December 1, 2023

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 22**
Parkerville Road Landfill
Southborough, Massachusetts
Pare Project No.: 18128.04

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 2023 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 in Figure 1.

Post-Closure Environmental Monitoring Program Overview

The Facility operated as a municipal solid waste landfill from the late-1930s through the mid-1970s. Concurrent with 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 in 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 22 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 quarterly. The locations of these sample points are depicted in Figure 2.

Groundwater and surface water sampling were performed by Pare Personnel on April 28, 2023. Prior to the groundwater sample collection, each well was gauged using a Solinst Water-Level Meter capable of measuring 1/100th of a foot (0.01') to determine the 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 28, 2023, 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 22 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. The 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:

- 1,4-Dioxane was present in above the RCGW-1 and the ORSG (0.3 ug/L both criteria) at MW-3S (0.721 ug/L detected) and MW-3D (0.583 ug/L detected);
- Iron was present at MW-2S (1.82 mg/L), MW-2D (9.25 mg/L), MW-3D (1.27 mg/L), and MW-4S (86 mg/L) above the SMCL (0.3 mg/L);
    - Manganese (up to 12.5 mg/L) and sodium (up to 384 mg/L) were present above 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);
- Chloride and the *in-situ* Total Dissolved Solids (TDS) values for MW-4S exceeded the SMCLs (Chloride: 544 mg/L detected vs 250 mg/L SMCL; TDS: 1,385 mg/L detected vs 500 mg/L SMCL); and

- The *in-situ* pH values obtained from MW-2S (9.67), MW-3D (9.13), and MW-4S (6.49) were outside of the SMCL acceptable range of 6.5 – 8.5 S.U.

Arsenic was detected in two (2) monitoring wells, MW-2D and MW-4S, at concentrations below the applicable criteria. 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 have 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 ug/L at MW-3S and 2.3 ug/L at MW-3D) were 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 2023 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 which 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. A summary of the landfill gas monitoring results is provided in Table 4.

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.

Analytical Data Useability

The project narratives for both laboratory reports identify non-conformance with MassDEP CAM protocols. The Laboratory Report No. 23D1028 indicated the following non-conformances:

1. 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.
2. A low biased continuing calibration for 1,4-dioxane (screen) which is a contaminant of concern at the landfill. A low bias would be expected to provide a result that may be lower than the actual concentration present. As 1,4-dioxane was also targeted in all samples *via* the more accurate EPA Method 8270D SIM, it is unlikely that more accurate results for the screening analysis would result in the identification of a new or substantially different condition. Hexachloroethane was also identified as having a low-biased continuing calibration differential but is not a contaminant of concern at the landfill.
3. A high biased continuing calibration was reported for chloromethane and dichlorodifluoromethane. A high bias may produce concentrations of targeted analytes that are greater than the actual values which would generally not be a concern for most targeted analytes. While chloromethane was not detected during this round of groundwater monitoring, it is a common groundwater contaminant at landfills, as is dichlorodifluoromethane to a lesser extent.
4. Blank Spike recovery was below the lower control limits for bromoform in both the matrix spike and matrix spike duplicate and for dibromochloromethane in the matrix spike duplicate. This indicates that the recovered quantity of the spiked analytes was below the established acceptable range, in both cases, between 70 and 130%, and consequently, the analytical results may show a low bias for these analytes. Both compounds were relatively close to the lower end of the range (Bromoform: 69% and 61%; Dibromochloromethane: 69%) and were well within the acceptable relative percent difference of 20%. As these compounds have not been detected in recent monitoring rounds, it is unlikely that a low bias has had a significant impact on these results.
5. Zinc was detected in method blank DE30106, at a concentration of 10.8 ug/L. This blank was used for quality control analyses associated with the surface water samples collected during this monitoring, and zinc was not detected in the method blank(s) used for QA/QC analyses associated with the groundwater samples. The surface water samples were flagged to indicate a high bias towards zinc, as the level of analyte in the method blank was greater than 10% of the level of analytes in the samples (10.8 ug/L in method blank vs 12.5 ug/L at SW-1 and 15.2 ug/L at SW-2). As indicated previously, a high bias is generally not a concern for most of the analytes targeted for this monitoring. Additionally, zinc was detected in both surface water samples in the previous monitoring round in concentrations that are generally consistent with those observed in the 2023 monitoring round (SW-1: 18.1 ug/L [2022] vs 12.5 ug/L [2023]; SW-2: 16.2 ug/L [2022] vs 15.2 ug/L [2023]).

No other compounds were detected in the method blanks during the analysis. Compounds identified during Round 22 that are commonly detected in groundwater and/or surface water at the landfill 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 metals routinely detected at the landfill were generally recovered in laboratory quality control tests with little apparent bias (dissolved metals were generally recovered at 100 ± 5%, slight high bias for silver [107-118%]; total metals were generally recovered at 100 ± 5%, slight low bias for mercury [85-89%]). VOC recoveries were generally low biased (most within 85 ± 10%), though several contaminants commonly found in groundwater at landfills exhibited slightly higher biases (acetone [120-125%], carbon disulfide [110-111%] methyl ethyl ketone/2-butanone [115-119%], and tetrahydrofuran [118-124%]). Additionally, the percent recovery of diethyl ether (ethyl ether), a known contaminant of concern at the landfill, indicates a slightly high bias (101-111%). The percent recovery for 1,4-dioxane *via* EPA Method 8270D SIM was slightly low (86-89%), but well within the acceptable recovery ranges and relative percent difference.

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 22nd round of surface water and groundwater sampling at the Parkerville Road Landfill and one (1) quarterly landfill soil gas screening on April 28, 2023. 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. Dissolved arsenic concentrations were compliant with the MCL and RCGW-1 at all groundwater sampling locations during the monitoring event performed in 2023.

Other compounds detected at the landfill include 1,4-dioxane and ethyl ether in groundwater at MW-3S and MW-3D, where the concentrations of 1,4-dioxane (0.721 ug/L at MW-3S and 0.583 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 22. 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 22nd 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 22nd 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, as was noted in prior reports. 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.

Overall, the results of water quality sampling during Round 22 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; no metals were present in excess of the MCL or RCGW-1 at any groundwater monitoring wells during this monitoring round.

The next round of annual Water Quality Monitoring will be performed in the Spring 2024. The next Soil Gas Monitoring event will be performed in the Summer 2023 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.

MCL = maximum contaminant level

RCGW-1 = groundwater standards

Very truly yours,

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

TPT/AWB/kji

Enclosures

Figure 1 – Locus Map
Figure 2 – Sample Location Plan
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
Appendix A – Field Sampling Data Sheets
Appendix B – Laboratory Analytical Reports

cc: William Cundiff, P.E., Superintendent, Southborough Department of Public Works
Heather Alker, MD, MPH, Public Health Director, Southborough Board of Health
Mark Purple, Southborough Town Administrator

FIGURES

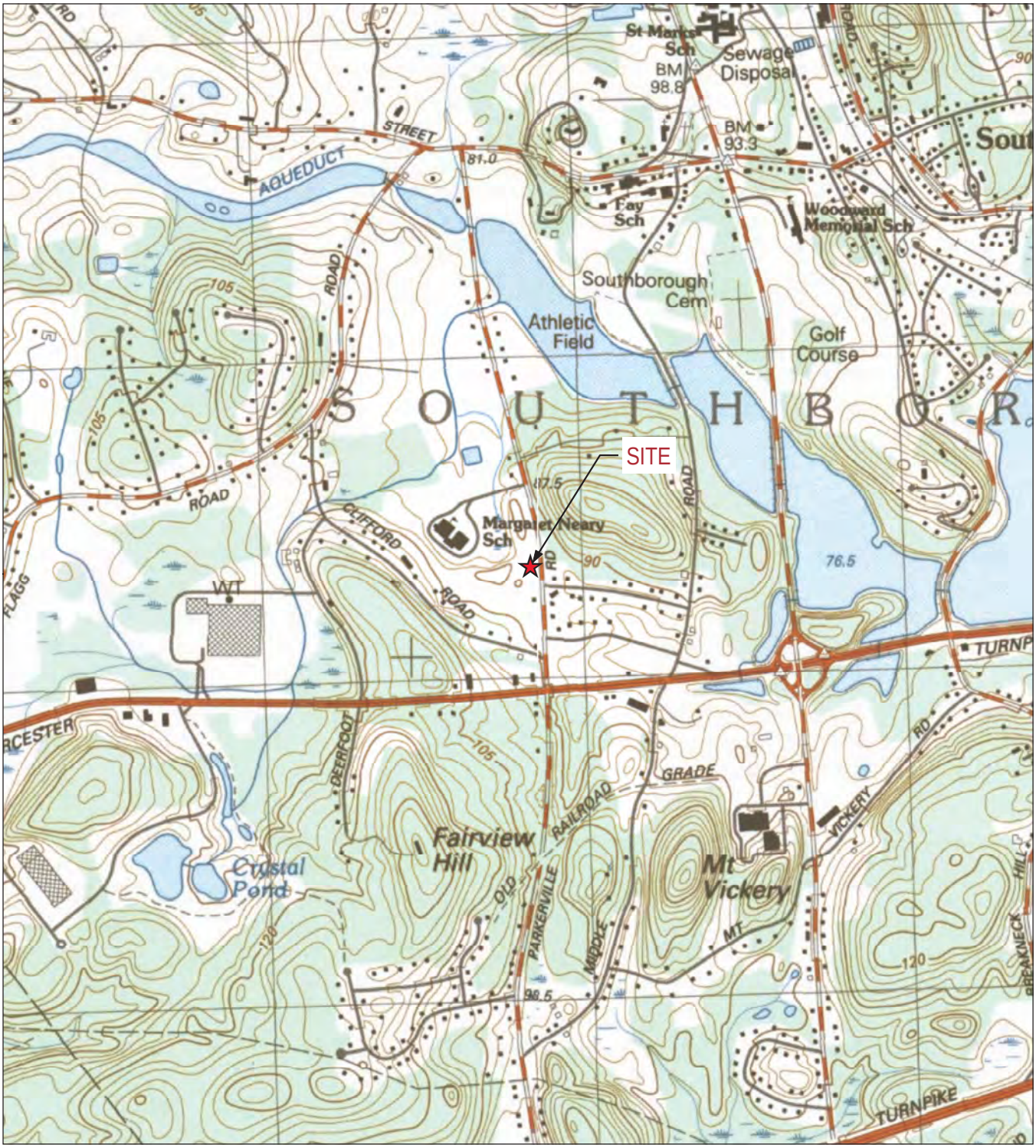


FIGURE 1

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

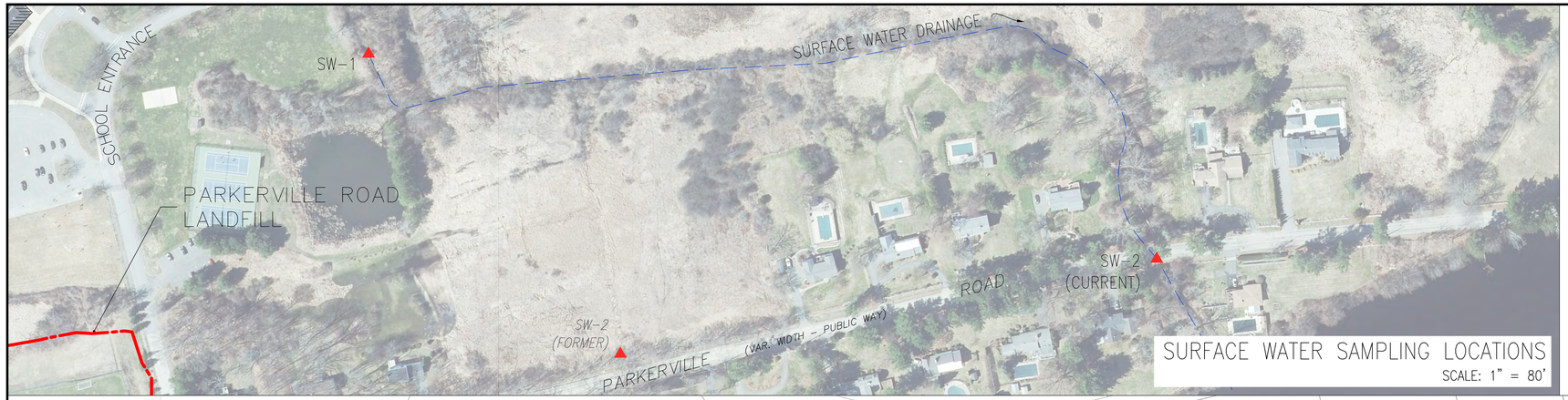
"MARLBOROUGH, MASSACHUSETTS" QUADRANGLE

★ SITE LOCATION

SITE LOCUS MAP

PARKERVILLE ROAD LANDFILL
SOUTHBOROUGH, MA

PARE PROJECT: 18128.02
DATE: JAN 2020



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 ___

TABLES

Table 2
Summary of Analytical Results for Surface Water
Monitoring Year 2023, Round 22
Parkerville Road Landfill
Southborough, Massachusetts

Sample ID	Units	MassDEP Reportable Concentration	Human Health Criteria			Aquatic Life Criteria		SW-1	Aquatic Life Criteria		SW-2
Analyte		RCGW-1	Consumption of Water & Organisms[A]	Consumption of Organisms Only	Organoleptic Effects Criteria[B]	Freshwater Acute (CMC)[C]	Freshwater Chronic (CCC)[D]	4/28/2023	Freshwater Acute (CMC)[C]	Freshwater Chronic (CCC)[D]	4/28/2023
INDICATOR PARAMETERS											
Alkalinity, Total	mg $CaCO_3$/L	*NE*	*NE*	*NE*	*NE*	*NE*	< 20	**36**	*NE*	< 20	**39.8**
Chloride	mg/L	*NE*	250	*NE*	250	860	230	**138**	860	230	**141**
Chemical Oxygen Demand	mg/L	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	**28**	*NE*	*NE*	**23**
Cyanide, PAC	mg/L	0.03	0.004	0.4	*NE*	0.022	0.0052	*<0.005*	0.022	0.0052	*<0.005*
Cyanide, Total	mg/L	0.03	0.004	0.4	*NE*	0.022	0.0052	*<0.005*	0.022	0.0052	*<0.005*
Dissolved Oxygen [1]	mg/L	*NE*	< 6	< 5	*NE*	< 6	< 6	**9.89**	< 6	< 6	**11.01**
Nitrogen, Nitrate	mg/L	*NE*	10	*NE*	*NE*	*NE*	*NE*	**0.808**	*NE*	*NE*	**0.849**
pH [1]	S.U.	*NE*	5.0 - 9.0	6.5 - 8.3	6.5 - 8.5	*NE*	6.5 - 8.3	**7.61**	*NE*	6.5 - 8.3	**7.63**
Sulfate	mg/L	*NE*	250	*NE*	250	*NE*	*NE*	**10.8**	*NE*	*NE*	**11.4**
Solids, Total Dissolved [1]	mg/L	*NE*	250	*NE*	500	*NE*	*NE*	**425**	*NE*	*NE*	**431**
Specific Conductivity [1]	mS/cm	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	**0.516**	*NE*	*NE*	**0.527**
Temperature [1]	°C	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	**15.8**	*NE*	*NE*	**16.5**
METALS, DISSOLVED											
Arsenic	mg/L	0.01	0.000018	0.00014	*NE*	0.34	0.15	*<0.0025*	0.34	0.15	*<0.0025*
Barium	mg/L	2	1	*NE*	*NE*	*NE*	*NE*	**0.0251**	*NE*	*NE*	**0.0251**
Cadmium [2]	mg/L	0.004	0.005	*NE*	*NE*	*0.00069*	*0.69097*	*<0.0002*	*0.00076*	*0.00036*	*<0.0002*
Calcium	mg/L	*NE*	*NE*	*NE*	*NE*	*NE*	*NE*	**14.4**	*NE*	*NE*	**15.9**
Chromium	mg/L	0.1	0.1	*NE*	*NE*	0.016	0.011	*<0.002*	0.016	0.011	*<0.002*
Copper [3]	mg/L	10	1.3	*NE*	1	0.0257	0.0181	*<0.002*	0.0257	0.0181	*<0.002*
Iron	mg/L	*NE*	*NE*	*NE*	0.3	*NE*	1	**0.535**	*NE*	1	**0.519**
Lead [2]	mg/L	0.01	0.015	*NE*	*NE*	*0.02090*	*0.00081*	*<0.002*	*0.02338*	*0.00091*	*<0.002*
Manganese	mg/L	*NE*	0.05	0.1	0.05	*NE*	*NE*	**0.0252**	*NE*	*NE*	**0.0724**
Mercury	mg/L	0.002	0.002	*NE*	*NE*	0.0014	0.00077	*<0.0002*	0.0014	0.00077	*<0.0002*
Selenium	mg/L	0.05	0.05	4.2	*NE*	0.005	0.002	*<0.005*	0.005	0.002	*<0.005*
Silver [2]	mg/L	0.007	*NE*	*NE*	0.1	*0.00055*	*NE*	*<0.0005*	*0.00066*	*NE*	*<0.0005*
Sodium	mg/L	*NE*	250	*NE*	20	*NE*	*NE*	**85.5**	*NE*	*NE*	**88.1**
Zinc [2]	mg/L	0.9	7.4	26	5	*0.04931*	*0.04971*	**0.0125**	*0.05368*	*0.05412*	**0.0152**
VOCS (8260)											
No VOCs detected above laboratory reporting limits											
MCP 1,4-Dioxane by 8270D-SIM											
1,4-Dioxane	ug/L	0.3	*NE*	*NE*	0.3	*NE*	*NE*	*<0.25*	*NE*	*NE*	*<.025*

Notes:

Analytical data was compared to the MassDEP Surface Water Standards (314 CMR 4.00, amended November 2021) 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] 314 CMR 4.00 Table 29, supplemented with the Maximum Contaminant Levels (MCLs) for drinking water promulgated at 310 CMR 22.00, as available.

[B] 314 CMR 4.00 Table 30, supplemented with the Office of Research and Standards' Drinking Water Guidelines (ORSG), or the Secondary Maximum Contaminant Levels (SMCLs) promulgated at 310 CMR 22.07D, as available.

[C] 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.

[D] 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] Freshwater CMC and CCC are hardness-dependent calculations using the criteria specified at 314 CMR 4.00 Table 29a.

[3] Site-specific aquatic life threshold values for the Assabet River portion of the Sudbury, Assabet, and Concord (SuAsCo) River Basin under 314 CMR 4.00 Table 28 were used for comparison to dissolved copper concentrations.

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 2023, Round 22
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		4/28/2023	4/28/2023	4/28/2023	4/28/2023	4/28/2023	4/28/2023	MCL[A]	ORSG[B]	RCGW-1[C]	SMCL[D]
IN-SITU *FIELD SCREENING*											
SWL (from PVC)	Feet	3.80	2.20	8.90	4.45	8.60	11.80	NE	NE	NE	NE
pH	S.U.	**9.67**	7.02	6.87	**9.13**	**6.49**	8.31	NE	NE	NE	6.5 - 8.5
Temperature	°C	9.1	10.2	12.5	12.2	9.8	12.2	NE	NE	NE	NE
Conductivity	mS/cm	0.523	0.528	0.761	0.532	2.252	0.072	NE	NE	NE	NE
Dissolved Oxygen	mg/L	0.42	3.46	0.94	0.17	4.39	10.3	NE	NE	NE	NE
INDICATOR PARAMETERS											
Alkalinity, Total	mg $CaCO_3$/L	102.8	85.8	189	169.5	65.5	23.4	NE	NE	NE	NE
Chloride	mg/L	97.7	124	76	58.4	**544**	<3.0	NE	NE	NE	250
Chemical Oxygen Demand	mg/L	<10	<10	14	74	85	11	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	0.106	0.0319	<0.03	<0.03	<0.21	<0.03	10	NE	NE	NE
Sulfate	mg/L	16.6	16.8	<5	10.3	<5	<0.005	NE	NE	NE	250
Solids, Total Dissolved	mg/L	322	325	468	327	**1385**	44	NE	NE	NE	500
METALS, DISSOLVED											
Arsenic	mg/L	<0.005	0.0086	<0.005	<0.005	0.0078	<0.005	0.01	NE	0.01	NE
Barium	mg/L	<0.05	<0.05	0.154	0.0852	0.14	<0.05	2	NE	2	NE
Cadmium	mg/L	<0.004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.005	NE	0.004	NE
Calcium	mg/L	41.1	34.3	75.6	67.8	26.2	9.37	NE	NE	NE	NE
Chromium	mg/L	<0.01	<0.01	<0.01	<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	**1.82**	**9.25**	0.232	**1.27**	**86**	<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	**1.44**	**3.97**	**12.5**	**4.89**	**1.11**	<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	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NE	NE	0.007	0.1
Sodium	mg/L	**32.2**	**48.2**	**48.7**	**39.3**	**384**	<5.0	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	2.3	<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	**0.721**	**0.583**	<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, amended October 2020) 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, amended Winter 2020.
   (C) RCGW-1 = Reportable Concentration in Groundwater, from 310 CMR 40.1600, amended December 2019.
   (D) SMCL = DEP Secondary Maximum Contaminant Levels, amended Winter 2020. 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.
NE = No limit established for the targeted analyte under the specified regulatory criteria or guidance.
SWL = Surface Water Level (depth to water from the PVC riser).

= 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 regulatory criteria and/or guideline, identified by the combination of colors used.

TABLE 4.

PARKERVILLE ROAD LANDFILL DATE: 4/28/2023

TOWN OF SOUTHBOROUGH, MASSACHUSETTS WEATHER: ~65°F partly cloudy to sunny

LANDFILL SOIL GAS MONITORING RESULTS

PROBE	INSTALLATION TYPE	TIME	PRESS. (inHg)	CH_4 (%)	LEL (%)	CO (%)	O2 (%)	H_2S (ppm)	PID (ppm)	NOTES
GAS MONITORING WELLS AND SOIL GAS WELL PROBE										
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	7:32	29.11	0.0	0.0	0.0	20.9	0.0	0.0	
SP-4C	Staked Probe	--	--	--	--	--	--	--	--	Inaccessible
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	7:52	29.12	0.0	0.0	0.0	20.9	0.0	0.0	
SP-8A	Flush Mounted Probe	--	--	--	--	--	--	--	--	Destroyed
SP-9A	Staked Probe	--	--	--	--	--	--	--	--	Not found
SP-10A	Staked Probe	8:24	29.12	0.0	0.0	0.0	20.9	0.0	0.0	
SP-11A	Staked Probe	8:27	29.12	0.0	0.0	0.0	20.7	0.0	0.0	
SP-12A	Flush Mounted Probe	8:32	29.12	0.0	0.0	0.0	20.9	0.0	0.0	
SP-12B	Staked Probe	8:41	29.12	0.0	0.0	0.0	20.9	0.0	0.0	
SP-13A	Flush Mounted Probe	8:54	29.12	0.0	0.0	0.0	20.9	0.0	0.0	
SP-13B	Flush Mounted Probe	9:02	29.12	0.0	0.0	0.0	20.9	0.0	0.0	
SP-14A	Staked Probe	--	--	--	--	--	--	--	--	Not found
SP-15A	Flush Mounted Probe	--	--	--	--	--	--	--	--	Not found
Ambient	Parking Lot	7:28	29.11	0.0	0.0	0.0	20.9	0.0	0.0	

Notes:

EQUIPMENT: MultiRAE Portable Multi-Gas Detector

Bold and shaded values indicate a reportable concentration.

APPENDIX A

Field Sampling Data Sheets

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 4/29/2023
WEATHER: 60°F, sunny

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

PURGE DATA

DEPTH TO WATER (DTW): 3.80 feet
TOTAL WELL DEPTH (DTB): 15.42 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:	1426	1432	1435	1438	1440				
pH:	10.16	9.61	9.64	9.65	9.67				
Sp.Con. (mS/cm):	0.529	0.525	0.525	0.523	0.523				
Temp (°C):	9.10	9.10	9.10	9.10	9.10				
D.O. (mg/L):	0.33	0.37	0.44	0.43	0.42				

Notes:

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

Samples were collected at 1440

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 4/29/2023
WEATHER: 60°F, sunny

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

PURGE DATA

DEPTH TO WATER (DTW): 2.20 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:	1446	1451	1454	1459	1505	1510			
pH:	7.07	7.06	7.04	7.04	7.03	7.02			
Sp.Con. (mS/cm):	0.519	0.521	0.524	0.526	0.526	0.528			
Temp (°C):	10.50	10.30	10.30	10.20	10.20	10.20			
D.O. (mg/L):	4.26	3.91	3.68	3.51	3.48	3.46			

Notes:

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

Samples were collected at 1510

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 4/29/2023
WEATHER: 60°F, sunny

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

PURGE DATA

DEPTH TO WATER (DTW): 8.90 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): 20 ±

FIELD TESTING RESULTS

Time:	1154	1159	1203	1206	1210				
pH:	6.93	6.90	6.88	6.87	6.87				
Sp.Con. (mS/cm):	0.757	0.759	0.761	0.761	0.761				
Temp (°C):	12.20	12.40	12.50	12.50	12.50				
D.O. (mg/L):	1.53	1.33	0.93	0.93	0.94				

Notes:
Samples were relatively murky/cloudy
Samples were collected at 1210

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 4/29/2023
WEATHER: 60°F, sunny

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

PURGE DATA

DEPTH TO WATER (DTW): 4.45 feet
TOTAL WELL DEPTH (DTB): 23.64 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:	1241	1244	1249	1254	1301	1305			
pH:	9.41	9.34	9.32	9.14	9.14	9.13			
Sp.Con. (mS/cm):	0.513	0.520	0.524	0.530	0.531	0.532			
Temp (°C):	12.10	12.20	12.20	12.30	12.20	12.20			
D.O. (mg/L):	0.62	0.51	0.28	0.16	0.17	0.17			

Notes:

clear, slight sulfur odor, sampled at 1305

Tubing needs to be replaced for next sampling event

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 4/29/2023
WEATHER: 60°F, sunny

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

PURGE DATA

DEPTH TO WATER (DTW): 8.60 feet
TOTAL WELL DEPTH (DTB): 14.89 feet
VOLUME PURGED: 3.00 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): 20 ±

FIELD TESTING RESULTS

Time:	848	852	855	902	905				
pH:	6.42	6.47	6.48	6.48	6.49				
Sp.Con. (mS/cm):	2.574	2.463	2.260	2.254	2.252				
Temp (°C):	9.70	9.80	9.80	9.80	9.80				
D.O. (mg/L):	4.86	4.69	4.35	4.37	4.39				

Notes:
clear, sampled at 0905

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 4/29/2023
WEATHER: 60°F, sunny

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

PURGE DATA

DEPTH TO WATER (DTW): 11.80 feet
TOTAL WELL DEPTH (DTB): 37.68 feet
VOLUME PURGED: 4.50 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): 40 ±

FIELD TESTING RESULTS

Time:	951	957	1001	1010	1024	1033	1038	1048	1050
pH:	7.06	7.07	7.31	7.47	7.86	8.16	8.38	8.31	8.31
Sp.Con. (mS/cm):	0.060	0.062	0.066	0.068	0.071	0.072	0.073	0.072	0.072
Temp (°C):	11.30	11.50	11.70	11.90	11.90	12.10	12.10	12.20	12.2
D.O. (mg/L):	10.65	8.80	9.30	9.82	10.22	10.33	10.60	10.40	10.30

Notes:

Samples were noted as generally clear and low in turbidity based on visual inspection.
Samples were collected at 1050

FIELD SAMPLING DATA SHEET

PROJECT NAME: PARKERVILLE ROAD LANDFILL
PROJECT NO.: 18128.02
DATE: 4/29/2023
WEATHER: 60°F, sunny

FIELD TESTING RESULTS:

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

pH: 7.61 S.U.
SPEC. COND: 0.516 mS/cm
TEMPERATURE: 15.8 °C
D.O.: 9.89 mg/L

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

pH: 7.63 S.U.
SPEC. COND: 0.527 mS/cm
TEMPERATURE: 16.5 °C
D.O.: 11.01 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 (18128.03)
ESS Laboratory Work Order Number: 23D1028

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 12:47 pm, May 17, 2023

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: 23D1028

SAMPLE RECEIPT

The following samples were received on April 28, 2023 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.

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

Lab Number	Sample Name	Matrix	Analysis
23D1028-01	MW-2S	Aqueous	353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
23D1028-02	MW-2D	Aqueous	353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
23D1028-03	MW-3S	Aqueous	353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
23D1028-04	MW-3D	Aqueous	353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
23D1028-05	MW-4S	Aqueous	353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
23D1028-06	MW-4D	Aqueous	353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
23D1028-07	SW-1	Aqueous	353.2, 5220D, 6010C, 6020A, 7010, 7470A, 8260B, 8270D SIM, 9014, 9038, 9250, MA PAC
23D1028-08	SW-2	Aqueous	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: 23D1028

PROJECT NARRATIVE

8260B Volatile Organic Compounds

D3E0026-CCV1	**Continuing Calibration %Diff/Drift is above control limit (CD+).**
	Chloromethane (23% @ 20%), Dichlorodifluoromethane (26% @ 20%)
D3E0026-CCV1	**Continuing Calibration %Diff/Drift is below control limit (CD-).**
	1,4-Dioxane - Screen (41% @ 20%), Hexachloroethane (23% @ 20%)
DE30129-BS1	**Blank Spike recovery is below lower control limit (B-).**
	Bromoform (69% @ 70-130%)
DE30129-BSD1	**Blank Spike recovery is below lower control limit (B-).**
	Bromoform (61% @ 70-130%), Dibromochloromethane (69% @ 70-130%)

Dissolved Metals

23D1028-07	**Present in Method Blank (B).**
	Zinc
23D1028-08	**Present in Method Blank (B).**
	Zinc

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: 23D1028

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: 23D1028

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **23D1028-01 through 23D1028-08**

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

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: _____ Date: May 16, 2023

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2S
Date Sampled: 04/28/23 14:40
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-01
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	CEV	05/15/23 17:37	10	10	DE30108
Barium	ND (50.0)		6010C		1	NAR	05/05/23 16:26	10	10	DE30108
Cadmium	ND (0.4)		6020A		1	BJV	05/01/23 11:14	10	10	DE30108
Calcium	**41100** (200)		6010C		1	CEV	05/10/23 18:33	10	10	DE30108
Chromium	ND (10.0)		6010C		1	NAR	05/05/23 16:26	10	10	DE30108
Copper	ND (20.0)		6010C		1	NAR	05/05/23 16:26	10	10	DE30108
Iron	**1820** (100)		6010C		1	NAR	05/05/23 16:26	10	10	DE30108
Lead	ND (1.0)		6020A		1	BJV	05/01/23 11:14	10	10	DE30108
Manganese	**1440** (20.0)		6010C		1	NAR	05/05/23 16:26	10	10	DE30108
Mercury	ND (0.20)		7470A		1	YIV	05/02/23 14:41	20	40	DE30216
Selenium	ND (5.0)		6020A		1	BJV	05/01/23 11:14	10	10	DE30108
Silver	ND (5.0)		6010C		1	CEV	05/10/23 18:33	10	10	DE30108
Sodium	**32200** (5000)		6010C		1	NAR	05/05/23 16:26	10	10	DE30108
Zinc	ND (50.0)		6010C		1	NAR	05/05/23 16:26	10	10	DE30108

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2S
Date Sampled: 04/28/23 14:40
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-01
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	05/02/23 5:12	D3E0026	DE30129
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,1-Dichloroethane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,1-Dichloroethene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,1-Dichloropropene	ND (2.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,2-Dibromoethane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,2-Dichloroethane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,3-Dichloropropane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
1,4-Dioxane - Screen	ND (500)		8260B		1	05/02/23 5:12	D3E0026	DE30129
2,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
2-Butanone	ND (10.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
2-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
2-Hexanone	ND (10.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
4-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
4-Isopropyltoluene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Acetone	ND (10.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Benzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Bromobenzene	ND (2.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2S
Date Sampled: 04/28/23 14:40
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Bromodichloromethane	ND (0.6)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Bromoform	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Bromomethane	ND (2.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Carbon Disulfide	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Carbon Tetrachloride	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Chlorobenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Chloroethane	ND (2.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Chloroform	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Chloromethane	ND (2.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Dibromochloromethane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Dibromomethane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Diethyl Ether	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Di-isopropyl ether	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Ethylbenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Hexachlorobutadiene	ND (0.6)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Hexachloroethane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Isopropylbenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Methylene Chloride	ND (2.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Naphthalene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
n-Butylbenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
n-Propylbenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
sec-Butylbenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Styrene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
tert-Butylbenzene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2S
Date Sampled: 04/28/23 14:40
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Tetrahydrofuran	ND (5.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Toluene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Trichloroethene	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Trichlorofluoromethane	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Vinyl Chloride	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Xylene O	ND (1.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Xylene P,M	ND (2.0)		8260B		1	05/02/23 5:12	D3E0026	DE30129
Xylenes (Total)	ND (2.00)		8260B		1	05/02/23 5:12		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*111 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*105 %*		*70-130*
Surrogate: Toluene-d8	*95 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2S
Date Sampled: 04/28/23 14:40
Percent Solids: N/A
Initial Volume: 500ml
Final Volume: 0.5ml
Extraction Method: 3535A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 5/1/23 16:22

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	05/02/23 1:26	D3E0024	DE30158

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*42 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2S
Date Sampled: 04/28/23 14:40
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-01
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Chemical Oxygen Demand	ND (10)		5220D		1	EAM	05/01/23 16:00	mg/L	DE30145
Chloride	**97.7** (3.0)		9250		1	JLK	05/01/23 20:43	mg/L	DE30148
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/02/23 11:45	ug/L	DE30211
Nitrate as N	**0.106** (0.0300)		353.2		1	EAM	04/28/23 20:46	mg/L	[CALC]
Sulfate	**16.6** (5.0)		9038		1	JLK	04/28/23 19:48	mg/L	DD32847
Total Cyanide	ND (5.0)		9014		1	EEM	05/01/23 12:25	ug/L	DE30120

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2D
Date Sampled: 04/28/23 15:10
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-02
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	**8.6** (5.0)		7010		1	CEV	05/15/23 17:59	10	10	DE30108
Barium	ND (50.0)		6010C		1	NAR	05/05/23 16:28	10	10	DE30108
Cadmium	ND (0.4)		6020A		1	BJV	05/01/23 11:19	10	10	DE30108
Calcium	**34300** (200)		6010C		1	CEV	05/10/23 18:36	10	10	DE30108
Chromium	ND (10.0)		6010C		1	NAR	05/05/23 16:28	10	10	DE30108
Copper	ND (20.0)		6010C		1	NAR	05/05/23 16:28	10	10	DE30108
Iron	**9250** (100)		6010C		1	NAR	05/05/23 16:28	10	10	DE30108
Lead	ND (1.0)		6020A		1	BJV	05/01/23 11:19	10	10	DE30108
Manganese	**3970** (20.0)		6010C		1	NAR	05/05/23 16:28	10	10	DE30108
Mercury	ND (0.20)		7470A		1	YIV	05/02/23 14:43	20	40	DE30216
Selenium	ND (5.0)		6020A		1	BJV	05/01/23 11:19	10	10	DE30108
Silver	ND (5.0)		6010C		1	CEV	05/10/23 18:36	10	10	DE30108
Sodium	**48200** (5000)		6010C		1	NAR	05/05/23 16:28	10	10	DE30108
Zinc	ND (50.0)		6010C		1	NAR	05/05/23 16:28	10	10	DE30108

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2D
Date Sampled: 04/28/23 15:10
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-02
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	05/02/23 5:39	D3E0026	DE30129
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,1-Dichloroethane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,1-Dichloroethene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,1-Dichloropropene	ND (2.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,2-Dibromoethane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,2-Dichloroethane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,3-Dichloropropane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
1,4-Dioxane - Screen	ND (500)		8260B		1	05/02/23 5:39	D3E0026	DE30129
2,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
2-Butanone	ND (10.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
2-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
2-Hexanone	ND (10.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
4-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
4-Isopropyltoluene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Acetone	ND (10.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Benzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Bromobenzene	ND (2.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2D
Date Sampled: 04/28/23 15:10
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Bromodichloromethane	ND (0.6)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Bromoform	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Bromomethane	ND (2.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Carbon Disulfide	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Carbon Tetrachloride	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Chlorobenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Chloroethane	ND (2.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Chloroform	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Chloromethane	ND (2.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Dibromochloromethane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Dibromomethane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Diethyl Ether	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Di-isopropyl ether	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Ethylbenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Hexachlorobutadiene	ND (0.6)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Hexachloroethane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Isopropylbenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Methylene Chloride	ND (2.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Naphthalene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
n-Butylbenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
n-Propylbenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
sec-Butylbenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Styrene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
tert-Butylbenzene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2D
Date Sampled: 04/28/23 15:10
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Tetrahydrofuran	ND (5.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Toluene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Trichloroethene	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Trichlorofluoromethane	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Vinyl Chloride	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Xylene O	ND (1.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Xylene P,M	ND (2.0)		8260B		1	05/02/23 5:39	D3E0026	DE30129
Xylenes (Total)	ND (2.00)		8260B		1	05/02/23 5:39		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*111 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*104 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2D
Date Sampled: 04/28/23 15:10
Percent Solids: N/A
Initial Volume: 500ml
Final Volume: 0.5ml
Extraction Method: 3535A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 5/1/23 16:22

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	05/02/23 1:52	D3E0024	DE30158

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*37 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-2D
Date Sampled: 04/28/23 15:10
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-02
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Chemical Oxygen Demand	ND (10)		5220D		1	EAM	05/01/23 16:00	mg/L	DE30145
Chloride	**124** (15.0)		9250		5	JLK	05/01/23 21:02	mg/L	DE30148
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/02/23 11:45	ug/L	DE30211
Nitrate as N	**0.0319** (0.0300)		353.2		1	EAM	04/28/23 20:47	mg/L	[CALC]
Sulfate	**16.8** (5.0)		9038		1	JLK	04/28/23 19:48	mg/L	DD32847
Total Cyanide	ND (5.0)		9014		1	EEM	05/01/23 12:25	ug/L	DE30120

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3S
Date Sampled: 04/28/23 12:10
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-03
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	CEV	05/15/23 18:05	10	10	DE30108
Barium	**154** (50.0)		6010C		1	NAR	05/05/23 16:30	10	10	DE30108
Cadmium	ND (0.4)		6020A		1	BJV	05/01/23 11:25	10	10	DE30108
Calcium	**75600** (200)		6010C		1	CEV	05/10/23 18:38	10	10	DE30108
Chromium	ND (10.0)		6010C		1	NAR	05/05/23 16:30	10	10	DE30108
Copper	ND (20.0)		6010C		1	NAR	05/05/23 16:30	10	10	DE30108
Iron	**232** (100)		6010C		1	NAR	05/05/23 16:30	10	10	DE30108
Lead	ND (1.0)		6020A		1	BJV	05/01/23 11:25	10	10	DE30108
Manganese	**12500** (20.0)		6010C		1	NAR	05/05/23 16:30	10	10	DE30108
Mercury	ND (0.20)		7470A		1	YIV	05/02/23 14:50	20	40	DE30216
Selenium	ND (5.0)		6020A		1	BJV	05/01/23 11:25	10	10	DE30108
Silver	ND (5.0)		6010C		1	CEV	05/10/23 18:38	10	10	DE30108
Sodium	**48700** (5000)		6010C		1	NAR	05/05/23 16:30	10	10	DE30108
Zinc	ND (50.0)		6010C		1	NAR	05/05/23 16:30	10	10	DE30108

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3S
Date Sampled: 04/28/23 12:10
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-03
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	05/02/23 6:06	D3E0026	DE30129
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,1-Dichloroethane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,1-Dichloroethene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,1-Dichloropropene	ND (2.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,2-Dibromoethane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,2-Dichloroethane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,3-Dichloropropane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
1,4-Dioxane - Screen	ND (500)		8260B		1	05/02/23 6:06	D3E0026	DE30129
2,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
2-Butanone	ND (10.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
2-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
2-Hexanone	ND (10.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
4-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
4-Isopropyltoluene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Acetone	ND (10.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Benzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Bromobenzene	ND (2.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3S
Date Sampled: 04/28/23 12:10
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Bromodichloromethane	ND (0.6)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Bromoform	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Bromomethane	ND (2.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Carbon Disulfide	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Carbon Tetrachloride	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Chlorobenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Chloroethane	ND (2.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Chloroform	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Chloromethane	ND (2.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Dibromochloromethane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Dibromomethane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Diethyl Ether	**3.0** (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Di-isopropyl ether	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Ethylbenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Hexachlorobutadiene	ND (0.6)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Hexachloroethane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Isopropylbenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Methylene Chloride	ND (2.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Naphthalene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
n-Butylbenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
n-Propylbenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
sec-Butylbenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Styrene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
tert-Butylbenzene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3S
Date Sampled: 04/28/23 12:10
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Tetrahydrofuran	ND (5.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Toluene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Trichloroethene	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Trichlorofluoromethane	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Vinyl Chloride	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Xylene O	ND (1.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Xylene P,M	ND (2.0)		8260B		1	05/02/23 6:06	D3E0026	DE30129
Xylenes (Total)	ND (2.00)		8260B		1	05/02/23 6:06		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*107 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*105 %*		*70-130*
Surrogate: Toluene-d8	*92 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3S
Date Sampled: 04/28/23 12:10
Percent Solids: N/A
Initial Volume: 500ml
Final Volume: 0.5ml
Extraction Method: 3535A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 5/1/23 16:22

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

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	**0.721** (0.250)		8270D SIM		1	05/02/23 2:17	D3E0024	DE30158

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*56 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3S
Date Sampled: 04/28/23 12:10
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-03
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Chemical Oxygen Demand	**14** (10)		5220D		1	EAM	05/01/23 16:00	mg/L	DE30145
Chloride	**76.0** (3.0)		9250		1	JLK	05/01/23 20:47	mg/L	DE30148
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/02/23 11:45	ug/L	DE30211
Nitrate as N	ND (0.0300)		353.2		1	EAM	04/28/23 20:53	mg/L	[CALC]
Sulfate	ND (5.0)		9038		1	JLK	04/28/23 19:48	mg/L	DD32847
Total Cyanide	ND (5.0)		9014		1	EEM	05/01/23 12:25	ug/L	DE30120

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3D
Date Sampled: 04/28/23 13:05
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-04
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	CEV	05/15/23 18:11	10	10	DE30108
Barium	**85.2** (50.0)		6010C		1	NAR	05/05/23 16:39	10	10	DE30108
Cadmium	ND (0.4)		6020A		1	BJV	05/01/23 11:31	10	10	DE30108
Calcium	**67800** (200)		6010C		1	CEV	05/10/23 18:40	10	10	DE30108
Chromium	ND (10.0)		6010C		1	NAR	05/05/23 16:39	10	10	DE30108
Copper	ND (20.0)		6010C		1	NAR	05/05/23 16:39	10	10	DE30108
Iron	**1270** (100)		6010C		1	NAR	05/05/23 16:39	10	10	DE30108
Lead	ND (1.0)		6020A		1	BJV	05/01/23 11:31	10	10	DE30108
Manganese	**4890** (20.0)		6010C		1	NAR	05/05/23 16:39	10	10	DE30108
Mercury	ND (0.20)		7470A		1	YIV	05/02/23 14:52	20	40	DE30216
Selenium	ND (5.0)		6020A		1	BJV	05/01/23 11:31	10	10	DE30108
Silver	ND (5.0)		6010C		1	CEV	05/10/23 18:40	10	10	DE30108
Sodium	**39300** (5000)		6010C		1	NAR	05/05/23 16:39	10	10	DE30108
Zinc	ND (50.0)		6010C		1	NAR	05/05/23 16:39	10	10	DE30108

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3D
Date Sampled: 04/28/23 13:05
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-04
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	05/02/23 6:32	D3E0026	DE30129
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,1-Dichloroethane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,1-Dichloroethene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,1-Dichloropropene	ND (2.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,2-Dibromoethane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,2-Dichloroethane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,3-Dichloropropane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
1,4-Dioxane - Screen	ND (500)		8260B		1	05/02/23 6:32	D3E0026	DE30129
2,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
2-Butanone	ND (10.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
2-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
2-Hexanone	ND (10.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
4-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
4-Isopropyltoluene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Acetone	ND (10.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Benzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Bromobenzene	ND (2.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3D
Date Sampled: 04/28/23 13:05
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-04
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Bromodichloromethane	ND (0.6)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Bromoform	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Bromomethane	ND (2.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Carbon Disulfide	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Carbon Tetrachloride	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Chlorobenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Chloroethane	ND (2.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Chloroform	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Chloromethane	ND (2.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Dibromochloromethane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Dibromomethane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Diethyl Ether	**2.3** (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Di-isopropyl ether	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Ethylbenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Hexachlorobutadiene	ND (0.6)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Hexachloroethane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Isopropylbenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Methylene Chloride	ND (2.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Naphthalene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
n-Butylbenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
n-Propylbenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
sec-Butylbenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Styrene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
tert-Butylbenzene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3D
Date Sampled: 04/28/23 13:05
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-04
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Tetrahydrofuran	ND (5.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Toluene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Trichloroethene	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Trichlorofluoromethane	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Vinyl Chloride	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Xylene O	ND (1.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Xylene P,M	ND (2.0)		8260B		1	05/02/23 6:32	D3E0026	DE30129
Xylenes (Total)	ND (2.00)		8260B		1	05/02/23 6:32		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*112 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*106 %*		*70-130*
Surrogate: Toluene-d8	*94 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3D
Date Sampled: 04/28/23 13:05
Percent Solids: N/A
Initial Volume: 500ml
Final Volume: 0.5ml
Extraction Method: 3535A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-04
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 5/1/23 16:22

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

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	**0.583** (0.250)		8270D SIM		1	05/02/23 2:43	D3E0024	DE30158

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*47 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-3D
Date Sampled: 04/28/23 13:05
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-04
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Chemical Oxygen Demand	**74** (10)		5220D		1	EAM	05/01/23 16:00	mg/L	DE30145
Chloride	**58.4** (3.0)		9250		1	JLK	05/01/23 20:48	mg/L	DE30148
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/02/23 11:45	ug/L	DE30211
Nitrate as N	ND (0.0300)		353.2		1	EAM	04/28/23 20:53	mg/L	[CALC]
Sulfate	**10.3** (5.0)		9038		1	JLK	04/28/23 19:48	mg/L	DD32847
Total Cyanide	ND (5.0)		9014		1	EEM	05/01/23 12:25	ug/L	DE30120

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4S
Date Sampled: 04/28/23 09:05
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-05
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	**7.8** (5.0)		7010		1	CEV	05/15/23 18:17	10	10	DE30108
Barium	**140** (50.0)		6010C		1	NAR	05/05/23 16:41	10	10	DE30108
Cadmium	ND (0.4)		6020A		1	BJV	05/01/23 11:37	10	10	DE30108
Calcium	**26200** (200)		6010C		1	CEV	05/10/23 18:42	10	10	DE30108
Chromium	ND (10.0)		6010C		1	NAR	05/05/23 16:41	10	10	DE30108
Copper	ND (20.0)		6010C		1	NAR	05/05/23 16:41	10	10	DE30108
Iron	**86000** (100)		6010C		1	NAR	05/05/23 16:41	10	10	DE30108
Lead	ND (1.0)		6020A		1	BJV	05/01/23 11:37	10	10	DE30108
Manganese	**1110** (20.0)		6010C		1	NAR	05/05/23 16:41	10	10	DE30108
Mercury	ND (0.20)		7470A		1	YIV	05/02/23 14:54	20	40	DE30216
Selenium	ND (5.0)		6020A		1	BJV	05/01/23 11:37	10	10	DE30108
Silver	ND (5.0)		6010C		1	CEV	05/10/23 18:42	10	10	DE30108
Sodium	**384000** (5000)		6010C		1	NAR	05/05/23 16:41	10	10	DE30108
Zinc	ND (50.0)		6010C		1	NAR	05/05/23 16:41	10	10	DE30108

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4S
Date Sampled: 04/28/23 09:05
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-05
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	05/02/23 6:59	D3E0026	DE30129
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,1-Dichloroethane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,1-Dichloroethene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,1-Dichloropropene	ND (2.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,2-Dibromoethane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,2-Dichloroethane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,3-Dichloropropane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
1,4-Dioxane - Screen	ND (500)		8260B		1	05/02/23 6:59	D3E0026	DE30129
2,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
2-Butanone	ND (10.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
2-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
2-Hexanone	ND (10.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
4-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
4-Isopropyltoluene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Acetone	ND (10.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Benzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Bromobenzene	ND (2.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4S
Date Sampled: 04/28/23 09:05
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Bromodichloromethane	ND (0.6)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Bromoform	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Bromomethane	ND (2.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Carbon Disulfide	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Carbon Tetrachloride	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Chlorobenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Chloroethane	ND (2.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Chloroform	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Chloromethane	ND (2.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Dibromochloromethane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Dibromomethane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Diethyl Ether	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Di-isopropyl ether	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Ethylbenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Hexachlorobutadiene	ND (0.6)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Hexachloroethane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Isopropylbenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Methylene Chloride	ND (2.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Naphthalene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
n-Butylbenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
n-Propylbenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
sec-Butylbenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Styrene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
tert-Butylbenzene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4S
Date Sampled: 04/28/23 09:05
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Tetrahydrofuran	ND (5.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Toluene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Trichloroethene	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Trichlorofluoromethane	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Vinyl Chloride	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Xylene O	ND (1.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Xylene P,M	ND (2.0)		8260B		1	05/02/23 6:59	D3E0026	DE30129
Xylenes (Total)	ND (2.00)		8260B		1	05/02/23 6:59		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*110 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*94 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4S
Date Sampled: 04/28/23 09:05
Percent Solids: N/A
Initial Volume: 500ml
Final Volume: 0.5ml
Extraction Method: 3535A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 5/1/23 16:22

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	05/02/23 3:09	D3E0024	DE30158

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*26 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4S
Date Sampled: 04/28/23 09:05
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-05
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Chemical Oxygen Demand	**85** (10)		5220D		1	EAM	05/01/23 16:00	mg/L	DE30145
Chloride	**544** (60.0)		9250		20	JLK	05/01/23 21:03	mg/L	DE30148
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/02/23 11:45	ug/L	DE30211
Nitrate as N	ND (0.210)		353.2		10	EAM	04/28/23 21:01	mg/L	[CALC]
Sulfate	ND (5.0)		9038		1	JLK	04/28/23 19:48	mg/L	DD32847
Total Cyanide	ND (5.0)		9014		1	EEM	05/01/23 12:25	ug/L	DE30120

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4D
Date Sampled: 04/28/23 10:50
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-06
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	CEV	05/15/23 18:22	10	10	DE30108
Barium	ND (50.0)		6010C		1	NAR	05/05/23 16:43	10	10	DE30108
Cadmium	ND (0.4)		6020A		1	BJV	05/01/23 11:42	10	10	DE30108
Calcium	**9370** (200)		6010C		1	CEV	05/10/23 18:44	10	10	DE30108
Chromium	ND (10.0)		6010C		1	NAR	05/05/23 16:43	10	10	DE30108
Copper	ND (20.0)		6010C		1	NAR	05/05/23 16:43	10	10	DE30108
Iron	ND (100)		6010C		1	NAR	05/05/23 16:43	10	10	DE30108
Lead	ND (1.0)		6020A		1	BJV	05/01/23 11:42	10	10	DE30108
Manganese	ND (20.0)		6010C		1	NAR	05/05/23 16:43	10	10	DE30108
Mercury	ND (0.20)		7470A		1	YIV	05/02/23 14:56	20	40	DE30216
Selenium	ND (5.0)		6020A		1	BJV	05/01/23 11:42	10	10	DE30108
Silver	ND (5.0)		6010C		1	CEV	05/10/23 18:44	10	10	DE30108
Sodium	ND (5000)		6010C		1	NAR	05/05/23 16:43	10	10	DE30108
Zinc	ND (50.0)		6010C		1	NAR	05/05/23 16:43	10	10	DE30108

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4D
Date Sampled: 04/28/23 10:50
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-06
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	05/02/23 7:26	D3E0026	DE30129
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,1-Dichloroethane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,1-Dichloroethene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,1-Dichloropropene	ND (2.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,2-Dibromoethane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,2-Dichloroethane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,3-Dichloropropane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
1,4-Dioxane - Screen	ND (500)		8260B		1	05/02/23 7:26	D3E0026	DE30129
2,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
2-Butanone	ND (10.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
2-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
2-Hexanone	ND (10.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
4-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
4-Isopropyltoluene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Acetone	ND (10.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Benzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Bromobenzene	ND (2.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4D
Date Sampled: 04/28/23 10:50
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-06
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Bromodichloromethane	ND (0.6)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Bromoform	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Bromomethane	ND (2.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Carbon Disulfide	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Carbon Tetrachloride	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Chlorobenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Chloroethane	ND (2.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Chloroform	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Chloromethane	ND (2.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Dibromochloromethane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Dibromomethane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Diethyl Ether	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Di-isopropyl ether	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Ethylbenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Hexachlorobutadiene	ND (0.6)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Hexachloroethane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Isopropylbenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Methylene Chloride	ND (2.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Naphthalene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
n-Butylbenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
n-Propylbenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
sec-Butylbenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Styrene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
tert-Butylbenzene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4D
Date Sampled: 04/28/23 10:50
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-06
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Tetrahydrofuran	ND (5.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Toluene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Trichloroethene	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Trichlorofluoromethane	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Vinyl Chloride	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Xylene O	ND (1.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Xylene P,M	ND (2.0)		8260B		1	05/02/23 7:26	D3E0026	DE30129
Xylenes (Total)	ND (2.00)		8260B		1	05/02/23 7:26		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*113 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*107 %*		*70-130*
Surrogate: Toluene-d8	*95 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4D
Date Sampled: 04/28/23 10:50
Percent Solids: N/A
Initial Volume: 500ml
Final Volume: 0.5ml
Extraction Method: 3535A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-06
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 5/1/23 16:22

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	05/02/23 3:35	D3E0024	DE30158

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*50 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: MW-4D
Date Sampled: 04/28/23 10:50
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-06
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Chemical Oxygen Demand	**11** (10)		5220D		1	EAM	05/01/23 16:00	mg/L	DE30145
Chloride	ND (3.0)		9250		1	JLK	05/01/23 20:51	mg/L	DE30148
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/02/23 11:45	ug/L	DE30211
Nitrate as N	ND (0.0300)		353.2		1	EAM	04/28/23 20:55	mg/L	[CALC]
Sulfate	ND (5.0)		9038		1	JLK	04/28/23 19:48	mg/L	DD32847
Total Cyanide	ND (5.0)		9014		1	EEM	05/01/23 12:25	ug/L	DE30120

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-1
Date Sampled: 04/28/23 15:30
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-07
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 (2.5)		7010		5	CEV	05/15/23 17:09	100	10	DE30106
Barium	**25.1** (5.0)		6010C		1	CEV	05/08/23 11:25	100	10	DE30106
Cadmium	ND (0.2)		6020A		5	NAR	05/02/23 12:47	100	10	DE30106
Calcium	**14400** (20.0)		6010C		1	CEV	05/08/23 11:25	100	10	DE30106
Chromium	ND (2.0)		6010C		1	CEV	05/08/23 11:25	100	10	DE30106
Copper	ND (2.0)		6010C		1	CEV	05/08/23 11:25	100	10	DE30106
Iron	**535** (10.0)		6010C		1	CEV	05/08/23 11:25	100	10	DE30106
Lead	ND (2.0)		6010C		1	CEV	05/08/23 11:25	100	10	DE30106
Manganese	**25.2** (2.0)		6010C		1	CEV	05/08/23 11:25	100	10	DE30106
Mercury	ND (0.20)		7470A		1	YIV	05/02/23 14:58	20	40	DE30216
Selenium	ND (5.0)		6010C		1	CEV	05/08/23 11:25	100	10	DE30106
Silver	ND (0.5)		6020A		5	NAR	05/02/23 12:47	100	10	DE30106
Sodium	**85500** (500)		6010C		1	CEV	05/08/23 11:25	100	10	DE30106
Zinc	**B 12.5** (5.0)		6010C		1	CEV	05/08/23 11:25	100	10	DE30106

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-1
Date Sampled: 04/28/23 15:30
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-07
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	05/02/23 7:52	D3E0026	DE30129
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,1-Dichloroethane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,1-Dichloroethene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,1-Dichloropropene	ND (2.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,2-Dibromoethane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,2-Dichloroethane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,3-Dichloropropane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
1,4-Dioxane - Screen	ND (500)		8260B		1	05/02/23 7:52	D3E0026	DE30129
2,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
2-Butanone	ND (10.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
2-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
2-Hexanone	ND (10.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
4-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
4-Isopropyltoluene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Acetone	ND (10.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Benzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Bromobenzene	ND (2.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-1
Date Sampled: 04/28/23 15:30
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-07
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Bromodichloromethane	ND (0.6)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Bromoform	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Bromomethane	ND (2.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Carbon Disulfide	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Carbon Tetrachloride	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Chlorobenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Chloroethane	ND (2.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Chloroform	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Chloromethane	ND (2.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Dibromochloromethane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Dibromomethane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Diethyl Ether	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Di-isopropyl ether	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Ethylbenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Hexachlorobutadiene	ND (0.6)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Hexachloroethane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Isopropylbenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Methylene Chloride	ND (2.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Naphthalene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
n-Butylbenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
n-Propylbenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
sec-Butylbenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Styrene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
tert-Butylbenzene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-1
Date Sampled: 04/28/23 15:30
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-07
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Tetrahydrofuran	ND (5.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Toluene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Trichloroethene	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Trichlorofluoromethane	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Vinyl Chloride	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Xylene O	ND (1.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Xylene P,M	ND (2.0)		8260B		1	05/02/23 7:52	D3E0026	DE30129
Xylenes (Total)	ND (2.00)		8260B		1	05/02/23 7:52		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*111 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*93 %*		*70-130*
Surrogate: Dibromofluoromethane	*110 %*		*70-130*
Surrogate: Toluene-d8	*91 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-1
Date Sampled: 04/28/23 15:30
Percent Solids: N/A
Initial Volume: 500ml
Final Volume: 0.5ml
Extraction Method: 3535A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-07
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 5/1/23 16:22

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	05/02/23 4:00	D3E0024	DE30158

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*54 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-1
Date Sampled: 04/28/23 15:30
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-07
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Chemical Oxygen Demand	**28** (10)		5220D		1	EAM	05/01/23 16:00	mg/L	DE30145
Chloride	**138** (15.0)		9250		5	JLK	05/01/23 21:04	mg/L	DE30148
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/02/23 11:45	ug/L	DE30211
Nitrate as N	**0.808** (0.0300)		353.2		1	EAM	04/28/23 20:56	mg/L	[CALC]
Sulfate	**10.8** (5.0)		9038		1	JLK	04/28/23 19:48	mg/L	DD32847
Total Cyanide	ND (5.0)		9014		1	EEM	05/01/23 12:25	ug/L	DE30120

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-2
Date Sampled: 04/28/23 16:00
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-08
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 (2.5)		7010		5	CEV	05/15/23 17:14	100	10	DE30106
Barium	**25.1** (5.0)		6010C		1	CEV	05/08/23 11:27	100	10	DE30106
Cadmium	ND (0.2)		6020A		5	NAR	05/02/23 12:52	100	10	DE30106
Calcium	**15900** (20.0)		6010C		1	CEV	05/08/23 11:27	100	10	DE30106
Chromium	ND (2.0)		6010C		1	CEV	05/08/23 11:27	100	10	DE30106
Copper	ND (2.0)		6010C		1	CEV	05/08/23 11:27	100	10	DE30106
Iron	**519** (10.0)		6010C		1	CEV	05/08/23 11:27	100	10	DE30106
Lead	ND (2.0)		6010C		1	CEV	05/08/23 11:27	100	10	DE30106
Manganese	**72.4** (2.0)		6010C		1	CEV	05/08/23 11:27	100	10	DE30106
Mercury	ND (0.20)		7470A		1	YIV	05/02/23 15:00	20	40	DE30216
Selenium	ND (5.0)		6010C		1	CEV	05/08/23 11:27	100	10	DE30106
Silver	ND (0.5)		6020A		5	NAR	05/02/23 12:52	100	10	DE30106
Sodium	**88100** (500)		6010C		1	CEV	05/08/23 11:27	100	10	DE30106
Zinc	**B 15.2** (5.0)		6010C		1	CEV	05/08/23 11:27	100	10	DE30106

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-2
Date Sampled: 04/28/23 16:00
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-08
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	05/02/23 8:19	D3E0026	DE30129
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,1-Dichloroethane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,1-Dichloroethene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,1-Dichloropropene	ND (2.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,2-Dibromoethane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,2-Dichloroethane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,3-Dichloropropane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
1,4-Dioxane - Screen	ND (500)		8260B		1	05/02/23 8:19	D3E0026	DE30129
2,2-Dichloropropane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
2-Butanone	ND (10.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
2-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
2-Hexanone	ND (10.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
4-Chlorotoluene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
4-Isopropyltoluene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Acetone	ND (10.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Benzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Bromobenzene	ND (2.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-2
Date Sampled: 04/28/23 16:00
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-08
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Bromodichloromethane	ND (0.6)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Bromoform	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Bromomethane	ND (2.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Carbon Disulfide	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Carbon Tetrachloride	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Chlorobenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Chloroethane	ND (2.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Chloroform	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Chloromethane	ND (2.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Dibromochloromethane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Dibromomethane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Diethyl Ether	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Di-isopropyl ether	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Ethylbenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Hexachlorobutadiene	ND (0.6)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Hexachloroethane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Isopropylbenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Methylene Chloride	ND (2.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Naphthalene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
n-Butylbenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
n-Propylbenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
sec-Butylbenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Styrene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
tert-Butylbenzene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-2
Date Sampled: 04/28/23 16:00
Percent Solids: N/A
Initial Volume: 5ml
Final Volume: 5ml
Extraction Method: 5030B

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-08
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Tetrahydrofuran	ND (5.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Toluene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Trichloroethene	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Trichlorofluoromethane	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Vinyl Chloride	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Xylene O	ND (1.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Xylene P,M	ND (2.0)		8260B		1	05/02/23 8:19	D3E0026	DE30129
Xylenes (Total)	ND (2.00)		8260B		1	05/02/23 8:19		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*108 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*104 %*		*70-130*
Surrogate: Toluene-d8	*96 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-2
Date Sampled: 04/28/23 16:00
Percent Solids: N/A
Initial Volume: 500ml
Final Volume: 0.5ml
Extraction Method: 3535A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-08
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 5/1/23 16:22

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	05/02/23 4:26	D3E0024	DE30158

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*50 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA
Client Sample ID: SW-2
Date Sampled: 04/28/23 16:00
Percent Solids: N/A

ESS Laboratory Work Order: 23D1028
ESS Laboratory Sample ID: 23D1028-08
Sample Matrix: Aqueous

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Chemical Oxygen Demand	**23** (10)		5220D		1	EAM	05/01/23 16:00	mg/L	DE30145
Chloride	**141** (15.0)		9250		5	JLK	05/01/23 21:05	mg/L	DE30148
Cyanide (PAC)	ND (5.0)		MA PAC		1	EEM	05/02/23 11:45	ug/L	DE30211
Nitrate as N	**0.849** (0.0300)		353.2		1	EAM	04/28/23 20:57	mg/L	[CALC]
Sulfate	**11.4** (5.0)		9038		1	JLK	04/28/23 19:48	mg/L	DD32847
Total Cyanide	ND (5.0)		9014		1	EEM	05/01/23 12:25	ug/L	DE30120

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 23D1028

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch DE30106 - 3005A/200.7										
Blank										
Barium	ND	5.0	ug/L							
Chromium	ND	2.0	ug/L							
Copper	ND	2.0	ug/L							
Iron	ND	10.0	ug/L							
Lead	ND	2.0	ug/L							
Manganese	ND	2.0	ug/L							
Selenium	ND	5.0	ug/L							
Sodium	ND	500	ug/L							
Zinc	ND	5.0	ug/L							
Blank										
Cadmium	ND	0.2	ug/L							
Blank										
Arsenic	ND	2.5	ug/L							
Barium	ND	5.0	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	2.0	ug/L							
Manganese	ND	2.0	ug/L							
Selenium	ND	5.0	ug/L							
Silver	ND	0.5	ug/L							
Sodium	ND	500	ug/L							
Zinc	10.8	5.0	ug/L							
LCS										
Barium	50.4	5.0	ug/L	50.00		101	80-120			
Calcium	502	20.0	ug/L	500.0		100	80-120			
Chromium	50.2	2.0	ug/L	50.00		100	80-120			
Copper	49.8	2.0	ug/L	50.00		100	80-120			
Iron	248	10.0	ug/L	250.0		99	80-120			
Lead	49.9	2.0	ug/L	50.00		100	80-120			
Manganese	51.0	2.0	ug/L	50.00		102	80-120			
Selenium	98.1	5.0	ug/L	100.0		98	80-120			
Sodium	2310	500	ug/L	2500		92	80-120			
Zinc	49.9	5.0	ug/L	50.00		100	80-120			
LCS										
Cadmium	24.9	2.0	ug/L	25.00		100	80-120			
Silver	26.7	5.0	ug/L	25.00		107	80-120			
LCS										
Arsenic	46.0	12.5	ug/L	50.00		92	80-120			
LCS Dup										
Barium	50.8	5.0	ug/L	50.00		102	80-120	0.7	20	

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 23D1028

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
				Dissolved Metals						
Batch DE30106 - 3005A/200.7										
Calcium	513	20.0	ug/L	500.0		103	80-120	2	20	
Chromium	48.6	2.0	ug/L	50.00		97	80-120	3	20	
Copper	50.2	2.0	ug/L	50.00		100	80-120	0.8	20	
Iron	241	10.0	ug/L	250.0		96	80-120	3	20	
Lead	52.6	2.0	ug/L	50.00		105	80-120	5	20	
Manganese	51.3	2.0	ug/L	50.00		103	80-120	0.6	20	
Selenium	102	5.0	ug/L	100.0		102	80-120	4	20	
Sodium	2440	500	ug/L	2500		97	80-120	5	20	
Zinc	50.9	5.0	ug/L	50.00		102	80-120	2	20	
LCS Dup										
Cadmium	26.1	2.0	ug/L	25.00		104	80-120	4	20	
Silver	29.5	5.0	ug/L	25.00		118	80-120	10	20	
LCS Dup										
Arsenic	47.6	12.5	ug/L	50.00		95	80-120	3	20	
Batch DE30108 - 200.7/6010BNoDigest										
Blank										
Barium	ND	50.0	ug/L							
Calcium	ND	200	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							
Sodium	ND	5000	ug/L							
Zinc	ND	50.0	ug/L							
Blank										
Cadmium	ND	0.4	ug/L							
Lead	ND	1.0	ug/L							
Selenium	ND	5.0	ug/L							
Blank										
Arsenic	ND	5.0	ug/L							
Blank										
Arsenic	ND	5.0	ug/L							
Barium	ND	50.0	ug/L							
Calcium	ND	200	ug/L							
Chromium	ND	10.0	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							
Sodium	ND	5000	ug/L							
LCS										

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 23D1028

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch DE30108 - 200.7/6010BNoDigest										
Barium	0.5		mg/L	0.5000		101	80-120			
Calcium	5.0		mg/L	5.000		99	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		99	80-120			
Manganese	0.5		mg/L	0.5000		102	80-120			
Silver	0.3		mg/L	0.2500		101	80-120			
Sodium	24.0		mg/L	25.00		96	80-120			
Zinc	0.5		mg/L	0.5000		100	80-120			
LCS										
Cadmium	9.9		ug/L	10.05		99	80-120			
Lead	10.1		ug/L	9.990		101	80-120			
Selenium	10.1		ug/L	9.990		101	80-120			
LCS										
Arsenic	25.1		ug/L	25.00		100	80-120			
Batch DE30216 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.10	0.20	ug/L	6.000		85	80-120			
LCS Dup										
Mercury	5.35	0.20	ug/L	6.000		89	80-120	5	20	
8260B Volatile Organic Compounds										
Batch DE30129 - 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							

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 23D1028

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE30129 - 5030B										
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							
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							

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 23D1028

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE30129 - 5030B										
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	*27.5*		ug/L	*25.00*		*110*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.0*		ug/L	*25.00*		*96*	*70-130*			
Surrogate: Dibromofluoromethane	*26.8*		ug/L	*25.00*		*107*	*70-130*			
Surrogate: Toluene-d8	*23.5*		ug/L	*25.00*		*94*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	8.0	1.0	ug/L	10.00		80	70-130			
1,1,1-Trichloroethane	9.2	1.0	ug/L	10.00		92	70-130			
1,1,2,2-Tetrachloroethane	8.1	0.5	ug/L	10.00		81	70-130			
1,1,2-Trichloroethane	9.5	1.0	ug/L	10.00		95	70-130			
1,1-Dichloroethane	9.5	1.0	ug/L	10.00		95	70-130			
1,1-Dichloroethene	9.0	1.0	ug/L	10.00		90	70-130			
1,1-Dichloropropene	10.5	2.0	ug/L	10.00		105	70-130			
1,2,3-Trichlorobenzene	9.6	1.0	ug/L	10.00		96	70-130			
1,2,3-Trichloropropane	8.2	1.0	ug/L	10.00		82	70-130			
1,2,4-Trichlorobenzene	8.7	1.0	ug/L	10.00		87	70-130			
1,2,4-Trimethylbenzene	8.7	1.0	ug/L	10.00		87	70-130			
1,2-Dibromo-3-Chloropropane	7.3	5.0	ug/L	10.00		73	70-130			
1,2-Dibromoethane	9.2	1.0	ug/L	10.00		92	70-130			
1,2-Dichlorobenzene	8.7	1.0	ug/L	10.00		87	70-130			
1,2-Dichloroethane	10.6	1.0	ug/L	10.00		106	70-130			
1,2-Dichloropropane	9.8	1.0	ug/L	10.00		98	70-130			
1,3,5-Trimethylbenzene	8.6	1.0	ug/L	10.00		86	70-130			
1,3-Dichlorobenzene	8.2	1.0	ug/L	10.00		82	70-130			
1,3-Dichloropropane	9.8	1.0	ug/L	10.00		98	70-130			
1,4-Dichlorobenzene	9.3	1.0	ug/L	10.00		93	70-130			
1,4-Dioxane - Screen	402	500	ug/L	200.0		201	0-332			
2,2-Dichloropropane	8.0	1.0	ug/L	10.00		80	70-130			
2-Butanone	59.3	10.0	ug/L	50.00		119	70-130			
2-Chlorotoluene	9.0	1.0	ug/L	10.00		90	70-130			
2-Hexanone	56.8	10.0	ug/L	50.00		114	70-130			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 23D1028

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE30129 - 5030B										
4-Chlorotoluene	8.6	1.0	ug/L	10.00		86	70-130			
4-Isopropyltoluene	8.8	1.0	ug/L	10.00		88	70-130			
4-Methyl-2-Pentanone	56.5	10.0	ug/L	50.00		113	70-130			
Acetone	62.6	10.0	ug/L	50.00		125	70-130			
Benzene	10.0	1.0	ug/L	10.00		100	70-130			
Bromobenzene	8.9	2.0	ug/L	10.00		89	70-130			
Bromochloromethane	8.9	1.0	ug/L	10.00		89	70-130			
Bromodichloromethane	9.2	0.6	ug/L	10.00		92	70-130			
Bromoform	6.9	1.0	ug/L	10.00		69	70-130			B-
Bromomethane	9.3	2.0	ug/L	10.00		93	70-130			
Carbon Disulfide	11.0	1.0	ug/L	10.00		110	70-130			
Carbon Tetrachloride	8.8	1.0	ug/L	10.00		88	70-130			
Chlorobenzene	8.5	1.0	ug/L	10.00		85	70-130			
Chloroethane	10.2	2.0	ug/L	10.00		102	70-130			
Chloroform	9.0	1.0	ug/L	10.00		90	70-130			
Chloromethane	10.3	2.0	ug/L	10.00		103	70-130			
cis-1,2-Dichloroethene	9.5	1.0	ug/L	10.00		95	70-130			
cis-1,3-Dichloropropene	8.6	0.4	ug/L	10.00		86	70-130			
Dibromochloromethane	7.0	1.0	ug/L	10.00		70	70-130			
Dibromomethane	9.8	1.0	ug/L	10.00		98	70-130			
Dichlorodifluoromethane	9.5	2.0	ug/L	10.00		95	70-130			
Diethyl Ether	11.1	1.0	ug/L	10.00		111	70-130			
Di-isopropyl ether	10.9	1.0	ug/L	10.00		109	70-130			
Ethyl tertiary-butyl ether	10.9	1.0	ug/L	10.00		109	70-130			
Ethylbenzene	8.4	1.0	ug/L	10.00		84	70-130			
Hexachlorobutadiene	9.7	0.6	ug/L	10.00		97	70-130			
Hexachloroethane	7.5	1.0	ug/L	10.00		75	70-130			
Isopropylbenzene	9.0	1.0	ug/L	10.00		90	70-130			
Methyl tert-Butyl Ether	10.5	1.0	ug/L	10.00		105	70-130			
Methylene Chloride	10.4	2.0	ug/L	10.00		104	70-130			
Naphthalene	9.0	1.0	ug/L	10.00		90	70-130			
n-Butylbenzene	8.3	1.0	ug/L	10.00		83	70-130			
n-Propylbenzene	9.0	1.0	ug/L	10.00		90	70-130			
sec-Butylbenzene	8.6	1.0	ug/L	10.00		86	70-130			
Styrene	8.6	1.0	ug/L	10.00		86	70-130			
tert-Butylbenzene	8.4	1.0	ug/L	10.00		84	70-130			
Tertiary-amyl methyl ether	10.5	1.0	ug/L	10.00		105	70-130			
Tetrachloroethene	10.7	1.0	ug/L	10.00		107	70-130			
Tetrahydrofuran	12.4	5.0	ug/L	10.00		124	70-130			
Toluene	9.8	1.0	ug/L	10.00		98	70-130			
trans-1,2-Dichloroethene	9.1	1.0	ug/L	10.00		91	70-130			
trans-1,3-Dichloropropene	7.6	0.4	ug/L	10.00		76	70-130			
Trichloroethene	9.8	1.0	ug/L	10.00		98	70-130			
Trichlorofluoromethane	9.2	1.0	ug/L	10.00		92	70-130			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 23D1028

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE30129 - 5030B										
Vinyl Chloride	9.5	1.0	ug/L	10.00		95	70-130			
Xylene O	8.6	1.0	ug/L	10.00		86	70-130			
Xylene P,M	17.8	2.0	ug/L	20.00		89	70-130			
Surrogate: 1,2-Dichloroethane-d4	*27.0*		ug/L	*25.00*		*108*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.2*		ug/L	*25.00*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*26.2*		ug/L	*25.00*		*105*	*70-130*			
Surrogate: Toluene-d8	*23.5*		ug/L	*25.00*		*94*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	8.0	1.0	ug/L	10.00		80	70-130	0.1	20	
1,1,1-Trichloroethane	9.3	1.0	ug/L	10.00		93	70-130	1	20	
1,1,2,2-Tetrachloroethane	8.1	0.5	ug/L	10.00		81	70-130	0.2	20	
1,1,2-Trichloroethane	8.7	1.0	ug/L	10.00		87	70-130	9	20	
1,1-Dichloroethane	9.4	1.0	ug/L	10.00		94	70-130	0.1	20	
1,1-Dichloroethene	8.3	1.0	ug/L	10.00		83	70-130	8	20	
1,1-Dichloropropene	9.9	2.0	ug/L	10.00		99	70-130	6	20	
1,2,3-Trichlorobenzene	8.9	1.0	ug/L	10.00		89	70-130	7	20	
1,2,3-Trichloropropane	8.2	1.0	ug/L	10.00		82	70-130	0	20	
1,2,4-Trichlorobenzene	9.0	1.0	ug/L	10.00		90	70-130	3	20	
1,2,4-Trimethylbenzene	8.5	1.0	ug/L	10.00		85	70-130	2	20	
1,2-Dibromo-3-Chloropropane	7.8	5.0	ug/L	10.00		78	70-130	6	20	
1,2-Dibromoethane	9.1	1.0	ug/L	10.00		91	70-130	0.7	20	
1,2-Dichlorobenzene	9.1	1.0	ug/L	10.00		91	70-130	5	20	
1,2-Dichloroethane	9.8	1.0	ug/L	10.00		98	70-130	8	20	
1,2-Dichloropropane	10.0	1.0	ug/L	10.00		100	70-130	2	20	
1,3,5-Trimethylbenzene	8.7	1.0	ug/L	10.00		87	70-130	0.9	20	
1,3-Dichlorobenzene	8.6	1.0	ug/L	10.00		86	70-130	4	20	
1,3-Dichloropropane	9.6	1.0	ug/L	10.00		96	70-130	2	20	
1,4-Dichlorobenzene	9.4	1.0	ug/L	10.00		94	70-130	1	20	
1,4-Dioxane - Screen	293	500	ug/L	200.0		146	0-332	31	200	
2,2-Dichloropropane	7.5	1.0	ug/L	10.00		75	70-130	7	20	
2-Butanone	57.6	10.0	ug/L	50.00		115	70-130	3	20	
2-Chlorotoluene	8.9	1.0	ug/L	10.00		89	70-130	0.7	20	
2-Hexanone	58.0	10.0	ug/L	50.00		116	70-130	2	20	
4-Chlorotoluene	9.1	1.0	ug/L	10.00		91	70-130	6	20	
4-Isopropyltoluene	8.5	1.0	ug/L	10.00		85	70-130	3	20	
4-Methyl-2-Pentanone	53.2	10.0	ug/L	50.00		106	70-130	6	20	
Acetone	60.2	10.0	ug/L	50.00		120	70-130	4	20	
Benzene	9.7	1.0	ug/L	10.00		97	70-130	3	20	
Bromobenzene	9.0	2.0	ug/L	10.00		90	70-130	2	20	
Bromochloromethane	9.1	1.0	ug/L	10.00		91	70-130	2	20	
Bromodichloromethane	8.9	0.6	ug/L	10.00		89	70-130	4	20	
Bromoform	6.1	1.0	ug/L	10.00		61	70-130	12	20	B-
Bromomethane	9.2	2.0	ug/L	10.00		92	70-130	1	20	
Carbon Disulfide	11.1	1.0	ug/L	10.00		111	70-130	0.8	20	

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 23D1028

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DE30129 - 5030B										
Carbon Tetrachloride	8.5	1.0	ug/L	10.00		85	70-130	4	20	
Chlorobenzene	8.6	1.0	ug/L	10.00		86	70-130	0.8	20	
Chloroethane	10.0	2.0	ug/L	10.00		100	70-130	2	20	
Chloroform	8.9	1.0	ug/L	10.00		89	70-130	2	20	
Chloromethane	10.6	2.0	ug/L	10.00		106	70-130	3	20	
cis-1,2-Dichloroethene	9.0	1.0	ug/L	10.00		90	70-130	6	20	
cis-1,3-Dichloropropene	8.3	0.4	ug/L	10.00		83	70-130	3	20	
Dibromochloromethane	6.9	1.0	ug/L	10.00		69	70-130	2	20	B-
Dibromomethane	9.2	1.0	ug/L	10.00		92	70-130	6	20	
Dichlorodifluoromethane	9.7	2.0	ug/L	10.00		97	70-130	2	20	
Diethyl Ether	10.1	1.0	ug/L	10.00		101	70-130	9	20	
Di-isopropyl ether	10.6	1.0	ug/L	10.00		106	70-130	3	20	
Ethyl tertiary-butyl ether	10.8	1.0	ug/L	10.00		108	70-130	0.8	20	
Ethylbenzene	8.6	1.0	ug/L	10.00		86	70-130	2	20	
Hexachlorobutadiene	10.2	0.6	ug/L	10.00		102	70-130	5	20	
Hexachloroethane	7.2	1.0	ug/L	10.00		72	70-130	5	20	
Isopropylbenzene	9.0	1.0	ug/L	10.00		90	70-130	0.1	20	
Methyl tert-Butyl Ether	10.1	1.0	ug/L	10.00		101	70-130	5	20	
Methylene Chloride	9.9	2.0	ug/L	10.00		99	70-130	4	20	
Naphthalene	8.8	1.0	ug/L	10.00		88	70-130	2	20	
n-Butylbenzene	8.4	1.0	ug/L	10.00		84	70-130	1	20	
n-Propylbenzene	9.0	1.0	ug/L	10.00		90	70-130	0.1	20	
sec-Butylbenzene	8.4	1.0	ug/L	10.00		84	70-130	1	20	
Styrene	8.5	1.0	ug/L	10.00		85	70-130	2	20	
tert-Butylbenzene	8.8	1.0	ug/L	10.00		88	70-130	4	20	
Tertiary-amyl methyl ether	10.1	1.0	ug/L	10.00		101	70-130	4	20	
Tetrachloroethene	10.8	1.0	ug/L	10.00		108	70-130	1	20	
Tetrahydrofuran	11.8	5.0	ug/L	10.00		118	70-130	5	20	
Toluene	9.3	1.0	ug/L	10.00		93	70-130	6	20	
trans-1,2-Dichloroethene	8.9	1.0	ug/L	10.00		89	70-130	2	20	
trans-1,3-Dichloropropene	7.4	0.4	ug/L	10.00		74	70-130	3	20	
Trichloroethene	10.3	1.0	ug/L	10.00		103	70-130	5	20	
Trichlorofluoromethane	8.8	1.0	ug/L	10.00		88	70-130	4	20	
Vinyl Chloride	9.4	1.0	ug/L	10.00		94	70-130	0.6	20	
Xylene O	8.1	1.0	ug/L	10.00		81	70-130	6	20	
Xylene P,M	16.8	2.0	ug/L	20.00		84	70-130	6	20	
Surrogate: 1,2-Dichloroethane-d4	*26.3*		ug/L	*25.00*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*23.7*		ug/L	*25.00*		*95*	*70-130*			
Surrogate: Dibromofluoromethane	*25.4*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: Toluene-d8	*23.4*		ug/L	*25.00*		*94*	*70-130*			
8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution										
Batch DE30158 - 3535A										
Blank										

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 23D1028

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 DE30158 - 3535A										
1,4-Dioxane	ND	0.250	ug/L							
Surrogate: 1,4-Dioxane-d8	*2.01*		ug/L	*5.000*		*40*	*15-115*			
LCS										
1,4-Dioxane	8.64	0.250	ug/L	10.00		86	40-140			
Surrogate: 1,4-Dioxane-d8	*2.12*		ug/L	*5.000*		*42*	*15-115*			
LCS Dup										
1,4-Dioxane	8.91	0.250	ug/L	10.00		89	40-140	3	20	
Surrogate: 1,4-Dioxane-d8	*2.30*		ug/L	*5.000*		*46*	*15-115*			
Classical Chemistry										
Batch DD32833 - General Preparation										
Blank										
Nitrite as N	ND	0.010	mg/L							
LCS										
Nitrite as N	0.261		mg/L	0.2497		104	90-110			
Batch DD32834 - General Preparation										
Blank										
Nitrate/Nitrite as N	ND	0.020	mg/L							
LCS										
Nitrate/Nitrite as N	0.486		mg/L	0.5000		97	90-110			
Batch DD32847 - General Preparation										
Blank										
Sulfate	ND	5.0	mg/L							
LCS										
Sulfate	9.8		mg/L	9.988		98	85-115			
Batch DE30120 - 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	149	5.0	ug/L	150.4		99	90-110	0.3	20	
Batch DE30145 - General Preparation										
Blank										
Chemical Oxygen Demand	ND	10	mg/L							
LCS										
Chemical Oxygen Demand	50.1	10	mg/L	50.15		100	95-105			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 23D1028

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch DE30148 - General Preparation										
Blank										
Chloride	ND	3.0	mg/L							
LCS										
Chloride	32.0		mg/L	30.00		107	90-110			
Batch DE30211 - TCN Prep										
Blank										
Cyanide (PAC)	ND	5.0	ug/L							
LCS										
Cyanide (PAC)	20.1	5.0	ug/L	20.06		100	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	0.1	20	
Reference										
Cyanide (PAC)	57.5	5.0	ug/L	1635		4	0-10			

CERTIFICATE OF ANALYSIS

Client Name: Pare Corporation
Client Project ID: Southborough MA

ESS Laboratory Work Order: 23D1028

Notes and Definitions

U	Analyte included in the analysis, but not detected
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
B-	Blank Spike recovery is below lower control limit (B-).
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: 23D1028

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: 23D1028
Date Received: 4/28/2023
Project Due Date: 5/5/2023
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: 18.1 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	425101	Yes	N/A	Yes	1L Amber	NP	
1	425102	Yes	N/A	Yes	1L Amber	NP	
1	425112	Yes	N/A	Yes	1L Poly	NP	
1	425120	Yes	N/A	Yes	250 mL Poly	NaOH pH>12	
1	425138	Yes	N/A	Yes	500 mL Poly	H2SO4	
1	425141	Yes	N/A	Yes	500 mL Poly	NP	
1	425144	Yes	No	Yes	VOA Vial	HCl	
1	425145	Yes	No	Yes	VOA Vial	HCl	
1	425146	Yes	No	Yes	VOA Vial	HCl	
2	425107	Yes	N/A	Yes	500 mL Amber	NP	
2	425113	Yes	N/A	Yes	1L Poly	NP	
2	425121	Yes	N/A	Yes	250 mL Poly	NaOH pH>12	
2	425139	Yes	N/A	Yes	500 mL Poly	H2SO4	
2	425142	Yes	N/A	Yes	500 mL Poly	NP	
2	425147	Yes	No	Yes	VOA Vial	HCl	
2	425148	Yes	No	Yes	VOA Vial	HCl	
2	425149	Yes	No	Yes	VOA Vial	HCl	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Pare Corporation - TB

ESS Project ID: 23D1028

Date Received: 4/28/2023

2	425170	Yes	N/A	Yes	500 mL Amber	NP	
3	425108	Yes	N/A	Yes	500 mL Amber	NP	
3	425114	Yes	N/A	Yes	1L Poly	NP	
3	425122	Yes	N/A	Yes	250 mL Poly	NaOH	pH>12
3	425128	Yes	N/A	Yes	250 mL Poly	H2SO4	
3	425133	Yes	N/A	Yes	250 mL Poly	NP	
3	425150	Yes	No	Yes	VOA Vial	HCl	
3	425151	Yes	No	Yes	VOA Vial	HCl	
3	425152	Yes	No	Yes	VOA Vial	HCl	
3	425171	Yes	N/A	Yes	500 mL Amber	NP	
4	425109	Yes	N/A	Yes	500 mL Amber	NP	
4	425115	Yes	N/A	Yes	1L Poly	NP	
4	425123	Yes	N/A	Yes	250 mL Poly	NaOH	pH>12
4	425129	Yes	N/A	Yes	250 mL Poly	H2SO4	
4	425134	Yes	N/A	Yes	250 mL Poly	NP	
4	425153	Yes	No	Yes	VOA Vial	HCl	
4	425154	Yes	No	Yes	VOA Vial	HCl	
4	425155	Yes	No	Yes	VOA Vial	HCl	
4	425172	Yes	N/A	Yes	500 mL Amber	NP	
5	425110	Yes	N/A	Yes	500 mL Amber	NP	
5	425116	Yes	N/A	Yes	1L Poly	NP	
5	425124	Yes	N/A	Yes	250 mL Poly	NaOH	pH>12
5	425130	Yes	N/A	Yes	250 mL Poly	H2SO4	
5	425135	Yes	N/A	Yes	250 mL Poly	NP	
5	425156	Yes	No	Yes	VOA Vial	HCl	
5	425157	Yes	No	Yes	VOA Vial	HCl	
5	425158	Yes	No	Yes	VOA Vial	HCl	
5	425173	Yes	N/A	Yes	500 mL Amber	NP	
6	425111	Yes	N/A	Yes	500 mL Amber	NP	
6	425117	Yes	N/A	Yes	1L Poly	NP	
6	425125	Yes	N/A	Yes	250 mL Poly	NaOH	pH>12
6	425131	Yes	N/A	Yes	250 mL Poly	H2SO4	
6	425136	Yes	N/A	Yes	250 mL Poly	NP	
6	425159	Yes	No	Yes	VOA Vial	HCl	
6	425160	Yes	No	Yes	VOA Vial	HCl	
6	425161	Yes	No	Yes	VOA Vial	HCl	
6	425174	Yes	N/A	Yes	500 mL Amber	NP	
7	425103	Yes	N/A	Yes	1L Amber	NP	
7	425104	Yes	N/A	Yes	1L Amber	NP	
7	425118	Yes	N/A	Yes	1L Poly	NP	
7	425126	Yes	N/A	Yes	250 mL Poly	NaOH	pH>12
7	425140	Yes	N/A	Yes	500 mL Poly	H2SO4	
7	425143	Yes	N/A	Yes	500 mL Poly	NP	
7	425162	Yes	No	Yes	VOA Vial	HCl	
7	425163	Yes	No	Yes	VOA Vial	HCl	
7	425164	Yes	No	Yes	VOA Vial	HCl	
8	425105	Yes	N/A	Yes	1L Amber	NP	
8	425106	Yes	N/A	Yes	1L Amber	NP	
8	425119	Yes	N/A	Yes	1L Poly	NP	
8	425127	Yes	N/A	Yes	250 mL Poly	NaOH	pH>12
8	425132	Yes	N/A	Yes	250 mL Poly	H2SO4	
8	425137	Yes	N/A	Yes	250 mL Poly	NP	
8	425165	Yes	No	Yes	VOA Vial	HCl	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Pare Corporation - TB

ESS Project ID: 23D1028
Date Received: 4/28/2023

8	425166	Yes	No	Yes	VOA Vial	HCl
8	425167	Yes	No	Yes	VOA Vial	HCl

2nd Review

Were all containers scanned into storage/lab? Initials TB

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: Date & Time: 1800 4/28/23

Reviewed By: Date & Time: 4/28/23 1804

CHAIN OF CUSTODY

ESS Lab # 23D1028. | Page 1 of 1

185 Frances Avenue
Cranston, RI 02910
Phone: 401-461-7181
[redacted]
www.esslaboratory.com

Turn Time (Days) ☐ >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 ☐ State Upload ☐ Enviro Data
☐ CLP-Like Package ☐ Other (Specify) →

CLIENT INFORMATION

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

PROJECT INFORMATION

Project Name: Southborough, MA
Project Location: "
Project Number: 18128.03
Project Manager: Tim Thies
Bill to: Accounting
PO#:
Quote#:

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

REQUESTED ANALYSES

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 SIM												Total Number of Bottles
1	4/26/23	14:40	Grab	AQ	MW-2S	X	X	X	X	X	X												9
2		15:10			MW-2D																		
3		12:10			MW-3S																		
4		13:05			MW-3D																		
5		09:05			MW-4S																		
6		10:50			MW-4D																		
7		15:30			SW-1																		
8		16:00			SW-2																		
		-JA 5/9/23																					

Container Type:	AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial											P	V	P	P	P	HGX2	?					
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*											3	7	1	3	3	5/10	?					
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*											1	2	5	1	3	1						

Sampled by : AB

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

Laboratory Use Only
Cooler Temperature (°C): 18.1 none

Comments: * Please specify "Other" preservative and containers types in this space
*LAB FILTER
AB Metals Analysis: Arsenic, Barium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Selenium, Silver, Sodium, & Zinc

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)
[signature]	4/28/23	17:08	[signature]				
Relinquished by (Signature)	**Date**	**Time**	**Received by (Signature)**	**Relinquished by (Signature)**	**Date**	**Time**	**Received by (Signature)**