June 21, 2022

Mr. James McQuade, Section Chief
Massachusetts Department of Environmental Protection
Division of Solid Waste Management
Central Regional Office
8 New Bond Street
Worcester, Massachusetts 01606

Re: **Post-Closure Environmental Monitoring Results – Round 21**
Parkerville Road Landfill, Southborough, Massachusetts
(Pare Project No.: 18128.03)

Dear Mr. McQuade:

On behalf of the Town of Southborough, Massachusetts, Pare Corporation (Pare) presents the results of Post-Closure Environmental Monitoring conducted of the Parkerville Road Landfill in Southborough, Massachusetts (hereinafter, the "Facility"). Environmental monitoring was conducted in April and May 2022 in accordance with the post-closure monitoring requirements of the Massachusetts Department of Environmental Protection (MassDEP) Solid Waste Management Facility Regulations (310 CMR 19.000). A Locus Map depicting the Facility and surrounding area on a recent United States Geological Survey (U.S.G.S.) 7.5-minute topographic map is provided as **Figure 1**.

Post-Closure Environmental Monitoring Program Overview

The Facility operated as a municipal solid waste landfill from the late-1930's through the mid-1970's. Concurrent to the start of annual landfill monitoring activities, closure activities consisting of waste consolidation and cap construction and stabilization were implemented between 1999 and 2002. The landfill is presently improved with the John A. Lundblad Memorial Field, a natural turf athletic field, with natural vegetative cover on the remainder of the landfill.

The Environmental Monitoring Program approved by the MassDEP consists of annual sampling and analysis of select groundwater monitoring wells and surface water locations, along with landfill gas surveying at several soil gas sample locations. Sample locations and analytes, targeted as part of the monitoring program, are summarized in **Table 1**, and the locations of surface water, groundwater, and soil gas point sample locations are depicted on the attached **Figure 2**.

Table 1. Summary of Environmental Monitoring Parameters and Targeted Analytes

Environmental Medium	Sampling Locations	Parameters and Targeted Analytes
Surface Water	SW-1, SW-2	Indicator parameters[1] Inorganics[2] Volatile Organic Compounds (VOCs)[3]
Groundwater	MW-2S, MW-2D, MW-3S, MW-3D, MW-4S, MW-4D	Indicator parameters[1] Inorganics[2] VOCs[3]
Landfill Gas	SP-1A, SP-2A, SP-3A, SP-4A, SP-4B, SP-4C, SP-5A, SP-6A, SP-7A, SP-7R, SP-8A, SP-9A, SP-10A, SP-11A, SP-12A, SP-12B, SP-13A, SP-13B, SP-14A, SP-15A Ambient Air	Methane (% total) % Lower Explosive Limit (LEL) as Methane % Carbon Monoxide % Oxygen Hydrogen Sulfide, parts per million by volume (ppmv) Total Volatile Organic Vapors (TVOV), ppmv

Notes:

Surface Water and Groundwater analysis includes all parameters specified under 310 CMR 19.132(2)(h):

[1] Indicator parameters: pH (*in situ*), alkalinity, temperature (*in situ*), specific conductance (*in situ*), nitrate nitrogen, total dissolved solids, chloride, calcium, sodium, iron, manganese, sulfate, chemical oxygen demand (COD), and dissolved oxygen.

[2] Inorganics: Arsenic, barium, cadmium, chromium, copper, cyanide (total and physiologically available [PAC]), lead, mercury, selenium, silver, and zinc.

[3] VOCs: all compounds included in EPA Method 8260, methyl ethyl ketone, methyl isobutyl ketone, acetone, 1,4-dioxane, and tentatively identified compounds in concentrations greater than 5 times background intensity.

Round 21 Post-Closure Monitoring

Sampling points for landfill gas, groundwater, and surface water samples have previously been established in status reports submitted to MassDEP by others: Six (6) groundwater monitoring wells and two (2) surface water sampling locations are sampled on an annual basis, twenty (20) landfill gas monitoring points and one (1) ambient air monitoring location are screened on a quarterly basis. The locations of these sample points are depicted on **Figure 2**.

Groundwater and surface water sampling were performed by Pare Personnel on April 29, 2022 and May 5, 2022. Monitoring wells MW-3S and MW-3D were found to be covered during the April 2022 sampling event which required an additional visit to the landfill to complete the sampling. Prior to groundwater sample collection, each well was gauged using a Solinst Water-Level Indicator capable of measuring 1/100th of a foot (0.01') to determine depth to groundwater and the total well depth from the PVC riser. Each groundwater monitoring well was purged in accordance with the procedures outlined in the U.S. Environmental Protection Agency (EPA) Region 1's *Low Stress (Low Flow) Purging And Sampling Procedure For The Collection Of Groundwater Samples From Monitoring Wells* (Document EQASOP-GW4, rev. September 2017; the EPA's "Low-Flow Method"). A YSI Instruments multiparameter probe was used to collect indicator field parameters for purge rate stabilization. Upon stabilization of field parameter readings, samples were collected in laboratory-provided, pre-preserved glassware and placed on ice pending transport to a state-certified laboratory (ESS Laboratory of Cranston, Rhode Island) for analysis of targeted analytes previously detailed in **Table 1**.

Water quality parameters were also evaluated at the two (2) surface water sample collection points. Field measurements from the surface water and groundwater monitoring event are included on the Field Sampling Data Sheets provided in **Appendix A**. Detected analytes from surface water and groundwater monitoring are summarized in **Table 2** (surface water) **and Table 3** (groundwater). The Laboratory Analytical Reports containing the results for the full suite of targeted analytes are provided in **Appendix B.**

On April 29, 2022, eight (8) soil gas probe locations and one (1) ambient air location were screened by Pare personnel for the presence of Total Methane (percent by volume) and % Methane LEL, Carbon Monoxide (percent by volume), Oxygen (as O_2, percent by volume), Hydrogen Sulfide concentration (ppmv), and TVOV (ppmv) using a MultiRAE System 5-gas meter capable of reading these parameters. The results of landfill soil gas monitoring are summarized in **Table 4**.

Round 21 Monitoring Results and Discussion

Surface Water Monitoring

Analytes targeted in surface water were compared to the MassDEP Surface Water Quality Standards (314 CMR 5.00) or the U. S. Environmental Protection Agency (EPA) National Recommended Water Quality Criteria for aquatic life. In the absence of promulgated standards and guidelines for any targeted analytes in surface water, the results were compared to the Massachusetts Contingency Plan (MCP; 310 CMR 40.00) Reportable Concentrations for groundwater that could be classified as GW-1 (the RCGW-1).

No targeted analytes were detected in excess of the applicable criteria in surface water. During prior monitoring events, pH values for surface water had been outside the acceptable range for Class A Surface Water Bodies (6.5-8.0 pH) but were within the acceptable range during the 2022 monitoring event. Metals detected in surface water included barium, calcium, iron, manganese, sodium, and zinc which were present in both surface water samples in concentrations below the applicable criteria. No targeted VOCs were detected in surface water.

Groundwater Monitoring

Analytes targeted in groundwater were compared to the National Primary and Secondary Drinking Water Standards or the MassDEP equivalent outlined at 310 CMR 22.00, the guidelines promulgated by the MassDEP's Office of Research and Standards (ORSG) for compounds without established state or federal MCLs, and the RCGW-1. Concentrations of targeted analytes were generally similar to those observed during the previous sampling round. The analysis identified several constituents that were present in excess of the comparison criteria:

- Dissolved arsenic was present in excess of the MCL and RCGW-1 (0.01 mg/L both criteria) at MW-2D (0.0109 mg/L detected);
- 1,4-Dioxane was present in excess of the RCGW-1 and the ORSG (0.3 ug/L both criteria) at MW-3S (0.412 ug/L detected) and MW-3D (0.417 ug/L detected);
- Manganese (1.02 – 10.9 mg/L) and sodium (30.1 – 246 mg/L) were present in excess of the ORSG (0.3 mg/L manganese; 20 mg/L sodium) at all monitoring wells except MW-4D. The concentration of manganese at these wells also exceeded the SMCL (0.05 mg/L);
- Iron was present at MW-2S (1.33 mg/L), MW-2D (12.2 mg/L), MW-3D (1.42 mg/L), and MW-4S (92.7 mg/L) in excess of the SMCL (0.3 mg/L);

- Chloride and the *in-situ* Total Dissolved Solids (TDS) values for MW-4S exceeded the SMCLs (Chloride: 439 mg/L detected vs 250 mg/L SMCL; TDS: 830 mg/L detected vs 500 mg/L SMCL); and
- The *in-situ* pH values obtained from MW-3S (6.21) and MW-4S (6.26) were outside of (below) the SMCL range of 6.5 – 8.5 S.U.

The only detection of dissolved arsenic was at monitoring well MW-2D, which was the same concentration of dissolved arsenic detected in the previous monitoring round. Barium and calcium were detected in at least one (1) monitoring well; concentrations of barium detected were compliant with the applicable criteria, and no criteria has been established for calcium under the MCL, ORSG, SMCL, or RCGW-1 criteria.

Two (2) VOCs, ethyl ether (also known as diethyl ether) and 1,4-dioxane, were detected above the laboratory reporting limit at two (2) monitoring wells, MW-3S and MW-3D. The concentrations of ethyl ether (3.6 ug/L at MW-3S and 2.7 ug/L at MW-3D) was compliant with the applicable RCGW-1 criteria (1,000 ug/L). As indicated previously, the concentrations of 1,4-dioxane in both monitoring wells exceeded the ORSG and RCGW-1 standard, though are generally consistent with past 1,4-dioxane concentrations. All other detected analytes were compliant with the applicable criteria.

Landfill Soil Gas Readings

Eleven (11) probes were not able to be found during the April 2022 soil gas survey, some of which were reported as destroyed in prior monitoring rounds. Most of the probes were located in the landscaping along Parkerville Road and may have been inadvertently filled during landscape maintenance. One soil gas probe, SP-7R, was found to be open to the environment which would allow water/weather to compromise the probe's integrity and could also cause the probe to be easily filled in. Pare suggests that SP-7R and select remaining probes be replaced with a flush probe equipped with a cap. Additionally, it appears that a fence was installed relatively recently at the property across Parkerville Road to the east of the landfill where SP-4C is located, which restricted access to this probe. Pare recommends replacing SP-4C with a new probe located closer to the sidewalk that would be less likely to be fenced in.

Parameters targeted at remaining landfill gas monitoring points were compared to the applicable criteria outlined at 310 CMR 19.140 *et seq.* No detectable levels of TVOV, hydrogen sulfide, carbon monoxide, or methane were identified from viable probes during this monitoring round.

Quality Assurance/Quality Control and Data Useability Evaluation

An evaluation of analytical and field components of this assessment with respect to the MassDEP's *Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data in Support of Response Actions Conducted Under the MCP* (WSC-CAM-VII A, rev. Jan. 2017) was performed to ensure the scientific validity and defensibility of environmental monitoring data and the quality and consistency of the procedures documented herein. Validation of these components included the following:

- Evaluating the quality and consistency of the field data collected by Pare personnel;
- Evaluating the sample collection, preservation, storage, and relinquishment procedures performed by Pare personnel;

- Evaluating the receiving laboratory's analytical methods and laboratory report for compliance with the MassDEP Compendium of Analytical Methods (CAM); and
- Any relevant observations from the performance of this assessment.

Field Data Useability

Appropriate sampling and handling methods were employed in the collection of surface water and groundwater samples. Monitoring wells were purged in accordance with the EPA's Low-Flow Method and samples were collected after indicator parameters had reached stabilization for at least three (3) consecutive readings. Samples were collected in pre-preserved glassware prepared by the receiving laboratory in advance of the sampling event. Due to construction activities, Pare personnel were unable to collect all samples over a single day (i.e., a soil stockpile had been placed over MW-3S and MW-3D obstructing access during Pare's initial attempt in April 2022). Pare returned to the Facility in May 2022 to collect remaining samples.

Analytical Data Useability

Due to the need to collect samples over several days, samples were provided to the laboratory on two (2) separate chains of custody and the analytical results are provided on two (2) separate laboratory reports, both included in **Appendix B**.

The project narratives for both laboratory reports identify non-conformance with MassDEP CAM protocols. The report from April 2022 (Report No. 22D1201) indicated that the cooler was not received within the acceptable temperature criteria; the cooler was transported directly from the field to the laboratory for sample drop off and may not have had adequate time to reach the acceptance criteria. Other non-conformances mentioned include the need to calibrate the instrument *via* quadratic regression for several VOCs, none of which are contaminants of concern at the landfill; a high biased continuing calibration for 1,4-dioxane, which is a contaminant of concern at the landfill which would not be expected to be significantly impacted by a high bias; and the test for alkalinity being out of the hold time due to a mistake on the chain of custody.

The report from May 2022 (Report No. 22E0224) had similar issues noted in the first report: the continuing calibration for one (1) VOC, tetrachloroethylene (PCE) was biased high, which is not anticipated to have a negative impact on analysis of site samples as PCE is not a contaminant of concern at the landfill and a high bias would be unlikely to mask a positive result. The compound 1,4-dioxane was detected in the method blank for this sampling event which may be due to the high bias exhibited by the instrument but could also be a result of contamination at some point in the sample preparation process. The final non-conformance was regarding alkalinity being out of hold time due to a mistake on the chain of custody.

No other compounds were detected in the method blanks during the analyses. Compounds identified during Round 21 that are commonly detected at the Facility were generally recovered in the laboratory control spike, matrix spike, and spike duplicates within the acceptable recovery limit range and with low relative percent differences; targeted analytes routinely detected at the landfill were generally recovered in laboratory quality control tests with a higher-than-average bias, ranging from 103-125%. Given the tendency of the instruments toward a high bias during the subject sampling events, it is unlikely that a "false negative" was reported during this monitoring period.

Based on the review of data from field activities and laboratory analysis, the data presented herein appears to be representative of conditions at the Facility and is acceptable for the purposes herein. Pare is of the opinion that data collected over the course of a single day would more accurately reflect conditions at the Facility, however, the analytical results appear to be consistent with historical observations at the Facility.

Summary of Findings and Recommendations

Pare performed the 21st round of surface water and groundwater sampling at the Parkerville Road Landfill in April and May of 2022, and one (1) quarterly landfill soil gas screening on April 29, 2022. The results of this monitoring round are generally consistent with the results of surface water, groundwater, and soil gas monitoring from the previous round.

During the previous monitoring event, dissolved arsenic was detected at MW-2D in excess of the MCL and RCGW-1. The 21st round of monitoring identified the same concentration of arsenic (0.0109 mg/L) at MW-2D. Dissolved arsenic concentrations were compliant with the MCL and RCGW-1 at all groundwater sampling locations during the monitoring event performed in 2018. The concentration of arsenic (0.0109 mg/L detected) is marginally above the applicable criteria (0.01 mg/L for MCL and RCGW-1) and may have been biased high given a 103-107 % recovery on the laboratory control spikes.

Other compounds detected at the Facility include 1,4-dioxane and ethyl ether in groundwater at MW-3S and MW-3D, where the concentrations of 1,4-dioxane (0.412 ug/L at MW-3S and 0.417 ug/L at MW-3D) exceeded the ORSG and RCGW-1 (0.3 ug/L for both criteria). Both compounds have been detected during prior monitoring rounds at MW-3S and MW-3D in similar concentrations. Manganese, sodium, and iron were also present in at least one (1) groundwater monitoring well in excess of applicable criteria during Round 21. These compounds were generally present in similar concentrations in the previous monitoring round. Additionally, several groundwater monitoring wells exhibited pH concentrations outside the acceptable SMCL range, several of which were also outside this range in the prior monitoring round. Chloride and TDS were present at MW-4S in concentrations that exceeded the SMCL during the current monitoring round; MW-4S was unable to be sampled during the previous monitoring round and may have had excess settlement due to not being purged or sampled during the previous round.

No parameters in surface water samples collected during the 21st monitoring round exceeded their applicable criteria. Concentrations of targeted analytes were generally similar to those observed during prior sampling events with the exception of pH, which was found to be within the acceptable range, the criteria established in 310 CMR 4.00 for Class A Surface Waters (pH 6.5 – 8.3) for both surface water sampling locations during the 21st monitoring event but had previously been outside of this range (below 6.5 pH). No VOCs were detected in surface water, and no other targeted analytes were present in excess of the applicable freshwater aquatic life thresholds or RCGW-1.

During the landfill soil gas probe sampling event, multiple probes were not found at the reported locations and appear to have been destroyed or filled in, specifically along Parkerville Road. Of the probe that was found adjacent to the landfill in this area, it appeared that the construction of the probe made it susceptible to weather and may have made other, similarly constructed probes susceptible to being filled in as they resemble a hole in the ground:

Photograph of soil gas monitoring point SP-7R on April 29, 2022. A metal sampling point was located inside the PVC pipe, though both the PVC and sampling point were loose. Roughly a 6-inch diameter hole had been advanced, which was partially filled with coarse sand and pea gravel, but no seal was observed.

Given the proximity of the soil gas probes to a school and the routine mowing that occurs along Parkerville Road, a flush soil gas probe equipped with a cap is best suited for this area and would be less likely to be filled in or become overgrown.

Additionally, soil gas probe SP-4C, located on the east side of Parkerville Road (i.e., across the street from the landfill), was unable to be accessed. There is a steep slope abutting the sidewalk in this area that restricts access to the probe to several feet off the property driveway. During this soil gas monitoring event, a fence had been constructed running parallel to the sidewalk and turning towards the residence near the driveway which inadvertently blocked access to the soil gas probe. The approximate location of the fence and soil gas monitoring point are depicted on the attached **Figure 2**.

Of the soil gas monitoring points that were found to be viable and accessible during this monitoring event, no detections of methane, TVOV, carbon monoxide, or hydrogen sulfide were observed.

Pare suggests that soil gas monitoring points SP-7R, SP-4C and select points that were not found during this monitoring event, be replaced with flush soil gas probes equipped with caps.

Overall, the results of water quality sampling during Round 21 continue to indicate impacts, albeit minor impacts, on water quality from organic and inorganic parameters commonly associated with municipal landfills. With respect to inorganic parameters, there have been very limited and only slight exceedances of MCLs for various heavy metals in the past; only one (1) metal, arsenic was present slightly above the MCL and RCGW-1 at one (1) groundwater sampling location during this monitoring round.

The next round of annual Water Quality Monitoring will be performed in the Spring of 2023. The next Soil Gas Monitoring event will be performed in the Summer of 2022 and reported under separate cover. In the meantime, if you have any questions regarding this report or the attached data, please feel free to contact me at (401) 334-4100.

Very truly yours,

Timothy P. Thies, P.E.
Senior Vice President

TPT/AWB/kji

Enclosures

Table 1 - Summary of Environmental Monitoring Parameters and Targeted Analytes
Table 2 – Summary of Analytical Results for Surface Water
Table 3 – Summary of Analytical Results for Groundwater
Table 4 – Summary of Landfill Soil Gas Survey Readings
Figure 1 – Locus Map
Figure 2 – Sample Location Plan
Appendix A – Field Sampling Data Sheets
Appendix B – Laboratory Analytical Reports

ecc: Karen Galligan, Superintendent, Southborough Department of Public Works
Heather Alker, MD, MPH, Public Health Director, Southborough Board of Health
Mark Purple, Southborough Town Administrator

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Table 2
Summary of Analytical Results for Surface Water
Monitoring Year 2022, Round 21
Parkerville Road Landfill
Southborough, Massachusetts

Sample ID	Units	SW-1	SW-2	EPA NRWQC or MassDEP WQC, Class A Surface Water		MassDEP Reportable Concentration
Analyte		4/29/2022	4/29/2022	Freshwater Acute (CMC)[A]	Freshwater Chronic (CCC)[B]	RCGW-1
INDICATOR PARAMETERS						
Alkalinity, Total	mg $CaCO_3$/L	23	27	*NE*	< 20	*NE*
Chloride	mg/L	140	141	860	230	*NE*
Chemical Oxygen Demand	mg/L	*<10*	*<10*	*NE*	*NE*	*NE*
Cyanide, PAC	mg/L	*<0.005*	*<0.005*	0.022	0.0052	0.03
Cyanide, Total	mg/L	*<0.005*	*<0.005*	0.022	0.0052	0.03
Dissolved Oxygen [1]	mg/L	12.73	11.48	< 6	< 6	*NE*
Nitrogen, Nitrate	mg/L	0.604	0.66	*NE*	*NE*	*NE*
pH [1]	S.U.	7.73	7.77	*NE*	6.5 - 8.3	*NE*
Sulfate	mg/L	12.9	14.2	*NE*	*NE*	*NE*
Solids, Total Dissolved [1]	mg/L	341	285	*NE*	*NE*	*NE*
Specific Conductivity [1]	mS/cm	0.554	0.463	*NE*	*NE*	*NE*
Temperature [1]	°C	10.1	9.5	*NE*	*NE*	*NE*
METALS, DISSOLVED						
Arsenic	mg/L	*<0.0005*	*<0.0005*	0.34	0.15	0.01
Barium	mg/L	0.0264	0.0252	*NE*	*NE*	2
Cadmium	mg/L	*<0.0002*	*<0.0002*	0.0018	0.00072	0.004
Calcium	mg/L	15.7	17.1	*NE*	*NE*	*NE*
Chromium	mg/L	*<0.002*	*<0.002*	0.016	0.011	0.1
Copper [2]	mg/L	*<0.002*	*<0.002*	0.0257	0.0181	10
Iron	mg/L	0.475	0.421	*NE*	1	*NE*
Lead	mg/L	*<0.0005*	*<0.0005*	0.065	0.0025	0.01
Manganese	mg/L	0.0383	0.0743	*NE*	*NE*	*NE*
Mercury	mg/L	*<0.0002*	*<0.0002*	0.0014	0.00077	0.002
Selenium	mg/L	*<0.0025*	*<0.0025*	0.005	0.002	0.05
Silver	mg/L	*<0.0005*	*<0.0005*	0.0032	*NE*	0.007
Sodium	mg/L	77.2	77	*NE*	*NE*	*NE*
Zinc	mg/L	0.0181	0.0162	0.12	0.12	0.9
VOCS (8260)						
No VOCs detected above laboratory reporting limits						
MCP 1,4-Dioxane by 8270D-SIM						
1,4-Dioxane	ug/L	*<0.25*	*<0.25*	*NE*	*NE*	0.3

Notes:

Analytical data was compared to the MassDEP Surface Water Standards (314 CMR 4.00) for Class A inland surface waterbodies, which further reference the EPA's National Recommended Water Quality Criteria (NRWQC) for contaminants not otherwise listed. As such, these requirements have been combined into a single dataset using the most stringent applicable criteria.

[A] Criterion Maximum Concentration – an estimate of the highest concentration of a substance in the water column to which an aquatic community can have a single daily exposure to with no observed adverse effects.

[B] Criterion Continuous Concentration – an estimate of the highest concentration of a substance in the water column to which an aquatic community can be exposed to over a 4-day period with no observed adverse effects.

[1] Parameters collected *in-situ* .

[2] Aquatic life threshold values for dissolved copper were provided as watershed-specific criteria under 314 CMR 4.00 for the SuAsCo Watershed.

NE = No regulatory or guidance limit has been established for the specified analyte

<x = Analyte was not detected above the specified laboratory quantitation limit (x)

= Concentration exceeds Acute Freshwater Aquatic Life Criteria

= Concentration exceeds Chronic Freshwater Aquatic Life Criteria

= Concentration exceeds the MassDEP RCGW-1 Reportable Concentration for Groundwater

Table 3
Summary of Analytical Results for Groundwater
Monitoring Year 2022, Round 21
Parkerville Road Landfill
Southborough, Massachusetts

Location	Units	MW-2S	MW-2D	MW-3S	MW-3D	MW-4S	MW-4D	Water Quality Standards and Guidelines			
Sampling Date		5/5/2022	5/5/2022	5/5/2022	4/29/2022	4/29/2022	4/29/2022	MCL[A]	ORSG[B]	RCGW-1[C]	SMCL[D]
IN-SITU *FIELD SCREENING*											
SWL (from PVC)	Feet	3.1	1.33	5.65	4.02	8.34	13.09	*NE*	*NE*	*NE*	*NE*
pH	S.U.	6.94	6.57	**6.21**	6.66	**6.26**	7.11	*NE*	*NE*	*NE*	6.5 - 8.5
Temperature	°C	10.5	12.78	12.89	8.3	6.7	7.4	*NE*	*NE*	*NE*	*NE*
Conductivity	mS/cm	0.547	0.596	0.732	0.667	1.349	0.0791	*NE*	*NE*	*NE*	*NE*
Dissolved Oxygen	mg/L	4.84	3.24	5.71	0.86	2.52	1.24	*NE*	*NE*	*NE*	*NE*
INDICATOR PARAMETERS											
Alkalinity, Total	mg $CaCO_3$/L	96	58	270	276	62	23	*NE*	*NE*	*NE*	*NE*
Chloride	mg/L	91.7	121	68.9	59.2	**439**	*<3.0*	*NE*	*NE*	*NE*	250
Chemical Oxygen Demand	mg/L	*<10*	*<10*	40	*<10*	18	*<10*	*NE*	*NE*	*NE*	*NE*
Cyanide, Total	mg/L	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	0.2	*NE*	0.03	*NE*
Cyanide, PAC	mg/L	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	0.2	*NE*	0.03	*NE*
Nitrate as N	mg/L	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	10	*NE*	*NE*	*NE*
Sulfate	mg/L	19.4	22.6	*<5*	14.1	*<5*	8.1	*NE*	*NE*	*NE*	250
Solids, Total Dissolved [1]	mg/L	336	367	403	354	**830**	49	*NE*	*NE*	*NE*	500
METALS, DISSOLVED											
Arsenic	mg/L	*<0.005*	**0.0109**	*<0.001*	*<0.005*	*<0.005*	*<0.005*	0.01	*NE*	0.01	*NE*
Barium	mg/L	*<0.05*	0.0525	0.146	0.0853	0.0648	*<0.05*	2	*NE*	2	*NE*
Cadmium	mg/L	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	0.005	*NE*	0.004	*NE*
Calcium	mg/L	40.8	34.1	71.4	74.7	29.6	9.76	*NE*	*NE*	*NE*	*NE*
Chromium	mg/L	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	0.1	*NE*	0.1	*NE*
Copper	mg/L	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	1.3	*NE*	10	1
Iron	mg/L	**1.33**	**12.2**	0.143	**1.42**	**92.7**	*<0.1*	*NE*	*NE*	*NE*	0.3
Lead	mg/L	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	0.015	*NE*	0.01	*NE*
Manganese	mg/L	**1.37**	**4.97**	**10.9**	**5.2**	**1.02**	*<0.02*	*NE*	0.3	*NE*	0.05
Mercury	mg/L	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	0.002	*NE*	0.002	*NE*
Selenium	mg/L	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	0.05	*NE*	0.05	*NE*
Silver	mg/L	*<0.001*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*NE*	*NE*	0.007	0.1
Sodium	mg/L	**30.1**	**44.8**	**43.4**	**42.4**	**246**	*<5*	*NE*	20	*NE*	*NE*
Zinc	mg/L	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*NE*	*NE*	0.9	5
VOCS (8260)											
Ethyl ether	ug/L	*<1.0*	*<1.0*	3.6	2.7	*<1.0*	*<1.0*	*NE*	*NE*	1,000	*NE*
MCP 1,4-Dioxane by 8270D-SIM											
1,4-Dioxane	ug/L	*<0.25*	*<0.25*	**0.412**	**0.417**	*<0.25*	*<0.25*	*NE*	0.3	0.3	*NE*

Notes:

1. Standard based on the following:
   (A) MCL = Maximum containment Level for Drinking Water, either for Massachusetts (310 CMR 22.00) or the National Primary Drinking Water Regulations, whichever is more stringent
   (B) ORSG = Office of Research and Standards Guidelines for Drinking Water Contaminants without a Massachusetts MCL, 2016.
   (C) RCGW-1 = Reportable Concentration in Groundwater, from 310 CMR 40.1600, July 2016.
   (D) SMCL = DEP Secondary Maximum Contaminant Level, 2016. SMCLs are non-enforceable standards that were developed to protect the aesthetic quality of drinking water (e.g., odor and taste).

<x = Not detected above laboratory reporting limit (x).
NT = Not tested. During the December 2019 sampling round, location MW-4S was unable to be accessed for sampling.
NE = No limit established for the targeted analyte under the specified criteria

= Concentration exceeds the MCL
= Concentration exceeds the ORSG criteria
= Concentration exceeds the MassDEP RCGW-1
= Concentration exceeds the SMCL

Multiple colors indicate an exceedance of more than one standard, identified by the colors used.

Table 4
Summary of Landfill Soil Gas Survey Readings - April 2022
Parkerville Road Landfill
Southborough, Massachusetts

PROBE ID	INSTALLATION TYPE	SCREENING TIME	PRESS. (Hg)	CH_4 (%)	LEL (%)	CO (%)	O2 (%)	H_2S (ppm)	TVOV (ppm)	NOTES
SP-1A	Flush-Mounted Probe	-	-	-	-	-	-	-	-	Not Found
SP-2A	Flush Mounted Probe	-	-	-	-	-	-	-	-	Not Found
SP-3A	Flush Mounted Probe	-	-	-	-	-	-	-	-	Not Found
SP-4A	Flush Mounted Probe	-	-	-	-	-	-	-	-	Not Found
SP-4B	Staked Probe	17:23	28.88	0.0	0.0	0.0	20.9	0	0.0	
SP-4C	Staked Probe	-	-	-	-	-	-	-	-	Inaccessible, fence installed that restricted access
SP-5A	Flush Mounted Probe	-	-	-	-	-	-	-	-	Not Found
SP-6A	Flush Mounted Probe	-	-	-	-	-	-	-	-	Not Found
SP-7A	Flush Mounted Probe	-	-	-	-	-	-	-	-	Not Found
SP-7R	Flush Mounted Probe	13:20	28.84	0.0	0.0	0.0	20.9	0	0.0	Open to environment/weather, should be replaced
SP-8A	Flush Mounted Probe	-	-	-	-	-	-	-	-	Not Found
SP-9A	Staked Probe	-	-	-	-	-	-	-	-	Not Found
SP-10A	Staked Probe	16:10	28.84	0.0	0.0	0.0	20.9	0	0.0	
SP-11A	Staked Probe	16:14	28.85	0.0	0.0	0.0	20.9	0	0.0	
SP-12A	Flush Mounted Probe	16:27	28.86	0.0	0.0	0.0	20.9	0	0.0	
SP-12B	Staked Probe	16:21	28.85	0.0	0.0	0.0	20.9	0	0.0	
SP-13A	Flush Mounted Probe	16:41	28.87	0.0	0.0	0.0	20.9	0	0.0	
SP-13B	Flush Mounted Probe	16:33	28.87	0.0	0.0	0.0	20.9	0	0.0	
SP-14A	Staked Probe	-	-	-	-	-	-	-	-	Not Found
SP-15A	Flush Mounted Probe	-	-	-	-	-	-	-	-	Not Found
Ambient	Parking Lot	8:23	28.82	0.0	0.0	0.0	20.9	0	0.0	

Notes:

1. Weather: Sunny to Partly Cloudy in Afternoon, 70° F.
2. MultiRAE PGM Portable Multi-Gas Detector was used for measurement collection.
3. Bold values indicate methane concentrations.
4. Bold and shaded values indicate a reportable concentration.

Several probes not found in the field and may have been destroyed. Areas were searched several times throughout the day but most were not able to be found.

FIGURE 1

Locus Map

FIGURE 1

IMAGERY SOURCE: MassGIS. 1995. U.S.G.S. 7.5-Minute Topographic Maps. MassGIS (Bureau of Geographic Information), Commonwealth of Massachusetts EOTSS and U.S. Geological Survey.

PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401-334-4100

0 250 500 1,000 1,500 2,000 Feet

N

"MARLBOROUGH, MASSACHUSETTS" QUADRANGLE

★ SITE LOCATION

SITE LOCUS MAP

PARKERVILLE ROAD LANDFILL
SOUTHBOROUGH, MA

PARE PROJECT: 18128.02
DATE: JAN 2020

FIGURE 2

Sample Location Plan

SURFACE WATER SAMPLING LOCATIONS
SCALE: 1" = 80'

LEGEND:

- GROUNDWATER MONITORING WELL
- LANDFILL SOIL GAS PROBE
- SURFACE WATER SAMPLING POINT
- PVC LANDFILL GAS VENT POINT

SP-10A
SP-11A
GV-7
SP-12B
GAS BARRIER TRENCH
GV-6
SP-12A
SP-13B
SP-13A
GV-5
APPROXIMATE LIMITS OF LANDFILL
20' WIDE AT&T FIBER OPTIC CABLE EASEMENT
GV-4
4" PVC GAS VENT (TYP.)
SPRINKLER HEAD (TYP., APPROX. LOCATION)
SUBGRADE PASSIVE GAS COLLECTION SYSTEM
ATHLETIC FIELD
GV-3
GV-2
GV-1
MW-2S
MW-2D
MW-3S
MW-3D
MW-4S
MW-4D
SP-1A (POSSIBLY DESTROYED OR BURIED)
SP-2A (POSSIBLY DESTROYED OR BURIED)
SP-3A (POSSIBLY DESTROYED OR BURIED)
SP-4A (POSSIBLY DESTROYED OR BURIED)
SP-4B
SP-4C (INACCESSIBLE)
SP-5A (POSSIBLY DESTROYED OR BURIED)
SP-6A (POSSIBLY DESTROYED OR BURIED)
SP-7A (POSSIBLY DESTROYED OR BURIED)
SP-7R
SP-8A (POSSIBLY DESTROYED OR BURIED)
SP-9A
SP-14A (POSSIBLY DESTROYED OR BURIED)
SP-15A (POSSIBLY DESTROYED OR BURIED)
AMBIENT PARKING LOT READING FOR SOIL GAS SURVEY
GAS BARRIER TRENCH
APPARENT FENCE ON PRIVATE PROPERTY RESTRICTING ACCESS TO SP-4C
BENCHMARK
B.B. HYDRANT
ELEV.=290.64
(NAVD 1988)
N/F
TOWN OF SOUTHBOROUGH – NEARY SCHOOL
MAP 43, PARCEL 18
DEED BK. 4813, PG. 316
MAP 35, PARCEL 35
AREA=24,302 S.F.
(0.5± ACRES)
MAP 35, PARCEL 13A
AREA=184,609 S.F.
(4.2± ACRES)
MAP 35, PARCEL 42
N/F
JULIE WAKSTEIN & CORNELIA GODFREY
MAP 35, PARCEL 10
DEED BK. 44907, PG. 32
PARKERVILLE ROAD (VAR. WIDTH – PUBLIC WAY)

PARKERVILLE LANDFILL
SCALE: 1" = 25'

PARE
PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401-334-4100

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING

Parkerville Road Landfill
Groundwater, Surface Water, and Soil Gas Monitoring Locations
Southborough, MA

REVISIONS:

PROJECT NO.:	18128.02
DATE:	JANUARY 2020
SCALE:	AS NOTED
DESIGNED BY:	
CHECKED BY:	
DRAWN BY:	
APPROVED BY:	

DRAWING TITLE:

FIGURE 2

PARKERVILLE LANDFILL
SAMPLE LOCATIONS

DRAWING NO.:

SHEET NO. ___ OF ___

APPENDIX A

Field Sampling Data Sheets

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 5/5/2022
WEATHER: 70°F, sunny

WELL ID: **MW-2S**
WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): 3.10 feet
TOTAL WELL DEPTH (DTB): 15.42 feet
VOLUME PURGED: 2.50 gallons
MEASURE POINT: Top of PVC Riser
ELEVATION:
WATER LEVEL MEASUREMENT DEVICE: Solinst

PURGER TYPE: Peristaltic Pump
PURGE RATE (GPM): 0.1 ±
ELAPSED TIME (MIN): 30 ±

FIELD TESTING RESULTS

Time:	906	914	918	922	928	932	937		
pH:	7.31	6.99	7.01	7.01	6.97	6.96	6.94		
Sp.Con. (mS/cm):	0.545	0.575	0.561	0.554	0.548	0.547	0.547		
Temp (°C):	11.30	10.90	10.80	10.60	10.60	10.60	10.50		
D.O. (mg/L):	6.26	5.21	5.09	4.91	4.85	4.85	4.84		

Notes:

Samples were noted as generally clear and low in turbidity based on visual inspections of samples.

Samples were collected at 0945

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 5/5/2022
WEATHER: 70°F, sunny

WELL ID: **MW-2D**
WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): 1.33 feet
TOTAL WELL DEPTH (DTB): 29.23 feet
VOLUME PURGED: 10.00 gallons
MEASURE POINT: Top of PVC Riser
ELEVATION:
WATER LEVEL MEASUREMENT DEVICE: Solinst

PURGER TYPE: Peristaltic Pump
PURGE RATE (GPM): 0.3 ±
ELAPSED TIME (MIN): 40 ±

FIELD TESTING RESULTS

Time:	1031	1036	1040	1044	1048	1053	1057		
pH:	6.26	6.24	6.31	6.48	6.56	6.59	6.57		
Sp.Con. (mS/cm):	0.581	0.702	0.691	0.641	0.599	0.599	0.596		
Temp (°C):	14.48	14.46	13.04	12.92	12.81	12.79	12.78		
D.O. (mg/L):	4.52	4.26	4.16	3.42	3.25	3.24	3.24		

Notes:

Samples were noted as generally clear and low in turbidity based on visual inspection.

Samples were collected at 1100

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 5/5/2022
WEATHER: 70°F, sunny

WELL ID: **MW-3S**
WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): 5.65 feet
TOTAL WELL DEPTH (DTB): 12.90 feet
VOLUME PURGED: 4.00 gallons
MEASURE POINT: Top of PVC Riser
ELEVATION:
WATER LEVEL MEASUREMENT DEVICE: Solinst

PURGER TYPE: Peristaltic Pump
PURGE RATE (GPM): 0.1 ±
ELAPSED TIME (MIN): 30 ±

FIELD TESTING RESULTS

Time:	1324	1328	1332	1338	1341				
pH:	5.67	6.14	6.17	6.19	6.21				
Sp.Con. (mS/cm):	0.754	0.781	0.722	0.726	0.732				
Temp (°C):	14.84	13.72	13.04	12.93	12.89				
D.O. (mg/L):	5.96	5.84	5.73	5.72	5.71				

Notes:
Samples were relatively murky/cloudy
Samples were collected at 1345

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 4/29/2022
WEATHER: 70°F, sunny

WELL ID: **MW-3D**
WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): 4.02 feet
TOTAL WELL DEPTH (DTB): 23.64 feet
VOLUME PURGED: 3.20 gallons
MEASURE POINT: Top of PVC Riser
ELEVATION:
WATER LEVEL MEASUREMENT DEVICE: Solinst

PURGER TYPE: Peristaltic Pump
PURGE RATE (GPM): 0.1 ±
ELAPSED TIME (MIN): 40 ±

FIELD TESTING RESULTS

Time:	1241	1244	1248	1253	1259	1304	1310		
pH:	6.65	6.67	6.64	6.65	6.66	6.66	0.67		
Sp.Con. (mS/cm):	0.669	0.703	0.694	0.682	0.671	0.667	0.667		
Temp (°C):	8.30	8.20	8.30	8.30	8.30	8.30	8.30		
D.O. (mg/L):	1.13	1.09	0.96	0.89	0.87	0.86	0.86		

Notes:
clear, slight sulfur odor, sampled at 1315

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 4/29/2022
WEATHER: 70°F, sunny

WELL ID: **MW-4S**
WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): 8.34 feet
TOTAL WELL DEPTH (DTB): 14.89 feet
VOLUME PURGED: 3.50 gallons
MEASURE POINT: Top of PVC Riser
ELEVATION:
WATER LEVEL MEASUREMENT DEVICE: Solinst

PURGER TYPE: Peristaltic Pump
PURGE RATE (GPM): 0.1 ±
ELAPSED TIME (MIN): 20 ±

FIELD TESTING RESULTS

Time:	951	955	1001	1005	1011				
pH:	6.21	6.24	6.26	6.27	6.26				
Sp.Con. (mS/cm):	1.475	1.362	1.353	1.351	1.349				
Temp (°C):	6.00	6.30	6.60	6.70	6.70				
D.O. (mg/L):	2.00	2.26	2.49	2.50	2.52				

Notes:
clear, sampled at 1015

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 4/29/2022
WEATHER: 70°F, sunny

WELL ID: **MW-4D**
WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): 13.09 feet
TOTAL WELL DEPTH (DTB): 37.68 feet
VOLUME PURGED: 4.00 gallons
MEASURE POINT: Top of PVC Riser
ELEVATION:
WATER LEVEL MEASUREMENT DEVICE: Solinst

PURGER TYPE: Peristaltic Pump
PURGE RATE (GPM): 0.1 ±
ELAPSED TIME (MIN): 40 ±

FIELD TESTING RESULTS

Time:	838	842	846	851	857	902	908	913	921
pH:	7.42	7.36	7.28	7.18	7.16	7.14	7.13	7.12	7.11
Sp.Con. (mS/cm):	0.0725	0.0721	0.0730	0.0751	0.0772	0.0784	0.0785	0.0789	0.0791
Temp (°C):	9.20	8.70	8.40	8.10	7.90	7.70	7.50	7.40	7.4
D.O. (mg/L):	2.18	1.91	1.84	1.69	1.47	1.32	1.27	1.25	1.24

Notes:

Samples were noted as generally clear and low in turbidity based on visual inspection.
Samples were collected at 0930

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
DATE: 4/29/2022
PROJECT NO.: 18128.02
WEATHER: 70°F, sunny

FIELD TESTING RESULTS:

SURFACE WATER SAMPLE LOCATION: **SW-1**

pH: 7.73 S.U.
SPEC. COND: 0.554 mS/cm
TEMPERATURE: 10.1 ^{o}C
D.O.: 12.73 mg/L

SURFACE WATER SAMPLE LOCATION: **SW-2**

pH: 7.77 S.U.
SPEC. COND: 0.463 mS/cm
TEMPERATURE: 9.5 ^{o}C
D.O.: 11.48 mg/L

NOTES:

All surface water samples were clear with a brownish tinge.

APPENDIX B

Laboratory Analytical Reports

CERTIFICATE OF ANALYSIS

Tim Thies
Pare Corporation
8 Blackstone Valley Place
Lincoln, RI 02865

RE: Southborough MA (18128.02)
ESS Laboratory Work Order Number: 22D1201

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 1:03 pm, Jun 01, 2022

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

SAMPLE RECEIPT

The following samples were received on April 29, 2022 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

The cooler temperature was not within the acceptance criteria of ≤6°C.

Question I: All samples for Metals were analyzed for a subset of the required MCP list per the client's request.

Revision 1 June 1, 2022: This report has been revised to include Alkalinity on all samples per client request.

Lab Number	Sample Name	Matrix	Analysis
22D1201-01	MW-3D	Aqueous	2320B, 353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
22D1201-02	MW-4S	Aqueous	2320B, 353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
22D1201-03	MW-4D	Aqueous	2320B, 353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
22D1201-04	SW-1	Aqueous	2320B, 353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
22D1201-05	SW-2	Aqueous	2320B, 353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

PROJECT NARRATIVE

8260B Volatile Organic Compounds

D2E0024-CCV1 **Calibration required quadratic regression (Q).**
Bromoform (101% @ 80-120%), cis-1,3-Dichloropropene (104% @ 80-120%), Dibromochloromethane (101% @ 80-120%), Naphthalene (100% @ 80-120%), trans-1,3-Dichloropropene (104% @ 80-120%)

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

D2E0087-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
1,4-Dioxane-d8 (33% @ 20%)

Classical Chemistry

22D1201-01 **Estimated value. Sample hold times were exceeded (H).**
Alkalinity as CaCO3

22D1201-02 **Estimated value. Sample hold times were exceeded (H).**
Alkalinity as CaCO3

22D1201-03 **Estimated value. Sample hold times were exceeded (H).**
Alkalinity as CaCO3

22D1201-04 **Estimated value. Sample hold times were exceeded (H).**
Alkalinity as CaCO3

22D1201-05 **Estimated value. Sample hold times were exceeded (H).**
Alkalinity as CaCO3

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **22D1201-01 through 22D1201-05**

Matrices: ( ) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air (x) Other: Aqueous

CAM Protocol (check all that apply below):

(x) 8260 VOC CAM II A	(x) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	( ) 8082 PCB CAM V A	(x) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(x) 8270 SVOC CAM II B	(x) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV C	( ) 8081 Pesticides CAM V B	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(x) 6010 Metals CAM III A	(x) 6020 Metals CAM III D	( ) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (x) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (x) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (x) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (x) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (x) No ( )

Responses to Questions G, H and I below are required for "'Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (x) No ( )*
	***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (x)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (x)*

All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard Date: May 11, 2022

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3D
Date Sampled: 04/29/22 13:15
Percent Solids: N/A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-01
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (5.0)		7010		1	KJK	05/06/22 16:58	10	10	DE20226
Barium	**85.3** (50.0)		6010C		1	KJK	05/03/22 19:27	10	10	DE20226
Cadmium	ND (1.0)		6020A		1	KJK	05/02/22 18:58	10	10	DE20226
Calcium	**74700** (200)		6010C		1	KJK	05/03/22 19:27	10	10	DE20226
Chromium	ND (10.0)		6010C		1	KJK	05/03/22 19:27	10	10	DE20226
Copper	ND (20.0)		6010C		1	KJK	05/03/22 19:27	10	10	DE20226
Iron	**1420** (100)		6010C		1	KJK	05/03/22 19:27	10	10	DE20226
Lead	ND (1.0)		6020A		1	KJK	05/02/22 18:58	10	10	DE20226
Manganese	**5200** (20.0)		6010C		1	KJK	05/03/22 19:27	10	10	DE20226
Mercury	ND (0.20)		7470A		1	YIV	05/04/22 14:36	20	40	DE20211
Selenium	ND (5.0)		6020A		1	KJK	05/02/22 18:58	10	10	DE20226
Silver	ND (5.0)		6010C		1	KJK	05/03/22 19:27	10	10	DE20226
Sodium	**42400** (5000)		6010C		1	KJK	05/03/22 19:27	10	10	DE20226
Zinc	ND (50.0)		6010C		1	KJK	05/03/22 19:27	10	10	DE20226

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3D
Date Sampled: 04/29/22 13:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,1-Dichloroethane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,1-Dichloroethene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,1-Dichloropropene	ND (2.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,2-Dibromoethane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,2-Dichloroethane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,2-Dichloropropane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,3-Dichloropropane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
1,4-Dioxane - Screen	ND (500)		8260B		1	05/03/22 5:04	D2E0024	DE20240
2,2-Dichloropropane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
2-Butanone	ND (10.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
2-Chlorotoluene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
2-Hexanone	ND (10.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
4-Chlorotoluene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
4-Isopropyltoluene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Acetone	ND (10.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Benzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Bromobenzene	ND (2.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Bromochloromethane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3D
Date Sampled: 04/29/22 13:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.6)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Bromoform	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Bromomethane	ND (2.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Carbon Disulfide	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Carbon Tetrachloride	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Chlorobenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Chloroethane	ND (2.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Chloroform	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Chloromethane	ND (2.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Dibromochloromethane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Dibromomethane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Diethyl Ether	**2.7** (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Di-isopropyl ether	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Ethylbenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Hexachlorobutadiene	ND (0.6)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Hexachloroethane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Isopropylbenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Methylene Chloride	ND (2.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Naphthalene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
n-Butylbenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
n-Propylbenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
sec-Butylbenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Styrene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
tert-Butylbenzene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Tetrachloroethene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Tetrahydrofuran	ND (5.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3D
Date Sampled: 04/29/22 13:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Trichloroethene	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Trichlorofluoromethane	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Vinyl Chloride	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Xylene O	ND (1.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Xylene P,M	ND (2.0)		8260B		1	05/03/22 5:04	D2E0024	DE20240
Xylenes (Total)	ND (2.00)		8260B		1	05/03/22 5:04		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*113 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*93 %*		*70-130*
Surrogate: Dibromofluoromethane	*102 %*		*70-130*
Surrogate: Toluene-d8	*105 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3D
Date Sampled: 04/29/22 13:15
Percent Solids: N/A
Initial Volume: 500
Final Volume: 0.5
Extraction Method: 3535A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TAJ
Prepared: 5/3/22 18:30

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	**0.417** (0.250)		8270D SIM		1	05/05/22 10:58	D2E0087	DE20347

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*93 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3D
Date Sampled: 04/29/22 13:15
Percent Solids: N/A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-01
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Alkalinity as CaCO3	**H 276** (20)		2320B		1	JLK	05/25/22 14:43	mg/L	DE22534
Chemical Oxygen Demand	ND (10)		5220D		1	CCP	05/03/22 15:30	mg/L	DE20340
Chloride	**59.2** (3.0)		9250		1	JLK	05/04/22 14:24	mg/L	DE20432
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/04/22 12:05	ug/L	DE20424
Nitrate as N	ND (0.0300)		353.2		1	JLK	04/29/22 22:19	mg/L	[CALC]
Sulfate	**14.1** (5.0)		9038		1	JLK	05/03/22 16:21	mg/L	DE20323
Total Cyanide	ND (5.0)		9014		1	EEM	05/04/22 14:35	ug/L	DE20423

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4S
Date Sampled: 04/29/22 10:15
Percent Solids: N/A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (5.0)		7010		1	KJK	05/06/22 17:10	10	10	DE20226
Barium	**64.8** (50.0)		6010C		1	KJK	05/03/22 19:29	10	10	DE20226
Cadmium	ND (1.0)		6020A		1	KJK	05/02/22 19:03	10	10	DE20226
Calcium	**29600** (200)		6010C		1	KJK	05/03/22 19:29	10	10	DE20226
Chromium	ND (10.0)		6010C		1	KJK	05/03/22 19:29	10	10	DE20226
Copper	ND (20.0)		6010C		1	KJK	05/03/22 19:29	10	10	DE20226
Iron	**92700** (100)		6010C		1	KJK	05/03/22 19:29	10	10	DE20226
Lead	ND (1.0)		6020A		1	KJK	05/02/22 19:03	10	10	DE20226
Manganese	**1020** (20.0)		6010C		1	KJK	05/03/22 19:29	10	10	DE20226
Mercury	ND (0.20)		7470A		1	YIV	05/04/22 14:39	20	40	DE20211
Selenium	ND (5.0)		6020A		1	KJK	05/02/22 19:03	10	10	DE20226
Silver	ND (5.0)		6010C		1	KJK	05/03/22 19:29	10	10	DE20226
Sodium	**246000** (5000)		6010C		1	KJK	05/03/22 19:29	10	10	DE20226
Zinc	ND (50.0)		6010C		1	KJK	05/03/22 19:29	10	10	DE20226

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4S
Date Sampled: 04/29/22 10:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,1-Dichloroethane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,1-Dichloroethene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,1-Dichloropropene	ND (2.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,2-Dibromoethane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,2-Dichloroethane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,2-Dichloropropane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,3-Dichloropropane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
1,4-Dioxane - Screen	ND (500)		8260B		1	05/03/22 5:30	D2E0024	DE20240
2,2-Dichloropropane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
2-Butanone	ND (10.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
2-Chlorotoluene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
2-Hexanone	ND (10.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
4-Chlorotoluene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
4-Isopropyltoluene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Acetone	ND (10.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Benzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Bromobenzene	ND (2.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Bromochloromethane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4S
Date Sampled: 04/29/22 10:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.6)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Bromoform	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Bromomethane	ND (2.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Carbon Disulfide	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Carbon Tetrachloride	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Chlorobenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Chloroethane	ND (2.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Chloroform	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Chloromethane	ND (2.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Dibromochloromethane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Dibromomethane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Diethyl Ether	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Di-isopropyl ether	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Ethylbenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Hexachlorobutadiene	ND (0.6)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Hexachloroethane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Isopropylbenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Methylene Chloride	ND (2.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Naphthalene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
n-Butylbenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
n-Propylbenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
sec-Butylbenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Styrene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
tert-Butylbenzene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Tetrachloroethene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Tetrahydrofuran	ND (5.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4S
Date Sampled: 04/29/22 10:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Trichloroethene	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Trichlorofluoromethane	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Vinyl Chloride	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Xylene O	ND (1.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Xylene P,M	ND (2.0)		8260B		1	05/03/22 5:30	D2E0024	DE20240
Xylenes (Total)	ND (2.00)		8260B		1	05/03/22 5:30		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*113 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*92 %*		*70-130*
Surrogate: Dibromofluoromethane	*103 %*		*70-130*
Surrogate: Toluene-d8	*105 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4S
Date Sampled: 04/29/22 10:15
Percent Solids: N/A
Initial Volume: 500
Final Volume: 0.5
Extraction Method: 3535A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: TAJ
Prepared: 5/3/22 18:30

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	ND (0.250)		8270D SIM		1	05/05/22 11:34	D2E0087	DE20347

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	62 %		15-115

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4S
Date Sampled: 04/29/22 10:15
Percent Solids: N/A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-02
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Alkalinity as CaCO3	**H 62** (10)		2320B		1	JLK	05/25/22 14:43	mg/L	DE22534
Chemical Oxygen Demand	**18** (10)		5220D		1	CCP	05/03/22 15:30	mg/L	DE20340
Chloride	**439** (60.0)		9250		20	JLK	05/04/22 14:57	mg/L	DE20432
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/04/22 12:05	ug/L	DE20424
Nitrate as N	ND (0.0300)		353.2		1	JLK	04/29/22 22:20	mg/L	[CALC]
Sulfate	ND (5.0)		9038		1	JLK	05/03/22 16:21	mg/L	DE20323
Total Cyanide	ND (5.0)		9014		1	EEM	05/04/22 14:35	ug/L	DE20423

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4D
Date Sampled: 04/29/22 09:30
Percent Solids: N/A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-03
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (5.0)		7010		1	KJK	05/06/22 17:16	10	10	DE20226
Barium	ND (50.0)		6010C		1	KJK	05/03/22 19:31	10	10	DE20226
Cadmium	ND (1.0)		6020A		1	KJK	05/02/22 19:09	10	10	DE20226
Calcium	**9760** (200)		6010C		1	KJK	05/03/22 19:31	10	10	DE20226
Chromium	ND (10.0)		6010C		1	KJK	05/03/22 19:31	10	10	DE20226
Copper	ND (20.0)		6010C		1	KJK	05/03/22 19:31	10	10	DE20226
Iron	ND (100)		6010C		1	KJK	05/03/22 19:31	10	10	DE20226
Lead	ND (1.0)		6020A		1	KJK	05/02/22 19:09	10	10	DE20226
Manganese	ND (20.0)		6010C		1	KJK	05/03/22 19:31	10	10	DE20226
Mercury	ND (0.20)		7470A		1	YIV	05/04/22 14:41	20	40	DE20211
Selenium	ND (5.0)		6020A		1	KJK	05/02/22 19:09	10	10	DE20226
Silver	ND (5.0)		6010C		1	KJK	05/03/22 19:31	10	10	DE20226
Sodium	ND (5000)		6010C		1	KJK	05/03/22 19:31	10	10	DE20226
Zinc	ND (50.0)		6010C		1	KJK	05/03/22 19:31	10	10	DE20226

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4D
Date Sampled: 04/29/22 09:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,1-Dichloroethane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,1-Dichloroethene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,1-Dichloropropene	ND (2.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,2-Dibromoethane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,2-Dichloroethane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,2-Dichloropropane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,3-Dichloropropane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
1,4-Dioxane - Screen	ND (500)		8260B		1	05/03/22 5:56	D2E0024	DE20240
2,2-Dichloropropane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
2-Butanone	ND (10.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
2-Chlorotoluene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
2-Hexanone	ND (10.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
4-Chlorotoluene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
4-Isopropyltoluene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Acetone	ND (10.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Benzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Bromobenzene	ND (2.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Bromochloromethane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4D
Date Sampled: 04/29/22 09:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.6)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Bromoform	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Bromomethane	ND (2.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Carbon Disulfide	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Carbon Tetrachloride	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Chlorobenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Chloroethane	ND (2.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Chloroform	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Chloromethane	ND (2.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Dibromochloromethane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Dibromomethane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Diethyl Ether	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Di-isopropyl ether	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Ethylbenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Hexachlorobutadiene	ND (0.6)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Hexachloroethane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Isopropylbenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Methylene Chloride	ND (2.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Naphthalene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
n-Butylbenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
n-Propylbenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
sec-Butylbenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Styrene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
tert-Butylbenzene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Tetrachloroethene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Tetrahydrofuran	ND (5.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4D
Date Sampled: 04/29/22 09:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Trichloroethene	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Trichlorofluoromethane	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Vinyl Chloride	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Xylene O	ND (1.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Xylene P,M	ND (2.0)		8260B		1	05/03/22 5:56	D2E0024	DE20240
Xylenes (Total)	ND (2.00)		8260B		1	05/03/22 5:56		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*113 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*93 %*		*70-130*
Surrogate: Dibromofluoromethane	*102 %*		*70-130*
Surrogate: Toluene-d8	*104 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4D
Date Sampled: 04/29/22 09:30
Percent Solids: N/A
Initial Volume: 500
Final Volume: 0.5
Extraction Method: 3535A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: TAJ
Prepared: 5/3/22 18:30

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	ND (0.250)		8270D SIM		1	05/05/22 12:09	D2E0087	DE20347

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*87 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4D
Date Sampled: 04/29/22 09:30
Percent Solids: N/A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-03
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Alkalinity as CaCO3	**H 23** (2)		2320B		1	JLK	05/25/22 14:43	mg/L	DE22533
Chemical Oxygen Demand	ND (10)		5220D		1	CCP	05/03/22 15:30	mg/L	DE20340
Chloride	ND (3.0)		9250		1	JLK	05/04/22 14:29	mg/L	DE20432
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/04/22 12:05	ug/L	DE20424
Nitrate as N	ND (0.0300)		353.2		1	JLK	04/29/22 22:20	mg/L	[CALC]
Sulfate	**8.1** (5.0)		9038		1	JLK	05/03/22 16:21	mg/L	DE20323
Total Cyanide	ND (5.0)		9014		1	EEM	05/04/22 14:35	ug/L	DE20423

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-1
Date Sampled: 04/29/22 15:00
Percent Solids: N/A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-04
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 3005A/200.7

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (0.5)		7010		1	KJK	05/06/22 15:48	100	10	DE20201
Barium	**26.4** (5.0)		6010C		1	KJK	05/03/22 18:12	100	10	DE20201
Cadmium	ND (0.2)		6020A		5	KJK	05/03/22 17:02	100	10	DE20201
Calcium	**15700** (20.0)		6010C		1	KJK	05/03/22 18:12	100	10	DE20201
Chromium	ND (2.0)		6010C		1	KJK	05/03/22 18:12	100	10	DE20201
Copper	ND (2.0)		6010C		1	KJK	05/03/22 18:12	100	10	DE20201
Iron	**475** (10.0)		6010C		1	KJK	05/03/22 18:12	100	10	DE20201
Lead	ND (0.5)		6020A		5	KJK	05/03/22 17:02	100	10	DE20201
Manganese	**38.3** (2.0)		6010C		1	KJK	05/03/22 18:12	100	10	DE20201
Mercury	ND (0.20)		7470A		1	YIV	05/04/22 14:03	20	40	DE20211
Selenium	ND (2.5)		6020A		5	KJK	05/03/22 17:02	100	10	DE20201
Silver	ND (0.5)		6010C		1	KJK	05/03/22 18:12	100	10	DE20201
Sodium	**77200** (500)		6010C		1	KJK	05/03/22 18:12	100	10	DE20201
Zinc	**18.1** (5.0)		6010C		1	KJK	05/03/22 18:12	100	10	DE20201

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-1
Date Sampled: 04/29/22 15:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-04
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,1-Dichloroethane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,1-Dichloroethene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,1-Dichloropropene	ND (2.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,2-Dibromoethane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,2-Dichloroethane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,2-Dichloropropane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,3-Dichloropropane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
1,4-Dioxane - Screen	ND (500)		8260B		1	05/03/22 6:22	D2E0024	DE20240
2,2-Dichloropropane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
2-Butanone	ND (10.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
2-Chlorotoluene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
2-Hexanone	ND (10.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
4-Chlorotoluene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
4-Isopropyltoluene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Acetone	ND (10.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Benzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Bromobenzene	ND (2.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Bromochloromethane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-1
Date Sampled: 04/29/22 15:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-04
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.6)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Bromoform	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Bromomethane	ND (2.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Carbon Disulfide	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Carbon Tetrachloride	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Chlorobenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Chloroethane	ND (2.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Chloroform	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Chloromethane	ND (2.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Dibromochloromethane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Dibromomethane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Diethyl Ether	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Di-isopropyl ether	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Ethylbenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Hexachlorobutadiene	ND (0.6)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Hexachloroethane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Isopropylbenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Methylene Chloride	ND (2.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Naphthalene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
n-Butylbenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
n-Propylbenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
sec-Butylbenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Styrene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
tert-Butylbenzene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Tetrachloroethene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Tetrahydrofuran	ND (5.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-1
Date Sampled: 04/29/22 15:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-04
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Trichloroethene	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Trichlorofluoromethane	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Vinyl Chloride	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Xylene O	ND (1.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Xylene P,M	ND (2.0)		8260B		1	05/03/22 6:22	D2E0024	DE20240
Xylenes (Total)	ND (2.00)		8260B		1	05/03/22 6:22		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*114 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*90 %*		*70-130*
Surrogate: Dibromofluoromethane	*103 %*		*70-130*
Surrogate: Toluene-d8	*104 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-1
Date Sampled: 04/29/22 15:00
Percent Solids: N/A
Initial Volume: 500
Final Volume: 0.5
Extraction Method: 3535A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-04
Sample Matrix: Aqueous
Units: ug/L
Analyst: TAJ
Prepared: 5/3/22 18:30

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	ND (0.250)		8270D SIM		1	05/05/22 12:46	D2E0087	DE20347

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*88 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-1
Date Sampled: 04/29/22 15:00
Percent Solids: N/A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-04
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Alkalinity as CaCO3	**H 23** (2)		2320B		1	JLK	05/25/22 14:43	mg/L	DE22533
Chemical Oxygen Demand	ND (10)		5220D		1	CCP	05/03/22 15:30	mg/L	DE20340
Chloride	**140** (30.0)		9250		10	JLK	05/04/22 14:58	mg/L	DE20432
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/04/22 12:05	ug/L	DE20424
Nitrate as N	**0.604** (0.0300)		353.2		1	JLK	04/29/22 22:21	mg/L	[CALC]
Sulfate	**12.9** (5.0)		9038		1	JLK	05/03/22 16:21	mg/L	DE20323
Total Cyanide	ND (5.0)		9014		1	EEM	05/04/22 14:35	ug/L	DE20423

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-2
Date Sampled: 04/29/22 15:30
Percent Solids: N/A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-05
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 3005A/200.7

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (0.5)		7010		1	KJK	05/06/22 15:54	100	10	DE20201
Barium	**25.2** (5.0)		6010C		1	KJK	05/03/22 18:15	100	10	DE20201
Cadmium	ND (0.2)		6020A		5	KJK	05/03/22 17:08	100	10	DE20201
Calcium	**17100** (20.0)		6010C		1	KJK	05/03/22 18:15	100	10	DE20201
Chromium	ND (2.0)		6010C		1	KJK	05/03/22 18:15	100	10	DE20201
Copper	ND (2.0)		6010C		1	KJK	05/03/22 18:15	100	10	DE20201
Iron	**421** (10.0)		6010C		1	KJK	05/03/22 18:15	100	10	DE20201
Lead	ND (0.5)		6020A		5	KJK	05/03/22 17:08	100	10	DE20201
Manganese	**74.3** (2.0)		6010C		1	KJK	05/03/22 18:15	100	10	DE20201
Mercury	ND (0.20)		7470A		1	YIV	05/04/22 14:06	20	40	DE20211
Selenium	ND (2.5)		6020A		5	KJK	05/03/22 17:08	100	10	DE20201
Silver	ND (0.5)		6010C		1	KJK	05/03/22 18:15	100	10	DE20201
Sodium	**77000** (500)		6010C		1	KJK	05/03/22 18:15	100	10	DE20201
Zinc	**16.2** (5.0)		6010C		1	KJK	05/03/22 18:15	100	10	DE20201

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-2
Date Sampled: 04/29/22 15:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,1-Dichloroethane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,1-Dichloroethene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,1-Dichloropropene	ND (2.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,2-Dibromoethane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,2-Dichloroethane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,2-Dichloropropane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,3-Dichloropropane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
1,4-Dioxane - Screen	ND (500)		8260B		1	05/03/22 6:48	D2E0024	DE20240
2,2-Dichloropropane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
2-Butanone	ND (10.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
2-Chlorotoluene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
2-Hexanone	ND (10.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
4-Chlorotoluene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
4-Isopropyltoluene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Acetone	ND (10.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Benzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Bromobenzene	ND (2.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Bromochloromethane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-2
Date Sampled: 04/29/22 15:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.6)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Bromoform	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Bromomethane	ND (2.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Carbon Disulfide	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Carbon Tetrachloride	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Chlorobenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Chloroethane	ND (2.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Chloroform	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Chloromethane	ND (2.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Dibromochloromethane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Dibromomethane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Diethyl Ether	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Di-isopropyl ether	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Ethylbenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Hexachlorobutadiene	ND (0.6)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Hexachloroethane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Isopropylbenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Methylene Chloride	ND (2.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Naphthalene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
n-Butylbenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
n-Propylbenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
sec-Butylbenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Styrene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
tert-Butylbenzene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Tetrachloroethene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Tetrahydrofuran	ND (5.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-2
Date Sampled: 04/29/22 15:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Trichloroethene	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Trichlorofluoromethane	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Vinyl Chloride	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Xylene O	ND (1.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Xylene P,M	ND (2.0)		8260B		1	05/03/22 6:48	D2E0024	DE20240
Xylenes (Total)	ND (2.00)		8260B		1	05/03/22 6:48		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*113 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*92 %*		*70-130*
Surrogate: Dibromofluoromethane	*104 %*		*70-130*
Surrogate: Toluene-d8	*105 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-2
Date Sampled: 04/29/22 15:30
Percent Solids: N/A
Initial Volume: 500
Final Volume: 0.5
Extraction Method: 3535A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: TAJ
Prepared: 5/3/22 18:30

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	ND (0.250)		8270D SIM		1	05/05/22 13:23	D2E0087	DE20347

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*94 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-2
Date Sampled: 04/29/22 15:30
Percent Solids: N/A

ESS Laboratory Work Order: 22D1201
ESS Laboratory Sample ID: 22D1201-05
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Alkalinity as CaCO3	**H 27** (2)		2320B		1	JLK	05/25/22 14:43	mg/L	DE22533
Chemical Oxygen Demand	ND (10)		5220D		1	CCP	05/03/22 15:30	mg/L	DE20340
Chloride	**141** (30.0)		9250		10	JLK	05/04/22 15:00	mg/L	DE20432
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/04/22 12:05	ug/L	DE20424
Nitrate as N	**0.660** (0.0300)		353.2		1	JLK	04/29/22 22:22	mg/L	[CALC]
Sulfate	**14.2** (5.0)		9038		1	JLK	05/03/22 16:21	mg/L	DE20323
Total Cyanide	ND (5.0)		9014		1	EEM	05/04/22 14:35	ug/L	DE20423

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch DE20201 - 3005A/200.7										
Blank										
Arsenic	ND	0.5	ug/L							
Barium	ND	5.0	ug/L							
Cadmium	ND	0.2	ug/L							
Calcium	ND	20.0	ug/L							
Chromium	ND	2.0	ug/L							
Copper	ND	2.0	ug/L							
Iron	ND	10.0	ug/L							
Lead	ND	0.5	ug/L							
Manganese	ND	2.0	ug/L							
Selenium	ND	2.5	ug/L							
Silver	ND	0.5	ug/L							
Sodium	ND	500	ug/L							
Zinc	ND	15.0	ug/L							
LCS										
Barium	51.6	5.0	ug/L	50.00		103	80-120			
Calcium	534	20.0	ug/L	500.0		107	80-120			
Chromium	49.8	2.0	ug/L	50.00		100	80-120			
Copper	50.6	2.0	ug/L	50.00		101	80-120			
Iron	259	10.0	ug/L	250.0		104	80-120			
Manganese	53.5	2.0	ug/L	50.00		107	80-120			
Silver	25.8	0.5	ug/L	25.00		103	80-120			
Sodium	2550	500	ug/L	2500		102	80-120			
Zinc	52.6	5.0	ug/L	50.00		105	80-120			
LCS										
Cadmium	23.8	2.0	ug/L	25.00		95	80-120			
Lead	45.5	5.0	ug/L	50.00		91	80-120			
Selenium	102	25.0	ug/L	100.0		102	80-120			
LCS										
Arsenic	53.5	12.5	ug/L	50.00		107	80-120			
LCS Dup										
Barium	52.9	5.0	ug/L	50.00		106	80-120	3	20	
Calcium	538	20.0	ug/L	500.0		108	80-120	0.9	20	
Chromium	52.0	2.0	ug/L	50.00		104	80-120	4	20	
Copper	52.0	2.0	ug/L	50.00		104	80-120	3	20	
Iron	262	10.0	ug/L	250.0		105	80-120	0.8	20	
Manganese	54.7	2.0	ug/L	50.00		109	80-120	2	20	
Silver	26.4	0.5	ug/L	25.00		106	80-120	3	20	
Sodium	2580	500	ug/L	2500		103	80-120	1	20	
Zinc	53.5	5.0	ug/L	50.00		107	80-120	2	20	
LCS Dup										
Cadmium	24.6	2.0	ug/L	25.00		98	80-120	3	20	
Lead	45.9	5.0	ug/L	50.00		92	80-120	0.9	20	
Selenium	106	25.0	ug/L	100.0		106	80-120	4	20	

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch DE20201 - 3005A/200.7										
LCS Dup										
Arsenic	51.3	12.5	ug/L	50.00		103	80-120	4	20	
Batch DE20211 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
Blank										
Mercury	ND	0.20	ug/L							
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.48	0.20	ug/L	6.042		91	80-120			
LCS Dup										
Mercury	5.82	0.20	ug/L	6.042		96	80-120	6	20	
Batch DE20226 - 200.7/6010BNoDigest										
Blank										
Barium	ND	50.0	ug/L							
Chromium	ND	10.0	ug/L							
Copper	ND	20.0	ug/L							
Iron	ND	100	ug/L							
Manganese	ND	20.0	ug/L							
Silver	ND	5.0	ug/L							
Zinc	ND	50.0	ug/L							
Blank										
Arsenic	ND	5.0	ug/L							
Blank										
Barium	ND	50.0	ug/L							
Cadmium	ND	1.0	ug/L							
Calcium	ND	200	ug/L							
Chromium	ND	20.0	ug/L							
Copper	ND	20.0	ug/L							
Iron	ND	100	ug/L							
Lead	ND	1.0	ug/L							
Manganese	ND	20.0	ug/L							
Selenium	ND	5.0	ug/L							
Silver	ND	5.0	ug/L							
Sodium	ND	5000	ug/L							
Zinc	ND	50.0	ug/L							
LCS										
Barium	0.5		mg/L	0.5000		101	80-120			
Calcium	5.0		mg/L	5.000		101	80-120			
Chromium	0.5		mg/L	0.5000		100	80-120			
Copper	0.5		mg/L	0.5000		100	80-120			
Iron	2.5		mg/L	2.500		101	80-120			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch DE20226 - 200.7/6010BNoDigest										
Manganese	0.5		mg/L	0.5000		102	80-120			
Silver	0.3		mg/L	0.2500		102	80-120			
Sodium	25.3		mg/L	25.00		101	80-120			
Zinc	0.5		mg/L	0.5000		101	80-120			
LCS										
Cadmium	9.9		ug/L	10.05		99	80-120			
Lead	9.9		ug/L	9.990		99	80-120			
Selenium	9.9		ug/L	9.990		99	80-120			
LCS										
Arsenic	24.1		ug/L	25.00		96	80-120			
8260B Volatile Organic Compounds										
Batch DE20240 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L							
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
1,1-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	1.0	ug/L							
1,1-Dichloropropene	ND	2.0	ug/L							
1,2,3-Trichlorobenzene	ND	1.0	ug/L							
1,2,3-Trichloropropane	ND	1.0	ug/L							
1,2,4-Trichlorobenzene	ND	1.0	ug/L							
1,2,4-Trimethylbenzene	ND	1.0	ug/L							
1,2-Dibromo-3-Chloropropane	ND	5.0	ug/L							
1,2-Dibromoethane	ND	1.0	ug/L							
1,2-Dichlorobenzene	ND	1.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,2-Dichloropropane	ND	1.0	ug/L							
1,3,5-Trimethylbenzene	ND	1.0	ug/L							
1,3-Dichlorobenzene	ND	1.0	ug/L							
1,3-Dichloropropane	ND	1.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
1,4-Dioxane - Screen	ND	500	ug/L							
2,2-Dichloropropane	ND	1.0	ug/L							
2-Butanone	ND	10.0	ug/L							
2-Chlorotoluene	ND	1.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
4-Chlorotoluene	ND	1.0	ug/L							
4-Isopropyltoluene	ND	1.0	ug/L							
4-Methyl-2-Pentanone	ND	10.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	1.0	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE20240 - 5030B										
Bromobenzene	ND	2.0	ug/L							
Bromochloromethane	ND	1.0	ug/L							
Bromodichloromethane	ND	0.6	ug/L							
Bromoform	ND	1.0	ug/L							
Bromomethane	ND	2.0	ug/L							
Carbon Disulfide	ND	1.0	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
Chlorobenzene	ND	1.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	1.0	ug/L							
Chloromethane	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	1.0	ug/L							
cis-1,3-Dichloropropene	ND	0.4	ug/L							
Dibromochloromethane	ND	1.0	ug/L							
Dibromomethane	ND	1.0	ug/L							
Dichlorodifluoromethane	ND	2.0	ug/L							
Diethyl Ether	ND	1.0	ug/L							
Di-isopropyl ether	ND	1.0	ug/L							
Ethyl tertiary-butyl ether	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Hexachlorobutadiene	ND	0.6	ug/L							
Hexachloroethane	ND	1.0	ug/L							
Isopropylbenzene	ND	1.0	ug/L							
Methyl tert-Butyl Ether	ND	1.0	ug/L							
Methylene Chloride	ND	2.0	ug/L							
Naphthalene	ND	1.0	ug/L							
n-Butylbenzene	ND	1.0	ug/L							
n-Propylbenzene	ND	1.0	ug/L							
sec-Butylbenzene	ND	1.0	ug/L							
Styrene	ND	1.0	ug/L							
tert-Butylbenzene	ND	1.0	ug/L							
Tertiary-amyl methyl ether	ND	1.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Tetrahydrofuran	ND	5.0	ug/L							
Toluene	ND	1.0	ug/L							
trans-1,2-Dichloroethene	ND	1.0	ug/L							
trans-1,3-Dichloropropene	ND	0.4	ug/L							
Trichloroethene	ND	1.0	ug/L							
Trichlorofluoromethane	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylene O	ND	1.0	ug/L							
Xylene P,M	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*27.2*		ug/L	*25.00*		*109*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*23.2*		ug/L	*25.00*		*93*	*70-130*			
Surrogate: Dibromofluoromethane	*24.9*		ug/L	*25.00*		*100*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE20240 - 5030B										
Surrogate: Toluene-d8	*26.3*		ug/L	*25.00*		*105*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	10.5	1.0	ug/L	10.00		105	70-130			
1,1,1-Trichloroethane	10.4	1.0	ug/L	10.00		104	70-130			
1,1,2,2-Tetrachloroethane	9.9	0.5	ug/L	10.00		99	70-130			
1,1,2-Trichloroethane	10.4	1.0	ug/L	10.00		104	70-130			
1,1-Dichloroethane	10.8	1.0	ug/L	10.00		108	70-130			
1,1-Dichloroethene	12.5	1.0	ug/L	10.00		125	70-130			
1,1-Dichloropropene	10.7	2.0	ug/L	10.00		107	70-130			
1,2,3-Trichlorobenzene	9.1	1.0	ug/L	10.00		91	70-130			
1,2,3-Trichloropropane	10.0	1.0	ug/L	10.00		100	70-130			
1,2,4-Trichlorobenzene	8.8	1.0	ug/L	10.00		88	70-130			
1,2,4-Trimethylbenzene	11.1	1.0	ug/L	10.00		111	70-130			
1,2-Dibromo-3-Chloropropane	8.7	5.0	ug/L	10.00		87	70-130			
1,2-Dibromoethane	10.4	1.0	ug/L	10.00		104	70-130			
1,2-Dichlorobenzene	10.3	1.0	ug/L	10.00		103	70-130			
1,2-Dichloroethane	10.2	1.0	ug/L	10.00		102	70-130			
1,2-Dichloropropane	10.2	1.0	ug/L	10.00		102	70-130			
1,3,5-Trimethylbenzene	11.0	1.0	ug/L	10.00		110	70-130			
1,3-Dichlorobenzene	10.5	1.0	ug/L	10.00		105	70-130			
1,3-Dichloropropane	10.5	1.0	ug/L	10.00		105	70-130			
1,4-Dichlorobenzene	10.3	1.0	ug/L	10.00		103	70-130			
1,4-Dioxane - Screen	219	500	ug/L	200.0		109	0-332			
2,2-Dichloropropane	9.8	1.0	ug/L	10.00		98	70-130			
2-Butanone	58.6	10.0	ug/L	50.00		117	70-130			
2-Chlorotoluene	10.9	1.0	ug/L	10.00		109	70-130			
2-Hexanone	60.1	10.0	ug/L	50.00		120	70-130			
4-Chlorotoluene	10.7	1.0	ug/L	10.00		107	70-130			
4-Isopropyltoluene	10.4	1.0	ug/L	10.00		104	70-130			
4-Methyl-2-Pentanone	50.9	10.0	ug/L	50.00		102	70-130			
Acetone	63.6	10.0	ug/L	50.00		127	70-130			
Benzene	10.4	1.0	ug/L	10.00		104	70-130			
Bromobenzene	10.3	2.0	ug/L	10.00		103	70-130			
Bromochloromethane	10.2	1.0	ug/L	10.00		102	70-130			
Bromodichloromethane	10.9	0.6	ug/L	10.00		109	70-130			
Bromoform	9.2	1.0	ug/L	10.00		92	70-130			
Bromomethane	11.1	2.0	ug/L	10.00		111	70-130			
Carbon Disulfide	11.8	1.0	ug/L	10.00		118	70-130			
Carbon Tetrachloride	10.7	1.0	ug/L	10.00		107	70-130			
Chlorobenzene	10.3	1.0	ug/L	10.00		103	70-130			
Chloroethane	11.1	2.0	ug/L	10.00		111	70-130			
Chloroform	10.8	1.0	ug/L	10.00		108	70-130			
Chloromethane	10.8	2.0	ug/L	10.00		108	70-130			
cis-1,2-Dichloroethene	11.3	1.0	ug/L	10.00		113	70-130			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

Quality Control Data

8260B Volatile Organic Compounds

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch DE20240 - 5030B										
cis-1,3-Dichloropropene	10.4	0.4	ug/L	10.00		104	70-130			
Dibromochloromethane	10.0	1.0	ug/L	10.00		100	70-130			
Dibromomethane	10.9	1.0	ug/L	10.00		109	70-130			
Dichlorodifluoromethane	10.0	2.0	ug/L	10.00		100	70-130			
Diethyl Ether	12.2	1.0	ug/L	10.00		122	70-130			
Di-isopropyl ether	10.8	1.0	ug/L	10.00		108	70-130			
Ethyl tertiary-butyl ether	10.8	1.0	ug/L	10.00		108	70-130			
Ethylbenzene	10.3	1.0	ug/L	10.00		103	70-130			
Hexachlorobutadiene	10.1	0.6	ug/L	10.00		101	70-130			
Hexachloroethane	10.4	1.0	ug/L	10.00		104	70-130			
Isopropylbenzene	10.8	1.0	ug/L	10.00		108	70-130			
Methyl tert-Butyl Ether	10.6	1.0	ug/L	10.00		106	70-130			
Methylene Chloride	10.6	2.0	ug/L	10.00		106	70-130			
Naphthalene	9.1	1.0	ug/L	10.00		91	70-130			
n-Butylbenzene	9.6	1.0	ug/L	10.00		96	70-130			
n-Propylbenzene	10.7	1.0	ug/L	10.00		107	70-130			
sec-Butylbenzene	10.6	1.0	ug/L	10.00		106	70-130			
Styrene	8.8	1.0	ug/L	10.00		88	70-130			
tert-Butylbenzene	10.7	1.0	ug/L	10.00		107	70-130			
Tertiary-amyl methyl ether	10.1	1.0	ug/L	10.00		101	70-130			
Tetrachloroethene	12.3	1.0	ug/L	10.00		123	70-130			
Tetrahydrofuran	11.5	5.0	ug/L	10.00		115	70-130			
Toluene	10.3	1.0	ug/L	10.00		103	70-130			
trans-1,2-Dichloroethene	11.8	1.0	ug/L	10.00		118	70-130			
trans-1,3-Dichloropropene	9.6	0.4	ug/L	10.00		96	70-130			
Trichloroethene	10.8	1.0	ug/L	10.00		108	70-130			
Trichlorofluoromethane	11.1	1.0	ug/L	10.00		111	70-130			
Vinyl Chloride	12.0	1.0	ug/L	10.00		120	70-130			
Xylene O	10.7	1.0	ug/L	10.00		107	70-130			
Xylene P,M	21.4	2.0	ug/L	20.00		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	*25.9*		ug/L	*25.00*		*104*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.2*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*25.1*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: Toluene-d8	*25.2*		ug/L	*25.00*		*101*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	10.9	1.0	ug/L	10.00		109	70-130	3	20	
1,1,1-Trichloroethane	10.6	1.0	ug/L	10.00		106	70-130	2	20	
1,1,2,2-Tetrachloroethane	9.9	0.5	ug/L	10.00		99	70-130	0.5	20	
1,1,2-Trichloroethane	10.5	1.0	ug/L	10.00		105	70-130	0.2	20	
1,1-Dichloroethane	11.0	1.0	ug/L	10.00		110	70-130	1	20	
1,1-Dichloroethene	12.6	1.0	ug/L	10.00		126	70-130	1	20	
1,1-Dichloropropene	10.9	2.0	ug/L	10.00		109	70-130	2	20	
1,2,3-Trichlorobenzene	9.3	1.0	ug/L	10.00		93	70-130	2	20	
1,2,3-Trichloropropane	10.0	1.0	ug/L	10.00		100	70-130	0.4	20	
1,2,4-Trichlorobenzene	9.2	1.0	ug/L	10.00		92	70-130	5	20	

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

Quality Control Data

8260B Volatile Organic Compounds

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch DE20240 - 5030B										
1,2,4-Trimethylbenzene	11.2	1.0	ug/L	10.00		112	70-130	1	20	
1,2-Dibromo-3-Chloropropane	8.7	5.0	ug/L	10.00		87	70-130	0.1	20	
1,2-Dibromoethane	10.6	1.0	ug/L	10.00		106	70-130	2	20	
1,2-Dichlorobenzene	10.5	1.0	ug/L	10.00		105	70-130	2	20	
1,2-Dichloroethane	10.4	1.0	ug/L	10.00		104	70-130	2	20	
1,2-Dichloropropane	10.5	1.0	ug/L	10.00		105	70-130	2	20	
1,3,5-Trimethylbenzene	11.2	1.0	ug/L	10.00		112	70-130	2	20	
1,3-Dichlorobenzene	10.6	1.0	ug/L	10.00		106	70-130	2	20	
1,3-Dichloropropane	10.7	1.0	ug/L	10.00		107	70-130	2	20	
1,4-Dichlorobenzene	10.4	1.0	ug/L	10.00		104	70-130	0.3	20	
1,4-Dioxane - Screen	220	500	ug/L	200.0		110	0-332	0.4	200	
2,2-Dichloropropane	9.6	1.0	ug/L	10.00		96	70-130	2	20	
2-Butanone	58.8	10.0	ug/L	50.00		118	70-130	0.5	20	
2-Chlorotoluene	10.9	1.0	ug/L	10.00		109	70-130	0.4	20	
2-Hexanone	60.3	10.0	ug/L	50.00		121	70-130	0.4	20	
4-Chlorotoluene	11.0	1.0	ug/L	10.00		110	70-130	2	20	
4-Isopropyltoluene	10.5	1.0	ug/L	10.00		105	70-130	1	20	
4-Methyl-2-Pentanone	51.6	10.0	ug/L	50.00		103	70-130	1	20	
Acetone	62.0	10.0	ug/L	50.00		124	70-130	3	20	
Benzene	10.6	1.0	ug/L	10.00		106	70-130	2	20	
Bromobenzene	10.3	2.0	ug/L	10.00		103	70-130	0.8	20	
Bromochloromethane	10.9	1.0	ug/L	10.00		109	70-130	7	20	
Bromodichloromethane	11.3	0.6	ug/L	10.00		113	70-130	3	20	
Bromoform	9.5	1.0	ug/L	10.00		95	70-130	3	20	
Bromomethane	12.2	2.0	ug/L	10.00		122	70-130	9	20	
Carbon Disulfide	11.8	1.0	ug/L	10.00		118	70-130	0	20	
Carbon Tetrachloride	10.8	1.0	ug/L	10.00		108	70-130	0.9	20	
Chlorobenzene	10.5	1.0	ug/L	10.00		105	70-130	2	20	
Chloroethane	11.2	2.0	ug/L	10.00		112	70-130	0.5	20	
Chloroform	10.9	1.0	ug/L	10.00		109	70-130	1	20	
Chloromethane	11.2	2.0	ug/L	10.00		112	70-130	3	20	
cis-1,2-Dichloroethene	10.9	1.0	ug/L	10.00		109	70-130	3	20	
cis-1,3-Dichloropropene	10.7	0.4	ug/L	10.00		107	70-130	2	20	
Dibromochloromethane	10.4	1.0	ug/L	10.00		104	70-130	3	20	
Dibromomethane	10.8	1.0	ug/L	10.00		108	70-130	0.5	20	
Dichlorodifluoromethane	10.1	2.0	ug/L	10.00		101	70-130	1	20	
Diethyl Ether	11.4	1.0	ug/L	10.00		114	70-130	6	20	
Di-isopropyl ether	11.0	1.0	ug/L	10.00		110	70-130	1	20	
Ethyl tertiary-butyl ether	10.9	1.0	ug/L	10.00		109	70-130	2	20	
Ethylbenzene	10.6	1.0	ug/L	10.00		106	70-130	2	20	
Hexachlorobutadiene	10.4	0.6	ug/L	10.00		104	70-130	3	20	
Hexachloroethane	10.6	1.0	ug/L	10.00		106	70-130	2	20	
Isopropylbenzene	11.1	1.0	ug/L	10.00		111	70-130	2	20	
Methyl tert-Butyl Ether	11.1	1.0	ug/L	10.00		111	70-130	5	20	
Methylene Chloride	10.5	2.0	ug/L	10.00		105	70-130	0.7	20	

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE20240 - 5030B										
Naphthalene	9.2	1.0	ug/L	10.00		92	70-130	1	20	
n-Butylbenzene	9.8	1.0	ug/L	10.00		98	70-130	2	20	
n-Propylbenzene	11.0	1.0	ug/L	10.00		110	70-130	2	20	
sec-Butylbenzene	10.7	1.0	ug/L	10.00		107	70-130	0.8	20	
Styrene	9.0	1.0	ug/L	10.00		90	70-130	2	20	
tert-Butylbenzene	11.0	1.0	ug/L	10.00		110	70-130	2	20	
Tertiary-amyl methyl ether	10.6	1.0	ug/L	10.00		106	70-130	4	20	
Tetrachloroethene	12.6	1.0	ug/L	10.00		126	70-130	2	20	
Tetrahydrofuran	11.6	5.0	ug/L	10.00		116	70-130	0.4	20	
Toluene	10.3	1.0	ug/L	10.00		103	70-130	0.1	20	
trans-1,2-Dichloroethene	12.2	1.0	ug/L	10.00		122	70-130	3	20	
trans-1,3-Dichloropropene	9.8	0.4	ug/L	10.00		98	70-130	2	20	
Trichloroethene	10.9	1.0	ug/L	10.00		109	70-130	0.7	20	
Trichlorofluoromethane	11.3	1.0	ug/L	10.00		113	70-130	2	20	
Vinyl Chloride	12.7	1.0	ug/L	10.00		127	70-130	6	20	
Xylene O	11.1	1.0	ug/L	10.00		111	70-130	3	20	
Xylene P,M	22.0	2.0	ug/L	20.00		110	70-130	3	20	
Surrogate: 1,2-Dichloroethane-d4	*26.2*		ug/L	*25.00*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.5*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*25.4*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: Toluene-d8	*25.3*		ug/L	*25.00*		*101*	*70-130*			
8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution										
Batch DE20347 - 3535A										
Blank										
1,4-Dioxane	ND	0.250	ug/L							
Surrogate: 1,4-Dioxane-d8	*5.44*		ug/L	*5.000*		*109*	*15-115*			
LCS										
1,4-Dioxane	5.98	0.250	ug/L	10.00		60	40-140			
Surrogate: 1,4-Dioxane-d8	*5.60*		ug/L	*5.000*		*112*	*15-115*			
LCS Dup										
1,4-Dioxane	6.52	0.250	ug/L	10.00		65	40-140	9	20	
Surrogate: 1,4-Dioxane-d8	*5.75*		ug/L	*5.000*		*115*	*15-115*			
Classical Chemistry										
Batch DD22951 - General Preparation										
Blank										
Nitrite as N	ND	0.010	mg/L							
LCS										
Nitrite as N	0.262		mg/L	0.2497		105	90-110			
Batch DD22952 - General Preparation										
Blank										
Nitrate/Nitrite as N	ND	0.020	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch DD22952 - General Preparation										
LCS										
Nitrate/Nitrite as N	0.491		mg/L	0.5000		98	90-110			
Batch DE20323 - General Preparation										
Blank										
Sulfate	ND	5.0	mg/L							
LCS										
Sulfate	9.8		mg/L	9.988		98	85-115			
Batch DE20340 - General Preparation										
Blank										
Chemical Oxygen Demand	ND	10	mg/L							
LCS										
Chemical Oxygen Demand	49.7	10	mg/L	50.15		99	95-105			
Batch DE20423 - TCN Prep										
Blank										
Total Cyanide	ND	5.0	ug/L							
LCS										
Total Cyanide	20.2	5.0	ug/L	20.06		101	90-110			
LCS										
Total Cyanide	149	5.0	ug/L	150.4		99	90-110			
LCS Dup										
Total Cyanide	149	5.0	ug/L	150.4		99	90-110	0.4	20	
Batch DE20424 - TCN Prep										
Blank										
Cyanide (PAC)	ND	5.0	ug/L							
LCS										
Cyanide (PAC)	20.8	5.0	ug/L	20.06		103	80-120			
LCS										
Cyanide (PAC)	149	5.0	ug/L	150.4		99	80-120			
LCS Dup										
Cyanide (PAC)	149	5.0	ug/L	150.4		99	80-120	0.3	20	
Reference										
Cyanide (PAC)	56.4	5.0	ug/L	1417		4	0-10			
Batch DE20432 - General Preparation										
Blank										
Chloride	ND	3.0	mg/L							
LCS										
Chloride	31.1		mg/L	30.00		104	90-110			
Batch DE22533 - General Preparation										
Blank										
Alkalinity as CaCO3	ND	2	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch DE22533 - General Preparation										
LCS										
Alkalinity as CaCO3	49		mg/L	50.90		97	85-115			
Batch DE22534 - General Preparation										
Blank										
Alkalinity as CaCO3	ND	10	mg/L							
LCS										
Alkalinity as CaCO3	52		mg/L	50.90		102	85-115			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

Notes and Definitions

U	Analyte included in the analysis, but not detected
Q	Calibration required quadratic regression (Q).
H	Estimated value. Sample hold times were exceeded (H).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probable Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22D1201

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Pare Corporation - TB

Shipped/Delivered Via: Client

ESS Project ID: 22D1201
Date Received: 4/29/2022
Project Due Date: 5/6/2022
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 18 Iced with: None
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By/Acid Lot#:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Resolution:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
1	285899	Yes	N/A	Yes	500 mL Amber	NP	
1	285900	Yes	N/A	Yes	500 mL Amber	NP	
1	285909	Yes	N/A	Yes	1L Poly	NP	
1	285914	Yes	N/A	Yes	500 mL Poly	NP	
1	285919	Yes	N/A	Yes	250 mL Poly	NaOH	pH >12
1	285924	Yes	N/A	Yes	250 mL Poly	H2SO4	
1	285929	Yes	No	Yes	VOA Vial	HCl	
1	285930	Yes	No	Yes	VOA Vial	HCl	
1	285931	Yes	No	Yes	VOA Vial	HCl	
2	285901	Yes	N/A	Yes	500 mL Amber	NP	
2	285902	Yes	N/A	Yes	500 mL Amber	NP	
2	285910	Yes	N/A	Yes	1L Poly	NP	
2	285915	Yes	N/A	Yes	500 mL Poly	NP	
2	285920	Yes	N/A	Yes	250 mL Poly	NaOH	pH >12
2	285925	Yes	N/A	Yes	250 mL Poly	H2SO4	
2	285932	Yes	No	Yes	VOA Vial	HCl	
2	285933	Yes	No	Yes	VOA Vial	HCl	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Pare Corporation - TB

ESS Project ID: 22D1201
Date Received: 4/29/2022

2	285934	Yes	No	Yes	VOA Vial	HCl	
3	285903	Yes	N/A	Yes	500 mL Amber	NP	
3	285904	Yes	N/A	Yes	500 mL Amber	NP	
3	285911	Yes	N/A	Yes	1L Poly	NP	
3	285916	Yes	N/A	Yes	500 mL Poly	NP	
3	285921	Yes	N/A	Yes	250 mL Poly	NaOH	pH >12
3	285926	Yes	N/A	Yes	250 mL Poly	H2SO4	
3	285935	Yes	No	Yes	VOA Vial	HCl	
3	285936	Yes	No	Yes	VOA Vial	HCl	
3	285937	Yes	No	Yes	VOA Vial	HCl	
4	285905	Yes	N/A	Yes	500 mL Amber	NP	
4	285906	Yes	N/A	Yes	500 mL Amber	NP	
4	285912	Yes	N/A	Yes	1L Poly	NP	
4	285917	Yes	N/A	Yes	500 mL Poly	NP	
4	285922	Yes	N/A	Yes	250 mL Poly	NaOH	pH >12
4	285927	Yes	N/A	Yes	250 mL Poly	H2SO4	
4	285938	Yes	No	Yes	VOA Vial	HCl	
4	285939	Yes	No	Yes	VOA Vial	HCl	
4	285940	Yes	No	Yes	VOA Vial	HCl	
5	285907	Yes	N/A	Yes	500 mL Amber	NP	
5	285908	Yes	N/A	Yes	500 mL Amber	NP	
5	285913	Yes	N/A	Yes	1L Poly	NP	
5	285918	Yes	N/A	Yes	500 mL Poly	NP	
5	285923	Yes	N/A	Yes	250 mL Poly	NaOH	pH >12
5	285928	Yes	N/A	Yes	250 mL Poly	H2SO4	
5	285941	Yes	No	Yes	VOA Vial	HCl	
5	285942	Yes	No	Yes	VOA Vial	HCl	
5	285943	Yes	No	Yes	VOA Vial	HCl	

2nd Review

Initials: KL

Were all containers scanned into storage/lab? (Yes / No)
Are barcode labels on correct containers? (Yes / No / NA)
Are all Flashpoint stickers attached/container ID # circled? (Yes / No / NA)
Are all Hex Chrome stickers attached? (Yes / No / NA)
Are all QC stickers attached? (Yes / No / NA)
Are VOA stickers attached if bubbles noted? (Yes / No / NA)

Completed By: [signature] Date & Time: 4.29.22 1747

Reviewed By: [signature] Date & Time: 4/29/22 1757

185 Frances Avenue
Cranston, RI 02921
Phone: 401-461-7181
Fax: 401-461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 220402 | Page of

Turn Time: ☐ >5 ☒ 5 ☐ 4 ☐ 3 ☐ 2 ☐ 1 ☐ Same Day

Regulatory State: MA Criteria: 310 CMR 19

Is this project for any of the following?:
☐ CT RCP ☒ MA MCP ☐ RGP ☐ Permit ☐ 401 WQ

ELECTRONIC DELIVERABLES (Final Reports are PDF)
☒ Limit Checker ☐ State Forms ☐ EQuIS
☒ Excel ☐ Hard Copy ☐ Enviro Data
☐ CLP-Like Package ☐ Other (Specify) →

CLIENT INFORMATION

Client: Pure Corporation
Address: 8 Blackstone Valley Pl
Lincoln, RI
Phone: (401) 334-4100
Email Distribution List: ABARTON@PARECORP.com, ITHIES@PARECORP.com

PROJECT INFORMATION

Project Name: Southborough, MA
Project Location:
Project Number: 18128.02
Project Manager: Jim Thies
Bill to: acct
PO#:
Quote#:

Client acknowledges that sampling is compliant with all EPA / State regulatory programs

REQUESTED ANALYSES

hdm 5/24/22

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Dissolved Metals	VOCs	CN, PAC & Total	Cl, NO3, SO4	COD	1,4-Dioxane 8270 SIM	Alkalinity
1	4/20/22	1315	Grab	AQ	MW-3D	X	X	X	X	X	X	X
2		1015			MW-4S							
3		0930			MW-4D							
4		1500			SW-1							
5		1530			SW-2							

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Sampled by :

Chain needs to be filled out neatly and completely for on time delivery.

Laboratory Use Only
Cooler Temperature (°C): 18.0 Nice

Comments: * Please specify "Other" preservative and containers types in this space
All parameters in 310 CMR 19 except "in situ"
Please filter metals (hdm 5/3/22)
Metals= As, Ba, Cd, Ca, Cr, Cu, Fe, Pb, Mn, Hg, Se, Ag, Na, Zn

All samples submitted are subject to ESS Laboratory's payment terms and conditions.

Dissolved Filtration
☒ Lab Filter

Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
	4/21/22	5:05					
Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)

CERTIFICATE OF ANALYSIS

Tim Thies
Pare Corporation
8 Blackstone Valley Place
Lincoln, RI 02865

RE: Southborough MA (18128.02)
ESS Laboratory Work Order Number: 22E0224

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 12:50 pm, Jun 01, 2022

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

SAMPLE RECEIPT

The following samples were received on May 05, 2022 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for metals were analyzed for a subset of the required MCP list per the client's request.

Revision 1 June 1, 2022: This report has been revised to include Alkalinity on all samples per client request.

Lab Number	Sample Name	Matrix	Analysis
22E0224-01	MW-2S	Aqueous	2320B, 353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
22E0224-02	MW-2D	Aqueous	2320B, 353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
22E0224-03	MW-3S	Aqueous	2320B, 353.2, 5220D, 6010C, 6020A, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

PROJECT NARRATIVE

8260B Volatile Organic Compounds

D2E0122-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Tetrachloroethene (23% @ 20%)

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

22E0224-03 **Present in Method Blank (B).**
1,4-Dioxane

Classical Chemistry

22E0224-01 **Estimated value. Sample hold times were exceeded (H).**
Alkalinity as CaCO3

22E0224-02 **Estimated value. Sample hold times were exceeded (H).**
Alkalinity as CaCO3

22E0224-03 **Estimated value. Sample hold times were exceeded (H).**
Alkalinity as CaCO3

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **22E0224-01 through 22E0224-03**

Matrices: ( ) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air (x) Other: Aqueous

CAM Protocol (check all that apply below):

(x) 8260 VOC CAM II A	(x) 7470/7471 Hg CAM III B	( ) MassDEP VPH (GC/PID/FID) CAM IV A	( ) 8082 PCB CAM V A	(x) 9014 Total Cyanide/PAC CAM VI A	( ) 6860 Perchlorate CAM VIII B
(x) 8270 SVOC CAM II B	(x) 7010 Metals CAM III C	( ) MassDEP VPH (GC/MS) CAM IV C	( ) 8081 Pesticides CAM V B	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(x) 6010 Metals CAM III A	(x) 6020 Metals CAM III D	( ) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) Explosives CAM VIII A	( ) TO-15 VOC CAM IX B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (x) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (x) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (x) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (x) No ( )
E	VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (x) No ( )

Responses to Questions G, H and I below are required for "'Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (x) No ( )*
	***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (x)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (x)*

All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard Date: May 20, 2022

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2S
Date Sampled: 05/05/22 09:45
Percent Solids: N/A

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-01
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (5.0)		7010		1	KJK	05/10/22 20:46	10	10	DE20630
Barium	ND (50.0)		6010C		1	KJK	05/06/22 16:16	10	10	DE20630
Cadmium	ND (1.0)		6020A		1	NAR	05/09/22 16:44	10	10	DE20630
Calcium	**40800** (200)		6010C		1	KJK	05/06/22 16:16	10	10	DE20630
Chromium	ND (20.0)		6010C		1	KJK	05/06/22 16:16	10	10	DE20630
Copper	ND (20.0)		6010C		1	KJK	05/06/22 16:16	10	10	DE20630
Iron	**1330** (100)		6010C		1	KJK	05/06/22 16:16	10	10	DE20630
Lead	ND (1.0)		6020A		1	NAR	05/09/22 16:44	10	10	DE20630
Manganese	**1370** (20.0)		6010C		1	KJK	05/06/22 16:16	10	10	DE20630
Mercury	ND (0.20)		7470A		1	YIV	05/10/22 14:52	20	40	DE20602
Selenium	ND (5.0)		6020A		1	NAR	05/09/22 16:44	10	10	DE20630
Silver	ND (1.0)		6020A		1	NAR	05/09/22 16:44	10	10	DE20630
Sodium	**30100** (5000)		6010C		1	KJK	05/06/22 16:16	10	10	DE20630
Zinc	ND (50.0)		6010C		1	KJK	05/06/22 16:16	10	10	DE20630

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2S
Date Sampled: 05/05/22 09:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,1-Dichloroethane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,1-Dichloroethene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,1-Dichloropropene	ND (2.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,2-Dibromoethane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,2-Dichloroethane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,2-Dichloropropane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,3-Dichloropropane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
1,4-Dioxane - Screen	ND (500)		8260B		1	05/06/22 19:14	D2E0122	DE20628
2,2-Dichloropropane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
2-Butanone	ND (10.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
2-Chlorotoluene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
2-Hexanone	ND (10.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
4-Chlorotoluene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
4-Isopropyltoluene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Acetone	ND (10.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Benzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Bromobenzene	ND (2.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Bromochloromethane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2S
Date Sampled: 05/05/22 09:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.6)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Bromoform	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Bromomethane	ND (2.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Carbon Disulfide	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Carbon Tetrachloride	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Chlorobenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Chloroethane	ND (2.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Chloroform	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Chloromethane	ND (2.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Dibromochloromethane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Dibromomethane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Diethyl Ether	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Di-isopropyl ether	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Ethylbenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Hexachlorobutadiene	ND (0.6)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Hexachloroethane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Isopropylbenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Methylene Chloride	ND (2.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Naphthalene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
n-Butylbenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
n-Propylbenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
sec-Butylbenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Styrene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
tert-Butylbenzene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Tetrachloroethene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Tetrahydrofuran	ND (5.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2S
Date Sampled: 05/05/22 09:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Trichloroethene	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Trichlorofluoromethane	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Vinyl Chloride	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Xylene O	ND (1.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Xylene P,M	ND (2.0)		8260B		1	05/06/22 19:14	D2E0122	DE20628
Xylenes (Total)	ND (2.00)		8260B		1	05/06/22 19:14		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*104 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2S
Date Sampled: 05/05/22 09:45
Percent Solids: N/A
Initial Volume: 500
Final Volume: 0.5
Extraction Method: 3535A

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TAJ
Prepared: 5/9/22 22:00

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	ND (0.250)		8270D SIM		1	05/11/22 17:19	D2E0206	DE20950

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*94 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2S
Date Sampled: 05/05/22 09:45
Percent Solids: N/A

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-01
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Alkalinity as CaCO3	**H 96** (10)		2320B		1	JLK	05/25/22 14:43	mg/L	DE22534
Chemical Oxygen Demand	ND (10)		5220D		1	JLK	05/09/22 14:24	mg/L	DE20939
Chloride	**91.7** (3.0)		9250		1	JLK	05/09/22 14:29	mg/L	DE20935
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/06/22 12:20	ug/L	DE20622
Nitrate as N	ND (0.0300)		353.2		1	EAM	05/06/22 18:48	mg/L	[CALC]
Sulfate	**19.4** (5.0)		9038		1	EEM	05/06/22 15:40	mg/L	DE20626
Total Cyanide	ND (5.0)		9014		1	EEM	05/06/22 12:20	ug/L	DE20621

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2D
Date Sampled: 05/05/22 11:00
Percent Solids: N/A

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	**10.9** (5.0)		7010		1	KJK	05/10/22 20:52	10	10	DE20630
Barium	**52.5** (50.0)		6010C		1	KJK	05/06/22 16:19	10	10	DE20630
Cadmium	ND (1.0)		6020A		1	NAR	05/09/22 16:50	10	10	DE20630
Calcium	**34100** (200)		6010C		1	KJK	05/06/22 16:19	10	10	DE20630
Chromium	ND (20.0)		6010C		1	KJK	05/06/22 16:19	10	10	DE20630
Copper	ND (20.0)		6010C		1	KJK	05/06/22 16:19	10	10	DE20630
Iron	**12200** (100)		6010C		1	KJK	05/06/22 16:19	10	10	DE20630
Lead	ND (1.0)		6020A		1	NAR	05/09/22 16:50	10	10	DE20630
Manganese	**4970** (20.0)		6010C		1	KJK	05/06/22 16:19	10	10	DE20630
Mercury	ND (0.20)		7470A		1	YIV	05/10/22 14:54	20	40	DE20602
Selenium	ND (5.0)		6020A		1	NAR	05/09/22 16:50	10	10	DE20630
Silver	ND (1.0)		6020A		1	NAR	05/09/22 16:50	10	10	DE20630
Sodium	**44800** (5000)		6010C		1	KJK	05/06/22 16:19	10	10	DE20630
Zinc	ND (50.0)		6010C		1	KJK	05/06/22 16:19	10	10	DE20630

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2D
Date Sampled: 05/05/22 11:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,1-Dichloroethane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,1-Dichloroethene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,1-Dichloropropene	ND (2.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,2-Dibromoethane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,2-Dichloroethane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,2-Dichloropropane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,3-Dichloropropane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
1,4-Dioxane - Screen	ND (500)		8260B		1	05/06/22 19:40	D2E0122	DE20628
2,2-Dichloropropane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
2-Butanone	ND (10.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
2-Chlorotoluene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
2-Hexanone	ND (10.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
4-Chlorotoluene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
4-Isopropyltoluene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Acetone	ND (10.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Benzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Bromobenzene	ND (2.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Bromochloromethane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2D
Date Sampled: 05/05/22 11:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.6)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Bromoform	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Bromomethane	ND (2.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Carbon Disulfide	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Carbon Tetrachloride	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Chlorobenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Chloroethane	ND (2.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Chloroform	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Chloromethane	ND (2.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Dibromochloromethane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Dibromomethane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Diethyl Ether	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Di-isopropyl ether	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Ethylbenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Hexachlorobutadiene	ND (0.6)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Hexachloroethane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Isopropylbenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Methylene Chloride	ND (2.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Naphthalene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
n-Butylbenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
n-Propylbenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
sec-Butylbenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Styrene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
tert-Butylbenzene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Tetrachloroethene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Tetrahydrofuran	ND (5.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2D
Date Sampled: 05/05/22 11:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Trichloroethene	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Trichlorofluoromethane	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Vinyl Chloride	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Xylene O	ND (1.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Xylene P,M	ND (2.0)		8260B		1	05/06/22 19:40	D2E0122	DE20628
Xylenes (Total)	ND (2.00)		8260B		1	05/06/22 19:40		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*104 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*100 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2D
Date Sampled: 05/05/22 11:00
Percent Solids: N/A
Initial Volume: 500
Final Volume: 0.5
Extraction Method: 3535A

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: TAJ
Prepared: 5/9/22 22:00

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	ND (0.250)		8270D SIM		1	05/11/22 17:57	D2E0206	DE20950

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*79 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2D
Date Sampled: 05/05/22 11:00
Percent Solids: N/A

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-02
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Alkalinity as CaCO3	**H 58** (10)		2320B		1	JLK	05/25/22 14:43	mg/L	DE22534
Chemical Oxygen Demand	ND (10)		5220D		1	JLK	05/09/22 14:24	mg/L	DE20939
Chloride	**121** (6.0)		9250		2	JLK	05/09/22 14:38	mg/L	DE20935
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/06/22 12:20	ug/L	DE20622
Nitrate as N	ND (0.0300)		353.2		1	EAM	05/06/22 18:51	mg/L	[CALC]
Sulfate	**22.6** (5.0)		9038		1	EEM	05/06/22 15:40	mg/L	DE20626
Total Cyanide	ND (5.0)		9014		1	EEM	05/06/22 12:20	ug/L	DE20621

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3S
Date Sampled: 05/05/22 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-03
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (1.0)		6020A		1	NAR	05/09/22 16:55	10	10	DE20630
Barium	**146** (50.0)		6010C		1	KJK	05/06/22 16:20	10	10	DE20630
Cadmium	ND (1.0)		6020A		1	NAR	05/09/22 16:55	10	10	DE20630
Calcium	**71400** (200)		6010C		1	KJK	05/06/22 16:20	10	10	DE20630
Chromium	ND (20.0)		6010C		1	KJK	05/06/22 16:20	10	10	DE20630
Copper	ND (20.0)		6010C		1	KJK	05/06/22 16:20	10	10	DE20630
Iron	**143** (100)		6010C		1	KJK	05/06/22 16:20	10	10	DE20630
Lead	ND (1.0)		6020A		1	NAR	05/09/22 16:55	10	10	DE20630
Manganese	**10900** (20.0)		6010C		1	KJK	05/06/22 16:20	10	10	DE20630
Mercury	ND (0.20)		7470A		1	YIV	05/10/22 14:56	20	40	DE20602
Selenium	ND (5.0)		6020A		1	NAR	05/09/22 16:55	10	10	DE20630
Silver	ND (1.0)		6020A		1	NAR	05/09/22 16:55	10	10	DE20630
Sodium	**43400** (5000)		6010C		1	KJK	05/06/22 16:20	10	10	DE20630
Zinc	ND (50.0)		6010C		1	KJK	05/06/22 16:20	10	10	DE20630

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3S
Date Sampled: 05/05/22 13:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,1-Dichloroethane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,1-Dichloroethene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,1-Dichloropropene	ND (2.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,2-Dibromoethane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,2-Dichloroethane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,2-Dichloropropane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,3-Dichloropropane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
1,4-Dioxane - Screen	ND (500)		8260B		1	05/06/22 20:06	D2E0122	DE20628
2,2-Dichloropropane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
2-Butanone	ND (10.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
2-Chlorotoluene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
2-Hexanone	ND (10.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
4-Chlorotoluene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
4-Isopropyltoluene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Acetone	ND (10.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Benzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Bromobenzene	ND (2.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Bromochloromethane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3S
Date Sampled: 05/05/22 13:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.6)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Bromoform	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Bromomethane	ND (2.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Carbon Disulfide	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Carbon Tetrachloride	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Chlorobenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Chloroethane	ND (2.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Chloroform	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Chloromethane	ND (2.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Dibromochloromethane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Dibromomethane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Diethyl Ether	**3.6** (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Di-isopropyl ether	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Ethylbenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Hexachlorobutadiene	ND (0.6)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Hexachloroethane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Isopropylbenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Methylene Chloride	ND (2.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Naphthalene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
n-Butylbenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
n-Propylbenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
sec-Butylbenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Styrene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
tert-Butylbenzene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Tetrachloroethene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Tetrahydrofuran	ND (5.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3S
Date Sampled: 05/05/22 13:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Trichloroethene	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Trichlorofluoromethane	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Vinyl Chloride	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Xylene O	ND (1.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Xylene P,M	ND (2.0)		8260B		1	05/06/22 20:06	D2E0122	DE20628
Xylenes (Total)	ND (2.00)		8260B		1	05/06/22 20:06		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*105 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*100 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3S
Date Sampled: 05/05/22 13:45
Percent Solids: N/A
Initial Volume: 500
Final Volume: 0.5
Extraction Method: 3535A

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: TAJ
Prepared: 5/9/22 22:00

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	**B 0.412** (0.250)		8270D SIM		1	05/11/22 18:33	D2E0206	DE20950

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*79 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3S
Date Sampled: 05/05/22 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 22E0224
ESS Laboratory Sample ID: 22E0224-03
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Alkalinity as CaCO3	**H 270** (20)		2320B		1	JLK	05/25/22 14:43	mg/L	DE22534
Chemical Oxygen Demand	**40** (10)		5220D		1	JLK	05/09/22 14:24	mg/L	DE20939
Chloride	**68.9** (3.0)		9250		1	JLK	05/09/22 14:53	mg/L	DE20936
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/06/22 12:20	ug/L	DE20622
Nitrate as N	ND (0.0300)		353.2		1	EAM	05/06/22 18:58	mg/L	[CALC]
Sulfate	ND (5.0)		9038		1	EEM	05/06/22 15:40	mg/L	DE20626
Total Cyanide	ND (5.0)		9014		1	EEM	05/06/22 12:20	ug/L	DE20621

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch DE20602 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.04	0.20	ug/L	6.042		83	80-120			
LCS Dup										
Mercury	5.62	0.20	ug/L	6.042		93	80-120	11	20	
Batch DE20630 - 200.7/6010BNoDigest										
Blank										
Barium	ND	50.0	ug/L							
Calcium	ND	200	ug/L							
Chromium	ND	20.0	ug/L							
Copper	ND	20.0	ug/L							
Iron	ND	100	ug/L							
Manganese	ND	20.0	ug/L							
Sodium	ND	5000	ug/L							
Zinc	ND	50.0	ug/L							
Blank										
Arsenic	ND	1.0	ug/L							
Cadmium	ND	1.0	ug/L							
Calcium	ND	200	ug/L							
Copper	ND	20.0	ug/L							
Iron	ND	100	ug/L							
Lead	ND	1.0	ug/L							
Manganese	ND	20.0	ug/L							
Selenium	ND	5.0	ug/L							
Silver	ND	1.0	ug/L							
Sodium	ND	5000	ug/L							
Blank										
Arsenic	ND	5.0	ug/L							
Blank										
Arsenic	ND	1.0	ug/L							
Arsenic	ND	5.0	ug/L							
Barium	ND	50.0	ug/L							
Cadmium	ND	1.0	ug/L							
Calcium	ND	200	ug/L							
Chromium	ND	20.0	ug/L							
Copper	ND	20.0	ug/L							
Iron	ND	100	ug/L							
Lead	ND	1.0	ug/L							
Manganese	ND	20.0	ug/L							
Selenium	ND	5.0	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch DE20630 - 200.7/6010BNoDigest										
Silver	ND	1.0	ug/L							
Sodium	ND	5000	ug/L							
Zinc	ND	50.0	ug/L							
LCS										
Barium	0.5		mg/L	0.5000		99	80-120			
Calcium	4.9		mg/L	5.000		97	80-120			
Chromium	0.5		mg/L	0.5000		97	80-120			
Copper	0.5		mg/L	0.5000		97	80-120			
Iron	2.5		mg/L	2.500		99	80-120			
Manganese	0.5		mg/L	0.5000		100	80-120			
Sodium	24.7		mg/L	25.00		99	80-120			
Zinc	0.5		mg/L	0.5000		98	80-120			
LCS										
Arsenic	10.0		ug/L	10.00		100	80-120			
Cadmium	10.0		ug/L	10.05		99	80-120			
Calcium	0.0		mg/L	0.5001		0	80-120			
Copper	0.0		mg/L	0.01000		0	80-120			
Iron	0.0		mg/L	0.5003		0	80-120			
Lead	10.0		ug/L	9.990		100	80-120			
Manganese	0.0		mg/L	0.01002		0	80-120			
Selenium	10.1		ug/L	9.990		101	80-120			
Silver	10.1		ug/L	10.02		100	80-120			
Sodium	0.0		mg/L	0.5002		0	80-120			
LCS										
Arsenic	26.0		ug/L	25.00		104	80-120			
8260B Volatile Organic Compounds										
Batch DE20628 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L							
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
1,1-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	1.0	ug/L							
1,1-Dichloropropene	ND	2.0	ug/L							
1,2,3-Trichlorobenzene	ND	1.0	ug/L							
1,2,3-Trichloropropane	ND	1.0	ug/L							
1,2,4-Trichlorobenzene	ND	1.0	ug/L							
1,2,4-Trimethylbenzene	ND	1.0	ug/L							
1,2-Dibromo-3-Chloropropane	ND	5.0	ug/L							
1,2-Dibromoethane	ND	1.0	ug/L							
1,2-Dichlorobenzene	ND	1.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE20628 - 5030B										
1,2-Dichloropropane	ND	1.0	ug/L							
1,3,5-Trimethylbenzene	ND	1.0	ug/L							
1,3-Dichlorobenzene	ND	1.0	ug/L							
1,3-Dichloropropane	ND	1.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
1,4-Dioxane - Screen	ND	500	ug/L							
2,2-Dichloropropane	ND	1.0	ug/L							
2-Butanone	ND	10.0	ug/L							
2-Chlorotoluene	ND	1.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
4-Chlorotoluene	ND	1.0	ug/L							
4-Isopropyltoluene	ND	1.0	ug/L							
4-Methyl-2-Pentanone	ND	10.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	1.0	ug/L							
Bromobenzene	ND	2.0	ug/L							
Bromochloromethane	ND	1.0	ug/L							
Bromodichloromethane	ND	0.6	ug/L							
Bromoform	ND	1.0	ug/L							
Bromomethane	ND	2.0	ug/L							
Carbon Disulfide	ND	1.0	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
Chlorobenzene	ND	1.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	1.0	ug/L							
Chloromethane	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	1.0	ug/L							
cis-1,3-Dichloropropene	ND	0.4	ug/L							
Dibromochloromethane	ND	1.0	ug/L							
Dibromomethane	ND	1.0	ug/L							
Dichlorodifluoromethane	ND	2.0	ug/L							
Diethyl Ether	ND	1.0	ug/L							
Di-isopropyl ether	ND	1.0	ug/L							
Ethyl tertiary-butyl ether	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Hexachlorobutadiene	ND	0.6	ug/L							
Hexachloroethane	ND	1.0	ug/L							
Isopropylbenzene	ND	1.0	ug/L							
Methyl tert-Butyl Ether	ND	1.0	ug/L							
Methylene Chloride	ND	2.0	ug/L							
Naphthalene	ND	1.0	ug/L							
n-Butylbenzene	ND	1.0	ug/L							
n-Propylbenzene	ND	1.0	ug/L							
sec-Butylbenzene	ND	1.0	ug/L							
Styrene	ND	1.0	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE20628 - 5030B										
tert-Butylbenzene	ND	1.0	ug/L							
Tertiary-amyl methyl ether	ND	1.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Tetrahydrofuran	ND	5.0	ug/L							
Toluene	ND	1.0	ug/L							
trans-1,2-Dichloroethene	ND	1.0	ug/L							
trans-1,3-Dichloropropene	ND	0.4	ug/L							
Trichloroethene	ND	1.0	ug/L							
Trichlorofluoromethane	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylene O	ND	1.0	ug/L							
Xylene P,M	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*26.1*		ug/L	*25.00*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.7*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*24.7*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: Toluene-d8	*25.4*		ug/L	*25.00*		*102*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	9.6	1.0	ug/L	10.00		96	70-130			
1,1,1-Trichloroethane	10.0	1.0	ug/L	10.00		100	70-130			
1,1,2,2-Tetrachloroethane	10.2	0.5	ug/L	10.00		102	70-130			
1,1,2-Trichloroethane	10.2	1.0	ug/L	10.00		102	70-130			
1,1-Dichloroethane	10.2	1.0	ug/L	10.00		102	70-130			
1,1-Dichloroethene	9.8	1.0	ug/L	10.00		98	70-130			
1,1-Dichloropropene	10.5	2.0	ug/L	10.00		105	70-130			
1,2,3-Trichlorobenzene	10.2	1.0	ug/L	10.00		102	70-130			
1,2,3-Trichloropropane	10.2	1.0	ug/L	10.00		102	70-130			
1,2,4-Trichlorobenzene	10.3	1.0	ug/L	10.00		103	70-130			
1,2,4-Trimethylbenzene	10.1	1.0	ug/L	10.00		101	70-130			
1,2-Dibromo-3-Chloropropane	9.8	5.0	ug/L	10.00		98	70-130			
1,2-Dibromoethane	9.8	1.0	ug/L	10.00		98	70-130			
1,2-Dichlorobenzene	10.3	1.0	ug/L	10.00		103	70-130			
1,2-Dichloroethane	9.8	1.0	ug/L	10.00		98	70-130			
1,2-Dichloropropane	9.7	1.0	ug/L	10.00		97	70-130			
1,3,5-Trimethylbenzene	10.2	1.0	ug/L	10.00		102	70-130			
1,3-Dichlorobenzene	10.2	1.0	ug/L	10.00		102	70-130			
1,3-Dichloropropane	10.2	1.0	ug/L	10.00		102	70-130			
1,4-Dichlorobenzene	10.4	1.0	ug/L	10.00		104	70-130			
1,4-Dioxane - Screen	202	500	ug/L	200.0		101	0-332			
2,2-Dichloropropane	10.2	1.0	ug/L	10.00		102	70-130			
2-Butanone	56.5	10.0	ug/L	50.00		113	70-130			
2-Chlorotoluene	10.4	1.0	ug/L	10.00		104	70-130			
2-Hexanone	56.1	10.0	ug/L	50.00		112	70-130			
4-Chlorotoluene	10.3	1.0	ug/L	10.00		103	70-130			
4-Isopropyltoluene	10.2	1.0	ug/L	10.00		102	70-130			
4-Methyl-2-Pentanone	51.4	10.0	ug/L	50.00		103	70-130			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE20628 - 5030B										
Acetone	53.9	10.0	ug/L	50.00		108	70-130			
Benzene	9.9	1.0	ug/L	10.00		99	70-130			
Bromobenzene	10.1	2.0	ug/L	10.00		101	70-130			
Bromochloromethane	10.1	1.0	ug/L	10.00		101	70-130			
Bromodichloromethane	10.2	0.6	ug/L	10.00		102	70-130			
Bromoform	9.7	1.0	ug/L	10.00		97	70-130			
Bromomethane	10.9	2.0	ug/L	10.00		109	70-130			
Carbon Disulfide	11.2	1.0	ug/L	10.00		112	70-130			
Carbon Tetrachloride	10.5	1.0	ug/L	10.00		105	70-130			
Chlorobenzene	10.0	1.0	ug/L	10.00		100	70-130			
Chloroethane	10.4	2.0	ug/L	10.00		104	70-130			
Chloroform	10.4	1.0	ug/L	10.00		104	70-130			
Chloromethane	9.4	2.0	ug/L	10.00		94	70-130			
cis-1,2-Dichloroethene	10.7	1.0	ug/L	10.00		107	70-130			
cis-1,3-Dichloropropene	10.2	0.4	ug/L	10.00		102	70-130			
Dibromochloromethane	9.9	1.0	ug/L	10.00		99	70-130			
Dibromomethane	10.6	1.0	ug/L	10.00		106	70-130			
Dichlorodifluoromethane	9.8	2.0	ug/L	10.00		98	70-130			
Diethyl Ether	10.5	1.0	ug/L	10.00		105	70-130			
Di-isopropyl ether	10.4	1.0	ug/L	10.00		104	70-130			
Ethyl tertiary-butyl ether	10.3	1.0	ug/L	10.00		103	70-130			
Ethylbenzene	9.7	1.0	ug/L	10.00		97	70-130			
Hexachlorobutadiene	10.5	0.6	ug/L	10.00		105	70-130			
Hexachloroethane	10.5	1.0	ug/L	10.00		105	70-130			
Isopropylbenzene	10.3	1.0	ug/L	10.00		103	70-130			
Methyl tert-Butyl Ether	10.6	1.0	ug/L	10.00		106	70-130			
Methylene Chloride	12.0	2.0	ug/L	10.00		120	70-130			
Naphthalene	10.0	1.0	ug/L	10.00		100	70-130			
n-Butylbenzene	10.2	1.0	ug/L	10.00		102	70-130			
n-Propylbenzene	10.4	1.0	ug/L	10.00		104	70-130			
sec-Butylbenzene	10.1	1.0	ug/L	10.00		101	70-130			
Styrene	9.8	1.0	ug/L	10.00		98	70-130			
tert-Butylbenzene	10.3	1.0	ug/L	10.00		103	70-130			
Tertiary-amyl methyl ether	10.0	1.0	ug/L	10.00		100	70-130			
Tetrachloroethene	8.6	1.0	ug/L	10.00		86	70-130			
Tetrahydrofuran	10.2	5.0	ug/L	10.00		102	70-130			
Toluene	9.6	1.0	ug/L	10.00		96	70-130			
trans-1,2-Dichloroethene	10.6	1.0	ug/L	10.00		106	70-130			
trans-1,3-Dichloropropene	9.6	0.4	ug/L	10.00		96	70-130			
Trichloroethene	9.6	1.0	ug/L	10.00		96	70-130			
Trichlorofluoromethane	11.0	1.0	ug/L	10.00		110	70-130			
Vinyl Chloride	10.7	1.0	ug/L	10.00		107	70-130			
Xylene O	10.0	1.0	ug/L	10.00		100	70-130			
Xylene P,M	19.8	2.0	ug/L	20.00		99	70-130			
Surrogate: 1,2-Dichloroethane-d4	*26.2*		ug/L	*25.00*		*105*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE20628 - 5030B										
Surrogate: 4-Bromofluorobenzene	*24.5*		ug/L	*25.00*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*25.0*		ug/L	*25.00*		*100*	*70-130*			
Surrogate: Toluene-d8	*24.9*		ug/L	*25.00*		*99*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	9.8	1.0	ug/L	10.00		98	70-130	2	20	
1,1,1-Trichloroethane	10.2	1.0	ug/L	10.00		102	70-130	3	20	
1,1,2,2-Tetrachloroethane	9.8	0.5	ug/L	10.00		98	70-130	3	20	
1,1,2-Trichloroethane	10.0	1.0	ug/L	10.00		100	70-130	2	20	
1,1-Dichloroethane	10.4	1.0	ug/L	10.00		104	70-130	2	20	
1,1-Dichloroethene	10.7	1.0	ug/L	10.00		107	70-130	8	20	
1,1-Dichloropropene	10.4	2.0	ug/L	10.00		104	70-130	0.9	20	
1,2,3-Trichlorobenzene	9.9	1.0	ug/L	10.00		99	70-130	2	20	
1,2,3-Trichloropropane	10.0	1.0	ug/L	10.00		100	70-130	2	20	
1,2,4-Trichlorobenzene	10.0	1.0	ug/L	10.00		100	70-130	3	20	
1,2,4-Trimethylbenzene	10.3	1.0	ug/L	10.00		103	70-130	2	20	
1,2-Dibromo-3-Chloropropane	9.3	5.0	ug/L	10.00		93	70-130	5	20	
1,2-Dibromoethane	9.8	1.0	ug/L	10.00		98	70-130	0.3	20	
1,2-Dichlorobenzene	10.2	1.0	ug/L	10.00		102	70-130	0.2	20	
1,2-Dichloroethane	10.0	1.0	ug/L	10.00		100	70-130	3	20	
1,2-Dichloropropane	9.6	1.0	ug/L	10.00		96	70-130	1	20	
1,3,5-Trimethylbenzene	10.4	1.0	ug/L	10.00		104	70-130	2	20	
1,3-Dichlorobenzene	10.4	1.0	ug/L	10.00		104	70-130	2	20	
1,3-Dichloropropane	10.2	1.0	ug/L	10.00		102	70-130	0.8	20	
1,4-Dichlorobenzene	10.6	1.0	ug/L	10.00		106	70-130	2	20	
1,4-Dioxane - Screen	197	500	ug/L	200.0		99	0-332	2	200	
2,2-Dichloropropane	10.5	1.0	ug/L	10.00		105	70-130	2	20	
2-Butanone	55.8	10.0	ug/L	50.00		112	70-130	1	20	
2-Chlorotoluene	10.6	1.0	ug/L	10.00		106	70-130	2	20	
2-Hexanone	55.0	10.0	ug/L	50.00		110	70-130	2	20	
4-Chlorotoluene	10.4	1.0	ug/L	10.00		104	70-130	1	20	
4-Isopropyltoluene	10.3	1.0	ug/L	10.00		103	70-130	1	20	
4-Methyl-2-Pentanone	50.0	10.0	ug/L	50.00		100	70-130	3	20	
Acetone	53.0	10.0	ug/L	50.00		106	70-130	2	20	
Benzene	10.1	1.0	ug/L	10.00		101	70-130	2	20	
Bromobenzene	10.3	2.0	ug/L	10.00		103	70-130	2	20	
Bromochloromethane	10.2	1.0	ug/L	10.00		102	70-130	0.6	20	
Bromodichloromethane	10.0	0.6	ug/L	10.00		100	70-130	2	20	
Bromoform	9.6	1.0	ug/L	10.00		96	70-130	0.7	20	
Bromomethane	10.7	2.0	ug/L	10.00		107	70-130	2	20	
Carbon Disulfide	10.8	1.0	ug/L	10.00		108	70-130	4	20	
Carbon Tetrachloride	10.7	1.0	ug/L	10.00		107	70-130	2	20	
Chlorobenzene	10.1	1.0	ug/L	10.00		101	70-130	1	20	
Chloroethane	10.6	2.0	ug/L	10.00		106	70-130	2	20	
Chloroform	10.8	1.0	ug/L	10.00		108	70-130	4	20	

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE20628 - 5030B										
Chloromethane	9.7	2.0	ug/L	10.00		97	70-130	3	20	
cis-1,2-Dichloroethene	10.3	1.0	ug/L	10.00		103	70-130	3	20	
cis-1,3-Dichloropropene	10.3	0.4	ug/L	10.00		103	70-130	1	20	
Dibromochloromethane	9.8	1.0	ug/L	10.00		98	70-130	1	20	
Dibromomethane	10.7	1.0	ug/L	10.00		107	70-130	1	20	
Dichlorodifluoromethane	10.2	2.0	ug/L	10.00		102	70-130	4	20	
Diethyl Ether	10.2	1.0	ug/L	10.00		102	70-130	3	20	
Di-isopropyl ether	10.7	1.0	ug/L	10.00		107	70-130	3	20	
Ethyl tertiary-butyl ether	10.2	1.0	ug/L	10.00		102	70-130	1	20	
Ethylbenzene	9.9	1.0	ug/L	10.00		99	70-130	2	20	
Hexachlorobutadiene	10.4	0.6	ug/L	10.00		104	70-130	0.6	20	
Hexachloroethane	10.9	1.0	ug/L	10.00		109	70-130	4	20	
Isopropylbenzene	10.5	1.0	ug/L	10.00		105	70-130	2	20	
Methyl tert-Butyl Ether	10.3	1.0	ug/L	10.00		103	70-130	3	20	
Methylene Chloride	12.0	2.0	ug/L	10.00		120	70-130	0.3	20	
Naphthalene	9.6	1.0	ug/L	10.00		96	70-130	3	20	
n-Butylbenzene	10.3	1.0	ug/L	10.00		103	70-130	2	20	
n-Propylbenzene	10.6	1.0	ug/L	10.00		106	70-130	2	20	
sec-Butylbenzene	10.2	1.0	ug/L	10.00		102	70-130	1	20	
Styrene	9.9	1.0	ug/L	10.00		99	70-130	1	20	
tert-Butylbenzene	10.5	1.0	ug/L	10.00		105	70-130	1	20	
Tertiary-amyl methyl ether	10.1	1.0	ug/L	10.00		101	70-130	0.6	20	
Tetrachloroethene	9.6	1.0	ug/L	10.00		96	70-130	11	20	
Tetrahydrofuran	9.7	5.0	ug/L	10.00		97	70-130	5	20	
Toluene	9.8	1.0	ug/L	10.00		98	70-130	2	20	
trans-1,2-Dichloroethene	10.8	1.0	ug/L	10.00		108	70-130	2	20	
trans-1,3-Dichloropropene	9.7	0.4	ug/L	10.00		97	70-130	0.4	20	
Trichloroethene	10.0	1.0	ug/L	10.00		100	70-130	4	20	
Trichlorofluoromethane	10.5	1.0	ug/L	10.00		105	70-130	4	20	
Vinyl Chloride	11.2	1.0	ug/L	10.00		112	70-130	5	20	
Xylene O	10.1	1.0	ug/L	10.00		101	70-130	1	20	
Xylene P,M	20.1	2.0	ug/L	20.00		101	70-130	1	20	
Surrogate: 1,2-Dichloroethane-d4	*26.0*		ug/L	*25.00*		*104*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.7*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*25.1*		ug/L	*25.00*		*100*	*70-130*			
Surrogate: Toluene-d8	*24.9*		ug/L	*25.00*		*100*	*70-130*			
8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution										
Batch DE20950 - 3535A										
Blank										
1,4-Dioxane	0.269	0.250	ug/L							
Surrogate: 1,4-Dioxane-d8	*3.91*		ug/L	*5.000*		*78*	*15-115*			
LCS										
1,4-Dioxane	8.30	0.250	ug/L	10.00		83	40-140			
Surrogate: 1,4-Dioxane-d8	*3.93*		ug/L	*5.000*		*79*	*15-115*			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution										
Batch DE20950 - 3535A										
LCS Dup										
1,4-Dioxane	7.57	0.250	ug/L	10.00		76	40-140	9	20	
Surrogate: 1,4-Dioxane-d8	*4.34*		ug/L	*5.000*		*87*	*15-115*			
Classical Chemistry										
Batch DE20621 - TCN Prep										
Blank										
Total Cyanide	ND	5.0	ug/L							
LCS										
Total Cyanide	20.3	5.0	ug/L	20.06		101	90-110			
LCS										
Total Cyanide	149	5.0	ug/L	150.4		99	90-110			
LCS Dup										
Total Cyanide	148	5.0	ug/L	150.4		98	90-110	0.3	20	
Batch DE20622 - TCN Prep										
Blank										
Cyanide (PAC)	ND	5.0	ug/L							
LCS										
Cyanide (PAC)	20.6	5.0	ug/L	20.06		103	80-120			
LCS										
Cyanide (PAC)	148	5.0	ug/L	150.4		98	80-120			
LCS Dup										
Cyanide (PAC)	148	5.0	ug/L	150.4		99	80-120	0.4	20	
Reference										
Cyanide (PAC)	56.0	5.0	ug/L	1417		4	0-10			
Batch DE20626 - General Preparation										
Blank										
Sulfate	ND	5.0	mg/L							
LCS										
Sulfate	9.8		mg/L	9.988		98	85-115			
Batch DE20644 - General Preparation										
Blank										
Nitrite as N	ND	0.010	mg/L							
LCS										
Nitrite as N	0.242		mg/L	0.2497		97	90-110			
Batch DE20645 - General Preparation										
Blank										
Nitrate/Nitrite as N	ND	0.020	mg/L							
LCS										
Nitrate/Nitrite as N	0.470		mg/L	0.5000		94	90-110			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch DE20935 - General Preparation										
Blank										
Chloride	ND	3.0	mg/L							
LCS										
Chloride	31.3		mg/L	30.00		104	90-110			
Batch DE20936 - General Preparation										
Blank										
Chloride	ND	3.0	mg/L							
LCS										
Chloride	30.5		mg/L	30.00		102	90-110			
Batch DE20939 - General Preparation										
Blank										
Chemical Oxygen Demand	ND	10	mg/L							
LCS										
Chemical Oxygen Demand	50.7	10	mg/L	50.15		101	95-105			
Batch DE22534 - General Preparation										
Blank										
Alkalinity as CaCO3	ND	10	mg/L							
LCS										
Alkalinity as CaCO3	52		mg/L	50.90		102	85-115			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

Notes and Definitions

U	Analyte included in the analysis, but not detected
H	Estimated value. Sample hold times were exceeded (H).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
B	Present in Method Blank (B).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probable Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 22E0224

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Pare Corporation - TB

Shipped/Delivered Via: Client

ESS Project ID: 22E0224
Date Received: 5/5/2022
Project Due Date: 5/12/2022
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.2 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** (Yes) / No / NA
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / (No)
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By/Acid Lot#:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Resolution:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
1	288479	Yes	N/A	Yes	500 mL Amber	NP	
1	288480	Yes	N/A	Yes	500 mL Amber	NP	
1	288485	Yes	N/A	Yes	1L Poly	NP	
1	288488	Yes	N/A	Yes	500 mL Poly	NP	
1	288491	Yes	N/A	Yes	250 mL Poly	NaOH pH>12	
1	288494	Yes	N/A	Yes	250 mL Poly	H2SO4	
1	288497	Yes	No	Yes	VOA Vial	HCl	
1	288498	Yes	No	Yes	VOA Vial	HCl	
1	288499	Yes	No	Yes	VOA Vial	HCl	
2	288481	Yes	N/A	Yes	500 mL Amber	NP	
2	288482	Yes	N/A	Yes	500 mL Amber	NP	
2	288486	Yes	N/A	Yes	1L Poly	NP	
2	288489	Yes	N/A	Yes	500 mL Poly	NP	
2	288492	Yes	N/A	Yes	250 mL Poly	NaOH pH>12	
2	288495	Yes	N/A	Yes	250 mL Poly	H2SO4	
2	288500	Yes	No	Yes	VOA Vial	HCl	
2	288501	Yes	No	Yes	VOA Vial	HCl	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Pare Corporation - TB

ESS Project ID: 22E0224
Date Received: 5/5/2022

2	288502	Yes	No	Yes	VOA Vial	HCl
3	288483	Yes	N/A	Yes	500 mL Amber	NP
3	288484	Yes	N/A	Yes	500 mL Amber	NP
3	288487	Yes	N/A	Yes	1L Poly	NP
3	288490	Yes	N/A	Yes	500 mL Poly	NP
3	288493	Yes	N/A	Yes	250 mL Poly	NaOH pH>12
3	288496	Yes	N/A	Yes	250 mL Poly	H2SO4
3	288503	Yes	No	Yes	VOA Vial	HCl
3	288504	Yes	No	Yes	VOA Vial	HCl
3	288505	Yes	No	Yes	VOA Vial	HCl

2nd Review

Were all containers scanned into storage/lab? Initials JD

Are barcode labels on correct containers? Yes / No

Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA

Are all Hex Chrome stickers attached? Yes / No / NA

Are all QC stickers attached? Yes / No / NA

Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: Clayton Davis Date & Time: 5/5/22 1705.

Reviewed By: [signature] Date & Time: 5/5/22 1745

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 22E0224

Turn Time	5	Days
Regulatory State	MA	
Reporting Limits	Criteria: 310 CMR 19	

Is this project for any of the following?: ○ CT RCP ☒ MA MCP ○ RGP

Electonic Deliverables: ☐ Data Checker ☒ Excel ☒ Other (Please Specify, 5yr) Limit Checker

Company Name	Project #	Project Name
Pare Corporation	16128.02	Southborough, MA

Contact Person	Address
Tim Thies / Adriana Barton	8 Blackstone Valley Pl

City	State	Zip Code	PO #
Lincoln	RI		

Telephone Number	FAX Number	Email Address
401-334-4100		tthies@pare.com, abarton@pare.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: Dissolved Metals*	VOC's	CN, PAC & Tot	Cl, NO3, SO4 COD	1,4-Dioxane SVOC	
1	5/5/22	0945	Grab	AQ	MW-25	X	X	X	X	X	X
2	↓	1100	↓	↓	MW-21D	↓	↓	↓	↓	↓	↓
3	↓	1345	↓	↓	MW-35	↓	↓	↓	↓	↓	↓

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*
Number of Containers per Sample:

Laboratory Use Only
Cooler Present: ✓ ○ Drop Off
Seals Intact: ○ Pickup
Cooler Temperature: 3.2 °C Ice

Sampled by: [signature]

Comments: Please specify "Other" preservative and containers types in this space
All parameters in 310 CMR 19 except "in situ"
*Please filter metals

Dissolved Filtration
☒ Lab Filtered

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 5/5/22 1635	[signature] 5/6/22 1635		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)