE-H1-20		8/10/20	1610	155 0734	NA	-30	-4	1L	✓		Grab
SVE-H2-20		8/10/20	1615	155 0047	NA	-30	-4	1L	✓		Grab

Report Tier Levels - please select

Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) X
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No
Type: _____ Units: µg/m³

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date: 8/11/20	Time: 1200	Received by: (Signature)	Date: 8/12/20	Time: 930	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	Cooler / Blank Temperature ____°C

ALS Environmental
Sample Acceptance Check Form

Client: Rescon Alaska Work order: P2004471

Project: Greer Tank / 07-001

Sample(s) received on: 8/12/20 Date opened: 8/12/20 by: DENISE.POSADA

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☒	☐	☐
	Location of seal(s)? _____ Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2004471-001.01	1.0 L Source Silonite Canister					
P2004471-002.01	1.0 L Source Can					
P2004471-003.01	1.0 L Source Silonite Canister					
P2004471-004.01	1.0 L Source Silonite Canister					
P2004471-005.01	1.0 L Source Silonite Canister					
P2004471-006.01	1.0 L Source Silonite Canister					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska**
Client Sample ID: **SVE-1-20** ALS Project ID: P2004471
Client Project ID: **Greer Tank / 07-001** ALS Sample ID: P2004471-001

Test Code: EPA TO-15 Date Collected: 8/10/20
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/12/20
Analyst: Topacio De Leon Date Analyzed: 8/18/20
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01045

Initial Pressure (psig): -1.41 Final Pressure (psig): 5.96

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	2.1	ND	0.82	
75-35-4	1,1-Dichloroethene	ND	2.1	ND	0.53	
75-09-2	Methylene Chloride	ND	2.1	ND	0.59	
156-60-5	trans-1,2-Dichloroethene	**4.1**	2.1	**1.0**	0.53	
156-59-2	cis-1,2-Dichloroethene	**19**	2.1	**4.8**	0.52	
79-01-6	Trichloroethene	**19**	2.1	**3.5**	0.39	
127-18-4	Tetrachloroethene	**1,100**	20	**160**	3.0	**D**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska**
Client Sample ID: **SVE-2-20**
Client Project ID: **Greer Tank / 07-001**

ALS Project ID: P2004471
ALS Sample ID: P2004471-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: Topacio De Leon
Sample Type: 1.0 L Summa Canister
Test Notes:
Container ID: 1SC00449

Date Collected: 8/10/20
Date Received: 8/12/20
Date Analyzed: 8/18/20
Volume(s) Analyzed: 0.40 Liter(s)
0.040 Liter(s)

Initial Pressure (psig): -1.64 Final Pressure (psig): 7.61

Canister Dilution Factor: 1.71

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	2.3	ND	0.90	
75-35-4	1,1-Dichloroethene	ND	2.3	ND	0.58	
75-09-2	Methylene Chloride	ND	2.3	ND	0.65	
156-60-5	trans-1,2-Dichloroethene	**6.9**	2.3	**1.8**	0.58	
156-59-2	cis-1,2-Dichloroethene	**13**	2.3	**3.3**	0.57	
79-01-6	Trichloroethene	**9.0**	2.3	**1.7**	0.43	
127-18-4	Tetrachloroethene	**630**	22	**92**	3.3	**D**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska**
Client Sample ID: **SVE-3-20** ALS Project ID: P2004471
Client Project ID: **Greer Tank / 07-001** ALS Sample ID: P2004471-003

Test Code: EPA TO-15 Date Collected: 8/10/20
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/12/20
Analyst: Simon Cao/Topacio De Leon Date Analyzed: 8/18/20
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS01033

Initial Pressure (psig): -1.34 Final Pressure (psig): 5.60

Canister Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	2.1	ND	0.80	
75-35-4	1,1-Dichloroethene	ND	2.1	ND	0.52	
75-09-2	Methylene Chloride	ND	2.0	ND	0.58	
156-60-5	trans-1,2-Dichloroethene	**5.1**	2.1	**1.3**	0.52	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	ND	0.51	
79-01-6	Trichloroethene	ND	2.1	ND	0.38	
127-18-4	Tetrachloroethene	**670**	20	**98**	2.9	**D**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska**
Client Sample ID: **SVE-4-20** ALS Project ID: P2004471
Client Project ID: **Greer Tank / 07-001** ALS Sample ID: P2004471-004

Test Code: EPA TO-15 Date Collected: 8/10/20
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/12/20
Analyst: Simon Cao/Topacio De Leon Date Analyzed: 8/18/20
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.40 Liter(s)
Test Notes: 0.040 Liter(s)
Container ID: 1SS00123

Initial Pressure (psig): -1.67 Final Pressure (psig): 5.46

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	2.1	ND	0.82	
75-35-4	1,1-Dichloroethene	ND	2.1	ND	0.53	
75-09-2	Methylene Chloride	ND	2.1	ND	0.59	
156-60-5	trans-1,2-Dichloroethene	**2.3**	2.1	**0.57**	0.53	
156-59-2	cis-1,2-Dichloroethene	ND	2.1	ND	0.52	
79-01-6	Trichloroethene	ND	2.1	ND	0.39	
127-18-4	Tetrachloroethene	**720**	20	**110**	3.0	**D**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska**
Client Sample ID: **SVE-H1-20**
Client Project ID: **Greer Tank / 07-001**

ALS Project ID: P2004471
ALS Sample ID: P2004471-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: Simon Cao
Sample Type: 1.0 L Silonite Summa Canister
Test Notes:
Container ID: 1SS00734

Date Collected: 8/10/20
Date Received: 8/12/20
Date Analyzed: 8/18/20
Volume(s) Analyzed: 0.40 Liter(s)

Initial Pressure (psig): -1.02 Final Pressure (psig): 6.30

Canister Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	2.1	ND	0.81	
75-35-4	1,1-Dichloroethene	ND	2.1	ND	0.52	
75-09-2	Methylene Chloride	ND	2.0	ND	0.59	
156-60-5	trans-1,2-Dichloroethene	**6.3**	2.1	**1.6**	0.52	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	ND	0.51	
79-01-6	Trichloroethene	ND	2.1	ND	0.39	
127-18-4	Tetrachloroethene	**120**	2.0	**18**	0.30	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska**
Client Sample ID: **SVE-H2-20**
Client Project ID: **Greer Tank / 07-001**

ALS Project ID: P2004471
ALS Sample ID: P2004471-006

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: Simon Cao
Sample Type: 1.0 L Silonite Summa Canister
Test Notes:
Container ID: 1SS00047

Date Collected: 8/10/20
Date Received: 8/12/20
Date Analyzed: 8/18/20
Volume(s) Analyzed: 0.40 Liter(s)

Initial Pressure (psig): -1.76 Final Pressure (psig): 5.25

Canister Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	2.1	ND	0.81	
75-35-4	1,1-Dichloroethene	ND	2.1	ND	0.52	
75-09-2	Methylene Chloride	ND	2.0	ND	0.59	
156-60-5	trans-1,2-Dichloroethene	**6.8**	2.1	**1.7**	0.52	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	ND	0.51	
79-01-6	Trichloroethene	ND	2.1	ND	0.39	
127-18-4	Tetrachloroethene	**86**	2.0	**13**	0.30	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska**
Client Sample ID: **Method Blank**
Client Project ID: **Greer Tank / 07-001**

ALS Project ID: P2004471
ALS Sample ID: P200818-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: Topacio De Leon
Sample Type: 1.0 L Silonite Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 8/18/20
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.54	ND	0.21	
75-35-4	1,1-Dichloroethene	ND	0.54	ND	0.14	
75-09-2	Methylene Chloride	ND	0.53	ND	0.15	
156-60-5	trans-1,2-Dichloroethene	ND	0.54	ND	0.14	
156-59-2	cis-1,2-Dichloroethene	ND	0.53	ND	0.13	
79-01-6	Trichloroethene	ND	0.54	ND	0.10	
127-18-4	Tetrachloroethene	ND	0.52	ND	0.077	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Rescon Alaska**
Client Project ID: **Greer Tank / 07-001** ALS Project ID: P2004471

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date(s) Collected: 8/10/20
Analyst: Topacio De Leon Date(s) Received: 8/12/20
Sample Type: 1.0 L Silonite Summa Canister(s) / 1.0 L Summa Canister(s) Date(s) Analyzed: 8/18/20
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P200818-MB	**106**	**100**	**120**	70-130	
Lab Control Sample	P200818-LCS	**107**	**99**	**122**	70-130	
Duplicate Lab Control Sample	P200818-DLCS	**107**	**99**	**120**	70-130	
SVE-1-20	P2004471-001	**108**	**97**	**119**	70-130	
SVE-2-20	P2004471-002	**103**	**101**	**115**	70-130	
SVE-3-20	P2004471-003	**104**	**99**	**116**	70-130	
SVE-4-20	P2004471-004	**103**	**99**	**116**	70-130	
SVE-H1-20	P2004471-005	**102**	**100**	**118**	70-130	
SVE-H2-20	P2004471-006	**104**	**100**	**118**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Rescon Alaska**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2004471
Client Project ID: **Greer Tank / 07-001** ALS Sample ID: P200818-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Topacio De Leon Date Analyzed: 8/18/20
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
75-01-4	Vinyl Chloride	212	198	203	**93**	**96**	61-129	3	25	
75-35-4	1,1-Dichloroethene	214	182	185	**85**	**86**	67-115	1	25	
75-09-2	Methylene Chloride	210	174	177	**83**	**84**	68-114	1	25	
156-60-5	trans-1,2-Dichloroethene	214	186	189	**87**	**88**	65-122	1	25	
156-59-2	cis-1,2-Dichloroethene	212	179	180	**84**	**85**	64-120	1	25	
79-01-6	Trichloroethene	216	202	202	**94**	**94**	70-114	0	25	
127-18-4	Tetrachloroethene	208	208	207	**100**	**100**	64-120	0	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Client: **Rescon Alaska** ALS Project ID: P2004471
Client Project ID: **Greer Tank / 07-001**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 08182004.D
Analyst: Topacio De Leon Date Analyzed: 8/18/20
Sample Type: 1.0 L Silonite Summa Canister(s) Time Analyzed: 03:13
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P200818-LCS	08182005.D	03:47
Duplicate Lab Control Sample	P200818-DLCS	08182006.D	04:21
SVE-1-20	P2004471-001	08182014.D	09:59
SVE-2-20	P2004471-002	08182015.D	10:33
SVE-1-20 (Dilution)	P2004471-001	08182016.D	11:07
SVE-2-20 (Dilution)	P2004471-002	08182017.D	11:40
SVE-3-20	P2004471-003	08182018.D	12:14
SVE-4-20	P2004471-004	08182019.D	12:48
SVE-4-20 (Dilution)	P2004471-004	08182020.D	13:22
SVE-H1-20	P2004471-005	08182021.D	13:55
SVE-H2-20	P2004471-006	08182022.D	14:29
SVE-3-20 (Dilution)	P2004471-003	08182023.D	15:03

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Rescon Alaska** ALS Project ID: P2004471
Client Project ID: **Greer Tank / 07-001**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 08182001.D
Analyst: Topacio De Leon Date Analyzed: 8/18/20
Sample Type: 1.0 L Silonite Summa Canister(s) Time Analyzed: 01:31
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	120781	9.16	508132	11.12	215786	15.46
	Upper Limit	169093	9.49	711385	11.45	302100	15.79
	Lower Limit	72469	8.83	304879	10.79	129472	15.13
	Client Sample ID						
01	Method Blank	110464	9.13	466580	11.10	194488	15.45
02	Lab Control Sample	112836	9.15	473180	11.11	200741	15.46
03	Duplicate Lab Control Sample	117282	9.15	496871	11.12	210760	15.46
04	SVE-1-20	102338	9.14	426139	11.11	179678	15.46
05	SVE-2-20	118336	9.14	499409	11.11	205616	15.45
06	SVE-1-20 (Dilution)	115412	9.13	500309	11.10	203718	15.45
07	SVE-2-20 (Dilution)	114705	9.13	503733	11.10	202268	15.45
08	SVE-3-20	116163	9.14	488212	11.11	203361	15.45
09	SVE-4-20	119830	9.14	506853	11.11	212480	15.45
10	SVE-4-20 (Dilution)	121299	9.13	513248	11.11	212960	15.45
11	SVE-H1-20	121745	9.13	508686	11.11	212825	15.46
12	SVE-H2-20	121757	9.14	517797	11.11	217266	15.45
13	SVE-3-20 (Dilution)	121677	9.13	513124	11.10	212051	15.45
14							
15							
16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits.

APPENDIX D

DATA QUALITY ASSESSMENT

DATA QUALITY ASSESSMENT

The data quality assessment was conducted by the Corvid, LLC Senior Chemist. The review and data qualification was conducted according to the USEPA National Functional Guidelines for Organic Superfund Methods Data Review (EPA.2017), accepted through reference by the ADEC per page 10 of the revised Field Sampling Guidance (ADEC.2020). This assessment included review of the K2009514ALS Kelso, WA and Simi Valley, CA report, and the completion of the ADEC Data Review Checklist. The laboratory reported many analytes that were not considered contaminants of concern (COC) as will be pointed out in the following sections. The data quality objectives for this project defines the COCs as follows: tetrachloroethene (PCE), trichloroethene, 1,1-dichloroethene, cis-1,2-dichloroethene (c-1,2-DCE), trans-1,2-dichloroethene (t-1,2-DCE), and vinyl chloride. To evaluate natural attenuation, ethane, ethene, methane, and total organic carbon, select samples were collected.

Samples collected on October 15, 2020 included six groundwater samples and a trip blank. All samples and the trip blank were analyzed by SW8260C for volatile organic compounds. Select samples (MW-104-20-F, MW-105-20-F, MW-106-20-F, and MW-4-20-F) were analyzed by a modified version of RSK-175 for methane, ethane, and ethene. Samples MW-104-20-F, MW-106-20-F, and MW-4-20-F were analyzed by SW5310C for total organic carbon.

All reporting limits were below the established action limits.

The method and laboratory quality control parameters were assessed to determine if the data quality meets the project objectives and if failures impact the usability of the data. All criteria were met except for the following, where sample results were impacted:

Holding Times

All samples analyzed by Modified RSK-175 were analyzed past the 14 day holding time. All positive results are considered (H-J).

Continuing Calibration Verification (CCV)

The recovery criteria for vinyl chloride in the CCV associated with samples analyzed 10/23/2020 did not meet established method criteria. All vinyl chloride results are considered estimated (CCV-J).

Laboratory Control Samples

All results (non-detected and detected) for Ethene in this project are considered (L-UJ or L-J)

Method Blanks and Trip Blanks

The method blanks and trip blank did not contain contaminates above the reporting limit in the project samples.

Field Duplicate Samples

All acceptance criteria were met.

A 100% completeness was achieved, and all results are acceptable as qualified to support project decisions and none of the results were rejected.

APPENDIX E

ADEC LABORATORY DATA REVIEW CHECKLISTS

Laboratory Data Review Checklist

Completed By:

Gloria Beckman

Title:

Senior Chemist

Date:

3/10/2021

Consultant Firm:

Corvid, LLC

Laboratory Name:

ALS

Laboratory Report Number:

K2009514

Laboratory Report Date:

11/12/2020

CS Site Name:

Greer Tank Yard - PCE

ADEC File Number:

2100.38.369

Hazard Identification Number:

1204

K2009514

Laboratory Report Date:

11/12/2020

CS Site Name:

Greer Tank Yard - PCE

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:

   RSK-175 and 5031C analyses were performed by the Simi Valley, CA laboratory

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:

K2009514

Laboratory Report Date:

11/12/2020

CS Site Name:

Greer Tank Yard - PCE

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:

e. Data quality or usability affected?

Comments:

None

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:

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

Comments:

None

K2009514

Laboratory Report Date:

11/12/2020

CS Site Name:

Greer Tank Yard - PCE

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:

RSK-175 analyzed 1 day past 14 day holding time.

c. All soils reported on a dry weight basis?

Yes☐ No☐ N/A☒ Comments:

All samples were waters

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

Yes☒ No☐ N/A☐ Comments:

e. Data quality or usability affected?

6. QC Samples

a. Method Blank

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

K2009514

Laboratory Report Date:

11/12/2020

CS Site Name:

Greer Tank Yard - PCE

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

Comments:

NA

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

Yes☐ No☐ N/A☒ Comments:

NA

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:

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:

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:

K2009514

Laboratory Report Date:

11/12/2020

CS Site Name:

Greer Tank Yard - PCE

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:

All positive results for ethene in the samples are estimated.

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:

K2009514

Laboratory Report Date:

11/12/2020

CS Site Name:

Greer Tank Yard - PCE

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:

s

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:

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:

K2009514

Laboratory Report Date:

11/12/2020

CS Site Name:

Greer Tank Yard - PCE

iv. Data quality or usability affected?

Comments:

No

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:

Based on data flag positive results are now ND.

f. Field Duplicate

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

Yes☒ No☐ N/A☐ Comments:

MW-106-20-F is the primary and MW-107-20-F is the duplicate

K2009514

Laboratory Report Date:

11/12/2020

CS Site Name:

Greer Tank Yard - PCE

ii. Submitted blind to lab?

Yes☒ No☐ N/A☐ Comments:

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

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☒ No☐ N/A☐ Comments:

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

Comments:

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

Yes☐ No☒ N/A☐ Comments:

None collected.

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

Yes☐ No☐ N/A☒ Comments:

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

Comments:

iii. Data quality or usability affected?

Comments:

K2009514

Laboratory Report Date:

11/12/2020

CS Site Name:

Greer Tank Yard - PCE

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

a. Defined and appropriate?

Yes☒ No☐ N/A☐ Comments:

APPENDIX F

WASTE MANAGEMENT

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

Contaminated Media Transport and Treatment or Disposal Approval Form

DEC HAZARD/SPILL ID #	NAME OF CONTAMINATED SITE OR SPILL	
1204 / 2100.38.369	Greer Tank Yard - PCE	
CONTAMINATED SITE OR SPILL LOCATION – ADDRESS OR OTHER APPROPRIATE DESCRIPTION		
2921 West International Airport Road / Anchorage, AK / 99502		
CURRENT PHYSICAL LOCATION OF MEDIA	**SOURCE OF THE CONTAMINATION (DAY TANK, WASH BAY, FIRE TRAINING PIT, LUST, ETC.)**	
At contaminated sites address (next to SVE system).	Historical fire, as well as historical tank puncture.	
CONTAMINANTS OF CONCERN	**ESTIMATED VOLUME**	**DATE(S) GENERATED**
PCE, TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, vinyl chloride	Two, 55-gallon drums	2018 - 2020
POST TREATMENT ANALYSIS REQUIRED *(such as GRO, DRO, RRO, VOCs, metals, PFAS, and/or Chlorinated Solvents)*		
None.		
COMMENTS OR OTHER IMPORTANT INFORMATION		
One, 55-gallon drum contains purge water from previous groundwater monitoring events. One, 55-gallon drum contains soil cuttings from a previous soil investigation. Both drums have been designated U-listed hazardous waste.		

TREATMENT FACILITY, LANDFILL, AND/OR FINAL DESTINATION OF MEDIA	PHYSICAL ADDRESS/PHONE NUMBER
US Ecology Idaho	20400 Lemley Rd / Grandview, ID / 83624 / 1-800-274-1516
RESPONSIBLE PARTY	**ADDRESS/PHONE NUMBER**
Greer Tank	2921 West International Airport Road / Anchorage, AK / 99502 / 907-243-2455
WASTE MANAGEMENT CO. / ORGANIZER	**ADDRESS/PHONE NUMBER**
NRC Alaska (a US Ecology Company)	2020 Viking Drive / Anchorage, AK / 99501 907-646-5050

***Note, disposal of polluted soil in a landfill requires prior approval from the landfill operator and ADEC Solid Waste Program.**

Ryan Burich
Name of the Person Requesting Approval (printed)

Associate Geologist / Rescon Alaska, LLC
Title/Association

Signature

March 6th 2020
Date

907-677-7423
Phone Number

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

Based on the information provided, ADEC approves transport of the above mentioned material. The Responsible Party or their consultant must submit to the DEC Project Manager a copy of weight receipts of the loads transported and a post treatment analytical report, if disposed of at an approved treatment facility. The contaminated soil shall be transported as a covered load in compliance with 18 AAC 60.015.

Erin Gleason
DEC Project Manager Name (printed)

EPS 3
Project Manager Title

Signature

3/13/20
Date

907-269-7556
Phone Number

CERTIFICATE OF DISPOSAL

November 11, 2020

GREER TANK INC
2921 W INTERNATIONAL AIRPORT RD
ANCHORAGE, AK 99502

This is to certify that waste as defined on Waste Manifest number **152479A** was received by U.S. Ecology, Inc., on **8/4/2020**. The waste(s) were subsequently treated, if required by CFR Part 268 and U.S. Ecology's permits, and disposed of on **08/17/2020** in accordance with permits and laws regulating this facility.

Reference Number: 20080401950-152479A-1-2
Material: 1 55 GALLON DRUM (BATCH WASTE)
Process: Solidification
Management Code: H132 Landfill or surface impoundment that will be closed as landfill

Facility: US ECOLOGY IDAHO, INC.
20400 LEMLEY ROAD
GRAND VIEW, ID 83624
EPA ID: IDD073114654

Waste Stream #: 46012-0

Waste Type: NON-HAZARDOUS

Customer: NRC ALASKA, LLC

Printed Name: CORIAN SCHMITZ

Signature: Corian Schmitz

Title: RECEIVING CLERK

CERTIFICATE OF DISPOSAL

November 11, 2020

GREER TANK INC
2921 W INTERNATIONAL AIRPORT RD
ANCHORAGE, AK 99502

This is to certify that waste as defined on Waste Manifest number **152479A** was received by U.S. Ecology, Inc., on **8/4/2020**. The waste(s) were subsequently treated, if required by CFR Part 268 and U.S. Ecology's permits, and disposed of on **08/17/2020** in accordance with permits and laws regulating this facility.

Reference Number: 20080401950-152479A-1-2
Material: 1 55 GALLON DRUM (CRUSHED EMPTY CONTAINER)
Process: Solidification
Management Code: H132 Landfill or surface impoundment that will be closed as landfill

Facility: US ECOLOGY IDAHO, INC.
20400 LEMLEY ROAD
GRAND VIEW, ID 83624
EPA ID: IDD073114654

Waste Stream #: 46012-0

Waste Type: NON-HAZARDOUS

Customer: NRC ALASKA, LLC

Printed Name: CORIAN SCHMITZ

Signature: Corian Schmitz

Title: RECEIVING CLERK

Please send payment remittance details to
NRCUSRemit@nrcc.com

FOR PAYMENTS VIA ACH (preferred)
Bank of America Merrill Lynch
Routing/ABA number: 021000322
Beneficiary: NRC US Holding Company LLC
Account# 483065987219

Please call to remit payment via credit card at 631-224-9141.

425 Outer Springer Loop Rd, Palmer, AK, 99645
***Phone:** (907) 258-1558, **Fax:** (907) 746-3651*

Customer:	RESCON ALASKA LLC	**Invoice #:**	722586
	8361 PETERSBURG STEET	**NRC Job #:**	152479
		Customer PO#:	RYAN BURICH
	Anchorage, AK, 99507	**Reference #:**	
Invoice Date:	22-JUN-20	**Contact:**	DILLON, JODY
Job Description:	GREER TANK IDW DRUMMED WASTE	**Phone:**	907-677-7423
		Fax:	
		E-Mail:	jdillon@resconalaska.com
		Terms:	30 NET
Job Location:	2921 W INTERNATIONAL AIRPORT RD	**Job Date (s):**	5 JUN 2020
	Anchorage, AK, 99502	**Progress Billing:**	No
		Final Billing:	Yes

Description(See Attached Details)	EXTENDED PRICE
EQUIPMENT	93.00
LABOR	234.00
DISPOSAL - INTERNAL	625.55
TRANSPORTATION	628.00
OTHER NRC	150.15
INVOICE SUBTOTAL	1,730.70
SALES TAX	0.00
INVOICE TOTAL	1,730.70

Currency: USD

THANK YOU FOR YOUR BUSINESS

Direct Phone: For billing questions, please contact
Email: Jeff Wendt at (907) 761-6652

FED ID #: 26-0025054

REMITTANCE OPTION/INSTRUCTIONS

CHECKS DRAWN ON A U.S. BANK ACCOUNT:
NRC US HOLDING COMPANY LLC
P.O. BOX 74007491
CHICAGO, IL 60674-7491

PAYMENTS MADE VIA ACH:
Bank of America Merrill Lynch
Routing/ABA number: 021000322
Beneficiary: NRC US Holding Company LLC
Account #: 483065987219

WIRE TRANSFER MADE FROM WITHIN THE U.S.
Bank of America Merrill Lynch
Routing/ABA number: 026009593
Beneficiary: NRC US Holding Company LLC
Account #: 483065987219

WIRE TRANSFERS MADE FROM OUTSIDE THE U.S.
Bank of America Merrill Lynch
SWIFT Code: BOFAUS3N
Beneficiary: NRC US Holding Company LLC
Account #: 483065987219

A 1.5% per month finance charge will be assessed for all past due invoices to include the flat late fee amount.

US ecology

INVOICE DETAILS SHEET

JOB NO 152479 **INVOICE NO** 722586 Page No 2/2

LABOR

Date	Name/Item(s)	Description	Billing Code	UOM	Qty	Rate	Amount
29-MAY-20	Kuhnke, Morgan	Regular Time	PROJECT ADMINISTRATOR	Hours	1	65.00	65.00
01-JUN-20	Hamilton, Zachary	Regular Time	PROJECT MANAGER	Hours	.5	122.00	61.00
05-JUN-20	McGee-Stuenkel, David	Regular Time	DRIVER	Hours	1.5	72.00	108.00
					Sub Total		234.00

DISPOSAL - INTERNAL

Date	Name/Item(s)	Description	Billing Code	UOM	Qty	Rate	Amount
04-JUN-20	AD-00300 ALTERNATE DISPOSAL A	152479A, 1-D30248, USE		DRUM-55G	1	187.05	187.05
04-JUN-20	AD-00301 ALTERNATE DISPOSAL B	152479A, 2-D30248, USE		DRUM-55G	1	193.50	193.50
04-JUN-20	AT-91002 DOC. ALT. DISPOSAL A			Each	1	75.00	75.00
04-JUN-20	AD-64000 PROFILE FEE			Each	2	85.00	170.00
					Sub Total		625.55

TRANSPORTATION

Date	Name/Item(s)	Description	Billing Code	UOM	Qty	Rate	Amount
04-JUN-20	AT-90206 TRANS-ANC-SEA 55-85			Each	2	174.00	348.00
04-JUN-20	AT-90207 TRANS-SEA-TSDF 55-85			Each	2	140.00	280.00
					Sub Total		628.00

OTHER NRC

Date	Name/Item(s)	Description	Billing Code	UOM	Qty	Rate	Amount
04-JUN-20	ESIC FEE			Each	1	150.15	150.15
					Sub Total		150.15

EQUIPMENT

Date	Name/Item(s)	Description	Billing Code	UOM	Qty	Rate	Amount
05-JUN-20	AE-1004 BOX VAN HR	6066		Hours	1.5	62.00	93.00
					Sub Total		93.00
					Grand Total		1,730.70

DAILY WORK REPORT

SERVICE DATE
5 June

CUSTOMER NAME	PROJECT NAME	PROJECT NUMBER
RESCON ALASKA	GREER TANK IDW DRUMMED WASTE	152479
CUSTOMER POINT OF CONTACT	**PROJECT LOCATION**	**CUSTOMER PO.**
RYAN BURICH	2921 WEST INTERNATIONAL AIRPORT ROAD	RYAN BURICH

PHONE NO.	CELL NO.	CITY	STATE	ZIP	PROJECT MANAGER	PHONE #
(907) 677-7423	(907) 341-9305	ANCHORAGE	AK	99507	MORGAN KUHNKE	907-646-5020

MANIFEST #:	EW Doc #	SCOPE OF WORK TO BE COMPLETED
152479A	D30248	Please call Ryan Burich to schedule the pick up of 1X55DM of IDW Soil and, 1X55DM of IDW Water. Off load at Viking.

LABOR

Employee Name	Category	Start Time	Stop Time	ST Hrs	OT Hrs	TOTAL	PPE/Comments
✓ Dan T M Eee	Driver (650)	1530	1700			1.5	D

NRC ALASKA-OWNED EQUIPMENT

Description	Unit Number	Start Time	Stop Time	TOTAL	Out	In	Comments
Box Van (AE-1004)	606	1530	1700	1.5			

RENTAL EQUIPMENT

Description	Vendor	Start Time	Stop Time	Purchase Order #

MATERIALS & SUPPLIES

Description	Item Number	Qty Checked Out	Qty Checked In	Notes

Ryan Burich RYAN BURICH 5 June

Customer Name & Signature Date

NRC Alaska Representative Date 5 June

NRC

US ecology

Project Number: 152479

Service Date: 5 Jun

Time	Description
1500	Contact made to be on site 1545
1545	on site
1600	pick up drums
1620	paperwork
1630	prep for transport
1645	arrive @ ANCH facility
1650	return to dispatch
1700	T/C

For Facility-Use Only:

Client equipment #: _____ **Last contained:** _____ **Clean cert required?** Yes / No

Waste Recovered: **Wash Water Generated from Cleaning:** _____ gal

Water: _____ gal _____ # containers **Fuel:** _____ gal _____ # containers **Sludge:** _____ gal _____ # containers

Oil: _____ gal _____ # containers **Solids:** _____ gal _____ # containers

Customer Name & Signature **Date**

5 Jun

NRC Alaska Representative **Date**

*** IN CASE OF EMERGENCY CALL 800-899-4672 ***

NON-HAZARDOUS WASTE MANIFEST

6266

Please print or type (Form designed for use on elite (12 pitch) typewriter)

PO# 152479-6-3408MK

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: VSQG

Manifest Document No.: 152479A

2. Page 1 of 3

3. Generator's Name and Mailing Address

RESCON ALASKA, LLC
8361 PETERSBURG STREET
ANCHORAGE, AK 99507

4. Generator's Phone ( )

GREER TANK INC
2921 W INTERNATIONAL AIRPORT RD
ANCHORAGE, AK 99502

5. Transporter 1 Company Name: NRC ALASKA LLC

6. US EPA ID Number: AKR000004184

A. State Transporter's ID

B. Transporter 1 Phone: 907-258-1558

7. Transporter 2 Company Name: WEAVER BROTHERS

8. US EPA ID Number: AKD002848372

C. State Transporter's ID

D. Transporter 2 Phone: 907-278-4526

9. Designated Facility Name and Site Address

US ECOLOGY IDAHO, INC.
20400 LEMLEY RD
GRAND VIEW, ID 83624

10. US EPA ID Number: IDD073114654

E. State Facility's ID

F. Facility's Phone: (208) 834-2275

11. WASTE DESCRIPTION	HM	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. UN3077, Environmentally Hazardous Substances, Solid, N.O.S. (Tetrachloroethene, 1,2-Dichloroethene), 9 , PGIII ERG#171	X	1	DM	150	P
b. UN3082, Environmentally Hazardous Substances, Liquid, N.O.S. (Tetrachloroethene, 1,2-Dichloroethene), 9 , PGIII ERG#171	X	1	DM	400	P
c.					
d.					

G. Additional Descriptions for Materials Listed Above

1) USE46011-0 PCE IDW SOIL & DEBRIS (55DM)
2) USE46012-0 PCE IDW GROUNDWATER (55DM)

H. Handling Codes for Wastes Listed Above: D80/D40

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	Signature	Date (Month / Day / Year)
Paul Bair	Paul Bair	6 / 5 / 20

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)
David McGee	David McGee	6 / 5 / 20

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)

FACILITY

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