



**POST-CLOSURE ENVIRONMENTAL MONITORING REPORT
(May 2022 Data)**

**Shawmut Avenue Landfill
New Bedford, MA 02746
MassDEP DSWM Transmittal No. ACOP-SE-08-4004-SEP 120068**

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1.0 INTRODUCTION

On behalf of the City of New Bedford, River Hawk Environmental, LLC (RHE) has prepared this Post-Closure Environmental Monitoring Report to provide the Massachusetts Department of Environmental Protection (MassDEP) with the results of post-closure landfill gas, groundwater, surface water, and sediment monitoring data collected at the Shawmut Avenue Landfill facility in May 2022. Post-Closure Landfill monitoring was conducted in accordance with the Massachusetts Solid Waste Management Regulations (310 CMR 19.00) and the requirements of the facility-specific Post-Closure Monitoring and Maintenance Plan, which was approved by the MassDEP in a letter dated April 19, 2007.

2.0 SCOPE OF WORK

The following is the Scope of Work associated with the Post-Closure Environmental Monitoring Event conducted in May 2022:

- Collection of landfill gas data at landfill gas wells, temporary monitoring points/vents, a fire hydrant, catch basins, and buildings;
- Collection of in-situ groundwater monitoring data and groundwater samples;
- Collection of in-situ surface water monitoring data and surface water samples;
- Collection of a sediment sample;
- Laboratory analysis of groundwater, surface water, and sediment samples;
- Evaluation of regulatory exceedences and data trends; and
- Preparation and submission of a Post-Closure Environmental Monitoring Report.

The following sections include information regarding sample collection procedures, results, and an evaluation of data.

3.0 MONITORING PROCEDURE & RESULTS

The following subsections include information regarding the landfill gas, groundwater, surface water, and sediment sampling procedures.

3.1 Landfill Gas Monitoring

RHE conducted landfill gas monitoring on May 12, 2022. The initial and final concentrations of methane (CH_4), carbon dioxide (CO_2), oxygen (O_2), hydrogen sulfide (H_2S), and total organic volatiles (TOV) were measured at fourteen (14) landfill gas wells (LGW-1 through LGW-14), two (2) temporary monitoring points/vents (MP-5 and MP-6), six (6) temporary gas points (TGP-1 through TGP-6), one (1) fire hydrant (Hydrant #2), three (3) catch basins (CB-1, CB-2, and CB-3), and two (2) building structures (scale house and warehouse building). Concentrations of CH_4 , CO_2 , O_2 , and H_2S were measured in the field using a GEM 5000 Landfill Gas Meter. TOV concentrations were measured using a RAE Lite Organic Volatile Meter (OVM), which was equipped with a 10.6 eV lamp

and calibrated prior to conducting screening with 100 ppmv isobutylene span gas.

Temporary gas probes were installed by driving an AMS® Retract-A-Tip to discrete depths below the ground surface. The stainless steel Retract-A-Tips were connected to polyethylene tubing, and landfill gas samples were subsequently drawn.

At least two well/probe volumes of air were evacuated from landfill gas wells and temporary monitoring points/vents prior to the collection of final measurements. Landfill gas monitoring locations are displayed on Figure 2, and a summary of field measurements collected from the above-referenced locations is included in Table 1.

Landfill Gas Well & Temporary Monitoring Point/Vent Results:

- CH₄ was detected at landfill gas wells LGW-1, LGW-2, LGW-3, LGW-5, LGW-6, LGW-7, and LGW-8 at concentrations greater than 25% of the Lower Explosive Limit (LEL); however, landfill gas wells and temporary monitoring points/vents were not considered to be “fence line monitoring locations,” since perimeter temporary gas probes were installed and screened on the same day.
- Significant concentrations of CO₂ (i.e., greater than 10%) were detected in landfill gas wells LGW-1, LGW-2, LGW-3, LGW-5, LGW-6, LGW-7, and LGW-8.
- Depleted O₂ concentrations (less than 19.5%) were detected at landfill gas wells LGW-1, LGW-2, LGW-3, LGW-5, LGW-6, LGW-7, LGW-8, LGW-10, LGW-11, and LGW-12 and temporary gas probe TGP-2, TGP-5, and TGP-11.
- H₂S was detected at concentrations greater than 1 ppmv in landfill gas wells LGW-1, LGW-3, and LGW-6.
- TOVs were detected at a concentration greater than 1.0 ppmv at landfill gas wells LGW-1, LGW-2, LGW-4, LGW-9, LGW-10, LGW-11, LGW-12, LGW-13, and LGW-14.
- No significantly elevated concentrations of TOVs, CH₄, CO₂, H₂S, or TOVs, nor depleted concentrations of O₂, were detected during field screening of temporary gas probes (i.e., fence line monitoring locations).

The results of landfill gas monitoring conducted during this Monitoring Period are generally consistent with previous landfill gas well and temporary gas probe monitoring results. It should be noted that monitoring conducted during this event did not reveal the presence of explosive gases at concentrations greater than 25% of the LEL at the property line, or beyond. Therefore, notification to the MassDEP, pursuant to 310 CMR 19.132(5)(h), was not applicable.

Catch Basin, Fire Hydrant, and Indoor Air Monitoring Results:

- No elevated concentrations of TOVs, CH₄, CO₂, H₂S, nor depleted concentrations of O₂, were detected during field screening conducted at catch basins, fire hydrants, or within the scale house or the warehouse building.

The results of catch basin and indoor air screening conducted during this Monitoring Period are generally consistent with previous monitoring results.

3.2 Groundwater Monitoring, Sampling, and Laboratory Analysis

RHE personnel collected groundwater data at nine (9) perimeter groundwater monitoring wells (CDM-1S, CDM-1D, CDM-3S, CDM-3D, CDM-4S, CDM-4D, CDM-5S, CDM-5D, and CDM-6D) on May 12, 2022. Each well was gauged for groundwater level and presence/absence of non-aqueous phase liquid (NAPL) using an electronic interface probe (EIP). Subsequent to gauging, RHE personnel purged a minimum of three well volumes of groundwater from each monitoring well using peristaltic sampling pumps and dedicated polyethylene tubing. Temperature, pH, specific conductivity, oxidation reduction potential (ORP), and dissolved oxygen (DO) were measured during monitoring well purging, using a YSI 600 XL multi-parameter meter. After the field parameters were observed to have stabilized, the flow-through cell of the multi-parameter meter was disconnected and groundwater samples were pumped directly into the sample bottles provided by the laboratory. Samples for dissolved metals analysis were field filtered using 0.45-micron filters, and samples for VOC analysis were collected using disposable polyethylene bailers. One duplicate sample (DUP-1) was collected from monitoring well CDM-1D.

Groundwater samples were submitted to Microbac Laboratory, of Dayville, CT, for laboratory analysis of parameters required by a letter entitled "Approval with Conditions" issued by the MassDEP and dated April 19, 2007. Low flow sampling logs and the complete laboratory analytical report associated with the May 2022 groundwater monitoring and sampling event are included in Appendix A. Summarized field data and laboratory analytical results are included in Table 2.

The results of laboratory analysis conducted on groundwater samples collected from perimeter monitoring wells were compared to the following standards:

- US EPA Maximum Contaminant Levels and Secondary Maximum Contaminant Levels;
- MassDEP Maximum Contaminant Levels and Secondary Maximum Contaminant Levels;
- MassDEP Office of Research and Standards Guidelines (ORSG);
- Massachusetts Contingency Plan (MCP) Method 1 GW-2 Standards (CDM-6D only); and
- MCP Method 1 GW-3 Groundwater Standards.

The following is a summary of exceedances and an evaluation of data trends:

Volatile Organic Compounds:

- cis-1,2-Dichloroethene was detected at a concentration greater than the MCP GW-2 Standards and/or MCL in the groundwater sample collected from monitoring well CDM-3D.
- Trichloroethylene (TCE) was detected at a concentration greater than the MCL in the groundwater sample collected from monitoring well CDM-3D.
- Vinyl Chloride (VC) was detected at a concentration greater than the MCL in the

groundwater sample collected from monitoring well CDM-4D.

These results are generally consistent with the results of previous groundwater sampling rounds.

Inorganic Parameters and Dissolved Metals:

- Total Dissolved Solids (TDS) was detected at a concentration greater than the SMCL in the groundwater samples collected from monitoring wells CDM-1S, CDM-1D, CDM-3D, CDM-4S, CDM-4D, CDM-5S, and CDM-5D.
- Dissolved Iron was detected at concentrations greater than the SMCLs in groundwater samples collected from monitoring wells CDM-1S, CDM-1D, CDM-3S, CDM-4S, CDM-4D, CDM-5S, CDM-5D, and CDM 6D.
- Dissolved Manganese was detected at concentrations greater than the SMCLs in groundwater samples collected from monitoring wells CDM-1S, CDM-1D, CDM-3S, CDM-4S, CDM-4D, CDM-5S, and CDM-5D.
- Dissolved Sodium was detected at concentrations greater than the ORSG in groundwater samples collected from all monitoring wells.
- Chloride was detected at concentrations greater than the SMCLs in groundwater samples collected from monitoring wells CDM-4S and CDM-4D.

These results are generally consistent with the results of previous groundwater sampling rounds.

PCBs:

- One PCB analyte (Aroclor 1016) was detected at a concentration greater than the MCL in the groundwater samples collected from monitoring wells CDM-5S and CDM-5D.

The results are consistent with the results of recent monitoring events. These conditions will be monitored during future events.

Quality Control Samples:

- RHE personnel collected a duplicate sample of groundwater from monitoring well CDM-1D. The results of laboratory analyses conducted on the duplicate sample (DUP-1) closely matched the results of analyses conducted on the original sample (CDM-1D).
- A field blank (de-ionized water) was collected during the sample collection process. The results of VOC analysis conducted on the field blank sample did not reveal the presence of VOCs at concentrations greater than the analytical method detection limit.

3.3 Surface Water Sampling and Laboratory Analysis

RHE personnel collected surface water samples from three (3) surface water sampling locations (SW-1, SW-2, and SW-3) on May 12, 2022. Temperature, pH, specific conductivity, and dissolved

oxygen (DO) were measured at the surface water sampling locations using an in-situ multi-parameter meter. Surface water samples were submitted to Microbac Laboratory for laboratory analysis of parameters required by a letter entitled “Approval with Conditions” issued by the MassDEP and dated April 19, 2007. The complete laboratory analytical report associated with the May 2022 surface water sampling event is included in Appendix A, and summarized laboratory analytical results are included in Table 3.

In accordance with the requirements of 310 CMR 19.00, the results of laboratory analyses conducted on surface water samples have been compared to the established National Recommended Water Quality Criteria (NRWQC) for each parameter. The NRWQC for certain hardness-dependent metals analytes (cadmium, copper, lead, silver, and zinc) was calculated in accordance with Appendix B of the NRWQC Guideline (2009). The following is an evaluation of the results of laboratory analysis conducted on surface water samples in comparison to the NRWQC:

Volatile Organic Compounds:

- No VOC analytes were detected at concentrations greater than the MCLs, SMCLs, and/or MassDEP ORSGs.

Inorganic Parameters and Dissolved Metals:

- Alkalinity was detected at concentrations greater than the NRWQC in surface water samples collected at SW-1, SW-2, and SW-3.

PCBs:

- PCBs were not detected at concentrations greater than the analytical method detection limit.

These results are generally consistent with the results of previous surface water sampling rounds.

3.4 Sediment Sampling and Laboratory Analysis

RHE personnel collected one (1) sediment sample (SED-1) on May 12, 2022. The sediment sample was submitted to Microbac Laboratory for laboratory analysis of polychlorinated biphenyls (PCBs), as specified in a letter entitled “Approval with Conditions” issued by the MassDEP and dated April 19, 2007. The complete laboratory analytical report associated with the May 2022 sediment sampling event is included in Appendix A. Summarized laboratory analytical results are included in Table 4.

PCBs:

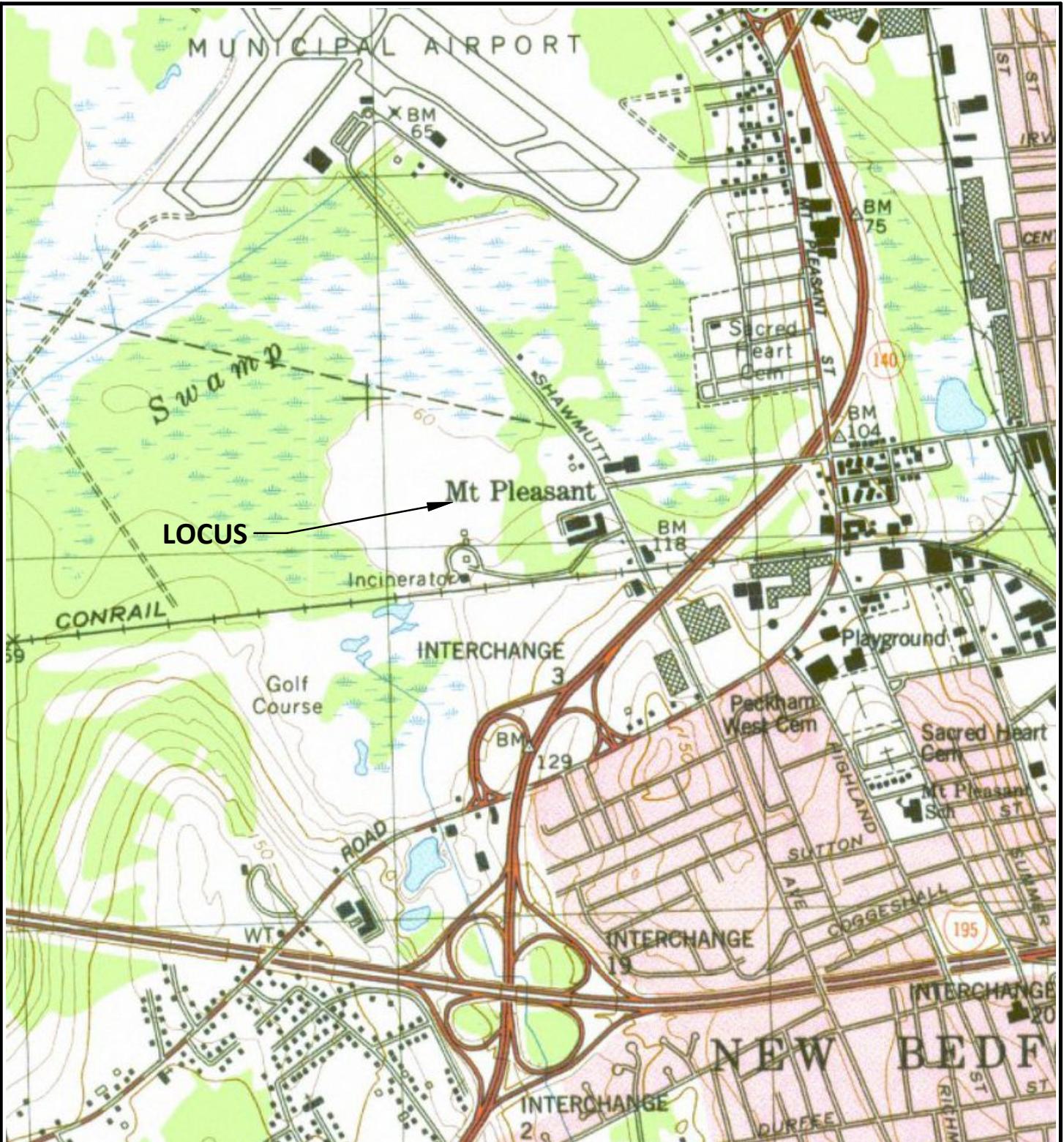
- No PCB analytes were detected at concentrations greater than the MCP S-1/GW-3

Concentration Limits.

4.0 FUTURE COURSE OF ACTION

The next post-closure environmental monitoring event is scheduled for August 2022.

FIGURES

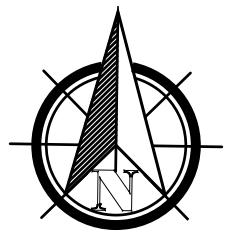


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DRAWING TITLE		
FIGURE 1 - LOCUS PLAN		
PROJECT	SHAWMUT AVENUE LANDFILL NEW BEDFORD, MA	
CLIENT	CITY OF NEW BEDFORD NEW BEDFORD, MA	
APPROX. SCALE:	NTS	DATE: OCT. 19, 2016
		DRAWN BY: RSR
		CHECKED BY: WPK



APPROX SCALE 1" = 1000'

0 500 1000 2000

LEGEND

- CDM-1S - GROUNDWATER MONITORING WELL
- LGW-1 - LANDFILL GAS MONITORING WELL
- ▲ SW-1 - SURFACE WATER SAMPLE LOCATION
- ▲ SED-1 - SEDIMENT SAMPLE LOCATION
- ◎ CB-2 - CATCH BASIN
- ❖ MP-1 - TEMPORARY GAS MONITORING POINT/VENT
- TGP-1 - TEMPORARY GAS PROBE

DRAWING TITLE		
SITE PLAN		
PROJECT	SHAWMUT AVENUE LANDFILL NEW BEDFORD, MA	
CLIENT	CITY OF NEW BEDFORD NEW BEDFORD, MA	
APPROX. SCALE:	1" = 1000'	DRAWN BY: PJK
	DATE: FEB 28, 2017	CHECKED BY: WPK

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TABLES

TABLE 1
Landfill Gas Monitoring Results
May 12, 2022

Shawmut Avenue Landfill
New Bedford, Massachusetts

Monitoring Point Identification	Monitoring Location Type	Purge Time	Total Organic Volatiles (TOV)		Methane (CH ₄)		Lower Explosive Lmt. (LEL)		Carbon Dioxide (CO ₂)		Oxygen (O ₂)		Hydrogen Sulfide (H ₂ S)	
			ppmv		% Initial		% Final		% Initial		% Final		% Initial	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
LGW-1	Gas Well	10+	0.1	0.2	42.1	45.9	842	918	20.9	22.7	2.8	0.0	0	0
LGW-2	Gas Well	10+	0.0	0.1	60.5	61.2	1210	1224	22.8	23.5	1.4	0.0	0	2
LGW-3	Gas Well	10+	0.1	0.1	30.5	68.9	610	1378	17.7	27.6	6.9	0.0	0	0
LGW-4	Gas Well	10+	3.5	3.8	0.0	0.0	0	0	4.3	8.4	14.4	7.8	0	0
LGW-5	Gas Well	10+	3.2	0.2	0.0	59.5	0	1190	0.2	25.2	21.5	1.4	0	0
LGW-6	Gas Well	10+	0.3	0.3	0.0	67.5	0	1350	0.7	25.1	22.0	0.1	7	12
LGW-7	Gas Well	10+	3.2	3.2	0.0	0.0	0	0	0.0	0.2	22.2	21.9	5	6
LGW-8	Gas Well	10+	3.1	0.3	0.0	14.7	0	294	0.0	16.0	22.2	2.4	5	6
LGW-9	Gas Well	10+	2.9	2.9	0.0	0.0	0	0	0.0	0.4	22.0	21.6	6	6
LGW-10	Gas Well	10+	2.8	3.1	0.0	0.0	0	0	0.0	3.2	22.2	15.6	6	7
LGW-11	Gas Well	10+	3.1	3.0	0.0	0.0	0	0	0.0	4.9	22.2	14.2	7	7
LGW-12	Gas Well	10+	3.8	3.5	0.0	0.0	0	0	0.0	1.7	22.2	14.2	7	7
LGW-13	Gas Well	10+	3.5	1.3	0.0	4.5	0	90	0.0	6.9	22.6	8.2	8	10
LGW-14	Gas Well	10+	3.1	3.2	0.0	0.0	0	0	0.0	1.1	22.5	21.1	8	8
TGP-1	Temp. Gas Probe	1-5	3.9	3.7	0.0	0.0	0	0	0.8	0.6	21.2	21.5	2	1
TGP-2	Temp. Gas Probe	1-5	3.0	3.2	0.0	0.0	0	0	0.0	1.4	21.7	21.2	4	5
TGP-3	Temp. Gas Probe	1-5	3.4	3.6	0.0	0.1	0	2	2.5	2.3	20.2	20.2	3	2
TGP-4	Temp. Gas Probe	1-5	2.9	3.2	0.0	0.0	0	0	0.0	1.6	20.5	20.7	4	4
TGP-6	Temp. Gas Probe	1-5	3.6	3.8	0.0	0.0	0	0	0.0	0.1	22.0	21.9	2	3
TGP-7	Temp. Gas Probe	1-5	3.9	4.0	0.0	0.0	0	0	0.1	0.1	21.8	21.8	3	3
TGP-8	Temp. Gas Probe	1-5	3.8	3.5	0.0	0.0	0	0	0.0	0.4	21.9	21.6	3	3
TGP-9	Temp. Gas Probe	1-5	3.3	3.7	0.0	0.0	0	0	0.0	1.6	22.2	19.1	8	9
TGP-10	Temp. Gas Probe	1-5	3.3	3.3	0.0	0.0	0	0	0.0	0.2	22.4	22.0	9	8
TGP-11	Temp. Gas Probe	1-5	3.1	3.3	0.0	0.0	0	0	0.0	0.3	22.3	21.9	8	9
TGP-12	Temp. Gas Probe	1-5	3.2	3.3	0.0	0.0	0	0	0.0	0.2	22.0	22.0	3	3
CB-1	Catch Basin	<1	3.9	3.9	0.0	0.0	0	0	0.1	0.1	21.5	21.6	2	2
CB-2	Catch Basin	<1	2.6	3.0	0.0	0.0	0	0	0.2	0.1	22.0	22.0	6	6
CB-3	Catch Basin	<1	2.9	3.1	0.0	0.0	0	0	0.0	0.1	22.2	22.2	7	7
CB-4	Catch Basin	<1	3.0	3.1	0.0	0.0	0	0	0.0	0.0	22.2	22.2	7	7
MP-5	Monitoring Point	10+	2.0	2.5	1.0	3.9	20	78	0.7	1.9	21.0	19.7	4	4
MP-6	Monitoring Point	10+	3.4	3.4	0.0	0.0	0	0	0.0	0.0	22.4	22.4	3	4
Hydrant 1	Fire Hydrant	<1									Removed			
Hydrant 2	Fire Hydrant	<1	3.2	3.4	0.0	0.0	0	0	0.0	0.0	22.3	22.4	4	4
Scale House	Indoor Air	<1	2.9	2.6	0.0	0.0	0	0	0.0	0.0	22.2	22.3	7	8
Warehouse Building	Indoor Air	<1	3.2	3.1	0.0	0.0	0	0	0.1	0.0	22.2	22.2	4	4

- Notes:
- 1.) Monitoring points were purged for approximately 10 minutes before final measurements were recorded.
 - 2.) Total Organic Volatiles were measured using an Organic Volatile Meter.
 - 3.) Methane, LEL, Carbon Dioxide, Oxygen, and Hydrogen Sulfide were measured using a Landtec GEM 5000 Plus Landfill Gas Monitor.

TABLE 2
Groundwater Monitoring Summary
May 12, 2022

Shawmut Avenue Landfill
New Bedford, Massachusetts

ANALYTES	UNITS	MCP GROUNDWATER STANDARDS		GROUNDWATER SAMPLE IDENTIFICATION																						
		GW-2	GW-3	DRINKING WATER STANDARDS			CDM-1S	Q	CDM-1D	Q	DUP-1 (CDM-1D)	Q	CDM-3S	Q	CDM-3D	Q	CDM-4S	Q	CDM-4D	Q	CDM-5S	Q	CDM-5D	Q	CDM-6D	Q
				MCLs	SMCLs	MCLs	SMCLs	ORSG																		
VOLATILE ORGANIC COMPOUNDS (US EPA METHOD 8260B)																										
1,1,1,2-Tetrachloroethane	µg/L	10	50,000	NS	NS	NS	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,1,1-Trichloroethane	µg/L	4,000	20,000	200	NS	200	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,1,2,2-Tetrachloroethane	µg/L	9	50,000	NS	NS	NS	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,1,2-Trichloroethane	µg/L	900	50,000	5	NS	5	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,1-Dichloroethane	µg/L	2,000	20,000	NS	NS	NS	NS	70	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.23	5.57	1.00	U	1.00	U		
1,1-Dichloroethene	µg/L	80	30,000	7	NS	7	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,1-Dichloropropene	µg/L	NS	NS	NS	NS	NS	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,2,2,Trichlorobenzene	µg/L	NS	NS	NS	NS	NS	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,2,4-Trichlorobenzene	µg/L	200	50,000	70	NS	70	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,2,4-Trimethylbenzene	µg/L	NS	NS	NS	NS	NS	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,2-Dibromo-3-chloropropane	µg/L	NS	0.2	NS	0.2	NS	NS	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	2.00	U	
1,2-Dibromoethane (EDB)	µg/L	2	50,000	0.02	NS	0.02	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,2-Dichlorobenzene	µg/L	8,000	2,000	NS	NS	600	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,2-Dichloroethane	µg/L	5	20,000	5	NS	5	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,2-Dichloropropane	µg/L	3	50,000	5	NS	5	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,2-Dichloroethene	µg/L	NS	NS	NS	NS	NS	NS	1.00	U	4.26	4.27	1.00	U	148	1.00	U	5.39	1.00	U	1.00	U	1.00	U	1.00	U	
1,3,5-Trimethylbenzene	µg/L	NS	NS	NS	NS	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	
1,3-Dichlorobenzene	µg/L	6,000	50,000	NS	NS	NS	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,3-Dichloropropane	µg/L	NS	NS	NS	NS	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	
1,3-Dichloropropene	µg/L	10	200	NS	NS	NS	NS	0.04	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,4-Dichlorobenzene	µg/L	60	8,000	NS	NS	5	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
1,4-Dioxane	µg/L	6,000	50,000	NS	NS	NS	NS	0.3	100	U	100	U	100	U	100	U	100	U	100	U	100	U	100	U		
2-Butanone (MEK)	µg/L	50,000	50,000	NS	NS	NS	NS	4,000	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U		
2-Hexanone	µg/L	NS	NS	NS	NS	NS	NS	NS	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U		
4-Methyl-2-Pentanone (MIBK)	µg/L	50,000	50,000	NS	NS	NS	NS	350	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U		
Acetone	µg/L	50,000	50,000	NS	NS	NS	NS	6,300	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U	5.00	U		
Benzene	µg/L	1,000	10,000	5	NS	5	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.52	1.55	1.00	U	1.00	U		
Bromobenzene	µg/L	NS	NS	NS	NS	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U			
Bromochloromethane	µg/L	NS	NS	NS	NS	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U			
Bromodichloromethane	µg/L	6	50,000	NS	NS	NS	NS	NS	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U		
Bromoform	µg/L	700	50,000	NS	NS	NS	NS	NS	1																	

TABLE 3
Surface Water Analytical Summary
May 12, 2022

Shawmut Avenue Landfill
New Bedford, Massachusetts

ANALYTES	UNITS	NRWQC	SURFACE WATER SAMPLE IDENTIFICATION					
			SW-1	Q	SW-2	Q	SW-3	Q
VOLATILE ORGANIC COMPOUNDS (US EPA METHOD 8260)								
1,1,1,2-Tetrachloroethane	µg/L	NS	1.00	U	1.00	U	1.00	U
1,1,1-Trichloroethane	µg/L	NS	1.00	U	1.00	U	1.00	U
1,1,2,2-Tetrachloroethane	µg/L	NS	1.00	U	1.00	U	1.00	U
1,1,2-Trichloroethane	µg/L	NS	1.00	U	1.00	U	1.00	U
1,1-Dichloroethane	µg/L	NS	1.00	U	1.00	U	1.00	U
1,1-Dichloroethene	µg/L	NS	1.00	U	1.00	U	1.00	U
1,1-Dichloropropene	µg/L	NS	1.00	U	1.00	U	1.00	U
1,2,3-Trichlorobenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
1,2,4-Trichlorobenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
1,2,4-Trimethylbenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
1,2-Dibromo-3-chloropropane	µg/L	NS	2.00	U	2.00	U	2.00	U
1,2-Dibromoethane (EDB)	µg/L	NS	1.00	U	1.00	U	1.00	U
1,2-Dichlorobenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
1,2-Dichloroethane	µg/L	NS	1.00	U	1.00	U	1.00	U
1,2-Dichloroethene	µg/L	NS	1.00	U	1.00	U	1.00	U
1,2-Dichloropropane	µg/L	NS	1.00	U	1.00	U	1.00	U
1,3,5-Trimethylbenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
1,3-Dichlorobenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
1,3-Dichloropropane	µg/L	NS	1.00	U	1.00	U	1.00	U
1,3-Dichloropropene	µg/L	NS	1.00	U	1.00	U	1.00	U
1,4-Dichlorobenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
1,4-Dioxane	µg/L	NS	100	U	100	U	100	U
2-Butanone (MEK)	µg/L	NS	5.00	U	5.00	U	5.00	U
2-Hexanone	µg/L	NS	5.00	U	5.00	U	5.00	U
4-Methyl-2-Pentanone (MIBK)	µg/L	NS	5.00	U	5.00	U	5.00	U
Acetone	µg/L	NS	5.00	U	6.38		5.00	U
Benzene	µg/L	NS	1.00	U	1.00	U	1.00	U
Bromobenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
Bromochloromethane	µg/L	NS	1.00	U	1.00	U	1.00	U
Bromodichloromethane	µg/L	NS	1.00	U	1.00	U	1.00	U
Bromoform	µg/L	NS	1.00	U	1.00	U	1.00	U
Bromomethane	µg/L	NS	1.00	U	1.00	U	1.00	U
Carbon Disulfide	µg/L	NS	1.00	U	1.00	U	1.00	U
Carbon Tetrachloride	µg/L	NS	1.00	U	1.00	U	1.00	U
Chlorobenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
Chlorodibromomethane	µg/L	NS	1.00	U	1.00	U	1.00	U
Chloroethane	µg/L	NS	1.00	U	1.00	U	1.00	U
Chloroform	µg/L	NS	1.00	U	1.00	U	1.00	U
Chlormethane	µg/L	NS	1.00	U	1.00	U	1.00	U
cis-1,2-Dichloroethene	µg/L	NS	1.00	U	1.00	U	1.00	U
cis-1,3-Dichloropropene	µg/L	NS	1.00	U	1.00	U	1.00	U
Cyclohexane	µg/L	NS	5.00	U	5.00	U	5.00	U
Dibromomethane	µg/L	NS	1.00	U	1.00	U	1.00	U
Dichlorodifluoromethane	µg/L	NS	1.00	U	1.00	U	1.00	U
Ethylbenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
Hexachlorobutadiene	µg/L	NS	1.00	U	1.00	U	1.00	U
Isopropylbenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
Methylene Chloride	µg/L	NS	1.00	U	1.00	U	1.00	U
Naphthalene	µg/L	NS	1.00	U	1.00	U	1.00	U
n-Butylbenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
n-Propylbenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
p-Isopropyltoluene	µg/L	NS	1.00	U	1.00	U	1.00	U
sec-Butylbenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
Styrene	µg/L	NS	1.00	U	1.00	U	1.00	U
tert-Butylbenzene	µg/L	NS	1.00	U	1.00	U	1.00	U
Tetrachloroethene (PCE)	µg/L	NS	1.00	U	1.00	U	1.00	U
Toluene	µg/L	NS	1.00	U	1.00	U	1.00	U
trans-1,2-Dichloroethene	µg/L	NS	1.00	U	1.00	U	1.00	U
trans-1,3-Dichloropropene	µg/L	NS	1.00	U	1.00	U	1.00	U
Trichloroethene (TCE)	µg/L	NS	1.00	U	1.00	U	1.00	U
Trichlorofluoromethane	µg/L	NS	1.00	U	1.00	U	1.00	U
Vinyl Chloride	µg/L	NS	1.00	U	1.00	U	1.00	U
meta-Xylene and para-Xylene	µg/L	NS	1.00	U	1.00	U	1.00	U
ortho-Xylene	µg/L	NS	1.00	U	1.00	U	1.00	U
DISSOLVED METALS (US EPA 6000/7000 Series Methods)								
Arsenic	µg/L	150	5	U	5	U	5	U
Barium	µg/L	NS	602		101		91.8	
Cadmium	µg/L	see below	2	U	2	U	2	U
Calcium	µg/L	NS	81,000		71,800		45,000	
Chromium	µg/L	74	2	U	2	U	2	U
Copper	µg/L	see below	2.06		2	U	2	U
Iron	µg/L	1,000	464		28,900		134	
Lead	µg/L	see below	3	U	3	U	3	U
Manganese	µg/L	NS	115		3,320		58	
Magnesium	µg/L	NS	21,800		27,000		13,300	
Mercury	µg/L	0.77	0.2	U	0.2	U	0.2	U
Selenium	µg/L	5.0	5	U	5	U	5.0	U
Silver	µg/L	see below	2	U	2	U	2.0	U
Sodium	µg/L	NS	100,000		24,700		84	
Zinc	µg/L	see below	8.7		5	U	5.68	
GENERAL WATER QUALITY PARAMETERS (US EPA or MassDEP-Approved Methods)								
Alkalinity, Total (as CaCO ₃)	mg/L	20	443		290		120	
Chloride	mg/L	230	98.3		59.1		153	
Chemical Oxygen Demand (COD)	mg/L	NS	67.3		84		39	
Cyanide (total)	mg/L	0.0052	0.0100	U	0.0100	U	0.0100	U
Nitrate (as Nitrogen)	mg/L	NS	9.11		0.05	U	0.0500	U
Sulfate	mg/L	NS	5.00	U	36.2		25.1	
Total Dissolved Solids (TDS)	mg/L	NS	685		402		407	
Hardness	mg/L	NS	282		282		162	
POLYCHLORINATED BIPHENYLS (US EPA Method 8082)								
Aroclor 1016	µg/L	0.014	----		----		0.100	U
Aroclor 1221	µg/L	0.014	----		----		0.100	U
Aroclor 1232	µg/L	0.014	----		----		0.100	U
Aroclor 1242	µg/L	0.014	----		----		0.100	U
Aroclor 1248	µg/L	0.014	----		----		0.100	U
Aroclor 1254	µg/L	0.014	----					

TABLE 4
Sediment Sample Analytical Summary
May 12, 2022

Shawmut Avenue Landfill
New Bedford, Massachusetts

ANALYTES	UNITS	MCP S-1/GW-3 Concentration	SEDIMENT SAMPLE IDENTIFICATION
			SED-1
POLYCHLORINATED BIPHENYLS (US EPA Method 8082)			
Aroclor 1016	mg/Kg	2	<0.0026
Aroclor 1221	mg/Kg	2	<0.0026
Aroclor 1232	mg/Kg	2	<0.0026
Aroclor 1242	mg/Kg	2	<0.0026
Aroclor 1248	mg/Kg	2	<0.0026
Aroclor 1254	mg/Kg	2	0.0173
Aroclor 1260	mg/Kg	2	<0.0026
Total PCBs	mg/Kg	2	<0.0026

1. Highlighted cells indicate that the MCP Method 1 S-1/GW-3 Soil Concentration is exceeded.

APPENDIX A

Laboratory Analytical Results & Field Logs



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Project Description

Shawmut Landfill

For:

Bill Kenney

River Hawk Environmental, LLC

2183 Ocean St.

Marshfield, MA 02050

A handwritten signature in black ink that reads "Melisa L. Montgomery".

Quality Assurance Officer

Melisa L. Montgomery

Tuesday, June 7, 2022

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc. - Dayville. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

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Microbac Laboratories, Inc. - Dayville

**Revised Report: Per client,
amended to correct 8260 list.**

CERTIFICATE OF ANALYSIS

D2E1264

River Hawk Environmental, LLC

Project Name: Shawmut Landfill

Bill Kenney
2183 Ocean St.
Marshfield, MA 02050

Project / PO Number: Shawmut Landfill
Received: 05/13/2022
Reported: 06/07/2022

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
CDM-1S	D2E1264-01	Aqueous	Grab		05/12/22 08:35	05/13/22 13:00
CDM-1D	D2E1264-02	Aqueous	Grab		05/12/22 08:50	05/13/22 13:00
CDM-3S	D2E1264-03	Aqueous	Grab		05/12/22 09:40	05/13/22 13:00
CDM-3D	D2E1264-04	Aqueous	Grab		05/12/22 09:30	05/13/22 13:00
CDM-4S	D2E1264-05	Aqueous	Grab		05/12/22 10:15	05/13/22 13:00
CDM-4D	D2E1264-06	Aqueous	Grab		05/12/22 10:25	05/13/22 13:00
CDM-5S	D2E1264-07	Aqueous	Grab		05/12/22 11:00	05/13/22 13:00
CDM-5D	D2E1264-08	Aqueous	Grab		05/12/22 11:20	05/13/22 13:00
CDM-6D	D2E1264-09	Aqueous	Grab		05/12/22 12:30	05/13/22 13:00
DUP-1	D2E1264-10	Aqueous	Grab		05/12/22 09:00	05/13/22 13:00
FIELD BLANK	D2E1264-11	Aqueous	Field Blank		05/12/22 00:00	05/13/22 13:00



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Analytical Testing Parameters

Client Sample ID:	CDM-1S	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	Customer
Lab Sample ID:	D2E1264-01		05/12/2022 8:35

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1	Q8	05/25/22	1858	KJB
Benzene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Bromochloromethane	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Bromodichloromethane	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Bromoform	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Bromomethane	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
2-Butanone	<5.00	5.00	ug/L	1		05/25/22	1858	KJB
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Chlorobenzene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Chloroform	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Chloromethane	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22	1858	KJB
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22	1858	KJB
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
1,1-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
cis-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	1858	KJB
1,4-Dioxane	<100	100	ug/L	1		05/25/22	1858	KJB

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-1S	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	
Lab Sample ID:	D2E1264-01		Customer 05/12/2022 8:35

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Ethylbenzene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
Hexachlorobutadiene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 1858	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 1858	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 1858	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
m-,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 1858	KJB
Surrogate: 4-Bromofluorobenzene	103	Limit: 86-115	% Rec	1			05/25/22 1858	KJB
Surrogate: Dibromofluoromethane	104	Limit: 86-118	% Rec	1			05/25/22 1858	KJB
Surrogate: 1,2-Dichloroethane-d4	100	Limit: 80-120	% Rec	1			05/25/22 1858	KJB
Surrogate: Toluene-d8	101	Limit: 88-110	% Rec	1			05/25/22 1858	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/14/22 1400	05/16/22 1136	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	40.0	5.00	mg/L	1		05/13/22 1500	05/13/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	483	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	610	25.0	mg/L	10		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	99.7	4.00	mg/L	2	A21		05/16/22 1605	CLW

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CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-1S	Collected By:		Customer				
Sample Matrix:	Aqueous	Collection Date:						
Lab Sample ID:	D2E1264-01			05/12/2022 8:35				
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 4500-NO3⁻ F-2011								
Nitrate as N	<0.0500	0.0500	mg/L	1	A5		05/13/22 1732	DJM
SM 4500-SO4⁻ E-2011								
Sulfate as SO4	20.7	5.00	mg/L	1	A21		05/16/22 1213	CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237	05/17/22 1412	DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3010A/EPA 6010C								
Arsenic	0.00588	0.00500	mg/L	1	R3,Y1	05/16/22 1406	05/16/22 1438	DLO
Barium	0.110	0.0100	mg/L	1	Y1	05/16/22 1406	05/16/22 1438	DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1438	DLO
Calcium	102	0.500	mg/L	10	M6,Y	05/16/22 1406	05/17/22 1642	DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1438	DLO
Copper	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1438	DLO
Iron	1.51	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1438	DLO
Lead	<0.00300	0.00300	mg/L	1	Y1	05/16/22 1406	05/16/22 1438	DLO
Manganese	0.361	0.00200	mg/L	1	Y	05/16/22 1406	05/16/22 1438	DLO
Selenium	0.00523	0.00500	mg/L	1	R3,Y1	05/16/22 1406	05/16/22 1438	DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1438	DLO
Sodium	55.4	1.00	mg/L	1	Y	05/16/22 1406	05/16/22 1438	DLO
Zinc	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/18/22 1045	DLO



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-1D	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 8:50
Lab Sample ID:	D2E1264-02		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1	Q8	05/25/22 1920	KJB	
Benzene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Bromoform	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Bromomethane	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
2-Butanone	<5.00	5.00	ug/L	1		05/25/22 1920	KJB	
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Chlorobenzene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Chloroform	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Chloromethane	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22 1920	KJB	
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22 1920	KJB	
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
1,1-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
1,2-Dichloroethene	4.26	1.00	ug/L	1		05/25/22 1920	KJB	
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
cis-1,2-Dichloroethene	4.09	1.00	ug/L	1		05/25/22 1920	KJB	
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
1,4-Dioxane	<100	100	ug/L	1		05/25/22 1920	KJB	
Ethylbenzene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	
Hexachlorobutadiene	<1.00	1.00	ug/L	1		05/25/22 1920	KJB	

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CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-1D	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	Customer
Lab Sample ID:	D2E1264-02		05/12/2022 8:50

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 1920	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 1920	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 1920	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
m,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 1920	KJB
Surrogate: 4-Bromofluorobenzene	103	Limit: 86-115	% Rec	1			05/25/22 1920	KJB
Surrogate: Dibromofluoromethane	104	Limit: 86-118	% Rec	1			05/25/22 1920	KJB
Surrogate: 1,2-Dichloroethane-d4	101	Limit: 80-120	% Rec	1			05/25/22 1920	KJB
Surrogate: Toluene-d8	102	Limit: 88-110	% Rec	1			05/25/22 1920	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/14/22 1400	05/16/22 1137	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	24.4	5.00	mg/L	1		05/13/22 1500	05/13/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	355	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	567	25.0	mg/L	10		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	108	4.00	mg/L	2	A21		05/16/22 1608	CLW
SM 4500-NO3⁻ F-2011								

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-1D	Collected By:		Customer				
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 8:50					
Lab Sample ID:	D2E1264-02							
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Nitrate as N SM 4500-SO4⁻ E-2011	<0.0500	0.0500	mg/L	1	A5		05/13/22 1739	DJM
Sulfate as SO4	16.3	5.00	mg/L	1	A21		05/16/22 1218	CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237	05/17/22 1431	DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3010A/EPA 6010C								
Arsenic	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1447	DLO
Barium	0.255	0.0100	mg/L	1	Y1	05/16/22 1406	05/16/22 1447	DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1447	DLO
Calcium	72.0	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1447	DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1447	DLO
Copper	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1447	DLO
Iron	10.1	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1447	DLO
Lead	<0.00300	0.00300	mg/L	1	Y1	05/16/22 1406	05/16/22 1447	DLO
Manganese	0.831	0.00200	mg/L	1	Y	05/16/22 1406	05/16/22 1447	DLO
Selenium	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1447	DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1447	DLO
Sodium	<1.00	1.00	mg/L	1	Y	05/16/22 1406	05/16/22 1447	DLO
Zinc	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/18/22 1054	DLO



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-3S	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 9:40
Lab Sample ID:	D2E1264-03		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1	Q8	05/25/22 1941	KJB	
Benzene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Bromoform	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Bromomethane	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
2-Butanone	<5.00	5.00	ug/L	1		05/25/22 1941	KJB	
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Chlorobenzene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Chloroform	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Chloromethane	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22 1941	KJB	
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22 1941	KJB	
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
1,1-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
cis-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
1,4-Dioxane	<100	100	ug/L	1		05/25/22 1941	KJB	
Ethylbenzene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	
Hexachlorobutadiene	<1.00	1.00	ug/L	1		05/25/22 1941	KJB	

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-3S	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	Customer
Lab Sample ID:	D2E1264-03		05/12/2022 9:40

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 1941	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 1941	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 1941	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
m,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 1941	KJB
Surrogate: 4-Bromofluorobenzene	93.0	Limit: 86-115	% Rec	1			05/25/22 1941	KJB
Surrogate: Dibromofluoromethane	95.0	Limit: 86-118	% Rec	1			05/25/22 1941	KJB
Surrogate: 1,2-Dichloroethane-d4	91.6	Limit: 80-120	% Rec	1			05/25/22 1941	KJB
Surrogate: Toluene-d8	91.9	Limit: 88-110	% Rec	1			05/25/22 1941	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/14/22 1400	05/16/22 1138	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	43.0	5.00	mg/L	1		05/13/22 1500	05/13/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	200	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	396	25.0	mg/L	10		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	97.8	4.00	mg/L	2	A21		05/16/22 1610	CLW
SM 4500-NO3⁻ F-2011								

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-3S	Collected By:				Customer		
Sample Matrix:	Aqueous	Collection Date:				05/12/2022 9:40		
Lab Sample ID:	D2E1264-03							
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Nitrate as N	<0.0500	0.0500	mg/L	1	A5		05/13/22 1744	DJM
SM 4500-SO₄⁻ E-2011								
Sulfate as SO ₄	<5.00	5.00	mg/L	1	A21		05/16/22 1218	CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237	05/17/22 1433	DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3010A/EPA 6010C								
Arsenic	0.00551	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1451	DLO
Barium	0.0804	0.0100	mg/L	1	Y1	05/16/22 1406	05/16/22 1451	DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1451	DLO
Calcium	65.1	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1451	DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1451	DLO
Copper	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1451	DLO
Iron	27.1	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1451	DLO
Lead	<0.00300	0.00300	mg/L	1	Y1	05/16/22 1406	05/16/22 1451	DLO
Manganese	1.71	0.00200	mg/L	1	Y	05/16/22 1406	05/16/22 1451	DLO
Selenium	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1451	DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1451	DLO
Sodium	36.3	1.00	mg/L	1	Y	05/16/22 1406	05/16/22 1451	DLO
Zinc	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/18/22 1107	DLO
Polychlorinated Biphenyls (PCBs) by GC/ECD	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3510C/EPA 8082A								
Aroclor-1016 (PCB-1016)	<0.133	0.133	ug/L	1	D2,Y1	05/16/22 0939	05/16/22 2151	MRB
Aroclor-1221 (PCB-1221)	<0.133	0.133	ug/L	1	D2,Y1	05/16/22 0939	05/16/22 2151	MRB
Aroclor-1232 (PCB-1232)	<0.133	0.133	ug/L	1	D2,Y1	05/16/22 0939	05/16/22 2151	MRB
Aroclor-1242 (PCB-1242)	<0.133	0.133	ug/L	1	D2,Y1	05/16/22 0939	05/16/22 2151	MRB
Aroclor-1248 (PCB-1248)	<0.133	0.133	ug/L	1	D2,Y1	05/16/22 0939	05/16/22 2151	MRB
Aroclor-1254 (PCB-1254)	<0.133	0.133	ug/L	1	D2,Y1	05/16/22 0939	05/16/22 2151	MRB
Aroclor-1260 (PCB-1260)	<0.133	0.133	ug/L	1	D2,Y1	05/16/22 0939	05/16/22 2151	MRB
Surrogate: Decachlorobiphenyl (BZ-209)	78.5	Limit: 30-150	% Rec	1	D2	05/16/22 0939	05/16/22 2151	MRB
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	88.9	Limit: 30-150	% Rec	1	D2	05/16/22 0939	05/16/22 2151	MRB



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-3D	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 9:30
Lab Sample ID:	D2E1264-04		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1	Q8	05/25/22 2002	KJB	
Benzene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Bromochloromethane	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Bromodichloromethane	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Bromoform	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Bromomethane	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
2-Butanone	<5.00	5.00	ug/L	1		05/25/22 2002	KJB	
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Chlorobenzene	1.82	1.00	ug/L	1		05/25/22 2002	KJB	
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Chloroform	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Chloromethane	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22 2002	KJB	
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22 2002	KJB	
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
1,1-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
1,2-Dichloroethene	148	1.00	ug/L	1		05/25/22 2002	KJB	
trans-1,2-Dichloroethene	27.7	1.00	ug/L	1		05/25/22 2002	KJB	
1,1-Dichloroethene	2.09	1.00	ug/L	1		05/25/22 2002	KJB	
cis-1,2-Dichloroethene	120	1.00	ug/L	1		05/25/22 2002	KJB	
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
1,4-Dioxane	<100	100	ug/L	1		05/25/22 2002	KJB	
Ethylbenzene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	
Hexachlorobutadiene	<1.00	1.00	ug/L	1		05/25/22 2002	KJB	

Microbac Laboratories, Inc.



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-3D	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	Customer
Lab Sample ID:	D2E1264-04		05/12/2022 9:30

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 2002	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 2002	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
Trichloroethene	124	1.00	ug/L	1			05/25/22 2002	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 2002	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
m,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 2002	KJB
Surrogate: 4-Bromofluorobenzene	95.5	Limit: 86-115	% Rec	1			05/25/22 2002	KJB
Surrogate: Dibromofluoromethane	98.0	Limit: 86-118	% Rec	1			05/25/22 2002	KJB
Surrogate: 1,2-Dichloroethane-d4	93.3	Limit: 80-120	% Rec	1			05/25/22 2002	KJB
Surrogate: Toluene-d8	97.0	Limit: 88-110	% Rec	1			05/25/22 2002	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/14/22 1400	05/16/22 1139	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	5.56	5.00	mg/L	1		05/19/22 1500	05/19/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	358	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	551	25.0	mg/L	10		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	89.4	2.00	mg/L	1			05/16/22 1611	CLW
SM 4500-NO3⁻ F-2011								

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-3D	Collected By:	Customer			
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 9:30			
Lab Sample ID:	D2E1264-04					
Inorganics Total	Result	RL	Units	DF	Note	Prepared
Nitrate as N	<0.0500	0.0500	mg/L	1	A5	05/13/22 1745 DJM
SM 4500-SO4⁻ E-2011						
Sulfate as SO4	19.8	5.00	mg/L	1		05/16/22 1220 CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared
EPA 7470A						
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237 05/17/22 1435 DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared
EPA 3010A/EPA 6010C						
Arsenic	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406 05/16/22 1454 DLO
Barium	<0.0100	0.0100	mg/L	1	Y1	05/16/22 1406 05/16/22 1454 DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406 05/16/22 1454 DLO
Calcium	94.2	0.500	mg/L	10	Y	05/16/22 1406 05/17/22 1702 DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406 05/16/22 1454 DLO
Copper	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406 05/17/22 1557 DLO
Iron	<0.0500	0.0500	mg/L	1	Y	05/16/22 1406 05/16/22 1454 DLO
Lead	<0.00300	0.00300	mg/L	1	Y1	05/16/22 1406 05/16/22 1454 DLO
Manganese	0.0798	0.00200	mg/L	1	Y	05/16/22 1406 05/16/22 1454 DLO
Selenium	0.00635	0.00500	mg/L	1	Y1	05/16/22 1406 05/16/22 1454 DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406 05/16/22 1454 DLO
Sodium	39.6	1.00	mg/L	1	Y	05/16/22 1406 05/16/22 1454 DLO
Zinc	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406 05/18/22 1110 DLO
Polychlorinated Biphenyls (PCBs) by GC/ECD	Result	RL	Units	DF	Note	Prepared
EPA 3510C/EPA 8082A						
Aroclor-1016 (PCB-1016)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939 05/16/22 2201 MRB
Aroclor-1221 (PCB-1221)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939 05/16/22 2201 MRB
Aroclor-1232 (PCB-1232)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939 05/16/22 2201 MRB
Aroclor-1242 (PCB-1242)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939 05/16/22 2201 MRB
Aroclor-1248 (PCB-1248)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939 05/16/22 2201 MRB
Aroclor-1254 (PCB-1254)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939 05/16/22 2201 MRB
Aroclor-1260 (PCB-1260)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939 05/16/22 2201 MRB
Surrogate: Decachlorobiphenyl (BZ-209)	88.4	Limit: 30-150	% Rec	1		05/16/22 0939 05/16/22 2201 MRB
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	76.6	Limit: 30-150	% Rec	1		05/16/22 0939 05/16/22 2201 MRB



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-4S	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 10:15
Lab Sample ID:	D2E1264-05		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1	Q8	05/25/22 2023	KJB	
Benzene	1.52	1.00	ug/L	1		05/25/22 2023	KJB	
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
Bromoform	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
Bromomethane	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
2-Butanone	<5.00	5.00	ug/L	1		05/25/22 2023	KJB	
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
Chlorobenzene	8.82	1.00	ug/L	1		05/25/22 2023	KJB	
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
Chloroethane (Ethyl chloride)	4.80	1.00	ug/L	1		05/25/22 2023	KJB	
Chloroform	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
Chloromethane	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22 2023	KJB	
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22 2023	KJB	
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
1,1-Dichloroethane	1.23	1.00	ug/L	1		05/25/22 2023	KJB	
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
cis-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
1,4-Dioxane	<100	100	ug/L	1		05/25/22 2023	KJB	
Ethylbenzene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	
Hexachlorobutadiene	<1.00	1.00	ug/L	1		05/25/22 2023	KJB	

Microbac Laboratories, Inc.



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-4S	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	Customer
Lab Sample ID:	D2E1264-05		05/12/2022 10:15

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 2023	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 2023	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 2023	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
m,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 2023	KJB
Surrogate: 4-Bromofluorobenzene	99.1	Limit: 86-115	% Rec	1			05/25/22 2023	KJB
Surrogate: Dibromofluoromethane	88.8	Limit: 86-118	% Rec	1			05/25/22 2023	KJB
Surrogate: 1,2-Dichloroethane-d4	97.4	Limit: 80-120	% Rec	1			05/25/22 2023	KJB
Surrogate: Toluene-d8	98.3	Limit: 88-110	% Rec	1			05/25/22 2023	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/14/22 1400	05/16/22 1129	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	100	5.00	mg/L	1		05/13/22 1500	05/13/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	535	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	1070	25.0	mg/L	10		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	318	10.0	mg/L	5	A21		05/16/22 1612	CLW
SM 4500-NO3⁻ F-2011								

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-4S	Collected By:		Customer				
Sample Matrix:	Aqueous	Collection Date:						
Lab Sample ID:	D2E1264-05			05/12/2022 10:15				
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Nitrate as N SM 4500-SO4⁻ E-2011	<0.0500	0.0500	mg/L	1	A5		05/13/22 1746	DJM
Sulfate as SO4	7.25	5.00	mg/L	1	A21		05/16/22 1220	CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237	05/17/22 1438	DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3010A/EPA 6010C								
Arsenic	0.00673	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1457	DLO
Barium	0.284	0.0100	mg/L	1	Y1	05/16/22 1406	05/16/22 1457	DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1457	DLO
Calcium	136	0.500	mg/L	10	Y	05/16/22 1406	05/17/22 1705	DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1457	DLO
Copper	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1457	DLO
Iron	22.7	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1457	DLO
Lead	<0.00300	0.00300	mg/L	1	Y1	05/16/22 1406	05/16/22 1457	DLO
Manganese	0.796	0.00200	mg/L	1	Y	05/16/22 1406	05/16/22 1457	DLO
Selenium	0.00844	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1457	DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1457	DLO
Sodium	185	1.00	mg/L	1	Y	05/16/22 1406	05/16/22 1457	DLO
Zinc	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/18/22 1114	DLO



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-4D	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 10:25
Lab Sample ID:	D2E1264-06		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1	Q8	05/25/22	2045	KJB
Benzene	1.55	1.00	ug/L	1		05/25/22	2045	KJB
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
Bromoform	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
Bromomethane	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
2-Butanone	<5.00	5.00	ug/L	1		05/25/22	2045	KJB
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
Chlorobenzene	77.8	1.00	ug/L	1		05/25/22	2045	KJB
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
Chloroform	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
Chloromethane	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22	2045	KJB
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22	2045	KJB
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
1,2-Dichlorobenzene	1.01	1.00	ug/L	1		05/25/22	2045	KJB
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
1,1-Dichloroethane	5.77	1.00	ug/L	1		05/25/22	2045	KJB
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
1,2-Dichloroethene	5.39	1.00	ug/L	1		05/25/22	2045	KJB
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
cis-1,2-Dichloroethene	5.39	1.00	ug/L	1		05/25/22	2045	KJB
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
1,4-Dioxane	<100	100	ug/L	1		05/25/22	2045	KJB
Ethylbenzene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB
Hexachlorobutadiene	<1.00	1.00	ug/L	1		05/25/22	2045	KJB

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CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-4D	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	Customer
Lab Sample ID:	D2E1264-06		05/12/2022 10:25

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 2045	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 2045	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 2045	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
Vinyl chloride	5.25	1.00	ug/L	1			05/25/22 2045	KJB
m,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 2045	KJB
Surrogate: 4-Bromofluorobenzene	102	Limit: 86-115	% Rec	1			05/25/22 2045	KJB
Surrogate: Dibromofluoromethane	103	Limit: 86-118	% Rec	1			05/25/22 2045	KJB
Surrogate: 1,2-Dichloroethane-d4	110	Limit: 80-120	% Rec	1			05/25/22 2045	KJB
Surrogate: Toluene-d8	100	Limit: 88-110	% Rec	1			05/25/22 2045	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/14/22 1400	05/16/22 1142	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	110	5.00	mg/L	1		05/13/22 1500	05/13/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	645	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	1330	25.0	mg/L	10		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	377	10.0	mg/L	5	A21		05/16/22 1613	CLW
SM 4500-NO3⁻ F-2011								

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CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-4D	Collected By:		Customer				
Sample Matrix:	Aqueous	Collection Date:						
Lab Sample ID:	D2E1264-06			05/12/2022 10:25				
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Nitrate as N SM 4500-SO4⁻ E-2011	<0.0500	0.0500	mg/L	1	A5		05/13/22 1747	DJM
Sulfate as SO4	5.86	5.00	mg/L	1	A21		05/16/22 1222	CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237	05/17/22 1440	DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3010A/EPA 6010C								
Arsenic	0.00869	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1500	DLO
Barium	0.0687	0.0100	mg/L	1	Y1	05/16/22 1406	05/16/22 1500	DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1500	DLO
Calcium	199	0.500	mg/L	10	Y	05/16/22 1406	05/17/22 1708	DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1500	DLO
Copper	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1500	DLO
Iron	13.2	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1500	DLO
Lead	<0.00300	0.00300	mg/L	1	Y1	05/16/22 1406	05/16/22 1500	DLO
Manganese	4.95	0.00200	mg/L	1	Y	05/16/22 1406	05/16/22 1500	DLO
Selenium	0.0234	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1500	DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1500	DLO
Sodium	173	1.00	mg/L	1	Y	05/16/22 1406	05/16/22 1500	DLO
Zinc	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/18/22 1117	DLO



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-5S	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 11:00
Lab Sample ID:	D2E1264-07		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1	Q8	05/25/22 2106	KJB	
Benzene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Bromoform	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Bromomethane	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
2-Butanone	<5.00	5.00	ug/L	1		05/25/22 2106	KJB	
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Chlorobenzene	3.30	1.00	ug/L	1		05/25/22 2106	KJB	
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Chloroform	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Chloromethane	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22 2106	KJB	
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22 2106	KJB	
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
1,1-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
cis-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
1,4-Dioxane	<100	100	ug/L	1		05/25/22 2106	KJB	
Ethylbenzene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	
Hexachlorobutadiene	<1.00	1.00	ug/L	1		05/25/22 2106	KJB	

Microbac Laboratories, Inc.



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-5S	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	
Lab Sample ID:	D2E1264-07		Customer 05/12/2022 11:00

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 2106	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 2106	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 2106	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
m,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 2106	KJB
Surrogate: 4-Bromofluorobenzene	94.7	Limit: 86-115	% Rec	1			05/25/22 2106	KJB
Surrogate: Dibromofluoromethane	101	Limit: 86-118	% Rec	1			05/25/22 2106	KJB
Surrogate: 1,2-Dichloroethane-d4	97.3	Limit: 80-120	% Rec	1			05/25/22 2106	KJB
Surrogate: Toluene-d8	95.8	Limit: 88-110	% Rec	1			05/25/22 2106	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/16/22 1537	05/16/22 1628	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	87.6	5.00	mg/L	1		05/13/22 1500	05/13/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	498	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	738	25.0	mg/L	10		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	109	4.00	mg/L	2	A21		05/16/22 1614	CLW
SM 4500-NO3⁻ F-2011								

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-5S	Collected By:				Customer		
Sample Matrix:	Aqueous	Collection Date:				05/12/2022 11:00		
Lab Sample ID:	D2E1264-07							
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Nitrate as N	<0.0500	0.0500	mg/L	1	A5		05/13/22 1749	DJM
SM 4500-SO₄⁻ E-2011								
Sulfate as SO ₄	<5.00	5.00	mg/L	1	A21		05/16/22 1222	CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237	05/17/22 1446	DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3010A/EPA 6010C								
Arsenic	0.00865	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1513	DLO
Barium	0.198	0.0100	mg/L	1	Y1	05/16/22 1406	05/16/22 1513	DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1513	DLO
Calcium	112	0.500	mg/L	10	Y	05/16/22 1406	05/17/22 1711	DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1513	DLO
Copper	0.00351	0.00200	mg/L	1	Q10,Y1	05/16/22 1406	05/17/22 1617	DLO
Iron	1.08	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1513	DLO
Lead	0.00397	0.00300	mg/L	1	Y1	05/16/22 1406	05/16/22 1513	DLO
Manganese	9.65	0.0200	mg/L	10	Y	05/16/22 1406	05/17/22 1711	DLO
Selenium	0.0131	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1513	DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1513	DLO
Sodium	53.2	1.00	mg/L	1	Y	05/16/22 1406	05/16/22 1513	DLO
Zinc	0.00518	0.00500	mg/L	1	Y1	05/16/22 1406	05/18/22 1120	DLO
Polychlorinated Biphenyls (PCBs) by GC/ECD	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3510C/EPA 8082A								
Aroclor-1016 (PCB-1016) [2C]	1.32	0.200	ug/L	2	AC,Y1	05/16/22 0939	05/17/22 1312	MRB
Aroclor-1221 (PCB-1221)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2212	MRB
Aroclor-1232 (PCB-1232)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2212	MRB
Aroclor-1242 (PCB-1242)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2212	MRB
Aroclor-1248 (PCB-1248)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2212	MRB
Aroclor-1254 (PCB-1254)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2212	MRB
Aroclor-1260 (PCB-1260)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2212	MRB
Surrogate: Decachlorobiphenyl (BZ-209)	70.7	Limit: 30-150	% Rec	1		05/16/22 0939	05/16/22 2212	MRB
Surrogate: Decachlorobiphenyl (BZ-209) [2C]	70.0	Limit: 30-150	% Rec	1		05/16/22 0939	05/16/22 2212	MRB
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	74.3	Limit: 30-150	% Rec	1		05/16/22 0939	05/16/22 2212	MRB
Surrogate: 2,4,5,6-Tetrachloro-m-xylene [2C]	74.1	Limit: 30-150	% Rec	1		05/16/22 0939	05/16/22 2212	MRB



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CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-5D	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 11:20
Lab Sample ID:	D2E1264-08		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1	Q8	05/25/22 2127	KJB	
Benzene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
Bromoform	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
Bromomethane	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
2-Butanone	<5.00	5.00	ug/L	1		05/25/22 2127	KJB	
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
Chlorobenzene	8.70	1.00	ug/L	1		05/25/22 2127	KJB	
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
Chloroethane (Ethyl chloride)	5.86	1.00	ug/L	1		05/25/22 2127	KJB	
Chloroform	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
Chloromethane	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22 2127	KJB	
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22 2127	KJB	
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
1,1-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
cis-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
1,4-Dioxane	<100	100	ug/L	1		05/25/22 2127	KJB	
Ethylbenzene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	
Hexachlorobutadiene	<1.00	1.00	ug/L	1		05/25/22 2127	KJB	

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CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-5D	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	Customer
Lab Sample ID:	D2E1264-08		05/12/2022 11:20

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 2127	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 2127	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 2127	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
m,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 2127	KJB
Surrogate: 4-Bromofluorobenzene	96.1	Limit: 86-115	% Rec	1			05/25/22 2127	KJB
Surrogate: Dibromofluoromethane	96.1	Limit: 86-118	% Rec	1			05/25/22 2127	KJB
Surrogate: 1,2-Dichloroethane-d4	92.6	Limit: 80-120	% Rec	1			05/25/22 2127	KJB
Surrogate: Toluene-d8	94.8	Limit: 88-110	% Rec	1			05/25/22 2127	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/16/22 1537	05/16/22 1629	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	93.8	5.00	mg/L	1		05/13/22 1500	05/13/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	525	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	801	25.0	mg/L	10		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	140	8.00	mg/L	4	A21		05/16/22 1616	CLW
SM 4500-NO3⁻ F-2011								

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-5D	Collected By:				Customer		
Sample Matrix:	Aqueous	Collection Date:				05/12/2022 11:20		
Lab Sample ID:	D2E1264-08							
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Nitrate as N	<0.0500	0.0500	mg/L	1	A5		05/13/22 1750	DJM
SM 4500-SO₄⁻ E-2011								
Sulfate as SO ₄	<5.00	5.00	mg/L	1	A21		05/16/22 1224	CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237	05/17/22 1448	DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3010A/EPA 6010C								
Arsenic	0.0104	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1516	DLO
Barium	0.105	0.0100	mg/L	1	Y1	05/16/22 1406	05/16/22 1516	DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1516	DLO
Calcium	110	0.500	mg/L	10	Y	05/16/22 1406	05/17/22 1715	DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1516	DLO
Copper	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/17/22 1620	DLO
Iron	0.694	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1516	DLO
Lead	<0.00300	0.00300	mg/L	1	Y1	05/16/22 1406	05/16/22 1516	DLO
Manganese	7.74	0.00200	mg/L	1	Y	05/16/22 1406	05/16/22 1516	DLO
Selenium	0.0231	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1516	DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1516	DLO
Sodium	78.8	1.00	mg/L	1	Y	05/16/22 1406	05/16/22 1516	DLO
Zinc	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/18/22 1123	DLO
Polychlorinated Biphenyls (PCBs) by GC/ECD	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3510C/EPA 8082A								
Aroclor-1016 (PCB-1016) [2C]	3.11	0.500	ug/L	5	AC,Y1	05/16/22 0939	05/17/22 1323	MRB
Aroclor-1221 (PCB-1221)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2223	MRB
Aroclor-1232 (PCB-1232)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2223	MRB
Aroclor-1242 (PCB-1242)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2223	MRB
Aroclor-1248 (PCB-1248)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2223	MRB
Aroclor-1254 (PCB-1254)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2223	MRB
Aroclor-1260 (PCB-1260)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2223	MRB
Surrogate: Decachlorobiphenyl (BZ-209)	72.2	Limit: 30-150	% Rec	1		05/16/22 0939	05/16/22 2223	MRB
Surrogate: Decachlorobiphenyl (BZ-209) [2C]	70.5	Limit: 30-150	% Rec	1		05/16/22 0939	05/16/22 2223	MRB
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	71.4	Limit: 30-150	% Rec	1		05/16/22 0939	05/16/22 2223	MRB
Surrogate: 2,4,5,6-Tetrachloro-m-xylene [2C]	75.1	Limit: 30-150	% Rec	1		05/16/22 0939	05/16/22 2223	MRB



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-6D	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 12:30
Lab Sample ID:	D2E1264-09		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1	Q8	05/25/22 2148	KJB	
Benzene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Bromoform	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Bromomethane	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
2-Butanone	<5.00	5.00	ug/L	1		05/25/22 2148	KJB	
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Chlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Chloroform	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Chloromethane	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22 2148	KJB	
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22 2148	KJB	
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
1,1-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
cis-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
1,4-Dioxane	<100	100	ug/L	1		05/25/22 2148	KJB	
Ethylbenzene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	
Hexachlorobutadiene	<1.00	1.00	ug/L	1		05/25/22 2148	KJB	

Microbac Laboratories, Inc.



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-6D	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	
Lab Sample ID:	D2E1264-09		Customer 05/12/2022 12:30

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 2148	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 2148	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 2148	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
m,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 2148	KJB
Surrogate: 4-Bromofluorobenzene	96.6	Limit: 86-115	% Rec	1			05/25/22 2148	KJB
Surrogate: Dibromofluoromethane	95.9	Limit: 86-118	% Rec	1			05/25/22 2148	KJB
Surrogate: 1,2-Dichloroethane-d4	94.2	Limit: 80-120	% Rec	1			05/25/22 2148	KJB
Surrogate: Toluene-d8	95.0	Limit: 88-110	% Rec	1			05/25/22 2148	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/14/22 1400	05/16/22 1133	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	8.60	5.00	mg/L	1		05/19/22 1500	05/19/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	115	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	196	25.0	mg/L	10		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	16.3	2.00	mg/L	1			05/16/22 1501	CLW
SM 4500-NO3⁻ F-2011								

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CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	CDM-6D	Collected By:		Customer				
Sample Matrix:	Aqueous	Collection Date:						
Lab Sample ID:	D2E1264-09			05/12/2022 12:30				
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Nitrate as N SM 4500-SO4⁻ E-2011	0.983	0.0500	mg/L	1	A5		05/13/22 1751	DJM
Sulfate as SO4	11.9	5.00	mg/L	1			05/16/22 1224	CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237	05/17/22 1450	DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3010A/EPA 6010C								
Arsenic	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1519	DLO
Barium	0.0949	0.0100	mg/L	1	Y1	05/16/22 1406	05/16/22 1519	DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1519	DLO
Calcium	20.8	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1519	DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1519	DLO
Copper	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/17/22 1623	DLO
Iron	<0.0500	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1519	DLO
Lead	<0.00300	0.00300	mg/L	1	Y1	05/16/22 1406	05/16/22 1519	DLO
Manganese	<0.00200	0.00200	mg/L	1	Y	05/16/22 1406	05/16/22 1519	DLO
Selenium	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1519	DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1519	DLO
Sodium	29.9	1.00	mg/L	1	Y	05/16/22 1406	05/16/22 1519	DLO
Zinc	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/18/22 1126	DLO



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	DUP-1	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 9:00
Lab Sample ID:	D2E1264-10		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1	Q8	05/25/22 2209	KJB	
Benzene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Bromochloromethane	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Bromodichloromethane	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Bromoform	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Bromomethane	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
2-Butanone	<5.00	5.00	ug/L	1		05/25/22 2209	KJB	
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Chlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Chloroform	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Chloromethane	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22 2209	KJB	
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22 2209	KJB	
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
1,1-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
1,2-Dichloroethene	4.27	1.00	ug/L	1		05/25/22 2209	KJB	
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
cis-1,2-Dichloroethene	4.27	1.00	ug/L	1		05/25/22 2209	KJB	
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
1,4-Dioxane	<100	100	ug/L	1		05/25/22 2209	KJB	
Ethylbenzene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	
Hexachlorobutadiene	<1.00	1.00	ug/L	1		05/25/22 2209	KJB	

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CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	DUP-1	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	
Lab Sample ID:	D2E1264-10		Customer 05/12/2022 9:00

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 2209	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 2209	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 2209	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
m,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 2209	KJB
Surrogate: 4-Bromofluorobenzene	97.8	Limit: 86-115	% Rec	1			05/25/22 2209	KJB
Surrogate: Dibromofluoromethane	97.4	Limit: 86-118	% Rec	1			05/25/22 2209	KJB
Surrogate: 1,2-Dichloroethane-d4	94.0	Limit: 80-120	% Rec	1			05/25/22 2209	KJB
Surrogate: Toluene-d8	96.6	Limit: 88-110	% Rec	1			05/25/22 2209	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/14/22 1400	05/16/22 1142	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	24.4	5.00	mg/L	1		05/13/22 1500	05/13/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	355	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	595	25.0	mg/L	10		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	109	4.00	mg/L	2	A21		05/16/22 1617	CLW
SM 4500-NO3⁻ F-2011								

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CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	DUP-1	Collected By:		Customer				
Sample Matrix:	Aqueous	Collection Date:						
Lab Sample ID:	D2E1264-10			05/12/2022 9:00				
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Nitrate as N SM 4500-SO4⁻ E-2011	<0.0500	0.0500	mg/L	1	A5		05/13/22 1752	DJM
Sulfate as SO4	17.1	5.00	mg/L	1	A21		05/16/22 1225	CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237	05/17/22 1452	DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3010A/EPA 6010C								
Arsenic	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1523	DLO
Barium	0.253	0.0100	mg/L	1	Y1	05/16/22 1406	05/16/22 1523	DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1523	DLO
Calcium	71.7	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1523	DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1523	DLO
Copper	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1523	DLO
Iron	9.84	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1523	DLO
Lead	<0.00300	0.00300	mg/L	1	Y1	05/16/22 1406	05/16/22 1523	DLO
Manganese	0.829	0.00200	mg/L	1	Y	05/16/22 1406	05/16/22 1523	DLO
Selenium	0.00665	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1523	DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1523	DLO
Sodium	64.7	1.00	mg/L	1	Y	05/16/22 1406	05/16/22 1523	DLO
Zinc	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/18/22 1130	DLO



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	FIELD BLANK	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022
Lab Sample ID:	D2E1264-11		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1	Q8	05/25/22	1651	KJB
Benzene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Bromoform	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Bromomethane	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
2-Butanone	<5.00	5.00	ug/L	1		05/25/22	1651	KJB
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Chlorobenzene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Chloroform	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Chloromethane	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22	1651	KJB
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22	1651	KJB
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
1,1-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
cis-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
1,4-Dioxane	<100	100	ug/L	1		05/25/22	1651	KJB
Ethylbenzene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB
Hexachlorobutadiene	<1.00	1.00	ug/L	1		05/25/22	1651	KJB

Microbac Laboratories, Inc.



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Client Sample ID:	FIELD BLANK				Collected By:	Customer		
Sample Matrix:	Aqueous				Collection Date:	05/12/2022		
Lab Sample ID:	D2E1264-11							
Volatile Organic Compounds by GCMS								
	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 1651	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 1651	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 1651	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
m,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 1651	KJB
Surrogate: 4-Bromofluorobenzene	98.1	Limit: 86-115	% Rec	1			05/25/22 1651	KJB
Surrogate: Dibromofluoromethane	95.2	Limit: 86-118	% Rec	1			05/25/22 1651	KJB
Surrogate: 1,2-Dichloroethane-d4	92.9	Limit: 80-120	% Rec	1			05/25/22 1651	KJB
Surrogate: Toluene-d8	95.5	Limit: 88-110	% Rec	1			05/25/22 1651	KJB



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D2E1264

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260B	B2E1337	B2E1337-BLK1 B2E1337-BS1 B2E1337-BSD1 D2E1264-11 D2E1264-01 D2E1264-02 D2E1264-03 D2E1264-04 D2E1264-05 D2E1264-06 D2E1264-07 D2E1264-08 D2E1264-09 D2E1264-10	FIELD BLANK CDM-1S CDM-1D CDM-3S CDM-3D CDM-4S CDM-4D CDM-5S CDM-5D CDM-6D DUP-1
SM 4500-CI E-2011	DE20824	DE20824-BS1 DE20824-BLK1 D2E1264-09 DE20824-DUP1 DE20824-MS1 DE20824-MSD1 D2E1264-01 D2E1264-02 D2E1264-03 D2E1264-04 D2E1264-05 D2E1264-06 D2E1264-07 D2E1264-08 D2E1264-10	CDM-6D D2E1264-09 D2E1264-09 D2E1264-09 CDM-1S CDM-1D CDM-3S CDM-3D CDM-4S CDM-4D CDM-5S CDM-5D DUP-1
SM 4500-SO4 ⁻ E-2011	DE20856	DE20856-BLK1 DE20856-BS1 D2E1264-01 DE20856-DUP1 D2E1264-02 D2E1264-03 D2E1264-05	CDM-1S D2E1264-01 CDM-1D CDM-3S CDM-4S

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SM 4500-SO ₄ ⁻ E-2011	DE20856	D2E1264-04 D2E1264-07 D2E1264-06 D2E1264-08 D2E1264-09 D2E1264-10 DE20856-MS1 DE20856-MSD1	CDM-3D CDM-5S CDM-4D CDM-5D CDM-6D DUP-1 D2E1264-01 D2E1264-01
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Method	Batch	Laboratory ID	Client / Source ID
SM 4500-NO ₃ ⁻ F-2011	DE20869	DE20869-BS1 DE20869-BLK1 D2E1264-01 DE20869-DUP1 DE20869-MS1 DE20869-MSD1 D2E1264-02 D2E1264-03 D2E1264-04 D2E1264-05 D2E1264-06 D2E1264-07 D2E1264-08 D2E1264-09 D2E1264-10	CDM-1S D2E1264-01 D2E1264-01 D2E1264-01 CDM-1D CDM-3S CDM-3D CDM-4S CDM-4D CDM-5S CDM-5D CDM-6D DUP-1
SM 2320 B-2011	DE20873	DE20873-DUP1 D2E1264-03 D2E1264-10 D2E1264-09 D2E1264-05 D2E1264-08 D2E1264-07 D2E1264-06 D2E1264-04 D2E1264-01 DE20873-BS1 D2E1264-02 DE20873-BLK1	D2E1175-09 CDM-3S DUP-1 CDM-6D CDM-4S CDM-5D CDM-5S CDM-4D CDM-3D CDM-1S CDM-1D
Hach 8000	DE20881	D2E1264-06 D2E1264-03	CDM-4D CDM-3S

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D2E1264

Hach 8000	DE20881	D2E1264-01	CDM-1S
		D2E1264-02	CDM-1D
		D2E1264-10	DUP-1
		D2E1264-07	CDM-5S
		D2E1264-08	CDM-5D
		DE20881-BLK1	
		DE20881-BS1	
		DE20881-MS1	D2E1126-02
		D2E1264-05	CDM-4S
		DE20881-DUP1	D2E1126-02

Method	Batch	Laboratory ID	Client / Source ID
SM 2540 C-2015	DE20890	D2E1264-06	CDM-4D
		DE20890-DUP2	D2E1267-03
		DE20890-DUP1	D2E1264-02
		D2E1264-10	DUP-1
		D2E1264-09	CDM-6D
		D2E1264-07	CDM-5S
		D2E1264-08	CDM-5D
		D2E1264-05	CDM-4S
		D2E1264-03	CDM-3S
		D2E1264-04	CDM-3D
		D2E1264-01	CDM-1S
		D2E1264-02	CDM-1D
		DE20890-BLK1	
		DE20890-BS1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 9012A	DE20894	DE20894-BS1	
		DE20894-BLK1	
		DE20894-MRL1	
		D2E1264-05	CDM-4S
		DE20894-DUP1	D2E1264-05
		DE20894-MS1	D2E1264-05
		D2E1264-09	CDM-6D
		DE20894-MS2	D2E1264-09
		D2E1264-01	CDM-1S
		D2E1264-02	CDM-1D
		D2E1264-03	CDM-3S
		D2E1264-04	CDM-3D
		D2E1264-10	DUP-1
		D2E1264-06	CDM-4D

Method	Batch	Laboratory ID	Client / Source ID
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EPA 8082A	DE20901	DE20901-BLK1 DE20901-BS1 DE20901-MS1 D2E1264-03 DE20901-MSD1 D2E1264-03 D2E1264-03 CDM-3S D2E1264-04 CDM-3D D2E1264-07 CDM-5S D2E1264-08 CDM-5D D2E1264-07RE1 CDM-5S D2E1264-08RE1 CDM-5D
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Method	Batch	Laboratory ID	Client / Source ID
EPA 6010C	DE20932	DE20932-BLK1 DE20932-BS1 D2E1264-01 CDM-1S DE20932-DUP1 D2E1264-01 DE20932-MS1 D2E1264-01 D2E1264-02 CDM-1D D2E1264-03 CDM-3S D2E1264-04 CDM-3D D2E1264-05 CDM-4S D2E1264-06 CDM-4D D2E1264-07 CDM-5S D2E1264-08 CDM-5D D2E1264-09 CDM-6D D2E1264-10 DUP-1 DE20932-MS2 D2E1267-01 D2E1264-04 CDM-3D D2E1264-07 CDM-5S D2E1264-08 CDM-5D D2E1264-09 CDM-6D DE20932-MS4 D2E1267-01 D2E1264-01 CDM-1S DE20932-DUP2 D2E1264-01 DE20932-MS3 D2E1264-01 D2E1264-04 CDM-3D D2E1264-05 CDM-4S D2E1264-06 CDM-4D D2E1264-07 CDM-5S D2E1264-08 CDM-5D DE20932-BLK2 DE20932-BS2 D2E1264-01 CDM-1S	

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D2E1264

EPA 6010C	DE20932	DE20932-DUP3 DE20932-MS5 D2E1264-02 D2E1264-03 D2E1264-04 D2E1264-05 D2E1264-06 D2E1264-07 D2E1264-08 D2E1264-09 D2E1264-10 DE20932-MS6	D2E1264-01 D2E1264-01 CDM-1D CDM-3S CDM-3D CDM-4S CDM-4D CDM-5S CDM-5D CDM-6D DUP-1 D2E1267-01
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Method	Batch	Laboratory ID	Client / Source ID
EPA 9012A	DE20939	DE20939-BS1 DE20939-MRL1 DE20939-BLK1 DE20939-DUP1 D2E1264-07 D2E1264-08 DE20939-MS1	D2E1185-08 CDM-5S CDM-5D D2E1185-08
EPA 7470A	DE21008	DE21008-BLK1 DE21008-BS1 D2E1264-01 DE21008-MS1 DE21008-MSD1 DE21008-MS2 D2E1264-02 D2E1264-03 D2E1264-04 D2E1264-05 D2E1264-06 D2E1264-07 D2E1264-08 D2E1264-09 D2E1264-10	CDM-1S D2E1264-01 D2E1264-01 D2E1267-01 CDM-1D CDM-3S CDM-3D CDM-4S CDM-4D CDM-5S CDM-5D CDM-6D DUP-1
Hach 8000	DE21281	D2E1264-04 D2E1264-09 DE21281-DUP1 DE21281-BS1	CDM-3D CDM-6D D2E1264-04

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CERTIFICATE OF ANALYSIS

D2E1264

Hach 8000

DE21281

DE21281-MS1

D2E1264-04

DE21281-BLK1

Batch Quality Control Summary: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch DE20824 - Wet Chem - W - SM 4500-CI E-2011										
Blank (DE20824-BLK1)										
Chloride <2.00 2.00 mg/L Prepared & Analyzed: 05/16/2022										
LCS (DE20824-BS1)										
Chloride 20.3 2.00 mg/L 20.0 101 90-110 Prepared & Analyzed: 05/16/2022										
Duplicate (DE20824-DUP1)										
Chloride 16.4 2.00 mg/L 16.3 0.863 20 Source: D2E1264-09 Prepared & Analyzed: 05/16/2022										
Matrix Spike (DE20824-MS1)										
Chloride 36.9 2.00 mg/L 20.0 16.3 103 75-125 Source: D2E1264-09 Prepared & Analyzed: 05/16/2022										
Matrix Spike Dup (DE20824-MSD1)										
Chloride 36.6 2.00 mg/L 20.0 16.3 102 75-125 0.873 20 Source: D2E1264-09 Prepared & Analyzed: 05/16/2022										
Batch DE20856 - Wet Chem - W - SM 4500-SO4⁻ E-2011										
Blank (DE20856-BLK1)										
Sulfate as SO4 <5.00 5.00 mg/L Prepared & Analyzed: 05/16/2022										
LCS (DE20856-BS1)										
Sulfate as SO4 20.2 5.00 mg/L 20.0 101 90-110 Prepared & Analyzed: 05/16/2022										
Duplicate (DE20856-DUP1)										
Sulfate as SO4 20.2 5.00 mg/L 20.7 2.30 20 A21 Source: D2E1264-01 Prepared & Analyzed: 05/16/2022										
Matrix Spike (DE20856-MS1)										
Sulfate as SO4 42.1 25.0 mg/L 20.0 20.7 107 75-125 A21 Source: D2E1264-01 Prepared & Analyzed: 05/16/2022										
Matrix Spike Dup (DE20856-MSD1)										
Sulfate as SO4 41.7 25.0 mg/L 20.0 20.7 105 75-125 0.907 20 A21 Source: D2E1264-01 Prepared & Analyzed: 05/16/2022										
Batch DE20869 - Wet Chem - W - SM 4500-NO3⁻ F-2011										
Blank (DE20869-BLK1)										
Nitrate as N <0.0500 0.0500 mg/L Prepared & Analyzed: 05/13/2022										
LCS (DE20869-BS1)										
Nitrate as N 5.11 0.0500 mg/L 5.00 102 90-110 Prepared & Analyzed: 05/13/2022										
Duplicate (DE20869-DUP1)										
Nitrate as N <0.0500 0.0500 mg/L ND 20 A5 Source: D2E1264-01 Prepared & Analyzed: 05/13/2022										
Matrix Spike (DE20869-MS1)										
Nitrate as N 5.06 0.0500 mg/L 5.00 ND 101 75-125 A5 Source: D2E1264-01 Prepared & Analyzed: 05/13/2022										
Matrix Spike Dup (DE20869-MSD1)										
Nitrate as N 5.11 0.0500 mg/L 5.00 ND 102 75-125 0.987 20 A5 Source: D2E1264-01 Prepared & Analyzed: 05/13/2022										
Batch DE20873 - Wet Chem - W - SM 2320 B-2011										



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CERTIFICATE OF ANALYSIS

D2E1264

Inorganics Total	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes				
Batch DE20873 - Wet Chem - W - SM 2320 B-2011														
Blank (DE20873-BLK1)					Prepared & Analyzed: 05/13/2022									
Alkalinity to pH 4.5	<1.00	1.00	mg CaCO ₃ /L											
LCS (DE20873-BS1)														
Alkalinity to pH 4.5	50.0	1.00	mg CaCO ₃ /L	50.0	100	90-110								
Duplicate (DE20873-DUP1)			Source: D2E1175-09		Prepared & Analyzed: 05/13/2022									
Alkalinity to pH 4.5	75.0	1.00	mg CaCO ₃ /L	75.0				0.00	20					
Batch DE20881 - Wet Chem - W - Hach 8000														
Blank (DE20881-BLK1)					Prepared & Analyzed: 05/13/2022									
Chemical Oxygen Demand (COD)	<5.00	5.00	mg/L											
LCS (DE20881-BS1)														
Chemical Oxygen Demand (COD)	101	5.00	mg/L	100	101	80-120								
Duplicate (DE20881-DUP1)			Source: D2E1126-02		Prepared & Analyzed: 05/13/2022									
Chemical Oxygen Demand (COD)	93.4	5.00	mg/L	99.3				6.13	20					
Matrix Spike (DE20881-MS1)			Source: D2E1126-02		Prepared & Analyzed: 05/13/2022									
Chemical Oxygen Demand (COD)	193	5.00	mg/L	100	99.3	94.2	80-120							
Batch DE20890 - Wet-Solids-W - SM 2540 C-2015														
Blank (DE20890-BLK1)					Prepared: 05/13/2022 Analyzed: 05/19/2022									
Total Dissolved Solids (TDS)	<10.0	10.0	mg/L											
LCS (DE20890-BS1)														
Total Dissolved Solids (TDS)	110	25.0	mg/L	100	110	80-120								
Duplicate (DE20890-DUP1)			Source: D2E1264-02		Prepared: 05/13/2022 Analyzed: 05/19/2022									
Total Dissolved Solids (TDS)	564	25.0	mg/L	567				0.531	10					
Duplicate (DE20890-DUP2)			Source: D2E1267-03		Prepared: 05/13/2022 Analyzed: 05/19/2022									
Total Dissolved Solids (TDS)	412	25.0	mg/L	407				1.22	10					
Batch DE20894 - Wet-Distillation-W - EPA 9012A														
Blank (DE20894-BLK1)					Prepared: 05/14/2022 Analyzed: 05/16/2022									
Cyanide - Total	<0.0100	0.0100	mg/L											
LCS (DE20894-BS1)														
Cyanide - Total	0.207	0.0100	mg/L	0.200	104	90-110								
Duplicate (DE20894-DUP1)			Source: D2E1264-05		Prepared: 05/14/2022 Analyzed: 05/16/2022									
Cyanide - Total	<0.0100	0.0100	mg/L	ND				200	20					
Matrix Spike (DE20894-MS1)			Source: D2E1264-05		Prepared: 05/14/2022 Analyzed: 05/16/2022									
Cyanide - Total	0.0926	0.0100	mg/L	0.100	ND	92.6	75-125							



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CERTIFICATE OF ANALYSIS

D2E1264

Inorganics Total	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch DE20894 - Wet-Distillation-W - EPA 9012A										
Matrix Spike (DE20894-MS2)	Source: D2E1264-09	Prepared: 05/14/2022 Analyzed: 05/16/2022								
Cyanide - Total	0.0957	0.0100	mg/L	0.100	ND	95.7	75-125			
Batch DE20939 - Wet-Distillation-W - EPA 9012A										
Blank (DE20939-BLK1)		Prepared & Analyzed: 05/16/2022								
Cyanide - Total	<0.0100	0.0100	mg/L							
LCS (DE20939-BS1)		Prepared & Analyzed: 05/16/2022								
Cyanide - Total	0.205	0.0100	mg/L	0.200	103	90-110				
Duplicate (DE20939-DUP1)	Source: D2E1185-08	Prepared & Analyzed: 05/16/2022								
Cyanide - Total	<0.0500	0.0500	mg/L	ND			20			
Matrix Spike (DE20939-MS1)	Source: D2E1185-08	Prepared & Analyzed: 05/16/2022								
Cyanide - Total	0.443	0.0500	mg/L	0.500	ND	88.5	75-125			
Batch DE21281 - Wet Chem - W - Hach 8000										
Blank (DE21281-BLK1)		Prepared & Analyzed: 05/19/2022								
Chemical Oxygen Demand (COD)	<5.00	5.00	mg/L							
LCS (DE21281-BS1)		Prepared & Analyzed: 05/19/2022								
Chemical Oxygen Demand (COD)	20.6	5.00	mg/L	20.0	103	80-120				
Duplicate (DE21281-DUP1)	Source: D2E1264-04	Prepared & Analyzed: 05/19/2022								
Chemical Oxygen Demand (COD)	<5.00	5.00	mg/L	5.56		13.4	20			
Matrix Spike (DE21281-MS1)	Source: D2E1264-04	Prepared & Analyzed: 05/19/2022								
Chemical Oxygen Demand (COD)	26.8	5.00	mg/L	20.0	5.56	106	80-120			
Metals Dissolved by CVAA	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch DE21008 - 245 HG W - EPA 7470A										
Blank (DE21008-BLK1)		Prepared & Analyzed: 05/17/2022								
Mercury	<0.00020	0.00020	mg/L							
LCS (DE21008-BS1)		Prepared & Analyzed: 05/17/2022								
Mercury	0.00510	0.00020	mg/L	0.00500	102	80-120				
Matrix Spike (DE21008-MS1)	Source: D2E1264-01	Prepared & Analyzed: 05/17/2022								
Mercury	0.00459	0.00020	mg/L	0.00500	ND	91.7	75-125			
Matrix Spike (DE21008-MS2)	Source: D2E1267-01	Prepared & Analyzed: 05/17/2022								
Mercury	0.00420	0.00020	mg/L	0.00500	ND	84.1	75-125			
Matrix Spike Dup (DE21008-MSD1)	Source: D2E1264-01	Prepared & Analyzed: 05/17/2022								
Mercury	0.00464	0.00020	mg/L	0.00500	ND	92.8	75-125	1.13	20	
Metals Dissolved by ICP	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch DE20932 - 3010A - EPA 6010C										
Blank (DE20932-BLK1)		Prepared & Analyzed: 05/16/2022								

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D2E1264

Metals Dissolved by ICP	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch DE20932 - 3010A - EPA 6010C										
Blank (DE20932-BLK1)										
Prepared & Analyzed: 05/16/2022										
Silver	<0.00200	0.00200	mg/L							
Arsenic	<0.00500	0.00500	mg/L							
Barium	<0.0100	0.0100	mg/L							
Calcium	<0.0500	0.0500	mg/L							
Cadmium	<0.00200	0.00200	mg/L							
Chromium	<0.00200	0.00200	mg/L							
Copper	<0.00200	0.00200	mg/L							
Iron	<0.0500	0.0500	mg/L							
Manganese	<0.00200	0.00200	mg/L							
Sodium	<1.00	1.00	mg/L							
Lead	<0.00300	0.00300	mg/L							
Selenium	<0.00500	0.00500	mg/L							
Blank (DE20932-BLK2)										
Zinc	<0.00500	0.00500	mg/L							
LCS (DE20932-BS1)										
Prepared & Analyzed: 05/16/2022										
Silver	0.0992	0.00200	mg/L	0.100		99.2	80-120			
Arsenic	0.482	0.00500	mg/L	0.500		96.3	80-120			
Barium	0.473	0.0100	mg/L	0.500		94.7	80-120			
Calcium	10.2	0.0500	mg/L	10.5		97.3	80-120			
Cadmium	0.498	0.00200	mg/L	0.500		99.5	80-120			
Chromium	0.478	0.00200	mg/L	0.500		95.7	80-120			
Copper	0.489	0.00200	mg/L	0.500		97.8	80-120			
Iron	2.46	0.0500	mg/L	2.50		98.3	80-120			
Manganese	0.497	0.00200	mg/L	0.500		99.4	80-120			
Sodium	10.6	1.00	mg/L	10.5		101	80-120			
Lead	0.479	0.00300	mg/L	0.500		95.9	80-120			
Selenium	0.473	0.00500	mg/L	0.500		94.6	80-120			
LCS (DE20932-BS2)										
Zinc	0.484	0.00500	mg/L	0.500		96.8	80-120			
Duplicate (DE20932-DUP1)										
Source: D2E1264-01 Prepared & Analyzed: 05/16/2022										
Silver	<0.00200	0.00200	mg/L	ND				20		
Arsenic	<0.00500	0.00500	mg/L	0.0059			200	20	R3	
Barium	0.109	0.0100	mg/L	0.110			0.679	20		
Cadmium	<0.00200	0.00200	mg/L	ND				20		
Chromium	<0.00200	0.00200	mg/L	ND				20		
Copper	<0.00200	0.00200	mg/L	ND				20		
Iron	1.50	0.0500	mg/L	1.51			0.426	20		
Manganese	0.359	0.00200	mg/L	0.361			0.627	20		
Sodium	55.0	1.00	mg/L	55.4			0.630	20		
Lead	<0.00300	0.00300	mg/L	ND				20		
Selenium	0.0101	0.00500	mg/L	0.0052			63.5	20	R3	
Duplicate (DE20932-DUP2)										
Source: D2E1264-01 Prepared: 05/16/2022 Analyzed: 05/17/2022										
Calcium	103	0.500	mg/L	102			1.16	20		

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Metals Dissolved by ICP	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch DE20932 - 3010A - EPA 6010C										
Duplicate (DE20932-DUP3)	Source: D2E1264-01	Prepared: 05/16/2022 Analyzed: 05/18/2022								
Zinc	<0.00500	0.00500	mg/L		ND				20	
Matrix Spike (DE20932-MS1)	Source: D2E1264-01	Prepared & Analyzed: 05/16/2022								
Silver	0.0908	0.00200	mg/L	0.100	ND	90.8	75-125			
Arsenic	0.518	0.00500	mg/L	0.500	0.0059	102	75-125			
Barium	0.585	0.0100	mg/L	0.500	0.110	94.9	75-125			
Cadmium	0.502	0.00200	mg/L	0.500	ND	100	75-125			
Chromium	0.487	0.00200	mg/L	0.500	ND	97.4	75-125			
Copper	0.505	0.00200	mg/L	0.500	ND	101	75-125			
Iron	3.93	0.0500	mg/L	2.50	1.51	96.6	75-125			
Manganese	0.842	0.00200	mg/L	0.500	0.361	96.3	75-125			
Sodium	63.8	1.00	mg/L	10.5	55.4	79.7	75-125			
Lead	0.480	0.00300	mg/L	0.500	ND	95.9	75-125			
Selenium	0.558	0.00500	mg/L	0.500	0.0052	111	75-125			
Matrix Spike (DE20932-MS2)	Source: D2E1267-01	Prepared & Analyzed: 05/16/2022								
Silver	0.0887	0.00200	mg/L	0.100	ND	88.7	75-125			
Arsenic	0.508	0.00500	mg/L	0.500	ND	102	75-125			
Barium	1.05	0.0100	mg/L	0.500	0.602	89.1	75-125			
Calcium	86.6	0.0500	mg/L	10.5	81.0	53.4	75-125			M6
Cadmium	0.493	0.00200	mg/L	0.500	ND	98.7	75-125			
Chromium	0.480	0.00200	mg/L	0.500	0.0012	95.8	75-125			
Iron	2.90	0.0500	mg/L	2.50	0.464	97.3	75-125			
Manganese	0.604	0.00200	mg/L	0.500	0.115	97.8	75-125			
Sodium	106	1.00	mg/L	10.5	100	56.7	75-125			M6
Lead	0.472	0.00300	mg/L	0.500	ND	94.5	75-125			
Selenium	0.533	0.00500	mg/L	0.500	0.0032	106	75-125			
Matrix Spike (DE20932-MS3)	Source: D2E1264-01	Prepared: 05/16/2022 Analyzed: 05/17/2022								
Calcium	107	0.500	mg/L	10.5	102	51.3	75-125			M6
Matrix Spike (DE20932-MS4)	Source: D2E1267-01	Prepared: 05/16/2022 Analyzed: 05/17/2022								
Copper	0.484	0.00200	mg/L	0.500	0.0021	96.4	75-125			
Matrix Spike (DE20932-MS5)	Source: D2E1264-01	Prepared: 05/16/2022 Analyzed: 05/18/2022								
Zinc	0.474	0.00500	mg/L	0.500	ND	94.9	75-125			
Matrix Spike (DE20932-MS6)	Source: D2E1267-01	Prepared: 05/16/2022 Analyzed: 05/18/2022								
Zinc	0.480	0.00500	mg/L	0.500	0.0087	94.3	75-125			
Polychlorinated Biphenyls (PCBs) by GC/ECD	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes

Batch DE20901 - 3510C W Sep Funnel - EPA 8082A

Blank (DE20901-BLK1)	Prepared & Analyzed: 05/16/2022									
Aroclor-1016 (PCB-1016)	<0.100	0.100	ug/L							
Aroclor-1016 (PCB-1016) [2C]	<0.100	0.100	ug/L							
Aroclor-1221 (PCB-1221)	<0.100	0.100	ug/L							

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Polychlorinated Biphenyls (PCBs) by GC/ECD	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch DE20901 - 3510C W Sep Funnel - EPA 8082A

Blank (DE20901-BLK1)	Prepared & Analyzed: 05/16/2022								
Aroclor-1221 (PCB-1221) [2C]	<0.100	0.100	ug/L						
Aroclor-1232 (PCB-1232)	<0.100	0.100	ug/L						
Aroclor-1232 (PCB-1232) [2C]	<0.100	0.100	ug/L						
Aroclor-1242 (PCB-1242)	<0.100	0.100	ug/L						
Aroclor-1242 (PCB-1242) [2C]	<0.100	0.100	ug/L						
Aroclor-1248 (PCB-1248)	<0.100	0.100	ug/L						
Aroclor-1248 (PCB-1248) [2C]	<0.100	0.100	ug/L						
Aroclor-1254 (PCB-1254)	<0.100	0.100	ug/L						
Aroclor-1254 (PCB-1254) [2C]	<0.100	0.100	ug/L						
Aroclor-1260 (PCB-1260)	<0.100	0.100	ug/L						
Aroclor-1260 (PCB-1260) [2C]	<0.100	0.100	ug/L						
<i>Surrogate: Decachlorobiphenyl (BZ-209)</i>	0.0882		ug/L	0.100		88.2	30-150		
<i>Surrogate: Decachlorobiphenyl (BZ-209) [2C]</i>	0.0861		ug/L	0.100		86.1	30-150		
<i>Surrogate: 2,4,5,6-Tetrachloro-m-xylene</i>	0.0844		ug/L	0.100		84.4	30-150		
<i>Surrogate: 2,4,5,6-Tetrachloro-m-xylene [2C]</i>	0.0810		ug/L	0.100		81.0	30-150		
LCS (DE20901-BS1)	Prepared & Analyzed: 05/16/2022								
Aroclor-1016 (PCB-1016)	0.665	0.100	ug/L	1.00		66.5	40-140		
Aroclor-1016 (PCB-1016) [2C]	0.658	0.100	ug/L	1.00		65.8	40-140		
Aroclor-1260 (PCB-1260)	0.752	0.100	ug/L	1.00		75.2	40-140		
Aroclor-1260 (PCB-1260) [2C]	0.730	0.100	ug/L	1.00		73.0	40-140		
<i>Surrogate: Decachlorobiphenyl (BZ-209)</i>	0.0881		ug/L	0.100		88.1	30-150		
<i>Surrogate: Decachlorobiphenyl (BZ-209) [2C]</i>	0.0859		ug/L	0.100		85.9	30-150		
<i>Surrogate: 2,4,5,6-Tetrachloro-m-xylene</i>	0.0834		ug/L	0.100		83.4	30-150		
<i>Surrogate: 2,4,5,6-Tetrachloro-m-xylene [2C]</i>	0.0795		ug/L	0.100		79.5	30-150		
Matrix Spike (DE20901-MS1)	Source: D2E1264-03 Prepared & Analyzed: 05/16/2022								
Aroclor-1016 (PCB-1016)	0.901	0.133	ug/L	1.33	ND	67.6	40-140		
Aroclor-1260 (PCB-1260)	1.09	0.133	ug/L	1.33	ND	81.5	40-140		
<i>Surrogate: Decachlorobiphenyl (BZ-209)</i>	0.117		ug/L	0.133		87.9	30-150		
<i>Surrogate: 2,4,5,6-Tetrachloro-m-xylene</i>	0.120		ug/L	0.133		90.1	30-150		
Matrix Spike Dup (DE20901-MSD1)	Source: D2E1264-03 Prepared & Analyzed: 05/16/2022								
Aroclor-1016 (PCB-1016)	0.861	0.133	ug/L	1.33	ND	64.6	40-140	4.56	20
Aroclor-1260 (PCB-1260)	1.03	0.133	ug/L	1.33	ND	77.3	40-140	5.31	20
<i>Surrogate: Decachlorobiphenyl (BZ-209)</i>	0.107		ug/L	0.133		80.5	30-150		
<i>Surrogate: 2,4,5,6-Tetrachloro-m-xylene</i>	0.114		ug/L	0.133		85.7	30-150		

Batch Quality Control Summary: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch B2E1337 - 5030_8260 - EPA 8260B

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Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes			
Batch B2E1337 - 5030_8260 - EPA 8260B													
Blank (B2E1337-BLK1)				Prepared & Analyzed: 05/25/2022									
Acetone	<5.00	5.00	ug/L										
Benzene	<1.00	1.00	ug/L										
Bromobenzene	<1.00	1.00	ug/L										
Bromochloromethane	<1.00	1.00	ug/L										
Bromodichloromethane	<1.00	1.00	ug/L										
Bromoform	<1.00	1.00	ug/L										
Bromomethane	<1.00	1.00	ug/L										
2-Butanone	<5.00	5.00	ug/L										
sec-Butylbenzene	<1.00	1.00	ug/L										
tert-Butylbenzene	<1.00	1.00	ug/L										
n-Butylbenzene	<1.00	1.00	ug/L										
Carbon disulfide	<1.00	1.00	ug/L										
Carbon tetrachloride	<1.00	1.00	ug/L										
Chlorobenzene	<1.00	1.00	ug/L										
Chlorodibromomethane	<1.00	1.00	ug/L										
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L										
Chloroform	<1.00	1.00	ug/L										
Chloromethane	<1.00	1.00	ug/L										
Cyclohexane	<5.00	5.00	ug/L										
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L										
1,2-Dibromoethane	<1.00	1.00	ug/L										
Dibromomethane	<1.00	1.00	ug/L										
1,2-Dichlorobenzene	<1.00	1.00	ug/L										
1,4-Dichlorobenzene	<1.00	1.00	ug/L										
1,3-Dichlorobenzene	<1.00	1.00	ug/L										
Dichlorodifluoromethane	<1.00	1.00	ug/L										
1,1-Dichloroethane	<1.00	1.00	ug/L										
1,2-Dichloroethane	<1.00	1.00	ug/L										
1,2-Dichloroethene	<1.00	1.00	ug/L										
trans-1,2-Dichloroethene	<1.00	1.00	ug/L										
1,1-Dichloroethene	<1.00	1.00	ug/L										
cis-1,2-Dichloroethene	<1.00	1.00	ug/L										
1,2-Dichloropropane	<1.00	1.00	ug/L										
1,3-Dichloropropane	<1.00	1.00	ug/L										
cis-1,3-Dichloropropene	<1.00	1.00	ug/L										
trans-1,3-Dichloropropene	<1.00	1.00	ug/L										
1,1-Dichloropropene	<1.00	1.00	ug/L										
1,3-Dichloropropene	<1.00	1.00	ug/L										
1,4-Dioxane	<100	100	ug/L										
Ethylbenzene	<1.00	1.00	ug/L										
Hexachlorobutadiene	<1.00	1.00	ug/L										
2-Hexanone	<5.00	5.00	ug/L										
Isopropylbenzene	<1.00	1.00	ug/L										

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D2E1264

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
Blank (B2E1337-BLK1)										
Prepared & Analyzed: 05/25/2022										
p-Isopropyltoluene	<1.00	1.00	ug/L							
Methylene chloride	<1.00	1.00	ug/L							
4-Methyl-2-pentanone	<5.00	5.00	ug/L							
Naphthalene	<1.00	1.00	ug/L							
n-Propylbenzene	<1.00	1.00	ug/L							
Styrene	<1.00	1.00	ug/L							
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L							
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L							
Tetrachloroethene	<1.00	1.00	ug/L							
Toluene	<1.00	1.00	ug/L							
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L							
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L							
1,1,1-Trichloroethane	<1.00	1.00	ug/L							
1,1,2-Trichloroethane	<1.00	1.00	ug/L							
Trichloroethene	<1.00	1.00	ug/L							
Trichlorofluoromethane	<1.00	1.00	ug/L							
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L							
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L							
Vinyl chloride	<1.00	1.00	ug/L							
m-,p-Xylene	<1.00	1.00	ug/L							
o-Xylene	<1.00	1.00	ug/L							
Xylenes	<1.00	1.00	ug/L							
Surrogate: 4-Bromofluorobenzene	49.2		ug/L	50.0		98.3	86-115			
Surrogate: Dibromofluoromethane	47.4		ug/L	50.0		94.8	86-118			
Surrogate: 1,2-Dichloroethane-d4	46.8		ug/L	50.0		93.6	80-120			
Surrogate: Toluene-d8	47.9		ug/L	50.0		95.7	88-110			
LCS (B2E1337-BS1)										
Prepared & Analyzed: 05/25/2022										
Acetone	19.1	5.00	ug/L	20.0		95.4	40-180			
Benzene	21.0	1.00	ug/L	20.0		105	80-121			
Bromobenzene	21.3	1.00	ug/L	20.0		106	80-120			
Bromochloromethane	20.1	1.00	ug/L	20.0		100	65-130			
Bromodichloromethane	18.0	1.00	ug/L	20.0		90.0	80-131			
Bromoform	18.5	1.00	ug/L	20.0		92.7	70-130			
Bromomethane	21.6	1.00	ug/L	20.0		108	30-145			
2-Butanone	20.0	5.00	ug/L	20.0		99.8	10-170			
sec-Butylbenzene	20.6	1.00	ug/L	20.0		103	80-127			
tert-Butylbenzene	21.0	1.00	ug/L	20.0		105	80-126			
n-Butylbenzene	21.5	1.00	ug/L	20.0		107	80-131			
Carbon disulfide	14.4	1.00	ug/L	20.0		71.9	58-128			
Carbon tetrachloride	18.0	1.00	ug/L	20.0		89.8	65-140			
Chlorobenzene	22.5	1.00	ug/L	20.0		112	80-120			
Chlorodibromomethane	19.4	1.00	ug/L	20.0		97.0	60-135			
Chloroethane (Ethyl chloride)	21.0	1.00	ug/L	20.0		105	60-135			

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D2E1264

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
LCS (B2E1337-BS1)										
					Prepared & Analyzed: 05/25/2022					
Chloroform	20.7	1.00	ug/L	20.0	103	80-125				
Chloromethane	18.3	1.00	ug/L	20.0	91.7	40-125				
Cyclohexane	14.4	5.00	ug/L	20.0	72.2	70-130				
1,2-Dibromo-3-chloropropane	18.8	2.00	ug/L	20.0	94.2	50-130				
1,2-Dibromoethane	21.6	1.00	ug/L	20.0	108	80-129				
Dibromomethane	21.7	1.00	ug/L	20.0	108	75-125				
1,2-Dichlorobenzene	21.4	1.00	ug/L	20.0	107	80-125				
1,4-Dichlorobenzene	21.7	1.00	ug/L	20.0	108	80-120				
1,3-Dichlorobenzene	20.7	1.00	ug/L	20.0	103	80-120				
Dichlorodifluoromethane	20.4	1.00	ug/L	20.0	102	40-160				
1,1-Dichloroethane	19.5	1.00	ug/L	20.0	97.5	80-125				
1,2-Dichloroethane	20.8	1.00	ug/L	20.0	104	80-129				
1,2-Dichloroethene	38.0	1.00	ug/L	40.0	95.0	80-124				
trans-1,2-Dichloroethene	20.1	1.00	ug/L	20.0	100	80-127				
1,1-Dichloroethene	20.0	1.00	ug/L	20.0	100	80-132				
cis-1,2-Dichloroethene	17.9	1.00	ug/L	20.0	89.5	70-125				
1,2-Dichloropropane	19.9	1.00	ug/L	20.0	99.5	80-120				
1,3-Dichloropropane	22.1	1.00	ug/L	20.0	110	80-120				
cis-1,3-Dichloropropene	20.6	1.00	ug/L	20.0	103	70-130				
trans-1,3-Dichloropropene	20.5	1.00	ug/L	20.0	102	80-130				
1,1-Dichloropropene	20.5	1.00	ug/L	20.0	103	75-130				
1,3-Dichloropropene	41.1	1.00	ug/L	40.0	103	80-120				
1,4-Dioxane	216	100	ug/L	200	108	20-160				
Ethylbenzene	21.9	1.00	ug/L	20.0	109	80-122				
Hexachlorobutadiene	20.1	1.00	ug/L	20.0	100	72-132				
2-Hexanone	19.2	5.00	ug/L	20.0	96.1	55-130				
Isopropylbenzene	22.5	1.00	ug/L	20.0	112	80-122				
p-Isopropyltoluene	21.0	1.00	ug/L	20.0	105	80-122				
Methylene chloride	22.4	1.00	ug/L	20.0	112	80-123				
4-Methyl-2-pentanone	19.6	5.00	ug/L	20.0	97.9	64-140				
Naphthalene	23.6	1.00	ug/L	20.0	118	59-149				
n-Propylbenzene	21.1	1.00	ug/L	20.0	106	80-129				
Styrene	22.4	1.00	ug/L	20.0	112	80-123				
1,1,1,2-Tetrachloroethane	21.0	1.00	ug/L	20.0	105	80-130				
1,1,2,2-Tetrachloroethane	19.8	1.00	ug/L	20.0	98.8	79-125				
Tetrachloroethene	22.7	1.00	ug/L	20.0	113	80-124				
Toluene	20.5	1.00	ug/L	20.0	103	80-124				
1,2,3-Trichlorobenzene	22.1	1.00	ug/L	20.0	110	55-140				
1,2,4-Trichlorobenzene	22.3	1.00	ug/L	20.0	112	65-135				
1,1,1-Trichloroethane	19.6	1.00	ug/L	20.0	97.8	80-134				
1,1,2-Trichloroethane	21.9	1.00	ug/L	20.0	110	80-125				
Trichloroethene	20.8	1.00	ug/L	20.0	104	80-122				
Trichlorofluoromethane	22.3	1.00	ug/L	20.0	111	62-151				

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CERTIFICATE OF ANALYSIS

D2E1264

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
LCS (B2E1337-BS1)										
Prepared & Analyzed: 05/25/2022										
1,2,4-Trimethylbenzene	21.2	1.00	ug/L	20.0	106	80-125				
1,3,5-Trimethylbenzene	20.8	1.00	ug/L	20.0	104	80-127				
Vinyl chloride	18.7	1.00	ug/L	20.0	93.3	50-170				
m-,p-Xylene	45.3	1.00	ug/L	40.0	113	80-122				
o-Xylene	21.7	1.00	ug/L	20.0	108	80-122				
Xylenes	67.0	1.00	ug/L	60.0	112	80-121				
Surrogate: 4-Bromofluorobenzene	48.2		ug/L	50.0	96.4	86-115				
Surrogate: Dibromofluoromethane	52.3		ug/L	50.0	105	86-118				
Surrogate: 1,2-Dichloroethane-d4	50.4		ug/L	50.0	101	80-120				
Surrogate: Toluene-d8	51.4		ug/L	50.0	103	88-110				
LCS Dup (B2E1337-BSD1)										
Prepared & Analyzed: 05/25/2022										
Acetone	18.0	5.00	ug/L	20.0	90.2	40-180	5.60	20		
Benzene	20.6	1.00	ug/L	20.0	103	80-121	1.92	20		
Bromobenzene	21.5	1.00	ug/L	20.0	107	80-120	0.935	20		
Bromochloromethane	19.6	1.00	ug/L	20.0	97.8	65-130	2.72	20		
Bromodichloromethane	17.9	1.00	ug/L	20.0	89.6	80-131	0.445	20		
Bromoform	17.2	1.00	ug/L	20.0	86.2	70-130	7.27	20		
Bromomethane	22.1	1.00	ug/L	20.0	111	30-145	2.43	20		
2-Butanone	19.4	5.00	ug/L	20.0	97.2	10-170	2.59	20		
sec-Butylbenzene	20.5	1.00	ug/L	20.0	103	80-127	0.486	20		
tert-Butylbenzene	20.8	1.00	ug/L	20.0	104	80-126	0.957	20		
n-Butylbenzene	21.1	1.00	ug/L	20.0	106	80-131	1.69	20		
Carbon disulfide	15.0	1.00	ug/L	20.0	75.0	58-128	4.22	20		
Carbon tetrachloride	17.8	1.00	ug/L	20.0	89.2	65-140	0.671	20		
Chlorobenzene	21.7	1.00	ug/L	20.0	108	80-120	3.67	20		
Chlorodibromomethane	18.6	1.00	ug/L	20.0	92.8	60-135	4.48	20		
Chloroethane (Ethyl chloride)	20.4	1.00	ug/L	20.0	102	60-135	3.00	20		
Chloroform	20.7	1.00	ug/L	20.0	103	80-125	0.00	20		
Chloromethane	17.9	1.00	ug/L	20.0	89.3	40-125	2.65	20		
Cyclohexane	14.9	5.00	ug/L	20.0	74.3	70-130	2.87	20		
1,2-Dibromo-3-chloropropane	18.0	2.00	ug/L	20.0	90.1	50-130	4.45	20		
1,2-Dibromoethane	20.0	1.00	ug/L	20.0	100	80-129	7.49	20		
Dibromomethane	20.8	1.00	ug/L	20.0	104	75-125	4.00	20		
1,2-Dichlorobenzene	21.1	1.00	ug/L	20.0	105	80-125	1.69	20		
1,4-Dichlorobenzene	21.4	1.00	ug/L	20.0	107	80-120	1.44	20		
1,3-Dichlorobenzene	20.7	1.00	ug/L	20.0	104	80-120	0.387	20		
Dichlorodifluoromethane	20.9	1.00	ug/L	20.0	104	40-160	2.08	20		
1,1-Dichloroethane	19.0	1.00	ug/L	20.0	94.8	80-125	2.76	20		
1,2-Dichloroethane	19.9	1.00	ug/L	20.0	99.4	80-129	4.43	20		
1,2-Dichloroethene	36.7	1.00	ug/L	40.0	91.8	80-124	3.35	20		
trans-1,2-Dichloroethene	19.1	1.00	ug/L	20.0	95.5	80-127	5.10	20		
1,1-Dichloroethene	19.7	1.00	ug/L	20.0	98.4	80-132	1.76	20		
cis-1,2-Dichloroethene	17.6	1.00	ug/L	20.0	88.2	70-125	1.41	20		

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
LCS Dup (B2E1337-BSD1)										
					Prepared & Analyzed: 05/25/2022					
1,2-Dichloropropane	19.6	1.00	ug/L	20.0	97.8	80-120	1.72	20		
1,3-Dichloropropane	21.2	1.00	ug/L	20.0	106	80-120	3.84	20		
cis-1,3-Dichloropropene	20.0	1.00	ug/L	20.0	100	70-130	2.95	20		
trans-1,3-Dichloropropene	19.7	1.00	ug/L	20.0	98.4	80-130	3.84	20		
1,1-Dichloropropene	20.3	1.00	ug/L	20.0	101	75-130	1.18	20		
1,3-Dichloropropene	39.7	1.00	ug/L	40.0	99.3	80-120	3.39	20		
1,4-Dioxane	222	100	ug/L	200	111	20-160	2.70	20		
Ethylbenzene	21.3	1.00	ug/L	20.0	106	80-122	2.78	20		
Hexachlorobutadiene	21.4	1.00	ug/L	20.0	107	72-132	6.27	20		
2-Hexanone	19.8	5.00	ug/L	20.0	99.0	55-130	2.97	20		
Isopropylbenzene	21.5	1.00	ug/L	20.0	108	80-122	4.23	20		
p-Isopropyltoluene	20.8	1.00	ug/L	20.0	104	80-122	0.957	20		
Methylene chloride	20.7	1.00	ug/L	20.0	103	80-123	7.81	20		
4-Methyl-2-pentanone	19.4	5.00	ug/L	20.0	97.1	64-140	0.769	20		
Naphthalene	23.3	1.00	ug/L	20.0	116	59-149	1.54	20		
n-Propylbenzene	21.1	1.00	ug/L	20.0	106	80-129	0.0474	20		
Styrene	21.6	1.00	ug/L	20.0	108	80-123	3.45	20		
1,1,1,2-Tetrachloroethane	20.7	1.00	ug/L	20.0	103	80-130	1.44	20		
1,1,2,2-Tetrachloroethane	19.6	1.00	ug/L	20.0	97.9	79-125	0.966	20		
Tetrachloroethene	22.3	1.00	ug/L	20.0	111	80-124	1.65	20		
Toluene	19.6	1.00	ug/L	20.0	98.1	80-124	4.58	20		
1,2,3-Trichlorobenzene	22.0	1.00	ug/L	20.0	110	55-140	0.136	20		
1,2,4-Trichlorobenzene	22.8	1.00	ug/L	20.0	114	65-135	2.22	20		
1,1,1-Trichloroethane	19.2	1.00	ug/L	20.0	96.0	80-134	1.81	20		
1,1,2-Trichloroethane	20.9	1.00	ug/L	20.0	104	80-125	4.91	20		
Trichloroethene	19.7	1.00	ug/L	20.0	98.3	80-122	5.39	20		
Trichlorofluoromethane	22.7	1.00	ug/L	20.0	113	62-151	1.91	20		
1,2,4-Trimethylbenzene	21.2	1.00	ug/L	20.0	106	80-125	0.377	20		
1,3,5-Trimethylbenzene	20.8	1.00	ug/L	20.0	104	80-127	0.0963	20		
Vinyl chloride	19.4	1.00	ug/L	20.0	96.8	50-170	3.63	20		
m-,p-Xylene	44.9	1.00	ug/L	40.0	112	80-122	0.976	20		
o-Xylene	20.9	1.00	ug/L	20.0	104	80-122	3.86	20		
Xylenes	65.7	1.00	ug/L	60.0	110	80-121	1.90	20		
Surrogate: 4-Bromofluorobenzene	47.6		ug/L	50.0	95.1	86-115				
Surrogate: Dibromofluoromethane	51.3		ug/L	50.0	103	86-118				
Surrogate: 1,2-Dichloroethane-d4	48.9		ug/L	50.0	97.9	80-120				
Surrogate: Toluene-d8	48.7		ug/L	50.0	97.4	88-110				



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1264

Definitions

- A21:** Sample was filtered in the laboratory before analysis.
- A27:** Headspace was present in the bottle used for the alkalinity analysis.
- A28:** Sample was treated for the presence of chlorine.
- A5:** Sample was filtered (0.45 um) before analysis.
- AC:** Concentration reported is elevated due to matrix interference.
- D1:** The sample was diluted during sample preparation (extraction, distillation or digestion) due to matrix interference.
- D2:** Dilution was performed due to insufficient sample.
- M6:** Matrix spike recovery is outside of acceptance limits. The analyte concentration is greater than 4X the spiking level.
- mg CaCO₃/L** Milligrams Calcium Carbonate per Liter
- mg/L:** Milligrams per Liter
- Q10:** The recovery for the closing low level check standard was outside of the established quality control range. The initial low level check standard was within range.
- Q6:** CCV recovery is above acceptance limits. The reported value is estimated.
- Q7:** CCV recovery is above acceptance limits. However there is no impact on the reported value.
- Q8:** CCV recovery is below acceptance limits. The reported value is estimated.
- R3:** Duplicate RPD is outside of acceptance criteria. The difference between the results is less than 2x Method Reporting Limit.
- RL:** Reporting Limit
- RPD:** Relative Percent Difference
- ug/L:** Micrograms per Liter
- Y:** This analyte is not on the laboratory's current scope of accreditation.
- Y1:** Accreditation is not offered by the accrediting body for this analyte.

Cooler Receipt Log

Cooler ID: Default Cooler

Temp: 5.1°C

Cooler Inspection Checklist

Ice Present or not required?	Yes	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes	Sample type identified on COC?	Yes
Correct type of Containers Received	Yes	Correct number of containers listed on COC?	Yes
Containers Intact?	Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes	Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes	Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes		

Project Requested Certification(s)

Microbac Laboratories, Inc. - Dayville
M-CT008

Massachusetts Department of Environmental Protection

Report Comments

Reviewed and Approved By:

Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.

Melisa L. Montgomery
Quality Assurance Officer
Reported: 06/07/2022 16:24

Microbac Laboratories, Inc.

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Premier
Laboratory, Inc.
A Division of L&S Analytical Services, LLC
61 Louisia Viens Drive
Dayville, CT 06241 (800) 334-0103

D 2 E 1 2 6 4
River Hawk Environmental

WWW

Lab WO#: _____
Project Manager: _____

Copy of Report To

CUSTOMER: River Hawk Environmental, LLC

ADDRESS: 2183 Ocean Street, Suite 2

Marshfield, MA 02050

ATTENTION: William Kenney

E-MAIL: bkenney@riverhawkllc.com

PHONE: 508-789-8920 Fax: NA

Billing Information

BILL TO: City of New Bedford

ADDRESS: 133 William Street, Room 304

New Bedford, MA 02740

ATTENTION: Bruce Hebbel

TELEPHONE: 508-991-6188

PURCHASE ORDER #: _____

Project Information

Shawmut Avenue Landfill

Project Location: Shawmut Avenue, New Bedford, MA

Project Manager: Bruce Hebbel

IN CASE WE HAVE ANY QUESTIONS WHEN SAMPLES ARRIVE WE SHOULD CALL:
bhebbel@newbedford-ma.gov

EMAIL: bhebbel@newbedford-ma.gov

TELEPHONE: 508-991-6188

Fax: _____

Sample Identification	Date Collected	Time Collected	Sample Type	GRAB	COMPOSITE	Number of Bottles	Sample Matrix	Alkalinity	Chloride &	Sulfate	PCBs	TDS	COD	HCl	Zn-pres	NaOH	H2SO4	Na2S2O3	Preservatives
CDM - 1S	5/12/22	8:35	X	GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CDM - 1D	5/12/22	8:50	X	GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CDM - 3S	5/12/22	9:40	X	GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CDM - 3D	5/12/22	9:30	X	GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CDM - 4S	5/12/22	10:15	X	GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CDM - 4D	5/12/22	10:25	X	GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CDM - 5S	5/12/22	11:00	X	GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CDM - 5D	5/12/22	11:20	X	GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CDM - 6D	5/12/22	12:30	X	GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DUP - 1	5/12/22	9:00	X	GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Field Blank	5/12/22		X	GW	X														

TURNAROUND (INDICATE IN CALENDAR DAYS):

HARD COPY

EXPEDITED SERVICE MAY BE SUBJECT TO SURCHARGE

COMMENTS:

**As, Ba, Ca, Cd, Cr, Cu, Fe, Pb, Mn, Hg, Se, Ag, Na, Zn

Please Bill the New Bedford Dept. of Env. Stewardship.

CONDITIONS OF RECEIPT: CHECK ONE

VERIFIED AMBIENT

Initials jl

SAMPLER:	RECEIVED:	RELINQUISHED:	RECEIVED:	RELINQUISHED:	RECEIVED:
<u>JL</u>	5/13/22 10:45	<u>JL</u>	5/13/22 10:45	<u>JL</u>	5/13/22 10:45
<u>JL</u>	5/13/22 10:45	<u>JL</u>	5/13/22 10:45	<u>JL</u>	5/13/22 10:45
<u>JL</u>	5/13/22 10:45	<u>JL</u>	5/13/22 10:45	<u>JL</u>	5/13/22 10:45
<u>JL</u>	5/13/22 10:45	<u>JL</u>	5/13/22 10:45	<u>JL</u>	5/13/22 10:45



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Project Description

D2E1264

For:

Shelby Jendrewski

Microbac Laboratories, Inc., Dayville

61 Louisa Viens DR

Dayville, CT 06241



Customer Relationship Specialist

Ron L Feathers

Tuesday, June 7, 2022

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories Inc., - Marietta, OH. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Microbac Laboratories, Inc., Dayville

Project Name: D2E1264

Shelby Jendrewski
61 Louisa Viens DR
Dayville, CT 06241

Project / PO Number: Shawmut Landfill
Received: 05/17/2022
Reported: 06/07/2022

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
D2E1264-01 (CDM-1S)	M2E0948-01	Aqueous	Grab		05/12/22 08:35	05/17/22 09:45
D2E1264-02 (CDM-1D)	M2E0948-02	Aqueous	Grab		05/12/22 08:50	05/17/22 09:45
D2E1264-03 (CDM-3S)	M2E0948-03	Aqueous	Grab		05/12/22 09:40	05/17/22 09:45
D2E1264-04 (CDM-3D)	M2E0948-04	Aqueous	Grab		05/12/22 09:30	05/17/22 09:45
D2E1264-05 (CDM-4S)	M2E0948-05	Aqueous	Grab		05/12/22 10:15	05/17/22 09:45
D2E1264-06 (CDM-4D)	M2E0948-06	Aqueous	Grab		05/12/22 10:25	05/17/22 09:45
D2E1264-07 (CDM-5S)	M2E0948-07	Aqueous	Grab		05/12/22 11:00	05/17/22 09:45
D2E1264-08 (CDM-5D)	M2E0948-08	Aqueous	Grab		05/12/22 11:20	05/17/22 09:45
D2E1264-09 (CDM-6D)	M2E0948-09	Aqueous	Grab		05/12/22 12:30	05/17/22 09:45
D2E1264-10 (DUP-1)	M2E0948-10	Aqueous	Grab		05/12/22 09:00	05/17/22 09:45
D2E1264-11 (FIELD BLANK)	M2E0948-11	Aqueous	Field Blank		05/12/22 00:00	05/17/22 09:45



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Analytical Testing Parameters

Client Sample ID:	D2E1264-01 (CDM-1S)	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 8:35
Lab Sample ID:	M2E0948-01		

Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030C/EPA 8260B									
Acetone	<5.00	1.00	5.00	ug/L	1	Q8		05/25/22 1858	KJB
Benzene	<1.00	0.100	1.00	ug/L	1			05/25/22 1858	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1			05/25/22 1858	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1			05/25/22 1858	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1			05/25/22 1858	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1			05/25/22 1858	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 1858	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 1858	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1			05/25/22 1858	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1			05/25/22 1858	KJB
Chlorobenzene	<1.00	0.140	1.00	ug/L	1			05/25/22 1858	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
Chloroethane (Ethyl chloride)	<1.00	0.380	1.00	ug/L	1			05/25/22 1858	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1			05/25/22 1858	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1			05/25/22 1858	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1			05/25/22 1858	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1			05/25/22 1858	KJB
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 1858	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1			05/25/22 1858	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1			05/25/22 1858	KJB
1,1-Dichloroethane	<1.00	0.210	1.00	ug/L	1			05/25/22 1858	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1			05/25/22 1858	KJB
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1			05/25/22 1858	KJB
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
cis-1,2-Dichloroethene	<1.00	0.180	1.00	ug/L	1			05/25/22 1858	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1			05/25/22 1858	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1			05/25/22 1858	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1			05/25/22 1858	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1			05/25/22 1858	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1			05/25/22 1858	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1			05/25/22 1858	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1			05/25/22 1858	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1			05/25/22 1858	KJB

Microbac Laboratories, Inc.



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-01 (CDM-1S)	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 8:35
Lab Sample ID:	M2E0948-01		

Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	1.00	5.00	ug/L	1			05/25/22 1858	KJB
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 1858	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 1858	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 1858	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 1858	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 1858	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 1858	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 1858	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 1858	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 1858	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 1858	KJB
Trichloroethene	<1.00	0.230	1.00	ug/L	1			05/25/22 1858	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 1858	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 1858	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1858	KJB
Vinyl chloride	<1.00	0.160	1.00	ug/L	1			05/25/22 1858	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 1858	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 1858	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 1858	KJB
Surrogate: 4-Bromofluorobenzene	103		Limit: 86-115	% Rec	1			05/25/22 1858	KJB
Surrogate: Dibromofluoromethane	104		Limit: 86-118	% Rec	1			05/25/22 1858	KJB
Surrogate: 1,2-Dichloroethane-d4	100		Limit: 80-120	% Rec	1			05/25/22 1858	KJB
Surrogate: Toluene-d8	101		Limit: 88-110	% Rec	1			05/25/22 1858	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-02 (CDM-1D)		Collected By:	Customer				
Sample Matrix:	Aqueous		Collection Date:	05/12/2022 8:50				
Lab Sample ID:	M2E0948-02							
Volatile Organic Compounds by GCMS								
Method: EPA 5030C/EPA 8260B	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed
Acetone	<5.00	1.00	5.00	ug/L	1	Q8	05/25/22 1920	KJB
Benzene	<1.00	0.100	1.00	ug/L	1		05/25/22 1920	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1		05/25/22 1920	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1		05/25/22 1920	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 1920	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1		05/25/22 1920	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1		05/25/22 1920	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1		05/25/22 1920	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 1920	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 1920	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 1920	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1		05/25/22 1920	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1		05/25/22 1920	KJB
Chlorobenzene	<1.00	0.140	1.00	ug/L	1		05/25/22 1920	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1		05/25/22 1920	KJB
Chloroethane (Ethyl chloride)	<1.00	0.380	1.00	ug/L	1		05/25/22 1920	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1		05/25/22 1920	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 1920	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1		05/25/22 1920	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1		05/25/22 1920	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1		05/25/22 1920	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1		05/25/22 1920	KJB
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1		05/25/22 1920	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 1920	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1		05/25/22 1920	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1		05/25/22 1920	KJB
1,1-Dichloroethane	<1.00	0.210	1.00	ug/L	1		05/25/22 1920	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1		05/25/22 1920	KJB
1,2-Dichloroethene	4.26	0.240	1.00	ug/L	1		05/25/22 1920	KJB
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/25/22 1920	KJB
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1		05/25/22 1920	KJB
cis-1,2-Dichloroethene	4.09	0.180	1.00	ug/L	1		05/25/22 1920	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1		05/25/22 1920	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1		05/25/22 1920	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1		05/25/22 1920	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 1920	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1		05/25/22 1920	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 1920	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1		05/25/22 1920	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 1920	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1		05/25/22 1920	KJB
2-Hexanone	<5.00	1.00	5.00	ug/L	1		05/25/22 1920	KJB

Microbac Laboratories, Inc.



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-02 (CDM-1D)								
Sample Matrix:	Aqueous						Collected By:	Customer	
Lab Sample ID:	M2E0948-02						Collection Date:	05/12/2022 8:50	
Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1920	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 1920	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 1920	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 1920	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 1920	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1920	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 1920	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 1920	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 1920	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 1920	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 1920	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 1920	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 1920	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1920	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 1920	KJB
Trichloroethene	<1.00	0.230	1.00	ug/L	1			05/25/22 1920	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 1920	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 1920	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1920	KJB
Vinyl chloride	<1.00	0.160	1.00	ug/L	1			05/25/22 1920	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 1920	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 1920	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 1920	KJB
Surrogate: 4-Bromofluorobenzene	103		Limit: 86-115	% Rec	1			05/25/22 1920	KJB
Surrogate: Dibromofluoromethane	104		Limit: 86-118	% Rec	1			05/25/22 1920	KJB
Surrogate: 1,2-Dichloroethane-d4	101		Limit: 80-120	% Rec	1			05/25/22 1920	KJB
Surrogate: Toluene-d8	102		Limit: 88-110	% Rec	1			05/25/22 1920	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-03 (CDM-3S)		Collected By:	Customer				
Sample Matrix:	Aqueous		Collection Date:	05/12/2022 9:40				
Lab Sample ID:	M2E0948-03							
Volatile Organic Compounds by GCMS								
Method: EPA 5030C/EPA 8260B	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed
Acetone	<5.00	1.00	5.00	ug/L	1	Q8	05/25/22 1941	KJB
Benzene	<1.00	0.100	1.00	ug/L	1		05/25/22 1941	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1		05/25/22 1941	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1		05/25/22 1941	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 1941	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1		05/25/22 1941	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1		05/25/22 1941	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1		05/25/22 1941	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 1941	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 1941	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 1941	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1		05/25/22 1941	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1		05/25/22 1941	KJB
Chlorobenzene	<1.00	0.140	1.00	ug/L	1		05/25/22 1941	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1		05/25/22 1941	KJB
Chloroethane (Ethyl chloride)	<1.00	0.380	1.00	ug/L	1		05/25/22 1941	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1		05/25/22 1941	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 1941	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1		05/25/22 1941	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1		05/25/22 1941	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1		05/25/22 1941	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1		05/25/22 1941	KJB
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1		05/25/22 1941	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 1941	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1		05/25/22 1941	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1		05/25/22 1941	KJB
1,1-Dichloroethane	<1.00	0.210	1.00	ug/L	1		05/25/22 1941	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1		05/25/22 1941	KJB
1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/25/22 1941	KJB
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/25/22 1941	KJB
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1		05/25/22 1941	KJB
cis-1,2-Dichloroethene	<1.00	0.180	1.00	ug/L	1		05/25/22 1941	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1		05/25/22 1941	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1		05/25/22 1941	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1		05/25/22 1941	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 1941	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1		05/25/22 1941	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 1941	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1		05/25/22 1941	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 1941	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1		05/25/22 1941	KJB
2-Hexanone	<5.00	1.00	5.00	ug/L	1		05/25/22 1941	KJB

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-03 (CDM-3S)								
Sample Matrix:	Aqueous								
Lab Sample ID:	M2E0948-03								
Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1941	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 1941	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 1941	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 1941	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 1941	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1941	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 1941	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 1941	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 1941	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 1941	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 1941	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 1941	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 1941	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1941	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 1941	KJB
Trichloroethene	<1.00	0.230	1.00	ug/L	1			05/25/22 1941	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 1941	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 1941	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1941	KJB
Vinyl chloride	<1.00	0.160	1.00	ug/L	1			05/25/22 1941	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 1941	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 1941	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 1941	KJB
Surrogate: 4-Bromofluorobenzene	93.0		Limit: 86-115	% Rec	1			05/25/22 1941	KJB
Surrogate: Dibromofluoromethane	95.0		Limit: 86-118	% Rec	1			05/25/22 1941	KJB
Surrogate: 1,2-Dichloroethane-d4	91.6		Limit: 80-120	% Rec	1			05/25/22 1941	KJB
Surrogate: Toluene-d8	91.9		Limit: 88-110	% Rec	1			05/25/22 1941	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-04 (CDM-3D)		Collected By:	Customer				
Sample Matrix:	Aqueous		Collection Date:	05/12/2022 9:30				
Lab Sample ID:	M2E0948-04							
Volatile Organic Compounds by GCMS								
Method: EPA 5030C/EPA 8260B	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed
Acetone	<5.00	1.00	5.00	ug/L	1	Q8	05/25/22 2002	KJB
Benzene	<1.00	0.100	1.00	ug/L	1		05/25/22 2002	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1		05/25/22 2002	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1		05/25/22 2002	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2002	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1		05/25/22 2002	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1		05/25/22 2002	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1		05/25/22 2002	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2002	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2002	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 2002	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1		05/25/22 2002	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1		05/25/22 2002	KJB
Chlorobenzene	1.82	0.140	1.00	ug/L	1		05/25/22 2002	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2002	KJB
Chloroethane (Ethyl chloride)	<1.00	0.380	1.00	ug/L	1		05/25/22 2002	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1		05/25/22 2002	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2002	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1		05/25/22 2002	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1		05/25/22 2002	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2002	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1		05/25/22 2002	KJB
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1		05/25/22 2002	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2002	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1		05/25/22 2002	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1		05/25/22 2002	KJB
1,1-Dichloroethane	<1.00	0.210	1.00	ug/L	1		05/25/22 2002	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2002	KJB
1,2-Dichloroethene	148	0.240	1.00	ug/L	1		05/25/22 2002	KJB
trans-1,2-Dichloroethene	27.7	0.240	1.00	ug/L	1		05/25/22 2002	KJB
1,1-Dichloroethene	2.09	0.200	1.00	ug/L	1		05/25/22 2002	KJB
cis-1,2-Dichloroethene	120	0.180	1.00	ug/L	1		05/25/22 2002	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1		05/25/22 2002	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1		05/25/22 2002	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1		05/25/22 2002	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 2002	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1		05/25/22 2002	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 2002	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1		05/25/22 2002	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 2002	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1		05/25/22 2002	KJB
2-Hexanone	<5.00	1.00	5.00	ug/L	1		05/25/22 2002	KJB

Microbac Laboratories, Inc.



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-04 (CDM-3D)		Collected By:	Customer					
Sample Matrix:	Aqueous		Collection Date:	05/12/2022 9:30					
Lab Sample ID:	M2E0948-04								
Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2002	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 2002	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 2002	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 2002	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 2002	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2002	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 2002	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 2002	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 2002	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 2002	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 2002	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2002	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 2002	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2002	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 2002	KJB
Trichloroethene	124	0.230	1.00	ug/L	1			05/25/22 2002	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 2002	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2002	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2002	KJB
Vinyl chloride	<1.00	0.160	1.00	ug/L	1			05/25/22 2002	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 2002	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 2002	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 2002	KJB
Surrogate: 4-Bromofluorobenzene	95.5		Limit: 86-115	% Rec	1			05/25/22 2002	KJB
Surrogate: Dibromofluoromethane	98.0		Limit: 86-118	% Rec	1			05/25/22 2002	KJB
Surrogate: 1,2-Dichloroethane-d4	93.3		Limit: 80-120	% Rec	1			05/25/22 2002	KJB
Surrogate: Toluene-d8	97.0		Limit: 88-110	% Rec	1			05/25/22 2002	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-05 (CDM-4S)	Collected By:	Customer						
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 10:15						
Lab Sample ID:	M2E0948-05								
Volatile Organic Compounds by GCMS									
Method: EPA 5030C/EPA 8260B	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Acetone	<5.00	1.00	5.00	ug/L	1	Q8		05/25/22 2023	KJB
Benzene	1.52	0.100	1.00	ug/L	1			05/25/22 2023	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1			05/25/22 2023	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1			05/25/22 2023	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1			05/25/22 2023	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1			05/25/22 2023	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 2023	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 2023	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1			05/25/22 2023	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1			05/25/22 2023	KJB
Chlorobenzene	8.82	0.140	1.00	ug/L	1			05/25/22 2023	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
Chloroethane (Ethyl chloride)	4.80	0.380	1.00	ug/L	1			05/25/22 2023	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1			05/25/22 2023	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1			05/25/22 2023	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1			05/25/22 2023	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1			05/25/22 2023	KJB
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 2023	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1			05/25/22 2023	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1			05/25/22 2023	KJB
1,1-Dichloroethane	1.23	0.210	1.00	ug/L	1			05/25/22 2023	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1			05/25/22 2023	KJB
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1			05/25/22 2023	KJB
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
cis-1,2-Dichloroethene	<1.00	0.180	1.00	ug/L	1			05/25/22 2023	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1			05/25/22 2023	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1			05/25/22 2023	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1			05/25/22 2023	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1			05/25/22 2023	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1			05/25/22 2023	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1			05/25/22 2023	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1			05/25/22 2023	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1			05/25/22 2023	KJB
2-Hexanone	<5.00	1.00	5.00	ug/L	1			05/25/22 2023	KJB

Microbac Laboratories, Inc.



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-05 (CDM-4S)								
Sample Matrix:	Aqueous					Collected By:	Customer		
Lab Sample ID:	M2E0948-05					Collection Date:	05/12/2022 10:15		
Volatile Organic Compounds by GCMS									
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 2023	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 2023	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 2023	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 2023	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 2023	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 2023	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 2023	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2023	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 2023	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 2023	KJB
Trichloroethene	<1.00	0.230	1.00	ug/L	1			05/25/22 2023	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 2023	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2023	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2023	KJB
Vinyl chloride	<1.00	0.160	1.00	ug/L	1			05/25/22 2023	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 2023	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 2023	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 2023	KJB
Surrogate: 4-Bromofluorobenzene	99.1	Limit: 86-115	% Rec	1				05/25/22 2023	KJB
Surrogate: Dibromofluoromethane	88.8	Limit: 86-118	% Rec	1				05/25/22 2023	KJB
Surrogate: 1,2-Dichloroethane-d4	97.4	Limit: 80-120	% Rec	1				05/25/22 2023	KJB
Surrogate: Toluene-d8	98.3	Limit: 88-110	% Rec	1				05/25/22 2023	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-06 (CDM-4D)		Collected By:	Customer				
Sample Matrix:	Aqueous		Collection Date:	05/12/2022 10:25				
Lab Sample ID:	M2E0948-06							
Volatile Organic Compounds by GCMS								
Method: EPA 5030C/EPA 8260B	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed
Acetone	<5.00	1.00	5.00	ug/L	1	Q8	05/25/22 2045	KJB
Benzene	1.55	0.100	1.00	ug/L	1		05/25/22 2045	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1		05/25/22 2045	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1		05/25/22 2045	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2045	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1		05/25/22 2045	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1		05/25/22 2045	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1		05/25/22 2045	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2045	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2045	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 2045	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1		05/25/22 2045	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1		05/25/22 2045	KJB
Chlorobenzene	77.8	0.140	1.00	ug/L	1		05/25/22 2045	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2045	KJB
Chloroethane (Ethyl chloride)	<1.00	0.380	1.00	ug/L	1		05/25/22 2045	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1		05/25/22 2045	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2045	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1		05/25/22 2045	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1		05/25/22 2045	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2045	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1		05/25/22 2045	KJB
1,2-Dichlorobenzene	1.01	0.200	1.00	ug/L	1		05/25/22 2045	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2045	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1		05/25/22 2045	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1		05/25/22 2045	KJB
1,1-Dichloroethane	5.77	0.210	1.00	ug/L	1		05/25/22 2045	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2045	KJB
1,2-Dichloroethene	5.39	0.240	1.00	ug/L	1		05/25/22 2045	KJB
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/25/22 2045	KJB
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1		05/25/22 2045	KJB
cis-1,2-Dichloroethene	5.39	0.180	1.00	ug/L	1		05/25/22 2045	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1		05/25/22 2045	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1		05/25/22 2045	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1		05/25/22 2045	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 2045	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1		05/25/22 2045	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 2045	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1		05/25/22 2045	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 2045	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1		05/25/22 2045	KJB
2-Hexanone	<5.00	1.00	5.00	ug/L	1		05/25/22 2045	KJB

Microbac Laboratories, Inc.



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-06 (CDM-4D)								
Sample Matrix:	Aqueous						Collected By:	Customer	
Lab Sample ID:	M2E0948-06						Collection Date:	05/12/2022 10:25	
Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2045	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 2045	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 2045	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 2045	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 2045	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2045	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 2045	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 2045	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 2045	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 2045	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 2045	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2045	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 2045	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2045	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 2045	KJB
Trichloroethene	<1.00	0.230	1.00	ug/L	1			05/25/22 2045	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 2045	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2045	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2045	KJB
Vinyl chloride	5.25	0.160	1.00	ug/L	1			05/25/22 2045	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 2045	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 2045	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 2045	KJB
Surrogate: 4-Bromofluorobenzene	102		Limit: 86-115	% Rec	1			05/25/22 2045	KJB
Surrogate: Dibromofluoromethane	103		Limit: 86-118	% Rec	1			05/25/22 2045	KJB
Surrogate: 1,2-Dichloroethane-d4	110		Limit: 80-120	% Rec	1			05/25/22 2045	KJB
Surrogate: Toluene-d8	100		Limit: 88-110	% Rec	1			05/25/22 2045	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-07 (CDM-5S)							
Sample Matrix:	Aqueous						Collected By:	Customer
Lab Sample ID:	M2E0948-07						Collection Date:	05/12/2022 11:00
Volatile Organic Compounds by GCMS								
Method: EPA 5030C/EPA 8260B	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed
Acetone	<5.00	1.00	5.00	ug/L	1	Q8	05/25/22 2106	KJB
Benzene	<1.00	0.100	1.00	ug/L	1		05/25/22 2106	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1		05/25/22 2106	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1		05/25/22 2106	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2106	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1		05/25/22 2106	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1		05/25/22 2106	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1		05/25/22 2106	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2106	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2106	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 2106	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1		05/25/22 2106	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1		05/25/22 2106	KJB
Chlorobenzene	3.30	0.140	1.00	ug/L	1		05/25/22 2106	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2106	KJB
Chloroethane (Ethyl chloride)	<1.00	0.380	1.00	ug/L	1		05/25/22 2106	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1		05/25/22 2106	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2106	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1		05/25/22 2106	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1		05/25/22 2106	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2106	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1		05/25/22 2106	KJB
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1		05/25/22 2106	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2106	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1		05/25/22 2106	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1		05/25/22 2106	KJB
1,1-Dichloroethane	<1.00	0.210	1.00	ug/L	1		05/25/22 2106	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2106	KJB
1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/25/22 2106	KJB
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/25/22 2106	KJB
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1		05/25/22 2106	KJB
cis-1,2-Dichloroethene	<1.00	0.180	1.00	ug/L	1		05/25/22 2106	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1		05/25/22 2106	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1		05/25/22 2106	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1		05/25/22 2106	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 2106	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1		05/25/22 2106	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 2106	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1		05/25/22 2106	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 2106	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1		05/25/22 2106	KJB
2-Hexanone	<5.00	1.00	5.00	ug/L	1		05/25/22 2106	KJB

Microbac Laboratories, Inc.



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-07 (CDM-5S)								
Sample Matrix:	Aqueous						Collected By:	Customer	
Lab Sample ID:	M2E0948-07						Collection Date:	05/12/2022 11:00	
Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2106	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 2106	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 2106	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 2106	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 2106	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2106	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 2106	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 2106	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 2106	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 2106	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 2106	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2106	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 2106	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2106	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 2106	KJB
Trichloroethene	<1.00	0.230	1.00	ug/L	1			05/25/22 2106	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 2106	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2106	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2106	KJB
Vinyl chloride	<1.00	0.160	1.00	ug/L	1			05/25/22 2106	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 2106	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 2106	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 2106	KJB
Surrogate: 4-Bromofluorobenzene	94.7		Limit: 86-115	% Rec	1			05/25/22 2106	KJB
Surrogate: Dibromofluoromethane	101		Limit: 86-118	% Rec	1			05/25/22 2106	KJB
Surrogate: 1,2-Dichloroethane-d4	97.3		Limit: 80-120	% Rec	1			05/25/22 2106	KJB
Surrogate: Toluene-d8	95.8		Limit: 88-110	% Rec	1			05/25/22 2106	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-08 (CDM-5D)							
Sample Matrix:	Aqueous						Collected By:	Customer
Lab Sample ID:	M2E0948-08						Collection Date:	05/12/2022 11:20
Volatile Organic Compounds by GCMS								
Method: EPA 5030C/EPA 8260B	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed
Acetone	<5.00	1.00	5.00	ug/L	1	Q8	05/25/22 2127	KJB
Benzene	<1.00	0.100	1.00	ug/L	1		05/25/22 2127	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1		05/25/22 2127	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1		05/25/22 2127	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2127	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1		05/25/22 2127	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1		05/25/22 2127	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1		05/25/22 2127	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2127	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2127	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 2127	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1		05/25/22 2127	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1		05/25/22 2127	KJB
Chlorobenzene	8.70	0.140	1.00	ug/L	1		05/25/22 2127	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2127	KJB
Chloroethane (Ethyl chloride)	5.86	0.380	1.00	ug/L	1		05/25/22 2127	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1		05/25/22 2127	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2127	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1		05/25/22 2127	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1		05/25/22 2127	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2127	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1		05/25/22 2127	KJB
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1		05/25/22 2127	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2127	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1		05/25/22 2127	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1		05/25/22 2127	KJB
1,1-Dichloroethane	<1.00	0.210	1.00	ug/L	1		05/25/22 2127	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2127	KJB
1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/25/22 2127	KJB
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/25/22 2127	KJB
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1		05/25/22 2127	KJB
cis-1,2-Dichloroethene	<1.00	0.180	1.00	ug/L	1		05/25/22 2127	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1		05/25/22 2127	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1		05/25/22 2127	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1		05/25/22 2127	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 2127	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1		05/25/22 2127	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 2127	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1		05/25/22 2127	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 2127	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1		05/25/22 2127	KJB
2-Hexanone	<5.00	1.00	5.00	ug/L	1		05/25/22 2127	KJB

Microbac Laboratories, Inc.



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-08 (CDM-5D)								
Sample Matrix:	Aqueous								
Lab Sample ID:	M2E0948-08								
Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2127	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 2127	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 2127	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 2127	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 2127	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2127	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 2127	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 2127	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 2127	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 2127	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 2127	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2127	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 2127	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2127	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 2127	KJB
Trichloroethene	<1.00	0.230	1.00	ug/L	1			05/25/22 2127	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 2127	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2127	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2127	KJB
Vinyl chloride	<1.00	0.160	1.00	ug/L	1			05/25/22 2127	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 2127	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 2127	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 2127	KJB
Surrogate: 4-Bromofluorobenzene	96.1		Limit: 86-115	% Rec	1			05/25/22 2127	KJB
Surrogate: Dibromofluoromethane	96.1		Limit: 86-118	% Rec	1			05/25/22 2127	KJB
Surrogate: 1,2-Dichloroethane-d4	92.6		Limit: 80-120	% Rec	1			05/25/22 2127	KJB
Surrogate: Toluene-d8	94.8		Limit: 88-110	% Rec	1			05/25/22 2127	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-09 (CDM-6D)							
Sample Matrix:	Aqueous						Collected By:	Customer
Lab Sample ID:	M2E0948-09						Collection Date:	05/12/2022 12:30
Volatile Organic Compounds by GCMS								
Method: EPA 5030C/EPA 8260B	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed
Acetone	<5.00	1.00	5.00	ug/L	1	Q8	05/25/22 2148	KJB
Benzene	<1.00	0.100	1.00	ug/L	1		05/25/22 2148	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1		05/25/22 2148	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1		05/25/22 2148	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2148	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1		05/25/22 2148	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1		05/25/22 2148	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1		05/25/22 2148	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2148	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2148	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 2148	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1		05/25/22 2148	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1		05/25/22 2148	KJB
Chlorobenzene	<1.00	0.140	1.00	ug/L	1		05/25/22 2148	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2148	KJB
Chloroethane (Ethyl chloride)	<1.00	0.380	1.00	ug/L	1		05/25/22 2148	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1		05/25/22 2148	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2148	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1		05/25/22 2148	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1		05/25/22 2148	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2148	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1		05/25/22 2148	KJB
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1		05/25/22 2148	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2148	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1		05/25/22 2148	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1		05/25/22 2148	KJB
1,1-Dichloroethane	<1.00	0.210	1.00	ug/L	1		05/25/22 2148	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2148	KJB
1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/25/22 2148	KJB
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/25/22 2148	KJB
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1		05/25/22 2148	KJB
cis-1,2-Dichloroethene	<1.00	0.180	1.00	ug/L	1		05/25/22 2148	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1		05/25/22 2148	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1		05/25/22 2148	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1		05/25/22 2148	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 2148	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1		05/25/22 2148	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 2148	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1		05/25/22 2148	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 2148	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1		05/25/22 2148	KJB
2-Hexanone	<5.00	1.00	5.00	ug/L	1		05/25/22 2148	KJB

Microbac Laboratories, Inc.

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-09 (CDM-6D)								
Sample Matrix:	Aqueous						Collected By:	Customer	
Lab Sample ID:	M2E0948-09						Collection Date:	05/12/2022 12:30	
Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2148	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 2148	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 2148	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 2148	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 2148	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2148	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 2148	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 2148	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 2148	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 2148	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 2148	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2148	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 2148	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2148	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 2148	KJB
Trichloroethene	<1.00	0.230	1.00	ug/L	1			05/25/22 2148	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 2148	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2148	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2148	KJB
Vinyl chloride	<1.00	0.160	1.00	ug/L	1			05/25/22 2148	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 2148	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 2148	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 2148	KJB
Surrogate: 4-Bromofluorobenzene	96.6		Limit: 86-115	% Rec	1			05/25/22 2148	KJB
Surrogate: Dibromofluoromethane	95.9		Limit: 86-118	% Rec	1			05/25/22 2148	KJB
Surrogate: 1,2-Dichloroethane-d4	94.2		Limit: 80-120	% Rec	1			05/25/22 2148	KJB
Surrogate: Toluene-d8	95.0		Limit: 88-110	% Rec	1			05/25/22 2148	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-10 (DUP-1)								
Sample Matrix:	Aqueous						Collected By:	Customer	
Lab Sample ID:	M2E0948-10						Collection Date:	05/12/2022 9:00	
Volatile Organic Compounds by GCMS									
Method: EPA 5030C/EPA 8260B	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Acetone	<5.00	1.00	5.00	ug/L	1	Q8		05/25/22 2209	KJB
Benzene	<1.00	0.100	1.00	ug/L	1			05/25/22 2209	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1			05/25/22 2209	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1			05/25/22 2209	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1			05/25/22 2209	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1			05/25/22 2209	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 2209	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 2209	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1			05/25/22 2209	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1			05/25/22 2209	KJB
Chlorobenzene	<1.00	0.140	1.00	ug/L	1			05/25/22 2209	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
Chloroethane (Ethyl chloride)	<1.00	0.380	1.00	ug/L	1			05/25/22 2209	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1			05/25/22 2209	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1			05/25/22 2209	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1			05/25/22 2209	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1			05/25/22 2209	KJB
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 2209	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1			05/25/22 2209	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1			05/25/22 2209	KJB
1,1-Dichloroethane	<1.00	0.210	1.00	ug/L	1			05/25/22 2209	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
1,2-Dichloroethene	4.27	0.240	1.00	ug/L	1			05/25/22 2209	KJB
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1			05/25/22 2209	KJB
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
cis-1,2-Dichloroethene	4.27	0.180	1.00	ug/L	1			05/25/22 2209	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1			05/25/22 2209	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1			05/25/22 2209	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1			05/25/22 2209	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1			05/25/22 2209	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1			05/25/22 2209	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1			05/25/22 2209	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1			05/25/22 2209	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1			05/25/22 2209	KJB
2-Hexanone	<5.00	1.00	5.00	ug/L	1			05/25/22 2209	KJB

Microbac Laboratories, Inc.

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-10 (DUP-1)		Collected By:	Customer					
Sample Matrix:	Aqueous		Collection Date:	05/12/2022 9:00					
Lab Sample ID:	M2E0948-10								
Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 2209	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 2209	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 2209	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 2209	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 2209	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 2209	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 2209	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2209	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 2209	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 2209	KJB
Trichloroethene	<1.00	0.230	1.00	ug/L	1			05/25/22 2209	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 2209	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2209	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2209	KJB
Vinyl chloride	<1.00	0.160	1.00	ug/L	1			05/25/22 2209	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 2209	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 2209	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 2209	KJB
Surrogate: 4-Bromofluorobenzene	97.8		Limit: 86-115	% Rec	1			05/25/22 2209	KJB
Surrogate: Dibromofluoromethane	97.4		Limit: 86-118	% Rec	1			05/25/22 2209	KJB
Surrogate: 1,2-Dichloroethane-d4	94.0		Limit: 80-120	% Rec	1			05/25/22 2209	KJB
Surrogate: Toluene-d8	96.6		Limit: 88-110	% Rec	1			05/25/22 2209	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-11 (FIELD BLANK)								
Sample Matrix:	Aqueous								
Lab Sample ID:	M2E0948-11						Collected By:	Customer	
Volatile Organic Compounds by GCMS									
Method: EPA 5030C/EPA 8260B	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Acetone	<5.00	1.00	5.00	ug/L	1	Q8		05/25/22 1651	KJB
Benzene	<1.00	0.100	1.00	ug/L	1			05/25/22 1651	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1			05/25/22 1651	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1			05/25/22 1651	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1			05/25/22 1651	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1			05/25/22 1651	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 1651	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 1651	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1			05/25/22 1651	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1			05/25/22 1651	KJB
Chlorobenzene	<1.00	0.140	1.00	ug/L	1			05/25/22 1651	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
Chloroethane (Ethyl chloride)	<1.00	0.380	1.00	ug/L	1			05/25/22 1651	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1			05/25/22 1651	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1			05/25/22 1651	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1			05/25/22 1651	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1			05/25/22 1651	KJB
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 1651	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1			05/25/22 1651	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1			05/25/22 1651	KJB
1,1-Dichloroethane	<1.00	0.210	1.00	ug/L	1			05/25/22 1651	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1			05/25/22 1651	KJB
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1			05/25/22 1651	KJB
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
cis-1,2-Dichloroethene	<1.00	0.180	1.00	ug/L	1			05/25/22 1651	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1			05/25/22 1651	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1			05/25/22 1651	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1			05/25/22 1651	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1			05/25/22 1651	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1			05/25/22 1651	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1			05/25/22 1651	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1			05/25/22 1651	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1			05/25/22 1651	KJB
2-Hexanone	<5.00	1.00	5.00	ug/L	1			05/25/22 1651	KJB

Microbac Laboratories, Inc.



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Client Sample ID:	D2E1264-11 (FIELD BLANK)								
Sample Matrix:	Aqueous						Collected By:	Customer	
Lab Sample ID:	M2E0948-11						Collection Date:	05/12/2022	
Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 1651	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 1651	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 1651	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 1651	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 1651	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 1651	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 1651	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 1651	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 1651	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 1651	KJB
Trichloroethene	<1.00	0.230	1.00	ug/L	1			05/25/22 1651	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 1651	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 1651	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 1651	KJB
Vinyl chloride	<1.00	0.160	1.00	ug/L	1			05/25/22 1651	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 1651	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 1651	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 1651	KJB
Surrogate: 4-Bromofluorobenzene	98.1		Limit: 86-115	% Rec	1			05/25/22 1651	KJB
Surrogate: Dibromofluoromethane	95.2		Limit: 86-118	% Rec	1			05/25/22 1651	KJB
Surrogate: 1,2-Dichloroethane-d4	92.9		Limit: 80-120	% Rec	1			05/25/22 1651	KJB
Surrogate: Toluene-d8	95.5		Limit: 88-110	% Rec	1			05/25/22 1651	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260B	B2E1337	B2E1337-BLK1	
		B2E1337-BS1	
		B2E1337-BSD1	
		M2E0948-11	D2E1264-11 (FIELD BLANK)
		M2E0948-01	D2E1264-01 (CDM-1S)
		M2E0948-02	D2E1264-02 (CDM-1D)
		M2E0948-03	D2E1264-03 (CDM-3S)
		M2E0948-04	D2E1264-04 (CDM-3D)
		M2E0948-05	D2E1264-05 (CDM-4S)
		M2E0948-06	D2E1264-06 (CDM-4D)
		M2E0948-07	D2E1264-07 (CDM-5S)
		M2E0948-08	D2E1264-08 (CDM-5D)
		M2E0948-09	D2E1264-09 (CDM-6D)
		M2E0948-10	D2E1264-10 (DUP-1)

Batch Quality Control Summary: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch B2E1337 - 5030_8260 - EPA 8260B

Blank (B2E1337-BLK1)	Prepared & Analyzed: 05/25/2022				
Acetone	<5.00	5.00	ug/L		
Benzene	<1.00	1.00	ug/L		
Bromobenzene	<1.00	1.00	ug/L		
Bromochloromethane	<1.00	1.00	ug/L		
Bromodichloromethane	<1.00	1.00	ug/L		
Bromoform	<1.00	1.00	ug/L		
Bromomethane	<1.00	1.00	ug/L		
2-Butanone	<5.00	5.00	ug/L		
sec-Butylbenzene	<1.00	1.00	ug/L		
tert-Butylbenzene	<1.00	1.00	ug/L		
n-Butylbenzene	<1.00	1.00	ug/L		
Carbon disulfide	<1.00	1.00	ug/L		
Carbon tetrachloride	<1.00	1.00	ug/L		
Chlorobenzene	<1.00	1.00	ug/L		
Chlorodibromomethane	<1.00	1.00	ug/L		
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L		
Chloroform	<1.00	1.00	ug/L		
Chloromethane	<1.00	1.00	ug/L		
Cyclohexane	<5.00	5.00	ug/L		
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L		
1,2-Dibromoethane	<1.00	1.00	ug/L		

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
Blank (B2E1337-BLK1)										
Prepared & Analyzed: 05/25/2022										
Dibromomethane	<1.00	1.00	ug/L							
1,2-Dichlorobenzene	<1.00	1.00	ug/L							
1,4-Dichlorobenzene	<1.00	1.00	ug/L							
1,3-Dichlorobenzene	<1.00	1.00	ug/L							
Dichlorodifluoromethane	<1.00	1.00	ug/L							
1,1-Dichloroethane	<1.00	1.00	ug/L							
1,2-Dichloroethane	<1.00	1.00	ug/L							
1,2-Dichloroethene	<1.00	1.00	ug/L							
trans-1,2-Dichloroethene	<1.00	1.00	ug/L							
1,1-Dichloroethene	<1.00	1.00	ug/L							
cis-1,2-Dichloroethene	<1.00	1.00	ug/L							
1,2-Dichloropropane	<1.00	1.00	ug/L							
1,3-Dichloropropane	<1.00	1.00	ug/L							
cis-1,3-Dichloropropene	<1.00	1.00	ug/L							
trans-1,3-Dichloropropene	<1.00	1.00	ug/L							
1,1-Dichloropropene	<1.00	1.00	ug/L							
1,3-Dichloropropene	<1.00	1.00	ug/L							
1,4-Dioxane	<100	100	ug/L							
Ethylbenzene	<1.00	1.00	ug/L							
Hexachlorobutadiene	<1.00	1.00	ug/L							
2-Hexanone	<5.00	5.00	ug/L							
Isopropylbenzene	<1.00	1.00	ug/L							
p-Isopropyltoluene	<1.00	1.00	ug/L							
Methylene chloride	<1.00	1.00	ug/L							
4-Methyl-2-pentanone	<5.00	5.00	ug/L							
Naphthalene	<1.00	1.00	ug/L							
n-Propylbenzene	<1.00	1.00	ug/L							
Styrene	<1.00	1.00	ug/L							
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L							
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L							
Tetrachloroethene	<1.00	1.00	ug/L							
Toluene	<1.00	1.00	ug/L							
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L							
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L							
1,1,1-Trichloroethane	<1.00	1.00	ug/L							
1,1,2-Trichloroethane	<1.00	1.00	ug/L							
Trichloroethene	<1.00	1.00	ug/L							
Trichlorofluoromethane	<1.00	1.00	ug/L							
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L							
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L							
Vinyl chloride	<1.00	1.00	ug/L							
m-,p-Xylene	<1.00	1.00	ug/L							
o-Xylene	<1.00	1.00	ug/L							

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
Blank (B2E1337-BLK1)										
Prepared & Analyzed: 05/25/2022										
Xylenes	<1.00	1.00	ug/L							
Surrogate: 4-Bromofluorobenzene	49.2		ug/L	50.0		98.3	86-115			
Surrogate: Dibromofluoromethane	47.4		ug/L	50.0		94.8	86-118			
Surrogate: 1,2-Dichloroethane-d4	46.8		ug/L	50.0		93.6	80-120			
Surrogate: Toluene-d8	47.9		ug/L	50.0		95.7	88-110			
LCS (B2E1337-BS1)										
Prepared & Analyzed: 05/25/2022										
Acetone	19.1	5.00	ug/L	20.0		95.4	40-180			
Benzene	21.0	1.00	ug/L	20.0		105	80-121			
Bromobenzene	21.3	1.00	ug/L	20.0		106	80-120			
Bromochloromethane	20.1	1.00	ug/L	20.0		100	65-130			
Bromodichloromethane	18.0	1.00	ug/L	20.0		90.0	80-131			
Bromoform	18.5	1.00	ug/L	20.0		92.7	70-130			
Bromomethane	21.6	1.00	ug/L	20.0		108	30-145			
2-Butanone	20.0	5.00	ug/L	20.0		99.8	10-170			
sec-Butylbenzene	20.6	1.00	ug/L	20.0		103	80-127			
tert-Butylbenzene	21.0	1.00	ug/L	20.0		105	80-126			
n-Butylbenzene	21.5	1.00	ug/L	20.0		107	80-131			
Carbon disulfide	14.4	1.00	ug/L	20.0		71.9	58-128			
Carbon tetrachloride	18.0	1.00	ug/L	20.0		89.8	65-140			
Chlorobenzene	22.5	1.00	ug/L	20.0		112	80-120			
Chlorodibromomethane	19.4	1.00	ug/L	20.0		97.0	60-135			
Chloroethane (Ethyl chloride)	21.0	1.00	ug/L	20.0		105	60-135			
Chloroform	20.7	1.00	ug/L	20.0		103	80-125			
Chloromethane	18.3	1.00	ug/L	20.0		91.7	40-125			
Cyclohexane	14.4	5.00	ug/L	20.0		72.2	70-130			
1,2-Dibromo-3-chloropropane	18.8	2.00	ug/L	20.0		94.2	50-130			
1,2-Dibromoethane	21.6	1.00	ug/L	20.0		108	80-129			
Dibromomethane	21.7	1.00	ug/L	20.0		108	75-125			
1,2-Dichlorobenzene	21.4	1.00	ug/L	20.0		107	80-125			
1,4-Dichlorobenzene	21.7	1.00	ug/L	20.0		108	80-120			
1,3-Dichlorobenzene	20.7	1.00	ug/L	20.0		103	80-120			
Dichlorodifluoromethane	20.4	1.00	ug/L	20.0		102	40-160			
1,1-Dichloroethane	19.5	1.00	ug/L	20.0		97.5	80-125			
1,2-Dichloroethane	20.8	1.00	ug/L	20.0		104	80-129			
1,2-Dichloroethene	38.0	1.00	ug/L	40.0		95.0	80-124			
trans-1,2-Dichloroethene	20.1	1.00	ug/L	20.0		100	80-127			
1,1-Dichloroethene	20.0	1.00	ug/L	20.0		100	80-132			
cis-1,2-Dichloroethene	17.9	1.00	ug/L	20.0		89.5	70-125			
1,2-Dichloropropane	19.9	1.00	ug/L	20.0		99.5	80-120			
1,3-Dichloropropane	22.1	1.00	ug/L	20.0		110	80-120			
cis-1,3-Dichloropropene	20.6	1.00	ug/L	20.0		103	70-130			
trans-1,3-Dichloropropene	20.5	1.00	ug/L	20.0		102	80-130			
1,1-Dichloropropene	20.5	1.00	ug/L	20.0		103	75-130			

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
LCS (B2E1337-BS1)										
Prepared & Analyzed: 05/25/2022										
1,3-Dichloropropene	41.1	1.00	ug/L	40.0	103	80-120				
1,4-Dioxane	216	100	ug/L	200	108	20-160				
Ethylbenzene	21.9	1.00	ug/L	20.0	109	80-122				
Hexachlorobutadiene	20.1	1.00	ug/L	20.0	100	72-132				
2-Hexanone	19.2	5.00	ug/L	20.0	96.1	55-130				
Isopropylbenzene	22.5	1.00	ug/L	20.0	112	80-122				
p-Isopropyltoluene	21.0	1.00	ug/L	20.0	105	80-122				
Methylene chloride	22.4	1.00	ug/L	20.0	112	80-123				
4-Methyl-2-pentanone	19.6	5.00	ug/L	20.0	97.9	64-140				
Naphthalene	23.6	1.00	ug/L	20.0	118	59-149				
n-Propylbenzene	21.1	1.00	ug/L	20.0	106	80-129				
Styrene	22.4	1.00	ug/L	20.0	112	80-123				
1,1,1,2-Tetrachloroethane	21.0	1.00	ug/L	20.0	105	80-130				
1,1,2,2-Tetrachloroethane	19.8	1.00	ug/L	20.0	98.8	79-125				
Tetrachloroethene	22.7	1.00	ug/L	20.0	113	80-124				
Toluene	20.5	1.00	ug/L	20.0	103	80-124				
1,2,3-Trichlorobenzene	22.1	1.00	ug/L	20.0	110	55-140				
1,2,4-Trichlorobenzene	22.3	1.00	ug/L	20.0	112	65-135				
1,1,1-Trichloroethane	19.6	1.00	ug/L	20.0	97.8	80-134				
1,1,2-Trichloroethane	21.9	1.00	ug/L	20.0	110	80-125				
Trichloroethene	20.8	1.00	ug/L	20.0	104	80-122				
Trichlorofluoromethane	22.3	1.00	ug/L	20.0	111	62-151				
1,2,4-Trimethylbenzene	21.2	1.00	ug/L	20.0	106	80-125				
1,3,5-Trimethylbenzene	20.8	1.00	ug/L	20.0	104	80-127				
Vinyl chloride	18.7	1.00	ug/L	20.0	93.3	50-170				
m,p-Xylene	45.3	1.00	ug/L	40.0	113	80-122				
o-Xylene	21.7	1.00	ug/L	20.0	108	80-122				
Xylenes	67.0	1.00	ug/L	60.0	112	80-121				
Surrogate: 4-Bromofluorobenzene	48.2		ug/L	50.0	96.4	86-115				
Surrogate: Dibromofluoromethane	52.3		ug/L	50.0	105	86-118				
Surrogate: 1,2-Dichloroethane-d4	50.4		ug/L	50.0	101	80-120				
Surrogate: Toluene-d8	51.4		ug/L	50.0	103	88-110				
LCS Dup (B2E1337-BSD1)										
Prepared & Analyzed: 05/25/2022										
Acetone	18.0	5.00	ug/L	20.0	90.2	40-180	5.60	20		
Benzene	20.6	1.00	ug/L	20.0	103	80-121	1.92	20		
Bromobenzene	21.5	1.00	ug/L	20.0	107	80-120	0.935	20		
Bromochloromethane	19.6	1.00	ug/L	20.0	97.8	65-130	2.72	20		
Bromodichloromethane	17.9	1.00	ug/L	20.0	89.6	80-131	0.445	20		
Bromoform	17.2	1.00	ug/L	20.0	86.2	70-130	7.27	20		
Bromomethane	22.1	1.00	ug/L	20.0	111	30-145	2.43	20		
2-Butanone	19.4	5.00	ug/L	20.0	97.2	10-170	2.59	20		
sec-Butylbenzene	20.5	1.00	ug/L	20.0	103	80-127	0.486	20		
tert-Butylbenzene	20.8	1.00	ug/L	20.0	104	80-126	0.957	20		

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
LCS Dup (B2E1337-BSD1)										
					Prepared & Analyzed: 05/25/2022					
n-Butylbenzene	21.1	1.00	ug/L	20.0	106	80-131	1.69	20		
Carbon disulfide	15.0	1.00	ug/L	20.0	75.0	58-128	4.22	20		
Carbon tetrachloride	17.8	1.00	ug/L	20.0	89.2	65-140	0.671	20		
Chlorobenzene	21.7	1.00	ug/L	20.0	108	80-120	3.67	20		
Chlorodibromomethane	18.6	1.00	ug/L	20.0	92.8	60-135	4.48	20		
Chloroethane (Ethyl chloride)	20.4	1.00	ug/L	20.0	102	60-135	3.00	20		
Chloroform	20.7	1.00	ug/L	20.0	103	80-125	0.00	20		
Chloromethane	17.9	1.00	ug/L	20.0	89.3	40-125	2.65	20		
Cyclohexane	14.9	5.00	ug/L	20.0	74.3	70-130	2.87	20		
1,2-Dibromo-3-chloropropane	18.0	2.00	ug/L	20.0	90.1	50-130	4.45	20		
1,2-Dibromoethane	20.0	1.00	ug/L	20.0	100	80-129	7.49	20		
Dibromomethane	20.8	1.00	ug/L	20.0	104	75-125	4.00	20		
1,2-Dichlorobenzene	21.1	1.00	ug/L	20.0	105	80-125	1.69	20		
1,4-Dichlorobenzene	21.4	1.00	ug/L	20.0	107	80-120	1.44	20		
1,3-Dichlorobenzene	20.7	1.00	ug/L	20.0	104	80-120	0.387	20		
Dichlorodifluoromethane	20.9	1.00	ug/L	20.0	104	40-160	2.08	20		
1,1-Dichloroethane	19.0	1.00	ug/L	20.0	94.8	80-125	2.76	20		
1,2-Dichloroethane	19.9	1.00	ug/L	20.0	99.4	80-129	4.43	20		
1,2-Dichloroethene	36.7	1.00	ug/L	40.0	91.8	80-124	3.35	20		
trans-1,2-Dichloroethene	19.1	1.00	ug/L	20.0	95.5	80-127	5.10	20		
1,1-Dichloroethene	19.7	1.00	ug/L	20.0	98.4	80-132	1.76	20		
cis-1,2-Dichloroethene	17.6	1.00	ug/L	20.0	88.2	70-125	1.41	20		
1,2-Dichloropropane	19.6	1.00	ug/L	20.0	97.8	80-120	1.72	20		
1,3-Dichloropropane	21.2	1.00	ug/L	20.0	106	80-120	3.84	20		
cis-1,3-Dichloropropene	20.0	1.00	ug/L	20.0	100	70-130	2.95	20		
trans-1,3-Dichloropropene	19.7	1.00	ug/L	20.0	98.4	80-130	3.84	20		
1,1-Dichloropropene	20.3	1.00	ug/L	20.0	101	75-130	1.18	20		
1,3-Dichloropropene	39.7	1.00	ug/L	40.0	99.3	80-120	3.39	20		
1,4-Dioxane	222	100	ug/L	200	111	20-160	2.70	20		
Ethylbenzene	21.3	1.00	ug/L	20.0	106	80-122	2.78	20		
Hexachlorobutadiene	21.4	1.00	ug/L	20.0	107	72-132	6.27	20		
2-Hexanone	19.8	5.00	ug/L	20.0	99.0	55-130	2.97	20		
Isopropylbenzene	21.5	1.00	ug/L	20.0	108	80-122	4.23	20		
p-Isopropyltoluene	20.8	1.00	ug/L	20.0	104	80-122	0.957	20		
Methylene chloride	20.7	1.00	ug/L	20.0	103	80-123	7.81	20		
4-Methyl-2-pentanone	19.4	5.00	ug/L	20.0	97.1	64-140	0.769	20		
Naphthalene	23.3	1.00	ug/L	20.0	116	59-149	1.54	20		
n-Propylbenzene	21.1	1.00	ug/L	20.0	106	80-129	0.0474	20		
Styrene	21.6	1.00	ug/L	20.0	108	80-123	3.45	20		
1,1,1,2-Tetrachloroethane	20.7	1.00	ug/L	20.0	103	80-130	1.44	20		
1,1,2,2-Tetrachloroethane	19.6	1.00	ug/L	20.0	97.9	79-125	0.966	20		
Tetrachloroethene	22.3	1.00	ug/L	20.0	111	80-124	1.65	20		
Toluene	19.6	1.00	ug/L	20.0	98.1	80-124	4.58	20		

Microbac Laboratories, Inc.



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
LCS Dup (B2E1337-BSD1)										
					Prepared & Analyzed: 05/25/2022					
1,2,3-Trichlorobenzene	22.0	1.00	ug/L	20.0	110	55-140	0.136	20		
1,2,4-Trichlorobenzene	22.8	1.00	ug/L	20.0	114	65-135	2.22	20		
1,1,1-Trichloroethane	19.2	1.00	ug/L	20.0	96.0	80-134	1.81	20		
1,1,2-Trichloroethane	20.9	1.00	ug/L	20.0	104	80-125	4.91	20		
Trichloroethylene	19.7	1.00	ug/L	20.0	98.3	80-122	5.39	20		
Trichlorofluoromethane	22.7	1.00	ug/L	20.0	113	62-151	1.91	20		
1,2,4-Trimethylbenzene	21.2	1.00	ug/L	20.0	106	80-125	0.377	20		
1,3,5-Trimethylbenzene	20.8	1.00	ug/L	20.0	104	80-127	0.0963	20		
Vinyl chloride	19.4	1.00	ug/L	20.0	96.8	50-170	3.63	20		
m-,p-Xylene	44.9	1.00	ug/L	40.0	112	80-122	0.976	20		
o-Xylene	20.9	1.00	ug/L	20.0	104	80-122	3.86	20		
Xylenes	65.7	1.00	ug/L	60.0	110	80-121	1.90	20		
Surrogate: 4-Bromofluorobenzene	47.6		ug/L	50.0	95.1	86-115				
Surrogate: Dibromofluoromethane	51.3		ug/L	50.0	103	86-118				
Surrogate: 1,2-Dichloroethane-d4	48.9		ug/L	50.0	97.9	80-120				
Surrogate: Toluene-d8	48.7		ug/L	50.0	97.4	88-110				

Definitions

- Q6:** CCV recovery is above acceptance limits. The reported value is estimated.
- Q7:** CCV recovery is above acceptance limits. However there is no impact on the reported value.
- Q8:** CCV recovery is below acceptance limits. The reported value is estimated.
- RL:** Reporting Limit
- RPD:** Relative Percent Difference
- ug/L:** Micrograms per Liter

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 4.0°C

Cooler Inspection Checklist

Ice Present or not required?	Yes	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes	Sample type identified on COC?	Yes
Correct type of Containers Received	Yes	Correct number of containers listed on COC?	Yes
Containers Intact?	Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes	Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes	Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	No		



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0948

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.

Reviewed and Approved By:

A handwritten signature in black ink, appearing to read "Ron L Feathers".

Ron L Feathers
Customer Relationship Specialist
Reported: 06/07/2022 08:29



M 2 E 0 9 4 8

Microbac - DAY
Rec'd: 05/17/2022 09:45
By: Brenda Gregory

Temp: 4

(Signature)

SUBCONTRACTED CHAIN OF CU

D2E1264

SENDING LABORATORY:

Microbac Laboratories, Inc. - Dayville
61 Louisa Viens Drive
Dayville, CT 06241
Phone: 860.774.6814
Lab Manager: Shelby Jendrewski
Email: Shelby.Jendrewski@microbac.com

RECEIVING LABORATORY:

Microbac - OVD
158 Starlite DR
Marietta, OH 45750
Phone: (740) 373-4071

Project Info: Client Name:
Project Name:
Project No: Shawmut Landfill

Client: River Hawk Environmental
Shawmut Landfill
Project Type: ENV-GroundWater
Project Location: Massachusetts

Report TAT: 10
Due: 05/27/2022 17:00

Project Requested Certifications

Massachusetts Department of Environmental Protection

Sample ID: D2E1264-01**Sampled: 05/12/2022 08:35**

Sampler: Customer

Matrix: Aqueous

Description: CDM-1S

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 08:35	\$ 40.00

Sample ID: D2E1264-02**Sampled: 05/12/2022 08:50**

Sampler: Customer

Matrix: Aqueous

Description: CDM-1D

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 08:50	\$ 40.00

Sample ID: D2E1264-03**Sampled: 05/12/2022 09:40**

Sampler: Customer

Matrix: Aqueous

Description: CDM-3S

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 09:40	\$ 40.00

Sample ID: D2E1264-04**Sampled: 05/12/2022 09:30**

Sampler: Customer

Matrix: Aqueous

Description: CDM-3D

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 09:30	\$ 40.00

Sample ID: D2E1264-05**Sampled: 05/12/2022 10:15**

Sampler: Customer

Matrix: Aqueous

Description: CDM-4S

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 10:15	\$ 40.00



SUBCONTRACTED CHAIN OF CUSTODY

D2E1264

Project Requested Certifications

Massachusetts Department of Environmental Protection

Sample ID: D2E1264-06

Sampled: 05/12/2022 10:25

Sampler: Customer

Matrix: Aqueous

Description: CDM-4D

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 10:25	\$ 40.00

Sample ID: D2E1264-07

Sampled: 05/12/2022 11:00

Sampler: Customer

Matrix: Aqueous

Description: CDM-5S

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 11:00	\$ 40.00

Sample ID: D2E1264-08

Sampled: 05/12/2022 11:20

Sampler: Customer

Matrix: Aqueous

Description: CDM-5D

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 11:20	\$ 40.00

Sample ID: D2E1264-09

Sampled: 05/12/2022 12:30

Sampler: Customer

Matrix: Aqueous

Description: CDM-6D

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 12:30	\$ 40.00

Sample ID: D2E1264-10

Sampled: 05/12/2022 09:00

Sampler: Customer

Matrix: Aqueous

Description: DUP-1

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 09:00	\$ 40.00

Sample ID: D2E1264-11

Sampled: 05/12/2022 00:00

Sampler: Customer

Matrix: Aqueous

Description: FIELD BLANK

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 00:00	\$ 40.00

Woy

5/16/22

Released By

Date

Received By

Date

Released By

Date

Received By

Date

Bunka Gregory

5/17/22 o 94/5



 MICROBAC®

Work Order #

COOLER TEMP >6° C LOG

pH Lot # N14

pH

Exceptions

PRESERVATIVE EXCEPTIONS

None

AS NOTED

Document Control # 1957
Last 04-10-2019

Issued to: Document Master File



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1267

Project Description

Shawmut Landfill

For:

Bill Kenney

River Hawk Environmental, LLC

2183 Ocean St.

Marshfield, MA 02050

A handwritten signature in black ink that reads "Melisa L. Montgomery".

Quality Assurance Officer

Melisa L. Montgomery

Monday, June 13, 2022

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc. - Dayville. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

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**Revised Report: Per client,
amended to correct 8260 list.**

CERTIFICATE OF ANALYSIS

D2E1267

River Hawk Environmental, LLC

Project Name: Shawmut Landfill

Bill Kenney
2183 Ocean St.
Marshfield, MA 02050

Project / PO Number: Shawmut Landfill
Received: 05/13/2022
Reported: 06/13/2022

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
SW-1	D2E1267-01	Aqueous	Grab		05/12/22 09:10	05/13/22 13:00
SW-2	D2E1267-02	Aqueous	Grab		05/12/22 11:30	05/13/22 13:00
SW-3	D2E1267-03	Aqueous	Grab		05/12/22 12:00	05/13/22 13:00
Trip Blank	D2E1267-04	Aqueous	Trip Blank		05/13/22 00:00	05/13/22 13:00
SW-1	D2E1267-05	Aqueous	Grab		05/12/22 09:10	05/13/22 13:00
SW-2	D2E1267-06	Aqueous	Grab		05/12/22 11:30	05/13/22 13:00
SW-3	D2E1267-07	Aqueous	Grab		05/12/22 12:00	05/13/22 13:00



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CERTIFICATE OF ANALYSIS

D2E1267

Analytical Testing Parameters

Client Sample ID:	SW-1	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	Customer
Lab Sample ID:	D2E1267-01		05/12/2022 9:10

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1	Q8	05/25/22	2230	KJB
Benzene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Bromochloromethane	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Bromodichloromethane	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Bromoform	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Bromomethane	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
2-Butanone	<5.00	5.00	ug/L	1		05/25/22	2230	KJB
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Chlorobenzene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Chloroform	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Chloromethane	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22	2230	KJB
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22	2230	KJB
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
1,1-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
cis-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22	2230	KJB
1,4-Dioxane	<100	100	ug/L	1		05/25/22	2230	KJB

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Page 3 of 52



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CERTIFICATE OF ANALYSIS

D2E1267

Client Sample ID:	SW-1	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	
Lab Sample ID:	D2E1267-01		Customer 05/12/2022 9:10

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Ethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
Hexachlorobutadiene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 2230	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 2230	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 2230	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
m-,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 2230	KJB
Surrogate: 4-Bromofluorobenzene	98.1	Limit: 86-115	% Rec	1			05/25/22 2230	KJB
Surrogate: Dibromofluoromethane	101	Limit: 86-118	% Rec	1			05/25/22 2230	KJB
Surrogate: 1,2-Dichloroethane-d4	97.9	Limit: 80-120	% Rec	1			05/25/22 2230	KJB
Surrogate: Toluene-d8	98.0	Limit: 88-110	% Rec	1			05/25/22 2230	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/16/22 1537	05/16/22 1630	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	67.3	5.00	mg/L	1		05/13/22 1500	05/13/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	443	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	685	25.0	mg/L	10		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	98.3	4.00	mg/L	2	A21		05/16/22 1618	CLW

Microbac Laboratories, Inc.



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1267

Client Sample ID:	SW-1	Sample Matrix:	Aqueous	Collected By:		Customer		
Lab Sample ID:	D2E1267-01 <th></th> <th></th> <th>Collection Date:</th> <td></td> <td>05/12/2022</td> <td>9:10</td>			Collection Date:		05/12/2022	9:10	
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 4500-NO3⁻ F-2011								
Nitrate as N	9.11	0.100	mg/L	2	A5		05/13/22 1901	DJM
SM 4500-SO4⁻ E-2011								
Sulfate as SO4	<5.00	5.00	mg/L	1	A21		05/16/22 1226	CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237	05/17/22 1423	DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3010A/EPA 6010C								
Arsenic	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1526	DLO
Barium	0.602	0.0100	mg/L	1	Y1	05/16/22 1406	05/16/22 1526	DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1526	DLO
Calcium	81.0	0.0500	mg/L	1	M6,Y	05/16/22 1406	05/16/22 1526	DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1526	DLO
Copper	0.00206	0.00200	mg/L	1	Q10,Y1	05/16/22 1406	05/17/22 1629	DLO
Iron	0.464	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1526	DLO
Lead	<0.00300	0.00300	mg/L	1	Y1	05/16/22 1406	05/16/22 1526	DLO
Manganese	0.115	0.00200	mg/L	1	Y	05/16/22 1406	05/16/22 1526	DLO
Selenium	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1526	DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1526	DLO
Sodium	100	1.00	mg/L	1	M6,Y	05/16/22 1406	05/16/22 1526	DLO
Zinc	0.00870	0.00500	mg/L	1	Y1	05/16/22 1406	05/18/22 1133	DLO



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CERTIFICATE OF ANALYSIS

D2E1267

Client Sample ID:	SW-2	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 11:30
Lab Sample ID:	D2E1267-02		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	6.38	5.00	ug/L	1	Q8	05/25/22 2252	KJB	
Benzene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Bromobenzene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Bromoform	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Bromomethane	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
2-Butanone	<5.00	5.00	ug/L	1		05/25/22 2252	KJB	
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
n-Butylbenzene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Carbon disulfide	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Chlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Chloroform	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Chloromethane	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Cyclohexane	<5.00	5.00	ug/L	1		05/25/22 2252	KJB	
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/25/22 2252	KJB	
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Dibromomethane	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
1,1-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
cis-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
1,4-Dioxane	<100	100	ug/L	1		05/25/22 2252	KJB	
Ethylbenzene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	
Hexachlorobutadiene	<1.00	1.00	ug/L	1		05/25/22 2252	KJB	

Microbac Laboratories, Inc.



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1267

Client Sample ID:	SW-2	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	
Lab Sample ID:	D2E1267-02		Customer 05/12/2022 11:30

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	5.00	ug/L	1			05/25/22 2252	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/25/22 2252	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
Styrene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
Toluene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/25/22 2252	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
m,p-Xylene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
Xylenes	<1.00	1.00	ug/L	1			05/25/22 2252	KJB
Surrogate: 4-Bromofluorobenzene	97.5	Limit: 86-115	% Rec	1			05/25/22 2252	KJB
Surrogate: Dibromofluoromethane	101	Limit: 86-118	% Rec	1			05/25/22 2252	KJB
Surrogate: 1,2-Dichloroethane-d4	97.2	Limit: 80-120	% Rec	1			05/25/22 2252	KJB
Surrogate: Toluene-d8	99.8	Limit: 88-110	% Rec	1			05/25/22 2252	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/16/22 1537	05/16/22 1630	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	84.0	5.00	mg/L	1		05/13/22 1500	05/13/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	290	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	402	50.0	mg/L	20		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	59.1	2.00	mg/L	1	A21		05/16/22 1619	CLW
SM 4500-NO3⁻ F-2011								

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1267

Client Sample ID:	SW-2	Collected By:		Customer				
Sample Matrix:	Aqueous	Collection Date:						
Lab Sample ID:	D2E1267-02			05/12/2022 11:30				
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Nitrate as N SM 4500-SO4⁻ E-2011	<0.0500	0.0500	mg/L	1	A5		05/13/22 1902	DJM
Sulfate as SO4	36.2	5.00	mg/L	1	A21		05/16/22 1229	CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237	05/17/22 1454	DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3010A/EPA 6010C								
Arsenic	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1532	DLO
Barium	0.101	0.0100	mg/L	1	Y1	05/16/22 1406	05/16/22 1532	DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1532	DLO
Calcium	71.8	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1532	DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1532	DLO
Copper	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/17/22 1636	DLO
Iron	28.9	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1532	DLO
Lead	<0.00300	0.00300	mg/L	1	Y1	05/16/22 1406	05/16/22 1532	DLO
Manganese	3.32	0.00200	mg/L	1	Y	05/16/22 1406	05/16/22 1532	DLO
Selenium	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1532	DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1532	DLO
Sodium	24.7	1.00	mg/L	1	Y	05/16/22 1406	05/16/22 1532	DLO
Zinc	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/18/22 1149	DLO



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1267

Client Sample ID:	SW-3	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 12:00
Lab Sample ID:	D2E1267-03		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 8260B								
Acetone	<5.00	5.00	ug/L	1		05/26/22 2232	KJB	
Benzene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Bromobenzene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Bromoform	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Bromomethane	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
2-Butanone	<5.00	5.00	ug/L	1		05/26/22 2232	KJB	
sec-Butylbenzene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
tert-Butylbenzene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
n-Butylbenzene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Carbon disulfide	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Carbon tetrachloride	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Chlorobenzene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Chlorodibromomethane	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Chloroform	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Chloromethane	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Cyclohexane	<5.00	5.00	ug/L	1	Q3	05/26/22 2232	KJB	
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L	1		05/26/22 2232	KJB	
1,2-Dibromoethane	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Dibromomethane	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
1,2-Dichlorobenzene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
1,4-Dichlorobenzene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
1,3-Dichlorobenzene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Dichlorodifluoromethane	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
1,1-Dichloroethane	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
1,2-Dichloroethane	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
trans-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
1,1-Dichloroethene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
cis-1,2-Dichloroethene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
1,2-Dichloropropane	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
1,3-Dichloropropane	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
cis-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
trans-1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
1,1-Dichloropropene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
1,3-Dichloropropene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
1,4-Dioxane	<100	100	ug/L	1		05/26/22 2232	KJB	
Ethylbenzene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	
Hexachlorobutadiene	<1.00	1.00	ug/L	1		05/26/22 2232	KJB	

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CERTIFICATE OF ANALYSIS

D2E1267

Client Sample ID:	SW-3	Collected By:	
Sample Matrix:	Aqueous	Collection Date:	
Lab Sample ID:	D2E1267-03		Customer 05/12/2022 12:00

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	5.00	ug/L	1			05/26/22 2232	KJB
Isopropylbenzene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
p-Isopropyltoluene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
Methylene chloride	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
4-Methyl-2-pentanone	<5.00	5.00	ug/L	1			05/26/22 2232	KJB
Naphthalene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
n-Propylbenzene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
Styrene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
Tetrachloroethene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
Toluene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
1,1,1-Trichloroethane	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
1,1,2-Trichloroethane	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
Trichloroethene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
Trichlorofluoromethane	<1.00	1.00	ug/L	1	Q7		05/26/22 2232	KJB
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
Vinyl chloride	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
m,p-Xylene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
o-Xylene	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
Xylenes	<1.00	1.00	ug/L	1			05/26/22 2232	KJB
Surrogate: 4-Bromofluorobenzene	92.3	Limit: 86-115	% Rec	1			05/26/22 2232	KJB
Surrogate: Dibromofluoromethane	93.7	Limit: 86-118	% Rec	1			05/26/22 2232	KJB
Surrogate: 1,2-Dichloroethane-d4	90.9	Limit: 80-120	% Rec	1			05/26/22 2232	KJB
Surrogate: Toluene-d8	91.3	Limit: 88-110	% Rec	1			05/26/22 2232	KJB

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 9012A								
Cyanide - Total	<0.0100	0.0100	mg/L	1	Y1	05/16/22 1537	05/16/22 1633	CLW
Hach 8000								
Chemical Oxygen Demand (COD)	39.0	5.00	mg/L	1		05/13/22 1500	05/13/22 1700	AJW
SM 2320 B-2011								
Alkalinity to pH 4.5	120	1.00	mg CaCO3/L	1	A27		05/13/22 1535	EMK
SM 2540 C-2015								
Total Dissolved Solids (TDS)	407	25.0	mg/L	10		05/13/22 2135	05/19/22 1945	AJD
SM 4500-CI E-2011								
Chloride	153	8.00	mg/L	4	A21		05/16/22 1623	CLW
SM 4500-NO3⁻ F-2011								

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CERTIFICATE OF ANALYSIS

D2E1267

Client Sample ID:	SW-3	Collected By:		Customer				
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 12:00					
Lab Sample ID:	D2E1267-03							
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Nitrate as N SM 4500-SO4⁻ E-2011	<0.0500	0.0500	mg/L	1	A5		05/13/22 1759	DJM
Sulfate as SO4	25.1	5.00	mg/L	1	A21		05/16/22 1229	CLW
Metals Dissolved by CVAA	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1	Y	05/17/22 1237	05/17/22 1456	DLO
Metals Dissolved by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3010A/EPA 6010C								
Arsenic	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1535	DLO
Barium	0.0918	0.0100	mg/L	1	Y1	05/16/22 1406	05/16/22 1535	DLO
Cadmium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1535	DLO
Calcium	45.0	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1535	DLO
Chromium	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1535	DLO
Copper	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/17/22 1639	DLO
Iron	0.134	0.0500	mg/L	1	Y	05/16/22 1406	05/16/22 1535	DLO
Lead	<0.00300	0.00300	mg/L	1	Y1	05/16/22 1406	05/16/22 1535	DLO
Manganese	0.0580	0.00200	mg/L	1	Y	05/16/22 1406	05/16/22 1535	DLO
Selenium	<0.00500	0.00500	mg/L	1	Y1	05/16/22 1406	05/16/22 1535	DLO
Silver	<0.00200	0.00200	mg/L	1	Y1	05/16/22 1406	05/16/22 1535	DLO
Sodium	84.0	1.00	mg/L	1	Y	05/16/22 1406	05/16/22 1535	DLO
Zinc	0.00568	0.00500	mg/L	1	Y1	05/16/22 1406	05/18/22 1153	DLO
Polychlorinated Biphenyls (PCBs) by GC/ECD	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3510C/EPA 8082A								
Aroclor-1016 (PCB-1016)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2233	MRB
Aroclor-1221 (PCB-1221)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2233	MRB
Aroclor-1232 (PCB-1232)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2233	MRB
Aroclor-1242 (PCB-1242)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2233	MRB
Aroclor-1248 (PCB-1248)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2233	MRB
Aroclor-1254 (PCB-1254)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2233	MRB
Aroclor-1260 (PCB-1260)	<0.100	0.100	ug/L	1	Y1	05/16/22 0939	05/16/22 2233	MRB
Surrogate: Decachlorobiphenyl (BZ-209)	79.0	Limit: 30-150	% Rec	1		05/16/22 0939	05/16/22 2233	MRB
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	75.9	Limit: 30-150	% Rec	1		05/16/22 0939	05/16/22 2233	MRB



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CERTIFICATE OF ANALYSIS

D2E1267

Client Sample ID: SW-1
Sample Matrix: Aqueous
Lab Sample ID: D2E1267-05

Collected By: Customer
Collection Date: 05/12/2022 9:10

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Metals Total by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 200.7, Rv. 4.4 (1994)								
Hardness - Total as CaCO ₃ (Calc)	282	0.331	mg CaCO ₃ /L	1		05/16/22 1606	05/17/22 2343	DLO
Calcium	76.8	0.0500	mg/L	1		05/16/22 1606	05/17/22 2343	DLO
Magnesium	21.8	0.0500	mg/L	1		05/16/22 1606	05/17/22 2343	DLO

Client Sample ID: SW-2
Sample Matrix: Aqueous
Lab Sample ID: D2E1267-06

Collected By: Customer
Collection Date: 05/12/2022 11:30

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Metals Total by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 200.7, Rv. 4.4 (1994)								
Hardness - Total as CaCO ₃ (Calc)	282	0.331	mg CaCO ₃ /L	1		05/16/22 1606	05/17/22 2346	DLO
Calcium	68.4	0.0500	mg/L	1		05/16/22 1606	05/17/22 2346	DLO
Magnesium	27.0	0.0500	mg/L	1		05/16/22 1606	05/17/22 2346	DLO

Client Sample ID: SW-3
Sample Matrix: Aqueous
Lab Sample ID: D2E1267-07

Collected By: Customer
Collection Date: 05/12/2022 12:00

Analyses Performed by: Microbac Laboratories, Inc. - Dayville

Metals Total by ICP	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 200.7, Rv. 4.4 (1994)								
Hardness - Total as CaCO ₃ (Calc)	162	0.331	mg CaCO ₃ /L	1		05/16/22 1606	05/17/22 2356	DLO
Calcium	42.9	0.0500	mg/L	1		05/16/22 1606	05/17/22 2356	DLO
Magnesium	13.3	0.0500	mg/L	1		05/16/22 1606	05/17/22 2356	DLO



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CERTIFICATE OF ANALYSIS

D2E1267

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260B	B2E1337	B2E1337-BLK1 B2E1337-BS1 B2E1337-BSD1 D2E1267-01 D2E1267-02	SW-1 SW-2
Method	Batch	Laboratory ID	Client / Source ID
EPA 8260B	B2E1399	B2E1399-BLK1 B2E1399-BS1 D2E1267-03	SW-3
Method	Batch	Laboratory ID	Client / Source ID
SM 4500-CI E-2011	DE20824	DE20824-BS1 DE20824-BLK1 DE20824-DUP1 DE20824-MS1 DE20824-MSD1 D2E1267-01 D2E1267-02 D2E1267-03	D2E1264-09 D2E1264-09 D2E1264-09 SW-1 SW-2 SW-3
Method	Batch	Laboratory ID	Client / Source ID
SM 4500-SO ₄ ⁻ E-2011	DE20856	DE20856-BLK1 DE20856-BS1 DE20856-DUP1 D2E1267-01 D2E1267-03 D2E1267-02 DE20856-MS1 DE20856-MSD1	D2E1264-01 SW-1 SW-3 SW-2 D2E1264-01 D2E1264-01
Method	Batch	Laboratory ID	Client / Source ID
SM 4500-NO ₃ ⁻ F-2011	DE20869	DE20869-BS1 DE20869-BLK1 DE20869-DUP1 DE20869-MS1 DE20869-MSD1 D2E1267-03 D2E1267-01 D2E1267-02	D2E1264-01 D2E1264-01 D2E1264-01 SW-3 SW-1 SW-2

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CERTIFICATE OF ANALYSIS

D2E1267

Method	Batch	Laboratory ID	Client / Source ID
SM 2320 B-2011	DE20873	DE20873-DUP1 D2E1267-01 DE20873-BLK1 D2E1267-02 D2E1267-03 DE20873-BS1	D2E1175-09 SW-1 SW-2 SW-3
Hach 8000	DE20881	DE20881-DUP1 DE20881-BLK1 DE20881-BS1 D2E1267-01 D2E1267-02 D2E1267-03 DE20881-MS1	D2E1126-02 SW-1 SW-2 SW-3 D2E1126-02
SM 2540 C-2015	DE20890	D2E1267-02 DE20890-BLK1 DE20890-DUP1 D2E1267-03 DE20890-DUP2 D2E1267-01 DE20890-BS1	SW-2 D2E1264-02 SW-3 D2E1267-03 SW-1
EPA 8082A	DE20901	DE20901-BLK1 DE20901-BS1 DE20901-MS1 DE20901-MSD1 D2E1267-03	D2E1264-03 D2E1264-03 SW-3
EPA 200.7, Rev. 4.4 (1994)	DE20910	DE20910-BLK1 DE20910-BS1 DE20910-DUP1 DE20910-MS1 D2E1267-05 D2E1267-06 DE20910-MS2 D2E1267-07	D2E1157-01 D2E1157-01 SW-1 SW-2 D2E1266-01 SW-3
Method	Batch	Laboratory ID	Client / Source ID

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CERTIFICATE OF ANALYSIS

D2E1267

EPA 6010C	DE20932	DE20932-BLK1	
		DE20932-BS1	
		DE20932-DUP1	D2E1264-01
		DE20932-MS1	D2E1264-01
		D2E1267-01	SW-1
		DE20932-MS2	D2E1267-01
		D2E1267-02	SW-2
		D2E1267-03	SW-3
		D2E1267-01	SW-1
		DE20932-MS4	D2E1267-01
		D2E1267-02	SW-2
		D2E1267-03	SW-3
		DE20932-DUP2	D2E1264-01
		DE20932-MS3	D2E1264-01
		DE20932-BLK2	
		DE20932-BS2	
		DE20932-DUP3	D2E1264-01
		DE20932-MS5	D2E1264-01
		D2E1267-01	SW-1
		DE20932-MS6	D2E1267-01
		D2E1267-02	SW-2
		D2E1267-03	SW-3

Method	Batch	Laboratory ID	Client / Source ID
EPA 9012A	DE20939	DE20939-BS1	
		DE20939-MRL1	
		DE20939-BLK1	
		DE20939-DUP1	D2E1185-08
		D2E1267-01	SW-1
		D2E1267-02	SW-2
		D2E1267-03	SW-3
		DE20939-MS1	D2E1185-08

Method	Batch	Laboratory ID	Client / Source ID
EPA 7470A	DE21008	DE21008-BLK1	
		DE21008-BS1	
		DE21008-MS1	D2E1264-01
		DE21008-MSD1	D2E1264-01
		D2E1267-01	SW-1
		DE21008-MS2	D2E1267-01
		D2E1267-02	SW-2
		D2E1267-03	SW-3



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1267

Batch Quality Control Summary: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes			
Batch DE20824 - Wet Chem - W - SM 4500-CI E-2011													
Blank (DE20824-BLK1)				Prepared & Analyzed: 05/16/2022									
Chloride	<2.00		2.00	mg/L									
LCS (DE20824-BS1)													
Chloride	20.3		2.00	mg/L	20.0	101	90-110						
Duplicate (DE20824-DUP1)													
Chloride	16.4		2.00	mg/L	16.3			0.863	20				
Matrix Spike (DE20824-MS1)													
Chloride	36.9		2.00	mg/L	20.0	16.3	103	75-125					
Matrix Spike Dup (DE20824-MSD1)													
Chloride	36.6		2.00	mg/L	20.0	16.3	102	75-125	0.873	20			
Batch DE20856 - Wet Chem - W - SM 4500-SO4⁻ E-2011													
Blank (DE20856-BLK1)				Prepared & Analyzed: 05/16/2022									
Sulfate as SO4	<5.00		5.00	mg/L									
LCS (DE20856-BS1)													
Sulfate as SO4	20.2		5.00	mg/L	20.0	101	90-110						
Duplicate (DE20856-DUP1)													
Sulfate as SO4	20.2		5.00	mg/L	20.7			2.30	20	A21			
Matrix Spike (DE20856-MS1)													
Sulfate as SO4	42.1		25.0	mg/L	20.0	20.7	107	75-125		A21			
Matrix Spike Dup (DE20856-MSD1)													
Sulfate as SO4	41.7		25.0	mg/L	20.0	20.7	105	75-125	0.907	20	A21		
Batch DE20869 - Wet Chem - W - SM 4500-NO3⁻ F-2011													
Blank (DE20869-BLK1)				Prepared & Analyzed: 05/13/2022									
Nitrate as N	<0.0500		0.0500	mg/L									
LCS (DE20869-BS1)													
Nitrate as N	5.11		0.0500	mg/L	5.00	102	90-110						
Duplicate (DE20869-DUP1)													
Nitrate as N	<0.0500		0.0500	mg/L	ND				20	A5			
Matrix Spike (DE20869-MS1)													
Nitrate as N	5.06		0.0500	mg/L	5.00	ND	101	75-125		A5			
Matrix Spike Dup (DE20869-MSD1)													
Nitrate as N	5.11		0.0500	mg/L	5.00	ND	102	75-125	0.987	20	A5		
Batch DE20873 - Wet Chem - W - SM 2320 B-2011													
Blank (DE20873-BLK1)				Prepared & Analyzed: 05/13/2022									



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

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Inorganics Total	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch DE20873 - Wet Chem - W - SM 2320 B-2011										
Blank (DE20873-BLK1)										
Alkalinity to pH 4.5	<1.00	1.00	mg CaCO ₃ /L		Prepared & Analyzed: 05/13/2022					
LCS (DE20873-BS1)										
Alkalinity to pH 4.5	50.0	1.00	mg CaCO ₃ /L		50.0	100	90-110			
Duplicate (DE20873-DUP1)										
Alkalinity to pH 4.5	75.0	1.00	mg CaCO ₃ /L		75.0			0.00	20	
Batch DE20881 - Wet Chem - W - Hach 8000										
Blank (DE20881-BLK1)										
Chemical Oxygen Demand (COD)	<5.00	5.00	mg/L		Prepared & Analyzed: 05/13/2022					
LCS (DE20881-BS1)										
Chemical Oxygen Demand (COD)	101	5.00	mg/L	100	101	80-120				
Duplicate (DE20881-DUP1)										
Chemical Oxygen Demand (COD)	93.4	5.00	mg/L		99.3			6.13	20	
Matrix Spike (DE20881-MS1)										
Chemical Oxygen Demand (COD)	193	5.00	mg/L	100	99.3	94.2	80-120			
Batch DE20890 - Wet-Solids-W - SM 2540 C-2015										
Blank (DE20890-BLK1)										
Total Dissolved Solids (TDS)	<10.0	10.0	mg/L		Prepared: 05/13/2022 Analyzed: 05/19/2022					
LCS (DE20890-BS1)										
Total Dissolved Solids (TDS)	110	25.0	mg/L	100	110	80-120				
Duplicate (DE20890-DUP1)										
Total Dissolved Solids (TDS)	564	25.0	mg/L		567			0.531	10	
Duplicate (DE20890-DUP2)										
Total Dissolved Solids (TDS)	412	25.0	mg/L		407			1.22	10	
Batch DE20939 - Wet-Distillation-W - EPA 9012A										
Blank (DE20939-BLK1)										
Cyanide - Total	<0.0100	0.0100	mg/L		Prepared & Analyzed: 05/16/2022					
LCS (DE20939-BS1)										
Cyanide - Total	0.205	0.0100	mg/L	0.200	103	90-110				
Duplicate (DE20939-DUP1)										
Cyanide - Total	<0.0500	0.0500	mg/L		ND			20		
Matrix Spike (DE20939-MS1)										
Cyanide - Total	0.443	0.0500	mg/L	0.500	ND	88.5	75-125			

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CERTIFICATE OF ANALYSIS

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Metals Total by ICP	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch DE20910 - 200.7 - W - EPA 200.7, Rv. 4.4 (1994)										
Blank (DE20910-BLK1) Prepared: 05/16/2022 Analyzed: 05/17/2022										
Calcium	<0.0500	0.0500	mg/L							
Magnesium	<0.0500	0.0500	mg/L							
LCS (DE20910-BS1) Prepared: 05/16/2022 Analyzed: 05/17/2022										
Calcium	9.82	0.0500	mg/L	10.5		93.6	85-115			
Magnesium	10.7	0.0500	mg/L	10.5		102	85-115			
Duplicate (DE20910-DUP1) Source: D2E1157-01 Prepared: 05/16/2022 Analyzed: 05/17/2022										
Calcium	34.6	0.0500	mg/L		33.9			2.16	20	
Magnesium	6.71	0.0500	mg/L		6.58			1.91	20	
Matrix Spike (DE20910-MS1) Source: D2E1157-01 Prepared: 05/16/2022 Analyzed: 05/17/2022										
Calcium	44.0	0.0500	mg/L	10.5	33.9	95.8	70-130			
Magnesium	17.4	0.0500	mg/L	10.5	6.58	103	70-130			
Matrix Spike (DE20910-MS2) Source: D2E1266-01 Prepared: 05/16/2022 Analyzed: 05/17/2022										
Calcium	47.1	0.0500	mg/L	10.5	37.4	92.3	70-130			
Magnesium	18.2	0.0500	mg/L	10.5	7.13	105	70-130			
Metals Dissolved by CVAA Result RL Units Spike Level Source Result %REC %REC Limits RPD RPD Limit Notes										
Batch DE21008 - 245 HG W - EPA 7470A										
Blank (DE21008-BLK1) Prepared & Analyzed: 05/17/2022										
Mercury	<0.00020	0.00020	mg/L							
LCS (DE21008-BS1) Prepared & Analyzed: 05/17/2022										
Mercury	0.00510	0.00020	mg/L	0.00500		102	80-120			
Matrix Spike (DE21008-MS1) Source: D2E1264-01 Prepared & Analyzed: 05/17/2022										
Mercury	0.00459	0.00020	mg/L	0.00500	ND	91.7	75-125			
Matrix Spike (DE21008-MS2) Source: D2E1267-01 Prepared & Analyzed: 05/17/2022										
Mercury	0.00420	0.00020	mg/L	0.00500	ND	84.1	75-125			
Matrix Spike Dup (DE21008-MSD1) Source: D2E1264-01 Prepared & Analyzed: 05/17/2022										
Mercury	0.00464	0.00020	mg/L	0.00500	ND	92.8	75-125	1.13	20	
Metals Dissolved by ICP Result RL Units Spike Level Source Result %REC %REC Limits RPD RPD Limit Notes										
Batch DE20932 - 3010A - EPA 6010C										
Blank (DE20932-BLK1) Prepared & Analyzed: 05/16/2022										
Silver	<0.00200	0.00200	mg/L							
Arsenic	<0.00500	0.00500	mg/L							
Barium	<0.0100	0.0100	mg/L							
Calcium	<0.0500	0.0500	mg/L							
Cadmium	<0.00200	0.00200	mg/L							
Chromium	<0.00200	0.00200	mg/L							
Copper	<0.00200	0.00200	mg/L							
Iron	<0.0500	0.0500	mg/L							

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CERTIFICATE OF ANALYSIS

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Metals Dissolved by ICP	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch DE20932 - 3010A - EPA 6010C										
Blank (DE20932-BLK1)										
Prepared & Analyzed: 05/16/2022										
Manganese	<0.00200	0.00200	mg/L							
Sodium	<1.00	1.00	mg/L							
Lead	<0.00300	0.00300	mg/L							
Selenium	<0.00500	0.00500	mg/L							
Blank (DE20932-BLK2)										
Zinc	<0.00500	0.00500	mg/L							
LCS (DE20932-BS1)										
Prepared & Analyzed: 05/16/2022										
Silver	0.0992	0.00200	mg/L	0.100	99.2	80-120				
Arsenic	0.482	0.00500	mg/L	0.500	96.3	80-120				
Barium	0.473	0.0100	mg/L	0.500	94.7	80-120				
Calcium	10.2	0.0500	mg/L	10.5	97.3	80-120				
Cadmium	0.498	0.00200	mg/L	0.500	99.5	80-120				
Chromium	0.478	0.00200	mg/L	0.500	95.7	80-120				
Copper	0.489	0.00200	mg/L	0.500	97.8	80-120				
Iron	2.46	0.0500	mg/L	2.50	98.3	80-120				
Manganese	0.497	0.00200	mg/L	0.500	99.4	80-120				
Sodium	10.6	1.00	mg/L	10.5	101	80-120				
Lead	0.479	0.00300	mg/L	0.500	95.9	80-120				
Selenium	0.473	0.00500	mg/L	0.500	94.6	80-120				
LCS (DE20932-BS2)										
Zinc	0.484	0.00500	mg/L	0.500	96.8	80-120				
Duplicate (DE20932-DUP1)										
Source: D2E1264-01 Prepared & Analyzed: 05/16/2022										
Silver	<0.00200	0.00200	mg/L	ND					20	
Arsenic	<0.00500	0.00500	mg/L	0.0059				200	20	R3
Barium	0.109	0.0100	mg/L	0.110				0.679	20	
Cadmium	<0.00200	0.00200	mg/L	ND					20	
Chromium	<0.00200	0.00200	mg/L	ND					20	
Copper	<0.00200	0.00200	mg/L	ND					20	
Iron	1.50	0.0500	mg/L	1.51				0.426	20	
Manganese	0.359	0.00200	mg/L	0.361				0.627	20	
Sodium	55.0	1.00	mg/L	55.4				0.630	20	
Lead	<0.00300	0.00300	mg/L	ND					20	
Selenium	0.0101	0.00500	mg/L	0.0052				63.5	20	R3
Duplicate (DE20932-DUP2)										
Calcium	103	0.500	mg/L	102				1.16	20	
Duplicate (DE20932-DUP3)										
Zinc	<0.00500	0.00500	mg/L	ND					20	
Matrix Spike (DE20932-MS1)										
Source: D2E1264-01 Prepared & Analyzed: 05/16/2022										
Silver	0.0908	0.00200	mg/L	0.100	ND	90.8	75-125			
Arsenic	0.518	0.00500	mg/L	0.500	0.0059	102	75-125			
Barium	0.585	0.0100	mg/L	0.500	0.110	94.9	75-125			
Cadmium	0.502	0.00200	mg/L	0.500	ND	100	75-125			

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Metals Dissolved by ICP	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch DE20932 - 3010A - EPA 6010C										
Matrix Spike (DE20932-MS1)										
Source: D2E1264-01 Prepared & Analyzed: 05/16/2022										
Chromium	0.487	0.00200	mg/L	0.500	ND	97.4	75-125			
Copper	0.505	0.00200	mg/L	0.500	ND	101	75-125			
Iron	3.93	0.0500	mg/L	2.50	1.51	96.6	75-125			
Manganese	0.842	0.00200	mg/L	0.500	0.361	96.3	75-125			
Sodium	63.8	1.00	mg/L	10.5	55.4	79.7	75-125			
Lead	0.480	0.00300	mg/L	0.500	ND	95.9	75-125			
Selenium	0.558	0.00500	mg/L	0.500	0.0052	111	75-125			
Matrix Spike (DE20932-MS2)										
Source: D2E1267-01 Prepared & Analyzed: 05/16/2022										
Silver	0.0887	0.00200	mg/L	0.100	ND	88.7	75-125			
Arsenic	0.508	0.00500	mg/L	0.500	ND	102	75-125			
Barium	1.05	0.0100	mg/L	0.500	0.602	89.1	75-125			
Calcium	86.6	0.0500	mg/L	10.5	81.0	53.4	75-125			M6
Cadmium	0.493	0.00200	mg/L	0.500	ND	98.7	75-125			
Chromium	0.480	0.00200	mg/L	0.500	0.0012	95.8	75-125			
Iron	2.90	0.0500	mg/L	2.50	0.464	97.3	75-125			
Manganese	0.604	0.00200	mg/L	0.500	0.115	97.8	75-125			
Sodium	106	1.00	mg/L	10.5	100	56.7	75-125			M6
Lead	0.472	0.00300	mg/L	0.500	ND	94.5	75-125			
Selenium	0.533	0.00500	mg/L	0.500	0.0032	106	75-125			
Matrix Spike (DE20932-MS3)										
Source: D2E1264-01 Prepared: 05/16/2022 Analyzed: 05/17/2022										
Calcium	107	0.500	mg/L	10.5	102	51.3	75-125			M6
Matrix Spike (DE20932-MS4)										
Source: D2E1267-01 Prepared: 05/16/2022 Analyzed: 05/17/2022										
Copper	0.484	0.00200	mg/L	0.500	0.0021	96.4	75-125			
Matrix Spike (DE20932-MS5)										
Source: D2E1264-01 Prepared: 05/16/2022 Analyzed: 05/18/2022										
Zinc	0.474	0.00500	mg/L	0.500	ND	94.9	75-125			
Matrix Spike (DE20932-MS6)										
Source: D2E1267-01 Prepared: 05/16/2022 Analyzed: 05/18/2022										
Zinc	0.480	0.00500	mg/L	0.500	0.0087	94.3	75-125			
Polychlorinated Biphenyls (PCBs) by GC/ECD										
Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes	
Batch DE20901 - 3510C W Sep Funnel - EPA 8082A										
Blank (DE20901-BLK1) Prepared & Analyzed: 05/16/2022										
Aroclor-1016 (PCB-1016)	<0.100	0.100	ug/L							
Aroclor-1016 (PCB-1016) [2C]	<0.100	0.100	ug/L							
Aroclor-1221 (PCB-1221)	<0.100	0.100	ug/L							
Aroclor-1221 (PCB-1221) [2C]	<0.100	0.100	ug/L							
Aroclor-1232 (PCB-1232)	<0.100	0.100	ug/L							
Aroclor-1232 (PCB-1232) [2C]	<0.100	0.100	ug/L							
Aroclor-1242 (PCB-1242)	<0.100	0.100	ug/L							
Aroclor-1242 (PCB-1242) [2C]	<0.100	0.100	ug/L							
Aroclor-1248 (PCB-1248)	<0.100	0.100	ug/L							

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Polychlorinated Biphenyls (PCBs) by GC/ECD	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch DE20901 - 3510C W Sep Funnel - EPA 8082A

Blank (DE20901-BLK1)		Prepared & Analyzed: 05/16/2022								
Aroclor-1248 (PCB-1248) [2C]	<0.100	0.100	ug/L							
Aroclor-1254 (PCB-1254)	<0.100	0.100	ug/L							
Aroclor-1254 (PCB-1254) [2C]	<0.100	0.100	ug/L							
Aroclor-1260 (PCB-1260)	<0.100	0.100	ug/L							
Aroclor-1260 (PCB-1260) [2C]	<0.100	0.100	ug/L							
Surrogate: Decachlorobiphenyl (BZ-209)	0.0882		ug/L	0.100		88.2	30-150			
Surrogate: Decachlorobiphenyl (BZ-209) [2C]	0.0861		ug/L	0.100		86.1	30-150			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	0.0844		ug/L	0.100		84.4	30-150			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene [2C]	0.0810		ug/L	0.100		81.0	30-150			
LCS (DE20901-BS1)		Prepared & Analyzed: 05/16/2022								
Aroclor-1016 (PCB-1016)	0.665	0.100	ug/L	1.00		66.5	40-140			
Aroclor-1016 (PCB-1016) [2C]	0.658	0.100	ug/L	1.00		65.8	40-140			
Aroclor-1260 (PCB-1260)	0.752	0.100	ug/L	1.00		75.2	40-140			
Aroclor-1260 (PCB-1260) [2C]	0.730	0.100	ug/L	1.00		73.0	40-140			
Surrogate: Decachlorobiphenyl (BZ-209)	0.0881		ug/L	0.100		88.1	30-150			
Surrogate: Decachlorobiphenyl (BZ-209) [2C]	0.0859		ug/L	0.100		85.9	30-150			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	0.0834		ug/L	0.100		83.4	30-150			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene [2C]	0.0795		ug/L	0.100		79.5	30-150			
Matrix Spike (DE20901-MS1)		Source: D2E1264-03 Prepared & Analyzed: 05/16/2022								
Aroclor-1016 (PCB-1016)	0.901	0.133	ug/L	1.33	ND	67.6	40-140			
Aroclor-1260 (PCB-1260)	1.09	0.133	ug/L	1.33	ND	81.5	40-140			
Surrogate: Decachlorobiphenyl (BZ-209)	0.117		ug/L	0.133		87.9	30-150			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	0.120		ug/L	0.133		90.1	30-150			
Matrix Spike Dup (DE20901-MSD1)		Source: D2E1264-03 Prepared & Analyzed: 05/16/2022								
Aroclor-1016 (PCB-1016)	0.861	0.133	ug/L	1.33	ND	64.6	40-140	4.56	20	
Aroclor-1260 (PCB-1260)	1.03	0.133	ug/L	1.33	ND	77.3	40-140	5.31	20	
Surrogate: Decachlorobiphenyl (BZ-209)	0.107		ug/L	0.133		80.5	30-150			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	0.114		ug/L	0.133		85.7	30-150			

Batch Quality Control Summary: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Acetone	<5.00	5.00	ug/L							
Benzene	<1.00	1.00	ug/L							
Bromobenzene	<1.00	1.00	ug/L							
Bromochloromethane	<1.00	1.00	ug/L							
Bromodichloromethane	<1.00	1.00	ug/L							

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CERTIFICATE OF ANALYSIS

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Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
Blank (B2E1337-BLK1)										
					Prepared & Analyzed: 05/25/2022					
Bromoform	<1.00	1.00	ug/L							
Bromomethane	<1.00	1.00	ug/L							
2-Butanone	<5.00	5.00	ug/L							
sec-Butylbenzene	<1.00	1.00	ug/L							
tert-Butylbenzene	<1.00	1.00	ug/L							
n-Butylbenzene	<1.00	1.00	ug/L							
Carbon disulfide	<1.00	1.00	ug/L							
Carbon tetrachloride	<1.00	1.00	ug/L							
Chlorobenzene	<1.00	1.00	ug/L							
Chlorodibromomethane	<1.00	1.00	ug/L							
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L							
Chloroform	<1.00	1.00	ug/L							
Chloromethane	<1.00	1.00	ug/L							
Cyclohexane	<5.00	5.00	ug/L							
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L							
1,2-Dibromoethane	<1.00	1.00	ug/L							
Dibromomethane	<1.00	1.00	ug/L							
1,2-Dichlorobenzene	<1.00	1.00	ug/L							
1,4-Dichlorobenzene	<1.00	1.00	ug/L							
1,3-Dichlorobenzene	<1.00	1.00	ug/L							
Dichlorodifluoromethane	<1.00	1.00	ug/L							
1,1-Dichloroethane	<1.00	1.00	ug/L							
1,2-Dichloroethane	<1.00	1.00	ug/L							
1,2-Dichloroethene	<1.00	1.00	ug/L							
trans-1,2-Dichloroethene	<1.00	1.00	ug/L							
1,1-Dichloroethene	<1.00	1.00	ug/L							
cis-1,2-Dichloroethene	<1.00	1.00	ug/L							
1,2-Dichloropropane	<1.00	1.00	ug/L							
1,3-Dichloropropane	<1.00	1.00	ug/L							
cis-1,3-Dichloropropene	<1.00	1.00	ug/L							
trans-1,3-Dichloropropene	<1.00	1.00	ug/L							
1,1-Dichloropropene	<1.00	1.00	ug/L							
1,3-Dichloropropene	<1.00	1.00	ug/L							
1,4-Dioxane	<100	100	ug/L							
Ethylbenzene	<1.00	1.00	ug/L							
Hexachlorobutadiene	<1.00	1.00	ug/L							
2-Hexanone	<5.00	5.00	ug/L							
Isopropylbenzene	<1.00	1.00	ug/L							
p-Isopropyltoluene	<1.00	1.00	ug/L							
Methylene chloride	<1.00	1.00	ug/L							
4-Methyl-2-pentanone	<5.00	5.00	ug/L							
Naphthalene	<1.00	1.00	ug/L							
n-Propylbenzene	<1.00	1.00	ug/L							

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Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
Blank (B2E1337-BLK1)										
Prepared & Analyzed: 05/25/2022										
Styrene	<1.00	1.00	ug/L							
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L							
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L							
Tetrachloroethene	<1.00	1.00	ug/L							
Toluene	<1.00	1.00	ug/L							
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L							
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L							
1,1,1-Trichloroethane	<1.00	1.00	ug/L							
1,1,2-Trichloroethane	<1.00	1.00	ug/L							
Trichloroethene	<1.00	1.00	ug/L							
Trichlorofluoromethane	<1.00	1.00	ug/L							
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L							
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L							
Vinyl chloride	<1.00	1.00	ug/L							
m-,p-Xylene	<1.00	1.00	ug/L							
o-Xylene	<1.00	1.00	ug/L							
Xylenes	<1.00	1.00	ug/L							
Surrogate: 4-Bromofluorobenzene	49.2		ug/L	50.0		98.3	86-115			
Surrogate: Dibromofluoromethane	47.4		ug/L	50.0		94.8	86-118			
Surrogate: 1,2-Dichloroethane-d4	46.8		ug/L	50.0		93.6	80-120			
Surrogate: Toluene-d8	47.9		ug/L	50.0		95.7	88-110			
LCS (B2E1337-BS1)										
Prepared & Analyzed: 05/25/2022										
Acetone	19.1	5.00	ug/L	20.0		95.4	40-180			
Benzene	21.0	1.00	ug/L	20.0		105	80-121			
Bromobenzene	21.3	1.00	ug/L	20.0		106	80-120			
Bromochloromethane	20.1	1.00	ug/L	20.0		100	65-130			
Bromodichloromethane	18.0	1.00	ug/L	20.0		90.0	80-131			
Bromoform	18.5	1.00	ug/L	20.0		92.7	70-130			
Bromomethane	21.6	1.00	ug/L	20.0		108	30-145			
2-Butanone	20.0	5.00	ug/L	20.0		99.8	10-170			
sec-Butylbenzene	20.6	1.00	ug/L	20.0		103	80-127			
tert-Butylbenzene	21.0	1.00	ug/L	20.0		105	80-126			
n-Butylbenzene	21.5	1.00	ug/L	20.0		107	80-131			
Carbon disulfide	14.4	1.00	ug/L	20.0		71.9	58-128			
Carbon tetrachloride	18.0	1.00	ug/L	20.0		89.8	65-140			
Chlorobenzene	22.5	1.00	ug/L	20.0		112	80-120			
Chlorodibromomethane	19.4	1.00	ug/L	20.0		97.0	60-135			
Chloroethane (Ethyl chloride)	21.0	1.00	ug/L	20.0		105	60-135			
Chloroform	20.7	1.00	ug/L	20.0		103	80-125			
Chloromethane	18.3	1.00	ug/L	20.0		91.7	40-125			
Cyclohexane	14.4	5.00	ug/L	20.0		72.2	70-130			
1,2-Dibromo-3-chloropropane	18.8	2.00	ug/L	20.0		94.2	50-130			
1,2-Dibromoethane	21.6	1.00	ug/L	20.0		108	80-129			

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Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
LCS (B2E1337-BS1)										
Prepared & Analyzed: 05/25/2022										
Dibromomethane	21.7	1.00	ug/L	20.0	108	75-125				
1,2-Dichlorobenzene	21.4	1.00	ug/L	20.0	107	80-125				
1,4-Dichlorobenzene	21.7	1.00	ug/L	20.0	108	80-120				
1,3-Dichlorobenzene	20.7	1.00	ug/L	20.0	103	80-120				
Dichlorodifluoromethane	20.4	1.00	ug/L	20.0	102	40-160				
1,1-Dichloroethane	19.5	1.00	ug/L	20.0	97.5	80-125				
1,2-Dichloroethane	20.8	1.00	ug/L	20.0	104	80-129				
1,2-Dichloroethene	38.0	1.00	ug/L	40.0	95.0	80-124				
trans-1,2-Dichloroethene	20.1	1.00	ug/L	20.0	100	80-127				
1,1-Dichloroethene	20.0	1.00	ug/L	20.0	100	80-132				
cis-1,2-Dichloroethene	17.9	1.00	ug/L	20.0	89.5	70-125				
1,2-Dichloropropane	19.9	1.00	ug/L	20.0	99.5	80-120				
1,3-Dichloropropane	22.1	1.00	ug/L	20.0	110	80-120				
cis-1,3-Dichloropropene	20.6	1.00	ug/L	20.0	103	70-130				
trans-1,3-Dichloropropene	20.5	1.00	ug/L	20.0	102	80-130				
1,1-Dichloropropene	20.5	1.00	ug/L	20.0	103	75-130				
1,3-Dichloropropene	41.1	1.00	ug/L	40.0	103	80-120				
1,4-Dioxane	216	100	ug/L	200	108	20-160				
Ethylbenzene	21.9	1.00	ug/L	20.0	109	80-122				
Hexachlorobutadiene	20.1	1.00	ug/L	20.0	100	72-132				
2-Hexanone	19.2	5.00	ug/L	20.0	96.1	55-130				
Isopropylbenzene	22.5	1.00	ug/L	20.0	112	80-122				
p-Isopropyltoluene	21.0	1.00	ug/L	20.0	105	80-122				
Methylene chloride	22.4	1.00	ug/L	20.0	112	80-123				
4-Methyl-2-pentanone	19.6	5.00	ug/L	20.0	97.9	64-140				
Naphthalene	23.6	1.00	ug/L	20.0	118	59-149				
n-Propylbenzene	21.1	1.00	ug/L	20.0	106	80-129				
Styrene	22.4	1.00	ug/L	20.0	112	80-123				
1,1,1,2-Tetrachloroethane	21.0	1.00	ug/L	20.0	105	80-130				
1,1,2,2-Tetrachloroethane	19.8	1.00	ug/L	20.0	98.8	79-125				
Tetrachloroethene	22.7	1.00	ug/L	20.0	113	80-124				
Toluene	20.5	1.00	ug/L	20.0	103	80-124				
1,2,3-Trichlorobenzene	22.1	1.00	ug/L	20.0	110	55-140				
1,2,4-Trichlorobenzene	22.3	1.00	ug/L	20.0	112	65-135				
1,1,1-Trichloroethane	19.6	1.00	ug/L	20.0	97.8	80-134				
1,1,2-Trichloroethane	21.9	1.00	ug/L	20.0	110	80-125				
Trichloroethene	20.8	1.00	ug/L	20.0	104	80-122				
Trichlorofluoromethane	22.3	1.00	ug/L	20.0	111	62-151				
1,2,4-Trimethylbenzene	21.2	1.00	ug/L	20.0	106	80-125				
1,3,5-Trimethylbenzene	20.8	1.00	ug/L	20.0	104	80-127				
Vinyl chloride	18.7	1.00	ug/L	20.0	93.3	50-170				
m-,p-Xylene	45.3	1.00	ug/L	40.0	113	80-122				
o-Xylene	21.7	1.00	ug/L	20.0	108	80-122				

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Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2E1337 - 5030 8260 - EPA 8260B

LCS (B2E1337-BS1)		Prepared & Analyzed: 05/25/2022					
		67.0	1.00	ug/L	60.0	112	80-121
Surrogate: 4-Bromofluorobenzene		48.2		ug/L	50.0	96.4	86-115
Surrogate: Dibromofluoromethane		52.3		ug/L	50.0	105	86-118
Surrogate: 1,2-Dichloroethane-d4		50.4		ug/L	50.0	101	80-120
Surrogate: Toluene-d8		51.4		ug/L	50.0	103	88-110
LCS Dup (B2E1337-BSD1)		Prepared & Analyzed: 05/25/2022					
Acetone		18.0	5.00	ug/L	20.0	90.2	40-180
Benzene		20.6	1.00	ug/L	20.0	103	80-121
Bromobenzene		21.5	1.00	ug/L	20.0	107	80-120
Bromochloromethane		19.6	1.00	ug/L	20.0	97.8	65-130
Bromodichloromethane		17.9	1.00	ug/L	20.0	89.6	80-131
Bromoform		17.2	1.00	ug/L	20.0	86.2	70-130
Bromomethane		22.1	1.00	ug/L	20.0	111	30-145
2-Butanone		19.4	5.00	ug/L	20.0	97.2	10-170
sec-Butylbenzene		20.5	1.00	ug/L	20.0	103	80-127
tert-Butylbenzene		20.8	1.00	ug/L	20.0	104	80-126
n-Butylbenzene		21.1	1.00	ug/L	20.0	106	80-131
Carbon disulfide		15.0	1.00	ug/L	20.0	75.0	58-128
Carbon tetrachloride		17.8	1.00	ug/L	20.0	89.2	65-140
Chlorobenzene		21.7	1.00	ug/L	20.0	108	80-120
Chlorodibromomethane		18.6	1.00	ug/L	20.0	92.8	60-135
Chloroethane (Ethyl chloride)		20.4	1.00	ug/L	20.0	102	60-135
Chloroform		20.7	1.00	ug/L	20.0	103	80-125
Chloromethane		17.9	1.00	ug/L	20.0	89.3	40-125
Cyclohexane		14.9	5.00	ug/L	20.0	74.3	70-130
1,2-Dibromo-3-chloropropane		18.0	2.00	ug/L	20.0	90.1	50-130
1,2-Dibromoethane		20.0	1.00	ug/L	20.0	100	80-129
Dibromomethane		20.8	1.00	ug/L	20.0	104	75-125
1,2-Dichlorobenzene		21.1	1.00	ug/L	20.0	105	80-125
1,4-Dichlorobenzene		21.4	1.00	ug/L	20.0	107	80-120
1,3-Dichlorobenzene		20.7	1.00	ug/L	20.0	104	80-120
Dichlorodifluoromethane		20.9	1.00	ug/L	20.0	104	40-160
1,1-Dichloroethane		19.0	1.00	ug/L	20.0	94.8	80-125
1,2-Dichloroethane		19.9	1.00	ug/L	20.0	99.4	80-129
1,2-Dichloroethene		36.7	1.00	ug/L	40.0	91.8	80-124
trans-1,2-Dichloroethene		19.1	1.00	ug/L	20.0	95.5	80-127
1,1-Dichloroethene		19.7	1.00	ug/L	20.0	98.4	80-132
cis-1,2-Dichloroethene		17.6	1.00	ug/L	20.0	88.2	70-125
1,2-Dichloropropane		19.6	1.00	ug/L	20.0	97.8	80-120
1,3-Dichloropropane		21.2	1.00	ug/L	20.0	106	80-120
cis-1,3-Dichloropropene		20.0	1.00	ug/L	20.0	100	70-130
trans-1,3-Dichloropropene		19.7	1.00	ug/L	20.0	98.4	80-130
1,1-Dichloropropene		20.3	1.00	ug/L	20.0	101	75-130

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Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
LCS Dup (B2E1337-BSD1)					Prepared & Analyzed: 05/25/2022					
1,3-Dichloropropene	39.7	1.00	ug/L	40.0	99.3	80-120	3.39	20		
1,4-Dioxane	222	100	ug/L	200	111	20-160	2.70	20		
Ethylbenzene	21.3	1.00	ug/L	20.0	106	80-122	2.78	20		
Hexachlorobutadiene	21.4	1.00	ug/L	20.0	107	72-132	6.27	20		
2-Hexanone	19.8	5.00	ug/L	20.0	99.0	55-130	2.97	20		
Isopropylbenzene	21.5	1.00	ug/L	20.0	108	80-122	4.23	20		
p-Isopropyltoluene	20.8	1.00	ug/L	20.0	104	80-122	0.957	20		
Methylene chloride	20.7	1.00	ug/L	20.0	103	80-123	7.81	20		
4-Methyl-2-pentanone	19.4	5.00	ug/L	20.0	97.1	64-140	0.769	20		
Naphthalene	23.3	1.00	ug/L	20.0	116	59-149	1.54	20		
n-Propylbenzene	21.1	1.00	ug/L	20.0	106	80-129	0.0474	20		
Styrene	21.6	1.00	ug/L	20.0	108	80-123	3.45	20		
1,1,1,2-Tetrachloroethane	20.7	1.00	ug/L	20.0	103	80-130	1.44	20		
1,1,2,2-Tetrachloroethane	19.6	1.00	ug/L	20.0	97.9	79-125	0.966	20		
Tetrachloroethene	22.3	1.00	ug/L	20.0	111	80-124	1.65	20		
Toluene	19.6	1.00	ug/L	20.0	98.1	80-124	4.58	20		
1,2,3-Trichlorobenzene	22.0	1.00	ug/L	20.0	110	55-140	0.136	20		
1,2,4-Trichlorobenzene	22.8	1.00	ug/L	20.0	114	65-135	2.22	20		
1,1,1-Trichloroethane	19.2	1.00	ug/L	20.0	96.0	80-134	1.81	20		
1,1,2-Trichloroethane	20.9	1.00	ug/L	20.0	104	80-125	4.91	20		
Trichloroethene	19.7	1.00	ug/L	20.0	98.3	80-122	5.39	20		
Trichlorofluoromethane	22.7	1.00	ug/L	20.0	113	62-151	1.91	20		
1,2,4-Trimethylbenzene	21.2	1.00	ug/L	20.0	106	80-125	0.377	20		
1,3,5-Trimethylbenzene	20.8	1.00	ug/L	20.0	104	80-127	0.0963	20		
Vinyl chloride	19.4	1.00	ug/L	20.0	96.8	50-170	3.63	20		
m,p-Xylene	44.9	1.00	ug/L	40.0	112	80-122	0.976	20		
o-Xylene	20.9	1.00	ug/L	20.0	104	80-122	3.86	20		
Xylenes	65.7	1.00	ug/L	60.0	110	80-121	1.90	20		
Surrogate: 4-Bromofluorobenzene	47.6		ug/L	50.0	95.1	86-115				
Surrogate: Dibromofluoromethane	51.3		ug/L	50.0	103	86-118				
Surrogate: 1,2-Dichloroethane-d4	48.9		ug/L	50.0	97.9	80-120				
Surrogate: Toluene-d8	48.7		ug/L	50.0	97.4	88-110				

Batch B2E1399 - 5030_8260 - EPA 8260B

Blank (B2E1399-BLK1)					Prepared & Analyzed: 05/26/2022					
Acetone	<5.00	5.00	ug/L							
Benzene	<1.00	1.00	ug/L							
Bromobenzene	<1.00	1.00	ug/L							
Bromochloromethane	<1.00	1.00	ug/L							
Bromodichloromethane	<1.00	1.00	ug/L							
Bromoform	<1.00	1.00	ug/L							
Bromomethane	<1.00	1.00	ug/L							
2-Butanone	<5.00	5.00	ug/L							

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CERTIFICATE OF ANALYSIS

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Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1399 - 5030_8260 - EPA 8260B										
Blank (B2E1399-BLK1)										
					Prepared & Analyzed: 05/26/2022					
sec-Butylbenzene	<1.00	1.00	ug/L							
tert-Butylbenzene	<1.00	1.00	ug/L							
n-Butylbenzene	<1.00	1.00	ug/L							
Carbon disulfide	<1.00	1.00	ug/L							
Carbon tetrachloride	<1.00	1.00	ug/L							
Chlorobenzene	<1.00	1.00	ug/L							
Chlorodibromomethane	<1.00	1.00	ug/L							
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L							
Chloroform	<1.00	1.00	ug/L							
Chloromethane	<1.00	1.00	ug/L							
Cyclohexane	<5.00	5.00	ug/L							
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L							
1,2-Dibromoethane	<1.00	1.00	ug/L							
Dibromomethane	<1.00	1.00	ug/L							
1,2-Dichlorobenzene	<1.00	1.00	ug/L							
1,4-Dichlorobenzene	<1.00	1.00	ug/L							
1,3-Dichlorobenzene	<1.00	1.00	ug/L							
Dichlorodifluoromethane	<1.00	1.00	ug/L							
1,1-Dichloroethane	<1.00	1.00	ug/L							
1,2-Dichloroethane	<1.00	1.00	ug/L							
1,2-Dichloroethene	<1.00	1.00	ug/L							
trans-1,2-Dichloroethene	<1.00	1.00	ug/L							
1,1-Dichloroethene	<1.00	1.00	ug/L							
cis-1,2-Dichloroethene	<1.00	1.00	ug/L							
1,2-Dichloropropane	<1.00	1.00	ug/L							
1,3-Dichloropropane	<1.00	1.00	ug/L							
cis-1,3-Dichloropropene	<1.00	1.00	ug/L							
trans-1,3-Dichloropropene	<1.00	1.00	ug/L							
1,1-Dichloropropene	<1.00	1.00	ug/L							
1,3-Dichloropropene	<1.00	1.00	ug/L							
1,4-Dioxane	<100	100	ug/L							
Ethylbenzene	<1.00	1.00	ug/L							
Hexachlorobutadiene	<1.00	1.00	ug/L							
2-Hexanone	<5.00	5.00	ug/L							
Isopropylbenzene	<1.00	1.00	ug/L							
p-Isopropyltoluene	<1.00	1.00	ug/L							
Methylene chloride	<1.00	1.00	ug/L							
4-Methyl-2-pentanone	<5.00	5.00	ug/L							
Naphthalene	<1.00	1.00	ug/L							
n-Propylbenzene	<1.00	1.00	ug/L							
Styrene	<1.00	1.00	ug/L							
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L							
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L							

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1267

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1399 - 5030_8260 - EPA 8260B										
Blank (B2E1399-BLK1)										
Prepared & Analyzed: 05/26/2022										
Tetrachloroethene	<1.00	1.00	ug/L							
Toluene	<1.00	1.00	ug/L							
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L							
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L							
1,1,1-Trichloroethane	<1.00	1.00	ug/L							
1,1,2-Trichloroethane	<1.00	1.00	ug/L							
Trichloroethene	<1.00	1.00	ug/L							
Trichlorofluoromethane	<1.00	1.00	ug/L							
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L							
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L							
Vinyl chloride	<1.00	1.00	ug/L							
m-,p-Xylene	<1.00	1.00	ug/L							
o-Xylene	<1.00	1.00	ug/L							
Xylenes	<1.00	1.00	ug/L							
Surrogate: 4-Bromofluorobenzene	47.9		ug/L	50.0		95.7	86-115			
Surrogate: Dibromofluoromethane	47.9		ug/L	50.0		95.8	86-118			
Surrogate: 1,2-Dichloroethane-d4	47.7		ug/L	50.0		95.3	80-120			
Surrogate: Toluene-d8	46.8		ug/L	50.0		93.7	88-110			
LCS (B2E1399-BS1)										
Prepared & Analyzed: 05/26/2022										
Acetone	16.3	5.00	ug/L	20.0		81.5	40-180			
Benzene	18.8	1.00	ug/L	20.0		94.2	80-121			
Bromobenzene	19.5	1.00	ug/L	20.0		97.3	80-120			
Bromochloromethane	18.3	1.00	ug/L	20.0		91.5	65-130			
Bromodichloromethane	17.6	1.00	ug/L	20.0		88.0	80-131			
Bromoform	16.5	1.00	ug/L	20.0		82.5	70-130			
Bromomethane	21.3	1.00	ug/L	20.0		106	30-145			
2-Butanone	17.7	5.00	ug/L	20.0		88.4	10-170			
sec-Butylbenzene	18.6	1.00	ug/L	20.0		93.0	80-127			
tert-Butylbenzene	19.2	1.00	ug/L	20.0		95.8	80-126			
n-Butylbenzene	19.2	1.00	ug/L	20.0		96.2	80-131			
Carbon disulfide	12.9	1.00	ug/L	20.0		64.3	58-128			
Carbon tetrachloride	16.7	1.00	ug/L	20.0		83.7	65-140			
Chlorobenzene	20.1	1.00	ug/L	20.0		101	80-120			
Chlorodibromomethane	18.0	1.00	ug/L	20.0		89.8	60-135			
Chloroethane (Ethyl chloride)	20.1	1.00	ug/L	20.0		101	60-135			
Chloroform	19.4	1.00	ug/L	20.0		97.2	80-125			
Chloromethane	17.2	1.00	ug/L	20.0		86.2	40-125			
Cyclohexane	13.5	5.00	ug/L	20.0		67.5	70-130			Q3
1,2-Dibromo-3-chloropropane	16.0	2.00	ug/L	20.0		80.0	50-130			
1,2-Dibromoethane	18.5	1.00	ug/L	20.0		92.3	80-129			
Dibromomethane	20.3	1.00	ug/L	20.0		101	75-125			
1,2-Dichlorobenzene	19.4	1.00	ug/L	20.0		97.0	80-125			
1,4-Dichlorobenzene	19.7	1.00	ug/L	20.0		98.4	80-120			

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1267

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1399 - 5030_8260 - EPA 8260B										
LCS (B2E1399-BS1)										
					Prepared & Analyzed: 05/26/2022					
1,3-Dichlorobenzene	19.3	1.00	ug/L	20.0	96.5	80-120				
Dichlorodifluoromethane	18.6	1.00	ug/L	20.0	92.9	40-160				
1,1-Dichloroethane	17.4	1.00	ug/L	20.0	86.8	80-125				
1,2-Dichloroethane	18.6	1.00	ug/L	20.0	93.1	80-129				
1,2-Dichloroethene	33.6	1.00	ug/L	40.0	84.0	80-124				
trans-1,2-Dichloroethene	17.2	1.00	ug/L	20.0	86.0	80-127				
1,1-Dichloroethene	18.2	1.00	ug/L	20.0	90.9	80-132				
cis-1,2-Dichloroethene	16.4	1.00	ug/L	20.0	82.0	70-125				
1,2-Dichloropropane	17.8	1.00	ug/L	20.0	89.0	80-120				
1,3-Dichloropropane	18.8	1.00	ug/L	20.0	93.8	80-120				
cis-1,3-Dichloropropene	18.3	1.00	ug/L	20.0	91.6	70-130				
trans-1,3-Dichloropropene	17.6	1.00	ug/L	20.0	88.2	80-130				
1,1-Dichloropropene	17.9	1.00	ug/L	20.0	89.5	75-130				
1,3-Dichloropropene	36.0	1.00	ug/L	40.0	89.9	80-120				
1,4-Dioxane	170	100	ug/L	200	85.1	20-160				
Ethylbenzene	19.4	1.00	ug/L	20.0	97.1	80-122				
Hexachlorobutadiene	20.2	1.00	ug/L	20.0	101	72-132				
2-Hexanone	17.1	5.00	ug/L	20.0	85.3	55-130				
Isopropylbenzene	19.6	1.00	ug/L	20.0	98.1	80-122				
p-Isopropyltoluene	19.2	1.00	ug/L	20.0	95.8	80-122				
Methylene chloride	19.2	1.00	ug/L	20.0	95.8	80-123				
4-Methyl-2-pentanone	17.4	5.00	ug/L	20.0	86.9	64-140				
Naphthalene	20.1	1.00	ug/L	20.0	101	59-149				
n-Propylbenzene	19.0	1.00	ug/L	20.0	95.0	80-129				
Styrene	19.6	1.00	ug/L	20.0	97.9	80-123				
1,1,1,2-Tetrachloroethane	19.3	1.00	ug/L	20.0	96.7	80-130				
1,1,2,2-Tetrachloroethane	17.9	1.00	ug/L	20.0	89.6	79-125				
Tetrachloroethene	19.7	1.00	ug/L	20.0	98.7	80-124				
Toluene	18.0	1.00	ug/L	20.0	90.1	80-124				
1,2,3-Trichlorobenzene	20.5	1.00	ug/L	20.0	102	55-140				
1,2,4-Trichlorobenzene	20.1	1.00	ug/L	20.0	100	65-135				
1,1,1-Trichloroethane	18.1	1.00	ug/L	20.0	90.4	80-134				
1,1,2-Trichloroethane	19.1	1.00	ug/L	20.0	95.4	80-125				
Trichloroethene	18.4	1.00	ug/L	20.0	92.1	80-122				
Trichlorofluoromethane	29.0	1.00	ug/L	20.0	145	62-151				
1,2,4-Trimethylbenzene	19.2	1.00	ug/L	20.0	95.9	80-125				
1,3,5-Trimethylbenzene	18.5	1.00	ug/L	20.0	92.7	80-127				
Vinyl chloride	17.3	1.00	ug/L	20.0	86.4	50-170				
m,p-Xylene	40.5	1.00	ug/L	40.0	101	80-122				
o-Xylene	18.8	1.00	ug/L	20.0	93.8	80-122				
Xylenes	59.3	1.00	ug/L	60.0	98.8	80-121				
Surrogate: 4-Bromofluorobenzene	44.8		ug/L	50.0	89.6	86-115				
Surrogate: Dibromofluoromethane	50.4		ug/L	50.0	101	86-118				

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1267

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
---------------------------------------	--------	----	-------	----------------	------------------	------	----------------	------------	--------------	-------

Batch B2E1399 - 5030_8260 - EPA 8260B

LCS (B2E1399-BS1)	Prepared & Analyzed: 05/26/2022					
Surrogate: 1,2-Dichloroethane-d4	47.1		ug/L	50.0	94.2	80-120
Surrogate: Toluene-d8	45.7		ug/L	50.0	91.5	88-110

Definitions

- A21:** Sample was filtered in the laboratory before analysis.
- A27:** Headspace was present in the bottle used for the alkalinity analysis.
- A28:** Sample was treated for the presence of chlorine.
- A5:** Sample was filtered (0.45 um) before analysis.
- D1:** The sample was diluted during sample preparation (extraction, distillation or digestion) due to matrix interference.
- M6:** Matrix spike recovery is outside of acceptance limits. The analyte concentration is greater than 4X the spiking level.
- mg CaCO₃/L** Milligrams Calcium Carbonate per Liter
- mg/L:** Milligrams per Liter
- Q10:** The recovery for the closing low level check standard was outside of the established quality control range. The initial low level check standard was within range.
- Q3:** LCS recovery is below acceptance limits. The reported value is estimated.
- Q6:** CCV recovery is above acceptance limits. The reported value is estimated.
- Q7:** CCV recovery is above acceptance limits. However there is no impact on the reported value.
- Q8:** CCV recovery is below acceptance limits. The reported value is estimated.
- R3:** Duplicate RPD is outside of acceptance criteria. The difference between the results is less than 2x Method Reporting Limit.
- RL:** Reporting Limit
- RPD:** Relative Percent Difference
- ug/L:** Micrograms per Liter
- Y:** This analyte is not on the laboratory's current scope of accreditation.
- Y1:** Accreditation is not offered by the accrediting body for this analyte.

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 5.1°C

Cooler Inspection Checklist

Ice Present or not required?	Yes	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes	Sample type identified on COC?	Yes
Correct type of Containers Received	Yes	Correct number of containers listed on COC?	Yes
Containers Intact?	Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes	Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes	Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes		

Project Requested Certification(s)

Microbac Laboratories, Inc. - Dayville
M-CT008

Massachusetts Department of Environmental Protection

Microbac Laboratories, Inc.

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1267

Report Comments

Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. **The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.**

Reviewed and Approved By:

A handwritten signature in black ink, appearing to read "Montgomery".

Melisa L. Montgomery
Quality Assurance Officer
Reported: 06/13/2022 17:04

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Project Description

D2E1267

For:

Shelby Jendrewski

Microbac Laboratories, Inc., Dayville

61 Louisa Viens DR

Dayville, CT 06241



Customer Relationship Specialist

Ron L Feathers

Thursday, June 9, 2022

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories Inc., - Marietta, OH. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Microbac Laboratories, Inc., Dayville

Project Name: D2E1267

Shelby Jendrewski
61 Louisa Viens DR
Dayville, CT 06241

Project / PO Number: Shawmut Landfill
Received: 05/17/2022
Reported: 06/09/2022

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
D2E1267-01 (SW-1)	M2E0988-01	Aqueous	Grab	05/12/22 09:10	05/17/22 09:45	
D2E1267-02 (SW-2)	M2E0988-02	Aqueous	Grab	05/12/22 11:30	05/17/22 09:45	
D2E1267-03 (SW-3)	M2E0988-03	Aqueous	Grab	05/12/22 12:00	05/17/22 09:45	



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Analytical Testing Parameters

Client Sample ID:	D2E1267-01 (SW-1)	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 9:10
Lab Sample ID:	M2E0988-01		

Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030C/EPA 8260B									
Acetone	<5.00	1.00	5.00	ug/L	1	Q8		05/25/22 2230	KJB
Benzene	<1.00	0.100	1.00	ug/L	1			05/25/22 2230	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1			05/25/22 2230	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1			05/25/22 2230	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1			05/25/22 2230	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1			05/25/22 2230	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 2230	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 2230	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1			05/25/22 2230	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1			05/25/22 2230	KJB
Chlorobenzene	<1.00	0.140	1.00	ug/L	1			05/25/22 2230	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
Chloroethane (Ethyl chloride)	<1.00	0.380	1.00	ug/L	1			05/25/22 2230	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1			05/25/22 2230	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1			05/25/22 2230	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1			05/25/22 2230	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1			05/25/22 2230	KJB
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1			05/25/22 2230	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1			05/25/22 2230	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1			05/25/22 2230	KJB
1,1-Dichloroethane	<1.00	0.210	1.00	ug/L	1			05/25/22 2230	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1			05/25/22 2230	KJB
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1			05/25/22 2230	KJB
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
cis-1,2-Dichloroethene	<1.00	0.180	1.00	ug/L	1			05/25/22 2230	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1			05/25/22 2230	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1			05/25/22 2230	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1			05/25/22 2230	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1			05/25/22 2230	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1			05/25/22 2230	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1			05/25/22 2230	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1			05/25/22 2230	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1			05/25/22 2230	KJB

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Client Sample ID:	D2E1267-01 (SW-1)	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 9:10
Lab Sample ID:	M2E0988-01		

Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2-Hexanone	<5.00	1.00	5.00	ug/L	1			05/25/22 2230	KJB
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 2230	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 2230	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 2230	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 2230	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 2230	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 2230	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 2230	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2230	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 2230	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 2230	KJB
Trichloroethene	<1.00	0.230	1.00	ug/L	1			05/25/22 2230	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 2230	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2230	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2230	KJB
Vinyl chloride	<1.00	0.160	1.00	ug/L	1			05/25/22 2230	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 2230	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 2230	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 2230	KJB
Surrogate: 4-Bromofluorobenzene	98.1		Limit: 86-115	% Rec	1			05/25/22 2230	KJB
Surrogate: Dibromofluoromethane	101		Limit: 86-118	% Rec	1			05/25/22 2230	KJB
Surrogate: 1,2-Dichloroethane-d4	97.9		Limit: 80-120	% Rec	1			05/25/22 2230	KJB
Surrogate: Toluene-d8	98.0		Limit: 88-110	% Rec	1			05/25/22 2230	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Client Sample ID:	D2E1267-02 (SW-2)	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/12/2022 11:30
Lab Sample ID:	M2E0988-02		

Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030C/EPA 8260B									
Acetone	6.38	1.00	5.00	ug/L	1	Q8	05/25/22 2252	KJB	
Benzene	<1.00	0.100	1.00	ug/L	1		05/25/22 2252	KJB	
Bromobenzene	<1.00	0.210	1.00	ug/L	1		05/25/22 2252	KJB	
Bromochloromethane	<1.00	0.330	1.00	ug/L	1		05/25/22 2252	KJB	
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2252	KJB	
Bromoform	<1.00	0.200	1.00	ug/L	1		05/25/22 2252	KJB	
Bromomethane	<1.00	0.300	1.00	ug/L	1		05/25/22 2252	KJB	
2-Butanone	<5.00	0.500	5.00	ug/L	1		05/25/22 2252	KJB	
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2252	KJB	
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2252	KJB	
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 2252	KJB	
Carbon disulfide	<1.00	0.200	1.00	ug/L	1		05/25/22 2252	KJB	
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1		05/25/22 2252	KJB	
Chlorobenzene	<1.00	0.140	1.00	ug/L	1		05/25/22 2252	KJB	
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2252	KJB	
Chloroethane (Ethyl chloride)	<1.00	0.380	1.00	ug/L	1		05/25/22 2252	KJB	
Chloroform	<1.00	0.100	1.00	ug/L	1		05/25/22 2252	KJB	
Chloromethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2252	KJB	
Cyclohexane	<5.00	1.00	5.00	ug/L	1		05/25/22 2252	KJB	
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1		05/25/22 2252	KJB	
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2252	KJB	
Dibromomethane	<1.00	0.270	1.00	ug/L	1		05/25/22 2252	KJB	
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1		05/25/22 2252	KJB	
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1		05/25/22 2252	KJB	
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1		05/25/22 2252	KJB	
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1		05/25/22 2252	KJB	
1,1-Dichloroethane	<1.00	0.210	1.00	ug/L	1		05/25/22 2252	KJB	
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1		05/25/22 2252	KJB	
1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/25/22 2252	KJB	
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/25/22 2252	KJB	
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1		05/25/22 2252	KJB	
cis-1,2-Dichloroethene	<1.00	0.180	1.00	ug/L	1		05/25/22 2252	KJB	
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1		05/25/22 2252	KJB	
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1		05/25/22 2252	KJB	
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1		05/25/22 2252	KJB	
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 2252	KJB	
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1		05/25/22 2252	KJB	
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/25/22 2252	KJB	
1,4-Dioxane	<100	10.0	100	ug/L	1		05/25/22 2252	KJB	
Ethylbenzene	<1.00	0.290	1.00	ug/L	1		05/25/22 2252	KJB	
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1		05/25/22 2252	KJB	
2-Hexanone	<5.00	1.00	5.00	ug/L	1		05/25/22 2252	KJB	

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Client Sample ID:	D2E1267-02 (SW-2)								
Sample Matrix:	Aqueous					Collected By:	Customer		
Lab Sample ID:	M2E0988-02					Collection Date:	05/12/2022 11:30		
Volatile Organic Compounds by GCMS									
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2252	KJB
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1			05/25/22 2252	KJB
Methylene chloride	<1.00	0.210	1.00	ug/L	1			05/25/22 2252	KJB
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1			05/25/22 2252	KJB
Naphthalene	<1.00	0.200	1.00	ug/L	1			05/25/22 2252	KJB
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2252	KJB
Styrene	<1.00	0.200	1.00	ug/L	1			05/25/22 2252	KJB
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1			05/25/22 2252	KJB
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1			05/25/22 2252	KJB
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1			05/25/22 2252	KJB
Toluene	<1.00	0.100	1.00	ug/L	1			05/25/22 2252	KJB
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2252	KJB
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1			05/25/22 2252	KJB
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1			05/25/22 2252	KJB
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1			05/25/22 2252	KJB
Trichloroethene	<1.00	0.230	1.00	ug/L	1			05/25/22 2252	KJB
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7		05/25/22 2252	KJB
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1			05/25/22 2252	KJB
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1			05/25/22 2252	KJB
Vinyl chloride	<1.00	0.160	1.00	ug/L	1			05/25/22 2252	KJB
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1			05/25/22 2252	KJB
o-Xylene	<1.00	0.100	1.00	ug/L	1			05/25/22 2252	KJB
Xylenes	<1.00	0.300	1.00	ug/L	1			05/25/22 2252	KJB
Surrogate: 4-Bromofluorobenzene	97.5		Limit: 86-115	% Rec	1			05/25/22 2252	KJB
Surrogate: Dibromofluoromethane	101		Limit: 86-118	% Rec	1			05/25/22 2252	KJB
Surrogate: 1,2-Dichloroethane-d4	97.2		Limit: 80-120	% Rec	1			05/25/22 2252	KJB
Surrogate: Toluene-d8	99.8		Limit: 88-110	% Rec	1			05/25/22 2252	KJB



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Client Sample ID:	D2E1267-03 (SW-3)							
Sample Matrix:	Aqueous						Collected By:	Customer
Lab Sample ID:	M2E0988-03						Collection Date:	05/12/2022 12:00
Volatile Organic Compounds by GCMS								
Method: EPA 5030C/EPA 8260B	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed
Acetone	<5.00	1.00	5.00	ug/L	1		05/26/22 2232	KJB
Benzene	<1.00	0.100	1.00	ug/L	1		05/26/22 2232	KJB
Bromobenzene	<1.00	0.210	1.00	ug/L	1		05/26/22 2232	KJB
Bromochloromethane	<1.00	0.330	1.00	ug/L	1		05/26/22 2232	KJB
Bromodichloromethane	<1.00	0.200	1.00	ug/L	1		05/26/22 2232	KJB
Bromoform	<1.00	0.200	1.00	ug/L	1		05/26/22 2232	KJB
Bromomethane	<1.00	0.300	1.00	ug/L	1		05/26/22 2232	KJB
2-Butanone	<5.00	0.500	5.00	ug/L	1		05/26/22 2232	KJB
sec-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/26/22 2232	KJB
tert-Butylbenzene	<1.00	0.250	1.00	ug/L	1		05/26/22 2232	KJB
n-Butylbenzene	<1.00	0.290	1.00	ug/L	1		05/26/22 2232	KJB
Carbon disulfide	<1.00	0.200	1.00	ug/L	1		05/26/22 2232	KJB
Carbon tetrachloride	<1.00	0.190	1.00	ug/L	1		05/26/22 2232	KJB
Chlorobenzene	<1.00	0.140	1.00	ug/L	1		05/26/22 2232	KJB
Chlorodibromomethane	<1.00	0.200	1.00	ug/L	1		05/26/22 2232	KJB
Chloroethane (Ethyl chloride)	<1.00	0.380	1.00	ug/L	1		05/26/22 2232	KJB
Chloroform	<1.00	0.100	1.00	ug/L	1		05/26/22 2232	KJB
Chloromethane	<1.00	0.200	1.00	ug/L	1		05/26/22 2232	KJB
Cyclohexane	<5.00	1.00	5.00	ug/L	1	Q3	05/26/22 2232	KJB
1,2-Dibromo-3-chloropropane	<2.00	0.200	2.00	ug/L	1		05/26/22 2232	KJB
1,2-Dibromoethane	<1.00	0.200	1.00	ug/L	1		05/26/22 2232	KJB
Dibromomethane	<1.00	0.270	1.00	ug/L	1		05/26/22 2232	KJB
1,2-Dichlorobenzene	<1.00	0.200	1.00	ug/L	1		05/26/22 2232	KJB
1,4-Dichlorobenzene	<1.00	0.250	1.00	ug/L	1		05/26/22 2232	KJB
1,3-Dichlorobenzene	<1.00	0.300	1.00	ug/L	1		05/26/22 2232	KJB
Dichlorodifluoromethane	<1.00	0.290	1.00	ug/L	1		05/26/22 2232	KJB
1,1-Dichloroethane	<1.00	0.210	1.00	ug/L	1		05/26/22 2232	KJB
1,2-Dichloroethane	<1.00	0.200	1.00	ug/L	1		05/26/22 2232	KJB
1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/26/22 2232	KJB
trans-1,2-Dichloroethene	<1.00	0.240	1.00	ug/L	1		05/26/22 2232	KJB
1,1-Dichloroethene	<1.00	0.200	1.00	ug/L	1		05/26/22 2232	KJB
cis-1,2-Dichloroethene	<1.00	0.180	1.00	ug/L	1		05/26/22 2232	KJB
1,2-Dichloropropane	<1.00	0.210	1.00	ug/L	1		05/26/22 2232	KJB
1,3-Dichloropropane	<1.00	0.200	1.00	ug/L	1		05/26/22 2232	KJB
cis-1,3-Dichloropropene	<1.00	0.160	1.00	ug/L	1		05/26/22 2232	KJB
trans-1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/26/22 2232	KJB
1,1-Dichloropropene	<1.00	0.230	1.00	ug/L	1		05/26/22 2232	KJB
1,3-Dichloropropene	<1.00	0.220	1.00	ug/L	1		05/26/22 2232	KJB
1,4-Dioxane	<100	10.0	100	ug/L	1		05/26/22 2232	KJB
Ethylbenzene	<1.00	0.290	1.00	ug/L	1		05/26/22 2232	KJB
Hexachlorobutadiene	<1.00	0.280	1.00	ug/L	1		05/26/22 2232	KJB
2-Hexanone	<5.00	1.00	5.00	ug/L	1		05/26/22 2232	KJB

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Client Sample ID:	D2E1267-03 (SW-3)		Collected By:	Customer		
Sample Matrix:	Aqueous		Collection Date:	05/12/2022 12:00		
Lab Sample ID:	M2E0988-03					
Volatile Organic Compounds by GCMS	Result	MDL	RL	Units	DF	Note
Isopropylbenzene	<1.00	0.200	1.00	ug/L	1	
p-Isopropyltoluene	<1.00	0.240	1.00	ug/L	1	
Methylene chloride	<1.00	0.210	1.00	ug/L	1	
4-Methyl-2-pentanone	<5.00	1.00	5.00	ug/L	1	
Naphthalene	<1.00	0.200	1.00	ug/L	1	
n-Propylbenzene	<1.00	0.200	1.00	ug/L	1	
Styrene	<1.00	0.200	1.00	ug/L	1	
1,1,1,2-Tetrachloroethane	<1.00	0.250	1.00	ug/L	1	
1,1,2,2-Tetrachloroethane	<1.00	0.140	1.00	ug/L	1	
Tetrachloroethene	<1.00	0.140	1.00	ug/L	1	
Toluene	<1.00	0.100	1.00	ug/L	1	
1,2,3-Trichlorobenzene	<1.00	0.230	1.00	ug/L	1	
1,2,4-Trichlorobenzene	<1.00	0.320	1.00	ug/L	1	
1,1,1-Trichloroethane	<1.00	0.200	1.00	ug/L	1	
1,1,2-Trichloroethane	<1.00	0.100	1.00	ug/L	1	
Trichloroethene	<1.00	0.230	1.00	ug/L	1	
Trichlorofluoromethane	<1.00	0.260	1.00	ug/L	1	Q7
1,2,4-Trimethylbenzene	<1.00	0.230	1.00	ug/L	1	
1,3,5-Trimethylbenzene	<1.00	0.200	1.00	ug/L	1	
Vinyl chloride	<1.00	0.160	1.00	ug/L	1	
m-,p-Xylene	<1.00	0.300	1.00	ug/L	1	
o-Xylene	<1.00	0.100	1.00	ug/L	1	
Xylenes	<1.00	0.300	1.00	ug/L	1	
Surrogate: 4-Bromofluorobenzene	92.3		Limit: 86-115	% Rec	1	
Surrogate: Dibromofluoromethane	93.7		Limit: 86-118	% Rec	1	
Surrogate: 1,2-Dichloroethane-d4	90.9		Limit: 80-120	% Rec	1	
Surrogate: Toluene-d8	91.3		Limit: 88-110	% Rec	1	



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260B	B2E1337	B2E1337-BLK1	
		B2E1337-BS1	
		B2E1337-BSD1	
		M2E0988-01	D2E1267-01 (SW-1)
		M2E0988-02	D2E1267-02 (SW-2)
Method	Batch	Laboratory ID	Client / Source ID
EPA 8260B	B2E1399	B2E1399-BLK1	
		B2E1399-BS1	
		M2E0988-03	D2E1267-03 (SW-3)

Batch Quality Control Summary: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2E1337 - 5030_8260 - EPA 8260B

Blank (B2E1337-BLK1)	Prepared & Analyzed: 05/25/2022				
Acetone	<5.00	5.00	ug/L		
Benzene	<1.00	1.00	ug/L		
Bromobenzene	<1.00	1.00	ug/L		
Bromochloromethane	<1.00	1.00	ug/L		
Bromodichloromethane	<1.00	1.00	ug/L		
Bromoform	<1.00	1.00	ug/L		
Bromomethane	<1.00	1.00	ug/L		
2-Butanone	<5.00	5.00	ug/L		
sec-Butylbenzene	<1.00	1.00	ug/L		
tert-Butylbenzene	<1.00	1.00	ug/L		
n-Butylbenzene	<1.00	1.00	ug/L		
Carbon disulfide	<1.00	1.00	ug/L		
Carbon tetrachloride	<1.00	1.00	ug/L		
Chlorobenzene	<1.00	1.00	ug/L		
Chlorodibromomethane	<1.00	1.00	ug/L		
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L		
Chloroform	<1.00	1.00	ug/L		
Chloromethane	<1.00	1.00	ug/L		
Cyclohexane	<5.00	5.00	ug/L		
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L		
1,2-Dibromoethane	<1.00	1.00	ug/L		
Dibromomethane	<1.00	1.00	ug/L		
1,2-Dichlorobenzene	<1.00	1.00	ug/L		
1,4-Dichlorobenzene	<1.00	1.00	ug/L		
1,3-Dichlorobenzene	<1.00	1.00	ug/L		
Dichlorodifluoromethane	<1.00	1.00	ug/L		

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
Blank (B2E1337-BLK1)										
					Prepared & Analyzed: 05/25/2022					
1,1-Dichloroethane	<1.00	1.00	ug/L							
1,2-Dichloroethane	<1.00	1.00	ug/L							
1,2-Dichloroethene	<1.00	1.00	ug/L							
trans-1,2-Dichloroethene	<1.00	1.00	ug/L							
1,1-Dichloroethene	<1.00	1.00	ug/L							
cis-1,2-Dichloroethene	<1.00	1.00	ug/L							
1,2-Dichloropropane	<1.00	1.00	ug/L							
1,3-Dichloropropane	<1.00	1.00	ug/L							
cis-1,3-Dichloropropene	<1.00	1.00	ug/L							
trans-1,3-Dichloropropene	<1.00	1.00	ug/L							
1,1-Dichloropropene	<1.00	1.00	ug/L							
1,3-Dichloropropene	<1.00	1.00	ug/L							
1,4-Dioxane	<100	100	ug/L							
Ethylbenzene	<1.00	1.00	ug/L							
Hexachlorobutadiene	<1.00	1.00	ug/L							
2-Hexanone	<5.00	5.00	ug/L							
Isopropylbenzene	<1.00	1.00	ug/L							
p-Isopropyltoluene	<1.00	1.00	ug/L							
Methylene chloride	<1.00	1.00	ug/L							
4-Methyl-2-pentanone	<5.00	5.00	ug/L							
Naphthalene	<1.00	1.00	ug/L							
n-Propylbenzene	<1.00	1.00	ug/L							
Styrene	<1.00	1.00	ug/L							
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L							
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L							
Tetrachloroethene	<1.00	1.00	ug/L							
Toluene	<1.00	1.00	ug/L							
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L							
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L							
1,1,1-Trichloroethane	<1.00	1.00	ug/L							
1,1,2-Trichloroethane	<1.00	1.00	ug/L							
Trichloroethene	<1.00	1.00	ug/L							
Trichlorofluoromethane	<1.00	1.00	ug/L							
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L							
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L							
Vinyl chloride	<1.00	1.00	ug/L							
m-,p-Xylene	<1.00	1.00	ug/L							
o-Xylene	<1.00	1.00	ug/L							
Xylenes	<1.00	1.00	ug/L							
Surrogate: 4-Bromofluorobenzene	49.2	ug/L	50.0		98.3	86-115				
Surrogate: Dibromofluoromethane	47.4	ug/L	50.0		94.8	86-118				
Surrogate: 1,2-Dichloroethane-d4	46.8	ug/L	50.0		93.6	80-120				
Surrogate: Toluene-d8	47.9	ug/L	50.0		95.7	88-110				

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
LCS (B2E1337-BS1)										
					Prepared & Analyzed: 05/25/2022					
Acetone	19.1	5.00	ug/L	20.0	95.4	40-180				
Benzene	21.0	1.00	ug/L	20.0	105	80-121				
Bromobenzene	21.3	1.00	ug/L	20.0	106	80-120				
Bromochloromethane	20.1	1.00	ug/L	20.0	100	65-130				
Bromodichloromethane	18.0	1.00	ug/L	20.0	90.0	80-131				
Bromoform	18.5	1.00	ug/L	20.0	92.7	70-130				
Bromomethane	21.6	1.00	ug/L	20.0	108	30-145				
2-Butanone	20.0	5.00	ug/L	20.0	99.8	10-170				
sec-Butylbenzene	20.6	1.00	ug/L	20.0	103	80-127				
tert-Butylbenzene	21.0	1.00	ug/L	20.0	105	80-126				
n-Butylbenzene	21.5	1.00	ug/L	20.0	107	80-131				
Carbon disulfide	14.4	1.00	ug/L	20.0	71.9	58-128				
Carbon tetrachloride	18.0	1.00	ug/L	20.0	89.8	65-140				
Chlorobenzene	22.5	1.00	ug/L	20.0	112	80-120				
Chlorodibromomethane	19.4	1.00	ug/L	20.0	97.0	60-135				
Chloroethane (Ethyl chloride)	21.0	1.00	ug/L	20.0	105	60-135				
Chloroform	20.7	1.00	ug/L	20.0	103	80-125				
Chloromethane	18.3	1.00	ug/L	20.0	91.7	40-125				
Cyclohexane	14.4	5.00	ug/L	20.0	72.2	70-130				
1,2-Dibromo-3-chloropropane	18.8	2.00	ug/L	20.0	94.2	50-130				
1,2-Dibromoethane	21.6	1.00	ug/L	20.0	108	80-129				
Dibromomethane	21.7	1.00	ug/L	20.0	108	75-125				
1,2-Dichlorobenzene	21.4	1.00	ug/L	20.0	107	80-125				
1,4-Dichlorobenzene	21.7	1.00	ug/L	20.0	108	80-120				
1,3-Dichlorobenzene	20.7	1.00	ug/L	20.0	103	80-120				
Dichlorodifluoromethane	20.4	1.00	ug/L	20.0	102	40-160				
1,1-Dichloroethane	19.5	1.00	ug/L	20.0	97.5	80-125				
1,2-Dichloroethane	20.8	1.00	ug/L	20.0	104	80-129				
1,2-Dichloroethene	38.0	1.00	ug/L	40.0	95.0	80-124				
trans-1,2-Dichloroethene	20.1	1.00	ug/L	20.0	100	80-127				
1,1-Dichloroethene	20.0	1.00	ug/L	20.0	100	80-132				
cis-1,2-Dichloroethene	17.9	1.00	ug/L	20.0	89.5	70-125				
1,2-Dichloropropane	19.9	1.00	ug/L	20.0	99.5	80-120				
1,3-Dichloropropane	22.1	1.00	ug/L	20.0	110	80-120				
cis-1,3-Dichloropropene	20.6	1.00	ug/L	20.0	103	70-130				
trans-1,3-Dichloropropene	20.5	1.00	ug/L	20.0	102	80-130				
1,1-Dichloropropene	20.5	1.00	ug/L	20.0	103	75-130				
1,3-Dichloropropene	41.1	1.00	ug/L	40.0	103	80-120				
1,4-Dioxane	216	100	ug/L	200	108	20-160				
Ethylbenzene	21.9	1.00	ug/L	20.0	109	80-122				
Hexachlorobutadiene	20.1	1.00	ug/L	20.0	100	72-132				
2-Hexanone	19.2	5.00	ug/L	20.0	96.1	55-130				
Isopropylbenzene	22.5	1.00	ug/L	20.0	112	80-122				

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CERTIFICATE OF ANALYSIS

M2E0988

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
LCS (B2E1337-BS1)										
Prepared & Analyzed: 05/25/2022										
p-Isopropyltoluene	21.0	1.00	ug/L	20.0	105	80-122				
Methylene chloride	22.4	1.00	ug/L	20.0	112	80-123				
4-Methyl-2-pentanone	19.6	5.00	ug/L	20.0	97.9	64-140				
Naphthalene	23.6	1.00	ug/L	20.0	118	59-149				
n-Propylbenzene	21.1	1.00	ug/L	20.0	106	80-129				
Styrene	22.4	1.00	ug/L	20.0	112	80-123				
1,1,1,2-Tetrachloroethane	21.0	1.00	ug/L	20.0	105	80-130				
1,1,2,2-Tetrachloroethane	19.8	1.00	ug/L	20.0	98.8	79-125				
Tetrachloroethene	22.7	1.00	ug/L	20.0	113	80-124				
Toluene	20.5	1.00	ug/L	20.0	103	80-124				
1,2,3-Trichlorobenzene	22.1	1.00	ug/L	20.0	110	55-140				
1,2,4-Trichlorobenzene	22.3	1.00	ug/L	20.0	112	65-135				
1,1,1-Trichloroethane	19.6	1.00	ug/L	20.0	97.8	80-134				
1,1,2-Trichloroethane	21.9	1.00	ug/L	20.0	110	80-125				
Trichloroethene	20.8	1.00	ug/L	20.0	104	80-122				
Trichlorofluoromethane	22.3	1.00	ug/L	20.0	111	62-151				
1,2,4-Trimethylbenzene	21.2	1.00	ug/L	20.0	106	80-125				
1,3,5-Trimethylbenzene	20.8	1.00	ug/L	20.0	104	80-127				
Vinyl chloride	18.7	1.00	ug/L	20.0	93.3	50-170				
m-,p-Xylene	45.3	1.00	ug/L	40.0	113	80-122				
o-Xylene	21.7	1.00	ug/L	20.0	108	80-122				
Xylenes	67.0	1.00	ug/L	60.0	112	80-121				
Surrogate: 4-Bromofluorobenzene	48.2		ug/L	50.0	96.4	86-115				
Surrogate: Dibromofluoromethane	52.3		ug/L	50.0	105	86-118				
Surrogate: 1,2-Dichloroethane-d4	50.4		ug/L	50.0	101	80-120				
Surrogate: Toluene-d8	51.4		ug/L	50.0	103	88-110				
LCS Dup (B2E1337-BSD1)										
Prepared & Analyzed: 05/25/2022										
Acetone	18.0	5.00	ug/L	20.0	90.2	40-180	5.60	20		
Benzene	20.6	1.00	ug/L	20.0	103	80-121	1.92	20		
Bromobenzene	21.5	1.00	ug/L	20.0	107	80-120	0.935	20		
Bromochloromethane	19.6	1.00	ug/L	20.0	97.8	65-130	2.72	20		
Bromodichloromethane	17.9	1.00	ug/L	20.0	89.6	80-131	0.445	20		
Bromoform	17.2	1.00	ug/L	20.0	86.2	70-130	7.27	20		
Bromomethane	22.1	1.00	ug/L	20.0	111	30-145	2.43	20		
2-Butanone	19.4	5.00	ug/L	20.0	97.2	10-170	2.59	20		
sec-Butylbenzene	20.5	1.00	ug/L	20.0	103	80-127	0.486	20		
tert-Butylbenzene	20.8	1.00	ug/L	20.0	104	80-126	0.957	20		
n-Butylbenzene	21.1	1.00	ug/L	20.0	106	80-131	1.69	20		
Carbon disulfide	15.0	1.00	ug/L	20.0	75.0	58-128	4.22	20		
Carbon tetrachloride	17.8	1.00	ug/L	20.0	89.2	65-140	0.671	20		
Chlorobenzene	21.7	1.00	ug/L	20.0	108	80-120	3.67	20		
Chlorodibromomethane	18.6	1.00	ug/L	20.0	92.8	60-135	4.48	20		
Chloroethane (Ethyl chloride)	20.4	1.00	ug/L	20.0	102	60-135	3.00	20		

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2E1337 - 5030_8260 - EPA 8260B										
LCS Dup (B2E1337-BSD1)										
					Prepared & Analyzed: 05/25/2022					
Chloroform	20.7	1.00	ug/L	20.0	103	80-125	0.00	20		
Chloromethane	17.9	1.00	ug/L	20.0	89.3	40-125	2.65	20		
Cyclohexane	14.9	5.00	ug/L	20.0	74.3	70-130	2.87	20		
1,2-Dibromo-3-chloropropane	18.0	2.00	ug/L	20.0	90.1	50-130	4.45	20		
1,2-Dibromoethane	20.0	1.00	ug/L	20.0	100	80-129	7.49	20		
Dibromomethane	20.8	1.00	ug/L	20.0	104	75-125	4.00	20		
1,2-Dichlorobenzene	21.1	1.00	ug/L	20.0	105	80-125	1.69	20		
1,4-Dichlorobenzene	21.4	1.00	ug/L	20.0	107	80-120	1.44	20		
1,3-Dichlorobenzene	20.7	1.00	ug/L	20.0	104	80-120	0.387	20		
Dichlorodifluoromethane	20.9	1.00	ug/L	20.0	104	40-160	2.08	20		
1,1-Dichloroethane	19.0	1.00	ug/L	20.0	94.8	80-125	2.76	20		
1,2-Dichloroethane	19.9	1.00	ug/L	20.0	99.4	80-129	4.43	20		
1,2-Dichloroethene	36.7	1.00	ug/L	40.0	91.8	80-124	3.35	20		
trans-1,2-Dichloroethene	19.1	1.00	ug/L	20.0	95.5	80-127	5.10	20		
1,1-Dichloroethene	19.7	1.00	ug/L	20.0	98.4	80-132	1.76	20		
cis-1,2-Dichloroethene	17.6	1.00	ug/L	20.0	88.2	70-125	1.41	20		
1,2-Dichloropropane	19.6	1.00	ug/L	20.0	97.8	80-120	1.72	20		
1,3-Dichloropropane	21.2	1.00	ug/L	20.0	106	80-120	3.84	20		
cis-1,3-Dichloropropene	20.0	1.00	ug/L	20.0	100	70-130	2.95	20		
trans-1,3-Dichloropropene	19.7	1.00	ug/L	20.0	98.4	80-130	3.84	20		
1,1-Dichloropropene	20.3	1.00	ug/L	20.0	101	75-130	1.18	20		
1,3-Dichloropropene	39.7	1.00	ug/L	40.0	99.3	80-120	3.39	20		
1,4-Dioxane	222	100	ug/L	200	111	20-160	2.70	20		
Ethylbenzene	21.3	1.00	ug/L	20.0	106	80-122	2.78	20		
Hexachlorobutadiene	21.4	1.00	ug/L	20.0	107	72-132	6.27	20		
2-Hexanone	19.8	5.00	ug/L	20.0	99.0	55-130	2.97	20		
Isopropylbenzene	21.5	1.00	ug/L	20.0	108	80-122	4.23	20		
p-Isopropyltoluene	20.8	1.00	ug/L	20.0	104	80-122	0.957	20		
Methylene chloride	20.7	1.00	ug/L	20.0	103	80-123	7.81	20		
4-Methyl-2-pentanone	19.4	5.00	ug/L	20.0	97.1	64-140	0.769	20		
Naphthalene	23.3	1.00	ug/L	20.0	116	59-149	1.54	20		
n-Propylbenzene	21.1	1.00	ug/L	20.0	106	80-129	0.0474	20		
Styrene	21.6	1.00	ug/L	20.0	108	80-123	3.45	20		
1,1,1,2-Tetrachloroethane	20.7	1.00	ug/L	20.0	103	80-130	1.44	20		
1,1,2,2-Tetrachloroethane	19.6	1.00	ug/L	20.0	97.9	79-125	0.966	20		
Tetrachloroethene	22.3	1.00	ug/L	20.0	111	80-124	1.65	20		
Toluene	19.6	1.00	ug/L	20.0	98.1	80-124	4.58	20		
1,2,3-Trichlorobenzene	22.0	1.00	ug/L	20.0	110	55-140	0.136	20		
1,2,4-Trichlorobenzene	22.8	1.00	ug/L	20.0	114	65-135	2.22	20		
1,1,1-Trichloroethane	19.2	1.00	ug/L	20.0	96.0	80-134	1.81	20		
1,1,2-Trichloroethane	20.9	1.00	ug/L	20.0	104	80-125	4.91	20		
Trichloroethene	19.7	1.00	ug/L	20.0	98.3	80-122	5.39	20		
Trichlorofluoromethane	22.7	1.00	ug/L	20.0	113	62-151	1.91	20		

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2E1337 - 5030_8260 - EPA 8260B

LCS Dup (B2E1337-BSD1)	Prepared & Analyzed: 05/25/2022							
1,2,4-Trimethylbenzene	21.2	1.00	ug/L	20.0	106	80-125	0.377	20
1,3,5-Trimethylbenzene	20.8	1.00	ug/L	20.0	104	80-127	0.0963	20
Vinyl chloride	19.4	1.00	ug/L	20.0	96.8	50-170	3.63	20
m-,p-Xylene	44.9	1.00	ug/L	40.0	112	80-122	0.976	20
o-Xylene	20.9	1.00	ug/L	20.0	104	80-122	3.86	20
Xylenes	65.7	1.00	ug/L	60.0	110	80-121	1.90	20
Surrogate: 4-Bromofluorobenzene	47.6		ug/L	50.0	95.1	86-115		
Surrogate: Dibromofluoromethane	51.3		ug/L	50.0	103	86-118		
Surrogate: 1,2-Dichloroethane-d4	48.9		ug/L	50.0	97.9	80-120		
Surrogate: Toluene-d8	48.7		ug/L	50.0	97.4	88-110		

Batch B2E1399 - 5030_8260 - EPA 8260B

Blank (B2E1399-BLK1)	Prepared & Analyzed: 05/26/2022							
Acetone	<5.00	5.00	ug/L					
Benzene	<1.00	1.00	ug/L					
Bromobenzene	<1.00	1.00	ug/L					
Bromochloromethane	<1.00	1.00	ug/L					
Bromodichloromethane	<1.00	1.00	ug/L					
Bromoform	<1.00	1.00	ug/L					
Bromomethane	<1.00	1.00	ug/L					
2-Butanone	<5.00	5.00	ug/L					
sec-Butylbenzene	<1.00	1.00	ug/L					
tert-Butylbenzene	<1.00	1.00	ug/L					
n-Butylbenzene	<1.00	1.00	ug/L					
Carbon disulfide	<1.00	1.00	ug/L					
Carbon tetrachloride	<1.00	1.00	ug/L					
Chlorobenzene	<1.00	1.00	ug/L					
Chlorodibromomethane	<1.00	1.00	ug/L					
Chloroethane (Ethyl chloride)	<1.00	1.00	ug/L					
Chloroform	<1.00	1.00	ug/L					
Chloromethane	<1.00	1.00	ug/L					
Cyclohexane	<5.00	5.00	ug/L					
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L					
1,2-Dibromoethane	<1.00	1.00	ug/L					
Dibromomethane	<1.00	1.00	ug/L					
1,2-Dichlorobenzene	<1.00	1.00	ug/L					
1,4-Dichlorobenzene	<1.00	1.00	ug/L					
1,3-Dichlorobenzene	<1.00	1.00	ug/L					
Dichlorodifluoromethane	<1.00	1.00	ug/L					
1,1-Dichloroethane	<1.00	1.00	ug/L					
1,2-Dichloroethane	<1.00	1.00	ug/L					
1,2-Dichloroethene	<1.00	1.00	ug/L					
trans-1,2-Dichloroethene	<1.00	1.00	ug/L					

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CERTIFICATE OF ANALYSIS

M2E0988

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1399 - 5030_8260 - EPA 8260B										
Blank (B2E1399-BLK1)										
Prepared & Analyzed: 05/26/2022										
1,1-Dichloroethene <1.00 1.00 ug/L										
cis-1,2-Dichloroethene <1.00 1.00 ug/L										
1,2-Dichloropropane <1.00 1.00 ug/L										
1,3-Dichloropropane <1.00 1.00 ug/L										
cis-1,3-Dichloropropene <1.00 1.00 ug/L										
trans-1,3-Dichloropropene <1.00 1.00 ug/L										
1,1-Dichloropropene <1.00 1.00 ug/L										
1,3-Dichloropropene <1.00 1.00 ug/L										
1,4-Dioxane <100 100 ug/L										
Ethylbenzene <1.00 1.00 ug/L										
Hexachlorobutadiene <1.00 1.00 ug/L										
2-Hexanone <5.00 5.00 ug/L										
Isopropylbenzene <1.00 1.00 ug/L										
p-Isopropyltoluene <1.00 1.00 ug/L										
Methylene chloride <1.00 1.00 ug/L										
4-Methyl-2-pentanone <5.00 5.00 ug/L										
Naphthalene <1.00 1.00 ug/L										
n-Propylbenzene <1.00 1.00 ug/L										
Styrene <1.00 1.00 ug/L										
1,1,1,2-Tetrachloroethane <1.00 1.00 ug/L										
1,1,2,2-Tetrachloroethane <1.00 1.00 ug/L										
Tetrachloroethene <1.00 1.00 ug/L										
Toluene <1.00 1.00 ug/L										
1,2,3-Trichlorobenzene <1.00 1.00 ug/L										
1,2,4-Trichlorobenzene <1.00 1.00 ug/L										
1,1,1-Trichloroethane <1.00 1.00 ug/L										
1,1,2-Trichloroethane <1.00 1.00 ug/L										
Trichloroethene <1.00 1.00 ug/L										
Trichlorofluoromethane <1.00 1.00 ug/L										
1,2,4-Trimethylbenzene <1.00 1.00 ug/L										
1,3,5-Trimethylbenzene <1.00 1.00 ug/L										
Vinyl chloride <1.00 1.00 ug/L										
m-,p-Xylene <1.00 1.00 ug/L										
o-Xylene <1.00 1.00 ug/L										
Xylenes <1.00 1.00 ug/L										
Surrogate: 4-Bromofluorobenzene 47.9 ug/L 50.0 95.7 86-115										
Surrogate: Dibromofluoromethane 47.9 ug/L 50.0 95.8 86-118										
Surrogate: 1,2-Dichloroethane-d4 47.7 ug/L 50.0 95.3 80-120										
Surrogate: Toluene-d8 46.8 ug/L 50.0 93.7 88-110										
LCS (B2E1399-BS1)										
Prepared & Analyzed: 05/26/2022										
Acetone 16.3 5.00 ug/L 20.0 81.5 40-180										
Benzene 18.8 1.00 ug/L 20.0 94.2 80-121										
Bromobenzene 19.5 1.00 ug/L 20.0 97.3 80-120										

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1399 - 5030_8260 - EPA 8260B										
LCS (B2E1399-BS1)										
					Prepared & Analyzed: 05/26/2022					
Bromochloromethane	18.3	1.00	ug/L	20.0		91.5	65-130			
Bromodichloromethane	17.6	1.00	ug/L	20.0		88.0	80-131			
Bromoform	16.5	1.00	ug/L	20.0		82.5	70-130			
Bromomethane	21.3	1.00	ug/L	20.0		106	30-145			
2-Butanone	17.7	5.00	ug/L	20.0		88.4	10-170			
sec-Butylbenzene	18.6	1.00	ug/L	20.0		93.0	80-127			
tert-Butylbenzene	19.2	1.00	ug/L	20.0		95.8	80-126			
n-Butylbenzene	19.2	1.00	ug/L	20.0		96.2	80-131			
Carbon disulfide	12.9	1.00	ug/L	20.0		64.3	58-128			
Carbon tetrachloride	16.7	1.00	ug/L	20.0		83.7	65-140			
Chlorobenzene	20.1	1.00	ug/L	20.0		101	80-120			
Chlorodibromomethane	18.0	1.00	ug/L	20.0		89.8	60-135			
Chloroethane (Ethyl chloride)	20.1	1.00	ug/L	20.0		101	60-135			
Chloroform	19.4	1.00	ug/L	20.0		97.2	80-125			
Chloromethane	17.2	1.00	ug/L	20.0		86.2	40-125			
Cyclohexane	13.5	5.00	ug/L	20.0		67.5	70-130			Q3
1,2-Dibromo-3-chloropropane	16.0	2.00	ug/L	20.0		80.0	50-130			
1,2-Dibromoethane	18.5	1.00	ug/L	20.0		92.3	80-129			
Dibromomethane	20.3	1.00	ug/L	20.0		101	75-125			
1,2-Dichlorobenzene	19.4	1.00	ug/L	20.0		97.0	80-125			
1,4-Dichlorobenzene	19.7	1.00	ug/L	20.0		98.4	80-120			
1,3-Dichlorobenzene	19.3	1.00	ug/L	20.0		96.5	80-120			
Dichlorodifluoromethane	18.6	1.00	ug/L	20.0		92.9	40-160			
1,1-Dichloroethane	17.4	1.00	ug/L	20.0		86.8	80-125			
1,2-Dichloroethane	18.6	1.00	ug/L	20.0		93.1	80-129			
1,2-Dichloroethene	33.6	1.00	ug/L	40.0		84.0	80-124			
trans-1,2-Dichloroethene	17.2	1.00	ug/L	20.0		86.0	80-127			
1,1-Dichloroethene	18.2	1.00	ug/L	20.0		90.9	80-132			
cis-1,2-Dichloroethene	16.4	1.00	ug/L	20.0		82.0	70-125			
1,2-Dichloropropane	17.8	1.00	ug/L	20.0		89.0	80-120			
1,3-Dichloropropane	18.8	1.00	ug/L	20.0		93.8	80-120			
cis-1,3-Dichloropropene	18.3	1.00	ug/L	20.0		91.6	70-130			
trans-1,3-Dichloropropene	17.6	1.00	ug/L	20.0		88.2	80-130			
1,1-Dichloropropene	17.9	1.00	ug/L	20.0		89.5	75-130			
1,3-Dichloropropene	36.0	1.00	ug/L	40.0		89.9	80-120			
1,4-Dioxane	170	100	ug/L	200		85.1	20-160			
Ethylbenzene	19.4	1.00	ug/L	20.0		97.1	80-122			
Hexachlorobutadiene	20.2	1.00	ug/L	20.0		101	72-132			
2-Hexanone	17.1	5.00	ug/L	20.0		85.3	55-130			
Isopropylbenzene	19.6	1.00	ug/L	20.0		98.1	80-122			
p-Isopropyltoluene	19.2	1.00	ug/L	20.0		95.8	80-122			
Methylene chloride	19.2	1.00	ug/L	20.0		95.8	80-123			
4-Methyl-2-pentanone	17.4	5.00	ug/L	20.0		86.9	64-140			

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Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B2E1399 - 5030_8260 - EPA 8260B										
LCS (B2E1399-BS1)										
Naphthalene	20.1	1.00	ug/L	20.0	101	59-149				
n-Propylbenzene	19.0	1.00	ug/L	20.0	95.0	80-129				
Styrene	19.6	1.00	ug/L	20.0	97.9	80-123				
1,1,1,2-Tetrachloroethane	19.3	1.00	ug/L	20.0	96.7	80-130				
1,1,2,2-Tetrachloroethane	17.9	1.00	ug/L	20.0	89.6	79-125				
Tetrachloroethene	19.7	1.00	ug/L	20.0	98.7	80-124				
Toluene	18.0	1.00	ug/L	20.0	90.1	80-124				
1,2,3-Trichlorobenzene	20.5	1.00	ug/L	20.0	102	55-140				
1,2,4-Trichlorobenzene	20.1	1.00	ug/L	20.0	100	65-135				
1,1,1-Trichloroethane	18.1	1.00	ug/L	20.0	90.4	80-134				
1,1,2-Trichloroethane	19.1	1.00	ug/L	20.0	95.4	80-125				
Trichloroethene	18.4	1.00	ug/L	20.0	92.1	80-122				
Trichlorofluoromethane	29.0	1.00	ug/L	20.0	145	62-151				
1,2,4-Trimethylbenzene	19.2	1.00	ug/L	20.0	95.9	80-125				
1,3,5-Trimethylbenzene	18.5	1.00	ug/L	20.0	92.7	80-127				
Vinyl chloride	17.3	1.00	ug/L	20.0	86.4	50-170				
m-,p-Xylene	40.5	1.00	ug/L	40.0	101	80-122				
o-Xylene	18.8	1.00	ug/L	20.0	93.8	80-122				
Xylenes	59.3	1.00	ug/L	60.0	98.8	80-121				
Surrogate: 4-Bromofluorobenzene	44.8		ug/L	50.0	89.6	86-115				
Surrogate: Dibromofluoromethane	50.4		ug/L	50.0	101	86-118				
Surrogate: 1,2-Dichloroethane-d4	47.1		ug/L	50.0	94.2	80-120				
Surrogate: Toluene-d8	45.7		ug/L	50.0	91.5	88-110				

Definitions

- Q3:** LCS recovery is below acceptance limits. The reported value is estimated.
Q6: CCV recovery is above acceptance limits. The reported value is estimated.
Q7: CCV recovery is above acceptance limits. However there is no impact on the reported value.
Q8: CCV recovery is below acceptance limits. The reported value is estimated.
RL: Reporting Limit
RPD: Relative Percent Difference
ug/L: Micrograms per Liter

Cooler Receipt Log

Cooler ID: Default Cooler

Temp: 4.0°C



Microbac Laboratories Inc., - Marietta, OH

CERTIFICATE OF ANALYSIS

M2E0988

Cooler Inspection Checklist

Ice Present or not required?	Yes	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes	Sample type identified on COC?	Yes
Correct type of Containers Received	Yes	Correct number of containers listed on COC?	Yes
Containers Intact?	Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes	Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes	Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	No		

Report Comments

Reviewed and Approved By:

A handwritten signature in black ink, appearing to read "Ron L Feathers".

Ron L Feathers
Customer Relationship Specialist
Reported: 06/09/2022 16:27

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. **The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.**

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M 2 E 0 9 8 8

Microbac - DAY
Rec'd: 05/17/2022 09:45
By: Brenda Gregory

Temp: 4

(Signature)

SUBCONTRACTED CHAIN OF CUSTODY

D2E1267

SENDING LABORATORY:

Microbac Laboratories, Inc. - Dayville
61 Louisa Viens Drive
Dayville, CT 06241
Phone: 860.774.6814
Lab Manager: Shelby Jendrewski
Email: Shelby.Jendrewski@microbac.com

RECEIVING LABORATORY:

Microbac - OVD
158 Starlite DR
Marietta, OH 45750
Phone: (740) 373-4071

Project Info:

Client Name:	Client: River Hawk Environmental
Project Name:	Shawmut Landfill
Project No:	Shawmut Landfill
Project Type:	ENV-GroundWater
Project Location:	Massachusetts
	Report TAT: 10
	Due: 05/27/2022 17:00

Project Requested Certifications

Massachusetts Department of Environmental Protection

Sample ID: D2E1267-01

Sampled: 05/12/2022 09:10

Sampler: Customer

Matrix: Aqueous

Description: SW-1

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 09:10	\$ 40.00
Trip Blank Provided				

Sample ID: D2E1267-02

Sampled: 05/12/2022 11:30

Sampler: Customer

Matrix: Aqueous

Description: SW-2

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 11:30	\$ 40.00
Trip Blank Provided				

Sample ID: D2E1267-03

Sampled: 05/12/2022 12:00

Sampler: Customer

Matrix: Aqueous

Description: SW-3

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/26/2022 12:00	\$ 40.00
Trip Blank Provided				

Sample ID: D2E1267-04

Sampled: 05/13/2022 00:00

Sampler: Customer

Matrix: Aqueous

Description: Trip Blank

Analysis	Method	Analysis Due	Expires	Network \$
8260C VOC	EPA 8260C	05/20/2022 16:00	05/27/2022 00:00	\$ 0.00
only analyze if needed				

W. Rey

5/16/22

Released By

Date

Received By

Date

Released By

Date

Received By

Date

Brenda Gregory

5/17/22 @ 945



 MICROBAC®

Work Order #

COOLER TEMP >6° C LOG

pH Lot # NIP

ph

Exceptions

PRESERVATIVE EXCEPTIONS

NONE

AS NOTED

Document Control # 1957
Last 04-10-2019

AS NOTED

Issued to: Document Master File



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1271

Project Description

Shawmut Landfill

For:

Bill Kenney

River Hawk Environmental, LLC

2183 Ocean St.

Marshfield, MA 02050

A handwritten signature in black ink that reads "Melisa L. Montgomery".

Quality Assurance Officer

Melisa L. Montgomery

Tuesday, May 24, 2022

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc. - Dayville. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

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Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1271

River Hawk Environmental, LLC

Bill Kenney
2183 Ocean St.
Marshfield, MA 02050

Project Name: Shawmut Landfill

Project / PO Number: Shawmut Landfill
Received: 05/13/2022
Reported: 05/24/2022

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
SED - 1	D2E1271-01	Solid	Grab		05/12/22 12:15	05/13/22 13:00



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1271

Analytical Testing Parameters

Client Sample ID:	SED - 1	Collected By:	Customer					
Sample Matrix:	Solid	Collection Date:	05/12/2022 12:15					
Lab Sample ID:	D2E1271-01							
Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SM 2540 G-1997								
Percent Solids	12.8		% (by wt.)	1	Y1	05/17/22 1700	05/18/22 1300	AJD
Polychlorinated Biphenyls (PCBs) by GC/ECD	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3550C/EPA 8082A								
Aroclor-1016 (PCB-1016)	<26.1	26.1	ug/kg dry	1	M2,Y1	05/17/22 0918	05/18/22 1037	MRB
Aroclor-1221 (PCB-1221)	<26.1	26.1	ug/kg dry	1	Y1	05/17/22 0918	05/18/22 1037	MRB
Aroclor-1232 (PCB-1232)	<26.1	26.1	ug/kg dry	1	Y1	05/17/22 0918	05/18/22 1037	MRB
Aroclor-1242 (PCB-1242)	<26.1	26.1	ug/kg dry	1	Y1	05/17/22 0918	05/18/22 1037	MRB
Aroclor-1248 (PCB-1248)	<26.1	26.1	ug/kg dry	1	Y1	05/17/22 0918	05/18/22 1037	MRB
Aroclor-1254 (PCB-1254)	173	26.1	ug/kg dry	1	Y1	05/17/22 0918	05/24/22 1049	MRB
Aroclor-1260 (PCB-1260)	<26.1	26.1	ug/kg dry	1	M2,Y1	05/17/22 0918	05/18/22 1037	MRB
Surrogate: Decachlorobiphenyl (BZ-209)	77.2	Limit: 30-150	% Rec	1		05/17/22 0918	05/18/22 1037	MRB
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	89.9	Limit: 30-150	% Rec	1		05/17/22 0918	05/18/22 1037	MRB



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1271

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 8082A	DE20990	DE20990-BLK1	
		DE20990-BS1	
		DE20990-MS1	D2E1271-01
			D2E1271-01
		DE20990-MSD1	D2E1271-01
		D2E1271-01	SED - 1
SM 2540 G-1997	DE21080	D2E1271-01RE1	SED - 1
		D2E1271-01	
		DE21080-DUP1	D2E1271-01
		DE21080-BLK1	

Batch Quality Control Summary: Microbac Laboratories, Inc. - Dayville

Inorganics Total	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch DE21080 - Wet-Solids-S - SM 2540 G-1997										
Blank (DE21080-BLK1)					Prepared: 05/17/2022 Analyzed: 05/18/2022					
Percent Solids	0.00			% (by wt.)						
Duplicate (DE21080-DUP1)										
Percent Solids	12.4			% (by wt.)	12.8			2.46	10	
Polychlorinated Biphenyls (PCBs) by GC/ECD										

Batch DE20990 - 3550C Ultrasonic - EPA 8082A

Blank (DE20990-BLK1)					Prepared: 05/17/2022 Analyzed: 05/18/2022					
Aroclor-1016 (PCB-1016)	<3.33	3.33	ug/kg wet							
Aroclor-1221 (PCB-1221)	<3.33	3.33	ug/kg wet							
Aroclor-1232 (PCB-1232)	<3.33	3.33	ug/kg wet							
Aroclor-1242 (PCB-1242)	<3.33	3.33	ug/kg wet							
Aroclor-1248 (PCB-1248)	<3.33	3.33	ug/kg wet							
Aroclor-1254 (PCB-1254)	<3.33	3.33	ug/kg wet							
Aroclor-1260 (PCB-1260)	<3.33	3.33	ug/kg wet							
Surrogate: Decachlorobiphenyl (BZ-209)	3.26		ug/kg wet	3.33		97.7	30-150			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	2.92		ug/kg wet	3.33		87.6	30-150			

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CERTIFICATE OF ANALYSIS

D2E1271

Polychlorinated Biphenyls (PCBs) by GC/ECD	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch DE20990 - 3550C Ultrasonic - EPA 8082A										
LCS (DE20990-BS1)										
Aroclor-1016 (PCB-1016)	23.4	3.33	ug/kg wet	33.3		70.2	40-140			
Aroclor-1260 (PCB-1260)	25.4	3.33	ug/kg wet	33.3		76.3	40-140			
Surrogate: Decachlorobiphenyl (BZ-209)	2.87		ug/kg wet	3.33		86.2	30-150			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	2.92		ug/kg wet	3.33		87.7	30-150			
Matrix Spike (DE20990-MS1)										
Aroclor-1016 (PCB-1016)	135	26.1	ug/kg dry	261	ND	51.6	40-140			
Aroclor-1260 (PCB-1260)	156	26.1	ug/kg dry	261	ND	59.9	40-140			
Surrogate: Decachlorobiphenyl (BZ-209)	14.8		ug/kg dry	26.1		56.5	30-150			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	16.0		ug/kg dry	26.1		61.1	30-150			
Matrix Spike Dup (DE20990-MSD1)										
Aroclor-1016 (PCB-1016)	198	26.1	ug/kg dry	261	ND	75.7	40-140	37.9	35	M2
Aroclor-1260 (PCB-1260)	233	26.1	ug/kg dry	261	ND	89.2	40-140	39.4	35	M2
Surrogate: Decachlorobiphenyl (BZ-209)	20.7		ug/kg dry	26.1		79.1	30-150			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	22.9		ug/kg dry	26.1		87.6	30-150			

Definitions

% (by wt.): Percent by Weight

M2: Matrix spike recovery is below acceptance limits.

RL: Reporting Limit

RPD: Relative Percent Difference

Y1: Accreditation is not offered by the accrediting body for this analyte.

Cooler Receipt Log

Cooler ID: Default Cooler

Temp: 5.1°C

Cooler Inspection Checklist

Ice Present or not required?	Yes	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	No	Sample type identified on COC?	Yes
Correct type of Containers Received	Yes	Correct number of containers listed on COC?	Yes
Containers Intact?	Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes	Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes	Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes		



Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D2E1271

Project Requested Certification(s)

Microbac Laboratories, Inc. - Dayville

M-CT008

Massachusetts Department of Environmental Protection

Report Comments

Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. **The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.**

Reviewed and Approved By:

A handwritten signature in black ink that appears to read "Montgomery".

Melisa L. Montgomery
Quality Assurance Officer
Reported: 05/24/2022 16:03

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GROUNDWATER SAMPLING LOG SHEET

GENERAL INFORMATION

Well I.D.: CDM-1S
Date: 5/12/2022
Time: 8:35
Weather: 60's, Sunny

Job #: 1360101
Project Description: Shawmut Avenue Landfill
Project Location: Shawmut Ave, New Bedford, MA
Staff: MAP

Gauging: EIP

Screening: N/A

Purging: Geopoump

Data Collection: YSI

Equipment:

WELL STATUS

	Good	Poor	Missing	N/A		YES	NO	N/A
Casing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Standing Water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Heaving	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Riser Cap	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Subsidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conc. Pad	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remarks:

PURGING AND SAMPLE COLLECTION DATA

Measurement Reference: PVC TOC

Depth to Product:

Reference Elevation: NR

Depth to Groundwater: 5.51

Well Volume: NR

Water Column: NR

OBSERVATIONS

Odor: _____ -

Turbidity: XH H M L

Color: _____

Sheen: Y N

Observations:

Signature of Sampler:

GROUNDWATER SAMPLING LOG SHEET

GENERAL INFORMATION

Well I.D.: CDM-1D
Date: 5/12/2022
Time: 8:50
Weather: 60's, Sunny

Job #: 1360101
Project Description: Shawmut Avenue Landfill
Project Location: Shawmut Ave, New Bedford, MA
Staff: MAP

Gauging: EIP

Screening: N/A

Purging: Geopoump

Data Collection: YSI

WELL STATUS

	Good	Poor	Missing	N/A		YES	NO	N/A
Casing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Standing Water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Heaving	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Riser Cap	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Subsidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conc. Pad	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remarks:

PURGING AND SAMPLE COLLECTION DATA

Measurement Reference: PVC TOC
Reference Elevation: NR

Depth to Product: -
Depth to Groundwater: 5.62
Total Depth: NR
Water Column: NR

OBSERVATIONS

Odor: _____ -
Color: _____ -

Turbidity: XH H M L

Sheen: Y N

Observations: Duplicate Sample Collected from this Monitoring well @ 9:00.

Signature of Sampler:

GROUNDWATER SAMPLING LOG SHEET

GENERAL INFORMATION

Well I.D.: CDM-3S
Date: 5/12/2022
Time: 9:10
Weather: 60's, Sunny

Job #: 1360101
Project Description: Shawmut Avenue Landfill
Project Location: Shawmut Ave, New Bedford, MA
Staff: MAP

Equipment:

Gauging: EIP

Screening: N/A

Purging: Geopoump

Data Collection: YSI

WELL STATUS

	Good	Poor	Missing	N/A		YES	NO	N/A
Casing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Standing Water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Heaving	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Riser Cap	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Subsidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conc. Pad	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remarks:

PURGING AND SAMPLE COLLECTION DATA

Measurement Reference: PVC TOC
Reference Elevation: NR

Depth to Product: _____
Depth to Groundwater: 3.04

Well Volume: NR

OBSERVATIONS

Odor: -
Color: -

Turbidity: XH H M L
Sheen: Y N

Observations:

Signature of Sample

GROUNDWATER SAMPLING LOG SHEET

GENERAL INFORMATION

Well I.D.: CDM-4S

Date: 5/12/2022

Time: 10:15

Weather: 60's, Sunny

Job #: 1360101

Project Description: Shawmut Avenue Landfill

Project Location: Shawmut Ave, New Bedford, MA

Staff: MAP

Gauging: EIP

Screening: N/A

Purging: Geopoump

Data Collection: YSI

WELL STATUS

	Good	Poor	Missing	N/A		YES	NO	N/A
Casing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Standing Water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Heaving	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Riser Cap	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Subsidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conc. Pad	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remarks:

PURGING AND SAMPLE COLLECTION DATA

Measurement Reference: PVC TOC

Depth to Product:

Reference Elevation: NR

Depth to Groundwater: 2.86

Well Volume: NR

Water Column: NR

OBSERVATIONS

Odor: -

Turbidity: XH H M L

Color: -

Sheen: Y N

Observations:

[Signature]

GROUNDWATER SAMPLING LOG SHEET

GENERAL INFORMATION

Well I.D.: CDM-4D

Date: 5/12/2022

Time: 10:25

Weather: 60's, Sunny

Job #: 1360101

Project Description: Shawmut Avenue Landfill

Project Location: Shawmut Ave, New Bedford, MA

Staff: MAP

Gauging: EIP

Screening: N/A

Purging: Geopoump

Data Collection: YSI

WELL STATUS

	Good	Poor	Missing	N/A		YES	NO	N/A
Casing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Standing Water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Heaving	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Riser Cap	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Subsidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conc. Pad	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remarks:

PURGING AND SAMPLE COLLECTION DATA

Measurement Reference: PVC TOC

Depth to Product:

Reference Elevation: NR

Depth to Groundwater: 2.29

Well Volume: NR

Total Depth: NR

OBSERVATIONS

Odor: -

Turbidity: XH H M L

Color:

Sheen: Y N

Observations:

Signature of Sampler: 

RIVER HAWK ENVIRONMENTAL, LLC

GROUNDWATER SAMPLING LOG SHEET

GENERAL INFORMATION

Well I.D.: CDM-5S
Date: 5/12/2022
Time: 11:00
Weather: 60's, Sunny

Job #: 1360101
Project Description: Shawmut Avenue Landfill
Project Location: Shawmut Ave, New Bedford, MA
Staff: MAP

Equipment:

Gauging: EIP

Screening: N/A

Purging: Geopoump

Data Collection: YSI

WELL STATUS

	Good	Poor	Missing	N/A		YES	NO	N/A
Casing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Standing Water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Heaving	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Riser Cap	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Subsidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conc. Pad	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remarks:

PURGING AND SAMPLE COLLECTION DATA

Measurement Reference: PVC TOC

Depth to Product:

Reference Elevation: NR

Depth to Groundwater: 2.6

Total Depth: NR

Well Volume: NR

Water Column: NR

OBSERVATIONS

Odor: _____ -
Color: _____ -

Turbidity: XH H M L
Sheen: Y N

Observations:

Signature of Sampler:

GROUNDWATER SAMPLING LOG SHEET

GENERAL INFORMATION

Well I.D.: CDM-5D
Date: 5/12/2022
Time: 11:20
Weather: 60's, Sunny

Job #: 1360101
Project Description: Shawmut Avenue Landfill
Project Location: Shawmut Ave, New Bedford, MA
Staff: MAP

Gauging: EIP

Screening: N/A

Purging: Geopoump

Data Collection: YSI

Equipment:

WELL STATUS

	Good	Poor	Missing	N/A		YES	NO	N/A
Casing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Standing Water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Heaving	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Riser Cap	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Subsidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conc. Pad	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remarks:

PURGING AND SAMPLE COLLECTION DATA

Measurement Reference: PVC TOC

Depth to Product:

Reference Elevation: NR

Depth to Groundwater: 2.59

Well Volume: NR

Water Column: NR

OBSERVATIONS

Odor: _____ -

Turbidity: XH H M L

Color: -

Sheen: Y N

Observations:

Signature of Sampler:

GROUNDWATER SAMPLING LOG SHEET

GENERAL INFORMATION

Well I.D.: CDM-6D
Date: 5/12/2022
Time: 12:30
Weather: 60's, Sunny

Job #: 1360101
Project Description: Shawmut Avenue Landfill
Project Location: Shawmut Ave, New Bedford, MA
Staff: MAP

Equipment:

Gauging: EIP

Screening: N/A

Purging: Geopoump

Data Collection: YSI

WELL STATUS

	Good	Poor	Missing	N/A		YES	NO	N/A
Casing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Standing Water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Heaving	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Riser Cap	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visible Subsidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Damage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conc. Pad	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remarks:

PURGING AND SAMPLE COLLECTION DATA

Measurement Reference: PVC TOC

Depth to Product:

Reference Elevation: NR

Depth to Groundwater: 7.71

Well Volume: NR

Water Column: NR

OBSERVATIONS

Odor: _____ -

Turbidity: XH H M L

Color: _____ -

Sheen: Y N

Observations:

Signature of Sampler:

GROUNDWATER SAMPLING LOG SHEET

GENERAL INFORMATION

Well I.D.: SW-1
Date: 5/12/2022
Time: 9:10
Weather: 60's, Sunny

Job #: 1360101
Project Description: Shawmut Avenue Landfill
Project Location: Shawmut Ave, New Bedford, MA
Staff: MAP

Gauging: EIP

Screening: N/A

Purging: Geopoump

Data Collection: YSI

Equipment:

WELL STATUS

	Good	Poor	Missing	N/A		YES	NO	N/A
Casing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Standing Water	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Visible Heaving	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Riser Cap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Visible Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Damage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Conc. Pad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Remarks:

PURGING AND SAMPLE COLLECTION DATA

Measurement Reference: PVC TOC

Depth to Product:

Reference Elevation: NR

Depth to Groundwater:

Total Depth: NR

Well Volume: NR

Water Column: NR

OBSERVATIONS

Odor:

Turbidity: XH H M L

Color:

Sheen: Y N

Observations:

Signature of Sampler: 

GROUNDWATER SAMPLING LOG SHEET

GENERAL INFORMATION

Well I.D.: SW-2
Date: 5/12/2022
Time: 11:30
Weather: 60's, Sunny

Job #: 1360101
Project Description: Shawmut Avenue Landfill
Project Location: Shawmut Ave, New Bedford, MA
Staff: MAP

Gauging: EIP

Screening: N/A

Purging: Geopoump

Data Collection: YSI

WELL STATUS

	Good	Poor	Missing	N/A		YES	NO	N/A
Casing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Standing Water	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Visible Heaving	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Riser Cap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Visible Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Damage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Conc. Pad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Remarks:

PURGING AND SAMPLE COLLECTION DATA

Measurement Reference: PVC TOC

Depth to Product: -

Reference Elevation: NR

Depth to Groundwater: _____

Well Volume: NR

Total Depth: NR

OBSERVATIONS

Odor: _____ -
Color: _____ -

Turbidity: XH H M L
Sheen: Y N

Observations: The following table summarizes the observed values for each parameter.

Signature of Sampler:

GROUNDWATER SAMPLING LOG SHEET

GENERAL INFORMATION

Well I.D.: SW-3
Date: 5/12/2022
Time: 12:00
Weather: 60's, Sunny

Job #: 1360101
Project Description: Shawmut Avenue Landfill
Project Location: Shawmut Ave, New Bedford, MA
Staff: MAP

Gauging: N/A

Screening: N/A

Purging: Geopoump

Data Collection: YSI

Equipment:

WELL STATUS

	Good	Poor	Missing	N/A		YES	NO	N/A
Casing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Standing Water	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Visible Heaving	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Riser Cap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Visible Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Damage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Conc. Pad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Remarks:

PURGING AND SAMPLE COLLECTION DATA

Measurement Reference: PVC TOC

Depth to Product: -

Reference Elevation: NR

Depth to Groundwater:

Total Depth: NR

Well Volume: NR

Water Column: NR

OBSERVATIONS

Odor: -

Turbidity: XH H M L

Color: _____ -

Sheen: Y N

Observations:

Section 68-1